

WELCOME

Dear Colleague:

It is a pleasure for me to invite you to attend the International Magnetism Conference, Intermag 2009, which will be held from Monday May 4, until Friday May 8, 2009, at the Convention Center in Sacramento California.

Intermag is the premier conference on applied magnetism which allows scientists and engineers from all over the world to meet and discuss novel developments in magnetism, magnetic materials and associated technologies. Intermag 2009 is planned to provide a range of oral and poster presentations, invited talks and symposia, a tutorial session, and exhibitions reviewing the latest developments in magnetism. I would like you to attend the conference and actively contribute to one or more of its technical sessions.

Sacramento, the conference venue, is the Capital of California: a lively and vibrant city. Participants will find in downtown Sacramento a wide choice of restaurants and shops within walking distance. A short drive will also allow our attendees to reach the San Francisco area, the fabulous hillside vineyards, or the lakes and snowcapped mountains of the Sierra Nevada.

On behalf of the Management Committee of Intermag 2009, I look forward to seeing you in Sacramento, CA, to help contribute to an exciting scientific and technical program.

Sincerely,

Massimo Pasquale

Intermag 2009 General Chairman

SCOPE OF THE CONFERENCE

The InterMag 2009 Conference, sponsored by the IEEE Magnetics Society, will be held May 4-8, 2009 at the Sacramento Convention Center in Sacramento, California. You are invited as members of the scientific community interested in recent advances in magnetism and related technologies.

This is the premiere international conference on applications of magnetism including information storage technology. An exciting program is planned. Invited symposia are scheduled on topics covering bio-nanomagnetism, future data storage technologies, magnetic materials for sustainable energy, spin hall effects and magnetic sensors for space applications. InterMag 2009 will provide an excellent opportunity for participants to interact with colleagues around the globe, to share insights and latest accomplishments and to see the latest products offered by our technical exhibitors.

LOCATION

Sacramento is not just the capital of California, it is also the "City of Trees" and the "River City". Even 150 years after the famous California "Gold Rush," visitors are still discovering gold in Sacramento. Sacramento, California, has emerged into a cosmopolitan state capital that still retains its unique Gold Rush history. To find more information about the city including weather, maps and things to do, please visit the city's website at www.cityofsacramento.org or at www.discovergold.org.

WEATHER

Sacramento has a mild climate and an abundance of sunshine year-round. The average high temperatures in May can reach mid-80 degrees (25-30 °C) and low temperatures can fall to the mid-50's (10-15 °C), especially at night.

TRANSPORTATION IN SACRAMENTO

Sacramento International Airport is served by 150 flights daily with direct service to more than 20 destinations. Major carriers include Southwest Airlines, American Airlines, United, Delta, Continental and more. Visit www.sacairports.org for more information.

SuperShuttle is the exclusive provider of on-call van service at Sacramento International Airport. They provide service to and from the airport to downtown. Please call (800) 258-3826 for more information.

Taxis are also convenient for transportation to and from the airport as well as throughout the city. The taxi rate is \$2.80 for the first mile, \$2.40 for each additional mile. A one-way fare between the airport and downtown is approximately \$27. Round-trip between Sacramento International Airport and downtown Sacramento is currently about \$50.

Public transportation is available by the YoloBus which offers daily public bus service to the airport and connection to Regional Transit. Call (530) 666-2877 for schedules and more information.

HOTEL ACCOMMODATION

Blocks of hotel rooms at special Intermag Conference rates are being held at both the Sheraton Grand Sacramento and the Hyatt Regency Sacramento. Both hotels are located directly across a pedestrian walkway from the Center. And both are offering rooms at the special INTERMAG rate of \$159/night/single or double for the week of the Conference. Links for making your reservation at either of these hotels are below. In addition we have been able to negotiate additional special discounts and benefits for conference participants staying in each of these two conference hotels. **PLEASE NOTE: All reservations must be made by April 13th to receive the Intermag Conference discounted rate.**

LINK TO THE HYATT REGENCY ONLINE RESERVATION

https://resweb.passkey.com/Resweb.do?mode=welcome_ei_new&eventID=81333&fromResdesk=true

LINK TO THE SHERATON GRAND ONLINE RESERVATION

<http://www.starwoodmeeting.com/StarGroupsWeb/res?id=0812032090&key=74C88>

Additionally, we have arranged for a limited number of hotel rooms for students and other financially-challenged attendees at the Holiday Inn Express for \$104 plus tax/night/single or double; and at the Clarion Hotel Mansion Inn for \$94 plus tax/night/single or double. To make your reservation at one of these properties, go to the website (www.intermagconference.com/intermag2009), download the reservation forms, and fax in your completed form to the hotel of your choice by April 13th to receive the discounted rates. These rooms are available on a first-come-first-served basis and are quite limited, so book early.

CONFERENCE REGISTRATION

You can register in advance at a reduced rate by completely filling out the Advance Registration Form. Payment in U.S. dollars must be made by personal or corporate check or by MasterCard, Visa or American Express credit cards. Make checks payable to "IEEE Intermag 2009." **All conference attendees, including speakers, must pay registration fees.**

The conference Advance Registration Form and complete instructions for submitting it can be found on the Intermag 2009 web site at: www.intermagconference.com. You are encouraged to register via the secure web site to save time and to ensure that you are registered well in advance of the deadline of April 13, 2009.

There will also be Onsite Registration, but at higher rates. After April 13th, only the higher registration fees will be accepted and only onsite at the Conference. Forms not accompanied by payment or with incomplete or incorrect credit card information will be considered “late” and the higher rates will be collected onsite at the Conference.

REGISTRATION FEES	Until April 13th	After April 14th Onsite
IEEE Members	\$395	\$495
Non-Members	\$495	\$625
IEEE Student Members	\$50	\$100
Student Non-Members	\$100	\$150
Unemployed Retiree IEEE Members	\$50	\$100
Unemployed Retiree Non-Members	\$100	\$150

All registrants paying the full registration fees will receive the Digest Book in CD form, and these will be distributed at the Conference Registration Desks onsite. Registrants will also receive the Conference Proceedings, scheduled to be published in the Fall of 2009 in the *IEEE Transactions on Magnetics*. Students and unemployed retirees who register at the lower fees will NOT receive a copy of the Proceedings, unless they are members of the IEEE Magnetics Society.

All attendees will be required to wear Intermag 2009 name badges to enter the Technical Sessions and Exhibits. **The use of cameras, videotaping and/or recording devices in the technical sessions is strictly prohibited.**

REMEMBER: All “Advance Registration” forms must be accompanied by full payment and must be received by April 13, 2009.

The conference registration desks will be located outside Exhibit Hall B on the ground floor of the Sacramento Convention Center and will be open during the following hours:

- Monday May 4th. 4:00 pm - 8:00 pm
- Tuesday May 5th 7:00 am - 2:30 pm
- Wednesday May 6th 7:00 am - 4:00 pm
- Thursday May 7th 7:00 am - 2:30 pm
- Friday May 8th 7:00 am - 11:00 pm

Registration Cancellation Policy: Cancellations of advance registrations must be submitted in writing and received at YesEvents no later than April 13, 2009. Payments will be refunded less a \$50 service charge for full registrants or a \$25 service charge for all others following the Conference. **AFTER April 13th, cancellations will be accepted but not refunded.** Substitutions may be made for a paid registrant at any time with written approval from the original registrant.

IEEE MAGNETICS SOCIETY MEMBERSHIP

If you are not already a member of the IEEE Magnetics Society we cordially invite you to join at your earliest convenience. Why? Well, please look at the discount for this conference alone. The difference between the Advance Member rate and the Onsite Non-Member rate is enough to cover the membership fee immediately. If you join now by going online via the Society website at: www.ieeemagnetics.org and follow the links, joining is made easy. Having done that for the rest of the year you can access other valuable member benefits such as discounts at other events, conferences and symposia, group insurance and other financial benefits.

Through the Magnetics Society you get unlimited access to all issues of the *IEEE Transaction on Magnetics* since the journal's inception in 1969 with unlimited downloads! This includes all InterMag Conference Proceedings as well as those from other topical conferences published in these *Transactions* (e.g. The Magnetic Recording Conference). Membership also includes a CD-Rom copy of the *Transactions* for **each year that you are a member**.

By joining you become a part of the world's best-known magnetics organization. You gain access to local Chapter events, technical activities and can sponsor students for conference travel grants. And you will be recognized as being a part of the established and vibrant IEEE technical community. So don't delay! Join immediately so you can enjoy the maximum discount at this upcoming InterMag Conference in Sacramento, California.

VISA REQUIREMENTS

The US has updated its visa policies to increase security, so it may take you longer to apply for and receive your visa than it has in the past. For details that apply specifically to your country please go to your nearest US Consulate or Embassy. Review your visa status now to determine if you need a US visa or visa renewal. Contact your nearest embassy or consulate to find out how to schedule an interview appointment, pay fees, and other vital instructions.

NEW VISA WAIVER PROGRAM TRAVEL: Beginning 12 January 2009, 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 will be 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 at: [http://www.cbp.gov/xp/cgov/travel/id_visa/esta/\(ESTA\)](http://www.cbp.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.cbp.gov/esta>. Travelers from countries not in the VWP are still required to obtain a Visa upon entry into the United States.

If you need a personal letter of invitation to attend the Conference, contact the Conference Coordinators by Email at: 2009intermag@courtesyassoc.com Be sure to provide your complete mailing address so that a signed letter of invitation can then be mailed

to you via standard mail service. Only an original copy (not faxed or Email version) may be accepted with your visa application. **Only participants who pay the registration fee, not family or unpaid guests, will receive a letter of invitation.** NOTE: The Conference CANNOT contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf.

ORAL PRESENTATION

Authors are expected to bring their presentations 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 connect up your computer. Macintosh users must make sure that “mirroring” is activated.

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

Invited speakers will be allocated a total of 30 minutes with 25 minutes for the presentation and 5 minutes for questions. Speakers with contributed talks will have a total of 15 minutes with 12 minutes for the presentation and 3 minutes for questions. Please adhere to these time allocations.

SPEAKER PRACTICE ROOM

Speakers may use Room 318 located on the Ballroom Level of the Sacramento Convention Center to practice their presentations. Audiovisual equipment (LCD projector and screen) will be available for authors to use. This room will be open during the day on Monday afternoon through Friday at 11:00 AM. Speakers are urged to use this facility to practice their presentation, either alone or with colleagues.

POSTER SESSIONS

The hours of the Poster Sessions are 8:00 AM-12:00 Noon and 1:00 PM-5:00 PM (1:00 PM-4:00 PM on Wednesday prior to the Plenary Session). Authors should set up their materials at least one-half hour before the session start times. Authors are encouraged to stay by their posters to answer questions and **must be by their posters for the first and last hour of their session.** During these times, if the Session Chair finds a poster that is not represented by an author, the poster will be designated as a “No Show” and the conference paper will not be considered for publication.

Authors are reminded to remove all of their materials, excluding the pushpins that have been provided by the Conference, promptly at the end of their session. The Conference Coordinators will discard materials that are not removed promptly, in order to prepare for the next session.

PUBLICATIONS ROOM

The Publications Room, where the authors can check the status of their manuscripts, will be located in the Dublin Room on the second floor. The status of all papers will be displayed and authors should check periodically on their individual papers. Authors may leave messages for their Editors. Each Editor will post a notice of the time at which he/she can be found in the publications room. Editors will respond to messages and questions as promptly as possible. This room will be open as follows:

Tuesday, May 5th to Thursday, May 7th: 9:00 AM – 5:00 PM
 Friday, May 8th: 9:00 AM – 4:00 PM

Session Chairs are requested to visit the Editor for their session to ensure the completion of the reviewing process for all papers in their session.

TUTORIAL SYMPOSIUM ON MAGNETICS - CMOS INTEGRATION

Monday, May 4, 7:00 PM – 8:30 PM, Room 311-313

The IEEE Magnetics Society Education Committee presents:

“Magnetics meets CMOS: Explore the Possibilities!”

Session Chair: Albrecht Jander, *Oregon State University*

The three distinguished speakers will present a tutorial on the integration of magnetic materials and devices with modern integrated circuit technology. What new circuit functions and performance can be achieved by marrying magnetics with integrated circuits? What are the biggest challenges in making magnetic devices work on top of a CMOS chip? What has been achieved and what can we expect in the future? Find out in this tutorial session designed to enlighten and entertain both novice and expert magneticians alike.

Integrating magnetic tunnel junctions on CMOS: the challenges and successes of MRAM, Yiming Huai, *Yadav Technology, Fremont, California*

Beyond MRAM: logic and computation with integrated CMOS/magnetic devices, Guillaume Prenat, *CEA/CNRS, Grenoble, France*

Linear magnetics: Integrating inductors with magnetic materials into CMOS, Don Gardner, *Intel Circuits Research Lab., Santa Clara, California*

IEEE MAGNETICS SOCIETY ANNUAL GENERAL MEETING

This meeting is open to all 2009 InterMag Conference participants and will be held during the Tuesday evening Bierstube. Please come to learn what the IEEE Magnetics Society is doing for you and/or the benefits of joining the Society. The meeting will be held in Room 308 of the Sacramento Convention Center beginning at 5:30 PM on Tuesday, May 5th. Bring your beverage from the Bierstube and join us.

PLENARY SESSION

The Plenary Session and Awards Ceremony will be held on the afternoon of Wednesday, May 6th following the shortened afternoon sessions, in Exhibit Hall D located on the ground floor of the Sacramento Convention Center. Details regarding the awards to be presented and the Plenary Lecture speaker and subject will be posted onsite. Please plan to attend this vital part of the 2009 InterMag Conference.

PLENARY RECEPTION

The IEEE Magnetics Society invites you to join us immediately after The Plenary Lecture for The Plenary Reception, to be held on Wednesday, May 6th, in the East Lobby and adjacent Terrace, located on the Ballroom Level of the Sacramento Convention Center. This Reception is being sponsored by the IEEE Magnetics Society. All registered participants are encouraged to attend the reception to help celebrate the achievements of our award winners, and to network with your colleagues.

BIERSTUBE AND COFFEE

Coffee service will be available on Tuesday through Friday mornings from 7:00 AM– 9:30 AM in Exhibit Hall B adjacent to the Exhibits, Poster Sessions and Cyber Lounge on the ground floor of the Sacramento Convention Center.

On Monday evening the Bierstube will be held from 5:00 PM-7:00 PM in the East Lobby located on the Ballroom Level of the Sacramento Convention Center and adjacent to that evening's Tutorial. On Wednesday and Thursday evenings, the Bierstube will be held from 5:00 PM-6:00 PM in Exhibit Hall B adjacent to the Exhibits and Poster Sessions on the ground floor of the Convention Center.

EXHIBITION

The Exhibition presenting the latest products and services in the magnetics industry will be located in Exhibit Hall B along with the Poster Sessions and the Cyber Lounge. Exhibit Hall B is located on the ground floor of the Sacramento Convention Center. The

VIII

entrance is just inside the J Street Lobby. All attendees will have the opportunity to learn first-hand about consumable materials, deposition tools and techniques, metrology tools and other laboratory and manufacturing equipment.

Exhibition hours:

- | | |
|---------------------|-------------------|
| • Tuesday May 5th | 9:00 am - 6:00 pm |
| • Wednesday May 6th | 9:00 am - 4:00 pm |
| • Thursday May 7th | 9:00 am - 6:00 pm |

If you are interested in becoming an exhibitor, please contact Intermag2009@courtesyassoc.com or visit www.intermagconference.com/intermag2009 and click on the exhibits link.

CYBER LOUNGE

The Cyber Lounge will be located at the rear of Exhibit Hall B, once you pass through the Exhibits and Poster Sessions. Complimentary wireless Internet service will be available there on a first-come-first-served basis. Instructions for access will be posted onsite at the entrance to this area. The Cyber Lounge is sponsored by the IEEE Magnetics Society.

STUDENT TRAVEL GRANTS

The IEEE Magnetic Society will award travel grants of up to \$1,250 each to a limited number of students working in basic and applied magnetism. These grants are intended to partially offset travel costs to attend Intermag 2009. **Support is for current graduate students only, including PhD candidates and those students in Masters only programs.**

Postdoctoral fellows, undergraduates or non-students are not eligible. Preference will be given to students who are Student Members of the Magnetics Society, nearing completion of their graduate studies and presenting conference papers. Students' advisors are required to be members of the Magnetics Society. **Students who have previously received travel support from the Magnetics Society for any conference are not eligible.**

To apply, the student must complete and submit the online application form. The student's advisor must submit a letter of endorsement. In addition, a second letter of endorsement, which must be from an IEEE Magnetics Society member, is also required.

Please download these forms from the Conference web site at: www.intermagconference.com/intermag2009 under "Student Travel".

The complete package, consisting of the application and two letters of endorsement, must be submitted before **March 13, 2009**. Decisions will be emailed by **March 23, 2009**.

Shortly after the Conference grant recipients must submit a short account of their experience for possible inclusion in the Magnetics Society Newsletter.

IEEE MAGNETICS SOCIETY

President	Randall Victora
Vice President	Takao Suzuki
Secretary/Treasurer	Liesl Folks
Past President	Carl Patton
Executive Director	Diane S. Melton

CONFERENCE MANAGEMENT COMMITTEE

General Chair	Massimo Pasquale
Treasurer	Jan-Ulrich Thiele
Program Co-Chairs	Marilyn Wun-Fogle Eric Fullerton Pallavi Dhagat
Conference Secretary	Carlo Paolo Sasso
Publications Chair	Claudio Serpico
Printing and Publicity Chair	Petru Andrei
Local Chair	Kai Liu
Industrial Liaison/Exhibits Chair	Laura Henderson Lewis
Exhibits Coordinator	Roseann Kuryla Courtesy Associates
Conference Coordinators	Diane Melton Ann Shafran Lauren Westcott

ELECTED IEEE MAGNETICS SOCIETY ADMINISTRATIVE COMMITTEE MEMBERS

Terms expiring December 31, 2009

C-R Chang; R. Chantrell; B. Dienen; R. Fontana; P. Freitas;
D. Jiles; J-U Thiele; S. Ueno

Terms expiring December 31, 2010

J. Chapman; O. Heinonen; B. Hillebrands; D. Litvinov;
H. Muraoka; M. Pardavi-Horvath; B. Terris; U. Varshney

Terms expiring December 31, 2011

R. Dee; J. Fidler; P. Fischer; V. Harris; S. Majetich; K. O'Grady;
M. Pasquale; J. Snyder

Appointed Committee Chairs: P. Dhagat; K. Gao; R. Goldfarb;
B. Gurney; A. Jander; J. Katine; C-H Lai; D. Lavers; C. Patton;
J-U Thiele

Council Representatives: A. Edelstein (Sensors); D. Litvinov and
R. Rannow (Nanotechnology); R. Goldfarb and A. Zeller (Super-
conductivity); J. Nibarger (IEEE GOLD)

Newsletter Editor: G. Hatch

FUTURE CONFERENCES

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

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

2011 INTERMAG Conference
April 25-29, 2011, Taipei, Taiwan

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

2013 Joint MMM/Intermag Conference
January 14-18, 2013, Chicago, Illinois

PROGRAM COMMITTEE MEMBERS

Petru Andrei; Manu Barandian; Ching-Ray Chang; Shu-Fan Cheng; Jeff Childress; Kevin Coffey; Fabio da Silva; Cindi Dennis; Peter Fischer; Sylvia Florez; Mike Gibbs; Vince Harris; Ryusuke Hasegawa; Laura Heyderman; Axel Hoffmann; Guohan Hu; Andreas Hutten; Yves Idzerda; Ganping Ju; Pavel Kabos; Jordan Katine; Akira Kikitsu; Sang-Koog Kim; Chih-Huang Lai; David Lederman; Chris Leighton; Minn-Tsong Lin; Sy-Hwang Liou; J. P. Liu; Kai Liu; Sam Lofland; Vitaliy Lomakin; Bin Lu; Stephane Mangin; Mike McHenry; Casey Miller; Andreas Moser; Marcus Muenzenberg; Eckhard Quandt; Gunter Reiss; James Restorff; Ichiro Sasada; H.C. Schneider; Oleksandr Serha; Robert Shull; John Snyder; Alexandru Stancu; Nian Sun; Bruce Terris; Tom Thomson; Mark Tondra; M.J. Tung; Matthew Willard; Mingzhong Wu; Masahiro Yamaguchi.

PUBLICATIONS EDITORS

Claudio Serpico (Transmag editor); Amr Adly; Massimiliano d'Aquino; Andreas Berger; Liesbet Lagae; Antonio Ruotolo; Werner Scholz; Massimo Solzi; Tom Thomson; Ciro Visone; Pieter B. Visscher.

ADDITIONAL INFORMATION

If you would like to receive more information about Intermag 2009 or to be placed on the Intermag Conference Mailing List, please contact Courtesy Associates at:

INTERMAG 2009
c/o Courtesy Associates
2025 M Street NW
Washington, DC 20036 USA
E-mail: 2009intermag@courtesyassoc.com

You may also access complete conference information through the Web at the Intermag home page at

www.intemagconference.com/intermag2009.

PROGRAM AT A GLANCE

Monday

7:00 PM XA Tutorial on Magnetism-CMOS Integration Room 311-313

Tuesday

8:00 AM AP Magnetoelastic Applications, Ferromagnetic Shape Memory Alloys, and Other Magnetoelastic Materials Exhibit Hall B
 AQ Spin Transport and Magnetoresistance (I) Exhibit Hall B
 AR Thin Films Exhibit Hall B
 AS Micromagnetics Exhibit Hall B
 AT Microwave Magnetic Materials and Devices Exhibit Hall B
 AU Shielding, Levitation, and Propulsion Exhibit Hall B
 AV Magnetic Nanowires, Clusters, and Nanoparticles (IV) Exhibit Hall B

Tuesday

9:00 AM AA Symposium on Current-Induced Domain-Wall Motions Room 311-313
 AB Advanced Characterization Techniques Room 314
 AC Patterned Films and Elements (I) Room 315
 AD Advanced Recording Media: Perpendicular and Beyond Room 306
 AE MgO Magnetic Tunnel Junctions Room 307
 AF Magnetic Thin Films/Multilayers and DMS films Room 308
 AG Crystalline, Nanocrystalline, and Amorphous Materials (I) Room 309-310

Tuesday

1:00 PM BP Magnetic Recording: Physics and Channel Exhibit Hall B
 BQ Magnetic Tunnel Junctions Exhibit Hall B
 BR Films, Nanostructures, and DMS Exhibit Hall B
 BS Crystalline, Nanocrystalline, and Amorphous Materials (II) Exhibit Hall B
 BT Soft Magnetic Materials and Applications Exhibit Hall B
 BU Energy Conversion Exhibit Hall B
 BV Actuators Exhibit Hall B

Tuesday

2:00 PM BA Symposium on Electric Field Control on Magnetism Room 311-313
 BB Fast Switching of Films and Nanostructures Room 314
 BC Patterned Media (I) Room 315
 BD Domain Wall Memory and Logic Room 306
 BE Micromagnetics and Multiscale Modeling Room 307
 BF Ferrites (I) Room 308
 BG Fe-Ga Materials and Applications Room 309-310

Wednesday

8:00 AM CP Patterned Media (II) Exhibit Hall B
 CQ Magnetic Microscopy and Characterization (I) Exhibit Hall B
 CR Magnetic Sensing (I) Exhibit Hall B
 CS Magnetic Nanowires, Clusters, and Nanoparticles (III) Exhibit Hall B
 CT Spin Transfer Torque Phenomena (III) Exhibit Hall B
 CU Magneto-Dielectric Materials and Meta-Materials (I) Exhibit Hall B
 CV Applications of Permanent Magnetic Materials Exhibit Hall B
 CW Motor Control Exhibit Hall B

XII

Wednesday

9:00 AM	CA	Symposium on Spin Hall Effects	Room 311-313
	CB	Symposium on Bio-Magnetism	Room 314
	CC	Head-Media Interface and Tribology (I)	Room 315
	CD	Magnetic Recording Physics	Room 306
	CE	Ab-Initio and First Principles Calculations (I)	Room 307
	CF	Spin Electronics and Applications (non-Recording) MRAM	Room 308
	CG	RF Micromagnetic Devices and Phenomena	Room 309-310

Wednesday

1:00 PM	DP	Advanced Magnetic Recording	Exhibit Hall B
	DQ	Patterned Films and Elements (II)	Exhibit Hall B
	DR	Magnetic Sensing (II)	Exhibit Hall B
	DS	Biomagnetic Applications (I)	Exhibit Hall B
	DT	Molecular and Novel Magnetic Materials	Exhibit Hall B
	DU	Permanent Magnetic Materials (I)	Exhibit Hall B
	DV	Modeling Motors	Exhibit Hall B

Wednesday

2:00 PM	DA	Symposium on Magnetic Sensors for Space Applications	Room 311-313
	DB	Mr-Based Sensors (Including GMR, Spin-Valves, MTJ, CPP, etc.)	Room 314
	DC	Recording Heads and Materials	Room 315
	DD	Ultra-Thin Films and Surface Effect	Room 306
	DE	Hysteresis Modeling	Room 307
	DF	Magnetoimpedance and MEMS	Room 308
	DG	Magneto-Dielectric Materials and Meta-Materials (II)	Room 309-310

Wednesday

4:15 PM	ZA	Plenary Session	Exhibit Hall D
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Thursday

8:00 AM	EP	Magneto-optics, Superconductivity, and Interdisciplinary Topics	Exhibit Hall B
	EQ	Exchange Bias (I)	Exhibit Hall B
	ER	Spin Torque Oscillators (I)	Exhibit Hall B
	ES	Magnetoresistive and Magnetocaloric Materials (I)	Exhibit Hall B
	ET	Magnetic Memory and Logic	Exhibit Hall B
	EU	Ferrites (II)	Exhibit Hall B
	EV	Motor Design (I)	Exhibit Hall B
	EW	Head-Media Interface (II)	Exhibit Hall B

Thursday

9:00 AM	EA	Symposium on New Materials for CPP-GMR Devices	Room 311-313
	EB	Biomagnetic Applications (II)	Room 314
	EC	Energy Assisted Magnetic Recording	Room 315
	ED	Spin Transfer Torque Phenomena (I)	Room 306
	EE	Magnetic Nanowires, Clusters, and Nanoparticles (I)	Room 307
	EF	Magnetic Recording: Systems, Coding and Channel	Room 308
	EG	Permanent Magnetic Materials (II)	Room 309
	EH	Transformers and Inductors	Room 310

Thursday

1:00 PM	FP	Magnetic Microscopy and Characterization (II)	Exhibit Hall B
	FQ	Eddy Currents and Losses in Motors	Exhibit Hall B
	FR	Ab-Initio and First Principles Calculations (II)	Exhibit Hall B
	FS	Fundamental Properties with Relevance to Applications	Exhibit Hall B
	FT	Electromagnetic Compatibility and Transformers	Exhibit Hall B
	FU	Power and Control Magnetics	Exhibit Hall B
	FV	Permanent magnetic materials (III)	Exhibit Hall B
	FW	Motor Design (II)	Exhibit Hall B

Thursday

2:00 PM	FA	Symposium on Shingled-Writing and Two-Dimensional Magnetic Recording	Room 311-313
	FB	Magnetoresistive and Magnetocaloric Materials (II)	Room 314
	FC	Magnetic non-Recording Sensors	Room 315
	FD	Spin Transfer Torque Phenomena (II)	Room 306
	FE	Microwave and Millimeter Wave Devices	Room 307
	FF	Magnetic Tunnel Junctions and Spin Injection	Room 308
	FG	Exchange Bias (II)	Room 309
	FH	Motors and Actuators (I)	Room 310

Friday

9:00 AM	GA	Symposium on Magnetism for Sustainable Energy	Room 311-313
	GB	Biomagnetic Applications (III)	Room 314
	GC	Magnetic Nanowires, Clusters, and Nanoparticles (II)	Room 315
	GD	Spin Torque Oscillators (II)	Room 306
	GE	Microwave Materials and Devices	Room 307
	GF	Spin Transport and Magnetoresistance (II)	Room 308
	GG	Motors and Actuators (II)	Room 309-310

MONDAY
AFTERNOON
7:00

ROOM 311-313

Session XA
TUTORIAL ON MAGNETICS-CMOS
INTEGRATION

Albrecht Jander, Session Chair
Oregon State University

- 7:00 **XA-01. Integrating magnetic tunnel junctions on CMOS: the challenges and successes of MRAM. (Invited) Y. Huai¹ I. Yadav Technology, Fremont, CA, USA**
- 7:30 **XA-02. Beyond MRAM: logic and computation with integrated CMOS/magnetic devices. (Invited) G. Prenat¹ I. CEA/CNRS, Grenoble, France**
- 8:00 **XA-03. Linear magnetics: Integrating inductors with magnetic materials into CMOS. (Invited) D.S. Gardner¹ I. Intel Corp., Santa Clara, CA, USA**

TUESDAY
MORNING
9:00

ROOM 311-313

Session AA
SYMPOSIUM ON CURRENT-INDUCED
DOMAIN-WALL MOTIONS

Peter Fischer, Session Chair
LBNL

- 9:00 **AA-01. Racetrack memory: progress towards a current controlled magnetic domain wall based storage class memory. (Invited) S. Parkin¹ I. IBM Almaden Research Center, San Jose, CA, USA**
- 9:30 **AA-02. Time resolved magnetic imaging of current-driven domain-wall and vortex dynamics. (Invited) G. Meier¹ I. Institut fuer Angewandte Physik und Zentrum fuer Mikrostrukturforschung, University of Hamburg, Hamburg, Germany**
- 10:00 **AA-03. Probing domain wall and vortex core dynamics by ac current – induced excitations. (Invited) M. Klaui¹ I. Physics, University of Konstanz, Konstanz, Germany**

- 10:30 AA-04. Stochastic domain wall depinning under current in perpendicularly magnetized elements. (Invited)** D. Ravelosona¹, C. Burrowes¹, J. Kim¹, M. Ngoc Nguyen¹, S. Park¹ and C. Chappert¹ *1. CNRS, Institut d'Electronique Fondamentale, Orsay, France; 2. Center for Magnetic Recording Research, University of California San Diego, San Diego, CA, USA*
- 11:00 AA-05. High DW velocity in Co/Ni with perpendicular anisotropy. (Invited)** T. Koyama¹, G. Yamada¹, H. Tanigawa¹, D. Chiba¹, S. Kasai¹, S. Fukami², N. Ohshima², N. Ishiwata², Y. Nakatani³ and T. Ono¹ *1. Institute for Chemical Research, Kyoto University, Uji, Japan; 2. Device Platforms Research Laboratories, NEC Corporation, Sagamihara, Japan; 3. Department of Computer Science, University of Electro-communications, Chofu, Japan*
- 11:30 AA-06. Direct measurement of the non-adiabatic parameter in thin films with perpendicular magnetic anisotropy. (Invited)** I. Miron^{1,2}, P. Zermatten¹, H. Szambolics³, G. Gaudin¹, S. Auffret¹, B. Rodmacq¹, T. Moore^{1,3}, G. Serret¹, M. Bonfim⁴, J. Vogel³, S. Pizzini³ and A. Schuhl¹ *1. SPINTEC / INAC / CEA-CNRS, Grenoble, France; 2. ICN-CSIC, Bellaterra, Spain; 3. Institut Néel, CNRS/UJF, Grenoble, France; 4. Departamento de Engenharia Elétrica, Universidade Federal do Paraná, Curitiba, Paraná, Brazil*

**TUESDAY
MORNING
9:00**

ROOM 314

**Session AB
ADVANCED CHARACTERIZATION
TECHNIQUES**

Sung-Chul Shin, Session Chair
KAIST

- 9:00 AB-01. Observation of localized ferromagnetic resonance in a continuous ferromagnetic film via magnetic resonance force microscopy. (Invited)** E. Nazaretski¹, D.V. Pelekhov², I. Martin¹, P.C. Hammel² and R. Movshovich¹ *1. MPA-10, Los Alamos National Laboratory, Los Alamos, NM, USA; 2. Department of Physics, Ohio State University, Columbus, OH, USA*
- 9:30 AB-02. Imaging the spatial modulation of the spin polarization in nanostructures.** S. Wedekind¹, H. Oka¹, G. Rodary¹, D. Sander¹ and J. Kirschner¹ *1. Max-Planck-Institute of Microstructurephysics, Halle, Germany*

- 9:45 **AB-03. Vortex formation during magnetization reversal of Co slotted nanorings.** K. He¹, N. Agarwal¹, D.J. Smith² and M.R. McCartney² *1. School of Materials, Arizona State University, Tempe, AZ, USA; 2. Department of Physics, Arizona State University, Tempe, AZ, USA*
- 10:00 **AB-04. Individual channel conductance in a carbon nanotube field-effect transistor studied by magnetic force microscopy.** T. Takahashi¹, M. Ato¹, Y. Okigawa² and T. Mizutani² *1. Institute of Industrial Science, The University of Tokyo, Tokyo, Japan; 2. Department of Quantum Engineering, Nagoya University, Nagoya, Japan*
- 10:15 **AB-05. Measurement of individual bond magnetostrictive strain in a-TbFe₂.** S. Pascarelli¹, M.P. Ruffoni¹, A. Trapananti¹, O. Mathon¹, M. Pasquale², A. Magni², C.P. Sasso², F. Celegato² and E. Olivetti² *1. European Synchrotron Radiation Facility, Grenoble, France; 2. Istituto Nazionale di Ricerca Metrologica, Torino, Italy*
- 10:30 **AB-06. Magnetic order and interfacial coupling in oxide thin films and heterostructures probed with soft x-ray dichroism. (Invited)** E. Arenholz¹ and G. van der Laan² *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, USA; 2. Diamond Light Source, Didcot, Oxfordshire, United Kingdom*
- 11:00 **AB-07. Electron magnetic circular dichroism: a new experimental technique for studies of magnetism at nanometer scale. (Invited)** J. Ruzs¹, H. Lidbaum², A. Liebig¹, P.M. Oppeneer¹, B. Hjörvarsson¹, O. Eriksson¹ and K. Leifer² *1. Dept. of Physics and Materials Science, Uppsala University, Uppsala, Sweden; 2. Dept. of Engineering Sciences, Uppsala University, Uppsala, Sweden*
- 11:30 **AB-08. Effect of disordered phase on the magnetic domain structure of FePt:C thin film – computer calculation of Lorentz TEM image.** M. Kim¹, W. Lee¹ and J. Park¹ *1. Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Daejeon, Korea, South*
- 11:45 **AB-09. Multiphysics modeling of photoinductive imaging for characterizing eddy-current probe with tilted coils.** C. Tai¹ and Y. Pan¹ *1. Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan*

**TUESDAY
MORNING
9:00**

ROOM 315

Session AC

PATTERNED FILMS AND ELEMENTS (I)

Jim Miles, Session Chair
University of Manchester

- 9:00 AC-01. Angular-dependent magnetic reversal in Co nano-ellipses.** *Y. Fang*¹, *S. Bonetti*¹, *A. Dmitriev*², *H. Fredriksson*², *J. Persson*¹, *M. Käll*² and *J. Åkerman*^{1,3} *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Sweden, Stockholm, Sweden; 2. Applied Physics, Chalmers University of Technology, Göteborg, Sweden; 3. Physics Department, Göteborg University, Göteborg, Sweden*
- 9:15 AC-02. Magnetic single-domain-transformation/spin-structure-evolution under an electric field in a patterned magnetoelectric nanostructure.** *T. Chung*¹ and *G.P. Carman*¹ *1. Mechanical Engineering, University of California, Los Angeles (UCLA), Los Angeles, CA, USA*
- 9:30 AC-03. Magnetic force microscopy study on domain structures in patterned (CoFe/Pt)_n micromagnets with perpendicular anisotropy.** *Z. Diao*^{1,2}, *J. Chen*², *G. Feng*² and *M. Coey*^{1,2} *1. School of Physics, Trinity College Dublin, Dublin, Ireland; 2. CRANN, Trinity College Dublin, Dublin, Ireland*
- 9:45 AC-04. Nonlinear vortex gyrotropic dynamics in ferromagnetic dots.** *K. Guslienko*¹, *R. Hernandez Heredero*² and *O. Chubykalo-Fesenko*³ *1. Department of Material Physics, University of the Basque Country, San Sebastian, Spain; 2. Universidad Politecnica de Madrid, Madrid, Spain; 3. POMT, Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*
- 10:00 AC-05. Fabrication of 5 – 300 nm magnetic multilayer patterns and sensors with high quality profiles.** *B. Zong*¹, *G. Hang*¹, *Z. Guo*¹, *J. Qiu*¹, *L. An*¹, *P. Luo*¹, *C. Wang*¹, *H. Meng*¹, *L. Wang*¹ and *B. Liu*¹ *1. SMI, Data Storage Institute, Singapore, Singapore*
- 10:15 AC-06. Thermally induced switching field distribution of a single CoPt dot in a large array.** *M. Delalande*¹, *J. Engelen*¹, *A. le Fèvre*¹, *L. Abelmann*¹ and *C. Lodder*¹ *1. MESA+ and Impact Research Institutes, Enschede, Netherlands*

- 10:30 AC-07. Planarization of bit patterned surface with gas cluster ion beams.** *N. Toyoda*¹, *T. Hirota*¹, *K. Nagato*^{2,3}, *H. Tani*⁴, *Y. Sakane*⁵, *T. Hamaguchi*², *M. Nakao*² and *I. Yamada*¹. *1. Graduate school of engineering, University of Hyogo, Himeji, Hyogo, Japan; 2. Department of Engineering Synthesis, School of Engineering, The University of Tokyo, Bunkyo, Tokyo, Japan; 3. The Japan Society for the Promotion of Science, Chiyoda, Tokyo, Japan; 4. Department of Mechanical Engineering, Kansai University, Suita, Osaka, Japan; 5. Western Digital Media Operations, San Jose, CA, USA*
- 10:45 AC-08. Reduction of in-plane uniaxial magnetic anisotropy in patterned single crystal Fe dot arrays.** *D. Niu*¹, *X. Zou*², *Y. Zhai*^{3,1}, *Z. Huang*^{3,1}, *I. Will*¹, *P. Wong*¹, *J. Wu*² and *Y. Xu*¹. *1. Department of Electronics, University of York, York, United Kingdom; 2. Department of Physics, The University of York, York, United Kingdom; 3. Department of Physics, Southeast University, Nanjing, China*
- 11:00 AC-09. New routes for nanopatterning magnetic materials.** *A. Asenjo*¹, *W.O. Rosa*¹ and *M. Jaafar*¹. *POMT, ICM-CCS, Madrid, Spain*
- 11:15 AC-10. Control of the magnetic vortex chirality and polarity in triangular nanodots.** *O. Chubykalo-Fesenko*¹, *R. Yanes*¹, *M. Jaafar*¹, *A. Asenjo*¹, *M. Vazquez*¹, *E. Gonzalez*² and *J.L. Vicent*². *1. POMT, Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 2. Physics Department, Complutense University, Madrid, Spain*
- 11:30 AC-11. Complex domain patterns in dot and antidot arrays of soft magnetic materials with different anisotropy values.** *M. Coisson*¹, *F. Celegato*¹, *E.S. Olivetti*¹, *P. Tiberto*¹ and *F. Vinai*¹. *1. Electromagnetics, INRIM, Torino, TO, Italy*
- 11:45 AC-12. Precise probing the spin excitations of vortex-state magnetic dots applying in-plane bias field.** *K. Gusliyenko*¹, *F. Aliev*², *J. Sierra*², *A. Awad*², *G. Kakazei*³, *D. Han*¹, *S. Kim*¹, *V. Metlushko*⁴ and *B. Ilic*⁵. *1. Research Center for Spin Dynamics & Spin-Wave Devices, Seoul National University, Seoul, Korea, South; 2. Dpto. Fisica de la Materia Condensada, Universidad Autonoma de Madrid, Madrid, Spain; 3. Departamento de Fisica, IFIMUP-IN, Universidade do Porto, Porto, Portugal; 4. Dept. Electrical and Computer Engineering, University of Illinois at Chicago, Chicago, IL, USA; 5. Cornell Nanofabrication Facility, Cornell University, Ithaca, NY, USA*

TUESDAY
MORNING
9:00

ROOM 306

Session AD

**ADVANCED RECORDING MEDIA:
PERPENDICULAR AND BEYOND**

Yingguo Peng, Session Chair
Seagate Technology

9:00 AD-01. Effects of initial grain layer on the performance of CoCrPt-SiO₂ perpendicular media with capping layer. *R. Mukai*¹ and *T. Uzunaki*¹ *1. Magnetic Media Lab., Fujitsu Laboratories Ltd., Atsugi, Japan*

9:15 AD-02. Effect of cross-track medium noise on high track-density recording. *S. Das*¹, *N. Ito*¹, *M. Sugiyama*¹ and *K. Nakamoto*¹ *1. Central Research Laboratory, Hitachi Ltd., Odawara, Japan*

9:30 AD-03. Noise power in perpendicular magnetic recording. *H. Bertram*¹, *M.E. Schabes*² and *M. Alex*³ *1. Hitachi Global Storage, San Mateo, CA, USA; 2. Hitachi Global Storage, San Jose, CA, USA; 3. Hitachi Global Storage, San Jose, CA, USA*

9:45 AD-04. Areal density potential for non-Stoner-Wohlfarth media. *B.F. Valcu*¹ and *T.W. McDaniel*¹ *1. Seagate Technology, Fremont, CA, USA*

10:00 AD-05. Stacking faults in smaller grain size perpendicular magnetic recording media. *H. Yuan*^{1,2} and *D.E. Laughlin*^{1,2} *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, USA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*

10:15 AD-06. Novel MnRu-based intermediate layer for CoPtCr-SiO₂ perpendicular media. *J. Liao*¹, *H. Hou*¹, *Y. Huang*¹, *M. Lin*¹ and *C. Lai*¹ *1. National Tsing Hua University, Hsinchu, Taiwan*

10:30 AD-07. Influence of dual synthetic nucleation (SN) layers in perpendicular recording media. *S. Piramanayagam*¹, *H. Tan*¹, *S. Wong*¹ and *R. Sbiaa*¹ *1. Data Storage Institute, (A*STAR) Agency for Science Technology and Research, Singapore*

- 10:45 AD-08. Si/NiFe/FeCoB crystalline SUL to reduce Ru intermediate layer thickness for CoPtCr-SiO₂ granular perpendicular magnetic recording media.** T. Matsuu¹, K. Hirata¹, S. Gomi¹, A. Hashimoto¹, S. Matsunuma², T. Inoue², T. Doi² and S. Nakagawa¹ 1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 2. Hitachi Maxell, Osaka, Japan
- 11:00 AD-09. In-plane structure control of CoPt-TiO₂ recording layer by using nanoparticle-like Ta orientation control layer.** K. Shintaku¹ 1. Akita Research Institute of Advanced Technology, Akita Prefectural R&D Center, Akita, Japan
- 11:15 AD-10. Micromagnetics of hard axis loops for composite media.** B.F. Valcu¹ 1. Seagate Technology, Fremont, CA, USA
- 11:30 AD-11. Characterization of magnetic properties and magnetic reversal process on magnetically decoupled Sm-Co perpendicular magnetic thin films consisting of crystal phase and amorphous phase.** T. Osaka^{1,3}, I. Koizumi¹, Y. Egawa¹, M. Yoshino¹, T. Asahi^{1,3}, J. Hokkyo¹ and A. Sugiyama² 1. Faculty of Science and Engineering, Waseda University, Tokyo, Japan; 2. Waseda Institute for Advanced Study (WIAS), Waseda University, Tokyo, Japan; 3. Consolidated Research Institute for Advanced Science and Medical Care, Waseda University, Tokyo, Japan
- 11:45 AD-12. FePtCu ordered alloy films with (001) orientation fabricated from Cu/Pt/Fe tri-layers.** Y. Imai¹, Y. Ogata¹ and S. Nakagawa¹ 1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan

**TUESDAY
MORNING
9:00**

ROOM 307

Session AE

MGO MAGNETIC TUNNEL JUNCTIONS

Daniele Mauri, Session Chair
Western Digital

- 9:00 AE-01. High magnetoresistance tunnel junctions with Mg(B)O barriers and NiFeB free electrodes.** J.C. Read^{1,2}, J.J. Cha², W.F. Egelhoff, Jr.¹, H. Tseng², P.Y. Huang², Y. Li², D.A. Muller² and R.A. Buhrman² 1. Magnetic Materials Group, NIST, Gaithersburg, MD, USA; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY, USA

- 9:15 AE-02. TEM investigation of CoFeB / MgO / CoFeB pseudo spin valves annealed at different temperatures.** S.V. Karthik¹, Y.K. Takahashi¹, T. Ohkubo¹, S. Ikeda², H. Ohno² and K. Hono¹ *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 2. Laboratory of Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*
- 9:30 AE-03. Tunneling spectroscopy of CoFeB/MgO/CoFeB MTJs with ultrahigh TMR ratio.** H. Gan¹, S. Ikeda¹, J. Hayakawa², J. Park¹, H. Yamamoto^{2,1}, K. Miura^{2,1}, H. Hasegawa^{1,2}, F. Matsukura¹ and H. Ohno¹ *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., 1-280 Higashi-koigakubo, Kokubunji-shi, Tokyo 185-8601, Japan*
- 9:45 AE-04. Effect of buffer layer texture on the crystallization of CoFeB and on the tunnel magnetoresistance in magnetic tunnel junctions.** J. Cao¹, J. Kanak², T. Stobiewsky², P. Wisniowski^{1,2} and P. Freitas^{1,3} *1. INESC Microsistemas e Nanotecnologias (INESC MN), Lisbon, Portugal; 2. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 3. Physics Department, Instituto Superior Técnico—Universidade Técnica de Lisboa, Lisbon, Portugal*
- 10:00 AE-05. MgO based epitaxial magnetic tunnel junctions using Fe_{1-x}V_x electrodes. (Invited)** F. Bonell¹, S. Andrieu¹, C. Tiusan¹ and F. Montaigne¹ *1. Nanomagnetism and Spintronics Team, Laboratoire de Physique des Matériaux - Institut Jean Lamour - Université Henry Poincaré - UMR 7556, Vandoeuvre-lès-Nancy, France*
- 10:30 AE-06. Improvement of magnetic transport properties in bottom-type pinning MgO magnetic tunnel junctions with NiFeSiB/CoFeB hybrid free layer.** J. Cho¹, D. Kim¹, R. Tan¹, S. Isogami², M. Tsunoda², M. Takahashi² and Y. Kim¹ *1. Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, South; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*
- 10:45 AE-07. Insertion of preferred grain growth promotion seed layer in the magnetic tunnel junction with MgO tunnel barrier prepared by oxidation method for MgO-based magnetic tunnel junction.** Y. Choi¹, Y. Otani¹, S. Yamagata¹, H. Tsunematsu¹, Y. Murooka¹, H. Okuyama¹, T. Yamauchi¹, F. Ernult¹ and K. Tsunekawa¹ *1. Electronic Devices Engineering Headquarters, Canon ANELVA corporation, Kawasaki-shi, Japan*

- 11:00 AE-08. Dielectric breakdown in MgO based magnetic tunnel junctions.** *G. Reiss*¹, *A.A. Khan*¹, *A. Thomas*¹, *J. Schmalhorst*¹, *O. Schebaum*¹ and *M. Münzenberg*² *1. Department of Physics, Bielefeld University, Bielefeld, Germany; 2. Physics Department, Georg-August-Universität Göttingen, Göttingen, Germany*
- 11:15 AE-09. Interface short range order in CoFeB/ MgO/ CoFeB magnetic tunnel junctions.** *G. Eilers*¹, *M. Walter*¹, *K. Ubben*¹, *M.G. Muenzenberg*¹, *K. Thiel*², *M. Seibt*², *V. Drewello*³, *A. Thomas*³ and *G. Reiss*³ *1. I. Phys. Institute, Goettingen University, Goettingen, Germany; 2. IV. Phys. Institute, Goettingen University, Göttingen, Germany; 3. Thin Films and Physics of Nanostructures, Department of Physics, Universität Bielefeld, Bielefeld, Germany*
- 11:30 AE-10. Antiferromagnetic coupling in sputtered MgO tunnel junctions with perpendicular magnetic anisotropy.** *L.E. Nistor*¹, *B. Rodmacq*¹, *S. Auffret*¹, *A. Schuhl*¹ and *B. Dieny*¹ *1. SPINTEC, CEA/CNRS, Grenoble, France*
- 11:45 AE-11. The effect of interfacial Fe layers inserted into FePt/MgO/FePt (001) magnetic tunnel junctions: A first-principles study.** *M. Suzuki*¹, *Y. Miura*¹, *K. Abe*¹ and *M. Shirai*¹ *1. Reseach Institute of Electrical Communication, Tohoku University, Sendai, Japan*

**TUESDAY
MORNING
9:00**

ROOM 308

**Session AF
MAGNETIC THIN FILMS/MULTILAYERS
AND DMS FILMS**

*Jing Wu, Session Chair
University of York*

- 9:00 AF-01. Chirality reversal for planar interface domain walls in exchange-spring hard/soft magnetic bilayers.** *S. Mangin*¹, *J. Mc Cord*², *Y. Henry*³, *F. Montaigne*¹, *T. Hauet*^{1,4} and *E.E. Fullerton*⁵ *1. IJL, Nancy-Université / CNRS, Vandoeuvre, France; 2. IFW Dresden, Institute for Metallic Materials, Dresden, Germany; 3. IPCMS, Université de Strasbourg/ CNRS, Strasbourg, France; 4. Hitachi-GST, Hitachi-GST, San Jose, CA, USA; 5. CMRR, UCSD, San Jose, CA, USA*

- 9:15 AF-02. Epitaxial Co/Ni (111) multilayer films studied by ferromagnetic resonance.** *J.L. Beaujour*¹, B.J. Krishnatrya¹, A.D. Kent¹, S. Girod², M. Gottwald², S. Andrieu² and S. Mangin² *1. Physics, New York University, New York, NY, USA; 2. IEJ, Nancy-Université, CNRS, Vandoeuvre-les-Nancy, France*
- 9:30 AF-03. Magnetic properties of (Ni₈₃Fe₁₇)_{1-x}-Gd_x thin films with diluted Gd doping.** Y. Fu¹, L. Sun^{1,3}, J. Wang¹, X. Bai², Z. Kou¹, Y. Zhai^{1,2}, J. Wu³, Y. Xu⁴, J. Du², H. Lu² and H. Zhai² *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, Jiangsu, China; 3. Department of Physics, University of York, York, United Kingdom; 4. Department of Electronics, University of York, York, United Kingdom*
- 9:45 AF-04. Magnetic anisotropy in CoFe films induced by obliquely sputtered Ru underlayers.** Z. Lu¹, Y. Fukuma¹, H. Fujiwara¹ and G. Mankey¹ *1. University of Alabama, Tuscaloosa, AL, USA*
- 10:00 AF-05. Anomalous Hall effect measurement of novel magnetic multilayers.** S. Wong¹, K. Srinivasan¹, R. Law¹, E. Tan¹, R. Sbiaa¹ and S. Piramanayagam¹ *1. Data Storage Institute, (A*STAR) Agency for Science Technology and Research, Singapore*
- 10:15 AF-06. Preisach model for CoPt based hard/soft bilayers.** A. Stancu¹, L. Stoleriu¹, I. Panagiotopoulos², A. Markou² and V. Alexandrakis³ *1. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania; 2. Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece; 3. NCSR Demokritos, Attiki, Greece*
- 10:30 AF-07. Magnetic properties and phase transition kinetics of Fe₅₀(Rh₁-XPtX)₅₀ thin films.** W. Lu¹, N. Nam¹ and T. Suzuki¹ *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*
- 10:45 AF-08. Magnetic interactions and effects of N codoping in Mn doped ZnO.** J. Persson¹, S. Bonetti¹, M. Göthelid¹, O. Tjernberg¹, J. Åkerman^{1,2}, R.K. Dumas³, K. Liu³, O. Karis⁴, M. Wikberg⁵ and P. Svedlindh⁵ *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Kista, Sweden; 2. Physics Department, Gothenburg University, Gothenburg, Sweden; 3. Physics Department, University of California, Davis, CA, USA; 4. Department of Physics and Materials Science, Uppsala University, Uppsala, Sweden; 5. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*

- 11:00 AF-09. Secondary phase formation in ZnCoO and ZnMnO and its influence on the magnetic properties.** *G. Kiliani*¹, *M. Fonin*¹, *L. Yao*², *R. Schneider*², *D. Gerthsen*² and *U. Rüdiger*¹ *1. Physics Dept., University of Konstanz, Konstanz, Germany; 2. Laboratory for Electron Microscopy, University of Karlsruhe, Karlsruhe, Germany*
- 11:15 AF-10. Anomalous Hall effect and transport mechanism in Co doped ZnO thin films.** *C. Lin*¹, *H. Hsu*² and *H. Chou*¹ *1. Physics, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. Applied Physics, National PingTung University of Education, PingTung, Taiwan*
- 11:30 AF-11. Chemical instability in Co doped ZnO.** *R. Knut*¹, *M. Wikberg*², *K. Lashgari*³, *D. Iusan*¹, *B. Sanyal*¹, *G. Westin*³, *P. Svedlindh*² and *O. Karis*¹ *1. Department of Physics and Materials Science, Uppsala University, Uppsala, Sweden; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 3. Department of Materials Chemistry, Uppsala University, Uppsala, Sweden*
- 11:45 AF-12. Pulsed current controlled thermally assisted magnetization reversal in (Ga,Mn)As magnetic tunneling junctions.** *Z. Li*^{1,2}, *L. Lagae*¹, *G. Borghs*¹, *R. Mertens*¹ and *W. Van Roy*¹ *1. IMEC, Leuven, Belgium; 2. ESAT, Katholieke Universiteit Leuven, Leuven, Belgium*

**TUESDAY
MORNING
9:00**

ROOM 309-310

Session AG

**CRYSTALLINE, NANOCRYSTALLINE,
AND AMORPHOUS MATERIALS (I)**

Mike Gibbs, Session Chair
University of Sheffield

- 9:00 AG-01. (Fe₇₂Mo₄B₂₄)₉₄Dy₆ amorphous alloy with large magnetostriction and high glass forming ability.** *S. Tao*¹, *T. Ma*¹, *H. Tong*¹ and *M. Yan*¹ *1. Department of Materials Science and Engineering, Zhejiang University, Hangzhou, Zhejiang, China*
- 9:15 AG-02. New excellent soft magnetic FeSiBPCu nanocrystalline alloys with high B_s of 1.9T from nanohetero-amorphous phase.** *A. Makino*¹, *H. Men*¹, *T. Kubota*¹, *K. Yubuta*¹ and *A. Inoue*¹ *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

- 9:30 AG-03. The effect of garnet nanometer grains on the terahertz wave absorption.** *Q. Yang*¹, *H. Zhang*¹, *Q. Wen*¹ and *Y. Liu*¹. *1. University of Electronic Science and Technology of China, Chengdu, Sichuan, China*
- 9:45 AG-04. Spinodal decomposition in Fe-(Au,Cu)-B glassy alloys with enhanced soft magnetic properties.** *N. Lupu*¹, *S. Corodeanu*¹, *H. Chiriac*¹, *K. Hono*² and *J. Grenèche*³. *1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Laboratoire de Physique de L'Etat Condensé, UMR CNRS 6087, Université du Maine, Le Mans, France*
- 10:00 AG-05. Positive and negative magnetoresistance of α -C: Fe/Si heterojunctions.** *L. Wu*¹ and *X. Zhang*¹. *1. Tsinghua University, Beijing, China*
- 10:15 AG-06. Magnitude dispersion of the uniaxial magnetic anisotropy in thin amorphous films.** *V. Dubuget*^{1,2}, *S. Dubourg*¹, *P. Thibaudeau*¹ and *A. Adenot-Engelvin*¹. *1. CEA, Monts, France; 2. LEMA, UMR CNRS 6157, Tours, France*
- 10:30 AG-07. Effect of transverse magnetic field on domain wall propagation in Fe-rich glass-coated amorphous wires.** *V. Zhukova*¹, *J. Blanco*², *M. Ipatov*¹ and *A. Zhukov*^{1,3}. *1. Material Science, Basque Country University, San Sebastian, Spain; 2. Dpto. Física Aplicada I, EUPDS, UPV/EHU, San Sebastián, Spain; 3. TAMAG, San Sebastián, Spain*
- 10:45 AG-08. Tailoring the domain wall dynamics in thin magnetic wires.** *R. Varga*¹, *K. Richter*¹, *G. Infante*^{2,1}, *M. Vazquez*² and *A. Zhukov*³. *1. Institute of Physics, Faculty of Sciences, UPJS, Kosice, Slovakia; 2. ICMM, CSIC, Madrid, Spain; 3. Dept. Física de Materiales, Fac. Química, UPV/EHU, San Sebastian, Spain*
- 11:00 AG-09. Adjustment of domain nucleation and domain wall motion in magnetic amorphous microwires.** *A. Chizhik*¹, *A. Zhukov*¹, *J. Blanco*² and *J. Gonzalez*¹. *1. Dpto. Física de Materiales, Universidad del País Vasco, San Sebastián, Spain; 2. Dpto. Física Aplicada I, EUPDS, Universidad del País Vasco, San Sebastián, Spain*
- 11:15 AG-10. Development and characterization of NiFe/insulation/Cu composite wires for magnetic sensing and their giant magneto-impedance effect.** *N. Ning*¹, *J. Fan*¹, *J. Wu*¹ and *X. Li*¹. *1. Mechanical Engineering, National University of Singapore, Singapore, Singapore*

TUESDAY
MORNING
8:00

EXHIBIT HALL B

Session AP
MAGNETOELASTIC APPLICATIONS,
FERROMAGNETIC SHAPE MEMORY
ALLOYS, AND OTHER
MAGNETOELASTIC MATERIALS
(Poster Session)

Thomas Lograsso, Session Chair
Ames Laboratory

AP-01. Magnetostrictive magnetic tunnel junctions as pressure gauges. *D. Meyners*¹, *T. von Hofe*¹, *A. Malavé*¹, *M. Vieth*², *M. Rührig*² and *E. Quandt*¹ *1. Institute for Material Science, Kiel University, Kiel, Germany; 2. CT MM 1, Corporate Technology, Siemens AG, Erlangen, Germany*

AP-02. Capacitive load effects on a magnetostrictive fully coupled energy harvesting device. *D. Davino*¹, *A. Giustiniani*² and *C. Visone*¹ *1. Engineering Department, University of Sannio, Benevento, Italy; 2. DIIE, University of Salerno, Salerno, Italy*

AP-03. A novel micropower generator by vibration-driven MsM materials. *S. Tong*¹, *Y. Huang*¹, *M. Tung*¹, *Y. Chang*², *K. Li*² and *M. Lin*² *1. Material and Chemical Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan; 2. Department of Physics and Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan*

AP-04. In-situ studies of the martensitic transformation in epitaxial Ni-Mn-Ga films constrained by the substrate. *J. Buschbeck*^{1,2}, *R. Niemann*¹, *O. Heczko*^{1,3}, *M. Thomas*¹, *L. Schultz*^{1,2} and *S. Faehler*¹ *1. IFW Dresden, Dresden, Germany; 2. Department of Mechanical Engineering, Institute for Materials Science, Dresden University of Technology, Dresden, Germany; 3. Institute of Physics, Academy of Science of Czech Republic, Prague, Czech Republic*

AP-05. Stray field induced actuation mode of freestanding magnetic shape memory films. *S. Faehler*^{1,2}, *M. Thomas*¹, *O. Heczko*^{1,3}, *J. Buschbeck*¹, *Y. Lai*¹, *J. McCord*¹, *S. Kaufmann*^{1,2} and *L. Schultz*^{1,2} *1. IFW Dresden, Dresden, Germany; 2. Department of Physics, Institute for Solid State Physics, Dresden University of Technology, Dresden, Germany; 3. Institute of Physics, Academy of Sciences of Czech Republic, Prague, Czech Republic*

AP-06. Magnetic shape memory effect in foils, fibers, and thin films - comparison with the bulk single crystal.

O. Heczko^{1,2}, N. Scheerbaum², S. Kaufman², M. Thomas² and S. Faehler² 1. *Condensed matter physics, Institute of Physics of ASCR, Prague, Czech Republic*; 2. *IFW Dresden, Dresden, Germany*

AP-07. Magnetic field induced phase transformation in Ni-Mn-In-Co particles for composites applications.

J. Liu¹, N. Scheerbaum¹ and O. Gutfleisch¹ 1. *IFW Dresden, Dresden, Germany*

AP-08. Magnetostriction and magnetization of common high strength steels.

M. Wun-Fogle¹, J.B. Restorff¹, J.M. Cuseo², I.J. Garshelis^{2,3} and S. Bitar² 1. *Naval Surface Warfare Center, Carderock Division, West Bethesda, MD, USA*; 2. *MagCanica, Inc., San Diego, CA, USA*; 3. *Magnova, Inc., Pittsfield, MA, USA*

AP-09. Evaluation of electromagnetic radiative noise magnetostrictively coupled to elastic vibrations in steel pipes.

M.J. Sablik^{1,3}, G.L. Burkhardt¹ and J.P. Casey² 1. *Mechanical and Materials Engineering Div., Bldg. 139,, Southwest Res. Inst., San Antonio, TX, USA*; 2. *Naval Undersea Warfare Center, Newport, RI, USA*; 3. *AM-PM, LLC, San Antonio, TX, USA*

AP-10. Enhanced magnetostriction in a pre-deformed Mn₅₀Fe₅₀ alloy.

T. Ma¹, J. Zhang¹, A. He¹ and M. Yan¹ 1. *Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China*

AP-11. Magnetoelastic properties of CoAl_xFe_{2-x}O₄ and improved strain sensitivity in CoFe₂O₄.

I. Nlebedim¹, N. Ranvah¹, W.I. Paul¹, M. Yevgen¹, S.E. John¹, M.J. Anthony¹ and J.C. David¹ 1. *Wolfson Centre for Magnetism, School of Engineering, Cardiff University, Cardiff, United Kingdom*

AP-12. Finite element modeling of the deformation of a thin magnetoelastic film compared to a membrane model.

M. Barham^{1,2}, D. White², D. Steigmann¹ and R. Rudd² 1. *Mechanical Engineering, University of California Berkeley, Berkeley, CA, USA*; 2. *Lawrence Livermore National Laboratory, Livermore, CA, USA*

AP-13. Magnetostriction of rapidly quenched Fe-X (X = Al, Ga) ribbons as function of the quenching rate.

R. Groessinger¹, N. Mehmood¹, G. Vlasak², R. Sato Turtelli¹, F. Kubel³, H. Sassik¹ and P. Svec² 1. *Inst. of Solid State Phys., T.U. Vienna, Vienna, Austria*; 2. *Inst of Physics, Slovak Academy of Science, Bratislava, Slovakia*; 3. *Inst. of Chemical Technologies and Analytics, Techn. Univ. Vienna, Vienna, Austria*

AP-14. Abnormal (110) grain growth and magnetostriction in recrystallized galfenol with dispersed niobium carbide. *S. Na*¹, *J. Yoo*¹ and *A.B. Flatau*¹. *Aerospace Engineering, University of Maryland, College Park, MD, USA*

**TUESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session AQ
SPIN TRANSPORT AND
MAGNETORESISTANCE (I)
(Poster Session)**

Burkard Hillebrands, Session Chair
TU Kaiserslautern

AQ-01. Thermal magnetic noise from synthetic antiferromagnets in magnetoresistive heads. *L. Wang*¹ and *H. Edelman*¹. *NRW129, Seagate Technology, Bloomington, MN, USA*

AQ-02. FMR peak width of ferromagnetically/antiferromagnetically coupled Co/Ru superlattice thin films. *N. Fujita*¹, *N. Inaba*¹, *F. Kirino*², *H. Kimura*¹, *K. Koike*¹ and *H. Kato*¹. *1. Yamagata University, Yonezawa, Japan; 2. National University of Fine Arts and Music, Tokyo, Japan*

AQ-03. Electronic structure and spin-dependent transport in ferromagnetic silicide and Heusler alloy/semiconductor junctions. *H. Itoh*¹. *1. Department of Pure and Applied Physics, Kansai University, Suita, Osaka, Japan*

AQ-04. Magnetotransport and trapping of magnetic domain walls in spin valves with nanoconstrictions. *B. Chun*¹, *Z. Diao*¹, *H. Wu*¹ and *M. Abid*¹. *1. Physics, CRANN Trinity College, Dublin, Ireland*

AQ-05. Pt/Co-alloy spin valve with perpendicular anisotropy. *F. Gen*¹ and *J. Coey*¹. *1. CRANN and School of Physics, Dublin, Ireland*

AQ-06. Exchange bias and giant magnetoresistance in top pinned CoFeB/IrMn current in plane spin valves. *C. Fowley*¹, *K. Oguz*¹ and *J. Coey*¹. *1. CRANN and School of Physics, Trinity College Dublin, Dublin, Ireland*

AQ-07. Magnetoresistance study and interlayer coupling of CoFe/Os/CoFe and Fe/Os/Fe thin films. *C. Yu*¹, *S. Chen*², *Y. Teng*¹ and *Y. Yao*³. *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

AQ-08. Electrical injection and detection of spin-polarized carriers in silicon in a vertical transport geometry. *M.K. Husain*¹, *X.V. Li*¹ and *C.H. de Groot*¹. *1. Electronics and Computer Science, University of Southampton, Southampton, Hampshire, United Kingdom*

AQ-09. Determination of spin-orbit interaction parameter in InAs-inserted heterostructure. *T. Lee*¹, *J. Chang*¹, *K. Kim*¹, *H. Kim*¹, *H. Koo*¹ and *S. Han*¹. *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South*

AQ-10. Fabrication and characterization of MBE grown Fe/GaAs(100)/Fe vertical devices. *J. Wong*¹, *W. Zhang*¹, *I.G. Will*¹, *Y. Xu*¹, *J. Wu*², *I. Farrer*³ and *D.A. Ritchie*³. *1. Spintronics and Nanodevice Laboratory, Department of Electronics, University of York, York, United Kingdom; 2. Department of Physics, University of York, York, United Kingdom; 3. Cavendish Laboratory, University of Cambridge, York, United Kingdom*

AQ-11. Spin-polarized transport based on double-Schottky barriers. *X. Tang*¹, *H. Zhang*¹, *H. Su*¹ and *Y. Jing*¹. *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, Chengdu, Sichuan, China*

**TUESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session AR
THIN FILMS
(Poster Session)**

Frederic Bonell, Session Chair
Nancy Université

AR-01. Stray field-induced dynamics of coupled magnetic vortices. *A. Drews*¹, *B. Krüger*², *M. Bolte*¹, *D. Pfannkuche*², *U. Merkt*¹ and *G. Meier*¹. *1. Angewandte Physik und Mikrostrukturzentrum, Universität Hamburg, Hamburg, Germany; 2. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany*

AR-02. Voltage induced magnetic anisotropy change in a Fe (001) alloy layers with perpendicular magnetization. *Y. Shiota*¹, *T. Maruyama*¹, *T. Nozaki*¹, *T. Shinjo*¹, *M. Shiraishi*¹ and *Y. Suzuki*¹. *1. Osaka University, Osaka, Japan*

AR-03. Ferromagnetic behaviour at RT of a 6 Å thick Co layer deposited on Si/SiO₂. *F. Fettar*¹, *H. Garad*¹, *A. Ramos*¹, *L. Ortega*¹, *J. Geshev*², *M. Pashkevich*³, *A. Stognij*³, *N. Novitski*³ and *V. Pankov*⁴ *1. Institut NEEL, CNRS, Grenoble, France; 2. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; 3. Minsk Research Institute of Radiomaterials, Minsk, Belarus; 4. Belarusian State University, Minsk, Belarus*

AR-04. Spin reorientation transition upon hydrogen exposure in bilayer cobalt films on Ru(0001). *B. Santos*^{1,4}, *A. Mascaraque*², *A.K. Schmid*³, *S. Gallego*⁵ and *J. De La Figuera*^{1,4} *1. Universidad Autonoma de Madrid, Madrid, Spain; 2. Universidad Complutense de Madrid, Madrid, Spain; 3. Lawrence Berkeley National Laboratory de Madrid, Berkeley, CA, USA; 4. Instituto de Química-Física Rocasolano, Madrid, Spain; 5. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*

AR-05. Structural and magnetic studies on epitaxial ultrathin Fe₃O₄/GaN(0001) hybrids. *J. Wong*¹, *W. Zhang*¹, *Y. Xu*¹, *X. Cui*², *Z. Tao*², *X. Li*², *Z. Xie*² and *R. Zhang*² *1. Spintronics and Nanodevice Laboratory, Department of Electronics, University of York, York, United Kingdom; 2. Jiangsu Provincial Key Laboratory of Advanced Photonic and Electronic Materials and Department of Physics, Nanjing University, Nanjing, China*

AR-06. Effect of temperature on the ferromagnetic resonance linewidth of epitaxial Fe thin films. *B.K. Kuanr*¹, *A.V. Kuanr*², *V. Veerakumar*¹, *Y. Nie*¹, *R.E. Camley*¹ and *Z. Celinski*¹ *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, USA; 2. Physics Department, Rajguru College of Applied Science for Women, Delhi, India*

AR-07. Spin dynamics of polycrystalline Ni45Fe55 films on Si substrates. *J.F. Godsell*¹, *T. O'Donnell*¹ and *S. Roy*¹ *1. Tyndall National Institute, University College Cork, Cork, Ireland*

AR-08. Effects of oxygen exposure on ultrathin Co/Si(111) films. *W. Chang*¹, *C. Chuang*¹, *K. Huang*², *H. Chang*², *W. Su*², *Y. Yao*^{3,2} and *J. Tsay*¹ *1. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

AR-09. Consideration on Interlayer Coupling in Co_{0.9}Fe_{0.1}/Cu/Co_{0.9}Fe_{0.1} Spin-Valves with Fe_{0.7}Co_{0.3}(/Cr)-NOL. *K. Sawada*¹, *H. Endo*¹, *M. Doi*¹ and *M. Sahashi*¹ *1. Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

AR-10. Magnetic properties of ultrathin TbFeCo magnetic films with perpendicular magnetic anisotropy.

C. Lee^{1,2}, L. Ye¹, J. Lee^{1,3}, J. Syu¹, W. Chen^{1,2} and T. Wu^{1,2}

1. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan; 2. Graduate School of materials science, National Yunlin University of Science and Technology, Douliou, Taiwan; 3. Graduate school of Engineering Science and Technology, National Yunlin University of Science and Technology, Douliou, Taiwan

AR-11. Study of Al/DyFeCo/Al multilayers using scanning transmission electromicroscope.

T. Wu¹, W. Chen¹ and W. Chen¹

1. Graduate School of Materials Science, National Yunlin University of Science & Technology, Douliou, Yunlin, Taiwan

AR-12. Permittivity modulation of Ta₂O₅/Co/ Ta₂O₅ trilayer films.

Y. Ding^{1,2}, Y. Yao³, K. Wu⁴, J. Hsu⁴,

D. Hung⁵, D. Wei⁶ and Y. Lin¹

1. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan; 2. The Teaching Center for Natural Sciences, Minghsin University of Science and Technology, Hsinchu, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 4. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 5. Department of Information and Tele. Engin., Ming Chuan University, Taipei, Taiwan; 6. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan

AR-13. Effects of argon ion bombardment on the structure and magnetic properties of ultra thin Fe films.

S. Ramaswamy¹, G. Chandrashekar¹, J. Kulandaivel² and

M. Ponnaivaikko²

1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Center for Nanoscience and Nanotechnology, Bharathidasan University, Tiruchinapalli, Tamil Nadu, India

TUESDAY
MORNING
8:00

EXHIBIT HALL B

Session AS
MICROMAGNETICS
(Poster Session)

Boris Livshitz, Session Chair
UCSD

Ching-Ray Chang, Session Chair
National Taiwan University

AS-01. On the use of the Sherman-Morrison-Woodbury formula for coupling external circuits to finite element simulation of transient magnetics. *D. White¹ and J. Solberg¹ 1. LLNL, Livermore, CA, USA*

AS-02. Simulations of magnetic excitations in small dots supporting weak and strong stripe domains. *Y. Talbi¹, Y. Roussigné¹, P. Djémia¹ and M. Labrune¹ 1. Labo. PMTM -CNRS, University Paris 13, Villetaneuse, France*

AS-03. Equilibrium shapes of ferrofluid under magnetic fields using continuum shape sensitivity and level set method. *Y. Kim¹, S. Lee² and I. Park¹ 1. School of Information and Communication Engineering, Sungkyunkwan University, Suwon, Kyeonggi-do, Korea, South; 2. School of Electrical Eng. and Computer Science, Kyungpook National University, Daegu, Kyungpook-do, Korea, South*

AS-04. Magnetic ordering of magnets with random anisotropy probed by an ac magnetic field: a novel Monte Carlo method. *H.M. Nguyen¹ and P. Hsiao¹ 1. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan*

AS-05. Full micromagnetic numerical simulations of thermal fluctuations. *C. Ragusa¹, M. d'Aquino², C. Serpico³, B. Xie¹, M. Repetto¹ and G. Bertotti⁴ 1. Electrical Engineering, Politecnico di Torino, Torino, TO, Italy; 2. Dipartimento per le tecnologie, Università di Napoli Parthenope, Napoli, NA, Italy; 3. Electrical Engineering Dep., Università di Napoli Federico II, Napoli, NA, Italy; 4. Divisione Elettromagnetismo, INRiM, Torino, TO, Italy*

AS-06. Local control of ultrafast dynamics of magnetic nanoparticles. *A. Sukhov^{1,2} and J. Berakdar² 1. Max Planck Institute of Microstructure Physics, Halle, Germany; 2. Martin-Luther-Universität Halle-Wittenberg, Halle, Germany*

AS-07. Renormalization of Landau-Lifshitz equation and its applications. *K. Rivkin*¹ and *N. Tabat*¹ *1. Seagate Technology, Edina, MN, USA*

AS-08. Excitation of non-propagative modes in a confined point-contact. *G. Finocchio*¹, *G. Consolo*¹, *L. Torres*² and *B. Azzerboni*¹ *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

AS-09. Parallelizing a micromagnetic program for use on multi-processor shared memory computers. *M.J. Donahue*¹ *1. National Institute of Standards and Technology, Gaithersburg, MD, USA*

AS-10. Fast micromagnetic simulation by a graphic processor unit. *M. Tate*¹, *T. Sato*¹ and *Y. Nakatani*¹ *1. Department of Computer Science, University of Electro-Communications, Tokyo, Japan*

AS-11. Micromagnetic study of coupled vortices motion in ferromagnetic/non-magnetic/ferromagnetic trilayer. *S. Jun*¹, *J. Shim*¹, *S. Yu*¹, *S. Oh*¹ and *D. Kim*¹ *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, South*

AS-12. Domain wall propagation in wavy ferromagnetic nanowire. *H. Piao*¹, *J. Shim*¹, *S. Lee*¹, *D. Djuhana*¹, *D. Kim*¹, *S. Oh*¹ and *S. Yu*¹ *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, South*

AS-13. Dynamic characterizations of magneto-rheological elastomers in shear mode. *H. Jung*¹, *S. Lee*¹, *D. Jang*¹, *I. Kim*¹ and *J. Koo*² *1. Civil and Environmental Engineering, KAIST, Daejeon, Korea, South; 2. Mechanical and Manufacturing Engineering, Miami University, Oxford, OH, USA*

AS-14. Numerical investigations on the excitation of spin-wave bullet modes within a micromagnetic framework. *G. Consolo*¹, *G. Finocchio*¹, *L. Lopez-Diaz*² and *B. Azzerboni*¹ *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Italy, Messina, Italy; 2. Fisica Aplicada, University of Salamanca, Salamanca, Spain*

AS-15. Refractive index and Snell Law for dipole-exchange spin waves in a confined planar structure. *D. Jeong*¹, *D. Han*¹ and *S. Kim*¹ *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, South*

AS-16. Analysis of noise spectral density for phenomenological models of hysteresis. A. Adedoyin¹, M. Dimian² and P. Andrei¹ *1. Department of Electrical Engineering and Computer Engineering, Florida State University, Tallahassee, FL, USA; 2. Department of Electrical Engineering and Computer Science, "Stefan cel Mare" University, Suceava, Romania*

AS-17. Dynamic neural network model of magnetic hysteresis. M. Temneanu¹ and C. Donciu¹ *1. Faculty of Electrical Engineering, Technical University "Gheorghe Asachi" of Iasi, Iasi*

AS-18. Random anizotropy ising model for BCC and HCP structures with magnetostatic and exchange interactions. A. Dobrinescu¹, C. Enachescu¹ and A. Stancu¹ *1. Department of Physics, Al. I. Cuza University Iasi, Iasi, Romania*

**TUESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session AT
MICROWAVE MAGNETIC MATERIALS
AND DEVICES
(Poster Session)**

Alexander Serga, Session Chair
Technische Universität Kaiserslautern

AT-01. Development of electromagnetic wave shielding textile by electroless Ni-based alloy plating. M. Sonehara¹, T. Sato¹, K. Yamasawa¹, Y. Miura¹, S. Noguchi² and T. Kurashina² *1. Spin Device Technology Center, Shinshu University, Nagano, Nagano, Japan; 2. Suwa Plant, Yamato Denki Ind. Co.,Ltd., Suwa, Nagano, Japan*

AT-02. Self-generation of dark envelope solitons in active feedback rings based on ferrite-ferroelectric layered structures. A.B. Ustinov¹ and B. Kalinikos¹ *1. Department of Physical Electronics and Technology, St.Petersburg Electrotechnical University "LETI", Saint Petersburg, Russia*

AT-03. Comparisons of Bi₂O₃ and V₂O₅ additives on the properties of lithium ferrites. H. Su¹, H. Zhang¹, X. Tang¹, Z. Zhong¹ and J. Shen^{1,2} *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE, DE, USA*

AT-04. Synthesis of metamaterial ferrites using double-square loops. *R. Yang*¹ and *S. Hsu*¹ *1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan*

AT-05. Antenna designs for single-wavelength spin wave propagation. *R.D. McMichael*¹ and *M. Zhu*^{1,2} *1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD, USA; 2. Maryland Nanocenter, University of Maryland, College Park, MD, USA*

AT-06. Static and dynamic magnetic properties of antidot arrays with different thickness. *L.M. Malkinski*¹, *M. Yu*¹ and *W.L. Zhou*¹ *1. University of New Orleans,, New Orleans, LA, USA*

AT-07. The influence of geometric parameters distribution on ferromagnetic resonance of nanowires systems. *I. Dumitru*¹, *D. Cimpoesu*¹, *L. Spinu*² and *A. Stancu*¹ *1. Department of Physics, "Alexandru Ioan Cuza" University, Iasi, Iasi, Romania; 2. AMRI & Department of Physics, University of New Orleans, New Orleans, LA, USA*

AT-08. High performance compact microstrip phase shifter at x-band using yttrium iron garnet. *I. Viswanathan*¹, *S.D. Yoon*¹, *T. Sakai*¹, *A.L. Geiler*¹, *C.N. Chinnasamy*¹, *C. Vittoria*¹ and *V.G. Harris*¹ *1. Center for Microwave Magnetic Materials and Integrated Circuits and the Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, USA*

AT-09. Low bias field hexagonal y-type ferrite phase shifters at K_u band. *A.L. Geiler*¹, *J. Wang*¹, *J. Gao*¹, *S. Yoon*¹, *Y. Chen*¹, *V.G. Harris*¹ and *C. Vittoria*¹ *1. Center for Microwave Magnetic Materials and Integrated Circuits, Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, USA*

AT-10. Analysis of electromagnetic fields generated by a spin-torque oscillator. *N. Amin*¹, *H. Xi*¹ and *M.X. Tang*¹ *1. Memory Products Group R&D, Seagate Technology, Bloomington, MN, USA*

AT-11. Detection of continuous spinwaves along magnetic nanostrips using magnetoresistive devices. *H. Xi*¹, *D. Wang*¹, *X. Wang*¹, *Y. Zheng*¹ and *M.X. Tang*¹ *1. Memory Products Group R&D, Seagate Technology, Bloomington, MN, USA*

TUESDAY
MORNING
8:00

EXHIBIT HALL B

Session AU
SHIELDING, LEVITATION, AND
PROPULSION
(Poster Session)

Ichiro Sasada, Session Chair
Kyushu University

AU-01. 3d analytical field calculation of pyramidal and other polyhedral shaped permanent magnets for a gravity compensator. *J. Janssen*¹, *J. Paulides*¹ and *E. Lomonova*¹ *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, N-Brabant, Netherlands*

AU-02. A novel rail shape to decouple the orthogonal magnetic circuits in the magnetically levitated vehicle. *S. Park*¹ and *W. Lee*¹ *1. Dept. of Railroad Drive and Control, Dongyang university, Yeongju, Korea, South*

AU-03. Experimental study on stabilizing range extension of diamagnetic levitation under modulated magnetic field. (Withdrawn) *T. Chow*¹, *P. Wong*¹ and *K. Liu*¹ *1. Manufacturing Engineering and Engineering Management Department, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China*

AU-04. Design considerations of EM-PM hybrid levitation and propulsion device for magnetically levitated vehicles. *H. Cho*¹, *H. Han*¹, *J. Lee*¹ and *K. Rho*¹ *1. System Engineering Research Division, Korea Institute of Machinery and Materials, Daejeon, Korea, South*

AU-05. Optimal design of open-type magnetically shielded room combined with square cylinders made of magnetic and conductive materials for MRI. *S. Hirotsato*¹, *K. Yamazaki*¹, *Y. Haraguchi*², *K. Muramatsu*², *A. Haga*³, *K. Kamata*⁴, *K. Kobayashi*⁵, *A. Matsuura*⁵ and *H. Sasaki*⁵ *1. Takenaka Corporation, Inzai, Japan; 2. Saga Univ., Saga, Japan; 3. Tohoku-Gakuin Univ., Tagajo, Japan; 4. Kagoshima National College of Technology, Kirishima, Japan; 5. Iwate Univ., Morioka, Japan*

AU-06. Shielding performance of open-type magnetic shielding box structure. *T. Saito*¹ *1. Kajima Corporation, Tokyo, Japan*

AU-07. Magnetic noise due to sound of footsteps on wooden free-access floor outside a magnetically-shielded room for biomagnetic and non-destructive measurements. *K. Yamazaki*¹, *T. Abe*¹, *Y. Terazono*², *N. Fujimaki*², *T. Murata*², *D. Oyama*³ and *K. Kobayashi*³ *1. Takenaka Corporation, Chiba, Inzai, Japan; 2. National Institute of Information and Communications Technology, Iwaoka, Iwaoka-Cho, Kobe, Japan; 3. Iwate University, Ueda, Morioka, Iwate, Japan*

AU-08. Shielding effect of double layered open-type magnetic shield structure. *H. Hirano*¹, *T. Saito*¹, *T. Shinnoh*¹, *M. Fujikura*² and *K. Chikuma*² *1. Kajima Corporation, Tokyo, Japan; 2. Nippon Steel Corporation, Tokyo, Japan*

**TUESDAY
MORNING
8:00**

EXHIBIT HALL B

Session AV
**MAGNETIC NANOWIRES, CLUSTERS,
AND NANOPARTICLES (IV)**
(Poster Session)

Raja Swaminathan, Session Chair
INTEL

AV-01. Exchange bias in Ni/NiO core-shell nanowires. *Y. Huang*¹, *W. Wu*¹, *I. Liu*¹ and *C. Lai*¹ *1. Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan*

AV-02. Origin of glass-like relaxation peaks in Fe₃O₄-based ferrofluids. *M. Morales*¹, *M. Phan*¹, *S. Pal*¹ and *H. Srikanth*¹ *1. Department of Physics, University of South Florida, Tampa, FL, USA*

AV-03. Fabrication and magnetization reversal processes for Co/Cu multilayer nanowires. *R. Sharif*^{1,2}, *S. Shazadi*^{1,2}, *M. Khaleeq-ur-Rahman*², *J.y. Chen*¹, *X.F. Han*¹ and *Y.K. Kim*³ *1. CAS, China, Institute of Physics, Beijing, Beijing, China; 2. Physics Department, University of Engineering and Technology, Lahore, Punjab, Pakistan; 3. Department of Materials Science and Engineering, Korea University, Seoul 136-713, Korea, South*

AV-04. Structural and magnetic properties of single-crystalline Co-doped barium titanate nanoparticle. *H. Liu*¹, *B. Cao*¹, *W. Zhou*¹ and *C. O'Connor*¹ *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA, USA*

AV-05. Dimensionality control and characterization of magnetic nanostructures for Fe on nano-patterned Au(111). *W. Lin*², *C. Hung-Yu*¹, *T. Wu*¹ and *C. Kuo*^{1,3} 1. *Department of Physics, National Sun Yat-sen University, Kaohsiung, Taiwan;* 2. *Department of Physics, National Taiwan Normal University, Taipei, Taiwan;* 3. *Center for Nanoscience and Nanotechnology, National Sun Yat-sen University, Kaohsiung, Taiwan*

AV-06. Synthesis and magnetic properties of multifunctional Fe₃O₄-AuPt core-shell nanoparticles. *A. Song*¹, *J. Wu*², *J. Min*¹, *R. Tan*¹, *J. Lee*¹ and *Y. Kim*¹ 1. *Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, South;* 2. *Research Institute of Engineering and Technology, Korea University, Seoul, Seoul, Korea, South*

AV-07. Preparation, properties and bio-functionalization of multifunctional Ni-Au core-shell nanowires. *M. Cho*¹, *J. Cho*^{2,3}, *I. Jeon*², *J. Wu*⁴ and *Y. Kim*² 1. *Department of Micro/Nano Systems, Korea university, Seoul, Seoul, Korea, South;* 2. *Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, South;* 3. *Korea Electronic Technology Institute, Seongnam, Gyeonggi, Korea, South;* 4. *Research Institute of Engineering and Technology, Korea university, Seoul, Seoul, Korea, South*

AV-08. Magnetic behavior of chemically-synthesized FeRh-FePt nanostructures. *Z. Jia*¹, *N. Seetala*², *M. Shamsuzzoha*³, *J.W. Harrell*³ and *D. Misra*¹ 1. *University of Louisiana at Lafayette, Lafayette, LA, USA;* 2. *Physics, Grambling State University, Grambling, LA, USA;* 3. *MINT Center, University of Alabama, Tuscaloosa, AL, USA*

AV-09. Synthesis and characterization of ferromagnetic nanoparticles. *J. Liu*¹ 1. *University of Texas at Arlington, Arlington, TX, USA*

AV-10. Effect of magnetic nanoparticle on carbonyl iron based magnetorheological suspension. *K. Song*¹, *B. Park*¹ and *H. Choi*¹ 1. *Department of Polymer Science and Engineering, Inha University, Incheon, Korea, South*

AV-11. The influence of the particles size and size distribution on the magnetorheological fluids properties. *H. Chiriac*¹ and *G. Stoian*¹ 1. *Magnetic Devices and Materials, National Institute of R&D for Technical Physics, Iasi, Romania*

AV-12. Advanced strategies for real-time control of vehicle suspensions based on magnetorheological fluids. *D. Lampasi*^{1,2} and *G.M. Veca*² 1. *Research Centre for Nanotechnology Applied to Engineering (CNIS), University of Rome Sapienza, Rome, Italy;* 2. *Department of Electrical Engineering, University of Rome Sapienza, Rome, Italy*

AV-13. Development of magnetic separation system with micro-scaled magnetic column. *S. Kim*¹, *R. Iwamoto*¹, *K. Kataoka*¹, *S. Noguchi*² and *H. Okada*³ *1. Okayama University, Okayama, Japan; 2. Hokkaido University, Sapporo, Japan; 3. NIMS, Tsukuba, Japan*

**TUESDAY
AFTERNOON
2:00**

ROOM 311-313

**Session BA
SYMPOSIUM ON ELECTRIC FIELD
CONTROL ON MAGNETISM**

*Kai Liu, Session Chair
U. C. Davis*

- 2:00 BA-01. Electrical field control of ferromagnets using multiferroics. (Invited)** *R. Ramesh*¹ *1. Materials Science and Engineering and Physics, University of California, Berkeley, Berkeley, CA, USA*
- 2:30 BA-02. Magnetization switching without charge or spin currents. (Invited)** *J. Stohr*¹ *1. Stanford University/SLAC, Palo Alto, CA, USA*
- 3:00 BA-03. Electric field manipulation of magnetic anisotropy in ferromagnetic semiconductors. (Invited)** *D. Chiba*^{1,2}, *M. Sawicki*^{2,3}, *Y. Nishitani*², *Y. Nakatani*⁴, *F. Matsukura*^{2,1} and *H. Ohno*^{2,1} *1. ERATO Semiconductor Spintronics Project, JST, Tokyo, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 3. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 4. Department of Computer Science, University of Electro-communications, Chofu, Japan*
- 3:30 BA-04. Novel FeGaB based microwave multiferroic heterostructures. (Invited)** *J. Lou*¹, *D. Reed*¹, *M. Liu*¹, *O. Obi*¹, *S. Stoute*¹, *N. Pwint*¹ and *N. Sun*¹ *1. Electrical and Computer Eng., Northeastern University, Boston, MA, USA*
- 4:00 BA-05. Morphotropic phase boundary in rare-earth doped BiFeO₃. (Invited)** *I. Takeuchi*¹ *1. Materials Science, University of Maryland, College Park, MD, USA*

- 4:30 BA-06. Electric-field charge accumulation and induced-superconductivity in an insulator. (Invited)** *K. Ueno*¹, *S. Nakamura*², *H. Shimotani*³, *A. Ohtomo*³, *N. Kimura*², *T. Nojima*², *H. Aoki*², *Y. Iwasa*^{3,4} and *M. Kawasaki*^{1,4} *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Center for Low Temperature Physics, Tohoku University, Sendai, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Japan; 4. CREST, JST, Tokyo, Japan*

TUESDAY
AFTERNOON
2:00

ROOM 314

Session BB
FAST SWITCHING OF FILMS AND
NANOSTRUCTURES

Mathias Klaeui, Session Chair
University of Konstanz

- 2:00 BB-01. Detecting single nanomagnet dynamics in varying magnetostatic environments.** *Z. Liu*¹, *R. Brandt*¹, *B. Hansen*², *B. Harteneck*³, *S. Cabrini*³, *A. Hawkins*², *J. Bokor*³ and *H. Schmidt*¹ *1. School of Engineering, University of California Santa Cruz, Santa Cruz, CA, USA; 2. Electrical and Computer Engineering, Brigham Young University, Provo, UT, USA; 3. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, USA*
- 2:15 BB-02. Non-linear dynamics of magnetic vortices.** *A. Drews*¹, *B. Krüger*², *S. Bohlens*², *M. Bolte*¹ and *G. Meier*¹ *1. Angewandte Physik und Mikrostrukturzentrum, Universität Hamburg, Hamburg, Germany; 2. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany*
- 2:30 BB-03. Current induced spin-wave emission from ferromagnetic nanostructures. (Invited)** *B. Hillebrands*¹, *H. Schultheiss*¹, *F. Ciubotaru*¹, *A. Laraoui*¹, *M. van Kampen*², *L. Lagae*² and *A.N. Slavin*³ *1. Fachbereich Physik, TU Kaiserslautern, Kaiserslautern, Germany; 2. IMEC, Leuven, Belgium; 3. Department of Physics, Oakland University, Rochester, MI, USA*
- 3:00 BB-04. Static and dynamic magnetization processes in magnetic property patterned thin films. (Invited)** *J. McCord*¹, *C. Hamann*¹, *N. Martin*¹, *I. Mönch*¹, *R. Kaltofen*¹, *L. Schultz*¹, *T. Strache*², *J. Fassbender*² and *R. Mattheis*³ *1. IFW Dresden, Dresden, Germany; 2. Institute of Ion Beam Physics and Materials Research, FZ Rossendorf, Dresden, Germany; 3. IPHT Jena, Jena, Germany*

- 3:30 BB-05. Coherent suppression of magnetization precession in presence of spin waves in a $\text{Ni}_{81}\text{Fe}_{19}$ microwire.** A. Barman^{1,2}, T. Kimura^{3,2}, Y. Otani^{3,2} and Y. Fukuma² 1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. RIKEN ASI, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan; 3. Institute for Solid State Physics, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8581, Japan
- 3:45 BB-06. Bubble dynamics and switching in magnetic nanoelements.** C. Moutafis¹, S. Komineas², J. Bland¹ and C. Barnes¹ 1. Cavendish Laboratory, Cambridge University, Cambridge, Cambridgeshire, United Kingdom; 2. Department of Applied Mathematics, University of Crete, Heraklion, Greece
- 4:00 BB-07. Magnetization dynamics in exchange-biased $\text{Ni}_{80}\text{Fe}_{20}/\text{Ir}_{80}\text{Mn}_{20}$ vortex structures.** E. Girgis¹, B.C. Choi¹, J. Rudge¹, T. Speliotis², C.A. Ross³, D. Niarchos² and H. Miyagawa³ 1. Department of Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 2. Institute of Materials Science, NCSR "Demokritos", 15310 Aghia Paraskevi, Greece; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA
- 4:15 BB-08. Energy equilibration processes of electrons, magnons, and phonons at the femtosecond time scale.** J. Walowski¹, A. Mann¹, M.G. Muenzenberg¹, S. Krzyk², M. Klauui², U. Atxitia³ and O. Chubykalo-Fesenko³ 1. I. Phys. Institute, Goettingen University, Goettingen, Germany; 2. Fachbereich Physik, Konstanz University, Konstanz, Germany; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain

TUESDAY
AFTERNOON
2:00

ROOM 315

Session BC

PATTERNED MEDIA (I)

Manfred Albrecht, Session Chair
 Chemnitz University of Technology
 Olav Hellwig, Session Chair
 Hitachi GST

- 2:00 BC-01. Tuning the magnetic properties of bit patterned media fabricated by blanket deposition of perpendicular anisotropy multilayers onto pre-patterned substrates. (Invited)** O. Hellwig¹ 1. San Jose Reserach Center, Hitachi GST, San Jose, CA, USA

- 2:30 BC-02. Capped bit patterned media for high-density magnetic recording.** *V. Lomakin*¹, E. Fullerton¹, S. Li¹ and B. Livshitz¹. *ECE, CMRR, University of California, San Diego, La Jolla, CA, USA*
- 2:45 BC-03. Balancing inter-layer dipolar interactions by RKKY coupling in multilevel magnetic nanostructures with out-of-plane anisotropy.** *V. Baltz*¹, B. Rodmacq¹, A. Bollero¹, S. Landis², J. Ferré³ and B. Dieny¹. *1. SPINTEC (URA 2512 CNRS/CEA), Grenoble, France; 2. CEA-LETI, Grenoble, France; 3. LPS (UMR 8502), Orsay, France*
- 3:00 BC-04. Tailoring particle arrays by reactive ion etching: a method to realize percolated media.** *M. Albrecht*¹, C. Brombacher¹, D. Assmann^{1,2}, D. Makarov^{1,2}, M. Saitner³, C. Pfahler³, A. Plettl³ and P. Ziemann³. *1. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 2. Department of Physics, University of Konstanz, Konstanz, Germany; 3. Department of Solid State Physics, University of Ulm, Ulm, Germany*
- 3:15 BC-05. Magnetic properties of 820 & 630 Gbit/in² patterned arrays produced by extreme ultraviolet interference lithography.** *T. Thomson*¹, L.J. Heyderman², F. Luo², O. Hellwig³ and H.H. Solak². *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland; 3. Hitachi San Jose Research Center, Hitachi GST, San Jose, CA, USA*
- 3:30 BC-06. Microwave assisted magnetic reversal and a novel recording system.** *S. Li*^{1,2}, B. Livshitz^{1,2}, H. Bertram^{2,3}, E.E. Fullerton^{1,2} and V. Lomakin^{1,2}. *1. University of California, San Diego, La Jolla, CA, USA; 2. CMRR, UCSD, La Jolla, CA, USA; 3. Hitachi GST, San Jose, CA, USA*
- 3:45 BC-07. Exploring the limits of RIE-based pattern transfer using self-assembled nanoparticle arrays as etch masks.** *C. Hogg*¹, S.A. Majetich¹ and J.A. Bain². *1. Physics, Carnegie Mellon University, Pittsburgh, PA, USA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*
- 4:00 BC-08. Single-domain island reversal behavior and switching field distribution of bit patterned media.** *T. Huang*¹, Y. Chen¹, S. Leong¹, J. Shi¹, Y. Hnin¹, J. Ding², S. Hu¹, B. Zong¹, Z. Yuan¹ and B. Liu¹. *1. SMI, Data Storage Institute (A*STAR), Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

- 4:15 BC-09. Self-assembled pattern multiplication for high-density patterned media templates.** *R. Ruiz*¹, *E. Dobisz*¹, *D.S. Kercher*¹, *O. Hellwig*¹, *T.R. Albrecht*¹, *H. Kang*², *F. Detcheverry*², *J.J. de Pablo*² and *P.F. Nealey*² *1. SJRC, Hitachi GST, San Jose, CA, USA; 2. Department of Chemical and Biological Engineering, University of Wisconsin, Madison, WI, USA*
- 4:30 BC-10. Semi-analytical approach for analysis of BER in conventional and staggered bit patterned media.** *B. Livshitz*¹, *H.N. Bertram*^{1,2}, *A. Inomata*³ and *V. Lomakin*¹ *1. ECE, CMRR, UCSD, San Diego, CA, USA; 2. Hitachi San Jose Research Center, Hitachi GST, San Jose, CA, USA; 3. Storage and Intelligent Systems Laboratories, Fujitsu Laboratories Ltd, Atsugi, Japan*
- 4:45 BC-11. MFM study on 60 nm track-pitch discrete track media fabricated by nanoimprinting.** *D. Lee*¹, *B. Lee*¹, *E. Cho*², *H. Kim*², *J. Sohn*², *S. Sul*³, *M. Lee*³, *S. Uchida*⁴ and *N. Takahashi*⁴ *1. Semiconductor Lab., Samsung Advanced Institute of Technology, Yongin, Gyeonggi, Korea, South; 2. Nanofabrication group, Samsung Advanced Institute of Technology, Yongin, Gyeonggi, Korea, South; 3. Device Architecture Lab., Samsung Electronics, Yongin, Gyeonggi, Korea, South; 4. Storage Media Lab., Fuji Electric Advanced Technology Co., Ltd., Matsumoto, Nagano, Japan*

**TUESDAY
AFTERNOON
2:00**

ROOM 306

Session BD

DOMAIN WALL MEMORY AND LOGIC

Jing Shi, Session Chair
U. C. Riverside

- 2:00 BD-01. Very effective domain wall excitation due to spin currents perpendicular to the plane.** *A.V. Khvalkovskiy*^{1,2}, *A.K. Zvezdin*¹, *A. Anane*², *J. Grollier*², *V. Cros*², *A.V. Krasheninnikov*¹, *K.A. Zvezdin*¹ and *A. Fert*² *1. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*
- 2:15 BD-02. Probing the pinning potential created by pinning sites for domain walls in GMR nanostrips using transverse fields.** *S. Glathe*¹, *M. Diegel*¹, *E. Halder*² and *R. Mattheis*¹ *1. Photonic Instrumentation, Institute of Photonic Technology, Jena, Germany; 2. Novotechnik, Ostfildern, Germany*

- 2:30 BD-03. Magnetic domain wall shift register with electrical input. (Invited)** L.A. O'Brien¹, D.E. Read¹, H.T. Zeng¹, E.R. Lewis¹, D. Petit¹, J. Sampaio¹ and R.P. Cowburn¹ *1. Physics, Imperial College, London, United Kingdom*
- 3:00 BD-04. Current-induced domain-wall motion in [CoFe/Pt]₅ nanowire with perpendicular magnetic anisotropy.** K. Kim¹, J. Lee^{1,2}, C. Lee³, Y. Cho³, K. Shin², S. Seo³, S. Choe¹, K. Lee⁴ and H. Lee⁵ *1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South; 3. Samsung Advanced Institute of Technology, Yongin, Korea, South; 4. Department of Materials Science and Engineering, Korea University, Seoul, Korea, South; 5. PCTP and Department of Physics, Pohang University of Science and Technology, Pohang, Kyungbuk, Korea, South*
- 3:15 BD-05. Evaluation of scalability for current-driven domain wall motion in a Co/Ni multi-layer strip for memory applications.** T. Suzuki¹, S. Fukami¹, K. Nagahara¹, N. Ohshima¹ and N. Ishiwata¹ *1. NEC Corp., Sagamihara, Japan*
- 3:30 BD-06. Spin transfer torque in domain wall structures by Keldysh Green functions.** C. You¹, J. Han², H. Lee² and K. Lee³ *1. Department of Physics, Inha University, Incheon, Korea, South; 2. Department of Physics, POSTECH, Pohang, Korea, South; 3. Department of Materials Science and Engineering, Korea Univ., Seoul, Korea, South*
- 3:45 BD-07. Simulation of tunneling magnetoresistance used to detect domain-wall structure and motion in a ferromagnetic wire.** K. Sawada¹, T. Uemura¹, M. Masuda¹, K. Matsuda¹ and M. Yamamoto¹ *1. Division of Electronics for Informatics, Graduate school of Information Science and Technology, Hokkaido University, Sapporo, Japan*
- 4:00 BD-08. Globally clocked magnetic logic circuits.** M. Hall¹, A. Jander², R.D. Chamberlain¹ and P. Dhagat² *1. Computer Science and Engineering, Washinton University, St. Louis, MO, USA; 2. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR, USA*
- 4:15 BD-09. High speed, high stability and low power sensing amplifier for MTJ/CMOS hybrid logic circuits.** W. Zhao^{1,2}, C. Chappert^{1,2}, V. Javerliac³ and J. Nozière³ *1. IEF, CNRS, Orsay, France; 2. Univ Paris-Sud, UMR 8622, Orsay, France; 3. Crocus Technology, Grenoble, France*

- 4:30 BD-10. A magnetic content addressable memory design with a single set of programming wires.** *Z. Jiang*¹ and *W. Wang*¹ *1. Electrical Engineering and Computer Science, University of Wisconsin Milwaukee, Milwaukee, WI, USA*
- 4:45 BD-11. A four bit magnetic domain based multivibrator counter.** *M. Diegel*¹, *R. Mattheis*¹, *E. Halder*² and *M. Scherzinger*² *1. Photonic Instrumentation, Institute of Photonic Technology, Jena, Germany; 2. Novotechnik Stiftung & Co. Messwertaufnehmer OHG, Ostfildern, Germany*

**TUESDAY
AFTERNOON
2:00**

ROOM 307

**Session BE
MICROMAGNETICS AND MULTISCALE
MODELING**

Thomas Schrefl, Session Chair
University of Sheffield
Vitaliy Lomakin, Session Chair
University of California, San Diego

- 2:00 BE-01. Spectral micromagnetic approach in the analysis of magnetization reversal processes.** *M. d'Aquino*¹, *C. Serpico*², *G. Bertotti*³, *T. Schrefl*⁴ and *I.D. Mayergoyz*⁵ *1. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 3. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 4. St. Pölten University of Applied Sciences, St. Pölten, Austria; 5. ECE Dept. and UMIACS, University of Maryland, College Park, MD, USA*
- 2:15 BE-02. Kronecker product approximation of demagnetizing tensors for micromagnetics.** *A. Goncharov*¹, *T. Schrefl*^{2,1}, *G. Hrkac*¹, *J. Dean*¹, *S. Bance*¹ and *A. Bashir*¹ *1. Engineering Materials, The University of Sheffield, Sheffield, United Kingdom; 2. St. Poelten University of Applied Sciences, St. Poelten, Austria*
- 2:30 BE-03. Non-uniform grid algorithm with centroid compensated interpolation for fast evaluation of magnetostatic fields.** *B. Livshitz*¹ and *V. Lomakin*¹ *1. ECE, CMRR, UCSD, San Diego, CA, USA*

- 2:45 BE-04. Graphics processing unit based multi-level non-uniform grid algorithm for fast evaluation of magnetostatic fields.** *S. Li*^{1,2}, *B. Livshitz*^{1,2} and *V. Lomakin*^{1,2} *1. University of California, San Diego, La Jolla, CA, USA; 2. CMRR, UCSD, La Jolla, CA, USA*
- 3:00 BE-05. Comparison of numerical and analytical calculation of the attempt frequency for nanomagnets.** *J. Schratzberger*¹, *D. Suess*¹, *J. Lee*¹ and *J. Fidler*¹ *1. Institut of Solid State Physics, Vienna, Austria*
- 3:15 BE-06. A novel method for the micro magnetic simulation of interface coupling.** *J.S. Dean*¹, *T. Schrefl*¹, *A. Kovacs*², *A. Kohn*², *G. Hrkac*¹, *A. Goncharov*¹, *M.A. Bashir*¹ and *S. Bance*¹ *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. Department of Materials, University of Oxford, Oxford, United Kingdom*
- 3:30 BE-07. Magnetic friction and the role of temperature.** *M.P. Magiera*¹, *D.E. Wolf*¹ and *U. Nowak*² *1. Department of Physics, University of Duisburg-Essen, Duisburg, Germany; 2. Department of Physics, University of Konstanz, Konstanz, Germany*
- 3:45 BE-08. Impact of anisotropic exchange on M-H loops: application to ECC media.** *M. Plumer*¹ and *M. Rogers*¹ *1. Physics, Memorial University of Newfoundland, St John's, NF, Canada*
- 4:15 BE-09. Influence of inhomogeneous current distributions on the motion of magnetic vortices.** *S. Bohlens*¹, *B. Krüger*¹, *M. Najafi*², *U. Merkt*² and *D. Pfannkuche*¹ *1. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany; 2. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*
- 4:30 BE-10. Proposal for a standard problem for micromagnetic simulations including spin-transfer torque.** *M. Najafi*^{1,2}, *B. Krüger*³, *S. Bohlens*³, *M. Franchin*⁴, *H. Fangohr*⁴, *A. Vanhaverbeke*⁵, *R. Allenspach*⁵, *M. Bolte*^{1,2}, *U. Merkt*², *D. Pfannkuche*³, *D. Möller*¹ and *G. Meier*² *1. Arbeitsbereich Technische Informatiksysteme, Fachbereich Informatik, Universität Hamburg, Hamburg, Germany; 2. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 3. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany; 4. School of Engineering Sciences, University of Southampton, Southampton, United Kingdom; 5. IBM Zürich Research Laboratory, Rüschlikon, Switzerland*

4:45 BE-11. Fast micromagnetic simulation by cell broadband engine. *T. Sato*¹ and *Y. Nakatani*¹ *1. Computer Science, The University of Electro-Communications, Tokyo, Japan*

5:00 BE-12. Dependence of depinning ability of domain-wall on its domain configuration at the notch in magnetic nanostripes. *S. Huang*¹ and *C. Lai*¹ *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

TUESDAY

ROOM 308

AFTERNOON

2:00

Session BF

FERRITES (I)

Mohammed Afsar, Session Chair
Tufts University

2:00 BF-01. Local magnetism and structural distortions in BaIrO₃ induced by Sr-doping and high pressure. *M.A. Laguna-Marco*¹, *D. Haskel*¹, *N. Souza-Neto*¹, *Y. Tseng*¹, *G. Cao*² and *S. Chikara*² *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL, USA; 2. Department of Physics and Astronomy, University of Kentucky, Lexington, KY, USA*

2:15 BF-02. Multifunctional nanofluids of bismuth ferrite. *H. Jawaharlal*¹ *1. Department of Physics, Advanced Materials Lab, National Institute of Technology, Tiruchirappalli, Tiruchirappalli, Tamilnadu, India*

2:30 BF-03. Imaging capabilities of bismuth iron garnet films with near zero growth-induced uniaxial anisotropy. *S. Tkachuk*¹, *V.J. Fratello*², *C. Krafft*³ and *I.D. Mayergoyz*^{1,4} *1. Electrical and Computer Engineering, University of Maryland, College Park, MD, USA; 2. Integrated Photonics, Inc, Hillsborough, NJ, USA; 3. Laboratory for Physical Sciences, University of Maryland, College Park, MD, USA; 4. UMIACS, University of Maryland, College Park, MD, USA*

2:45 BF-04. Photo-magnetic effects induced in ferrites with long-time memory at room temperature. *E.Z. Katsnelson*¹ and *M.M. Chervinsky*² *1. Physics and Astronomy, Northwestern University, Evanston, IL, USA; 2. D.I. Mendeleev Institute for Metrology, S. Peterburg, Russia*

- 3:00 BF-05. Thickness dependent anomalous magnetic behavior in Co-ferrite thin film.** S.C. Sahoo¹, V. Narayanan², S. Prasad^{1,4}, M. Bohra¹ and K. Ramanathan³
1. Department of Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Metallurgical Eng. and Matls. Sci., Indian Institute of Technology Bombay, Mumbai, India; 3. Groupe d'étude de la matière condensée, CNRS/ Université de Versailles-St-Quentin, Versailles, France; 4. Director, Indo-French Centre for the Promotion of Advanced Research, New Delhi, India
- 3:15 BF-06. Loss and permeability dependence on temperature in soft ferrites.** F. Fiorillo¹, C. Beatrice¹, M. Coisson¹ and L. Zhemchuzhna²
1. INRIM, Torino, Italy; 2. Politecnico di Torino, Torino, Italy
- 3:30 BF-07. An anomaly in ferromagnetic resonance of single crystal compound of Sr_{1.5}Ba_{0.5}Zn₂Fe₁₂O₂₂.** M.N. Afsar¹ and M. Obol¹
1. ECE Department, Tufts University, Medford, MA, USA
- 3:45 BF-08. A novel method of evaluating frequency response of permeabilities in the c-plane and along the c-axis of Z-type hexagonal ferrite.** T. Kato¹, H. Mikami¹ and S. Noguchi¹
1. Advanced Research Laboratory, Hitachi Metals, Ltd., Kumagaya, Saitama, Japan
- 4:00 BF-09. Low-loss magnetodielectric spinel-ferrite based ceramic with constant permeability and permittivity in the UHF range.** A. Thakur¹, J. Mattei¹, A. Chevalier¹ and P. Queffelec¹
1. Laboratory of Information, Communication Sciences and Technologies, Brest University, Brest, France
- 4:15 BF-10. Millimeter-wave transmittance and reflectance measurements on pure and diluted carbonyl iron ferrites.** K.A. Korolev^{1,2}, S. Chen¹ and M. Afsar¹
1. EECS, Tufts University, Medford, MA, USA; 2. Extremely High Frequency Medical and Technical Association, Moscow, Russia
- 4:30 BF-11. Validation of a new nonlinear model inductor with a ferrite RM-type core by means of 2D finite element analysis.** R. Salas¹ and J. Pleite¹
1. Tecnologia Electronica, Universidad Carlos III de Madrid, Leganés, Spain
- 4:45 BF-12. Electromagnetic noise suppression of LSI using ferrite film-plated lead frame.** K. Kondo¹, O. Takahata¹, H. Ono¹, S. Yoshida¹ and M. Yamaguchi²
1. R&D Unit, NEC TOKIN Corporation, Sendai Miyagi, Japan; 2. Tohoku University, Sendai, Miyagi, Japan

TUESDAY
AFTERNOON
2:00

ROOM 309-310

Session BG

FE-GA MATERIALS AND APPLICATIONS

Eric Summers, Session Chair
ETREMA Products, Inc.

- 2:00 BG-01. Measurement of intrinsic magnetostriction in Fe-Ga alloys. (Invited) S. Pascarelli¹ and M.P. Ruffoni¹ 1. European Synchrotron Radiation Facility, Grenoble, France**
- 2:30 BG-02. Highly magnetostrictive nanoclusters in FeGa alloys. C. Mudivarthi¹, M. Laver^{1,3}, J. Cullen¹, A.B. Flatau^{1,2} and M. Wuttig¹ 1. Materials Science and Engineering, University of Maryland, College Park, MD, USA; 2. Department of Aerospace Engineering, University of Maryland, College Park, MD, USA; 3. NIST Center for Neutron Research (NCNR), National Institute of Standards and Technology (NIST), Gaithersburg, MD, USA**
- 2:45 BG-03. Determination of structural anisotropy of stress-annealed Fe-Ga. Y. Du^{1,2}, R. McQueeney^{1,2}, M. Wun-Fogle³, J. Restorff³, A. Clark⁴, M. Huang², Q. Xing² and T. Lograsso² 1. Iowa State University, Ames, IA, USA; 2. Ames Laboratory, Ames, IA, USA; 3. Naval Surface Warfare Center, Carderock Division, West Bethesda, MD, USA; 4. Clark Associates, Adelphi, MD, USA**
- 3:00 BG-04. Comparing different growth parameter sets for the fabrication of Fe-Ga thin films. A. Javed¹, M.R. Gibbs¹ and N.A. Morley¹ 1. Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom**
- 3:15 BG-05. The effect of field annealing on highly textured polycrystalline Galfenol strips. J. Yoo¹, S.M. Na¹, J.B. Restorff², M. Wun-Fogle² and A.B. Flatau¹ 1. Aerospace, University of Maryland, College Park, MD, USA; 2. Naval Surface Warfare Center, Carderock, West Bethesda, MD, USA**
- 3:30 BG-06. Galfenol alloying additions and the effects on uniaxial anisotropy generation. E.M. Summers¹, R. Meloy¹ and J. Restorff² 1. ETREMA Products, Inc., Ames, IA, USA; 2. Naval Surface Warfare Center, West Bethesda, MD, USA**
- 3:45 BG-07. Precipitation of L12 phase in magnetostrictive Fe₈₁Ga₁₉ alloy. J. Zhang¹, T. Ma¹ and M. Yan¹ 1. Materials Science and Engineering, Zhejiang University, Hangzhou, China**

- 4:00 BG-08. Miniature spherical motor using magnetostrictive bimorph. (Invited)** *T. Ueno*¹ and *T. Higuchi*¹ *1. University of Tokyo, Tokyo, Japan*
- 4:30 BG-09. Magnetoelasticity of Fe_{100-x}Ge_x (5 < x < 18) single crystals from 77 K to 300 K.** *G. Petculescu*¹, *J. LeBlanc*¹, *M. Wun-Fogle*², *J.B. Restorff*², *W.C. Burton*³, *J.X. Cao*⁴, *R.Q. Wu*⁴, *W.M. Yuhasz*⁵, *T.A. Lograsso*⁵ and *A.E. Clark*⁶ *1. University of Louisiana, Lafayette, LA, USA; 2. Naval Surface Warfare Center, Carderock Division, West Bethesda, MD, USA; 3. Montgomery Blair Magnet Program, Silver Spring, MD, USA; 4. University of California, Irvine, CA, USA; 5. Ames Laboratory, Ames, IA, USA; 6. Clark Associates, Adelphi, MD, USA*
- 4:45 BG-10. Magnetostriction evaluation of Fe-V polycrystalline alloys.** *C. Bormio-Nunes*¹, *C.T. Santos*¹ and *L. Ghivelder*² *1. Escola de Engenharia de Materiais, Universidade de Sao Paulo, Lorena, Sao Paulo, Brazil; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil*

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BP
MAGNETIC RECORDING: PHYSICS
AND CHANNEL
(Poster Session)**

Mel Gomez, Session Chair
Dept of Electrical Engineering
Charles Krafft, Session Chair
Lab for Physical Science

BP-01. Perpendicular anisotropy master medium in magnetic printing for writing high density servo signal. *N. Suhaimi*¹, *M. Nakazawa*¹, *H. Konishi*¹, *T. Komine*¹ and *R. Sugita*¹ *1. Media and Telecommunications Engineering, Ibaraki University, Ibaraki, Japan*

BP-02. Read channel modeling and detector designs for two-dimensional magnetic recording (TDMR). *A. Krishnan*¹, *R. Radhakrishnan*¹ and *B. Vasic*¹ *1. Department of Electrical and Computer Engineering, University of Arizona, Tucson, AZ, USA*

BP-03. Layered LDPC decoding over GF(q) for magnetic recording channel. *A. Risso*¹ *1. STMicroelectronics, San Diego, CA, USA*

BP-04. Design of multirate low pass filter to attenuate mechanical resonances in HDDs. Q. Jia¹ and S. Yoshida²
 1. Storage Mechanics Lab, Hitachi Asia Ltd, Singapore, Singapore; 2. Mechanical Engineering Research Laboratory, Hitachi Ltd, Hitachinaka, Japan

BP-05. Proximity detection for estimating fly height using frequency characteristics in perpendicular magnetic recording systems. J. Lee¹ 1. Samsung Electronics Co., LTD., Suwon, Kyeonggi-Do, Korea, South

BP-06. A novel thermal asperity suppression for perpendicular recording channels. P. Kovintavewat¹, S. Koonkarnkhai² and S. Thamakam³ 1. Data Storage Technology Research Unit, Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Mueng District, Nakhon Pathom, Thailand; 2. Department of Electrical Engineering, King Mongkut's University of Technology North Bangkok, Bangsue, Bangkok, Thailand; 3. Asia Drive Launch Product Engineer, Seagate Technology (Thailand) Ltd., Sungnoen, Nakhon Ratchasima, Thailand

BP-07. An inter-track interference mitigation technique using partial ITI estimation from iterative processing in patterned media storage. L.M. Myint¹, K. Vichienechom², P. Tantaswad¹ and P. Supnithi² 1. School of Technology, Shinawatra University, Pathumthani, Thailand; 2. Faculty of Engineering and I/U CRC in Data Storage Technology and Applications, King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand

BP-08. Seek and track-follow for scanning probe microscopy based data storage. C. Lee¹, C. Chung² and H. Nam³ 1. Electrical and Computer Engineering, Hanyang University, Seoul, Korea, South; 2. Electrical Engineering, Hanyang University, Seoul, Korea, South; 3. Advanced Research Institute, LG Electronics, Seoul, Korea, South

BP-09. RS plus LDPC codes for perpendicular magnetic recording. (Withdrawn) W. Chang¹ and J.R. Cruz¹ 1. Electrical and Computer Engineering, The University of Oklahoma, Norman, OK, USA

BP-10. Error probabilities of 1d models for TDMR. H. Kamabe¹ 1. Information Science, Gifu University, Gifu, Gifu, Japan

BP-11. Effect of disk on ESD performance of hard disk drives with tunneling magnetoresistive (TMR) heads. E. Jang¹ 1. HDD R&D, Samsung Information Systems America, San Jose, CA, USA

BP-12. Construction of quasi-cyclic LDPC codes and the performance on the PR4-equalized MRC channel. X. Liu¹, W. Zhang¹, Z. Fan¹ and H. Cheng¹ 1. Dept. of Electronics & Comm. Engr., Sun Yat-Sen University, Guangzhou, Guangdong, China

BP-13. Servo-pattern and guard-band forming in perpendicular discrete-track media by ion irradiation. *J. Yasumori*^{1,2}, *Y. Sonobe*¹, *S.J. Greaves*² and *H. Muraoka*² *1. MD division, HOYA corporation, Akishima, Tokyo, Japan; 2. RIEC, Tohoku univ., Sendai, Miyagi, Japan*

BP-14. Statistical model for transitions of magnetization distribution in perpendicular magnetic recording. *Z. Liu*¹, *B. Chen*¹, *S. Zhang*¹, *K. Tan*¹ and *H. Wang*¹ *1. Data Storage Institute, Singapore, Singapore*

BP-15. Effect of head field gradient on nonlinear transition shift in perpendicular media. *S. Li*¹, *T. Pan*¹, *H. Mendez*¹, *A. Torabi*² and *S. Mao*¹ *1. HMO, Western Digital, Fremont, CA, USA; 2. WDSJ, Western Digital, Fremont, CA, USA*

BP-16. Effect of ellipsoidal AC field on microwave assisted magnetic switching. *M. Igarashi*¹, *Y. Suzuki*¹, *H. Miyamoto*¹, *Y. Maruyama*² and *Y. Shiroishi*² *1. Hitachi, Ltd., Kokubunji, Tokyo, Japan; 2. Hitachi Global Storage Technologies, Odawara, Kanagawa, Japan*

BP-17. Stability of exchange-coupled media: Kramers-Brown method. *R. Zhu*¹ and *P.B. Visscher*¹ *1. Physics Department and MINT Center, University of Alabama, Tuscaloosa, AL, USA*

BP-18. Simulation of magnetic cluster formation with localized exchange interaction model. *H. Endo*¹, *Y. Uesaka*¹, *Y. Nakatani*², *N. Hayashi*³ and *H. Fukushima*⁴ *1. Nihon University, Koriyama, Fukushima, Japan; 2. University of Electro-Communications, Choufu, Japan; 3. Individual capacity, Tokyo, Japan; 4. Individual capacity, Chiba, Japan*

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BQ
MAGNETIC TUNNEL JUNCTIONS
(Poster Session)**

**Yasushi Endo, Session Chair
Tohoku University
Bernard Dieny, Session Chair
CEA/Grenoble**

BQ-01. Structural and magnetical control of CoFeB/Ta/NiFe free layer in MgO-MTJ. *M. Sato*¹, *S. Umehara*¹, *T. Ibusuki*¹, *T. Miyajima*¹ and *S. Eguchi*¹ *1. Magnetic Devices Lab., Fujitsu Laboratories Ltd., Atsugi, Japan*

BQ-02. Reducing roughness of insulator barrier layer in MTJs by changing crystallographic orientation of IrMn pinning layer. *T. Ibusuki*¹, *S. Umehara*¹, *S. Eguchi*¹ and *M. Sato*¹ *1. Magnetic Device Lab., Fujitsu Laboratories Limited, Morinosatowakamiya 10-1 Atsugi, Kanagawa, Japan*

BQ-03. Study on the appearance of thermal and spin-torque noise in TMR read heads. *Y. Endo*¹, *T. Abe*¹, *M. Suzuki*¹ and *M. Yamaguchi*¹ *1. Department of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

BQ-04. Consequences of interfacial Fe-O bonding and disorder in epitaxial Fe/MgO/Fe(001) magnetic tunnel junctions. *F. Bonell*¹, *S. Andrieu*¹, *A.M. Bataille*² and *C. Tiusan*¹ *1. Nanomagnetism and Spintronics Team, Laboratoire de Physique des Matériaux - Institut Jean Lamour - Université Henry Poincaré - UMR 7556, Vandoeuvre-lès-Nancy, France; 2. IRAMIS/LLB, CEA/Saclay, Gif-sur-Yvette, France*

BQ-05. TEM studies of the dielectric breakdown in MgO based magnetic tunnel junctions. *A. Thomas*¹, *V. Drewello*¹, *M. Schaefer*¹, *A. Weddemann*¹, *G. Reiss*¹, *G. Eilers*², *M. Muenzenberg*², *K. Thiel*² and *M. Seibt*² *1. D2 Physics, Bielefeld University, Bielefeld, Germany; 2. IV. Physikalisches Institut, Goettingen University, Goettingen, Germany*

BQ-06. Rock salt type ZnO(001)-based magnetic tunnel junctions with RA of 0.5 $\Omega\mu\text{m}^2$. *K. Sunaga*¹, *K. Komagaki*¹, *K. Noma*¹, *A. Furuya*², *T. Miyajima*³, *H. Kanai*¹, *K. Kobayashi*¹ and *Y. Uehara*¹ *1. Advanced Head Technology Department, Head Division, Storage Products Group, FUJITSU LIMITED, Nagano, Japan; 2. Simulation Technology Development Division, FUJITSU Advanced Technologies Ltd, Kawasaki, Japan; 3. Devices and Materials Laboratories, FUJITSU Laboratories Ltd, Atsugi, Japan*

BQ-07. Effect of the annealing and the barrier-layer thickness on the magnetic properties in MgO-barrier-based magnetic tunnel junctions. *Y. Chang*^{1,2}, *A. Canizo-Cabrera*², *V. Garcia-Vazquez*³ and *T. Wu*^{2,4} *1. Graduate School of Engineering Science and Technology, Doctoral Program, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 2. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 3. Instituto de Física Luis Rivera Terrazas, Universidad Autónoma de Puebla, Puebla, Pue., Mexico; 4. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan*

BQ-08. Influence of pinholes on MgO-tunnel junction barrier parameters obtained from current-voltage characteristics. *J. Ventura*¹, *J.M. Teixeira*¹, *J.P. Araujo*¹, *J.B. Sousa*¹, *R. Ferreira*², *P.P. Freitas*², *J. Langer*³, *B. Ocker*³ and *W. Maass*³ *1. IFIMUP, Porto, Portugal; 2. INESC-MN, Lisbon, Pakistan; 3. Singulus Technologies, Main, Germany*

BQ-09. Spin-flip effects in a ferromagnetic/normal-metal island/ ferromagnetic double tunnel junction system. *M. Ma*¹ and *M. Jalil*¹ *1. Department of Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore*

BQ-10. The effect of etch damage on the tunneling magnetoresistance, temperature stability, and spin transfer switching of MgO magnetic tunnel junctions. *K. Kim*¹, *I. Hwang*¹, *K. Kim*¹ and *S. Seo*¹ *1. Semiconductor Devices Laboratory, Samsung Advanced Institute of Technology (SAIT), Yongin-si, Gyeonggi-do, Korea, South*

BQ-11. Bias dependent tunneling magnetoresistance in magnetic tunnel junctions with a nonsymmetric insulating barrier. *J. Feng*^{1,2}, *Q. Ma*^{1,2}, *J. Chen*^{1,2}, *G. Feng*¹, *H. Wei*², *J. Coey*¹ and *X. Han*² *1. CRANN and School of Physics, Trinity College, Dublin 2, Ireland; 2. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

BQ-12. The effect of pressure and substrate heating during magnesium oxide deposition on the properties of CoFeB/MgO magnetic tunnel junctions. *K. Oguz*¹, *T. Niizeki*¹ and *J. Coey*¹ *1. CRANN and School of Physics, Trinity College, Dublin, Ireland*

BQ-13. Tunneling anisotropic magneto-resistance in an epitaxial CoFe/n-GaAs junction. *T. Uemura*¹, *Y. Imai*¹, *M. Harada*¹, *K. Matsuda*¹ and *M. Yamamoto*¹ *1. Hokkaido University, Sapporo, Japan*

BQ-14. Interface roughness effect of the bias voltage dependence of tunneling magnetoresistance ratio in double-barrier magnetic tunnel junction. *J. Rhee*¹, *S. Lee*¹, *J. Hwang*¹, *N. Lee*¹, *H. Yim*¹, *M. Kim*¹, *B. Chun*², *T. Kim*³, *Y. Kim*⁴, *S. Lee*⁵ and *D. Hwang*⁵ *1. Physics, Sookmyung Women's University, Seoul, Korea, South; 2. CRANN, School of Physics, Trinity College, Dublin 2, Ireland; 3. Nanotechnology and Advanced Materials Engineering, Sejong University, Seoul, Korea, South; 4. Materials Science and Engineering, Korea University, Seoul, Korea, South; 5. Oriental Biomedical Engineering, Sangji University, Seoul, Korea, South*

BQ-15. Reduction of critical switching current density of MgO-based magnetic tunnel junctions with a composite free layer by controlling the annealing temperature.

W. Tsai¹, C. Lai¹, Y. Wang¹, Y. Kao¹ and C. Lin¹ 1. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

BQ-16. Magnetic properties and spin polarization of $\text{Fe}_2\text{Cr}_{1-x}\text{M}_x\text{Si}$ (M = Ti, V) Heusler alloys.

N. Fukatani¹, C. Shishikura¹, K. Yamaji¹, Y. Takeda¹, H. Asano¹, A. Rajanikanth², K. Hono² and S. Ishida³ 1. Department of Material Science, Graduate School of Engineering, Nagoya university, Nagoya, Japan; 2. National Institute for Materials Science (NIMS), Tsukuba, Japan; 3. Department of Physics, Faculty of Science, Kagoshima university, Kagoshima, Japan

BQ-17. Influence of frequency and dc bias on magnetoimpedance behaviors in double-MgO magnetic tunnel junctions.

C. Lin¹, K. Kuo¹, C. Lin¹, G. Chern¹, C. Chao², J. Wu², L. Horng², T. Wu³, C. Huang⁴, H. Ohyama⁵, S. Isogami⁵, M. Tsunoda⁵ and M. Takahashi⁵ 1. Taiwan SPIN Research Center, National Chung Cheng University, Chia-Yi, Taiwan; 2. Taiwan SPIN Research Center, National Changhua University of Education, Chang-Hua, Taiwan; 3. Taiwan SPIN Research Center, National Yunlin University of Science & Technology, Yun-Lin, Taiwan; 4. National Taiwan Normal University, Taipei, Taiwan; 5. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

Session BR

**FILMS, NANOSTRUCTURES, AND DMS
(Poster Session)**

Randy Dumas, Session Chair
University of California, Davis

BR-01. Magnetization reversal mechanism and microstructure refinement of FePt (001) films with SiO₂ capping layer.

D. Wei¹ and Y. Yao² 1. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan

BR-02. Magnetic and transport properties of

La_{0.7}Sr_{0.3}MnO₃/Nd_{0.6}Ca_{0.4}MnO₃ superlattices. J. Lin¹, D. Hsu¹, C. Chiang², W. Chan² and T. Han³ 1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Physics, Tamkang University, Taipei Province, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan

BR-03. Microstructure and magnetic properties of

CoFe₂O₄ thin films deposited on Si Substrate with Fe₃O₄ underlayer. Z. Zhong¹, H. Zhang¹, X. Tang¹, Y. Jing¹ and K. Sun¹ 1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China

BR-04. The fabrication of high coercivity τ -phase Mn-Al

films. C. Duan¹, X. Qiu³, X. Zhang¹, B. Ma^{1,2}, Z. Zhang¹ and Q. Jin¹ 1. Department of Optical Science and Engineering, Fudan University, Shanghai, Shanghai, China; 2. Department of Electrical and Computer Engineering, The Center for Micromagnetic and Information, Minneapolis, MN, USA; 3. Department of Physics, Fudan University, Shanghai, Shanghai, China

BR-05. Theoretical and experimental investigation of dipolar interactions in coupled nanomagnets.

S. Jain¹, Y. Ren¹ and A.O. Adeyeye¹ 1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore

BR-06. Magnetic properties of dumbbell-shaped

nanostructures formed by self assembly methods. V. Ng¹ and L.K. Verma¹ 1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore

BR-07. Structure, properties and the origin of room temperature ferromagnetism in Si implanted with Mn.

A.F. Orlov¹, L.A. Balagurov¹, I.V. Kulemanov¹, Y.N. Parkhomenko¹, N.S. Perov², A.V. Kartavykh³, V.I. Vdovin³, A. Sapelkin⁴, V.T. Bublik⁵, K.D. Shcherbachev⁵, V.V. Saraikin⁶, A. Rogalev⁷, A. Smekhova⁷, Y.A. Agafonov⁸ and V.I. Zinenko⁸ 1. Physics, State Institute for Rare Metals, Moscow, Russia; 2. Moscow State University, Moscow, Russia; 3. Institute for Chemical Problems of Microelectronics, Moscow, Russia; 4. Queen Mary University of London, London, United Kingdom; 5. Moscow Institute of Steel and Alloys, Moscow, Russia; 6. State Research Institute of Physical Problems, Moscow, Russia; 7. European Synchrotron Radiation Facility, Grenoble, France; 8. Institute of Microelectronics Technology RAS, Chernogolovka, Russia

BR-08. CuO nanoparticles as a room temperature dilute magnetic giant dielectric material. *N.R. Gade*¹ and *J.W. Chen*¹ *1. Physics, National Taiwan University, Taipei, Taipei, Taiwan*

BR-09. Investigation on the magnetic and transport properties of Mn-doped CuO thin films. *W. Zou*¹, *S. Wang*¹, *Z. Lu*², *H. Lu*¹, *F. Zhang*¹ and *Y. Du*¹ *1. Phys. Dept., Nanjing University, Nanjing, Jiangsu, China; 2. Physics Department, Southeast University, Nanjing, Jiangsu, China*

BR-10. Room temperature ferromagnetism in carbon-doped nanocrystalline TiO₂. *Q. Wen*¹, *H. Zhang*¹, *Q. Yang*¹, *D. Gu*¹, *W. Wang*² and *J. Xiao*² *1. University of Electronic Science and Technology of China, State Key Laboratory of Electronic Films and Integrated Devices, Chengdu, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE, USA*

BR-11. Negative coercivity and spin configurations in Ni/TbFeCo/Ni trilayers. *X. Liu*¹, *T. Kanazawa*¹, *S. Li*¹, *H. Matsuoka*¹ and *A. Morisako*¹ *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BS
CRYSTALLINE, NANOCRYSTALLINE,
AND AMORPHOUS MATERIALS (II)
(Poster Session)**

Arcady Zhukov, Session Chair
Universidad de País Vasco

BS-01. Ferromagnetic resonance linewidth in stressed CoFeSiB microwires. *K.D. Sossmeyer*¹, *F. Beck*¹, *R.C. Gomes*¹, *L.F. Schelp*¹ and *M. Carara*¹ *1. Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*

BS-02. Kerr microscopy study of magnetic domain structure changes in amorphous microwires. *A. Chizhik*¹, *A. Zhukov*¹, *A. Stupakiewicz*², *A. Maziewski*², *J. Blanco*³ and *J. Gonzalez*¹ *1. Dpto. Física de Materiales, Universidad del País Vasco, San Sebastian, Spain; 2. Laboratory of Magnetism, University of Białystok, Białystok, Poland; 3. Dpto. Física Aplicada I, EUPDS, Universidad del País Vasco, San Sebastian, Spain*

BS-03. Complex surface magnetic structure and GMI response in amorphous microwires. T. Óvári¹, S. Corodeanu¹ and H. Chiriac¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

BS-04. Domain wall propagation in nanocrystalline glass-coated microwires. H. Chiriac¹, M. Tibu¹ and T. Óvári¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

BS-05. Effects of thermal oxidation on the high-frequency magnetic properties of Fe-based nanocrystalline alloy powder cores. Y. Kim¹ and K. Jee¹ *1. Advanced Metals Research Center, Korea Institute of Science and Technology, Seoul, Korea, South*

BS-06. Statistical properties of Barkhausen noise in FeSiB films. F. Bohn¹, M.A. Corrêa¹, M. Carara¹ and R.L. Sommer² *1. Universidade Federal de Santa Maria, Santa Maria, RS, Brazil; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, RJ, Brazil*

BS-07. CoFeSiO/SiO₂ multilayer granular film with very narrow ferromagnetic resonant linewidth. K. Ikeda^{1,2}, T. Suzuki¹ and T. Sato² *1. R&D Center, Taiyo Yuden Co., Ltd., Gunma, Japan; 2. Spin Device Technology Center, Shinshu University, Nagano, Japan*

BS-08. Magnetic properties of Fe-based amorphous powder cores with high magnetic flux density. I. Otsuka^{1,2}, T. Kadomura¹, K. Ishiyama² and M. Yagi³ *1. EPSON ATMIK CORPORATION, Hachinohe, Aomori, Japan; 2. Research Institute of Electrical Communication, Tohoku Univ., Aoba-ku, Sendai, Japan; 3. Formerly, Energy Electronics Lab., Sojo Univ., Ikeda, Kumamoto, Japan*

BS-09. Synthesis and magnetic properties of electrospun FeNi nanofiber arrays. J. Park¹, S. Kim¹ and B. Ju² *1. Center for Energy-Materials research, KIST, Seoul, Korea, South; 2. School of Electrical Engineering, College of Engineering, Korea University, Seoul, Korea, South*

BS-10. Production of magnetically soft submicron particles from an aqueous solution and characterization. Y. Shimada¹, Y. Endo¹, M. Yamaguchi¹, S. Okamoto², O. Kitakami², Y. Imano³, H. Matsumoto³ and S. Yoshida³ *1. Electrical and Communication Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. IMRAM, Tohoku University, Sendai, Miyagi, Japan; 3. NEC-TOKIN Co., Sendai, Miyagi, Japan*

BS-11. Influence of oxide layer on high frequency properties of sub-micron sized iron-based alloy particles.

D. Kodama¹, K. Shinoda¹, Y. Shimada¹, M. Yamaguchi¹, K. Tohji¹ and B. Jeyadevan¹ 1. Tohoku Univ., Sendai, Japan

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BT
SOFT MAGNETIC MATERIALS AND
APPLICATIONS
(Poster Session)**

Nian Sun, Session Chair
Northeastern University

BT-01. Design of a new electromagnetic actuator which can produce three-dimensional forces.

S. Yang¹ and C. Huang¹ 1. Electrical Engineering, National Taipei University of Technology, Taipei, Taiwan

BT-02. Application of a flexible film type EMI filter for high-frequency noise suppression on the signal transmission cable.

K. Lee², I. Byun² and S. Kim¹ 1. Center for Energy-Materials research, KIST, Seoul, Korea, South; 2. R&D Center, Chang Sung Corporation, Incheon, Korea, South

BT-03. Investigation on magnetic design in electrodeless discharged lamp.

T. Yanai¹, A. Yonemaru¹, K. Takahashi¹, M. Nakano¹, H. Ogasawara², A. Sato², H. Kakehashi² and H. Fukunaga¹ 1. Electrical and Electronic Engineering, Nagasaki University, Nagasaki, Nagasaki, Japan; 2. Lighting R&D Center, Panasonic Electric Works, Ltd., Kadoma, Osaka, Japan

BT-04. Magnetic material identification in geometries with non uniform electromagnetic fields using global and local magnetic measurements.

A. Abdallah¹, P. Sergeant^{1,2}, G. Crevecoeur¹, L. Vandenbossche¹ and L. Dupre¹ 1. Department Electrical Energy, Systems and Automation (EESA) - Electrical Energy Laboratory (EELAB), Ghent University, Gent, Belgium; 2. Department of Electrotechnology, Faculty of Applied Engineering Sciences, University College Ghent, Gent, Belgium

BT-05. On the characterization of a grain oriented steel assembly for the development of high efficiency AC rotating electrical machines. *S.F. Lopez*¹, *J.F. Brudny*¹, *B. Cassoret*¹ and *J.N. Vincent*² *1. FSA Béthune Université d'Artois, Béthune, France; 2. ThyssenKrupp E.S, Isbergues, France*

BT-06. Effect of tension coating on iron loss at middle frequencies in thin-gauged 3%Si-Fe strips. *S. Cho*¹, *S. Kim*¹, *J. Soh*¹ and *S. Han*² *1. Korea Electric Power Research Institute, Daejeon, Korea, South; 2. Chungnam National University, Daejeon, Korea, South*

BT-07. The use of soft magnetic composite material in switched reluctance machine — a study on magnetic, thermal, and vibration characterization.

*K.K. Vijayakumar*¹, *K.R. Keyan*¹ and *A.R. Rengasamy*² *1. Electrical Engineering, Anna University, Chennai, Tamil Nadu, India; 2. EEE, SSN college of engineering, Chennai, Tamilnadu, India*

BT-08. Magnetic dipole modeling combined with material sensitivity analysis for solving an inverse problem of thin ferromagnetic sheet. *D. Kim*¹, *G. Jeung*¹, *C. Yang*¹, *H. Chung*¹ and *S. Lee*¹ *1. school of Electrical Engineering and Computer Science, Kyungpook National University, Daegu, Korea, South*

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BU
ENERGY CONVERSION
(Poster Session)**

Daniele Davino, Session Chair
University of Sannio
Siu Lau Ho, Session Chair
H.K. Polytechnic University

BU-01. Optimal design of a double layer permanent magnet dual mechanical port machine for wind power application. *X. Sun*^{1,2}, *M. Cheng*¹, *L. Xu*² and *W. Hua*¹ *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Department of Electrical & Computer Engineering, The Ohio State University, Columbus, OH, USA*

BU-02. Maximum power point tracking control of a double-stator cup-rotor PM wind power generator. S. Niu¹, K. Chau¹ and X. Zhang¹ 1. *Depart. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

BU-03. Characteristics of the linear synchronous generator using energy from mechanical vibration in the vehicle application. S. Ohashi¹ 1. *Kansai University, Osaka, Japan*

BU-04. A new linear transverse flux permanent magnet generator for wave energy conversion. W. Li¹, K. Chau¹, Y. Gong¹ and J. Jiang¹ 1. *Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

BU-05. Design and analysis of new fan motors for low-profile cooling applications. L. Hsu², G. Yan¹ and M. Tsai² 1. *Micro/Meso Mechanical Manufacturing Section, Metal Industries Research & Development Centre, Kaohsiung, Taiwan;* 2. *Electric Motor Technology Research Center, National Cheng Kung University, Tainan, Taiwan*

BU-06. Behavior of a novel thrust magnetic bearing with a cylindrical rotor on high speed rotation. K. Hijikata¹, M. Takemoto¹, S. Ogasawara¹, A. Chiba² and T. Fukao² 1. *Division of Systems Science and Informatics, Hokkaido University, Sapporo, Hokkaido, Japan;* 2. *Department of Electrical Engineering, Tokyo University of Science, Noda, Chiba, Japan*

BU-07. Design and analysis of low-speed, direct-coupled permanent magnet generators for wind power applications. S. Jang¹, J. Kim¹, J. Choi¹, K. Ko¹, D. You¹ and I. Kim² 1. *Chungnam National University, Daejeon, Korea, South;* 2. *Hoseo University, Cheonan, Korea, South*

BU-08. Rotor shape design of IPM motor for a reduction of vibration generated by electromagnetic force. G. Kang¹, J. Hur² and B. Kim² 1. *GEM-TECH CO, Changwon, Gyeongnam, Korea, South;* 2. *School of Electrical Engineering, University of Ulsan, Ulsan, Korea, South*

BU-09. Design of tubular type permanent magnet linear synchronous generator for wave power generation. O. Gwon¹, D. Lee¹, K. Jang¹ and G. Kim¹ 1. *Chang-Won national university, Chang-Won, Korea, South*

BU-10. Cogging torque reduction in axial flux machines for small wind turbines. *M. Hsieh*¹, D.G. Dorrell² and S. Ekram¹ *1. Systems and Naval Mechatronic Eng., National Cheng Kung University, Tainan, Taiwan; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Sydney, NSW, Australia*

BU-11. A Radial Flux Machine with Dual Rotors Dual Output Shafts for Variable Speed Air Conditioners. *M. Hsieh*¹, Y. Yeh¹, D.G. Dorrell² and S. Ekram¹ *1. Systems and Naval Mechatronic Eng., National Cheng Kung University, Tainan, Taiwan; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Sydney, NSW, Australia*

BU-12. Permanent magnet generator design for low speed direct drive applications. *D.G. Dorrell*¹ *1. school of Electrical, Mechanical and Mechatronic Systems, University of Technology Sydney, Sydney, NSW, Australia*

**TUESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session BV
ACTUATORS
(Poster Session)**

Li-Han Chen, Session Chair
UCSD

BV-01. Comparison of coaxial magnetic gears with different topologies. *L. Jian*¹, K. Chau¹, Y. Gong² and J. Jiang² *1. Electrical & electronic engineering, The University of Hong Kong, Hong Kong, China; 2. Automation school, Shanghai University, Shanghai, China*

BV-02. A novel cableless magnetic actuator capable of reversible motion inside a pipe. *H. Yaguchi*¹ and K. Ishikawa¹ *1. Tohoku gakuin university, Tagajo, Japan*

BV-03. 2d exact analytical solution of armature reaction field in slotted surface mounted PM radial flux synchronous machines. *A. Bellara*¹, *Y. Amara*¹, *G. Barakat*¹ and *B. Dakyo*¹ *1. University of Le Havre, Le Havre, France*

BV-04. Operating torque estimation of high-speed slotless permanent magnet synchronous machine considering power loss. S. Jang¹, U. Lee¹, D. You¹, S. Sung² and J. Lee³ 1. *Chungnam National University, Daejeon, Korea, South*; 2. *Korea Institute of Machinery & Materials, Daejeon, Korea, South*; 3. *Korea Electric Power Research Institute, Daejeon, Korea, South*

BV-05. Analytical force calculations for high precision planar actuator with Halbach magnet array. H. Jiang¹, X. Huang¹ and G. Zhou¹ 1. *School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

BV-06. Characteristic comparison between the spiral and the lamination stator in axial field slotless machines. S. Lee¹, D. Kim¹, J. Lee¹ and J. Hong¹ 1. *Department of Automotive Engineering, Hanyang university, Seoul, Korea, South*

BV-07. Application of response surface methodology (RSM) in microspeaker design used in mobile phones. J. Kwon¹, P. Kim¹ and S. Hwang¹ 1. *Pusan National University, Busan, Korea, South*

BV-08. Power saving drive in 2-position control of giant-magnetostrictive actuator. Y. Sato¹ and K. Shinohara¹ 1. *Mechanical Engineering, Yokohama National University, Yokohama, Kanagawa, Japan*

BV-09. Design of a voice-coil actuator for optical image stabilization based on genetic algorithm. M. Song¹, Y. Hur¹, N. Park¹, K. Park¹, Y. Park¹, S. Lim² and J. Park² 1. *Center for Information Storage Device, Yonsei University, Seoul, Korea, South*; 2. *Samsung Electro-Mechanics, Suwon, Korea, South*

BV-10. Shape optimal design of a 9 pole 10 slot PMLSM for detent force reduction using adaptive response surface method. N. Baatar¹, H. Yoon¹, P. Shin² and C. Koh¹ 1. *School of Electrical and Computer Engineering, Chungbuk National University, Cheongju, Chungbuk, Korea, South*; 2. *Department of Electrical Engineering, Hongik University, Chochiwon, Chungnam, Korea, South*

BV-11. Characteristics analysis and simulation of permanent magnet actuator with a new control method for air circuit breaker. F. Shuhua¹, L. Heyun¹, H. Siu-lau², W. Xianbing¹ and J. Ping¹ 1. *School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*; 2. *Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong, Hong Kong, China*

BV-12. Characteristic analysis of claw-pole machine using improved equivalent magnetic circuits. *S. Lee*¹, S. Kwon¹ and J. Hong¹ *1. Department of Automotive Engineering, Hanyang university, Seoul, Korea, South*

**WEDNESDAY
MORNING
9:00**

ROOM 311-313

Session CA

SYMPOSIUM ON SPIN HALL EFFECTS

Sadamichi Maekawa, Session Chair
Japan

9:00 CA-01. Anomalous Hall and Nernst effects in GaMnAs ferromagnetic semiconductors. (Invited) *J. Shi*¹, *Y. Pu*¹, *D. Chiba*², *F. Matsukura*² and *H. Ohno*² *1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA, USA; 2. RIEC, Tohoku University, Sendai, Japan*

9:30 CA-02. Spin-injection Hall effect in a planar photovoltaic cell. (Invited) *J. Wunderlich*^{1,2}, *A.C. Irvine*³, *J. Sinova*^{4,2}, *B. Park*¹, *X. Xu*¹, *B. Kaestne*⁵, *V. Novak*² and *T. Jungwirth*^{2,6} *1. Hitachi Europe Ltd., Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 2. Institute of Physics ASCR, Prague, Czech Republic; 3. Microelectronics Research Centre, University of Cambridge, Cambridge, United Kingdom; 4. Department of Physics, Texas A&M University, College Station, TX, USA; 5. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 6. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

10:00 CA-03. Negative nonlocal resistance in mesoscopic gold Hall bars: how does it relate to spin Hall effects?. (Invited) *G. Mihajlovic*¹, *J.E. Pearson*¹, *M. Garcia*², *S.D. Bader*^{1,3} and *A. Hoffmann*^{1,3} *1. Materials Science Division, Argonne National Laboratory, Argonne, IL, USA; 2. Dpto. Física de Materiales, Universidad Complutense de Madrid, Madrid, Spain; 3. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL, USA*

10:30 CA-04. Spin Hall effects and spin Seebeck effect in NiFe/Pt films. (Invited) *E. Saitoh*¹ *1. Keio University, Yokohama, Japan*

WEDNESDAY
MORNING
9:00

ROOM 314

Session CB
SYMPOSIUM ON BIO-MAGNETISM

Sara Majetich, Session Chair
Carnegie Mellon University

9:00 CB-01. Protein assays based on magnetic nanotags and GMR sensors – a new tool for fighting cancer and rapid triaging. (Invited) S.X. Wang¹ 1. MSE, Stanford, Stanford, CA, USA

9:30 CB-02. Scanning tunneling magnetoresistance microscopy for imaging magnetically labeled DNA microarrays. (Invited) M. Chan¹, G. Jaramillo², K.R. Hristova³ and D.A. Horsley¹ 1. Mechanical and Aeronautical Engineering, University of California, Davis, CA, USA; 2. Electrical and Computer Engineering, University of California, Davis, CA, USA; 3. Land Air and Water Research, University of California, Davis, CA, USA

10:00 CB-03. Anticancer sentinel-lymph-node mapping by sonic waves generated by magnetic beads under ac magnetic field. M. Abe¹, K. Kakegawa¹, T. Ueda¹, T. Nakagawa¹, M. Tada¹ and H. Handa² 1. Department of Physical Electronics, Tokyo Institute of Technology, Meguro, Tokyo, Japan; 2. Department of Biological Information, Tokyo Institute of Technology, Yokohama, Japan

10:30 CB-04. In Vivo Detection of targeted magnetite nanoparticles by SQUID-relaxometry for early disease detection. (Invited) N. Adolphi¹, H.C. Bryant², D.L. Huber³, K.S. Butler⁴, J.E. Jaetao⁴, D.M. Lovato⁴, D.L. Fegan², T.C. Monson³, E.L. Venturini³, T.E. Tessier², H.J. Hathaway⁵, R.S. Larson⁴ and E.R. Flynn² 1. Biochemistry and Molecular Biology, University of New Mexico, Albuquerque, NM, USA; 2. Senior Scientific, LLC, Albuquerque, NM, USA; 3. Center for Integrative Nanotechnologies, Sandia National Laboratories, Albuquerque, NM, USA; 4. Pathology, University of New Mexico, Albuquerque, NM, USA; 5. Cell Biology and Physiology, University of New Mexico, Albuquerque, NM, USA

11:00 CB-05. Magnetic nanoparticles for diagnostic and therapeutic applications. (Invited) H. Hofmann¹ 1. Laboratory of Powder Technology, Ecole Polytechnique Federal de Lausanne, Lausanne, Switzerland

WEDNESDAY
MORNING
9:00

ROOM 315

Session CC
HEAD-MEDIA INTERFACE AND
TRIBOLOGY (I)

Huan Tang, Session Chair
Seagate Technology

- 9:00 CC-01. Magnetic spacing trends: from LMR to PMR and beyond. (Invited)** B. Marchon¹ and T. Olson¹ *1. San Jose Research Center, Hitachi, San Jose, CA, USA*
- 9:30 CC-02. Monte Carlo simulations of lubricant transfer at the head disk interface.** H. Kubotera¹ and T. Imamura¹ *1. Storage Systems Laboratories, Fujitsu Laboratories Ltd., Atsugi, Japan*
- 9:45 CC-03. Contact characteristics of spherical head and magnetic disk considering van der Waals forces and elastic deformation of contacting asperities and mean height surfaces.** K. Ono¹ *1. Hitachi Central Research Laboratory, Fujisawa-shi, Japan*
- 10:00 CC-04. Numerical simulation of a “spherical pad” slider flying over bit patterned media.** H. Li^{1,2}, H. Zheng¹ and F. Talke¹ *1. center for magnetic recording research, La Jolla, CA, USA; 2. Storage Mechanics Laboratory, Hitachi Asia Ltd., Singapore, Singapore*
- 10:15 CC-05. Media corrosion: not just an overcoat problem.** Q. Dai¹, B. Marchon¹, H. Do¹, K. Takano¹ and J. Wang² *1. San Jose Research Center, Hitachi Global Storage Technology, San Jose, CA, USA; 2. Media Development, Hitachi Global Storage Technology, San Jose, CA, USA*
- 10:30 CC-06. Experimental and numerical simulation study on low-surface energy slider with thermal flying-height control function.** Y. Shimizu¹, K. Ono¹, N. Umehara² and J. Xu¹ *1. Central research laboratory, Hitachi, Ltd., Fujisawa, Kanagawa, Japan; 2. Department of Mechanical Science and Engineering, Nagoya University, Nagoya, Aichi, Japan*
- 10:45 CC-07. Experimental study of head-disk interface stability and durability at sub-1-nm clearance.** N. Li^{1,2}, L. Zheng³, D.B. Bogy¹ and Y. Meng² *1. Department of Mechanical Engineering, University of California, Berkeley, CA, USA; 2. State Key Laboratory of Tribology, Tsinghua University, Beijing, China; 3. Western Digital Corporation, Fremont, CA, USA*

- 11:00 CC-08. Head disk contact friction measurement and glide test.** *J. He*¹, *J. Hopkins*¹, *S. Duan*¹ and *K. Johnson*¹
1. Hitachi GST, San Jose, CA, USA
- 11:15 CC-09. Atomic force microscopy (AFM) and scanning thermal microscopy (SThM) studies of thermal response of perpendicular recording head to writing and heating currents.** *Y. Chen*¹, *S. Leong*¹, *T. Huang*¹, *H. Ho*³, *V. Ng*² and *J. Phang*³ *1. SMI, Data Storage Institute (A*STAR), Singapore, Singapore; 2. Dept. of Electrical and computer, National University of Singapore, Singapore, Singapore; 3. Center for Integrated Circuit Failure Analysis and Reliability (CIFAR), National University of Singapore, Singapore, Singapore*
- 11:30 CC-10. Numerical simulation of a thermal flying height control slider with dual heater and insulator elements.** *H. Zheng*¹, *H. Li*¹ and *F.E. Talke*¹ *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA, USA*
- 11:45 CC-11. Particle scratch reliability for head disk interface – modeling and experiments.** *X. Shen*¹, *C. Lee*¹, *Z. Feng*¹ and *E. Cha*¹ *1. SAE Magnetics, Milpitas, CA, USA*

WEDNESDAY

ROOM 306

MORNING

9:00

Session CD**MAGNETIC RECORDING PHYSICS**

Hans Richter, Session Chair

Seagate Technology

- 9:00 CD-01. Improved jitter noise in exchange spring perpendicular recording.** *J. Lee*¹, *D. Suess*¹, *T. Schrefl*² and *J. Fidler*¹ *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom*
- 9:15 CD-02. Micromagnetic study of media noise plateau.** *Y. Dong*¹ and *R.H. Victora*¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, USA*
- 9:30 CD-03. Switching field reduction in FePt/FeRh/FeCo exchange spring trilayers.** *C. Goh*¹, *T. Zhou*¹, *Z. Yuan*¹ and *B. Liu*¹ *1. Data Storage Institute, Singapore, Singapore*

- 9:45 CD-04. Magnetic cluster size distribution and its relation to read-write performance of advanced recording media.** *M. Hashimoto*¹, *H. Nakagawa*¹, *K. Nakamoto*¹, *H. Ide*¹ and *T. Ichihara*¹ *1. Hitachi, Ltd., Central Research Laboratory, Odawara-shi, Japan*
- 10:00 CD-05. Estimation of maximum track density in shingled writing magnetic recording.** *K. Miura*¹, *H. Muraoka*¹ and *H. Aoi*¹ *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*
- 10:15 CD-06. Simulations of perpendicular recording at high linear density on exchange coupled composite continuous and discrete track media.** *J. van Ek*¹, *E. Champion*¹, *A. Torabi*¹, *J. Wang*¹ and *H. Jung*^{1,2} *1. Western Digital Corp., San Jose, CA, USA; 2. Hitachi Global Storage Tech., San Jose, CA, USA*
- 10:30 CD-07. Comparison of track densities of discrete track media and continuous media: a numerical model.** *K. Zhang*¹ and *S. Duan*¹ *1. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 10:45 CD-08. Adjacent track erasure of wrapped-around shielded PMR writers.** *S. Song*¹, *L. Guan*¹ and *S. Mao*¹ *1. Magnetic Head Operation, Western Digital Corporation, Fremont, CA, USA*
- 11:00 CD-09. Reversal properties of write head at extremely high density.** *S. Wang*¹, *D. Wei*¹ and *K. Gao*² *1. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Research and Technology Development, Seagate Technology, Bloomington, MN, USA*
- 11:15 CD-10. Recording integration – reader path.** *W.D. Huber*¹ *1. Recording Integration, Western Digital Corporation, San Jose, CA, USA*
- 11:30 CD-11. Latency and base pressure effects on the sheet film CIP GMR performance.** *X. Peng*¹, *M. Kief*¹ and *M. Ostrowski*¹ *1. RHO Minneapolis, Seagate Technology, Bloomington, MN, USA*
- 11:45 CD-12. Simulation of realistic particle packing and impact on high density tape recording.** *Y. Wang*¹ and *J. Zhu*¹ *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*

WEDNESDAY
MORNING
9:00

ROOM 307

Session CE
AB-INITIO AND FIRST PRINCIPLES
CALCULATIONS (I)

Oleg Mryasov, Session Chair
Seagate Research

- 9:00 CE-01. Interplay of strain and magnetism in manganese perovskites from first principles.** *A. Filippetti¹, G. Colizzi¹ and V. Fiorentini¹ 1. University of Cagliari, Monserrato, Italy*
- 9:15 CE-02. Domain wall formation and spin-wave spectra in an Fe monolayer on W(110).** *A. Antal¹, L. Balogh¹, L. Udvardi¹ and L. Szunyogh¹ 1. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary*
- 9:30 CE-03. The GGA+U approach for improved ab-initio modeling of small cobalt clusters.** *Y. Hancock¹ and M. Ijäs² 1. Department of Physics, The University of York, York, United Kingdom; 2. Department of Engineering Physics, Helsinki University of Technology, Espoo, Finland*
- 9:45 CE-04. Characteristic length scale for spin polarized tunneling in Langmuir-Blodgett molecular magnetic tunnel junction.** *D. Liu¹, Y. Hu², H. Guo² and X. Han¹ 1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Center for the Physics of Materials and Department of Physics, McGill University, Montreal, QC, Canada*
- 10:00 CE-05. Suitability of Fe/GaAs and (Co, Ni)Mn(Ga, Ge) for spintronics applications: An ab initio study.** *A. Grünebohm¹, M.E. Gruner¹, H.C. Herper¹ and P. Entel¹ 1. Theoretical Physics, University of Duisburg-Essen, Duisburg, Germany*
- 10:15 CE-06. 3d analytical calculation of the torque exerted between two cuboidal magnets.** *H. Allag¹ and J. Yonnet¹ 1. G2E Lab, Grenoble-INP, St Martin d'Herès, France*
- 10:30 CE-07. A novel 3d finite element method to obtain unique magnetization distribution in rectangular geometries.** *A. Vashghani Farahani¹, J. Lavers¹ and A. Konrad¹ 1. Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada*

- 10:45 CE-08. Calculation of the error in approximate methods of computing thermal fluctuation.** P.J. Chen¹, Y. Jin¹, E. Della Torre¹ and L.H. Bennett¹ *1. George Washington University, Washington, DC, USA*
- 11:00 CE-09. Atomistic simulation of iridium manganese in exchange bias systems.** J. Jackson¹, U. Nowak¹, R. Chantrell², L. Szunyogh³, B. Lazarovits^{3,4} and L. Udvardi³ *1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 2. Department of Physics, University of York, York, United Kingdom; 3. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary; 4. Research Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary*
- 11:15 CE-10. New stochastic approach for modelling of ultra-fast magnetization dynamics on femto and pico second time scale.** O. Chubykalo-Fesenko¹, U. Atxitia¹, U. Nowak², R.W. Chantrell³ and A. Rebei⁴ *1. POMT, Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 2. Fachbereich Physik, University of Konstanz, Konstanz, Germany; 3. Department of Physics, University of York, York, United Kingdom; 4. Seagate Research, Pittsburgh, PA, USA*
- 11:30 CE-11. Influence of the geometry of the contact leads on the Oersted field in current-carrying magnetic nanopillars.** A.V. Khvalkovskiy¹ and R. Hertel² *1. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia; 2. Institute of Solid State Research, IFF-9, Jülich Research Center, Jülich, Germany*

WEDNESDAY
MORNING
9:00

ROOM 308

Session CF
SPIN ELECTRONICS AND APPLICATIONS
(NON-RECORDING) MRAM
 Jonathan Sun, Session Chair
 IBM T J Watson Research Center

- 9:00 CF-01. After hard drives – what comes next?. (Invited)**
 M.H. Kryder¹ *1. ECE Department, Carnegie Mellon University, Pittsburgh, PA, USA*

- 9:30 CF-02. Recent results on spin-torque MRAM arrays and technology outlook. (Invited)** *J.M. Slaughter*¹, N.D. Rizzo¹, F.B. Mancoff¹, R. Whig¹, P.G. Mather¹, T. Andre¹, K. Smith¹ and S. Tehrani¹ *1. Everspin Technologies, Inc., Chandler, AZ, USA*
- 10:00 CF-03. A three-terminal spin torque driven MRAM cell.** P.M. Braganca^{2,1}, *J.A. Katine*¹, N.C. Emley², J.R. Childress¹, D. Mauri⁴, P.M. Rice³, E.M. Delenia³, D.C. Ralph² and R.A. Buhrman² *1. HGST Research, San Jose, CA, USA; 2. Cornell University, Ithaca, NY, USA; 3. IBM Research, San Jose, CA, USA; 4. HGST Development, San Jose, CA, USA*
- 10:15 CF-04. Current-induced switching in orthogonal polarizer spin-transfer devices¹.** *D. Bedau*¹, H. Liu¹, J. Beaujour¹, M. Rogosky² and A.D. Kent¹ *1. New York University, New York, NY, USA; 2. Spin Transfer Technologies, Quincy, MA, USA*
- 10:30 CF-05. Inherent switching current fluctuations in STT-MRAM with in-plane magnetization and comparison with perpendicular design.** *X. Zhu*¹ and S. Kang¹ *1. Qualcomm CDMA Technologies, Qualcomm Incorporated, San Diego, CA, USA*
- 10:45 CF-06. Spin transfer torque switching of exchange pinned TA-MRAM cell.** *J. Hérault*¹, R.C. Sousa¹, M.T. Delaye¹, C. Ducruet², C. Portemont², I.L. Prejbeanu², J.P. Nozières² and B. Dieny¹ *1. Spintec (URA 2512 CEA/CNRS), Grenoble, France; 2. Crocus Technology, Grenoble, France*
- 11:00 CF-07. Precessional switching of a thin ferromagnetic film by perpendicularly spin polarized current pulses.** *C. Pappasoi*¹, U. Ebels¹, D. Houssamedine¹, L. Buda¹, R. Sousa¹, B. Delaët², M. Cyrille² and B. Dieny¹ *1. SPINTEC CEA/CNRS, Grenoble, France; 2. LETI/DIHS/LIMN CEA, Grenoble, France*
- 11:15 CF-08. Analysis and design of nonvolatile SRAM using MOSFET-based spin-transistors.** *Y. Shuto*^{1,3}, S. Yamamoto^{2,3} and S. Sugahara^{1,3} *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*
- 11:30 CF-09. Dynamical critical curve of a synthetic antiferromagnet.** H. Pham^{1,2}, *D. Cimpoesu*³, A. Stancu³ and L. Spinu^{1,2} *1. Advanced Materials Research Institute/ University of New Orleans, New Orleans, LA, USA; 2. Department of Physics, University of New Orleans, New Orleans, LA, USA; 3. Department of Physics, "Al. I. Cuza" University, Iasi 700506, Romania*

WEDNESDAY
MORNING
9:00

ROOM 309-310

Session CG
**RF MICROMAGNETIC DEVICES AND
PHENOMENA**

Masahiro Yamaguchi, Session Chair
Tohoku University

- 9:00 CG-01. RF applications of magneto-dielectric substrates combining high ϵ and high μ .** *E. Bènevent*^{1,2}, K. Garelli^{1,3} and B. Viala^{1,2} *1. DRT/DIHS/LCRF, CEA-LETI, MINATEC, Grenoble, France; 2. Spintec, CEA, CNRS, UJF, INPG, Grenoble, France; 3. XLIM, CNRS, Limoges, France*
- 9:15 CG-02. Broadband $\text{Ni}_x\text{Zn}_{0.8-x}\text{Cu}_{0.2}\text{Fe}_2\text{O}_4$ electromagnetic absorber for 1 GHz application.** *J. Lee*¹, *Y. Hong*¹, *S. Bae*¹, *J. Jalli*¹, *G.S. Abo*¹, *W. Seoung*², *W. Ahn*², *S. Park*², *C. Choi*³ and *J. Lee*³ *1. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 2. E.M.W. Antenna Co., Ltd., Seoul, Korea, South; 3. Korea Institute of Materials Science, Changwon, Korea, South*
- 9:30 CG-03. Nonlinear parametric interactions of spin waves in permalloy (Py) films.** *Y.V. Koblyanskiy*², *G.A. Melkov*² and *A.N. Slavin*¹ *1. Physics, Oakland University, Rochester, MI, USA; 2. Radiophysics, National Taras Shevchenko University of Kyiv, Kyiv, Ukraine*
- 9:45 CG-04. Design of an integrated magneto-optic switch for transparent networks.** *J. Tioh*¹, *M. Mina*¹ and *R.J. Weber*¹ *1. Electrical and Computer Engineering, Iowa State University, Ames, IA, USA*
- 10:00 CG-05. Kerr microscopy study of magnetic flux concentrators.** *V. Höink*¹, *S. Chung*^{2,3} and *W.F. Egelhoff*¹ *1. Materials Science and Engineering Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, USA; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD, USA; 3. Maryland NanoCenter, University of Maryland, College Park, MD, USA*
- 10:15 CG-06. Size and performance trade-offs in micro-inductors for high frequency dc-dc conversion.** *R.T. Meere*¹, *T. O'Donnell*¹, *N. Wang*¹, *N. Achotte*¹, *S. Kulkarni*¹ and *S. O'Mathuna*¹ *1. Microsystems Centre, Tyndall National Institute, Cork, Ireland*

- 10:30 CG-07. High efficiency inductive-coupling power delivery with sandwiching thin films of magnetic material.** *K. Niitsu*¹, *Y. Yuxiang*¹, *H. Ishikuro*¹ and *T. Kuroda*¹ *1. Department of Electronics and Electrical Engineering, Keio University, Yokohama, Kanagawa, Japan*
- 10:45 CG-08. Study of the GMI effect and orthogonal fluxgate effect of two-wire arrays of amorphous wires.** *X. Li*¹, *M. Malátek*², *J. Fan*¹ and *P. Ripka*² *1. Mechanical Engineering, National University of Singapore, Singapore, Singapore; 2. Mechanical Engineering, National University of Singapore, Singapore, Singapore*
- 11:00 CG-09. Contributions of Néel and Brownian relaxations to heat dissipation from magneite dispersion in ac magnetic field.** *J. Balachandran*¹, *M. Suto*¹, *Y. Hirota*², *H. Mamiya*³, *A. Fujita*¹, *R. Kasuya*¹ and *T. Kikuchi*¹ *1. Graduate School of Environmental Studies, Tohoku University, Sendai, Japan; 2. Ferrotec Corporation, Tokyo, Japan; 3. Nanomaterials Laboratory, Institute for Materials Science, Tsukuba, Japan*
- 11:15 CG-10. Feasibility study on droplet formation using magnetostrictive principle.** *B. Kim*¹ and *Y. Park*¹ *1. BK21 Mechatronics Group, Dept. of Mechatronics Engineering, Chungnam National University, 220 Gung Dong, Yuseong Gu, Daejeon, Republic of Korea, Daejeon, Korea, South*
- 11:30 CG-11. Design and experimental validation of magnetostrictive scanner for laser machining.** *J. Jung*¹ and *Y. Park*¹ *1. Chungnam National University, BK21 Mechatronics Group, Dept. of Mechatronics Engineering, Daejeon, Korea, South*

**WEDNESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session CP
PATTERNED MEDIA (II)
(Poster Session)**

Vitaliy Lomakin, Session Chair
University of California, San Diego
Holger Schmidt, Session Chair
U. C. Santa Cruz

CP-01. Influences of film microstructure and defects on magnetization reversal in bit patterned Co/Pt multilayer thin film media. *V.W. Guo*¹, *H. Lee*² and *J. Zhu*¹ *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA; 2. eMD Center, Central R&D Institute, Samsung Electro-Mechanics, Suwon, Korea, South*

CP-02. Characterization of patterning noise in self-assembled nano-masks for bit patterned media using image processing. S. Nabavi^{1,2}, B. Kumar^{1,2}, J.A. Bain^{1,2}, C. Hogg^{3,2} and S.A. Majetich^{3,2} 1. *Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*; 2. *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*; 3. *Physics, Carnegie Mellon University, Pittsburgh, PA, USA*

CP-03. Exchange coupled magnetic dot arrays for next generation bit patterned media. Y. Kondo¹, J. Ariake¹, T. Chiba¹, K. Taguchi¹, M. Suzuki², N. Kawamura² and N. Honda³ 1. *Research Institute of Advanced Technology, Akita Prefectural R&D center, Akita, Japan*; 2. *Japan Synchrotron Radiation Research Institute, Hyogo, Japan*; 3. *Department of Electronics and Intelligent Systems, Tohoku Institute of Technology, Sendai, Japan*

CP-04. Microstructure and magnetic properties of FePt films on anodized aluminum oxide membranes. S. Chen¹, Y. Yao² and C. Yu³ 1. *Materials Science and Engineering, National Tsing Hua University, Taipei, Taiwan*; 2. *Materials Engineering, Tatung University, Taipei, Taiwan*; 3. *Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

CP-05. Modification of magnetic properties and structure of Kr⁺ ion dosed CrPt₃ films for planar bit patterned media. T. Kato¹, Y. Yamauchi², S. Iwata¹ and S. Tsunashima² 1. *Department of Quantum Engineering, Nagoya University, Nagoya, Aichi, Japan*; 2. *Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Aichi, Japan*

CP-06. Topography and magnetic properties of planarized patterned magnetic recording media. C. Choi^{1,2}, Y. Oh^{1,2}, M. Loya^{1,2}, D. Hong³ and S. Jin^{1,2} 1. *Materials science & engineering, University of California, San Diego, La Jolla, CA, USA*; 2. *Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA, USA*; 3. *Formerly with Center for Magnetic Recording Research, University of California at San Diego, La Jolla, CA 92093, USA, now with Western Digital, San Jose, CA, USA*

CP-07. Planarization of discrete track recording media to improve flyability of magnetic recording sliders. Y. Yoon¹, C. Choi¹, Y. Oh¹, D. Hong¹, S. Jin¹ and F.E. Talke¹ 1. *Center for Magnetic Recording Research, U.C. San Diego, La Jolla, CA, USA*

CP-08. Dependence of switching fields on island shape in bit patterned media (BPM). *J. Kalezhi*¹, *J.J. Miles*¹ and *B.D. Belle*¹ *1. School of Computer Science, The University of Manchester, Manchester, United Kingdom*

CP-09. Channel modeling and two-dimensional equalization for bit-patterned media. *Y. Ng*^{1,2}, *K. Cai*¹, *V. Bhagavatula*², *S. Zhang*¹ and *T. Chong*¹ *1. Data Storage Institute, Singapore, Singapore; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*

CP-10. Density limit estimation of bit patterned media without assisted writing. *C. Cheong*¹, *Z. Yuan*¹, *C. Goh*¹, *B. Liu*¹ and *C. Ong*¹ *1. Spintronics, Media & Interface Division, DATA STORAGE INSTITUTE, Singapore, Singapore*

CP-11. Reduction of switching field distribution in patterned media using antiferromagnetically coupled layer structure. *S. Deng*^{2,1}, *K. Aung*¹, *S. Piramanayagam*^{1,2} and *R. Sbiaa*¹ *1. Data Storage Institute, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore*

CP-12. Simulation study of bit patterned media with inclined anisotropy at 5 Tbit/in². *N. Honda*¹, *K. Yamakawa*² and *K. Ouchi*² *1. Faculty of Engineering, Tohoku Institute of Technology, Sendai, Miyagi, Japan; 2. Research Institute of Advanced Technology, Akita Prefectural R & D Center, Akita, Akita, Japan*

CP-13. Fabrication and process issues of bit patterned media for 1 Tbit/in² regime. *J. Ariake*¹, *Y. Kondo*¹, *T. Hasegawa*², *S. Ishio*² and *N. Honda*³ *1. Akita Research Institute of Advanced Technology, Akita Prefectural R&D Center, Akita, Japan; 2. Faculty of Engineering and Resource Science, Akita University, Akita, Japan; 3. Faculty of Engineering, Tohoku Institute of Technology, Sendai, Japan*

CP-14. Magnetization reversal process of CoPt patterned dot studied by magnetic force microscopy. *S. Ishio*¹, *W. Pei*² and *T. Wang*³ *1. Materials Science and Engineering, Akita University, Akita, Japan; 2. Northeastern University, Shenyang, China; 3. Venture Business Laboratory, Akita University, Akita, Japan*

CP-15. Magnetic properties of patterned CGC perpendicular films with soft magnetic fillings. *M. Aniya*¹, *A. Mitra*¹, *Y. Sonobe*¹, *T. Ouchi*² and *T. Homma*² *1. MD Division, HOYA, TOKYO, Japan; 2. Department of Applied Chemistry, Waseda University, TOKYO, Japan*

WEDNESDAY
MORNING
8:00

EXHIBIT HALL B

Session CQ
MAGNETIC MICROSCOPY AND
CHARACTERIZATION (I)
(Poster Session)

Guido Meier, Session Chair
University of Hamburg

CQ-01. Optimizing the performance of the high-frequency MFM technique. *M.R. Koblischka*¹ and *U. Hartmann*¹ *1. Institute of Experimental Physics, University of the Saarland, Saarbruecken, Germany*

CQ-02. Magnetic force microscopy with ultra-high coercivity L10 nanoprobe. *N. Amos*¹, *B. Lee*¹, *R. Ikkawi*¹, *B. Hu*¹, *C. Zang*¹, *R. Fernandez*¹, *J. Hong*¹, *S. Chen*¹, *D. Litvinov*² and *S. Khizroev*¹ *1. Electrical Engineering, University of California-Riverside, Riverside, CA, USA; 2. Electrical Engineering, University of Houston, Houston, TX, USA*

CQ-03. Alignment-free, low temperature magnetic force microscope (LT-MFM) design for 300mK-300K temperature range. *O. Karci*¹, *A. Oral*² and *M. Dede*¹ *1. R&D, NanoMagnetics Instruments Ltd, Oxford, United Kingdom; 2. Faculty of Engineering & Natural Sciences, Sabanci University, Istanbul, Turkey*

CQ-04. Amplitude and phase imaging of AC magnetic field on single-pole head by frequency modulated magnetic force microscopy (FM-MFM). *H. Saito*¹, *M. Siekman*², *H. Ikeya*¹, *G. Egawa*¹, *S. Ishio*¹ and *S. Yoshimura*¹ *1. Faculty of Engineering and Resource Science, Akita University, Akita, Japan; 2. MESA+ Institute for Nanotechnology, IMPACT research institute, Enschede, Netherlands*

CQ-05. Natural resonant frequency of magnetic slab with multi domain structure. *S. Takeda*¹ and *H. Suzuki*² *1. Magnontech, Ltd., Kumagaya, Japan; 2. KEYCOM Corp., Tokyo, Japan*

CQ-06. Development of measurement system of magnetic properties at high flux density using novel single sheet tester. *N. Takahashi*¹, *D. Miyagi*¹, *T. Yamazaki*¹, *D. Otome*¹ and *M. Nakano*¹ *1. DEpt. Electrical and Electronic Eng., Okayama University, Okayama, Japan*

CQ-07. Image reconstruction algorithm for ECT based on Tikhonov regularization method with constraints.

L. Cuihuan¹, Y. Xiaoguang¹, W. Youhua¹, G. Duyan¹ and Y. Weili¹ 1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China

CQ-08. Evaluation of a pulsed eddy current signal in the stainless steel.

C.S. Angani¹, D. Park¹, Y. Cheong¹, G. Kim¹ and C. Kim² 1. Nuclear material research division, Korea Atomic Energy Research Institute, Taejeon, Korea, South; 2. Dept. of Material Science Engineering, Chungnam National University, Taejeon, Korea, South

CQ-09. Electromagnetic transducer with rotational excitation field for 2-dimensional evaluation of fatigue and stress loaded steel samples.

T. Chady¹ and G. Psuj¹ 1. Department of Electrical and Computer Engineering, West Pomeranian University of Technology, Szczecin, Poland

CQ-10. An analytical expression for fractional absorption in Mössbauer spectroscopy.

Y. Chen¹, X. Wang¹, J. He¹ and D. Yang² 1. Physics Dept., Wuhan University, Wuhan, China; 2. Physics Dept., College of the Holy Cross, Worcester, MA, USA

**WEDNESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session CR
MAGNETIC SENSING (I)
(Poster Session)**

Volodymyr Kruglyak, Session Chair
University of Exeter
Andrii Chumak, Session Chair
TU Kaiserslautern

CR-01. Bi-metallic magnetic wire with insulating layer as core for orthogonal fluxgate.

M. Butta¹, P. Ripka¹, G.A. Badini², M. Vázquez² and G. Infante² 1. CVUT v Praze - FEL - MagLab, Praha, Czech Republic; 2. Institute for Materials Science of Madrid, CSIC, Madrid, Spain

CR-02. Operational gradientmeter.

O.I. Baltag¹ 1. Medical Bioengineering, Univ. of Medicine & Pharmacy, Iasi, Romania

CR-03. Study of the noise in multi-core orthogonal fluxgate sensors based on NiFe/Cu composite micro-wires. *J. Fan*¹, *N. Ning*¹, *J. Wu*¹ and *X. Li*¹ *1. Mechanical Engineering, National University of Singapore, Singapore, Singapore*

CR-04. Fluxgate magnetometer electromagnetically compatible with the first-order SQUID gradiometer. *I. Sasada*¹ and *M. Murakami*¹ *1. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan*

CR-05. Linearity of pulse excited coil-less fluxgate. *M. Butta*¹ and *P. Ripka*¹ *1. CVUT v Praze - FEL - MagLab, Praha, Czech Republic*

CR-06. Contactless electromagnetic temperature sensors for spinning devices. *O. Bottauscio*¹, *M. Chiampi*², *G. Crotti*¹, *E. Ferrara*¹ and *F. Fiorillo*¹ *1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Ingegneria Elettrica, Politecnico di Torino, Torino, Italy*

CR-07. Extending the operating distance of inductive proximity sensor using magnetoplated wire. *T. Mizuno*¹, *T. Mizuguchi*¹, *Y. Isono*¹, *T. Fujii*¹, *Y. Kishi*², *N. Katsuhiko*², *M. Kasai*² and *A. Shimizu*² *1. Faculty of Engineering, Shinshu University, Nagano, Nagano, Japan; 2. Koyo Electronics Industries Co., Ltd., Hokuto, Yamanashi, Japan*

CR-08. Electromagnetic inspection method of outer side defect on small and thick steel tube using both ac and dc magnetic fields. *Y. Gotoh*¹, *K. Sakurai*² and *N. Takahashi*³ *1. Mechanical and Energy Systems Engineering, Oita University, Oita, Oita, Japan; 2. Mechanical and Energy Systems Engineering, Oita University, Oita, Oita, Japan; 3. Electrical and Electronic Engineering, Okayama University, Okayama, Okayama, Japan*

CR-09. Non-destructive way of detecting cracks in distribution lines. *A. Watanabe*¹, *F. Sato*¹, *T. Sato*¹, *H. Matsuki*² and *T. Nonaka*³ *1. Electrical Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. Electrical and Computer Engineering, Hachinohe National College of Technology, Hachinohe, Aomori, Japan*

CR-10. Integration of excitation coil and pick-up coil array for wireless magnetic motion sensing system. *S. Hashi*¹, *F. Kamisaka*¹, *S. Yabukami*², *H. Kanetaka*³, *K. Ishiyama*¹ and *K. Arai*⁴ *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Department of Electrical Engineering and Information Technology, Tohoku Gakuin University, Tagajo, Japan; 3. Graduate School of Dentistry, Tohoku University, Sendai, Japan; 4. The Research Institute for Electric and Magnetic Materials, Sendai, Japan*

CR-11. Nondestructive detections of metallic crack using a thin film inductive sensor. K. Kim¹, Y. Cha¹, B. Nam¹ and J. Shon² *1. Physics, Yeungnam University, Gyeongsan, Korea, South; 2. Research Institute of Nova Magnetics, Incheon, Korea, South*

CR-12. On the behavior of an electromagnetic linear position sensor with air-gap. A.F. Flores¹, R. Mueller¹ and R.P. Homrich¹ *1. Electrical Engineering, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil*

CR-13. A magnetization effect on the sensing signals in magnetic flux leakage type NDT. K. Seo^{1,2} and G. Park^{2,1} *1. Pusan National University, Busan, Korea, South; 2. Pusan National University, Busan, Korea, South*

CR-14. Multivariable Eddy current sensor. T. Kudo¹, T. Asano¹ and Y. Matsuzoe¹ *1. Electric Equipment Technology laboratory, Fuji Electric Advanced Technology Co.,Ltd., Hino, Tokyo, Japan*

**WEDNESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session CS
MAGNETIC NANOWIRES, CLUSTERS,
AND NANOPARTICLES (III)
(Poster Session)**

Leonard Spinu, Session Chair
University of New Orleans

CS-01. Nickel nano-wires filled alumina templates for microwave electronics. B.K. Kuanr¹, V. Veerakumar¹, A.V. Kuanr², R. Marson³, S.R. Mishra³, R.E. Camley¹ and Z. Celinski¹ *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, USA; 2. Physics Department, Shaheed Rajguru College of Applied Science for Women, Delhi, India; 3. Department of Physics, University of Memphis, Memphis, TN, USA*

CS-02. Magnetization reversal in multi-component magnetic nanowires. J. Lim^{1,3}, A. Diaconu^{1,2}, H. Pham^{1,2}, D. Cimpoesu⁴, J.B. Wiley^{1,3}, A. Stancu⁴ and L. Spinu^{1,2} *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA, USA; 2. Department of Physics, University of New Orleans, New Orleans, LA, USA; 3. Department of Chemistry, University of New Orleans, New Orleans, LA, USA; 4. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania*

CS-03. Depinning field at notches of ferromagnetic nanowire with perpendicular magnetic anisotropy.

K. Kim¹, J. Lee^{1,2}, G. Gim¹, S. Ahn¹, K. Lee¹, Y. Cho³, C. Lee³, S. Seo³, K. Shin² and S. Choe¹ 1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South; 3. Samsung Advanced Institute of Technology, Yongin, Korea, South

CS-04. Dynamics of the response time of a magneto-optical switch based on the rotation of superparamagnetic nanoparticle chains formed in magnetorheological fluids.

S. Park^{1,3}, H. Handa^{2,3} and A. Sandhu^{1,3} 1. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 2. Integrated Research Institute, Tokyo Institute of Technology, Tokyo, Japan; 3. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan

CS-05. Magnetic domain wall movements by interaction with propagating spin waves.

D. Han¹, S. Kim¹, J. Lee¹, S.J. Hermsdoerfer², H. Schultheiss², B. Leven² and B. Hillebrands² 1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, South; 2. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, 67663 Kaiserslautern, Germany

CS-06. Influence of silica coating on magnetic properties of γ -Fe₂O₃ nanoparticles.

A.M. Pereira¹, C. Pereira², A.S. Silva¹, P. Quaresma^{2,3}, D. Schmool¹, E. Pereira², C. Freire² and J.P. Araujo¹ 1. IFIMUP-IN, Faculdade de Ciências da Universidade do Porto, Porto, Portugal; 2. REQUIMTE, Dept. de Química, Faculdade de Ciências da Universidade do Porto, Porto, Portugal; 3. CIGMH, Dep. de Ciências da Vida, FCT-UNL, Lisboa, Portugal

CS-07. Relativistic investigation of two-impurity interactions at surfaces.

A. Szilva¹, E. Simon², L. Szunyogh¹ and B. Ujfalussy² 1. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary; 2. Research Institute of Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary

CS-08. Magnetic investigation of CoFe₂O₄ nanoparticles supported in biocompatible polymeric microsphere.

J.A. Coaquira¹, C.B. Vaccari², A.C. Tedesco² and P.C. Morais¹ 1. Instituto de Física, Universidade de Brasília, Brasília, DF, Brazil; 2. Departamento de Química, Universidade de São Paulo, Faculdade de Filosofia Ciências e Letras de Ribeirão Preto, Ribeirão Preto, SP, Brazil

CS-09. Easy preparation and magnetic properties of greigite nanocrystals. C. Lin¹, S. Lu¹ and Y. Siao¹ *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

CS-10. Magnetoresistance of epitaxial Fe₃O₄ nanowire. H. Wu¹, M. Abid¹, O. Mryasov² and I. Shvets¹ *1. Physics, Trinity College Dublin, Dublin, Ireland; 2. Seagate Research, Pittsburgh, PA, USA*

CS-11. A new drug of BCNU bound on magnetic nanoparticles and their in vitro antitumor activity against Glioma C6 cells. M. Hua¹, H. Yang¹, K. Wei², P. Chen², Y. Hwua³ and R. Tsai⁴ *1. Chemical and Materials Engineering, Chang Gung University, Tao-Yuan, Taiwan; 2. Neurosurgery, Chang Gung Memorial Hospital, Taipei, Taiwan; 3. Medical Imaging and Radiological Science, Central Taiwan University of Science and Technology, Taichung, Taiwan; 4. Electronics and Optoelectronics Research Laboratories, Industrial Technology Research Institute, Hsin-chu, Taiwan*

CS-12. Template synthesis of cobalt nanowires using diblock copolymer. S. Vishnubhotla¹, A. Sarella¹, S. Yoon², J. Jeong¹ and C. Kim¹ *1. Chungnam National University, Daejeon, Korea, South; 2. Andong National University, Andong, Korea, South*

**WEDNESDAY
MORNING
8:00**

EXHIBIT HALL B

**Session CT
SPIN TRANSFER TORQUE
PHENOMENA (III)
(Poster Session)**

Giovanni Finocchio, Session Chair
University of Messina

CT-01. Current-driven magnetization dynamics of vortex and onion states in a nanomagnet. D.E. Buergler¹, R. Lehdorff¹, S. Gliga¹, R. Hertel¹, P.A. Grünberg¹, C.M. Schneider¹ and Z. Celinski² *1. IFF-9, Institut für Festkörperforschung, Jülich, Germany; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado Springs, Colorado Springs, CO, USA*

CT-02. Current-driven domain-wall depinning in Pt/CoFe/Pt nanowire with perpendicular magnetic anisotropy. K. Kim¹, J. Lee^{1,2}, C. Lee³, Y. Cho³, S. Seo³, S. Choe¹ and K. Shin² 1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South; 3. Samsung Advanced Institute of Technology, Yongin, Korea, South

CT-03. Parameter dependence of resonant spin torque magnetization reversal. L. Fricke¹, S. Serrano-Guisan¹ and H.W. Schumacher¹ 1. Department of Semiconductor Physics and Magnetism, Physikalisch-Technische Bundesanstalt, Braunschweig, Germany

CT-04. Micromagnetic study of switching boundary of a ferromagnetic nanodevice. Y. Zhou¹, J. Åkerman^{1,2} and J.Z. Sun³ 1. Institute of Microelectronics and Information Technology, Royal Institute of Technology, Stockholm-Kista, Sweden; 2. Physics Department, Göteborg University, 412 96 Göteborg, Sweden; 3. IBM T. J. Watson Research Center, PO Box 218, Yorktown Heights, NY 10598, NY, USA

CT-05. Back hopped switching error in spin transfer torque MRAM. H. Ohmori¹, Y. Higo¹, M. Hosomi¹ and H. Kano¹ 1. Sony Corporation, Atsugi-shi, Kanagawa, Japan

CT-06. Spin-torque modulation of magneto-impedance spectra in magnetic tunnel junctions. C. Fu¹, M. Kuo², M. Syue², C. Chang², C. Chou² and X. Han³ 1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; 3. Institute of Physics, Chinese Academy of Sciences, Beijing, China

CT-07. Proposal for a robust measurement scheme of the non-adiabatic spin torque using the deflection of magnetic vortices. B. Krueger¹, M. Najafi², S. Bohlens¹, R. Froemter³, D. Moeller² and D. Pfannkuche¹ 1. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany; 2. Arbeitsbereich Technische Informatiksysteme, Universität Hamburg, Hamburg, Germany; 3. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany

CT-08. Non-adiabatic spin transfer torque in a domain wall. T. Taniguchi^{1,2} and H. Imamura¹ 1. Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan

CT-09. Driving domain walls: effect of perpendicular spin torque in STT driven switching. *J. Zhu*¹ and *X. Zhu*²
 1. *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*; 2. *Qualcomm Incorporation, San Diego, CA, USA*

CT-10. Reduction of the critical current for spin-transfer switching of perpendicularly magnetized nanomagnets. *S. Mangin*¹, *Y. Henry*², *J. Cucchiara*¹, *D. Ravélosona*³, *J. Katine*⁴ and *E.E. Fullerton*⁵
 1. *IJL, Nancy-Université / CNRS, Vandoeuvre, France*; 2. *IPCMS, Université de Strasbourg / CNRS, Strasbourg, France*; 3. *IEF, Université d'Orsay / CNRS, Orsay, France*; 4. *Hitachi Gst, Hitachi-GST, San Jose, CA, USA*; 5. *CMRR, UCSD, San Diego, CA, USA*

**WEDNESDAY
 MORNING
 8:00**

EXHIBIT HALL B

**Session CU
 MAGNETO-DIELECTRIC MATERIALS
 AND META-MATERIALS (I)
 (Poster Session)**

Samuel Lofland, Session Chair
 Rowan University

CU-01. Dielectric and magnetic properties of Co₂O₃ modified 0.4PZT+0.6NiCuZn-ferrite composites. *L. Jia*¹, *H. Zhang*¹, *S. Chen*¹, *Q. Wen*¹ and *Y. Liu*¹
 1. *University of Electronic Science and Technology of China, Chengdu, China*

CU-02. Fabrication and simulation of a dual composite right/left handed differential transmission line with common mode filtering function. *H. Nakayama*^{1,2} and *T. Itoh*³
 1. *Nagano National College of Technology, Nagano, Nagano, Japan*; 2. *Spin Device Technology Center, Shinshu University, Nagano, Nagano, Japan*; 3. *University of California, Los Angeles, Los Angeles, CA, USA*

CU-03. Effects of the electric component on left-handed metamaterial. *N. Tung*¹, *V. Lam*^{1,2}, *M. Cho*¹, *J. Park*¹, *W. Jang*³ and *Y. Lee*¹
 1. *Quantum Photonic Science Research Center, Hanyang University, Seoul, Korea, South*; 2. *Institute of Material Science, Vietnamese Academy of Science and Technology, Hanoi, Viet Nam*; 3. *Korea Communication Commission Radio Research Laboratory, Seoul, Korea, South*

CU-04. Modeling and simulation of flat panel speaker using magnetostrictive actuator. *H. Choi*¹, *Y. Park*¹ and *M. Noh*¹ *1. BK21 Mechatronics Group, Dept. of Mechatronics Engineering, Chungnam National University, Daejeon, Korea, South*

CU-05. Electromagnetic properties of a new ferrite-ceramic composite material. *Y. He*¹, *H. Zhang*¹, *W. Ling*¹ and *C. Mu*¹ *1. The Key Laboratory of Electronic Thin Film and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

CU-06. Dielectric permittivity study of SiO₂/Co/SiO₂ films. *Y. Ding*^{1,2}, *Y. Yao*³, *K. Wu*⁴, *D. Hung*⁵, *J. Hsu*⁴, *D. Wei*⁶ and *J. Wu*³ *1. Graduate Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Division of Natural Science, Ming Hsin Univ. of Sci. and Tech., Hsinchu, Taiwan; 4. Department of Physics, Fu Jen University, Taipei, Taiwan; 5. Department of Information and Tele. Engin., Ming Chuan University, Taipei, Taiwan; 6. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan*

CU-07. Nonlinear homogenization for calculation of electromagnetic properties of soft magnetic composite materials. *B. Mohamed*¹, *T. Didier*¹, *R. Brahim*¹ and *F. Javad*¹ *1. IREENA, Saint Nazaire, France*

CU-08. Magnetic and crystal structure transition on La_{0.2}Ho_{0.8}Mn₂O₅ oxide. *C. Ju*¹, *H. Chou*¹ and *J. Lee*² *1. NSYSU, Kaohsiung, Taiwan; 2. NSRRC, HsinChu, Taiwan*

CU-09. Magneto-electric coupling changed by proton irradiation in the CoCr₂O₄. *K. Choi*¹, *S. Kim*¹ and *C. Kim*¹ *1. Physics, Kookmin Univ., Seoul, Korea, South*

**WEDNESDAY
MORNING
8:00**

EXHIBIT HALL B

Session CV

**APPLICATIONS OF PERMANENT
MAGNETIC MATERIALS
(Poster Session)**

Michaela Kuepferling, Session Chair
National Institute of Metrological Research

CV-01. Calculation of the static forces among the magnets in a Halbach array. *H. Rovers*¹, *J. Jansen*¹, *E. Lomonova*¹ and *J. Janssen*¹ *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

CV-02. Feasibility study on a new energy harvesting electromagnetic device using aerodynamic instability.

H. Jung¹, S. Lee¹ and D. Jang¹ 1. KAIST, Daejeon, Korea, South

CV-03. Strong permanent magnet dipole with reduced demagnetization effect.

C. Li¹ and M. Devine¹ 1. Dexter Magnetic Technologies, Hicksville, NY, USA

CV-04. Analysis of an E-core interior permanent magnet linear oscillating actuator.

Z. Zhu¹ and X. Chen¹ 1. University of Sheffield, Sheffield, United Kingdom

CV-05. Radial stiffness of ferrofluid seals : theoretical modeling and experimental results.

R. Ravaut¹, M. Pinho¹, G. Lemarquand¹, N. Dauchez¹ and J. Genevaux¹ 1. LAUM, Universite du Maine, Le Mans, France

CV-06. Enhancements of substrate deposition rate and target erosion profile in a dc magnetron sputtering system.

C. Liu¹, M. Lai¹, C. Hwang², C. Tu¹, L. Liu¹ and Y. Hsu¹ 1. Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. Electrical Engineering, Feng Chia University, Taichung, Taiwan

CV-07. Analytical calculation of magnetic coenergy and mechanical energy output in a permanent magnet system.

Z.J. Bin¹, W. Qian¹, Z. Juan¹ and Y. Li² 1. Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Linqun Motor Factory, Guiyang, Guizhou, China

CV-08. Vibration circuit breaker using repulsive magnets and ferromagnets.

K. Nishimura¹ and M. Inoue² 1. Department of Electrical and Electronic Engineering, Suzuka National College of Technology, Suzuka, Japan; 2. Department of Electrical and Electronic Engineering, Toyohashi University of Technology, Toyohashi, Japan

CV-09. Development of permanent magnetic system for single crystal growth.

S. Ho¹, F. Liu², Q. Yang² and W. Fu¹ 1. The Hong Kong Polytechnic University, Hong Kong, China; 2. Electrical Engineering, Hebei University of Technology, Tianjin, China

CV-10. Field analysis and comparison of several dipole permanent magnet structures.

B. Zhang¹ and G.P. Hatch¹ 1. Dexter Magnetic Technologies, Elk Grove Village, IL, USA

WEDNESDAY
MORNING
8:00

EXHIBIT HALL B

Session CW
MOTOR CONTROL
(Poster Session)

Zu Guang Zhang, Session Chair
Tokyo University of Science
Zhejie Liu, Session Chair
Data Storage Institute

CW-01. Efficiency optimization of a permanent-magnet hybrid brushless machine using DC field current control. *C. Liu*¹ and *K. Chau*¹ *1. Dept. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

CW-02. Harmonic iron loss analysis of electrical machines for high-speed operation considering driving condition and speed. *J. Seo*¹, *T. Chung*² and *H. Jung*¹ *1. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Korea, South; 2. Department of Electrical Engineering, Choong-Ang University, Seoul, Korea, South*

CW-03. Temperature compensation algorithm according to temperature of IPMSM for HEV. *J. Im*¹, *S. Kim*¹, *J. Bae*¹, *S. Go*¹, *C. Jin*¹ and *J. Lee*¹ *1. Electrical Engineering, Hanyang University, Seoul, Korea, South*

CW-04. Optimal magnet design of PMA-SynRM for wide constant-power operation. *W. Kim*¹, *K. Kim*¹, *D. Kang*¹, *S. Go*¹ and *J. Lee*¹ *1. Electrical Engineering, HanYang Univ., Seoul, Korea, South*

CW-05. A study on the characteristics of unbalanced impedance and thrust reduction of PMLSM according to end effect. *L. Seung Hoon*¹, *A. Ho-Jin*², *J. Ki-Bong*¹ and *K. Gyu-Tak*¹ *1. Electrical Engineering, Changwon National University, Changwon, Gyeongnam, Korea, South; 2. Precision Machinery Team, GN-Mechanical Technology Center, Gimhae, Gyeongnam, Korea, South*

CW-06. Detection of saturation in the iron core of a welding transformer based on an artificial neural network. *K. Dezelak*¹, *J. Pihler*¹, *G. Stumberger*¹, *B. Klopčič*² and *D. Dolinar*¹ *1. Faculty of electrical engineering and computer science, University of Maribor, Maribor, Slovenia; 2. Indramat elektromotorji d.o.o, Skofja Loka, Slovenia*

CW-07. An intensive investigation into reduction of vibration in switched reluctance motors. *J. Li*¹, *D. Choi*¹, *D. Kang*² and *Y. Cho*¹ *1. Electrical Engineering, Dong-A University, Busan, Korea, South; 2. Electronics Engineering, Dong-A University, Busan, Korea, South*

CW-08. A study on Auxiliary core design of PMLSM to reduce the detent force according to end effect. *L. Seung Hoon*¹, *A. Ho-jin*², *J. Ki-Bong*¹ and *K. Gyu-Tak*¹ *1. Electrical Engineering, Changwon National University, Changwon, Gyeongnam, Korea, South; 2. Precision Mechanical Team, GN-Mechanical Thechnology Center, Changwon, Gyeongnam, Korea, South*

CW-09. Operational range evaluation based on constraint parameters estimation for interfacing design with control field of high-speed permanent magnet synchronous machine. *S. Jang*¹, *S. Sung*¹, *K. Ko*¹ and *D. You*¹ *1. Chungnam National University, Daejeon, Korea, South*

CW-10. Sensorless drive for brushless DC motor using simple voltage detecting circuit. *S. Go*¹ and *J. Lee*¹ *1. Hanyang University, Seoul, Korea, South*

CW-11. Design of position detection strategy of sensorless permanent magnet motors at standstill using transient finite element analysis. *W. Fu*¹, *S. Ho*¹ and *Z. Zhang*² *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Whirlpool Corporation, Beaton Harbor, MI, USA*

CW-12. PM synchronous motor speed control using hybrid fuzzy PI with novel switching functions. *A. Sant*¹ and *K. Rajagopal*¹ *1. Electrical Engineering, I.I.T. Delhi, New Delhi, India*

**WEDNESDAY
AFTERNOON
2:00**

ROOM 311-313

Session DA

SYMPOSIUM ON MAGNETIC SENSORS FOR SPACE APPLICATIONS

Marina Díaz - Michelena, Session Chair
INTA

2:00 DA-01. Space environment and scientific missions.
*(Invited) R.J. Strangeway*¹ *1. Institute of Geophysics and Planetary Physics, University of California, Los Angeles, CA, USA*

- 2:30 DA-02. The challenges of magnetometry in space.**
(Invited) N. Murphy¹ 1. *Space and Astrophysical Plasmas Group, Jet Propulsion Laboratory, Pasadena, CA, USA*
- 3:00 DA-03. Calibration of magnetometers. (Invited)**
 J. Merayo¹, P. Brauer¹ and F. Primdahl¹ 1. *DTU Space, Technical University of Denmark, Lyngby, Denmark*
- 3:30 DA-04. Future directions for sensors for space applications. (Invited)** W. Magnes¹ and M. Diaz Michelena² 1. *Space Research Institute, Graz, Austria;* 2. *Instituto Nacional de Técnica Aeroespacial, Madrid, Spain*

WEDNESDAY
AFTERNOON
2:00

ROOM 314

Session DB

MR-BASED SENSORS (INCLUDING GMR, SPIN-VALVES, MTJ, CPP, ETC.)

Stefan Maat, Session Chair

Hitachi Global Storage Technologies

- 2:00 DB-01. Measurement of effective free layer magnetization orientation of TMR sensors.** A. Taratorin¹
 1. *Integral Solutions International, Santa Clara, CA, USA*
- 2:15 DB-02. Effect of current screen layer on bias voltage dependence of MR ratio in Heusler alloy based CPP-GMR sensor.** Y. Sato¹, K. Hoshino¹, S. Okamura¹, K. Kato¹ and H. Hoshiya¹ 1. *Central research laboratory, Hitachi Ltd., Odawara, Kanagawa, Japan*
- 2:30 DB-03. Influence of diffused boron into MgO barrier on pinhole creation in CoFeB/MgO/CoFeB magnetic tunnel junctions.** K. Komagaki¹, M. Hattori¹, K. Noma¹, H. Kanai¹, K. Kobayashi¹, Y. Uehara¹, M. Tsunoda² and M. Takahashi² 1. *Head Division, FUJITSU LIMITED, Nagano, Japan;* 2. *Department of Electronic Engineering, Tohoku University, Sendai, Japan*
- 2:45 DB-04. A model of the exchange-bias setting process in spin valves and tunnelling readers.** J. Barker^{1,2}, B. Craig², R. Lambertson², A. Johnston², O. Heinonen³ and R.W. Chantrell¹ 1. *York University, York, United Kingdom;* 2. *Seagate Technology, Springtown, United Kingdom;* 3. *Seagate Technology, Minneapolis, MN, USA*

- 3:00 DB-05. Electrical and magnetic 1/f noise in magnetic tunnel junctions.** *C. Kaiser*¹, *C. Park*¹, *S. Oh*¹, *Y. Ding*¹, *C. Shang*¹, *Q. Leng*¹, *P. Rana*¹, *M. Ho*¹ and *M. Pakala*¹ *1. Western Digital, Fremont, CA, USA*
- 3:15 DB-06. Influence of Boron Diffusion on Transport and Magnetic properties in CoFeB/CoFe/MgO/CoFeB Magnetic Tunnel Junction.** *C. Park*¹, *L. Miloslavsky*¹, *I. Lim*², *S. Oh*¹, *C. Kaiser*¹, *Q. Leng*¹ and *M. Pakala*¹ *1. Western Digital, Fremont, CA, USA; 2. Western Digital (Media), San Jose, CA, USA*
- 3:30 DB-07. Spin scattering asymmetry in CPP spin valves with alternated monatomic [Fe/Co]_n superlattice and Au spacer.** *T. Mano*¹, *I. Chu*², *M. Doi*¹ and *M. Sahashi*¹ *1. Electronic Engineering, Tohoku Univ., Sendai, Japan; 2. LG Electronics, Kyunggi-Do, Korea, South*

WEDNESDAY

ROOM 315

AFTERNOON

2:00

Session DC**RECORDING HEADS AND MATERIALS**

Kaizhong Gao, Session Chair

Seagate

- 2:00 DC-01. Magneto-optic write head characterization using a garnet imaging film.** *J. Heidmann*¹ *1. ISI, Santa Clara, CA, USA*
- 2:15 DC-02. Recording head characterization using narrow domain walls in epitaxial garnet films.** *J. Heidmann*¹ *1. Research, Integral Solutions Int'l, Santa Clara, CA, USA*
- 2:30 DC-03. Analysis of track edge noise from write heads with different dimensions.** *Y. Urakami*¹, *H. Katada*¹, *M. Shiimoto*¹, *S. Das*¹, *M. Sugiyama*¹, *N. Ito*¹ and *K. Nakamoto*¹ *1. Hitachi, Ltd., Odawara, Kanagawa, Japan*
- 2:45 DC-04. Characterization of skip or far track erasure in a side shield design.** *Y. Liu*¹, *K. Takano*¹, *D. Bai*¹, *X. Zhang*¹, *K. Liu*¹, *Y. Wu*¹ and *M. Dovek*¹ *1. Headway Technologies, Inc., Milpitas, CA, USA*
- 3:00 DC-05. Pole tip optimization for bit patterned recording.** *T. Schrefl*^{2,1}, *A. Goncharov*¹, *G. Hrkac*¹, *A. Bashir*¹ and *D. Suess*³ *1. University of Sheffield, Sheffield, United Kingdom; 2. St Poelten University of Applied Sciences, St Poelten, Austria; 3. Vienna University of Technology, Vienna, Austria*

- 3:15 DC-06. Inductance saturation of perpendicular recording heads in magnetic field.** *A. Taratorin*¹ and *J. Heidmann*¹ *1. Integral Solutions International, Santa Clara, CA, USA*
- 3:30 DC-07. Simultaneous optimal design of the yoke and the coil in the perpendicular magnetic recording head.** *S. Park*², *J. Yoo*¹ and *J. Choi*² *1. School of Mechanical Engineering, Yonsei University, Seoul, Korea, South; 2. Graduate School of Mechanical Engineering, Yonsei University, Seoul, Korea, South*
- 3:45 DC-08. Write head modeling for shingled recording.** *Y. Kanai*¹, *K. Hirasawa*¹, *Y. Jinbo*¹, *K. Yoshida*², *S.J. Greaves*³ and *H. Muraoka*³ *1. IEE, Niigata Institute of Technology, Kashiwazaki, Niigata-ken, Japan; 2. ICE, Kogakuin University, Shinjuku, Tokyo-to, Japan; 3. RIEC, Tohoku University, Sendai, Miyagi-ken, Japan*

WEDNESDAY
AFTERNOON
2:00

ROOM 306

Session DD
ULTRA-THIN FILMS AND SURFACE
EFFECT

Stéphane Andrieu, Session Chair
Nancy Université

- 2:00 DD-01. Thickness-dependent magnetic properties of $\text{Ba}_{1-x}\text{Bi}_x\text{FeO}_3$ thin films for spin-filer junction.** *K. Yoshimoto*¹, *Y. Sugimoto*¹, *S. Tachiki*¹, *S. Kobayashi*¹, *F. Kato*¹, *Y. Takeda*¹ and *H. Asano*¹ *1. Crystalline Material Science, Nagoya University, Nagoya, Japan*
- 2:15 DD-02. In-situ time-resolved probing of magnetization dynamics in $\text{Ni}_{80}\text{Fe}_{20}$ thin films.** *J. Rudge*¹, *J. Kolthammer*¹, *A. Santoni*¹, *Y.K. Hong*² and *B.C. Choi*¹ *1. Department of Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 2. Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA*
- 2:30 DD-03. The extraordinary optical transmission through dielectric hole-array coated with TbFeCo thin film.** *N. Ou*¹, *J. Shyu*¹, *J. Wu*¹ and *T. Wu*² *1. Optoelectronics Technology, National Changhua University of Education, Changhua, Taiwan; 2. Taiwan SPIN Research Center, National Yunlin University of Science & Technology, Yunlin, Taiwan*

- 2:30 DD-04. Ultra-thin film magnetite islands studied by spin-polarized low energy electron microscopy.** B. Santos^{1,2}, E. Loginova³, A. Mascaraque⁴, A.K. Schmid⁵, K.F. McCarty³ and J. de la Figuera^{1,2} 1. Instituto de Química-Física Rocasolano CSIC, Madrid, Madrid, Spain; 2. Universidad Autónoma de Madrid, Madrid, Madrid, Spain; 3. Sandia National Laboratories, Livermore, CA, USA; 4. Universidad Complutense de Madrid, Madrid, Madrid, Spain; 5. Lawrence Berkeley National Laboratory, Berkeley, CA, USA
- 2:45 DD-05. Fabrication of antiferromagnetic α -Cr₂O₃(0001) thin film of high quality toward the control of magnetism of ultrathin film by ME effect.** Y. Shiratsuchi¹, T. Nakatani¹, S. Kawahara¹ and R. Nakatani¹ 1. Materials Science and Engineering, Osaka University, Suita, Osaka, Japan
- 3:00 DD-06. Study of the structure and magnetic properties of Co₂MnSi thin films onto Si.** A.I. Nahid¹, M. Oogane¹ and Y. Ando¹ 1. Applied Physics, Tohoku University, Sendai, Japan
- 3:15 DD-07. Epitaxial growth of Fe_xCo_{1-x} thin films on MgO(110) single-crystal substrates.** M. Ohtake¹, K. Shikada¹, T. Nishiyama¹, F. Kirino² and M. Futamoto¹ 1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan
- 3:30 DD-08. Competing magnetoresistance contributions in FePt thin film at low temperatures.** P. Tiberto¹, P. Allia², F. Celegato¹, M. Coisson¹, F. Vinai¹, F. Albertini³ and F. Casoli³ 1. Electromagnetism Division, INRIM, Torino, Italy; 2. DISMIC, Politecnico di Torino, Torino, Italy; 3. IMEM-CNR, Parma, Italy

WEDNESDAY
AFTERNOON
2:00

ROOM 307

Session DE

HYSTERESIS MODELING

Gergely Zimanyi, Session Chair
University of California, Davis

- 2:00 DE-01. Homogenized magnetic properties of heterogeneous anisotropic media including nonlinearities.** O. Bottauscio¹, M. Chiampì² and A. Manzin¹ 1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Ingegneria Elettrica, Politecnico di Torino, Torino, Italy

- 2:15 DE-02. Nonlinear resonant and chaotic magnetization dynamics in microwave assisted magnetization switching.** *M. d'Aquino*¹, *C. Serpico*², *G. Bertotti*³, *I.D. Mayergoyz*⁴ and *R. Bonin*⁵ *1. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 3. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 4. ECE Department and UMIACS, University of Maryland, College Park, MD, USA; 5. Politecnico di Torino - Sede di Verrès, Verrès (Aosta), Italy*
- 2:30 DE-03. Frequency dependence of hysteresis loss in an interacting nanoparticle system.** *J. King*¹, *H. Roberts*¹, *R. Evans*¹ and *R.W. Chantrell*¹ *1. York University, York, United Kingdom*
- 2:45 DE-04. Typical features on the FORC diagrams related to mean field interactions in magnetic structures.** *R. Tanasa*¹ and *A. Stancu*¹ *1. Department of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania*
- 3:00 DE-05. Identification algorithm for the vector Preisach-LLG model.** *L. Stoleriu*¹, *A. Stancu*¹, *P. Postolache*¹ and *I. Petrilă*¹ *1. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania*
- 3:15 DE-06. Modeling the temperature dependence of hysteresis based on Jiles-Atherton theory.** *A. Raghunathan*¹, *Y. Melikhov*¹, *J.E. Snyder*¹ and *D.C. Jiles*¹ *1. Wolfson Centre for Magnetism, School of Engineering, Cardiff University, Cardiff, United Kingdom*
- 3:30 DE-07. Modeling magnetic hysteresis under dc-biased magnetization using neural network.** *Z. Zhao*², *F. Liu*², *S. Ho*¹, *W. Fu*¹ and *W. Yan*² *1. The Hong Kong Polytechnic University, Hong Kong, China; 2. Electrical Engineering, Hebei University of Technology, Tianjin, China*
- 3:45 DE-08. Computer modeling for apparent image effect in closed-circuit magnetic measurement.** *A. Wangler*¹, *A.K. Higgins*¹, *C.D. Graham*², *R.M. Strnat*³ and *C.H. Chen*¹ *1. University of Dayton Magnetism Lab, Dayton, OH, USA; 2. University of Pennsylvania, Philadelphia, PA, USA; 3. Magnet-Physics Inc., Fishers, IN, USA*

WEDNESDAY
AFTERNOON
2:00

ROOM 308

Session DF
MAGNETOIMPEDANCE AND MEMS

David Menard, Session Chair
Polytechnique Montréal

- 2:00 DF-01. Giant magnetoimpedance stray field detector.** *S. Volchkov*¹ and *G. Kurylanskaya*^{2,1} *1. Dept. of Magnetism and Magnetics Nanomaterials, Ural State University, Ekaterinburg, Russia; 2. Dept. Electricity and Technology, University of the Basque Country UPV-EHU, Leioa, Spain*
- 2:15 DF-02. Low loss Ba_{2-x}Sr_xCo₂Fe₁₂O₂₂ Y-type hexaferrite for 1 ~ 3 GHz applications.** *J. Kum*¹, *W. Seong*¹, *G. Kim*¹, *S. Park*¹, *W. Ahn*¹, *S. Bae*², *Y. Hong*², *J. Lee*², *J. Jalli*², *G.S. Abo*², *I. Nam*³, *C. Choi*⁴ and *J. Lee*⁴ *1. E.M.W. Antenna Co., Ltd., Seoul, Korea, South; 2. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 3. Department of Advanced Materials Engineering, Kangwon National University, Choonchun, Korea, South; 4. Korea Institute of Materials Science, Changwon, Korea, South*
- 2:30 DF-03. Multipeak FMR absorption spectra in biphasic magnetic microwires.** *J. Torrejon*¹, *G.A. Badini-Confalonieri*¹ and *M. Vazquez*¹ *1. Magnetism, ICMM (CSIC), Madrid, Spain*
- 2:45 DF-04. Existence of three stable states of magnetic domain for the stepped giant magnetoimpedance element and a proposal for a sensor with memory function.** *T. Nakai*¹, *K. Takada*¹ and *K. Ishiyama*² *1. Industrial Technology Institute, Miyagi Prefectural Government, Sendai, Miyagi, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*
- 3:00 DF-05. Low noise amorphous wire magneto-impedance sensor having pico-Tesla sensitivity.** *T. Uchiyama*¹, *A. Yamaguchi*² and *Y. Utsumi*³ *1. Electrical Engineering and Computer Science, Nagoya University, Nagoya, Aichi, Japan; 2. Physics, Keio University, Yokohama, Kanagawa, Japan; 3. Advanced Science and Technology for Industry, University of Hyogo, Ako-gun, Hyogo, Japan*
- 3:15 DF-06. ANN modeling technique for RF MEMS phase shifter.** *Q. Wu*¹, *G. Yang*¹, *J. Fu*¹, *F. Meng*¹ and *K. Zhang*¹ *1. Harbin Institute of Technology, Harbin, Heilongjiang, China*

- 3:30 DF-07. A wafer-scale packaging with vertical feedthroughs for RF MEMS phase shifter applications.** *Q. Wu*¹ and *L. Jin*¹ *1. Harbin Institute of Technology, Harbin, China*
- 3:45 DF-08. Enhancing the performance of magnetic tunnel junction sensors using MEMS resonators.** *G. Jaramillo*^{1,3}, *M. Chan*^{2,3} and *D. Horsley*^{2,3} *1. Electrical and Computer Engineering, UC Davis, Davis, CA, USA; 2. Mechanical and Aeronautical Engineering, UC Davis, Davis, CA, USA; 3. Berkeley Sensors and Actuators Center, UC Berkeley, Berkeley, CA, USA*

**WEDNESDAY
AFTERNOON
2:00**

ROOM 309-310

Session DG

**MAGNETO-DIELECTRIC MATERIALS
AND META-MATERIALS (II)**

Zbigniew Celinski, Session Chair
University of Colorado at Colorado Springs

- 2:00 DG-01. Magnetolectricity in piezoelectric/magnetostrictive nanocomposites at microwave frequencies.** *V. Castel*¹, *C. Brosseau*^{1,2} and *J. Ben Youssef*³ *1. Lab-STICC, Université Européenne de Bretagne, Brest, France; 2. Département de Physique, Université Européenne de Bretagne, Brest, France; 3. Laboratoire de Magnétisme de Bretagne, Université Européenne de Bretagne, Brest, France*
- 2:15 DG-02. Magneto-dielectric thin film heterostructure with high permeability and permittivity.** *K. Garelo*^{1,2}, *B. Viala*¹ and *E. Benèvent*¹ *1. CEA, Grenoble, France; 2. XLIM, Limoges, France*
- 2:30 DG-03. Design, fabrication, and testing of 3-D miniaturized rectangular cavity resonator based on metamaterial.** *F. Meng*¹, *K. Zhang*¹, *Y. Liang*¹, *Q. Wu*^{1,2} and *L. Li*^{2,1} *1. School of Electronics and Information Technology, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Department of Electrical and Computer Engineering, National University of Singapore, Kent Ridge, Singapore*
- 2:45 DG-04. Comparison of direct and converse magnetolectric effect in laminate composite.** *T. Wu*¹, *C. Chang*¹, *T. Chung*¹ and *G. Carman*¹ *1. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA, USA*

- 3:00 DG-05. Epitaxial strain and chemical doping effects on the magnetic properties of magnetoelectric orthorhombic YMnO_3 thin films.** X. Martí¹, V. Skumryev^{2,3}, A. Cattoni⁴, R. Bertacco⁴, C. Ferrater⁵, M. García-Cuenca⁵, M. Varela⁵, F. Sanchez¹ and J. Fontcuberta¹ 1. Institut de Ciència de Materials de Barcelona - CSIC, Bellaterra, Spain; 2. Institut Català de Recerca i Estudis Avançats, Barcelona, Spain; 3. Departament de Física, Universitat Autònoma de Barcelona, Barcelona, Spain; 4. LNESS – Politecnico di Milano, Como, Italy; 5. Departament de Física Aplicada i Òptica, Universitat de Barcelona, Barcelona, Spain
- 3:15 DG-06. Low loss composite material for high-frequency applications consisting of Zn–Ni–Fe fine flakes.** Y. Shirakata^{1,3}, N. Hidaka^{2,3}, M. Ishitsuka², A. Teramoto³ and T. Ohmi³ 1. R&D Div., Yokowo Co., Ltd., Kita-ku, Tokyo, Japan; 2. Advanced Materials Research Laboratory, Sumitomo Osaka Cement Co., Ltd., Funabashi, Chiba, Japan; 3. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan
- 3:30 DG-07. Multiferroic properties of BiFeO_3 ceramics and $\text{BiFeO}_3/\text{Co}/\text{BiFeO}_3$ layer structure.** W. Zih-Siang¹, T. Chi-Shun¹, D. Yi¹, L. Deng-Chi², W. Kun-Tung² and Y. Yong-De³ 1. Graduate Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 2. Department of Physics, Fu Jen University, Taipei, Taiwan; 3. Department of Material Engineering, Tatung University, Taipei, Taiwan
- 3:45 DG-08. Magnetization studies of multiferroic LaFeO_3 - BaTiO_3 ceramics.** V. Ramana¹, P. Hong Woo¹, K. Jaeyeong¹, L. Bo Wha¹ and J. Chang Uk¹ 1. Department of Physics, Hankuk University of Foreign Studies, Yongin, Kyugki-do, Korea, South

WEDNESDAY
AFTERNOON
1:00

EXHIBIT HALL B

Session DP
ADVANCED MAGNETIC RECORDING
(Poster Session)

S.N. Piramanayagam, Session Chair
Data Storage Institute
Yunhao Xu, Session Chair
Seagate Technology

DP-01. Enhanced structural and magnetic ordering of FePt/SiO₂ bilayers by ion-beam bombardment and annealing. K. Lin¹, Y. Chiu¹, A. Sun², J. Hsu², H. Ouyang³ and T. Suzuki⁴ *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Department of Physics and Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan; 3. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 4. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

DP-02. Microstructure analysis of ultrathin Ag effect on perpendicular FePt film. G. Lin¹, C. Ou¹, M. Chen¹ and J. Tsai¹ *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

DP-03. Formation of ordered FePt(001) texture with reduced diffusion length. S. Wang¹, A. Sun^{2,3}, F. Yuan⁴, P. Kuo¹ and J. Hsu^{2,3} *1. Material Science and Engineering, National Taiwan University, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan; 3. Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

DP-04. Chemical stability and microstructure of highly (0001) textured Sm(CoCu)₅ thin films with a thin Ta capping layer. H. Zhao¹, X. Liu¹, H. Wang¹ and J. Wang¹ *1. ECE, University of Minnesota, Minneapolis, MN, USA*

DP-05. Realization of 15 Gb/in² media with fine barium-ferrite particle for linear tape system. A. Matsumoto¹, Y. Murata¹, A. Musha¹ and S. Matsubaguchi¹ *1. FUJIFILM Corporation, Odawara, Kanagawa, Japan*

DP-06. Effect of inter-track interference on the areal density of magnetic tape sputtered media. *D. Berman*¹, V.H. Chembrolu¹, T. Topuria¹, S. Matsunuma², T. Inoue³, T. Doi³, T. Matsuu⁴, A. Hashimoto⁴, K. Hirata⁴ and S. Nakagawa⁴ *1. Almaden Research Center, IBM, San Jose, CA, USA; 2. R&D Division, Hitachi Maxell, Ibaraki, Osaka, 567-8567, Japan; 3. Advanced Tape Division, Hitachi Maxell, Yamazaki, Kyoto, 618-8525, Japan; 4. Department of Physical Electronics, Tokyo Institute of Technology, Ookayama, Tokyo, 152-8552, Japan*

DP-07. Effect of tape longitudinal dynamics on timing recovery and channel performance. *W. Imaino*¹, D. Berman¹, P. Jubert¹, G. McClelland¹, H. Noguchi², M. Asai² and H. Takano² *1. Almaden Research Center, IBM, San Jose, CA, USA; 2. Recording Media Research Laboratories, Fujifilm, Odawara, Kanagawa, Japan*

DP-08. Conversion of nano-sized spherical magnetite (S-Mag) to spherical barium ferrite (S-BaFe) nanoparticles for high density particulate recording media. *J. Jalli*¹, Y. Hong¹, S. Bae¹, J. Lee¹, G.S. Abo¹, S. Gee², J.C. Sur³ and S.G. Kim⁴ *1. MINT Center, Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 2. Seagate Technology, Bloomington, MN, USA; 3. Division of Physics, Division of Physics, Wonkwang University, Iksan, Korea, South; 4. Department of Physics and Astronomy, Mississippi State University, Mississippi, MS, USA*

DP-09. Study of heat assisted magnetic recording with matching media and recording head field. *J. Liao*¹, S. Wei¹, J. Li¹, Q. Jin¹ and X. Che² *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Hitachi Global Storage technologies, San Jose, CA, USA*

DP-10. Investigation of high and low mobility sputter conditions to enhance decoupling in oxide composite media. *H. Lee*¹, S. Kong², H. Lee², H. Oh², V.W. Guo³, J. Zhu³ and D.E. Laughlin³ *1. eMD Center, Central R&D Institute, Samsung Electro-Mechanics, Suwon, Korea, South; 2. Samsung Advanced Institute of Technology, Yongin, Korea, South; 3. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*

DP-11. High resolution MFM imaging of perpendicular and in-plane magnetic stray field gradients for perpendicular magnetic recording media. *S. Yoshimura*¹, G. Egawa¹, T. Miyazawa¹, S. Ishio² and H. Saito¹ *1. Center for Geo-environmental Science, Akita University, Akita, Akita, Japan; 2. Faculty of Engineering and Resource Science, Akita University, Akita, Akita, Japan*

DP-12. Optimization of exchange coupled composite media by tuning anisotropy in laminated soft layer.

H. Hou¹, J. Liao¹, M. Lin¹, C. Lai¹, R. Chen² and J. Lee² 1. Department of Materials Science and Engineering, National Tsing Hua University, Hsing Chu, Taiwan; 2. China Steel Corporation, Kao Hsiung, Taiwan

DP-13. Formation of (001) texture L10 FePt films with Fe-Ox underlayer. C. Zha¹, B. Ma¹, Z. Zhang¹ and Q. Jin¹

1. Department of Optical Science and Engineering, Fudan University, Shanghai, Shanghai, China

DP-14. High recording performance of improved nanoCAP tape media. T. Inoue¹, T. Watanabe¹, T. Ohwaki¹,

H. Mitsuhashi¹, Y. Sasaki¹, T. Doi¹ and M. Kishimoto¹ 1. Storage Media Div, Hitachi Maxell, Oyamazaki Otokuni, Kyoto, Japan

DP-15. Comparison of playback performance of facing targets sputtered perpendicular and longitudinal tape media. S. Matsunuma¹, T. Inoue², T. Doi², T. Matsuu³,

A. Hashimoto³, K. Hirata³ and S. Nakagawa³ 1. R&D Division, Hitachi Maxell, Ibaraki, Osaka, Japan; 2. Advanced Tape Division, Hitachi Maxell, Yamazaki, Kyoto, Japan; 3. Dept. Physical Electronics, Tokyo Institute of Technology, Ookayama, Tokyo, Japan

DP-16. Study of perpendicular AME media in a linear tape drive. W. Imaino¹, D. Berman¹, P. Jubert¹,

G. McClelland¹, K. Motohashi², N. Ikeda², T. Sato², H. Ono² and S. Onodera² 1. Almaden Research Center, IBM, San Jose, CA, USA; 2. Recording Media, Sony Corporation, Sendai, Miyagi-ken, Japan

DP-17. Automatic design optimization of plasmon antenna for TAMR. K. Takano¹, E. Jin¹, E. Schreck¹,

J. Smyth¹ and M. Dovek¹ 1. Headway Technologies, Milpitas, CA, USA

WEDNESDAY
AFTERNOON
1:00

EXHIBIT HALL B

Session DQ

**PATTERNED FILMS AND ELEMENTS (II)
(Poster Session)**

Mathias Klaui, Session Chair
University of Konstanz
Andy Thomas, Session Chair
Bielefeld University

DQ-01. Static and dynamic properties of sub-100 nm Fe nanodot arrays. Z. Liu¹, R. Brandt¹, R. Dumas², C. Li³, I. Schuller³, K. Liu² and H. Schmidt¹ *1. School of Engineering, University of California Santa Cruz, Santa Cruz, CA, USA; 2. Physics, University of California Davis, Davis, CA, USA; 3. Physics, University of California San Diego, San Diego, CA, USA*

DQ-02. Phase diagrams for vortex-core switching threshold field and switching time. K. Lee¹, S. Kim¹, Y. Yu¹, Y. Choi¹, H. Jung¹, K.Y. Guslienko¹ and P. Fischer² *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, South; 2. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA, USA*

DQ-03. MOKE and AHE measurements of rectangular magnetic islands. M. Alexandrou¹, P.W. Nutter¹, E.W. Hill¹, B.D. Belle¹, F. Schedin¹, J.J. Miles¹ and T. Thomson¹ *1. School Of Computer Science, The University Of Manchester, Manchester, United Kingdom*

DQ-04. One way propagation of domain wall in artificial asymmetric configurations. S. Yoon¹, Y. Jang¹, L. Kisu¹, S. Lee¹ and B. Cho¹ *1. Material Science and Engineering and School of Photonics, Gwangju Institute of Science and Technology, Gwangju, Korea, South*

DQ-05. Weak localization behavior in template-grown Py antidot networks. D.P. Leitão^{1,2}, C.T. Sousa¹, A. Apolinario¹, J. Ventura¹, J.B. Sousa¹, K.R. Pirotta², M. Vazquez² and J.P. Araujo¹ *1. IFIMUP and IN - Institute of Nanotechnology, Porto, Portugal; 2. Instituto de Ciencia de Materiales de Madrid ICMM-CSIC, Madrid, Spain*

DQ-06. Superparamagnetic behavior of Pt/CoFe/Pt nanowires with decreasing wire width. *J. Lee*^{1,2}, *K. Kim*¹, *C. Lee*³, *Y. Cho*³, *S. Seo*³, *K. Shin*² and *S. Choe*¹ *1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South; 3. Samsung Advanced Institute of Technology, Samsung, Seoul, Korea, South*

DQ-07. Investigation on the magnetization reversal of nanostructured magnetic tunnel junction rings. *C. Chen*¹, *J. Lin*¹, *L. Horng*¹, *J. Yang*², *S. Isogami*³, *M. Tsunoda*³ and *M. Takahashi*³ *1. Physics, Taiwan Spin Research Center, National Chang-Hua Univ. of Education, Chang-Hua city, Taiwan; 2. Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung, Taiwan; 3. Graduate school of Electronic Engineering, Tohoku University, Sendai, Japan*

DQ-08. Ferromagnetic resonance of arrays of nanosized permalloy stripes. *L.M. Malkinski*¹, *M. Yu*¹, *D.J. Scherer II*¹ and *W.L. Zhou*¹ *1. University of New Orleans,, New Orleans, LA, USA*

DQ-09. Microwave magnetic properties of NiFe nano-strips. *B.K. Kuanr*¹, *V. Veerakumar*¹, *A.V. Kuanr*², *L.M. Malkinski*³, *R.E. Camley*¹ and *Z. Celinski*¹ *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, USA; 2. Physics Department, Shaheed Rajguru College of Applied Science for Women, Delhi, India; 3. AMRI, University of New Orleans, New Orleans, LA, USA*

DQ-10. Interdot coupling on vortex state of nano-patterned permalloy dots array. *C. Chao*¹, *C. Kuo*¹, *Y. Tsai*¹, *C. Chang*¹, *J. Wang*¹, *L. Horng*¹ and *J. Wu*¹ *1. Physics, National Changhua University of Education, Changhua, Taiwan*

DQ-11. The effects of size distribution and magnetic anisotropy on the switching field distribution of Co/Pd multilayered patterned arrays. *D. Smith*^{1,3}, *L. Chang*^{1,3}, *J.O. Rantschler*^{1,3}, *P. Ruchhoeft*^{1,3}, *S. Khizroev*⁴ and *D. Litvinov*^{1,2} *1. Electrical & Computer Engineering, University of Houston, Houston, TX, USA; 2. Chemical & Biomolecular Engineering, University of Houston, Houston, TX, USA; 3. Center for NanoMagnetic Systems, University of Houston, Houston, TX, USA; 4. Electrical Engineering, University of California - Riverside, Riverside, CA, USA*

DQ-12. Single crystal Fe elements patterned by selective chemical wet-etching. L. Sun^{1,2}, P. Wong², D. Niu², X. Zou³, Y. Zhai^{1,2}, J. Wu³, Y. Xu² and H. Zhai⁴ *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. Department of Electronics, The University of York, York, United Kingdom; 3. Department of Physics, The University of York, York, United Kingdom; 4. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China*

DQ-13. Local switching in patterned permalloy elements by focusing-MOKE measurements. L. Sun^{1,2}, X. Zou³, G. Li², W. Zhang², Y. Zhai^{1,2}, J. Wu³, Y. Xu² and H. Zhai⁴ *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. Department of Electronics, The University of York, York, United Kingdom; 3. Department of Physics, The University of York, York, United Kingdom; 4. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, Jiangsu, China*

**WEDNESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

Session DR

**MAGNETIC SENSING (II)
(Poster Session)**

Vasyl Tyberkevych, Session Chair
Oakland University

Marcelo Knobel, Session Chair

Insittuto de Física Gleb Wataghin (IFGW) -
Universidade Estadual de Campinas (UNICAMP)

DR-01. Development of tilt-compensated electronic compass. Y. Honkura^{1,3}, K. Sasayama², K. Tsuchida¹, H. Aoyama¹, M. Yamamoto³, C.M. Cai³ and N. Hamada³ *1. Aichi Micro Intelligent Corp., Tokai, Japan; 2. OTSL Inc., Nagoya, Japan; 3. Aichi Steel Corp., Tokai, Japan*

DR-02. Synthesis and magnetic properties of FeNi nanowires electro-deposited on nano-porous alumina templates. S. Cho¹, B. Yoo¹, K. Kim² and J. Kim¹ *1. Metallurgy and materials engineering, Hanyang University, Ansan, Korea, South; 2. Physics, Yeungnam University, Gyeongsan, Korea, South*

DR-03. Magnetic angle sensors based on oblique giant magneto impedance (GMI) devices. D. Kim¹, W. Pi¹, A. Murakami², I. Nam², Y. Yu² and W. Jeung¹ *1. Functional Materials Research Center, Korea Institute of Science and Technology, Seoul, Korea, South; 2. Divison of Information and Communication Engineering, Sunmun University, Asan, Korea, South*

DR-04. Sensitivity and capacitively coupled noise of coaxial line type magneto-impedance sensor constructed with cobalt base amorphous wire. H. Kim², K. Shin¹, Y. Kim² and S. Lim³ 1. Department of Multimedia Engineering, Kyungsoong University, Pusan, None, Korea, South; 2. Pukyong National University, Pusan, Korea, South; 3. Korea University, Seoul, Korea, South

DR-05. Error reduction of spin-valve type magnetic rotation angle sensor. Y. Okada^{1,2}, C. Mitsumata¹ and O. Ishii² 1. Advanced Electronics Research Laboratory, Hitachi Metals, Ltd., Kumagaya, Saitama, Japan; 2. Graduate School of Science and Engineering, Yamagata University, Yonezawa, Yamagata, Japan

DR-06. A fast magnetization reversal of antiparallel switching process in FeCoV wire for sensor application. T. Kusunoki¹, T. Kohara¹, H. Tanaka¹, T. Yamada¹, Y. Takemura¹, S. Abe², S. Kohno³, H. Itoi³ and F. Kaneko³ 1. Yokohama National University, Yokohama, Japan; 2. Kanagawa University, Yokohama, Japan; 3. Nikkoshi Co., Ltd, Tokyo, Japan

DR-07. “Negative” hysteresis in magnetoelastic torque transducers. I.J. Garshelis^{1,2} 1. Magnova, Inc., Pittsfield, MA, USA; 2. MagCanica, Inc., San Diego, CA, USA

DR-08. Barkhausen noise in the ion implanted amorphous ribbon. H. Song¹ and D. Park¹ 1. Korea Atomic Energy Research Institute, Daejeon, Korea, South

DR-09. A research on the structure of permanent magnets in the dual magnetic float type level gauge. D. Kim¹, J. Kim¹ and G. Park¹ 1. Electronic & Electrical Engineering, Pusan National University, Busan, Korea, South

DR-10. Numerical analysis of in-vitro GMR/TMR biosensors with immobilized ferrimagnetic sensor agents for single molecular detection. P. Zhang¹ and S. Bae¹ 1. Electrical and Computer Engineering, National Univ. of Singapore, Singapore, Singapore

DR-11. Quantitative analysis of magnetic beads using photoresist micro-well on PHR Sensor. S. Oh¹, Q. Tran¹, K. S.Ananda¹ and C. Kim¹ 1. Department of Materials Science and Engineering, Chungnam National University, Daejeon, Korea, South

DR-12. 3-D magnetic field measurements in a single SERF atomic magnetometer cell. *A. Gusarov*¹, D. Levron², E. Paperno¹, R. Shuker² and A. Ben-Amar Baranga^{2,3} *1. Electrical and Computer Engineering, Ben Gurion University, Beer Sheva, Israel; 2. Physics, Ben Gurion University, Beer Sheva, Israel; 3. Physics, Nuclear Research Center - Negev, Beer Sheva, Israel*

DR-13. Effect of stress due to plastic package moisture absorption in Hall sensors. *J.M. Cesaretti*¹, W.P. Taylor¹, G. Monreal¹ and O. Brand² *1. Allegro MicroSystems, Inc., Worcester, MA, USA; 2. Georgia Institute of Technology, Atlanta, GA, USA*

DR-14. Analysis of Total Harmonic Distortion in microspeakers considering the electromagnetic mechanical acoustic coupling effect. *J. Kwon*¹ and C. Lee¹ *1. Mechanical Engineering, Pusan National Univ., Busan, Busan, Korea, South*

**WEDNESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

Session DS

BIOMAGNETIC APPLICATIONS (I) (Poster Session)

Mark Tondra, Session Chair
Diagnostic Biosensors, LLC
Yasushi Takemura, Session Chair
Yokohama National University

DS-01. Development of a high-sensitive optically-pumped atomic magnetometer for biomagnetic field measurements: A phantom study. *S. Taue*¹, Y. Sugihara¹, T. Kobayashi¹, S. Ichihara², K. Ishikawa^{1,3} and N. Mizutani² *1. Kyoto Univ., Kyoto, Japan; 2. Canon Inc., Tokyo, Japan; 3. Univ. of Hyogo, Hyogo, Japan*

DS-02. Biomolecular recognition protocol based on optical transmittance of solutions containing self-assembled chains of functionalized magnetic nanoparticles. *S. Park*^{1,3}, H. Handa^{2,3} and A. Sandhu^{1,3} *1. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 2. Integrated Research Institute, Tokyo Institute of Technology, Tokyo, Japan; 3. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan*

DS-03. High-throughput top-down fabrication of magnetic particles for medical diagnostics, biosensor, and bioseparation applications. *J. Litvinov*^{1,4}, *A. Nasrullah*^{2,4}, *T.J. Sherlock*^{2,4}, *Y. Wang*^{3,4}, *P. Ruchhoeft*^{2,4} and *R.C. Willson*^{3,4} 1. *Materials Engineering, University of Houston, Houston, TX, USA*; 2. *Electrical & Computer Engineering, University of Houston, Houston, TX, USA*; 3. *Chemical & Biomolecular Engineering, University of Houston, Houston, TX, USA*; 4. *Center for NanoMagnetic Systems, University of Houston, Houston, TX, USA*

DS-04. Synthesis of thermoresponsive Au/iron oxide micelles for imaging, drug delivery and magnetic hyperthermia. *D. Kim*¹, *V. Novosad*¹, *R. Elena*², *T. Rajh*² and *B. Sam*¹ 1. *Materials Science Division, Argonne National Laboratory, Argonne, IL, USA*; 2. *Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL, USA*

DS-05. Examination of multidirectional exciting coil located outside the body for functional hyperthermia. *K. Furiya*¹, *T. Takura*¹, *F. Sato*¹, *H. Matsuki*² and *T. Sato*¹ 1. *Graduate School of Engineering, Tohoku University, Sendai, Japan*; 2. *Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan*

DS-06. Study of the optimum injection sites for a multiple metastasis region in cancer therapy by using MFH. *M. Pavel*^{1,2} and *A. Stancu*¹ 1. *Department of Physics, "Alexandru Ioan Cuza" University, Faculty of Physics, Iasi, Romania*; 2. *Faculty of Medicine, "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, Romania*

DS-07. Variance analysis of current source reconstruction using 3D MCG measurements. *M. De Melis*¹ and *Y. Uchikawa*¹ 1. *Graduate School of Advanced Science and Technology, Tokyo Denki University, Hatoyama, Saitama, Japan*

DS-08. Complexity analysis of magnetic stimulation at acupoint of Zusanli(St36) on EEG. *G. Xu*^{1,2}, *X. Zhang*¹, *W. Fu*², *S. Ho*², *W. Yan*¹ and *Y. Wang*¹ 1. *Biomedical Engineering, Hebei University of Technology, Tianjin, China*; 2. *Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

DS-09. Equivalent circuit simulation of the induced artifacts resulted from transcranial magnetic stimulation on human electroencephalography. *Y. Katayama*¹ and *K. Iramina*¹ 1. *Intelligent Systems, Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan*

DS-10. Optimization of metallic implant coated by diamagnetic material to reduce magnetic disturbance in magnetic resonance imaging. *Y. Gao*¹, K. Muramatsu¹, A. Kushibe², K. Yamazaki², A. Chiba³ and T. Yamamoto⁴ *1. Dept. of Electrical and Electronic Engineering, Saga Univ., Saga, Japan; 2. Takenaka Co., Inzai, Japan; 3. Inst. for Materials Research, Tohoku Univ., Sendai, Japan; 4. Graduate School of Health Sciences, Hokkaido Univ., Sapporo, Japan*

DS-11. Research on 3d reconstruction for head MRI image based on immune sphere-shaped SVM. L. Guo¹, Y. Li¹, Y. Wu², W. Yan¹ and X. Shen² *1. Biomedical Engineering, Hebei University of Technology, Tianjin, China; 2. Computer Science, Hebei University of Technology, Tianjin, China*

DS-12. Detection of transient changes in magnetic resonance signal intensity arising from neuronal electrical activities. *M. Sekino*¹, H. Ohsaki¹, S. Yamaguchi-Sekino² and S. Ueno³ *1. Department of Advanced Energy, Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa, Japan; 2. Department of Biomedical Engineering, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; 3. Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, Fukuoka, Japan*

DS-13. Broad area excitation system for direct feeding method FES using magnetic coupling. *Y. Kohata*¹, K. Kato², T. Sato¹, F. Sato¹, H. Matsuki² and Y. Handa³ *1. Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Biomedical Engineering, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. Medicine, Tohoku University of Medicine, Sendai, Miyagi, Japan*

DS-14. Effects of coil parameters on the stimulated area by transcranial magnetic stimulation. S. Tsuyama¹, A. Hyodo², T. Hayami³, Y. Katayama¹, S. Ueno⁴ and K. Iramina^{1,2} *1. Department of Intelligent Systems, Kyushu University, Fukuoka, Japan; 2. Systems Life Sciences, Kyushu University, Fukuoka, Japan; 3. Digital Medicine Initiative, Kyushu University, Fukuoka, Japan; 4. Applied Quantum Physics, Kyushu University, Fukuoka, Japan*

DS-15. Optimization array magnetic coil design for functional magnetic stimulation based on improved genetic algorithm. G. Xu^{1,2}, W. Fu², Q. Yang³, H. Hou¹, S. Ho² and W. Yan¹ *1. Biomedical Engineering, Hebei University of Technology, Tianjin 300130, China; 2. Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 3. Electrical Engineering, Tianjin Polytechnic University, Tianjin, China*

DS-16. Effects of electromagnetic field of UHV transmission lines exposure on testis tissue in mice.
 G. Duyan¹, X. Guizhi¹, Z. Xianghong², X. Lingxiao²,
 G. Hongyong³, Y. Weili¹ and W. Youhua¹ *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China; 2. Hebei Medical University, Shijiazhuang, China; 3. Natural Science Foundation of Hebei Province, Shijiazhuang, China*

**WEDNESDAY
 AFTERNOON
 1:00**

EXHIBIT HALL B

**Session DT
 MOLECULAR AND NOVEL MAGNETIC
 MATERIALS
 (Poster Session)**

Sang-Koog Kim, Session Chair
 Seoul National University

DT-01. Heusler compounds go nano: Co₂FeZ. *C. Felser¹, L. Basit¹, G.H. Fecher¹, C.A. Jenkins^{2,1}, E. Mugnaioli¹ and U. Kolb¹ 1. Institute of Inorganic Chemistry, University of Mainz, Mainz, Germany; 2. Department of Materials Science and Engineering, University of California, Berkeley, Berkeley, CA, USA*

DT-02. Magnetic properties of 3-dimensional arrays of magnetic rods. *L.M. Malkinski¹, M. Tanase¹, C. Spinu¹, J. Lim¹, K.L. Stokes¹, J.B. Wiley¹, P. Schilling² and P. Young³ 1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA, USA; 2. Department of Mechanical Engineering, University of New Orleans, New Orleans, LA, USA; 3. Department of Physics, Louisiana State University, Baton Rouge, LA, USA*

DT-03. Magnetic and magnetoresistive properties of double perovskite oxides RESrMnCoO₆ (RE - Nd, La).
 R.N. Mahato¹, K. Sethupathi¹, V. Sankaranarayanan¹,
 R. Nirmala¹, A.K. Nigam² and S.K. Malik³ *1. Physics, IITMadras, Chennai, India; 2. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, India; 3. International Center for Condensed Matter Physics (ICOMP), University of Brasilia, Brasilia, Brazil*

DT-04. Study of hysteresis in spin crossover systems using a new Monte Carlo elastic model. L. Stoleriu¹, A. Apetrei¹, A. Stancu¹, A. Hauser² and C. Enachescu¹ *1. Department of Physics, Al. I. Cuza University Iasi, Iasi, Romania; 2. Department of Physical Chemistry, University of Geneva, Geneva, Switzerland*

DT-05. Magnetic properties of iron selenide nanocrystals synthesized by the thermal decomposition. C. Lin¹, Y. Siao², S. Lu¹ and C. Gau² *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan; 2. Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan*

DT-06. New iron oxalates: effect of bridging ligands, valence and nature of transitional ion species on magnetic properties. G. Filoti¹, J. Bartolome², P. Palade¹, C. Valsangiacom¹, V. Kuncser¹, I. Mandru³ and L. Patron³ *1. Solid State Magnetism, National Institute for Materials Physics, Bucharest-Magurele, Romania; 2. Aragón Institute of Material Science, CSIC-University of Zaragoza, Zaragoza, Spain; 3. Institute for Physical Chemistry, Romanian Academy, Bucharest, Romania*

**WEDNESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session DU
PERMANENT MAGNETIC MATERIALS (I)
(Poster Session)**

Oliver Gutfleish, Session Chair
IFW-Dresden

DU-01. The spin moment of SmFe₇ observed by magnetic Compton scattering. S. Mizusaki¹, T. Ohnishi¹, Y. Kozaki¹, Y. Nagata¹, M. Itou², Y. Sakurai², Y. Noro³ and H. Samata⁴ *1. EEE, Aoyama Gakuin University, Sagami-hara, Kanagawa, Japan; 2. Japan Synchrotron Radiation Research Institute (JASRI/SPring-8), Sayo, Japan; 3. Kawazoe Frontier Technologies, Co. Ltd., Yokohama, Japan; 4. Kobe University, Kobe, Japan*

DU-02. The magnetic properties of AlNiCo magnets prepared by hot pressing and hot deforming. D. Lee¹ *1. Ningbo Institute of Material Technology & Engineering, Chinese Academy of Sciences, Ningbo, China*

DU-03. Influence of underlayer on magnetic properties of 3 μm thick $\text{Sm}_2\text{TM}_{17}$ (TM=Co, Fe, Cu, and Zr) quinary films. P. Long¹, Z. Huaiwu¹, L. Yuanxun¹ and S. Yuanqiang¹ 1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China

DU-04. Microstructure control and magnetic property of Nd-Fe-B sintered magnets after a cyclic heat-treatment. H. Kim¹, S. Kim¹, D. Kim², T. Jang³ and Y. Kim¹ 1. Division of Materials Science and Engineering, Hanyang University, Seoul, Korea, South; 2. Korea Institute of Materials Science, Changwon, Korea, South; 3. Department of Hybrid Engineering, Sunmoon University, Asan, Korea, South

DU-05. Synthesis and magnetic properties of $\text{BaFe}_{12-x}\text{Al}_x\text{O}_{19}$ nano-powders. K. Moon¹, K. Jeon¹ and J. Kim¹ 1. Metallurgical and Materials Engineering, Hanyang university, Ansan, Kyunggi-Do, Korea, South

DU-06. The study on thermal expansion of sintered $\text{Sm}_2\text{Co}_{17}$ magnets. A. Li¹, W. Li¹, H. Wang¹, M. Zhu¹ and W. Pan¹ 1. Central Iron & Steel Research Institute, Beijing, China

DU-07. Electrodeposited Co-Pt-(P) films prepared by low temperature process. J. Suzuki¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ 1. Electronics and Electrical Engineering, Nagasaki University, Nagasaki, Japan

DU-08. Magnetism and transport in RCoAl (R = Gd, Tb and Dy) compounds. J. Arout Chelvane², T. Das¹, J. Lamsal³, W.B. Yelon³, N. R¹ and S.K. Malik⁴ 1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. Department of Physics and Astronomy, University of Missouri-Columbia, Columbia, MO, USA; 4. International Center for Condensed Matter Physics (ICCMP), Univ. of Brasilia, Brasilia, Brazil

DU-09. Spacer layer effect and magnetic properties of multilayer $[(\text{FePt})_x(\text{Os})_n]$ films. S. Chen¹, Y. Yao², J. Wu², J. Wu¹ and C. Yu³ 1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan

DU-10. Magnetic properties and microstructures of perpendicular $(\text{FePt}/\text{Ag})_n$ film. C. Ou¹, G. Lin¹, M. Chen¹ and J. Tsai¹ 1. Department of Materials Science and Engineering, National Chung Hsing University, Taiching, Taiwan

DU-11. Properties modification of rapid-quenched NdFeB ribbon by electrodepositing nanometallic layer.

*M. Lin*¹ and *J. Zheng*² 1. *Magnetic Material & Device, Ningbo Institute of Material Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*; 2. *Chemical Engineering and Material, Zhejiang University of Technology, Hangzhou, Zhejiang, China*

**WEDNESDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session DV
MODELING MOTORS
(Poster Session)**

David Dorrell, Session Chair
University of Technology Sydney
Philippe Wendling, Session Chair
Magsoft Corp.

DV-01. Analysis of doubly salient memory motors using Preisach theory. *G. Yu*^{1,2}, *C. K. t*¹ and *J. Jianzhong*² 1.

Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China; 2. *Mechatronic Engineering and Automation, The University of Hong Kong, Shanghai, China*

DV-02. Design of the cage-bars for single phase line start permanent magnet synchronous motor considering the starting torque and magnetic saturation. *S. Kim*¹,

*W. Kim*¹, *D. Jung*¹ and *J. Lee*¹ 1. *Hanyang Univ., Seoul, Korea, South*

DV-03. Thermal analysis of high-speed SMC motor based on thermal network and 3-d FEA with rotational core loss included. *Y. Huang*¹ and *J. Zhu*² 1. *School of*

Electrical Eng., Southeast University, Nanjing, Jiangsu, China; 2. *School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Sydney, NSW, Australia*

DV-04. A numerically efficient performance analysis of Thomson coil type actuator of an arc eliminator and its application to design optimization. *W. Li*¹, *J. Lu*¹, *Y. Jeong*²

and *C. Koh*¹ 1. *Chungbuk National University, Cheongju, Korea, South*; 2. *LSIS Co. Ltd, Cheongju, Korea, South*

DV-05. Cogging torque calculation in finite element analysis of stator interior permanent magnet machine.

*J. Zhang*¹ and *M. Cheng*¹ *1. School of Electrical Engineering, Southeast University, Nanjing, China*

DV-06. Nonlinear magnetic model of surface mounted PM machines incorporating saturation saliency.

*Y. Wang*¹, *J. Zhu*¹, *S. Wang*², *Y. Guo*¹ and *W. Xu*¹ *1. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Broadway, NSW, Australia; 2. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shanxi, China*

DV-07. Analytical calculation of magnetic field in surface-inset permanent magnet motors.

*L. Jian*¹ and *K. Chau*¹ *1. Electrical & electronic engineering, The University of Hong Kong, Hong Kong, China*

DV-08. Theoretical analysis and its applications of a PM synchronous motor with minimized cogging force.

*J. Choi*¹, *D. Ahn*¹ and *Y. Baek*¹ *1. Mechanical Engineering, Yonsei University, Seoul, Korea, South*

DV-09. Characteristics analysis & optimum design of anisotropy rotor SynRM using coupled FEM & RSM.

*J. Lee*¹ and *I. Lee*¹ *1. Hanbat National University, Daejeon, Korea, South*

DV-10. Heat characteristics analysis of synchronous reluctance motor using FEM coupled electromagnetic field and thermal field.

*J. Lee*¹ and *Y. Kim*¹ *1. Hanbat national university, Daejeon, Korea, South*

DV-11. Multilevel optimization for surface mounted PM machine incorporating with FEM.

S. Wang^{1,2}, *J. Qiu*¹, *J. Zhu*², *Y. Guo*², *D. Liu*², *Y. Wang*² and *W. Xu*² *1. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Sydney, NSW, Australia*

DV-12. A proposal of a 5-axis active control type bearingless motor without a thrust rotor disk for wide-gap condition.

*S. Iwasaki*², *H. Miyazaki*², *M. Takemoto*¹, *Y. Tanaka*², *A. Chiba*³ and *T. Fukao*³ *1. Division of Systems Science and Informatics, Hokkaido University, Sapporo, Hokkaido, Japan; 2. Department of Mechanical Systems Engineering, Musashi Institute of Technology, Setagaya-ku, Tokyo, Japan; 3. Department of Electrical Engineering, Tokyo University of Science, Noda, Chiba, Japan*

WEDNESDAY
AFTERNOON
4:15

EXHIBIT HALL D

Session ZA
PLENARY SESSION

Massimo Pasquale, Session Chair
INRIM

THURSDAY
MORNING
9:00

ROOM 311-313

Session EA
SYMPOSIUM ON NEW MATERIALS
FOR CPP-GMR DEVICES

Jordan Katine, Session Chair
HGST Research

9:00 EA-01. Enhancement of CPP-GMR by using spin-polarized ferromagnetic metals with high resistivity for future high-density magnetic read-heads. (Invited)

K. Nagasaka¹, A. Jogo¹, H. Oshima¹, Y. Shimizu¹, S. Eguchi¹ and A. Tanaka¹. I. Advanced Magnetic Recording Lab., Fujitsu Laboratories Ltd., Atsugi, Kanagawa, Japan

9:30 EA-02. Materials for all Heusler alloy CPP GMR.

(Invited) O.N. Mryasov^{1,2}, K. Nikolaev³ and T. Ambrose². 1. MINT Center, University of Alabama, Tuscaloosa, AL, USA; 2. RTD, Seagate Research Center, Seagate Technology LLC, Pittsburgh, PA, USA; 3. RTD, Seagate Technology LLC, Bloomington, MN, USA

10:00 EA-03. Advanced ferromagnetic alloys and multilayer-structures for CPP-GMR magnetic recording read heads. (Invited)

S. Maat¹, M.J. Carey¹, S. Chandrashekariaih¹, J. Katine¹, X. Liu¹, N. Smith¹, P. Vanderheijden¹, K. Vo¹ and J.R. Childress¹. I. Hitachi Global Storage Technologies, San Jose, CA, USA

10:30 EA-04. CPP-GMR read head micro-magnetic and noise simulation. (Invited)

Y. Zhou¹. I. R&D, Headway Technology, Milpitas, CA, USA

- 11:00 EA-05. Development of Heusler materials and high $\Delta R/R$ in CPP-GMR. (Invited)** *T. Furubayashi*¹, K. Kodama², T. Nakatani², H. Sukegawa¹, Y.K. Takahashi¹, R. Shan¹, W. Wang¹, K. Inomata¹ and K. Hono^{1,2} *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*
- 11:30 EA-06. Finite element modeling of charge and spin-currents in CPP GMR structures. (Invited)** N. Strelkov^{2,1}, A. Vedyayev^{2,1}, L. Buda-Prejbeanu^{1,3}, M. Chshiev¹ and B. Dieny¹ *1. SPINTEC, CEA/CNRS, INAC, Grenoble, France; 2. Department of Physics, Lomonosov University, Moscow, Russia; 3. Grenoble INP, Grenoble, France*

**THURSDAY
MORNING
9:00**

ROOM 314

**Session EB
BIOMAGNETIC APPLICATIONS (II)**
Heinrich Hofmann, Session Chair
EPFL

- 9:00 EB-01. Characterization of magnetic core-shell nanoparticles for biomagnetic applications by magnetorelaxometry.** *F. Ludwig*¹, E. Heim¹, D. Eberbeck², K. Schwarz², L. Trahms² and M. Schilling¹ *1. Institute of Electrical Measurement and Fundamental Electrical Engineering, TU Braunschweig, Braunschweig, Germany; 2. Department 8.2 Biosignals, Physikalisch-Technische Bundesanstalt, Berlin, Germany*
- 9:15 EB-02. Protein functionalized synthetic antiferromagnetic nanoparticles for biomedical applications.** *A. Fu*¹, W. Hu¹, L. Xu¹, R.J. Wilson¹, H. Yu¹, S.J. Osterfeld¹, S.S. Gambhir² and S.X. Wang¹ *1. Materials Science and Engineering, Stanford University, Stanford, CA, USA; 2. Departments of Radiology and Bioengineering, Stanford University, Stanford, CA, USA*
- 9:30 EB-03. Biological synthesis and NSOM/ HRTEM characterization of cubo-octahedral nano-magnets.** M. Naresh¹, S. Sekhar², P. Juneja², M. Sharma³ and A. Mittal¹ *1. Department of Biochemical Engineering and Biotechnology, Indian Institute of Technology Delhi, New Delhi, Delhi, India; 2. Department of Physics, Indian Institute of Technology Delhi, New Delhi, Delhi, India; 3. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

- 9:45 EB-04. Changes in fluorescence lifetime and polarization via iron oxide nanoparticles: determination of iron loads in ferritin.** *O. Cespedes*¹ and *S. Ueno*¹ *1. Applied Quantum Physics, Kyushu University, Fukuoka, Japan*
- 10:00 EB-05. Effects of radio frequency magnetic fields on ferritin.** *O. Cespedes*¹, *O. Inomoto*¹, *S. Kai*¹ and *S. Ueno*¹ *1. Applied Quantum Physics, Kyushu University, Fukuoka, Japan*
- 10:15 EB-06. Preparation, characterization and in vitro release of magnetic solid lipid nanoparticles containing ibuprofen.** *X. Pang*^{1,2}, *H. Ma*¹, *D. Caruntu*¹, *M. Yu*¹, *F. Cui*², *C.J. O'Connor*¹ and *W. Zhou*¹ *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA, USA; 2. College of Pharmacy, Shenyang Pharmaceutical University, Shenyang, Liaoning, China*
- 10:30 EB-07. Magnetic microactuator for controlling nanoparticles in gene delivery applications.** *E. Flick*¹, *A. Belski*¹, *W. Li*², *G. Steinhoff*² and *H. Gatzen*¹ *1. Leibniz Universitaet Hannover, Institute for Microtechnology, Garbsen, Germany; 2. University of Rostock, Department of Cardiac Surgery, Rostock, Germany*
- 10:45 EB-08. Magnetoresistive detection of magnetic beads moving at high speed on microfluidic channels.** *J.F. Loureiro*¹, *S. Cardoso*¹, *J. Germano*², *C. Fermon*³, *G. Arrias*³, *M. Pannetier-Lecoeur*³, *F. Rivadulla*⁴, *J. Rivas*⁴ and *P.P. Freitas*¹ *1. Instituto de Sistemas e Computadores – Microsistemas e Nanotecnologias and Institute for Nanosciences and Nanotechnologies, Lisbon, Portugal; 2. Instituto de Sistemas e Computadores – Investigação e Desenvolvimento, Lisbon, Portugal; 3. DSM/IRAMIS/SPEC CEA Saclay, Saclay, France; 4. Química-Física y Física Aplicada, Universidad de Santiago de Compostela, Santiago de Compostela, Spain*
- 11:00 EB-09. Multiplexed GMR biosensor arrays.** *D. Hall*^{1,2}, *R. Gaster*^{3,2}, *H. Yu*², *S. Osterfeld*², *B. Murmann*¹ and *S.X. Wang*^{1,2} *1. Electrical Engineering, Stanford University, Stanford, CA, USA; 2. Materials Science and Engineering, Stanford University, Stanford, CA, USA; 3. Bioengineering, Stanford University, Stanford, CA, USA*
- 11:15 EB-10. Tagging suspension-based biochemical assays using digital magnetic microtags.** *T. Mitrelias*^{1,3}, *T. Trypiniotis*^{1,3}, *T.J. Hayward*¹, *K. Vyas*¹, *B. Hong*¹, *J.R. Jeong*⁴, *J.J. Palfreyman*¹, *P.A. Robertson*², *J. Llandro*¹ and *C.H. Barnes*¹ *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. CAPE, University of Cambridge, Cambridge, United Kingdom; 3. Cambridge BioMagnetics Ltd, Cambridge, United Kingdom; 4. School of Nanoscience and Engineering, Chungnam National University, Daejeon, Korea, South*

THURSDAY
MORNING
9:00

ROOM 315

Session EC
ENERGY ASSISTED MAGNETIC
RECORDING

Ganping Ju, Session Chair
Seagate Research

- 9:00 EC-01. Thermally-assisted magnetic recording experiments using a plasmonic near-field transducer with integrated waveguide.** *B.C. Stipe*¹, T. Strand¹, C. Poon¹, T. Boone¹, J. Katine¹, H. Balamane¹, N. Robertson¹, B. Terris¹, H. Nemoto² and A. Hirotsune² *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA, USA; 2. Central Research Laboratory, Hitachi Ltd., Tokyo, Japan*
- 9:15 EC-02. Opto-thermal analysis of novel heat assisted magnetic recording media based on surface plasmon enhancement.** *D. Lim*¹, M. Shin¹, H. Oh¹ and Y. Kim^{1,2} *1. Center for Information Storage Device, Yonsei University, Seoul, Korea, South; 2. School of Mechanical Engineering, Yonsei University, Seoul, Korea, South*
- 9:30 EC-03. Simulation of transducer heating in ridge waveguides for HAMR.** *J.A. Bain*¹, M.J. Chabalko¹ and D.D. Stancil¹ *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*
- 9:45 EC-04. Optimal coupling of near-field light into magnetic recording media for HAMR.** *R. Ikkawi*¹, N. Amos¹, B. Lee¹, R. Fernandez¹, D. Litvinov² and S. Khizroev¹ *1. Electrical Engineering, University of California, Riverside, CA, USA; 2. Electrical Engineering, University of Houston, Houston, TX, USA*
- 10:00 EC-05. Micromagnetic modeling study of thermal gradient effect in heat assisted magnetic recording (HAMR).** *A.F. Torabi*¹, J. Van Ek¹, E. Champion¹ and J. Wang² *1. Western Digital Corporation, San Jose, CA, USA; 2. Western Digital Corporation, Fremont, CA, USA*
- 10:15 EC-06. Thermally assisted magnetization writing : analytical results and simulations.** *D. Hinzke*¹, N. Kazantseva², R.W. Chantrell² and U. Nowak¹ *1. Physics, University of Konstanz, Konstanz, Germany; 2. Physics, University of York, York, United Kingdom*

- 10:30 EC-07. Experimental study on microwave-assisted magnetization reversal in patterned ferromagnetic thin films. (Invited)** *Y. Nozaki*¹, *K. Tateishi*¹, *M. Ohta*¹, *N. Narita*¹, *T. Tanaka*¹ and *K. Matsuyama*¹ *1. Dept. of Electronics, Kyushu University, Fukuoka, Japan*
- 11:00 EC-08. Switchable STT circular ac field generator for microwave assisted magnetic recording.** *J. Zhu*¹ and *Y. Wang*¹ *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*
- 11:15 EC-09. Exchange coupled bit patterned media under the influence of RF-field pulses.** *M.A. Bashir*¹, *T. Schrefl*^{1,3}, *D. Suess*², *G. Winkler*², *J. Dean*¹, *G. Hrkac*¹, *A. Gonchrov*¹, *S. Bance*¹, *D. Allwood*¹ and *J. Fidler*² *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 3. St Poelten University of Applied Sciences, St Poelten, Austria*
- 11:30 EC-10. Observation of microwave-assisted magnetization reversal in Fe₆₅Co₃₅ thin films through ferromagnetic resonance measurements.** *C. Nistor*¹, *K. Sun*^{1,2} and *M. Wu*¹ *1. Physics, Colorado State University, Fort Collins, CO, USA; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- 11:45 EC-11. Microwave assisted magnetic reversal in Ni₈₀Fe₂₀ nanoelements.** *H.T. Nembach*¹, *H. Bauer*¹, *J.M. Shaw*¹, *M. Schneider*² and *T.J. Silva*¹ *1. Magnetism Group, NIST, Boulder, CO, USA; 2. Dept. of Physics and Astronomy, University of Montana, Missoula, MT, USA*

**THURSDAY
MORNING
9:00**

ROOM 306

**Session ED
SPIN TRANSFER TORQUE
PHENOMENA (I)**

Jordan Katine, Session Chair
HGST Research

- 9:00 ED-01. Ultrafast time-domain switching studies of spin-torque nanopillars. (Invited)** *L. Ye*¹, *S. Garzon*¹, *R.A. Webb*¹, *M. Covington*², *S. Kaka*² and *T.M. Crawford*¹ *1. Physics and Astronomy, University of South Carolina, Columbia, SC, USA; 2. Seagate Technology LLC, Pittsburgh, PA, USA*

- 9:30 ED-02. Spin-transfer-driven reversal in magnetic tunnel junctions: torques, dynamics, and thermal activation effects. (Invited) J.Z. Sun¹, M.C. Gaidis¹, G. Hu¹, Y.F. Guan¹, E.J. O'Sullivan¹, S.L. Brown¹, J.J. Nowak¹, P.L. Trouilloud¹, D.C. Worledge¹, X. Jiang², R. Moriya², S. Parkin², T. Min³ and Q. Chen³** *1. Physical Sciences, IBM Research, Yorktown Heights, NY, USA; 2. IBM Almaden Research Center, San Jose, CA, USA; 3. MagIC Technologies, Milpitas, CA, USA*
- 10:00 ED-03. Spin-torque-induced switching and precession in fully-epitaxial Fe/MgO/Fe(001) magnetic tunnel junctions. R. Matsumoto^{1,2}, A. Fukushima¹, K. Yakushiji¹, T. Nagahama¹, H. Kubota¹, T. Katayama¹, Y. Suzuki^{1,2}, K. Ando¹, S. Yuasa¹, B. Georges³, V. Cros³, J. Grollier³ and A. Fert³** *1. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Unité mixte de physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France*
- 10:15 ED-04. Magnetic field- and spin transfer torque-induced ferromagnetic resonances for antiferromagnetically-coupled layers. T. Seki¹, H. Tomita¹, A. Tulapurkar¹, Y. Masugata¹, T. Maruyama¹, T. Nozaki¹, M. Shiraishi¹, T. Shinjo¹ and Y. Suzuki¹** *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*
- 10:30 ED-05. Effect of antiferromagnetic exchange coupling on current induced magnetization switching in MgO barrier MTJs with CoFeB based synthetic ferrimagnetic recording layer. J. Hayakawa¹, H. Yamamoto^{1,2}, S. Ikeda², K. Miura^{1,2}, R. Sasaki², T. Meguro², M. Ichimura¹, R. Sugano¹, H. Hasegawa², K. Ito¹, H. Takahashi¹ and H. Ohno²** *1. Nano system laboratory, Hitachi Advanced Research Laboratory, Tokyo, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Tohoku University, Sendai, Japan*
- 10:45 ED-06. Extrinsic current-induced field-like torques in MgO magnetic tunnel junctions. T. Devolder¹, C. Chappert¹, J. Hayakawa², K. Ito², H. Takahashi², S. Ikeda³ and H. Ohno³** *1. Institut d'Electronique Fondamentale, Orsay, France; 2. Hitachi, Ltd., Advanced Research Laboratory,, Tokyo, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University,, Sendai, Japan*
- 11:00 ED-07. Spin pumping effects on spin torque induced magnetization switching in magnetic tunneling junctions. X. Wang¹, W. Zhu¹, Y. Zheng¹, Z. Gao¹ and H. Xi¹** *1. Seagate Technology, Bloomington, MN, MN, USA*

- 11:15 ED-08. Unique spin torque transfer switching in magnetic tunnel junctions with composite free layer.** X. Yao¹, R. Malmhall², R. Ranjan² and J. Wang¹ *1. Electrical and Computer Engineering Dept., the Center for Micromagnetics and Information Technology (MINT), University Of Minnesota-Twin Cities, Minneapolis,, MN, USA; 2. Yadav Technology, Fremont, CA, USA*
- 11:30 ED-09. Effects of rf current on critical field for magnetization reversal in spin torque devices.** W. Chen¹, S.H. Florez¹, J.A. Katine¹, M. Carey¹, L. Folks¹ and B.D. Terris¹ *1. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 11:45 ED-10. Measuring the non-adiabaticity of reversible current-induced vortex core displacements.** L. Heyne¹, M. Kläui¹, J. Rhensius¹, D. Ilgaz¹, U. Rüdiger¹, L.J. Heyderman², F. Kronast³ and J.U. Thiele⁴ *1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. Bessy GmbH, Berlin, Germany; 4. Recording Media Operations, Seagate, Fremont, CA, USA*

THURSDAY
MORNING
9:00

ROOM 307

Session EE

**MAGNETIC NANOWIRES, CLUSTERS,
AND NANOPARTICLES (I)**

Nicoleta Lupu, Session Chair
NIRDTP

- 9:00 EE-01. Tailoring domain wall dynamics with uniaxial anisotropy in nanowires.** J.S. Dean¹, M.T. Bryan¹, D.A. Allwood¹, G. Hrkac¹, M.A. Bashir¹, A. Goncharov¹, S. Bance¹ and T. Schrefl¹ *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom*
- 9:15 EE-02. Probing magnetic configurations in Co/Cu multilayered nanowires*.** R.K. Dumas¹, J. Wong¹, P. Greene¹ and K. Liu¹ *1. Physics Department, University of California, Davis, Davis, CA, USA*

- 9:30 EE-03. Magnetization reversal of ferromagnetic nanowire arrays studied by angular FORC measurements.** *F. Béron*¹, *L. Carignan*², *K.R. Pirota*¹, *M. Knobel*¹, *D. Ménard*² and *A. Yelon*² *1. Laboratório de Materiais e Baixas Temperaturas (LMBT), Instituto de Física Gleb Wataghin (IFGW), Universidade Estadual de Campinas (UNICAMP), Campinas, São Paulo, Brazil; 2. Département de génie physique, École Polytechnique de Montréal, Montréal, QC, Canada*
- 9:45 EE-04. Domain transfer by heat-assisted coercivity reduction in perpendicular anisotropy magnetic nanowire stacks for 3d memory applications.** *O. Ozatay*¹, *A. Moser*¹, *J. Katine*¹, *T. Hauet*¹, *L. Folks*¹, *R. Payne*¹, *S. Florez*¹ and *B. Terris*¹ *1. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 10:00 EE-05. Near-field interaction between domain walls in adjacent permalloy nanowires.** *L.A. O'Brien*¹, *D. Petit*¹, *H.T. Zeng*¹, *E.R. Lewis*¹, *J. Sampaio*¹, *A.V. Jausovec*¹, *D.E. Read*¹ and *R.P. Cowburn*¹ *1. Physics, Imperial College, London, United Kingdom*
- 10:15 EE-06. Magnetization process in ferromagnetic nanowire arrays.** *L. Carignan*^{1,2}, *M. Massicotte*¹, *C. Caloz*², *A. Yelon*¹ and *D. Ménard*¹ *1. Engineering Physics, École Polytechnique de Montréal, Montreal, QC, Canada; 2. Electrical Engineering, École Polytechnique de Montréal, Montreal, QC, Canada*
- 10:30 EE-07. Tuning of the scattering parameters of magnetic nanowire arrays near antiresonance at photonic frequencies.** *G.S. Makeeva*², *M. Pardavi-Horvath*¹ and *O.A. Golovanov*² *1. SEAS, The George Washington University, Washington, DC, USA; 2. Penza State University, Penza, Russia*
- 10:45 EE-08. Magnetotransport phenomena in [NiFe/Cu] magnetic multilayered nanowires.** *H. Chiriac*¹, *O. Dragos*¹, *M. Grigoras*¹, *G. Ababei*¹ and *N. Lupu*¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- 11:00 EE-09. Structural and magnetic properties of electrodeposited Co nanowire arrays.** *S. Sharma*¹, *A. Barman*¹, *M. Sharma*², *L.R. Shelford*³, *V.V. Kruglyak*³ and *R.J. Hicken*³ *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India; 3. School of Physics, University of Exeter, Exeter, Devon, United Kingdom*

- 11:15 EE-10. Phase transformation in silica-coated FePt nanoparticles.** *L. Colak*¹ and *G.C. Hadjipanayis*¹ *1. Physics and Astronomy, University of Delaware, Newark, DE, USA*

**THURSDAY
MORNING
9:00**

ROOM 308

**Session EF
MAGNETIC RECORDING: SYSTEMS,
CODING AND CHANNEL**

Zhejie Liu, Session Chair
Data Storage Institute

- 9:00 EF-01. A generalized data detection scheme using hyper-plane for magnetic recording channel with pattern-dependent noise.** *S. Mita*¹ and *V. Van*¹ *1. Toyota Technological Institute, Nagoya, Japan*
- 9:15 EF-02. Error correction coding with LDPC codes for a new class of patterned media storage.** *X. Liu*¹, *C. Shi*¹, *M. Teng*¹ and *X. Ma*¹ *1. Department of Electronic and Communications Engineering, Sun Yat-sen University, Guangzhou, Guangdong, China*
- 9:30 EF-03. A method for simultaneous position and timing error detection for bit patterned media.** *H. Suzuki*¹, *W.C. Messner*², *J. Bain*², *V. Bhagavatula*² and *S. Nabavi*² *1. Magnetic Disk Drive Laboratory, Fujitsu Laboratories LTD., Atsugi, Kanagawa, Japan; 2. Data Storage System Center, Carnegie Mellon University, Pittsburgh, PA, USA*
- 9:45 EF-04. Write-error correction in magnetic recording system using BPM.** *Y. Nakamura*¹, *Y. Okamoto*¹, *H. Osawa*², *H. Aoi*³ and *H. Muraoka*³ *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. Institution for Collaborative Relations, Ehime University, Matsuyama, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- 10:00 EF-05. A new encoding and decoding system for Reed-Solomon codes.** *H. Matsui*¹ and *S. Mita*¹ *1. Toyota Technological Institute, Nagoya, Japan*
- 10:15 EF-06. On the characterization of write-equalized magnetic recording channels.** *S. OELCER*¹ and *V. Venkatesan*¹ *1. IBM Research, Rueschlikon, Switzerland*

- 10:30 EF-07. Amplitude and null position error signal generation: a timing recovery perspective.** *A. Nayak*¹ *1. LSI Corporation, Allentown, PA, USA*
- 10:45 EF-08. Highly-parallel FPGA emulation for LDPC error floor characterization in perpendicular magnetic recording channels.** *Y. Cai*¹, *S. Jeon*¹, *K. Mai*¹ and *B. Kumar*¹ *1. ECE, DSSC, Carnegie Mellon University, Pittsburgh, PA, USA*
- 11:00 EF-09. Performance of advanced data-detection schemes on BaFe tape media.** *S. Ölçer*¹, *E. Eleftheriou*¹, *R.A. Hutchins*², *H. Noguchi*³, *M. Asai*³ and *H. Takano*³ *1. IBM Zurich Research Laboratory, Rueschlikon, Switzerland; 2. Integrated Systems Development, IBM Systems & Technology Group, Tucson, AZ, USA; 3. Recording Media Research Laboratories, FUJIFILM Corporation, Odawara, Kanagawa, Japan*
- 11:15 EF-10. Operating range optimization of a MEMS type slider with an integrated microactuator (SLIM) for second stage actuation in hard disc drives.** *D. Dinulovic*¹, *F. Pape*¹, *H. Saalfeld*¹, *W. Kurniawan*², *E. Obermeier*² and *H.H. Gatzert*¹ *1. Institute for Microtechnology, Leibniz Universitaet Hannover, Garbsen, Germany; 2. Microsensor&Actuator Technology, Technische Universitaet Berlin, Berlin, Germany*
- 11:30 EF-11. Millions of square inches (MSI) comparisons and implications for magnetic recording and solid state storage class memories.** *R. Fontana*¹ and *S.R. Hetzler*² *1. IBM Systems Technology Group, San Jose, CA, USA; 2. IBM Research Division, San Jose, CA, USA*

**THURSDAY
MORNING
9:00**

ROOM 309

Session EG

PERMANENT MAGNETIC MATERIALS (II)

**J.Ping Liu, Session Chair
University of Texas-Arlington**

- 9:00 EG-01. Effects of small indium additions on sintered microcrystalline and hot-deformed nanocrystalline PrCo₅ magnets.** *A. Gabay*¹, *M. Marinescu*², *J. Liu*² and *G.C. Hadjipanayis*¹ *1. Department of Physics and Astronomy, University of Delaware, Newark, DE, USA; 2. Electron Energy Corporation, Landisville, PA, USA*

- 9:15 EG-02. Hard magnetic Co-Pt-based nanotubes, produced via direct electroplating.** *K. Zuzek Rozman*¹, *S. Sturm*¹, *P.J. McGuinness*¹ and *S. Kobe*¹ *1. Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia*
- 9:30 EG-03. Exchange-spring coupling in ferrite/Sm₂Fe₁₇N₃ explosive-consolidated composites: novel spring-exchange magnets with high resistivity.** *N. Imaoka*¹, *M. Tada*², *T. Nakagawa*² and *M. Abe*² *1. Central R&D Laboratories, Asahi Kasei Corporation, Fuji, Shizuoka, Japan; 2. Physical Electronics, Tokyo Institute of Technology, Meguro, Tokyo, Japan*
- 9:45 EG-04. NdFeB/FeCo exchange spring thin film magnet with perpendicular magnetic anisotropy.** *X. Liu*¹, *A. Morisako*¹ and *G. Ishida*¹ *1. Department of Information Engineering, Shinshu University, Nagano, Japan*
- 10:00 EG-05. First-order-reversal-curve analysis of Pr-Fe-B-based exchange spring magnets.** *D.R. Cornejo*¹, *T.R. Peixoto*¹, *P.F. Fichtner*², *S. Reboh*³, *V.C. de Franco*⁴, *V. Villas-Boas*⁴ and *F.P. Missell*⁴ *1. Instituto de Física, Universidade de São Paulo, São Paulo, São Paulo, Brazil; 2. Engineering School, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; 3. Graduate Program in Materials Science, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; 4. Centro de Ciências Exatas e Tecnologia, Universidade de Caxias do Sul, Caxias do Sul, Rio Grande do Sul, Brazil*
- 10:15 EG-06. Structure and magnetic properties of Nd-Fe-B/ α -Fe nanocomposite thin films with perpendicular magnetic anisotropy*.** *Q. Yao*^{1,2}, *W. Liu*¹, *W. Cui*¹, *F. Yang*¹, *Y. Qiang*² and *Z. Zhang*¹ *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research and International Center for Materials Physic, Chinese Academy of Sciences, Shenyang 110016, China; 2. Department of Physics, University of Idaho, Moscow 83844-0903, ID, USA*
- 10:30 EG-07. Anisotropic PrCo₅ nanoparticles by surfactant-assisted ball milling.** *N. Gunduz Akdogan*¹, *A. Gabay*¹, *G.C. Hadjipanayis*¹ and *D.J. Sellmyer*² *1. Department of Physics and Astronomy, University of Delaware, Newark, DE, USA; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE, USA*
- 10:45 EG-08. Effect of additional elements on the structural properties, magnetic characteristics and natural resonance frequency of strontium ferrite nanoparticles/ polymer composite.** *A. Ghasemi*¹, *X. Liu*¹ and *A. Morisako*¹ *1. Shinshu University, Nagano, Japan*

- 11:00 EG-09. Effect of substrate and surface conditioning on magnetic properties and texture of CoPt hard bias films.** *A.G. Roy*¹, *M. Mao*¹ and *M. Pakala*¹ *1. Western Digital, Fremont, CA, USA*
- 11:15 EG-10. Amorphisation and crystallization behavior of melt-spun SmCo₇(Cr₃C₂)_x alloys.** *L. Li*^{1,2}, *A. Yan*¹, *G. Zhang*² and *Y. Sun*¹ *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science, Ningbo, Zhejiang, China; 2. State key Laboratory of Powder Metallurgy, Central South University, Changsha, China*
- 11:30 EG-11. The role of grain boundaries on the coercivity of NdFeB magnets.** *G. Hrkac*¹, *C. Freeman*¹, *A. Goncharov*¹, *J. Dean*¹, *T. Schrefl*^{1,2}, *T.G. Woodcock*³ and *O. Gutflisch*³ *1. University of Sheffield, Sheffield, United Kingdom; 2. University of Science, St. Pölten, Austria; 3. IFW Dresden, Institute for Metallic Materials, Dresden, Germany*
- 11:45 EG-12. Structure-property relationship of nanocrystalline Pr₂Co₁₄B-based hard magnetic film.** *W. Zhang*¹, *H. Shima*¹, *F. Takano*¹, *H. Akinaga*¹ and *S. Nimori*² *1. National institute of advanced industrial science and technology, Tsukuba, Japan; 2. National institute for material science, Tsukuba, Japan*

**THURSDAY
MORNING
9:00**

ROOM 310

**Session EH
TRANSFORMERS AND INDUCTORS**

**Don Gardner, Session Chair
Intel**

- 9:00 EH-01. Fabrication and characterization of micro-scaled on-chip toroidal inductors.** *J. Ou*¹, *S. Chen*¹, *H. Lee*¹ and *J. Wu*¹ *1. Department of Physics, National Changhua University of Education, Changhua, Taiwan*
- 9:15 EH-02. Fabrication of toroidal microinductors for rf applications.** *E. Quandt*¹, *U. Schuermann*¹, *A. Gerber*¹, *F. Hettstedt*², *A. Kulkarni*³, *V. Zaporozhchenko*³, *R. Knoechel*² and *F. Faupel*³ *1. Chair for Inorganic Functional Materials, University Kiel, Faculty of Engineering, Kiel, Germany; 2. Institute of Electrical and Information Engineering, University Kiel, Faculty of Engineering, Kiel, Germany; 3. Chair for Multicomponent Materials, University Kiel, Faculty of Engineering, Kiel, Germany*

- 9:30 EH-03. Design of LTCC inductor for high frequency dc-dc converter.** *L. Wang*¹ *1. electric engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China*
- 9:45 EH-04. High Q ferrite film inductor for on-chip power module.** *S. Bae*¹, *Y. Hong*¹, *J. Lee*¹, *J. Jalli*¹, *G.S. Abo*¹, *B. Kim*¹ and *G.W. Donohoe*² *1. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 2. Department of Electrical and Computer Engineering, University of Idaho, Moscow, ID, USA*
- 10:00 EH-05. A novel crossed traveling wave induction heating system and its FEM computation of Eddy current and temperature distributions.** *S. Ho*¹, *J. Wang*¹, *W. Fu*¹ and *Y. Wang*² *1. Department of Electrical and Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. School of Electrical Engineering and Automation, Hebei University of Technology, Tianjin, China*
- 10:15 EH-06. Iron loss calculation in a three-phase-laminated-core variable inductor based on reluctance network analysis.** *K. Nakamura*¹, *S. Hisada*¹, *K. Arimatsu*², *T. Ohinata*², *K. Sakamoto*² and *O. Ichinokura*¹ *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Tohoku Electric Power Co., Inc., Sendai, Japan*
- 10:30 EH-07. The magnetic components for high performance multilevel half-bridge inverter legs.** *C. Chapelsky*¹, *A.M. Knight*¹ and *J. Salmon*¹ *1. Electrical and Computer Engineering, University of Alberta, Edmonton, AB, Canada*
- 10:45 EH-08. Vibration analysis of reactor driven by inverter power supply taking account of magnetostriction and electromagnetic force.** *Y. Gao*¹, *K. Muramatsu*¹, *K. Fujiwara*², *Y. Ishihara*², *S. Fukuchi*³ and *T. Takahata*³ *1. Dept. of Electrical and Electronic Engineering, Saga Univ., Saga, Japan; 2. Dept. of Electrical Engineering, Doshisha Univ., Kyotanabe, Japan; 3. Sao Electric Mfg. Co. Ltd., Yukuhashi, Japan*
- 11:00 EH-09. Modeling and testing of ethernet transformers.** *D. Bowen*^{1,2}, *P. McAvoy*^{1,2}, *Z. Zhang*^{1,2}, *I. Mayergoyz*^{1,2}, *C. Krafft*³ and *D. Kroop*⁴ *1. Electrical and Computer Engineering, University of Maryland, College Park, MD, USA; 2. UMLACS, University of Maryland, College Park, MD, USA; 3. Laboratory for Physical Sciences, College Park, MD, USA; 4. Windermere/Essex, a subsidiary of Northrop Grumman, Annapolis, MD, USA*

- 11:15 EH-10. An efficient two-grid finite element method of 3d nonlinear magnetic field computation for the reduction of computing time.** *N. Chen¹, S. Ho¹ and W. Fu¹* *1. Electrical Engineering Department, HongKong Polytechnic University, HongKong, China*
- 11:30 EH-11. Significant electric field tuning of magnetic response in multiferroic heterostructures. (Invited)** *J. Das¹, Y. Song¹, N. Mo¹, P. Krivosik¹ and C.E. Patton¹* *1. Physics, Colorado State University, Fort Collins, CO, USA*

**THURSDAY
MORNING
8:00**

EXHIBIT HALL B

**Session EP
MAGNETO-OPTICS,
SUPERCONDUCTIVITY, AND
INTERDISCIPLINARY TOPICS
(Poster Session)**

Ichiro Takeuchi, Session Chair
University of Maryland

EP-01. Stability of magnetization reversal of pixels formed by ion-beam etching. *K. Iwasaki¹, H. Mochizuki¹, H. Umezawa¹ and M. Inoue²* *1. FDK CORPORATION, Kosai, Japan; 2. Toyohashi University of Technology, Toyohashi, Japan*

EP-02. Bismuth iron garnet (BIG) for magneto-optical sensors and applications. *T. Wehlius¹, T. Koerner¹, H. Karl¹ and B. Stritzker¹* *1. Lehrstuhl für Experimentalphysik IV, Universität Augsburg, Augsburg, Bavaria, Germany*

EP-03. Low current driving of heat-assisted magneto-optic spatial light modulator with low T_c amorphous DyFe film. *J. Heo¹, T. Miyazawa¹, J. Kim¹, A.V. Baryshev¹ and M. Inoue¹* *1. Electrical & Electronic Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan*

EP-04. Highly luminescent rare earth oxide magneto-optical films. *A.M. Grishin¹ and S.I. Khartsev¹* *1. Condensed Matter Physics, Royal Institute of Technology, Stockholm, Sweden*

EP-05. Magneto-optical response of gold-magnetite nanocomposite films. F.E. Moolekamp¹ and K.L. Stokes¹
1. Dept. of Physics, University of New Orleans, New Orleans, LA, USA

EP-06. Fiber-based magneto-optic Sagnac optical modulator. S. Kemmet¹, M. Mina¹ and R.J. Weber¹
1. Electrical and Computer Engineering, Iowa State University, Ames, IA, USA

EP-07. Magneto-optic spatial light phase modulators with one-dimensional magneto photonic crystals.
K. Chung¹, S. Mito¹, T. Mano¹, H. Takagi² and M. Inoue¹
1. Electrical and Electronic Engineering, Toyohashi University of Technology, Toyohashi, Japan; 2. Electrical Engineering, Toyota National College of Technology, Toyota, Japan

EP-08. Intensification of magnetic Field in electromagnetic forming systems using anisotropic materials. A. Karimi^{1,2}, K. Niayesh² and A. Bahmani²
1. Design and Develop, Esfahan Regional Electrical Company (EREC), Esfahan, Esfahan, Iran; 2. High Voltage Laboratory, University of Tehran, Tehran, Tehran, Iran

EP-09. Bistable current-pulse-excited magnetic reluctance microvalve simulation. A.C. Burke¹ and A. Knight¹
1. Department of Electrical and Computer Engineering, University of Alberta, Edmonton, AB, Canada

EP-10. Dependence of magnetoresistance and superconducting transition temperature on relative orientation of magnetization easy axis to current direction in a Py/Nb/Py trilayer. D. Kim¹ and T. Hwang¹
1. Physics, Yeungnam University, Gyeongsan, Korea, South

EP-11. Core level X-ray photoelectron spectroscopy (XPS) of SmFeAsO. V.P. Awana¹, A. Vajpayee¹, A. Joshi¹, A. Pal¹, R.S. Meena¹ and H. Kishan¹
1. Superconductivity, NPL, New Delhi, Delhi, India

EP-12. Coexistence of ferromagnetism and superconductivity in Pb nanoparticles. C. Hsu¹, C. Wu¹, C. Li¹, C. Wang¹, S.K. Karna¹, S. Liu¹, C. Hung¹ and W. Li¹
1. Physics, National Central University, Zhongli, Taoyuan, Taiwan

EP-13. Magnetic field dependence of kinetic inductance in superconductors and its feasible applications.
S. Chockalingam¹, S. Sarangi¹ and S. Bhat¹
1. Department of Physics, Indian Institute of Science, Bangalore, India

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session EQ
EXCHANGE BIAS (I)
(Poster Session)

Axel Hoffmann, Session Chair
Argonne National Lab

EQ-01. Temperature dependence of magnetization reversal in exchange biased Co/CoO nanoscale antidot arrays. *D. Tripathy*¹ and *A. Adeyeye*¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

EQ-02. Exchange bias in bulk Ni₅₀Mn₃₅In_{15-x}Si_x Heusler alloys. *A.K. Pathak*¹, *I. Dubenko*¹, *S. Stadler*² and *N. Ali*¹ *1. Physics, Southern Illinois University Carbondale, IL, Carbondale, IL, USA; 2. Physics and Astronomy, Louisiana State University, Baton Rouge, LA, 70803, Baton Rouge, LA, USA*

EQ-03. Modulating positive exchange bias by ion-beam bombardment in CoFe/(Co,Fe)O bilayers. *K. Lin*¹, *K. Yang*¹, *T. Chen*¹, *H. Ouyang*², *S. Chang*³ and *D. Wei*⁴ *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Electrical Engineering, National Chung Hsing University, Taichung, Taiwan; 4. National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

EQ-04. Structural and magnetic properties of FeRh/FePt bilayers. *N.T. Nguyen*¹, *W. Lu*¹ and *T. Suzuki*¹ *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

EQ-05. Effect of Cu impurities on K_{AF} in IrMn_{1-x}Cu_x/CoFe exchange bias system. *N.P. Aley*¹, *C. Bonet*¹, *B. Lafferty*² and *K. O'Grady*¹ *1. Physics, The University of York, York, North Yorkshire, United Kingdom; 2. Seagate Technology Ltd, Derry, United Kingdom*

EQ-06. Magnetic anisotropy and magnetization reversal in the exchange-biased thin films. *H. Choi*¹, *K. Kim*², *J. Shim*³, *J. Kim*⁴, *S. Shin*⁴, *D. Kim*³, *J. Lee*² and *C. You*¹ *1. Department of Physics, Inha University, Incheon, Korea, South; 2. Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, Korea, South; 3. Department of Physics, Chungbuk University, Cheongju, Korea, South; 4. Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea, South*

EQ-07. Positive and negative exchange bias in IrMn/NiFe bilayers. A. Sarella¹, S. Vishnubhotla¹, S. Oh¹, J. Jeong¹ and C. Kim¹ 1. Chungnam National University, Daejeon, Korea, South

EQ-08. Composition-dependent crystal structure and magnetism in nanocrystalline Co-rich alloy. B. Chun¹, S. Kim², Y. Kim², Y. Kim², J. Hwang³ and J. Rhee³ 1. Trinity College, Dublin, Ireland; 2. Department of Materials Science and Engineering, Korea University, Seoul, Korea, South; 3. Department of Physics, Sookmyung Women's University, Seoul, Korea, South

EQ-09. Antiferromagnet thickness dependence of training effect in exchange coupled CoFe/MnIr bilayers. D. Kim¹, S. Yoon¹, S. Bae¹, C. Kim², M. Tsunoda³ and M. Takahashi³ 1. Physics, Andong National University, Andong, Korea, South; 2. Materials Engineering, Chungnam National University, Daejeon, Korea, South; 3. Electronic Engineering, Tohoku University, Sendai, Japan

EQ-10. Influence of the deposition sequence of antiferromagnetic and ferromagnetic layers in the IrMn/Co structures on the exchange bias. N.G. Chechenin¹ and E. Khomenko¹ 1. Skobeltsyn Inst.Nucl.Phys., Moscow State University, Moscow, Russia

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session ER
SPIN TORQUE OSCILLATORS (I)
(Poster Session)

JianPing Wang, Session Chair
University of Minnesota

ER-01. Large output of microwave oscillations with narrow linewidth in magnetic nanocontact spin torque oscillator with spin-valve structure. H. Endo¹, H. Suzuki¹, T. Tanaka¹, T. Nakamura¹, K. Miyake¹, M. Doi¹, M. Takagishi², H.N. Fuke², H. Iwasaki² and M. Sashiki¹ 1. Department of Electron Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan

ER-02. Magnetic vortex dynamics in MgO based magnetic tunnel junctions. *B. Georges*¹, *A. Dussaux*¹, *J. Grollier*¹, *V. Cros*¹, *A. Fert*¹, *M. Konoto*², *A. Fukushima*², *R. Matsumoto*², *H. Kubota*², *K. Yakushijin*², *S. Yuasa*² and *K. Ando*² *1. Unité Mixte de Physique CNRS/Thales (CNRS-UMR137), Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

ER-03. Phase noise and time resolved signals of vortex oscillators in point contacts. *T. Devolder*¹, *J.V. Kim*¹, *P. Crozat*¹, *C. Chappert*¹, *M. Manfrini*², *M. Van Kampen*², *L. Lagae*², *G. Hrkac*³ and *T. Schrefl*³ *1. Institut d'Electronique Fondamentale, ORSAY Cedex, France; 2. IMEC, Leuven, Belgium; 3. Department of Engineering Materials,, University of Sheffield, Sheffield, United Kingdom*

ER-04. Magnetic vortex oscillators driven by spin-polarized out-of-plane dc current. *Y. Choi*¹, *K. Lee*¹ and *S. Kim*¹ *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, South*

ER-05. Effect of dipolar interaction on the current-induced microwave oscillation of a geometrically confined domain wall. *K. Matsushita*¹, *J. Sato*¹ and *H. Imamura*¹ *1. Nanotechnology Research institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan*

ER-06. Magnetoresistance and spin torque study of dual spin valve devices. *A. Aziz*¹, *M.C. Wu*¹, *M. Ali*², *B. Hickey*² and *M. Blamire*¹ *1. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

ER-07. Doublet sub-GHz peaks in the spectra of magnetization oscillations in spin-transfer nanocontacts. *M. Kuepferling*¹, *C. Serpico*², *M.R. Pufall*³, *M.T. Wallis*³, *R. Heindl*³, *H. Nembach*³, *W.H. Rippard*³, *A. Imtiaz*³, *M. Pasquale*¹ and *P. Kabos*³ *1. Division of Electromagnetism, National Institute for Metrological Research (INRiM), Torino, Italy; 2. Dept. of Electrical Engineering, University of Naples Federico II, Napoli, Italy; 3. Electromagnetics Division, National Institute of Standards and Technology (NIST), Boulder, CO, USA*

ER-08. Analytical theory of non-autonomous dynamics of a nonlinear spin-torque oscillator. V. Tiberkevich¹, O. Dmytriiev^{1,2} and A. Slavin¹ *1. Physics, Oakland University, Rochester, MI, USA; 2. Institute of Magnetism, Kyiv, Ukraine*

ER-09. Micromagnetic and analytical calculations of current-induced vortex oscillations in nanopillar spin valves. A.V. Khvalkovskiy^{1,2}, J. Grollier³, V. Cros³, K.A. Zvezdin^{2,1}, A.K. Zvezdin² and A. Fert³ *1. Istituto P.M. s.r.l., Torino, Italy; 2. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia; 3. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*

ER-10. Temperature dependence of microwave nanoscillator linewidths driven by spin-polarized currents: a micromagnetic analysis. M. Carpentieri¹, L. Torres² and E. Martinez³ *1. Elettronica, Informatica e Sistemistica, University of Calabria, Rende, Cosenza, Italy; 2. Fisica Aplicada, University of Salamanca, Salamanca, Salamanca, Spain; 3. Ingeniería Electromecánica, University of Burgos, Burgos, Burgos, Spain*

ER-11. Micromagnetic analysis of the frequency modulation process in spin-torque nano-contact oscillators. V. Puliafito¹, G. Consolo¹ and B. Azzerboni¹ *1. Dipartimento di Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy*

ER-12. Zero field vortex oscillators in point contacts. T. Devolder¹, J.V. Kim¹, C. Chappert¹, M. Manfrini², M. Van Kampen², L. Lagae², G. Hrkac³ and T. Schrefl³ *1. Institut d'Electronique Fondamentale, CNRS-Université Paris-Sud,, Orsay, France; 2. IMEC, Leuven, Belgium; 3. Department of Engineering Materials,, University of Sheffield, Sheffield, United Kingdom*

ER-13. SAF layer oscillations of magnetic tunnel junctions. G. Hrkac¹, J. Dean¹, A. Goncharov¹, T. Schrefl^{1,2}, T. Devolder³, J. Kim³, P. Crozat³, C. Chappert³, S. Cornelissen⁴, L. Bianchini⁴ and L. Lagae⁴ *1. University of Sheffield, Sheffield, United Kingdom; 2. University of Science, St. Pölten, Austria; 3. Institut d'Electronique Fondamentale, Université Paris-Sud, Orsay, France; 4. Imec, Leuven, Belgium*

ER-14. Microwave oscillations in CPP-GMR with CoFeAlSi. M. Matsubara¹, J. Masuko¹, H. Kanai¹, Y. Uehara¹, T. Ibusuki² and M. Sato² *1. Advanced Head Technology Department, Fujitsu Ltd., Nagano, Japan; 2. Fujitsu Laboratories Ltd., Atsugi, Japan*

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session ES
MAGNETORESISTIVE AND
MAGNETOCALORIC MATERIALS (I)
(Poster Session)

Josep Fontcuberta, Session Chair
ICMAB-CSIC

Karl Sandeman, Session Chair
University of Cambridge

ES-01. Magnetotransport behavior and the phase diagram of Nd_{1-x}Ca_xMnO₃ manganites. *T. Hsu*¹, *Y. Shih*¹, *W. Wang*¹ and *J. Lin*¹ *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*

ES-02. Optical reflectance at visible wavelengths: a probe for Jahn-Teller contribution to the magneto-optical signal of manganite thin films. *G. Herranz*¹, *D. Hrabovsky*^{1,2}, *J. Caicedo*¹, *I. C. Infante*¹, *F. Sanchez*¹ and *J. Fontcuberta*¹ *1. Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Bellaterra, Spain; 2. Technical university of Ostrava, Ostrava, Czech Republic*

ES-03. Electron magnetic resonance study of magnetic order, paramagnetic magnetic correlations and spin dynamics in La- and Mn-deficient LaMnO₃ manganites. *M. Auslender*¹, *A.I. Shames*², *E. Rozenberg*², *G. Gorodetsky*² and *Y.M. Mukovskii*³ *1. Electrical Engineering and Computers, BGU, Beer-Sheva, Israel; 2. Physics, BGU, Beer-Sheva, Israel; 3. The New Materials Synthesis Laboratory, Moscow Steel and Alloys Institute, Moscow, Russia*

ES-04. Magnetic properties of La_{0.67}Ca_{0.33}MnO₃ nanoplates. *D. De*^{1,2}, *S. Ram*², *A. Banerjee*³, *A. Gupta*³ and *S.K. Roy*¹ *1. MME, IIT, Kharagpur, Kharagpur, West Bengal, India; 2. MSC, IIT, Kharagpur, Kharagpur, West Bengal, India; 3. UGC-DAE Consortium for scientific research, Indore, Madhya Pradesh, India*

ES-05. Interface strain effect and doped atoms effect deformation CMR system. *C. Wu*¹ *1. National Sun Yat-sen University, Kaohsiung, Taiwan*

ES-06. Microstructure of the strain-induced Fe/MgO/In_xGa_{1-x}As heterostructure for spin-injection. *K. Kim*¹, *H. Kim*¹, *I. Shin*¹, *H. Koo*¹, *J. Chang*¹ and *S. Han*¹ *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South*

ES-07. Epitaxial growth and magnetic properties of half-metallic Fe₃O₄ on Si(100) using MgO buffer layer.

S.S. Hassan¹ and Y. Xu¹ 1. *Electronics, University of York, York, United Kingdom*

ES-08. Preparation and characterization of full-Heusler Co₂FeSi alloy thin films on amorphous insulator films.

K. Hayashi¹, Y. Takamura¹, R. Nakane² and S. Sugahara^{1,3}
1. *Tokyo Institute of Technology, Yokohama, Japan*; 2. *University of Tokyo, Tokyo, Japan*; 3. *JST-CREST, Kawaguchi, Japan*

ES-09. Optimization of a rotary-type magnetic refrigerator.

S. Celik¹, D. Fasig¹ and P. Akkidas¹ 1. *Southern Illinois University, Edwardsville, IL, USA*

ES-10. Performance study of the room-temperature reciprocating magnetic refrigerator using an improved model.

Z. Zheng¹, X. Zhong¹, H. Yu¹, Z. Liu¹, D. Zeng¹ and S. You² 1. *School of Materials Science and Engineering, South China University of Technology, Guangzhou, Guangdong, China*; 2. *College of Mechanical and Materials Engineering, Jiujiang University, Jiujiang, Jiangxi, China*

ES-11. Influence of the GaAs substrate on the magnetocaloric behaviour of epitaxial MnAs thin films grown by MOVPE.

M. Solzi¹, C. Pernechele¹, M. Ghidini¹, M. Natali² and M. Bolzan² 1. *Dept. of Physics, University of Parma, Parma, Italy*; 2. *ICIS-CNR Institute, Padova, Italy*

ES-12. Magnetocaloric effect in single crystal Nd₂Co₇.

M. Ilyn¹, A.V. Andreev², M.I. Bartashevich³, E.A. Tereshina², A. Zhukov¹, V. Zhukova¹ and J. Gonzalez¹
1. *Material Physics, Chemistry Faculty, Universidad del Pais Vasco, San Sebastian, Spain*; 2. *Institute of Physics, Academy of Science, Prague, Czech Republic*; 3. *Institute of Physics and Applied Mathematics, Ural State University, Ekaterinburg, Russia*

ES-13. The effect of chemical distribution on the magnetocaloric effect of second- and first-order phase transitions.

J.S. Amaral¹, P.B. Tavares², S. Das¹, M.S. Reis¹, J.P. Araújo³, T.M. Mendonça³, V.S. Amaral¹ and J.M. Vieira⁴
1. *Physics and CICECO, Universidade de Aveiro, Aveiro, Portugal*; 2. *CQ-VR and Chemistry, UTAD, Vila Real, Portugal*; 3. *Physics and IFIMUP, FCUP, Porto, Portugal*; 4. *Ceramics and Glass and CICECO, Universidade de Aveiro, Aveiro, Portugal*

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session ET
MAGNETIC MEMORY AND LOGIC
(Poster Session)

Dirk Meyners, Session Chair
Christian-Albrechts University
Mathias Klaui, Session Chair
University of Konstanz

ET-01. Nonvolatile delay flip-flop using magnetic tunnel junctions with current-induced magnetization switching architecture. *S. Yamamoto*^{1,3} and *S. Sugahara*^{2,3} *1. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Japan; 2. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

ET-02. Energy surface analysis and critical points of a symmetric synthetic antiferromagnet. *A. Plamada*¹ and *A. Stancu*¹ *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Iasi, Romania*

ET-03. Schwarz-Christoffel Transformation for the cladding conducting lines. *Y. Su*¹, *J. Yang*² and *C. Chang*¹ *1. physics, National Taiwan University, Taipei, Taiwan; 2. Optoelectronic sciences, National Taiwan Ocean University, Keelung, Taiwan*

ET-04. Annealing effects of spin-transfer MTJ with composite free layers. *S. Yang*¹, *C. Yen*¹, *Y. Wang*¹, *D. Wang*¹, *C. Shen*¹, *C. Chien*¹, *C. Tsai*¹, *Y. Chen*¹, *C. Hung*¹, *K. Shen*¹ and *M. Kao*¹ *1. Electronics and Optoelectronics Research Lab. (EOL), Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan*

ET-05. Analysis of MTJ edge deformation influence on switching current distribution for next-generation high-speed embedded MRAMs. *Y. Katoh*¹, *S. Saitho*¹, *H. Honjo*¹, *S. Miura*¹ and *T. Sugibayashi*¹ *1. Device Platforms Research Laboratories, NEC Corporation, Sagami-hara, Kanagawa, Japan*

ET-06. Demagnetizing fields in magnetic RAM. *R. Spitzer*¹ and *E. Wuori*² *1. Integrated MagnetoElectronics, Berkely, CA, USA; 2. Integrated MagnetoElectronics, Minneapolis, MN, USA*

ET-07. Dependence of spin-transfer torque switching characteristics on process parameter of Ar flow rate.

*K. Kim*¹, *W. Kim*², *S. Oh*², *K. Nam*², *D. Kim*², *Y. Kim*², *J. Jeong*², *S. Lee*² and *J. Lee*² 1. *Semiconductor Device Lab, Samsung Advanced Institute of Technology (SAIT), Samsung Electronics Co., Ltd., Yongin-Si, Gyeonggi-Do, Korea, South*; 2. *Process Development Team, Samsung Electronics Co., Ltd, Yongin-Si, Gyeonggi-Do, Korea, South*

ET-08. Ultrathin perpendicular RE-TM films for the application of STT-RAM.

C. Lee^{1,2}, *L. Ye*¹, *J. Lee*^{1,3}, *W. Chen*^{1,2}, *J. Syu*¹, *C. Chen*¹, *S. Zheng*¹ and *T. Wu*^{1,2} 1. *Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan*; 2. *Graduate School of materials science, National Yunlin University of Science and Technology, Douliou, Taiwan*; 3. *Graduate school of Engineering Science and Technology, National Yunlin University of Science and Technology, Douliou, Taiwan*

ET-09. Velocity splitting of field driven domain walls in nanostrips under large transverse fields.

*R. Mattheis*¹ and *S. Glathe*¹ 1. *Institute of Photonic Technology, Jena, Germany*

ET-10. Effect of non-adiabatic damping constant on domain wall motion driven by pulse current in a magnetic nanowire.

*H. Murakami*¹, *T. Komine*¹ and *R. Sugita*¹ 1. *Department of Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

ET-11. Kinetic and static pinning of magnetic domain walls at notches in ferromagnetic nanowires.

*S. Ahn*¹, *K. Moon*¹, *K. Kim*¹, *D. Kim*² and *S. Choe*¹ 1. *Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South*; 2. *Department of Physics, Chungbuk National University, Cheongju, Korea, South*

ET-12. Computer simulation of the current induced domain wall motion in nanowire with perpendicular anisotropy.

*Y. Nakatani*¹, *H. Tanigawa*², *S. Kasai*² and *T. Ono*² 1. *Department of Computer Science, University of Electro-Communications, Tokyo, Japan*; 2. *Kyoto University, Uji, Japan*

ET-13. Direct magnetic imaging of domain wall manipulation in necked permalloy wires using XPEEM.

*W. Zhang*¹, *P. Wong*¹, *Y. Xu*¹, *J. Wu*², *S. Morton*³, *A. Scholl*³, *G. van der Laan*⁴ and *K. Xia*⁵ 1. *Electronics, University of York, York, United Kingdom*; 2. *Physics, University of York, York, United Kingdom*; 3. *Lawrence Berkeley National Laboratory, Berkeley, CA, USA*; 4. *Diamond Light Source, Chilton, United Kingdom*; 5. *Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China*

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session EU
FERRITES (II)
(Poster Session)

Yang-Ki Hong, Session Chair
University of Alabama

EU-01. Magnetoreactance studies in rare earth doped Ni ferrite. *K. Kamala Bharathi*¹, S. Dwevedi¹ and G. Markandeyulu¹. *Physics, Indian Institute of Technology, CHENNAI, India*

EU-02. Magnetic behavior of NiFe₂O₄/SiO₂ nanocomposite hollow spheres. *C. Lin*¹, *C. Wang*², *M. Hsieh*², *S. Lu*¹ and *Y. Siao*¹. *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan; 2. Department of Chemical and Materials Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

EU-03. Magnetic and structural properties of nanometric epitaxial CoFe₂O₄ and NiFe₂O₄ films: strain vs surface effects. *F. Rigato*¹, *S. Estradé*², *J. Arbiol*², *F. Peiró*², *X. Martí*¹, *F. Sanchez*¹ and *J. Fontcuberta*¹. *1. Institut de Ciència de Materials de Barcelona - CSIC, Bellaterra, Spain; 2. EME/CeRMAE/IN2UB, Departament d'Electrònica, Universitat de Barcelona, Barcelona, Spain*

EU-04. Temperature dependence of magnetic properties of CoAl_xFe_{2-x}O₄ for magnetostrictive sensor and actuator applications. *N. Ranvah*¹, *I.C. Nlebedim*¹, *Y. Melikhov*¹, *J.E. Snyder*¹, *A.J. Moses*¹, *P.I. Williams*¹ and *D.C. Jiles*¹. *1. Wolfson Centre for Magnetism, Cardiff University, Cardiff, Wales, United Kingdom*

EU-05. Improvement of high-frequency characteristics of Co₂Z-type hexaferrite by addition of rare earth. *C. Mu*¹, *H. Zhang*¹, *L. Jia*¹, *H. Su*¹ and *L. Wang*¹. *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

EU-06. The magnetization and magneto-impedance properties of NiZn-ferrites and NdFeB hard/soft magnetic composites. *C. Fu*¹, *C. Cheng*¹, *M. Kuo*², *M. Syue*², *C. Chou*² and *G. Hwang*³. *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Kaoshiung Normal University, Kaoshiung, Taiwan*

EU-07. Local spin structure of spinel

Cd_{0.9}Zn_{0.1}Fe₂O₄ investigated by external magnetic field Mössbauer spectrometry. *W. Kim*¹, *S. Hyun*¹, *B. Won*¹ and *C. Kim*¹ *1. Physics, Kookmin University, Seoul, Korea, South*

EU-08. Origin of the double-triangle hysteresis loops in ErFeO₃ near the low temperature erbium ordering transition.

*L. Tsymbal*¹, *G.N. Kakazei*^{2,3} and *Y.B. Bazaliy*^{4,2}
1. O. Galkin Donetsk Physics and Technology Institute, Donetsk, Ukraine; 2. Institute of Magnetism, National Academy of Sciences of Ukraine, Kyiv, Ukraine; 3. Universidade do Porto, Porto, Portugal; 4. Department of Physics, University of South Carolina, Columbia, SC, USA

EU-09. Structural and magnetic properties of

electrospun multiferroic BiFeO₃ nanofiber. *J. Nam*¹, *Y. Joo*¹, *S. Khim*², *K. Kim*², *J. Cho*¹, *M. Chun*¹ and *B. Kim*¹
1. Advanced Materials & Components Laboratory, Korea Institute of Ceramic Engineering and Technology, Seoul, Korea, South; 2. Department of Physics and Astronomy, Seoul National University, Seoul, Korea, South

EU-10. Multiferroic properties of hexagonal YbMnO₃

thin films. *T. Han*¹ and *J. Lin*² *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*

EU-11. The structural transition and magnetic properties

of lithium deintercalation in LiFePO₄. *I. Lee*¹, *S. Moon*¹, *I. Shim*¹ and *C. Kim*¹ *1. Department of Nano and Electronic Physics, Kookmin University, Seoul, Korea, South*

EU-12. Effect of compressive stress in thickness direction on magnetic properties of electrical steel sheet.

*D. Miyagi*¹, *Y. Aoki*¹, *M. Nakano*¹ and *N. Takahashi*¹ *1. Okayama University, Okayama, Japan*

THURSDAY
MORNING
8:00

EXHIBIT HALL B

Session EV
MOTOR DESIGN (I)
(Poster Session)

Jianguo Zhu, Session Chair
University of Technology, Sydney
Thomas Reichert, Session Chair
ETH Zurich

EV-01. Design of doubly salient permanent magnet motors with minimum torque ripple. G. Yu^{1,2}, C. K. t¹ and J. Jianzhong² 1. *Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, China*; 2. *Power Electronics and Electrical Drive, Shanghai University, Shanghai, China*

EV-02. Magnetic field and thrust analysis of the U-channel air-cored permanent magnet linear synchronous motor. X. Liu¹, Z. Zheng¹ and Y. Ye¹ 1. *College of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang, China*

EV-03. Cogging torque in flux-switching permanent magnet machines. Z. Zhu¹, A.S. Thomas¹, J.T. Chen¹ and G.W. Jewell¹ 1. *University of Sheffield, Sheffield, United Kingdom*

EV-04. A study on optimal pole design of spoke type IPMSM with concentrated winding for reducing the torque ripple by experimental design method. K. Hwang¹, J. Jo², B. Yang¹ and B. Kwon¹ 1. *Department of Electronics, Electrical, Control & Instrumentation Engineering, Hanyang Univ., Kyeonggi-do, Korea, South*; 2. *Komotek Co., Komotek Co., Kyeonggi-do, Korea, South*

EV-05. Effects of magnetic saturation on spindle motor characteristics. J. Bae¹, S. Kim¹, J. Im¹, K. Kim¹, C. Jin¹ and J. Lee¹ 1. *Department of electrical engineering, Hanyang University, Seoul, Korea, South*

EV-06. Design and analysis of tubular linear PM generator. Q. Lu¹ and Y. Ye¹ 1. *College of electrical engineering, Zhejiang university, Hangzhou, Zhejiang, China*

EV-07. Assessments of magnetic cross-coupling impacts on interior permanent magnet machine controls for electric vehicles. A. Wang¹, H. Li¹ and C. Liu² 1. *Electrical Engineering, North China Electric Power University, Baoding, China*; 2. *Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan*

EV-08. An improved AC standstill inductance test method for interior PM synchronous motor considering current vector variation. *T. Sun*¹, *J. Hong*¹ and *H. Jin*² *1. Department of Automotive Engineering, Hanyang University, Seoul, Korea, South; 2. School of Electrical Engineering, Ulsan University, Ulsan, Korea, South*

EV-09. Design and control method of moving-permanent magnet type linear synchronous machine for high thrust and smooth speed performance in transportation application. *S. Jang*¹, *J. Choi*¹, *D. You*¹, *J. Park*¹ and *I. Kim*² *1. Chungnam National University, Daejeon, Korea, South; 2. Hoseo University, Cheonan, Korea, South*

EV-10. A elicitation of thrust coefficient for permanent magnet linear synchronous motor by experimental design method. *S. Pyo*¹, *D. Lee*¹, *K. Jang*¹ and *G. Kim*¹ *1. Electrical Engineering, changwon national university, Changwon, Gyeongnam, Korea, South*

EV-11. Design and analysis of an axial flux synchronous motor with ring permanent magnets by using analytical method. *P. Vrtič*¹, *J. Horvat*¹, *P. Pišek*¹, *T. Marčič*¹, *M. Hadziselimovič*^{2,1} and *B. Stumberger*^{2,1} *1. TECES, Development centre for electrical machines, Maribor, Slovenia; 2. Faculty of Electrical Engineering and Computer Science, University of Maribor, Maribor, Slovenia*

EV-12. Torque ripple improvement for interior permanent magnet synchronous motor considering parameters with magnetic saturation. *H. Ihm*¹ and *J. Lee*¹ *1. Hanyang Univ., Seoul, Korea, South*

**THURSDAY
MORNING
8:00**

EXHIBIT HALL B

**Session EW
HEAD-MEDIA INTERFACE (II)
(Poster Session)**

**Bruno Marchon, Session Chair
Hitachi**

EW-01. Solvent effects on friction properties of monolayer perfluoropolyether films coated on magnetic disk surfaces. *H. Zhang*¹, *Y. Mitsuya*², *Y. Fujikawa*¹, *A. Fuwa*¹ and *K. Fukuzawa*¹ *1. Nagoya University, Nagoya, Japan; 2. Nagoya Industrial Science Research Institute, Nagoya, Japan*

EW-02. Electric field assisted dip coating process of ultra-thin PFPE lubricant film for magnetic disks.

H. Tani¹, K. Sakamoto¹, M. Kubota², M. Kanda², M. Terao² and N. Tagawa¹ 1. Dept. of Mechanical Engineering, High Technology Research Center, Kansai University, Suita-shi, Osaka-fu, Japan; 2. Kubota Comps Co., Amagasaki-shi, Hyogo-ken, Japan

EW-03. Wear–corrosion properties of DLC films with different source gas flows and the CN layer of media.

A. Tan¹ 1. Mechanical Engineering, Ching-Yun University, Jung-Li, Taiwan

EW-04. Characterization of head-disk interaction induced lubricant bonding. *L. Zhu¹ and F. Li¹ 1. Seagate Technology, Singapore, Singapore*

EW-05. Spinning effects on the spreading profiles in PFPE films. *H. Chen², D. Kim¹, P. Chung¹ and M.S. Jhon¹ 1. Depart of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA; 2. Hewlett-Packard Company, San Diego, CA, USA*

EW-06. The effect of molecular structure on the static and dynamic responses of binary mixture perfluoropolyether lubricant films. *P. Chung¹ and M.S. Jhon¹ 1. Depart of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*

EW-07. Some system level considerations for ultra-low FH head testing and drive integration. *Z. Li¹ and K. Flechsig¹ 1. Hitachi GST, San Jose, CA, USA*

THURSDAY
AFTERNOON
2:00

ROOM 311-313

Session FA
SYMPOSIUM ON SHINGLED-WRITING
AND TWO-DIMENSIONAL MAGNETIC
RECORDING

Roger Wood, Session Chair
Hitachi Global

- 2:00 FA-01. Future options for HDD storage^a. (Invited)**
Y. Shiroishi¹, K. Fukuda², I. Tagawa³, H. Iwasaki⁴, S. Takenoiri⁵, H. Tanaka⁶, H. Mutoh⁷ and N. Yoshikawa⁸ 1. R&D Strategy Office, Hitachi Global Storage Technologies Japan, Ltd., Odawara, Kanagawa, Japan; 2. Data Storage & Thin Film Technology Components Business Group, TDK Corporation, Saku, Nagano, Japan; 3. HDD Lab, Hitachi Global Storage Technologies Japan, Ltd., Fujisawa, Kanagawa, Japan; 4. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan; 5. Disk Media Group, Fuji Electric Device Technology Co., Ltd., Matsumoto, Nagano, Japan; 6. Head Advanced Technology, Hitachi Global Storage Technologies Japan, Ltd., Odawara, Kanagawa, Japan; 7. Storage Products Group, Fujitsu Limited, Kawasaki, Kanagawa, Japan; 8. Hard Disk Drive Development Dept., Toshiba Corporation, Ome, Tokyo, Japan
- 2:30 FA-02. High density data-storage using shingle-write. (Invited)** *I. Tagawa¹ and M. Williams² 1. Hitachi Global Storage Technologies, Fujisawa, Japan; 2. Consultant, San Jose, CA, USA*
- 3:00 FA-03. Shingled magnetic recording for 2 Tbit/in². (Invited)** *S. Greaves¹, Y. Kanai² and H. Muraoka¹ 1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan*
- 3:30 FA-04. Two-dimensional magnetic recording. (Invited)** *A. Kavcic¹, M. Erden², B. Vasic³ and W. Ryan³ 1. Department of Electrical Engineering, University of Hawaii, Honolulu, HI, USA; 2. Seagate Research, Pittsburgh, PA, USA; 3. Department of Electrical and Computer Engineering, University of Arizona, Tucson, AZ, USA*
- 4:00 FA-05. TDMR platform simulations and experiments.** *K. Chan¹, J.J. Miles², E. Hwang³, M. Lin³, R. Negi³, B. Kumar³ and J. Zhu³ 1. Data Storage Institute, A*STAR, Singapore, Singapore; 2. School of Computer Science, The University of Manchester, Manchester, United Kingdom; 3. Department of Electrical and Computer Engineering, Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, USA*

- 4:30 **FA-06. Directions for shingled-write and TDMR system architectures: synergies with solid-state disks. (Invited)** G. Gibson¹ and M. Polte¹ *1. Carnegie Mellon University, Pittsburgh, PA, USA*

THURSDAY
AFTERNOON
2:00

ROOM 314

Session FB
MAGNETORESISTIVE AND
MAGNETOCALORIC MATERIALS (II)

Jian Shen, Session Chair
Oak Ridge National Laboratory
Julia Lyubina, Session Chair
Leibniz-Institute of Solid State and Materials
Research Dresden

- 2:00 **FB-01. Emergent phenomena in manganites under spatial confinement. (Invited)** J. Shen^{1,2} and T.Z. Ward^{1,2}
1. Materials Sciences and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA; 2. Department of Physics and Astronomy, The University of Tennessee, Knoxville, TN, USA
- 2:30 **FB-02. Interfacial magnetic phase separation in SrTiO₃(001)/La_{1-x}Sr_xCoO₃.** M.A. Torija¹, M. Sharma¹, J. Gazquez², M. Varela², C. He¹, M. Laver³, B.B. Maranville³, J.A. Borchers³, V. Orlyanchik⁴, M.B. Weissman⁴ and C. Leighton¹ *1. University of Minnesota, Minneapolis, MN, USA; 2. Oak Ridge National Lab, Oak Ridge, TN, USA; 3. NIST, Gaithersburg, MD, USA; 4. University of Illinois, Urbana-Champaign, IL, USA*
- 2:45 **FB-03. Epitaxial strain effects on interfaces of ferromagnetic manganites.** J. Fontcuberta¹, I.C. Infante¹, F. Sanchez¹, G. Herranz¹, M. Wojcik², E. Jedryka², S. Estradé³, J. Arbiol³, F. Peiró³, F. de la Peña⁴, M. Walls⁴ and C. Colliex⁴ *1. Institut de Ciencia de Materials de Barcelona - CSIC, Bellaterra, Spain; 2. Institute of Physics, Polish Academy of Sciences, Warszawa, Poland; 3. EME/CeRMAE/IN2UB, Departament d'Electrònica, Universitat de Barcelona, Barcelona, Spain; 4. Lab. Physique des Solides, UMR CNRS, Orsay, France*

- 3:00 FB-04. The properties and structure relationship of half metallic magnetic materials on GaAs.** *S.S. Hassan*¹, *Y. Xu*¹, *J. Wu*², *Y. Huang*³, *J. Zheng*⁴, *C.D. Damsgaard*⁵, *J.B. Hansen*⁵ and *C.S. Jacobsen*⁵ *1. Electronics, University of York, York, United Kingdom; 2. Physics, University of York, York, United Kingdom; 3. Materials, University of Oxford, Oxford, United Kingdom; 4. University of California, San Diego, La Jolla, CA, USA; 5. Physics, Technical University of Denmark, Lyngby, Denmark*
- 3:15 FB-05. Microstructure, magnetic and transport properties of Co-ferrite thin films.** *Y.K. Takahashi*¹, *T. Seki*², *H. Sukegawa*¹, *T. Furubayashi*¹, *S. Mitani*^{1,2}, *K. Inomata*¹, *K. Takanashi*² and *K. Hono*¹ *1. NIMS, Tsukuba, Japan; 2. IMR Tohoku Univ., Sendai, Japan*
- 3:30 FB-06. Magnetocaloric and transverse susceptibility studies of charge-ordered Nd_{0.25}Pr_{0.25}Sr_{0.5}MnO₃.** *M. Phan*¹, *M. Morales*¹, *T.D. Nguyen*², *T.Q. Phung*^{3,4}, *S. Yu*⁴ and *H. Srikanth*¹ *1. Department of Physics, University of South Florida, Tampa, FL, USA; 2. Department of Chemistry, National University of Hanoi, 334 Nguyen Trai, Hanoi, Viet Nam; 3. Center for Material Science, National University of Hanoi, 334 Nguyen Trai, Hanoi, Viet Nam; 4. Department of Physics, Chungbuk National University, Cheongju 361-763, Korea, South*
- 3:45 FB-07. Field dependence of magnetic entropy change: a criterion for distinguishing first- and second-order phase transitions.** *J. Lyubina*¹, *M.D. Kuz'min*¹, *K. Nenkov*¹, *M. Richter*¹ and *O. Gutfleisch*¹ *1. IFW Dresden, Dresden, Germany*
- 4:00 FB-08. Magnetocaloric effect in RFe₁₁Ti (R=Gd,Tb,Ho) intermetallic compounds: from single crystals to nanocrystalline alloys.** *K.P. Skokov*^{1,2}, *J. Lyubina*¹, *O. Gutfleisch*¹, *Y.S. Koshkid'ko*², *D. Karpenkov*², *A. Karpenkov*² and *Y.G. Pastushenkov*² *1. Magnetism and Superconductivity, Leibniz Institute for Solid State and Materials Research Dresden, Institute for Metallic Materials, Dresden, Germany; 2. Faculty of Physics, Tver State University, Tver, Russia*
- 4:15 FB-09. Magnetic and structural changes in Fe-substituted Gd₅Si₂Ge₂-based alloys.** *B. Podmiljsak*^{1,2}, *P.J. McGuinness*¹, *N. Mattern*², *H. Ehrenberg*² and *S. Kobe*¹ *1. Jozef Stefan Institute, Ljubljana, Slovenia; 2. Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany*
- 4:30 FB-10. Anomalous behaviour in electrical transport properties in single crystal Gd₅Si_{1.8}Ge_{2.2} and polycrystalline Gd₅Si_{2.09}Ge_{1.91}.** *R.L. Hadimani*¹, *Y. Melikhov*¹, *J.E. Snyder*¹ and *D.C. Jiles*¹ *1. Wolfson Centre for Magnetism, Cardiff University, Cardiff, CF24 3AA, United Kingdom*

- 4:45 FB-11. Insights on the magnetism of Tb₅Ge₄.**
*A.M. Pereira*¹, *C. Magen*^{2,3}, *A. dos Santos*⁴, *P. Algarabel*³,
*J. Amaral*⁵, *L. Morellon*^{2,3}, *V. Amaral*⁵, *M.R. Ibarra*^{2,3},
*J.B. Sousa*¹ and *J.P. Araujo*¹ *1. IFIMUP-IN, Porto, Portugal;*
2. INA, Zaragoza, Spain; 3. ICMA, Zaragoza, Spain; 4.
NSSD ORNL, Oak Ridge, TN, USA; 5. CICECO, Aveiro,
Portugal

THURSDAY
AFTERNOON
2:00

ROOM 315

Session FC
MAGNETIC NON-RECORDING
SENSORS

Manuel Vazquez, Session Chair
 ICMM-CSIC

- 2:00 FC-01. Remote temperature sensor based on amorphous metal strips.** *D. Azuma*¹ and *R. Hasegawa*¹ *1. R&D, Metglas, Inc., Conway, SC, USA*
- 2:15 FC-02. A new type of current sensor based on inverse magnetostriction for large current detection.** *F. Koga*¹, *T. Tadatsu*², *J. Inoue*³ and *I. Sasada*⁴ *1. Fukuoka Industrial Technology Center, Kitakyushu, Japan; 2. Loyal Port Co., Ltd., Koga, Japan; 3. FDK Corporation, Kosai, Japan; 4. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan*
- 2:30 FC-03. Micron-sized InSb Hall sensors.** *O. Kazakova*¹, *J.C. Gallop*¹, *P. See*^{1,2}, *D. Cox*^{1,3}, *J. Moore*⁴ and *L.F. Cohen*⁴ *1. NPL, Teddington, United Kingdom; 2. Univ. of Cambridge, Cambridge, United Kingdom; 3. Univ. of Surrey, Guilford, United Kingdom; 4. Imperial College, London, United Kingdom*
- 2:45 FC-04. High T_c SQUID detection system for metallic contaminant in lithium ion battery.** *S. Tanaka*¹, *T. Akai*¹, *Y. Hatsukade*¹, *T. Ohtani*² and *S. Suzuki*² *1. Toyohashi University of Technology, Toyohashi, Aichi, Japan; 2. Advance Food Tech Co., Ltd., Toyohashi, Aichi, Japan*
- 3:00 FC-05. Using the crossfield error in AMR.** *P. Ripka*¹ and *M. Butta*¹ *1. Faculty of Electrical Engineering, Czech Technical University in Prague, Praha 6, Czech Republic*

- 3:15 FC-06. Wireless passive magneto/acoustic strain sensors.** *D. Suess*¹, *T. Schrefl*¹, *B. Bergmair*², *M. Jamek*² and *E. Tschegg*² *1. SuessCo KG, Herzogenburg, Austria; 2. Institut of Solid State Physics, Vienna, Austria*
- 3:30 FC-07. Non-contact temperature sensor based on inverse magnetostriction.** *C. Thede*¹, *S. Chemnitz*¹ and *E. Quandt*¹ *1. Institute for Materials Science, Kiel University, Kiel, Germany*
- 3:45 FC-08. Achieving the benefits of the MEMS flux concentrator: a low cost, highly sensitive magnetometer.** *A. Edelstein*¹, *G.A. Fischer*¹, *J.E. Burnette*¹, *W.E. Egelhoff, Jr*² and *S. Cheng*³ *1. US Army Research Laboratory, Adelphi, MD, USA; 2. NIST, Gaithersburg, MD, USA; 3. NRL, Washington, DC, USA*
- 4:00 FC-09. Optimization of multilayer structures for high field sensitivity biochip sensor based on planar Hall effect.** *H. Tran Quang*¹, *S. Oh*¹, *A. Sarella*¹, *J. Jeong*¹, *C. Kim*¹ and *D. Kim*² *1. Department of Materials Science and Engineering, Chungnam National University, Daejeon, Korea, South; 2. Department of Physics, Andong National University, Andong, Korea, South*
- 4:15 FC-10. Magnetoelastic carbon fiber micro strain sensor.** *A. Belski*¹ and *H. Gatzen*¹ *1. Leibniz Universitaet Hannover, Institute for Microtechnology, Garbsen, Germany*
- 4:30 FC-11. Noise study of magnetic tunnel junction sensors with magnetic flux concentrators.** *S. Liou*¹, *R. Zhang*¹, *S.E. Russek*², *R. Heindl*², *L. Yuan*², *S.T. Halloran*², *F. Da Silva*², *J. Moreland*² and *D.P. Pappas*² *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE, USA; 2. National Institute of Standards and Technology, Boulder, CO, USA*
- 4:45 FC-12. Magnetoelastic/piezoelectric laminated structures for tunable remote contactless magnetic sensing and energy harvesting.** *P. Finkel*^{1,2} and *S. Lofland*^{2,1} *1. Drexel University, Philadelphia, PA, USA; 2. Rowan University, Glassboro, NJ, USA*

THURSDAY
AFTERNOON
2:00

ROOM 306

Session FD
SPIN TRANSFER TORQUE
PHENOMENA (II)

Ilya Krivorotov, Session Chair
University of California, Irvine

- 2:00 FD-01. Spin transfer switching in magnetic tunnel junctions : time-resolved observation and related eigenexcitations. (Invited)** A. Helmer¹, T. Devolder¹, J. Kim¹, C. Chappert¹, J. Hayakawa², K. Ito², H. Takahashi², S. Ikeda³ and H. Ohno³ *1. Institut d'Electronique Fondamentale, ORSAY Cedex, France; 2. Hitachi, Ltd., Advanced Research Laboratory, Tokyo, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- 2:30 FD-02. Spin polarized transport and dynamics in magnetic tunneling structures. (Invited)** J.Q. Xiao¹, T. Moriyama¹, R. Cao¹, X. Fan¹, J. Kolodzey², S.H. Chen^{1,3}, C.R. Chang³, Y. Tserkovnyak⁴ and B.K. Nikolic¹ *1. Physics and Astronomy, University of Delaware, Newark, DE, USA; 2. Electrical and Computer Engineering, University of Delaware, Newark, DE, USA; 3. Physics, National Taiwan University, Taipei, Taiwan; 4. Physics and Astronomy, University of California, Los Angeles, CA, USA*
- 3:00 FD-03. Spin transfer induced dynamics of magnetic vortices in single and multi-nanocontact systems.** A. Ruotolo¹, A. Dussaux¹, B. Georges¹, V. Cros¹, J. Grollier¹, C. Deranlot¹, S. Fusil¹, K. Bouzehouane¹ and A. Fert¹ *1. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France*
- 3:15 FD-04. Time-resolved x-ray microscopy and micromagnetic simulations of magnetic antivortex dynamics.** M. Bolte¹, A. Drews¹, T. Kamionka¹, M. Martens¹, G. Meier¹, B. Krüger², B. Van Waeyenberge³, M. Weigand³, M. Curcic³ and H. Stoll³ *1. Institute for Applied Physics, University of Hamburg, Hamburg, Germany; 2. I. Institute for Theoretical Physics, University of Hamburg, Hamburg, Germany; 3. Max-Planck-Institute for Metal Research, Stuttgart, Germany*

- 3:30 FD-05. Domain wall induced telegraph noise switching driven by spin transfer in nanopillars with perpendicular anisotropy.** *J. Cucchiara*¹, *Y. Henry*², *D. Ravelosona*³, *D. Lacour*¹, *E.E. Fullerton*⁴, *J.A. Katine*⁵ and *S. Mangin*¹. *1. Laboratoire de Physique des Matériaux, Vandoeuvre lès Nancy, France; 2. Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France; 3. Institut d'Electronique Fondamentale, Orsay, France; 4. Center of Magnetic Recording Research, San Diego, CA, USA; 5. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 3:45 FD-06. Hysteresis and bistability in the injection locking of spin-transfer nano-oscillators.** *C. Serpico*¹, *G. Bertotti*², *R. Bonin*³, *I. Mayergoyz*⁴ and *M. d'Aquino*⁵. *1. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, NA, Italy; 2., Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, TO, Italy; 3. Politecnico di Torino - sede di Verres, Verres, AO, Italy; 4. Dept. of Electrical and Computer Eng. and UMIACS, University of Maryland, College Park, MD, USA; 5. Dept. per le Tecnologie, Università di Napoli "Parthenope", Napoli, NA, Italy*
- 4:00 FD-07. Magnetic-field-driven ferromagnetic resonance in spin-transfer devices.** *R. Bonin*¹, *G. Bertotti*², *C. Serpico*³, *M. d'Aquino*⁴ and *I.D. Mayergoyz*⁵. *1. Politecnico di Torino - Sede di Verrès, Verrès, Aosta, Italy; 2. Electromagnetic Division, Istituto Nazionale di Ricerca Metrologica, Torino, Torino, Italy; 3. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Napoli, Italy; 4. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Napoli, Italy; 5. Electrical and Computer Engineering Department and UMIACS, University of Maryland, College Park, MD, USA*
- 4:15 FD-08. Diffusive Spin-Transfer; derivation of the critical current due to the spin accumulation only.** *J. Wegrowe*¹, *H. Drouhin*¹ and *M. Rubi*². *1. LSI, Ecole Polytechnique, Palaiseau, France; 2. Physics, Universitat de Barcelona, Barcelona, Spain*
- 4:30 FD-09. Spin-polarized current switching of Co/Cu/Py Pac-man type II.** *A. Lyle*¹, *Y. Hong*¹, *B. Choi*², *G.S. Abo*¹, *J. Jalli*¹, *S. Bae*¹, *R. Syslo*¹, *M. Park*³ and *G.W. Donohoe*⁴. *1. MINT Center, Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 2. Department of Electrical and Computer Engineering, University of Victoria, Victoria, BC, Canada; 3. Western Digital Corporation, Fremont, CA, USA; 4. Department of Electrical and Computer Engineering, University of Idaho, Moscow, ID, USA*

- 4:45 FD-10. Non-adiabatic spin transfer torque in high anisotropy magnetic nanowires with narrow domain walls.** *O. Boulle*¹, J. Heinen¹, J. Kimling¹, L. Heyne¹, M. Kläui¹, U. Rüdiger¹, G. Malinowsky³, B. Koopmans³, J. Rhensius², L. Heyderman² and G. Faini⁴ *1. Constance University, Konstanz, Germany; 2. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland; 3. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 4. CNRS, Phynano team, Laboratoire de Photonique et de Nanostructures, Marcoussis, France*

**THURSDAY
AFTERNOON
2:00**

ROOM 307

**Session FE
MICROWAVE AND MILLIMETER WAVE
DEVICES**

Mingzhong Wu, Session Chair
Colorado State University

- 2:00 FE-01. Nonlinear microwave signal processing based on spin waves in dielectric and metallic magnetic films.** *(Invited)* G.A. Melkov¹, Y.V. Kobljanskiy¹, V.S. Tiberkevich² and A.N. Slavin² *1. Radiophysics, T.Shevchenko Kiev State University, Kiev, Ukraine; 2. Physics, Oakland University, Rochester, MI, USA*
- 2:30 FE-02. Miniaturized planar antennas and filters on magnetoelectric substrates with ferrite films loading.** G. Yang¹, A. Shrabstein¹, X. Xing¹, A. Daigle¹, Y. Obi¹, M. Liu¹, S. Stoute¹ and N. Sun¹ *1. Electrical and Computer Engineering, Northeastern University, Boston, MA, USA*
- 2:45 FE-03. A tunable X-band band-pass filter using YIG-GGG layer on RT-Duroid substrate.** Y. Zhu¹, Q. Gang¹, K. Chi¹, B. Wang² and C.S. Tsai^{1,3} *1. Electrical Engineering and Computer Science, and Institute of Surface and Interface Science, University of California, Irvine, CA, USA; 2. Wang, NMR Inc., 550 North Canyons Parkway, Livermore, CA, USA; 3. Institute of Electrooptics Engineering, National Taiwan University, Taipei, Taiwan*

- 3:00 FE-04. High-frequency microwave devices using ferromagnetic structures. (Invited)** Z. Celinski¹, Y. Khivintsev¹, B. Kuanr¹, V. Zagorodnii¹, T. Fal¹, V. Veerakumar¹ and R.E. Camley¹ *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO, USA*
- 3:30 FE-05. Probing of a parametrically driven magnon gas with a non-resonant traveling spin wave.** A.A. Serga¹, T. Neumann¹ and B. Hillebrands¹ *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*
- 3:45 FE-06. Reverse Doppler effect in backward spin waves scattered on acoustic waves.** A.V. Chumak¹, P. Dhagat², A. Jander², A.A. Serga¹ and B. Hillebrands¹ *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR, USA*
- 4:00 FE-07. Co₂Z hexaferrite T-DMB antenna for mobile phone.** S. Bae¹, Y. Hong¹, J. Lee¹, J. Jalli¹, G.S. Abo¹, W. Sung², G. Kim², S. Park², J. Kum² and H. Kwon³ *1. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL, USA; 2. E.M.W. Antenna Co., Ltd., Seoul, Korea, South; 3. Department of Electrical and Computer Engineering, Wichita State University, Wichita, KS, USA*
- 4:15 FE-08. Field-induced transition from parallel to perpendicular parametric pumping for a microstrip transducer.** T.M. Neumann¹, A.A. Serga¹ and B. Hillebrands¹ *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*
- 4:30 FE-09. Nonreciprocal phase-shift composite right/left handed transmission lines.** T. Ueda¹ and M. Akiyama¹ *1. Department of Electronics, Kyoto Institute of Technology, Kyoto, Japan*
- 4:45 FE-10. Left-handed characteristics of ferrite microstrip line magnetized to wave propagation.** M. Tsutsumi¹ and K. Okubo² *1. Fukui University of Thecnology, Fukui, Fukui, Japan; 2. Okayama Prefectural University, Soja, Okayama, Japan*

THURSDAY
AFTERNOON
2:00

ROOM 308

Session FF
MAGNETIC TUNNEL JUNCTIONS AND
SPIN INJECTION

John Xiao, Session Chair
University of Delaware

- 2:00 FF-01. Perpendicular magnetic tunnel junctions with CoFe/Pd multilayer electrodes and MgO barrier.** *J. Park*¹, *S. Ikeda*¹, *H. Yamamoto*^{2,1}, *H. Gan*¹, *K. Miura*^{2,1}, *H. Hasegawa*^{1,2}, *J. Hayakawa*², *K. Ito*², *F. Matsukura*¹ and *H. Ohno*¹ *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., 1-280 Higashi-koigakubo, Kokubunji-shi, Tokyo 185-, Japan*
- 2:15 FF-02. Influence of crystallographic orientation of FeCo spin polarization enhancement layer on the magnetization coupling with RE-TM alloy films in perpendicular MTJ.** *H. Ohmori*¹, *N. Miyamoto*¹ and *S. Nakagawa*¹ *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*
- 2:30 FF-03. X-ray absorption and X-ray magnetic circular dichroism studies of the interfacial structure and ferromagnetic properties in Co₂FeAl_{0.5}Si_{0.5} magnetic tunnel junctions.** *S.S. Hassan*¹, *Y. Xu*¹, *A. Hirohata*¹, *H. Sukegawa*², *W. Wang*², *K. Inomata*² and *G. van der Laan*³ *1. Electronics, University of York, York, United Kingdom; 2. Magnetic Materials Group, National Institute for Materials Science, Tsukuba, Japan; 3. Diamond Light Source, Didcot, United Kingdom*
- 2:45 FF-04. Voltage induced magnetic anisotropy change in ultrathin Au/bcc-Fe/MgO (001) junctions.** *T. Maruyama*¹, *Y. Shiota*¹, *T. Nozaki*¹, *M. Shiraiishi*¹, *T. Shinjo*¹ and *Y. Suzuki*¹ *1. Engineering Science, Osaka University, Toyonaka, Japan*
- 3:00 FF-05. Magnetoresistance properties of planar-type tunnel junctions with ferromagnetic nanogap system fabricated by electromigration method.** *Y. Tomoda*¹, *K. Takahashi*¹, *M. Hanada*¹, *W. Kume*¹, *S. Itami*¹ and *J. Shirakashi*¹ *1. Electronic and Information Engineering, Tokyo University of Agriculture and Technology, Koganei, Tokyo, Japan*

- 3:15 FF-06. Electrical phase transitions as a function of temperature, applied voltage and magnetic field in arrays of CoFe nanoparticles separated by organic tunnel barriers.** R.P. Tan¹, J. Carrey¹, C. Desvaux², P. Renaud³, B. Chaudret² and M. Respaud¹ *1. Laboratoire de Physique et Chimie des Nano-Objets, Université de Toulouse, Toulouse, France; 2. Laboratoire de Chimie de Coordination-CNRS, Toulouse, France; 3. Freescale Semiconductor, Toulouse, France*
- 3:30 FF-07. The critical role of the barrier thickness in spin filter tunneling.** C.W. Miller¹ *1. Physics Department, University of South Florida; Center for Integrated Functional Materials, Tampa, FL, USA*
- 3:45 FF-08. Spin-tunnel contacts to silicon using low-work-function CoGd alloys.** R.S. Patel¹, S.P. Dash¹, M.P. de Jong¹ and R. Jansen¹ *1. University of Twente, MESA+ Institute for Nanotechnology, Enschede, Netherlands*
- 4:00 FF-09. Fermi level pinning/depinning and Schottky barrier height modulation in CoFeB/MgO/Ge structure.** D. Lee¹, S. Raghunathan², K. Saraswat² and S.X. Wang^{1,2} *1. Department of Materials Science and Engineering, Stanford University, Stanford, CA, USA; 2. Department of Electrical Engineering, Stanford University, Stanford, CA, USA*
- 4:15 FF-10. Electrical characterization for spin injection and detection in Si using ferromagnet/tunnel barrier electrodes.** T. Marukame¹, H. Sugiyama¹, T. Inokuchi¹, M. Ishikawa¹ and Y. Saito¹ *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*
- 4:30 FF-11. Enhancement of the spin accumulation at the interface between a spin-polarized tunnel junction and a semiconductor.** M. Tran¹, H. Jaffrès¹, C. Deranlot¹, J. George¹, A. Fert¹, A. Miard² and A. Lemaitre² *1. Unité Mixte de Physique CNRS-Thales, Palaiseau, France; 2. Laboratoire de Photonique et Nanostructures, Marcoussis, France*
- 4:45 FF-12. Electric-field-induced spin injection enhancement at a ferromagnet-semiconductor interface.** H. Koo¹, Y. Park¹, K. Kim¹, H. Kim¹, J. Chang¹ and S. Han¹ *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South*

THURSDAY
AFTERNOON
2:00

ROOM 309

Session FG
EXCHANGE BIAS (II)

Jeffrey McCord, Session Chair
IFW Dresden

- 2:00 FG-01. Hysteretic exchange bias supplied by MnIr layers studied by network analyser ferromagnetic resonance.** C. Bilzer¹, T. Devolder¹, J.V. Kim¹, C. Chappert¹, M. Ruehrig² and L. Baer² *1. Institut d'Electronique Fondamentale, ORSAY Cedex, France; 2. Siemens AG, Erlangen, Germany*
- 2:15 FG-02. Atomic origin of exchange bias in core-shell nanoparticles.** D. Bate¹, R. Yanes², O. Chubykalo-Fesenko², R.F. Evans¹ and R.W. Chantrell¹ *1. Physics, University Of York, York, England, United Kingdom; 2. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Cantoblanco, Spain*
- 2:30 FG-03. Tuning of anisotropy in IrMn/CoFe exchange bias systems.** N.P. Aley¹, R. Kroeger¹, B. Lafferty², J. Agnew², Y. Lu² and K. O'Grady¹ *1. Physics, The Univeristy of York, York, North Yorkshire, United Kingdom; 2. Seagate Technology Ltd., Derry, United Kingdom*
- 2:45 FG-04. Reversal mechanism of exchange-biased CoFeB/IrMn Bi-layers observed by Lorentz electron microscopy.** A. Kovacs¹, A. Kohn¹, J. Dean², T. Schrefl², A. Zeltser³ and M.J. Carey³ *1. Department of Materials, University of Oxford, Oxford, United Kingdom; 2. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 3. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 3:00 FG-05. Spin dynamics in Py/NiO : experimental and theoretical approach.** C. Le Graët¹, D.T. Dekadjevi¹, J. Jay¹, S.P. Pogossian¹, D. Spenato¹ and J. Ben Youssef¹ *1. physics, Laboratoire de Magnetisme de Bretagne-LMB - CNRS FRE3117-Université de Bretagne Occidentale, Brest, France*
- 3:15 FG-06. Systematic study for magnetization dependence of exchange anisotropy strength in Mn-Ir/FM (FM = Fe-Co, Co-Ni, Ni-Fe) bilayer system.** M. Tsunoda¹, H. Takahashi¹ and M. Takahashi¹ *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

- 3:30 FG-07. Exchange bias in $L1_0$ (111) FePt-based all-ferromagnetic spin valves.** C. Zha¹ and J. Åkerman^{1,2} 1. *Department of Microelectronics and Applied Physics, Royal Institute of Technology, Kista, Sweden;* 2. *Physics Department, Göteborg University, Göteborg, Sweden*
- 3:45 FG-08. Thermally-activated relaxation of IrMn interfacial spins in epitaxial (002) $\text{Ir}_{20}\text{Mn}_{80}/\text{Co}_{50}\text{Fe}_{50}$ exchange-coupled bilayers.** H. Huang¹, C. Yang¹ and C. Lai¹ 1. *Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*
- 4:00 FG-09. Correlation between the degradation of perpendicular anisotropy and the double hysteresis behavior in $[\text{Pd}/\text{Co}]_n/\text{FeMn}$ exchange biased thin films.** H. Joo¹, S. Bae¹, S. Kim¹, L. Lin¹ and D. Hwang² 1. *Electrical and Computer Engineering, National University of Singapore, Biomagnetic Laboratory (BML), and Information Storage Materials Laboratory (ISML), Singapore, Singapore;* 2. *Computer and Electronic Physics, Sangji University, Nono Bio Laboratory (NBL), Wonju, Korea, South*
- 4:15 FG-10. Surface anisotropy as a driving force for exchange bias behavior in magnetite nanoparticles.** J. Restrepo¹, J. Mazo-Zuluaga¹ and J. Mejía-López² 1. *Instituto de Física, Universidad de Antioquia, Medellín, Antioquia, Colombia;* 2. *Facultad de Física, Pontificia Universidad Católica, Santiago, Chile*

**THURSDAY
AFTERNOON
2:00**

ROOM 310

**Session FH
MOTORS AND ACTUATORS (I)**

Mi-Ching Tsai, Session Chair
National Cheng Kung University

- 2:00 FH-01. Method for evaluating eddy current loss of permanent magnet in PM motor driven by inverter power supply using coupled 2D and 3D finite element analyses.** T. Okitsu¹, D. Matsubashi¹ and K. Muramatsu² 1. *Meidensha Corp., Tokyo, Japan;* 2. *Saga University, Saga, Japan*
- 2:15 FH-02. Development of a magnetic-gear permanent-magnet brushless motor.** L. Wang¹, J. Shen¹, C. Wang¹ and H. Hao¹ 1. *College of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang, China*

- 2:30 FH-03. Design and analysis of a claw pole PM motor with molded SMC core.** *Y. Guo*¹, *J. Zhu*¹ and *D. Dorrell*¹
1. Faculty of Engineering and IT, University of Technology, Sydney, Sydney, NSW, Australia
- 2:45 FH-04. Study of magnetization distribution in interpolar transition areas and its influence on performances of permanent magnet motors.** *J. Li*¹ and *Z. Liu*²
1. Electrical Engineering, P.R. China, China; 2. Data Storage Institute, Singapore, Singapore
- 3:00 FH-05. Unbalanced magnet pull in large brushless rare-earth permanent magnet motors with rotor eccentricity.** *D.G. Dorrell*¹, *M. Hsieh*² and *Y. Guo*¹
1. School of Electrical, Mechanical and Mechatronic Systems, University of Technology Sydney, Sydney, NSW, Australia; 2. Department of Systems and Naval Mechatronic Engineering, National Cheng Kung University, Tainan, Taiwan
- 3:15 FH-06. Fault diagnosis of induction motor using analysis of stator current.** *J. Shin*^{1,2}, *Y. Cho*^{1,2} and *D. Kang*^{1,3}
1. Electronics Engineering, Dong-A Univ. in Korea, Pusan, Korea, South; 2. Dong-A Univ, Pusan, Korea, South; 3. Dong-A Univ, Pusan, Korea, South
- 3:30 FH-07. A study of three dimensional excitation field in a hybrid excitation synchronous generator.** *Z. Jibin*¹, *F. Xinghe*¹, *X. Yongxiang*¹, *Y. Li*² and *M. Wei*²
1. Harbin Institute of Technology, Harbin, China; 2. Linqun Motor Factory, Guizhou, China
- 3:45 FH-08. Miniature electromagnetic XY stage with vibration resistance.** *K. Lee*¹, *S. Kim*¹, *I. Yi*¹, *J. Cho*¹, *J. Shin*¹, *Y. Choi*² and *H. Nam*³
1. Korea Electronics Technology Institute, Seongnam-si, Korea, South; 2. Myongji University, Yongin, Korea, South; 3. LG electronics, Seoul, Korea, South
- 4:00 FH-09. Novel moving coil tubular actuator with double sided PM array.** *K.J. Meessen*¹, *J.J. Paulides*¹ and *E.A. Lomonova*¹
1. Eindhoven University of Technology, Eindhoven, Netherlands
- 4:15 FH-10. Magnetic navigation system of rotating saddle and Maxwell coils for three-dimensional manipulation of a micro-robot in human blood vessel.** *S. Jeon*¹ and *G. Jang*¹
1. PREM Lab., Dept. of Mechanical Engineering, Hanyang University, Seoul, Korea, South
- 4:30 FH-11. Coupled analysis method of electromagnetic-structure acoustic for flat panel speaker driven by giant magnetostrictive material based actuator using finite element method.** *B. Yoo*¹ and *K. Hirata*¹
1. Graduate School of Engineering, Osaka university, Suita, Japan

THURSDAY
AFTERNOON
1:00

EXHIBIT HALL B

Session FP
MAGNETIC MICROSCOPY AND
CHARACTERIZATION (II)
(Poster Session)

Dong-Hyun Kim, Session Chair
Chungbuk National University

FP-01. Investigation of metallic/oxide interfaces in Pt/Co/AIO_x trilayers by hard X-Ray reflectivity. F. Fetta¹, H. Garad¹, A. Ramos¹, L. Ortega¹, J. Marcus¹, B. Zawilski¹, P. Plaindoux¹, S. Auffret², B. Rodmacq² and B. Dieny² *1. Institut NEEL, CNRS, Grenoble, France; 2. Inac/Spintec, CEA/CNRS, Grenoble, France*

FP-02. Flux distribution at the cross-section of stacked nanostructured magnetic ribbon. Z.W. Lin¹, J.G. Zhu¹, Y.G. Guo¹, T.H. Johansen² and Y. Yoshizawa³ *1. University of Technology, Sydney, Sydney, NSW, Australia; 2. Department of Physics, University of Oslo, Oslo, Norway; 3. Magnetic & Electronic Materials Research Laboratory, Hitachi Metals Ltd, Saitama, Japan*

FP-03. Soft x-ray imaging of non-linear vortex core dynamics in permalloy squares. B.L. Mesler^{1,2}, M. Im², K. Buchanan³ and P. Fischer² *1. Applied Science and Technology Graduate Group, University of California, Berkeley, Berkeley, CA, USA; 2. Center for X-ray Optics, Lawrence Berkeley National Lab, Berkeley, CA, USA; 3. Department of Physics, Colorado State University, Fort Collins, CO, USA*

FP-04. Temperature dependence of domain-wall creep in Pt/CoFe/Pt films. J. Kim¹, K. Kim¹, S. Choe¹, Y. Cho², C. Lee² and S. Seo² *1. Seoul National University, Seoul, Korea, South; 2. Samsung Advanced Institute of Technology, Yongin, Korea, South*

FP-05. Magnetic shape anisotropy of ferromagnetic permalloy nanowires. K. Moon¹, J. Lee^{1,2}, S. Choe¹, M. Jung³ and K. Shin² *1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, South; 3. Department of Physics, Sogang University, Seoul, Korea, South*

FP-06. Bench-top time-resolved magneto-optical Kerr magnetometer. *A. Barman*^{1,2}, *T. Kimura*^{3,2}, *Y. Otani*^{3,2}, *Y. Fukuma*², *K. Akahane*⁴, *S. Meguro*⁴ and *S. Sugawara*⁴ *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. RIKEN ASI, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan; 3. Institute for Solid State Physics, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8581, Japan; 4. Neorark Corporation, 2026-21 Nakanomachi, Hachioji, Tokyo 192-0015, Japan*

FP-07. Magneto-optical observation of magnetic field distribution of soft magnetic materials. *Z.W. Lin*¹, *J.G. Zhu*¹, *Y.G. Guo*¹, *J.X. Chen*³ and *S.H. Wang*² *1. University of Technology, Sydney, Sydney, NSW, Australia; 2. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 3. DongHua University, Shanghai, China*

**THURSDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session FQ
EDDY CURRENTS AND LOSSES IN
MOTORS
(Poster Session)**

*Elena Lomonova, Session Chair
Eindhoven University of Technology
Vincent Mazauric, Session Chair
Schneider Electric*

FQ-01. Effect of magnetostriction anisotropy in non-oriented electrical steels on deformation of induction motor cores. *S. Somkun*¹, *A.J. Moses*¹ and *P.I. Anderson*¹ *1. Wolfson Centre for Magnetism, Cardiff University, Cardiff, United Kingdom*

FQ-02. Transverse edge effect of a linear eddy current brake with a solid steel secondary. *Y. Sakamoto*¹, *T. Kashiwagi*¹, *H. Hasegawa*¹, *T. Sasakawa*¹ and *N. Fujii*² *1. Electromagnetic Applications Laboratory, Railway Technical Research Institute, Tokyo, Japan; 2. Electrical and Electronic Systems Engineering, Kyushu University, Fukuoka, Japan*

FQ-03. Proximity losses study in a high speed flux switching permanent magnet machine. *A.S. Thomas*¹, *Z. Zhu*¹ and *G.W. Jewell*¹ *1. University of Sheffield, Sheffield, United Kingdom*

FQ-04. Analysis and solution on squeak noise of small permanent magnetic dc brush motors in variable speed applications. Y. Li¹, S. Ho², W. Fu² and W. Liu² 1. *JohnsonElectric, Inc, Hong Kong, China*; 2. *Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

FQ-05. Design, fabrication and testing of a micro axial reluctance motor integrated with Eddy current sensor. D. Pang¹ 1. *Mechanical Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan*

FQ-06. Effect of eddy current loss reduction by segmentation of magnets in synchronous motors: difference between interior and surface type. K. Yamazaki¹, M. Shina¹, Y. Kanou¹, M. Miwa² and J. Hagiwara² 1. *Dept. of Electrical, Electronics and Computer Engineering, Chiba Institute of Technology, Narashino, Chiba, Japan*; 2. *TDK Corporation, Ichikawa, Japan*

FQ-07. Optimum design of copper rotor for premium high efficiency induction motor. P. Han¹, Y. Chun¹, J. Choi¹, M. Kim¹, D. Koo¹ and J. Lee² 1. *Electric Motor Research Center, Korea Electrotechnology Research Institute, Changwon, Gyeongsangnam-do, Korea, South*; 2. *Department of Electrical Engineering, Hanyang University, Seoul, Korea, South*

FQ-08. Analysis on the characteristics of the high speed permanent magnet synchronous machines with diametrically magnetized rotors considering the electromagnetic losses according to the magnetic circuit construction conditions. S. Jang¹, Y. Park¹, K. Ko¹, S. Lee², S. Han³ and J. Lee³ 1. *Chungnam National University, Daejeon, Korea, South*; 2. *Korea Institute of Industrial Technology Gwangju Research Center, Gwangju, Korea, South*; 3. *Korea Electric Power Research Institute, Daejeon, Korea, South*

FQ-09. An improved core loss calculation based on magnetic field analysis in stator core of permanent magnet machines considering the time harmonics under load conditions. K. Ko¹, J. Choi¹, S. Jang¹, H. Cho² and S. Lee³ 1. *Chungnam Nat'l Univ, Daejeon, Korea, South*; 2. *Korea Institute of Machinery & Materials, Daejeon, Korea, South*; 3. *Korea Institute of Industrial Technology Gwangju Research Center, Gwangju, Korea, South*

FQ-10. Analysis on Eddy current losses for cylindrical linear oscillatory actuator with Halbach array mover according to driving method. S. Jang¹, H. Kim¹, K. Ko¹, J. Choi¹, Y. Park² and Y. Lee³ 1. *Chungnam National University, Daejeon, Korea, South*; 2. *Korea Research Institute of Standards and Science, Daejeon, Korea, South*; 3. *Korea Institute of Science Technology, Seoul, Korea, South*

FQ-11. Magnetic suspension characteristics of a two-unit outer rotor type bearingless motor with consequent-pole permanent magnet structure. *T. Kono*², *T. Sunohara*², *M. Takemoto*¹, *Y. Tanaka*², *A. Chiba*³ and *T. Fukao*³ *1.*

Division of Systems Science and Informatics, Hokkaido University, Sapporo, Hokkaido, Japan; 2. Department of Mechanical Systems Engineering, Musashi Institute of Technology, Setagaya-ku, Tokyo, Japan; 3. Department of Electrical Engineering, Tokyo University of Science, Noda, Chiba, Japan

FQ-12. Modeling for iron loss prediction by equivalent circuit of permanent magnet synchronous motor. *S. Kim*¹, *S. Lee*¹, *J. Hong*¹, *W. Lee*², *C. Lee*³ and *Y. Park*³ *1.*

Dept. of Automotive Engineering, Hanyang University, Seoul, Korea, South; 2. Dept. of Control and Instrumentation, Changwon National University, Chagnwon, Korea, South; 3. Advanced Technology Center, HYUNDAI-KIA Motors, Yongin, Korea, South

**THURSDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session FR
AB-INITIO AND FIRST PRINCIPLES
CALCULATIONS (II)
(Poster Session)**

*Xiangrong Wang, Session Chair
Hong Kong University of Science and
Technology*

FR-01. Hybrid RBF collocation methods for moving conductor Eddy current problems. *Y. Zhang*¹, *K.R. Shao*¹,

*Y. Guo*² and *J.D. Lavers*³ *1. College of Electrical & Electronic Engineering, Huazhong Univ. of Sci. & Tech., Wuhan, Hubei, China; 2. Faculty of Engineering, University of Technology, Sydney, NSW, Australia; 3. Department of Electrical & Computer Engineering, University of Toronto, Toronto, ON, Canada*

FR-02. A Novel Superposition RBF Collocation Method To Solve Moving Conductor Eddy Current Problem.

*G. Yang*¹ and *Y. Guo*² *1. College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. Faculty of Engineering, University of Technology, Sydney, NSW, Australia*

FR-03. Bayesian inversion method and its information determination for the estimation of particle size distribution in ferrofluids.

G. Lei¹, Y. Guo², Y. Li³ and J. Lavers⁴ 1. College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. Faculty of Engineering, University of Technology, Sydney, NSW, Australia; 3. School of Electronic Information, Zhongyuan University of Technology, Zhengzhou, Henan, China; 4. Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada

FR-04. Dynamics simulation of magnetic nanoparticles system using finite element field model and level set method.

Y. Kim¹, M. Baek¹, G. Park² and I. Park¹ 1. School of Information and Communication Engineering, Sungkyunkwan University, Suwon, Kyeonggi-do, Korea, South; 2. School of Electronic, Electrical and Communication Engineering, Pusan National University, Pusan, Korea, South

FR-05. Novel Monte Carlo study of deposited magnetic nanoparticles.

L. Balogh¹, B. Lazarovits^{2,1}, L. Szunyogh¹ and L. Udvardi¹ 1. Dept. of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary; 2. Department of Physics and Astronomy, Rutgers University, Piscataway, NJ, USA

FR-06. Efficient force analysis in CAD-based simulations.

Z. Andjelic¹ and D. Pusch¹ 1. V, ABB Corporate Research, Daettwil, Switzerland

FR-07. The electronic structure and magnetism of transition metal chains between graphene sheets.

B. Bialek¹ and J. Lee¹ 1. Physics, Inha University, Incheon, Korea, South

FR-08. Dynamic Jahn-Teller effect in the near-infrared spectra of Fe²⁺ ions in III-V semimagnetic semiconductors InP and GaP.

Y. Zhou¹ 1. Institute of Solid State Physics, Sichuan Normal University, Chengdu, China

FR-09. First-principles calculation of magnetic moment and crystal field parameter near surfaces of Nd₂Fe₁₄B.

H. Moriya^{1,2}, H. Tsuchiura¹ and A. Sakuma¹ 1. Applied Physics, Tohoku University, Sendai, Japan; 2. Mechanical Engineering Research Laboratory, Hitachi, Ltd., Hitachinaka, Japan

FR-10. Electronic structure and magnetic properties of spinel LiCr₂O₄: A GGA+U study.

M. Feng¹, X. Zuo², C. Vittoria³ and V.G. Harris³ 1. College of Physics, Nankai University, Tianjin, Tianjin, China; 2. College of Information Technical Science, Nankai University, Tianjin, Tianjin, China; 3. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA, USA

FR-11. Exchange Interactions in Gd₄Bi₃ and Gd from first-principles calculation. X. Liu¹ and Z. Altounian¹ *1. Physics, McGill University, Montreal, QC, Canada*

FR-12. Improved sequential optimization method for high dimensional electromagnetic optimization problems. G. Lei¹, K. Shao¹, Y. Guo², J. Zhu² and J. Lavers³ *1. College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. Faculty of Engineering, University of Technology, Sydney, NSW, Australia; 3. Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada*

FR-13. Oscillatory behavior of spin current in a 2DEG square sample with a central defect. I. Klik¹, S. Chen¹ and C. Chang¹ *1. Physics, National Taiwan University, Taipei, Taiwan*

THURSDAY
AFTERNOON
1:00

EXHIBIT HALL B

Session FS
FUNDAMENTAL PROPERTIES WITH
RELEVANCE TO APPLICATIONS
(Poster Session)

Shu-Fan Cheng, Session Chair
Naval Research Lab

FS-01. Spatially resolved magnetic hysteresis loops on single nanostructures. H. Oka¹, S. Wedekind¹, G. Rodary¹, A. Enders^{2,1}, D. Sander¹ and J. Kirschner¹ *1. Max-Planck-Institute of Microstructurephysics, Halle, Germany; 2. Department of Physics & Astronomy, University of Nebraska, Lincoln, NE, USA*

FS-02. Inter-comparison Of TCR (temperature coefficient of resistance) in silver doped La_{0.67}Ca_{0.33}MnO₃ and La_{0.7}Ca_{0.2}Ba_{0.1}MnO₃. R. Tripathi^{1,2}, V. Awana¹, G.L. Bhalla² and H. Kishan¹ *1. Superconductivity & Cryogenics, National Physical Laboratory, New Delhi, New Delhi, India; 2. Department of Physics and Astrophysics, University of Delhi, Delhi, Delhi, India*

FS-03. Disappearance of antiferromagnetism and extended ferromagnetism in nanoparticles of Pr_{0.5}Sr_{0.5}MnO₃. S.V. Bhat¹ and S.S. Rao^{1,2} *1. Physics, Indian Institute of Science, Bangalore, India; 2. Semiconductor Physics Laboratory, Institute for Nanoscale Physics and Chemistry, K.U.Leuven, elestijnenlaan 200 D, B-3001 Leuven, Belgium*

FS-04. Direct observation of Barkhausen avalanches in Fe thin films. *H. Lee*¹, *K. Ryu*¹ and *S. Shin*¹ *1. Center for Nanospinic Spintronics, Daejeon, Korea, South*

FS-05. Variable fractal dimensions of magnetic domain wall in CoFe/Pt multilayer with changing the number of bilayers. *K. Lee*¹, *C. Lee*², *Y. Cho*², *S. Seo*², *D. Kim*³ and *S. Choe*¹ *1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, South; 2. Samsung Advanced Institute of Technology, Suwon, Korea, South; 3. Department of Physics and Institute for Basic Research, Chungbuk National University, Cheongju, Korea, South*

FS-06. Mixed exchange interactions: a study of Cr doped La_{0.67}Ca_{0.33}Mn_{1-x}Cr_xO₃ (0 ≤ x ≤ 1). *N. Kumar*¹, *V. Awana*¹ and *H. Kishan*¹ *1. Superconductivity & cryogenics, National Physical Laboratory, Delhi, India*

FS-07. First- principles calculation and experimental investigations on full-Heusler alloy Co₂FeGe. *K. Ramesh Kumar*¹, *J. Arout Chelvane*², *S. Venkatesh*³, *G. Markandeyulu*¹ and *N. Harish Kumar*¹ *1. Department of Physics, Indian Institute of Technology (Madras), Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. Department of Condensed Matter Physics and Material Sciences, Tata Institute of Fundamental Research, Mumbai, India*

FS-08. Study of magnetic properties of carbon nanosheets fabricated using RF-Plasma enhanced chemical vapor deposition. *P.B. Chandra Rao*², *S. Ramaswamy*¹, *G. Chandrashekar*¹ and *J.D. Thiruvadigal*² *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Center for Materials Science and Nanodevices, SRM University, Chennai, Tamil Nadu, India*

FS-09. FPGA benchmark simulation based on spin MOSFET. *K. Ikegami*¹, *T. Tanamoto*¹, *H. Sugiyama*¹ and *Y. Saito*¹ *1. Advanced LSI Technology Laboratory, Toshiba corporation, 1, Komukai-Toshiba-cho, Saiwai-ku, Kawasaki, 212-8582, Japan*

FS-10. Terahertz time-domain spectroscopy of CeO₂ polycrystal. *S. Li*^{1,2}, *H. Zhang*^{1,2}, *Y. Song*^{1,2}, *W. Ling*^{1,2} and *Y. Li*^{1,2} *1. University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. State Key Laboratory of Electronic Thin Film and Integrated Devices, Chengdu, Sichuan, China*

THURSDAY
AFTERNOON
1:00

EXHIBIT HALL B

Session FT
ELECTROMAGNETIC COMPATIBILITY
AND TRANSFORMERS
(Poster Session)

Toshiro Sato, Session Chair
Shinshu University

FT-01. Cross-talk suppression in high density printed circuit board using magnetic composite filled in spacing between signal lines. S. Kayama¹, M. Sonehara¹, T. Sato¹, K. Yamasawa¹ and Y. Miura¹ *1. Spin Device Technology Center, Shinshu University, Nagano, Nagano, Japan*

FT-02. RF Joule losses analysis in thin film noise suppressor estimated by 3d equivalent circuit network. S. Muroga¹ and M. Yamaguchi¹ *1. Department of Electrical and Communication Engineering, Tohoku University, Sendai City, Japan*

FT-03. Permeability and permittivity effects of magnetic nanorod filled in composites for the broadband noise suppression. K. Kim¹, B. Nam¹, Y. Cha¹, S. Lee², Y. Choa³ and S. Oh⁴ *1. Physics, Yeungnam University, Gyeongsan, Korea, South; 2. Korea Institute of Materials Science, Changwon, Korea, South; 3. Chemical Engineering, Hanyang University, Ansan, Korea, South; 4. Materials Sci. and Eng., Seoul National University of Technology, Seoul, Korea, South*

FT-04. Analysis of location tracking and speed measurements for moving objects by using radio frequency identification systems. E. Coca¹, M. Dimian² and V. Popa² *1. Electromagnetic Compatibility Laboratory, Stefan cel Mare University, Suceava, Romania; 2. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania*

FT-05. Design and simulation for three phase saturated core high temperature superconducting fault current limiter. X. Fang¹, J. Qiu¹, S. Wang^{1,3}, W. Gong², Z. Cao², J. Zhu³, Y. Guo³ and Z. Lin³ *1. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 2. Innopower Superconductor Cable Co., Ltd, Beijing, China; 3. University of Technology, Sydney, Sydney, NSW, Australia*

FT-06. Rotating flux and estimation rotational loss in the joints of a model three-phase three-limb transformer core under sinusoidal and PWM voltage excitation. X. Yao¹, A.J. Moses¹, S. Somkun¹ and F. Anayi¹ *1. Wolfson Centre for Magnetism, Cardiff University, Cardiff, United Kingdom*

FT-07. Analysis of variable reluctance resolver according to output signal winding methods. C. Jin¹, K. Kim¹ and J. Lee¹ *1. Hanyang University, Seoul, Korea, South*

FT-08. Electrostatically tunable inductors with multiferroic composites. J. Lou¹, D. Reed¹, M. Liu¹ and N.X. Sun¹ *1. Electrical and Computer engineering, Northeastern University, Boston, MA, USA*

**THURSDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session FU
POWER AND CONTROL MAGNETICS
(Poster Session)**

Jiabin Wang, Session Chair
 University of Sheffield

Johannes Paulides, Session Chair
 Eindhoven University of Technology

FU-01. Magnetic signal transmission coil for control of contactless power transmission. H. Tanimoto¹, T. Takura¹, S. Fumihiko¹, H. Matsuki² and T. Sato¹ *1. Electrical Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan*

FU-02. Improvement of electric power conversion efficiency of magnetic oscillation-type DC-AC converter. S. Okanuma¹ and Y. Ogata¹ *1. Faculty of Symbiotic Systems Science, Fukushima University, Fukushima, Japan*

FU-03. Novel hybrid fuzzy-PI controllers for the speed control of permanent magnet synchronous motors. A. Sant¹ and K. Rajagopal¹ *1. Electrical Engineering, I.I.T. Delhi, New Delhi, India*

FU-04. Coupled inductor characterizations for a high performance interleaved boost converter. H. Kosai¹, B. Jordan², J. Scofield², B. Ray³ and Z. Turgut¹ *1. UES Inc., Dayton, OH, USA; 2. Air Force Research Laboratory, Wright Patterson AFB, OH, USA; 3. Bloomsburg University of Pennsylvania, Bloomsburg, PA, USA*

FU-05. A system for interactive design of the winding layout in PM machines. C. Hwang¹, S. Cheng² and C. Liu³ *1. Electrical Engineering, Feng Chia University, Taichung, Taiwan; 2. Nan Kai University of Technology, Nantao, Taiwan; 3. National Sun Yet-sen University of Technology, Kaoshiung, Taiwan*

FU-06. Characteristics of closed slots opening for high power motor with segment rectangular copper wire on electric vehicle. *J. Choi*¹, *Y. Chun*¹, *P. Han*¹, *M. Kim*¹, *D. Koo*¹ and *J. Chun*² *1. Electric Motor Research Center, Korea Electrotechnology Research Institute, Changwon Si, Gyeongsangnam-Do, Korea, South; 2. TSA Co., Bucheon-si, Gyeonggi-do, Korea, South*

FU-07. A study on critical speed of 15 kW 120,000 rpm ultra speed motor's rotor with shrink fit. *D. Hong*¹, *B. Woo*¹, *D. Koo*¹ and *C. Ahn*² *1. Korea Electrotechnology Research Institute, Changwon, Korea, South; 2. Division of Mechanical Engineering, Dong-A University, Busan, Korea, South*

FU-08. Design and modeling of improved functionality of switching inductive devices using non-linear behavior of core materials. *A.E. Umenei*¹, *Y. Melikhov*¹ and *D.C. Jiles*¹ *1. School of Engineering, Wolfson centre of magnetics, Cardiff, United Kingdom*

FU-09. A novel strategy for phase current control of two phase hybrid stepping motor based high speed swing drive system. *J. Chen*¹, *Y. Guo*², *J. Zhu*² and *W. Fu*³ *1. College of Electromechanical Engineering, Donghua University, Shanghai, China; 2. Faculty of Engineering and IT, University of Technology, Sydney, Sydney, NSW, Australia; 3. Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong, China*

**THURSDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session FV
PERMANENT MAGNETIC MATERIALS
(III)
(Poster Session)**

**Aru Yan, Session Chair
Ninbo Institute of Materials Tech & Eng**

FV-01. Anisotropy distribution of FePt nanoparticles with twinned structures. *K. Zhang*¹, *X. Hu*¹, *L. Xie*¹, *J. Yuan*^{2,1}, *J. Zhu*¹ and *D. Wei*¹ *1. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Department of Physics, University of York, Heslington, York YO10 5DD, United Kingdom*

FV-02. Tunable stochastic resonance in magnetic nanoparticles with auxiliary permanent magnetic field.

A.G. Isavnin¹ *1. Kazan State University, Naberezhnye Chelny, Tatarstan, Russia*

FV-03. Impact of particle size on room temperature

ferro-magnetism of SrFe₂O₁₉. A. Kumar¹, V.P. Awana¹, R. Pasricha¹, R.K. Kotnala¹ and H. Kishan¹ *1. Superconductivity, NPL, New Delhi, Delhi, India*

FV-04. A change of magnetic properties of Y₂(Fe,Mn)₁₇ compounds under hydrogenation. N.Y. Pankratov^{1,2},

W. Iwasieczko³, K.P. Skokov^{2,4}, S.A. Nikitin^{1,2}, Y.G. Pastushenkov⁴ and H. Drulis³ *1. Physics faculty, M.V.Lomonosov Moscow State University, Moscow, Russia; 2. International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland; 3. Division of Magnetism, Trzebiatowski Institute of Low Temperature and Structure Research, Wroclaw, Poland; 4. Physics faculty, Tver State University, Tver, Russia*

FV-05. On the behavior of the squareness factor of REFeB (RE = Nd or Pr) magnets above room

temperature. E.A. Périgo¹, H. Takiishi¹, C.C. Motta² and R.N. Faria¹ *1. Instituto de Pesquisas Energéticas e Nucleares, São Paulo, Brazil; 2. Centro Tecnológico da Marinha em São Paulo, São Paulo, Brazil*

FV-06. Texture formation in die-upset Nd-lean Nd-Fe-(Cu)-Ga-B alloy. H. Kwon¹, B. Kim¹, S. Kim¹ and J. Yu² *1.*

Materials Science and Engineering, Pukyong National University, Busan, Korea, South; 2. Engineering powder group, Korea Institute of Materials Science, Changwon, Korea, South

FV-07. Synthesis and their magnetic property of Dy coated Nd-Fe-B powder by decomposition of Dy metal salt. J. Yu¹, D. Kim¹, D. Lee¹ and B. Kim¹ *1. Powder*

Technology Research Group, Korea Institute of Materials Science, Changwon, Gyeongnam, Korea, South

FV-08. Surface domain configuration of Nd-Fe-B sintered magnets influenced by underneath

magnetization. M. Takezawa¹, Y. Ichihara¹, Y. Morimoto¹ and J. Yamasaki¹ *1. Dept. of Appl. Sci. for Integ. Syst. Engin., Kyushu Institute of Technology, Kitakyushu, Japan*

FV-09. Improvement of stability of Nd-Fe-B anisotropic bonded magnet MAGFINE. C. Mishima¹, K. Noguchi¹,

M. Yamazaki¹, H. Matsuoka¹, H. Mitarai¹ and Y. Honkura¹ *1. Aichi Steel Corporation, Tokai, Japan*

FW-10. Microstructure and magnetic properties of hot deformed magnets by dysprosium oxide addition.

*H. Wang*¹, *M. Lin*², *B. Lai*¹, *D. Li*², *A. Li*¹, *W. Pan*¹ and *W. Li*¹ 1. *Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China*; 2. *Ningbo Institute of Material Technology & Engineering Chinese Academy of Science, Ningbo, China*

**THURSDAY
AFTERNOON
1:00**

EXHIBIT HALL B

**Session FW
MOTOR DESIGN (II)
(Poster Session)**

Johannes Paulides, Session Chair
Eindhoven University of Technology
Franz Zürcher, Session Chair
ETH Zürich

FW-01. A fault-tolerant permanent-magnet hybrid brushless motor drive for electric vehicles. *C. Liu*¹ and *K. Chau*¹ 1. *Dept. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

FW-02. Maximum torque per Ampere control of flux-controllable stator-PM brushless motors over full-speed range. *X. Zhu*^{1,2}, *K. Chau*² and *M. Cheng*³ 1. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, Jiangsu, China*; 2. *Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, China*; 3. *School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

FW-03. An optimal design of permanent magnet pole shape for a BLDC motor by using latin hypercube sampling strategy. *P. Shin*¹, *H. Chung*¹, *S. Woo*¹ and *C. Koh*² 1. *Electrical Engineering, Hongik University, Jochiwon, Chungnam, Korea, South*; 2. *School of ECE, Chungbuk National University, Cheongju, Chungbuk, Korea, South*

FW-04. A new modular flux-switching permanent-magnet motor for fault-tolerant applications. *W. Zhao*^{1,2}, *K. Chau*¹, *M. Cheng*² and *J. Ji*³ 1. *Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*; 2. *School of Electrical Engineering, Southeast University, Nanjing, China*; 3. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

FW-05. A totally brushless electric variable transmission machine system for hybrid electric vehicles. *Y. Wang*^{1,2}, *M. Cheng*¹, *Y. Fan*¹ and *K. Chau*^{1,3} 1. *School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China;* 2. *College of Mechanical and Electric Engineering, China University of Petroleum, Dongying, Shandong, China;* 3. *Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, Hong Kong, China*

FW-06. High performance line-start permanent magnet synchronous motor amended from small industrial three-phase induction motor. *W. Fei*¹, *G. Yang*², *J. Shen*² and *P. Luk*¹ 1. *Department of Engineering Systems and Management, DCMT Cranfield University, Shrivenham, Oxfordshire, United Kingdom;* 2. *College of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang, China*

FW-07. A novel hybrid excitation flux-switching motor for hybrid vehicles. *H. Wei*¹, *C. Ming*¹ and *Z. Gan*¹ 1. *School of Electrical Engineering, Southeast University, Nanjing, 210096, China*

FW-08. Preload effect in a mobile fan motor design. *C. Wang*¹, *K. Liang*², *M. Wu*², *J. Huang*², *Y. Chang*² and *Y. Yao*³ 1. *Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan;* 2. *Energy and Environment Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan;* 3. *Institute of Physics, Academia Sinica, Taipei, Taiwan*

FW-09. Axial-flux permanent magnet brushless motors for slim vortex pumps. *G. Yan*¹, *G. Huang*¹, *J. Wang*¹, *L. Hsu*² and *M. Tsai*² 1. *Micro/Meso Mechanical Manufacturing Section, Metal Industries Research & Development Centre, Kaohsiung, Taiwan;* 2. *Electric Motor Technology Research Center, National Cheng Kung University, Tainan, Taiwan*

FW-10. Effect of the number of poles on the acoustic noise from BLDC motors. *K. Kim*¹ and *S. Hwang*¹ 1. *Mechanical Engineering, Pusan National University, Busan, Korea, South*

FW-11. On the PM demagnetization physics of variable flux memory motor. *L. Hengchuan*¹, *L. Heyun*¹, *F. Shuhua*¹ and *Z. Ziqiang*² 1. *School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China;* 2. *Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

FW-12. Loss distribution of 3-phase induction motor and BLDC motor according to core materials and operating conditions. *S. Kwon*¹, *J. Lee*¹, *B. Lee*¹, *J. Kim*², *K. Ha*² and *J. Hong*¹ 1. *Department of Automotive Engineering, Hanyang Univeristy, Seoul, Korea, South;* 2. *Electrical Steel Research Group, POSCO, Pohang, Korea, South*

FRIDAY
MORNING
9:00

ROOM 311-313

Session GA
SYMPOSIUM ON MAGNETISM FOR
SUSTAINABLE ENERGY

Casey Miller, Session Chair
University of South Florida

- 9:00 GA-01. Advanced permanent magnets. (Invited)**
*O. Gutfleisch*¹, *J. Thielsch*¹, *K. Güth*¹, *J. Lyubina*¹,
*T.G. Woodcock*¹, *B. Rellinghaus*¹ and *L. Schultz*¹ *1. Institute of Metallic Materials, IFW Dresden, Dresden, Germany*
- 9:30 GA-02. Nanocrystalline soft magnetic alloys: sustained energy by improved energy efficiency. (Invited)**
*M.A. Willard*¹, *M. Daniil*^{1,2}, *K.E. Knipling*¹, *R. Goswami*^{1,3}
and *M. Rawlings*^{1,4} *1. Materials Science and Technology Division, Naval Research Laboratory, Washington, DC, USA; 2. Department of Physics, George Washington University, Washington, DC, USA; 3. SAIC, Washington, DC, USA; 4. Department of Physics, Morehouse College, Atlanta, GA, USA*
- 10:00 GA-03. Magnetocaloric materials and magnetic materials. (Invited)** *K.A. Gschneidner, Jr.*^{1,2} and *V.K. Pecharsky*^{1,2} *1. Ames Laboratory, Iowa State University, Ames, IA, USA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA, USA*
- 10:30 GA-04. Magnetic microsystems Mag-MEMS: novel trends. (Invited)** *O. Cugat*¹, *J. Delamare*¹, *G. Reyne*¹,
*D.T. O'Brien*¹, *P. Kauffmann*¹, *A. Msaed*¹, *L. Carlloz*¹ and
*M. Kustov*¹ *1. G2Elab - Mag-MEMS, Grenoble Universities - CNRS, St Martin d'Hères, France*
- 11:00 GA-05. A miniaturized electromagnetic generator with planar coils and its energy harvest circuit. (Invited)**
*L. Liao*¹, *C.P. Chao*¹, *J. Chen*¹ and *C. Chiu*¹ *1. Department of Electrical and Control Engineering, National Chiao Tung University, Hsinchu, Taiwan*

FRIDAY
MORNING
9:00

ROOM 314

Session GB

BIOMAGNETIC APPLICATIONS (III)

Oscar Cespedes, Session Chair
Kyushu University

9:00 GB-01. Hybrid nanoparticles based on $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ perovskite phase and silica shell for magnetically induced hyperthermia and MR imaging. *O. Kaman*^{1,2}, E. Pollert¹, P. Veverka¹, E. Hadova¹, M. Marysko¹, V. Herynek³, P. Jendelova⁴, V. Grunwaldova⁵, J. Bohacek⁶, M. Klementova⁶, P. Kaspar⁷, R. Epherre⁸, E. Duguet⁸ and S. Mornet⁸ *1. IOP ASCR, v. v. i., Praha, Czech Republic; 2. Charles Univ Prague, Fac Sci, Praha, Czech Republic; 3. ICEM, Praha, Czech Republic; 4. IEM ASCR, v. v. i., Praha, Czech Republic; 5. Zentiva a. s., Praha, Czech Republic; 6. IIC ASCR, v. v. i., Rez u Prahy, Czech Republic; 7. CTU FEE, Praha, Czech Republic; 8. ICMCB CNRS, Bordeaux, France*

9:15 GB-02. Water dispersible Fe/Fe-oxide core-shell nanoparticles for MRI contrast enhancement. *H. Khurshid*¹, S. Balakrishnan¹, L. Colak¹, M.J. Bonder¹ and G.C. Hadjipanayis¹ *1. Physics and Astronomy, University of Delaware, Newark, DE, USA*

9:30 GB-03. Relaxation and loss power characteristics of iron oxide nano-particles designed for magnetic hyperthermia. *E. Kita*¹, S. Hashimoto², T. Kayano¹, H. Yanagihara¹, K. Yamada², M. Takagi², T. Oda², N. Ohkohchi², M. Kishimoto⁵, T. Takagi³, T. Kanamori³, Y. Ikehata⁴ and I. Nagano⁴ *1. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Institute of Clinical Medicine, University of Tsukuba, Tsukuba, Ibaraki, Japan; 3. AIST, Tsukuba, Ibaraki, Japan; 4. Faculty of Engineering, Kanazawa University, Kanazawa, Japan; 5. Hitachi Maxell, Ltd., Oyamazaki, Kyoto, Japan*

9:45 GB-04. Hyperthermia properties of single-domain Fe and FeCo nanoparticles : from Néel –Brown relaxation to Stoner-Wohlfarth switching. L. Lacroix¹, *J. Carrey*¹, S. Lachaize¹, B. Chaudret² and M. Respaud¹ *1. Laboratoire de Physique et Chimie des Nano-Objets, Université de Toulouse, Toulouse, France; 2. Laboratoire de Chimie de Coordination-CNRS, Toulouse, France*

10:00 GB-05. The design of an applicator and half-bridge series-resonant type heating system for magnetic nanoparticle thermotherapy. *C. Tai*¹, *C. Chen*¹ and *J. Chen*¹ *1. Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan*

- 10:15 GB-06. Contactless power transmission.** *S. Huang¹, J. Huang¹, W. Jhang¹ and H. Chen¹* *1. Department of Electronic Engineering, Oriental Institute of Technology, Pan-Chiao City, Taipei County, Taiwan*
- 10:30 GB-07. Bio-magnetic sensing for human central nervous system midline using amorphous wire CMOS IC pico-Tesla MI sensor.** *K. Mohri¹, T. Uchiyama², T. Maki² and Y. Nakamura²* *1. Nagoya Ind. Sci. Res. Inst., Nagoya, Japan; 2. Graduate School of Eng., Nagoya Univ., Nagoya, Japan*
- 10:45 GB-08. Examination of simultaneous power and signal transmission using power magnetic flux as carrier wave in implanted TES.** *S. Matsumura¹, Y. Kohata², K. Kato¹, H. Sato², T. Sato², H. Matsuki¹ and Y. Handa³* *1. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. School of Medicine, Tohoku University, Sendai, Miyagi, Japan*
- 11:00 GB-09. Jaw tracking system using resonated wireless marker.** *S. Yabukami¹, S. Hashi², H. Kanetaka³, K. Arai⁴ and T. Sato⁵* *1. Tohoku-Gakuin University, Tagajo, Japan; 2. RIEC, Tohoku University, Sendai, Japan; 3. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; 4. Research Institute for Electric and Magnetic Materials, Sendai, Japan; 5. Graduate School of Engineering, Tohoku University, Sendai, Japan*
- 11:15 GB-10. Measurement of magnetocardiogram using by high-frequency carrier-type thin-film sensor at room temperature.** *S. Yabukami¹, Y. Ohtomo¹, K. Kato¹, T. Ozawa² and K. Arai³* *1. Tohoku-Gakuin University, Tagajo, Japan; 2. Miyagi National College of Technology, Natori, Japan; 3. Research Institute for Electric and Magnetic Materials, Sendai, Japan*
- 11:30 GB-11. Microfabricated magnetic sifter for high-throughput and high-gradient magnetic separation.** *C.M. Earhart¹, E. Nguyen¹, R.J. Wilson¹, Y. Wang², R.L. White^{1,3}, N. Pourmand⁴ and S.X. Wang^{1,3}* *1. Materials Science and Engineering, Stanford University, Stanford, CA, USA; 2. Ocean Nanotech, LLC, Fayetteville, AR, USA; 3. Electrical Engineering, Stanford University, Stanford, CA, USA; 4. Biomolecular Engineering, University of California, Santa Cruz, Santa Cruz, CA, USA*

FRIDAY
MORNING
9:00

ROOM 315

Session GC

**MAGNETIC NANOWIRES, CLUSTERS,
AND NANOPARTICLES (II)**

Vince Harris, Session Chair
Northeastern University

- 9:00 GC-01. Field effect transistor based on $\text{Ge}_{1-x}\text{Mn}_x$ nanowires.** *O. Kazakova*¹, *M.I. van der Meulen*^{2,3}, *N. Petkov*^{2,3}, *M.A. Morris*^{2,3}, *J.D. Holmes*^{2,3}, *X. Han*⁴, *K.L. Wang*⁴ and *A.P. Jacob*⁵ *1. NPL, Teddington, United Kingdom; 2. University College Cork, Cork, Ireland; 3. Trinity College Dublin, Dublin, Ireland; 4. University of California, Los Angeles, CA, USA; 5. Intel Corporation, Santa Clara, CA, USA*
- 9:15 GC-02. Three-terminal transport through individual single-molecule magnets.** *A. Zyazin*¹, *J. van den Berg*¹, *E. Osorio*¹, *N. Konstantinidis*^{2,3}, *M. Wegewijs*^{2,3}, *A. Cornia*⁴ and *H. van der Zant*¹ *1. Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands; 2. Institut für Theoretische Physik A, RWTH Aachen, Aachen, Germany; 3. Institut für Festkörper-Forschung, Forschungszentrum Jülich, Jülich, Germany; 4. Department of Chemistry, University of Modena and Reggio Emilia, Modena, Italy*
- 9:30 GC-03. Direct characterization of the superparamagnetic ferromagnetic transition of single nano-islands.** *G. Rodary*¹, *S. Wedekind*¹, *H. Oka*¹, *D. Sander*¹ and *J. Kirschner*¹ *1. Max-Planck-Institute of Microstructurephysics, Halle, Germany*
- 9:45 GC-04. Structure and magnetism of undoped and Co-Doped TiO_x clusters.** *D. Sellmyer*¹, *X. Wei*¹, *B. Balasubramanian*¹ and *R. Skomski*¹ *1. NCMN and Physics Dept., University of Nebraska, Lincoln, NE, USA*
- 10:00 GC-05. Rapid simple aqueous-preparation of uniform-sized Fe-Ni spherical nanoparticles with strong saturation magnetization.** *T. Nakagawa*¹, *T. Hattori*¹, *M. Tada*¹, *M. Abe*¹ and *H. Handa*² *1. Department of Physical Electronics, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan; 2. Department of Biological Information, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*

- 10:15 GC-06. Magnetic frustration and particle size effects in nanostructured $Gd_3Fe_5O_{12}$ garnets.** *H. Srikanth*¹, *M.H. Phan*¹, *M.B. Morales*¹, *N. Chinnasamy*², *B. Latha*² and *V.G. Harris*² *1. Department of Physics, University of South Florida, Tampa, FL, USA; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, USA*
- 10:30 GC-07. Spontaneous spin polarization of Ag nanoparticles.** *C. Li*¹, *C. Wang*¹, *C. Hsu*¹, *S.K. Karna*¹, *S. Liu*¹, *C. Hung*¹, *C. Wu*¹ and *W. Li*¹ *1. Department of Physics, National Central University, Zhongli City, Taoyuan County, Taiwan*
- 10:45 GC-08. Unexpected ferromagnetism in Si nanocaps on self-assembled glass beads.** *Y. Chi*¹, *Y. Lan*² and *H. Shih*² *1. Atomic Energy Council, Yonghe, Taiwan; 2. Institute of Materials Science and Nanotechnology, Chinese Culture University, Taipei, Taiwan*
- 11:00 GC-09. Nanostructure facilitating room-temperature ferromagnetism in $Zn_{1-x}Co_xO$ nanowires using magnetic force microscopy.** *W. Jian*¹, *Y. Ou*², *Z. Wu*³, *F. Chen*³ and *J. Kai*³ *1. Department of Electrophysics, National Chiao Tung University, Hsinchu, Taiwan; 2. Institute of Physics, National Chiao Tung University, Hsinchu, Taiwan; 3. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan*
- 11:15 GC-10. (In,Cr)As ferromagnetic semiconductor quantum dots.** *H. Meng*¹, *J. Lu*¹, *S. Yan*¹, *Y. Zheng*¹, *J. Deng*¹ and *J. Zhao*¹ *1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*
- 11:30 GC-11. Enormous resistance switching phenomena observed in nickel-aluminium-oxide nanocomposite.** *S. Yamanishi*¹, *Y. Siotani*¹, *K. Murakami*², *T. Shimizu*³ and *S. Shingubara*¹ *1. Kansai University, Osaka, Japan; 2. Center for Quantum Science and Technology, Osaka University, Toyonaka, Osaka, Japan; 3. Microstructure Physics, Max Planck Institute, Halle, Germany*
- 11:45 GC-12. Effect of external magnetic fields on the magnetic domain structure of nanoparticle films.** *S. Sievers*¹, *K.F. Braun*¹, *M. Albrecht*¹, *U. Siegner*¹, *K. Landfester*² and *V. Holzapel*² *1. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 2. Max Planck Institute for Polymer Research, Mainz, Germany*

FRIDAY
MORNING
9:00

ROOM 306

Session GD
SPIN TORQUE OSCILLATORS (II)

Andrew Kent, Session Chair
NYU

- 9:00 GD-01. Spectral line width and line shape of spin torque oscillators. (Invited)** *I. Krivorotov*¹, *C. Boone*¹, *J. Katine*², *J. Childress*², *J. Zhu*¹ and *X. Cheng*¹ *1. Department of Physics and Astronomy, University of California, Irvine, CA, USA; 2. Hitachi Global Storage Technologies, San Jose, CA, USA*
- 9:30 GD-02. Bias current and temperature dependences of the spin transfer microwave emission in MgO based magnetic tunnel junctions.** *B. Georges*¹, *J. Grollier*¹, *V. Cros*¹, *A. Fert*¹, *A. Fukushima*², *H. Kubota*², *K. Yakushiji*², *S. Yuasa*² and *K. Ando*² *1. Unité Mixte de Physique CNRS/Thales (CNRS-UMR137), Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
- 9:45 GD-03. Auto-oscillation threshold and linewidth optimization in MgO based spin torque oscillators.** *T. Devolder*¹, *S. Cornelissen*², *L. Bianchini*¹, *L. Lagae*², *J.V. Kim*¹, *C. Chappert*¹, *G. Hrkac*³ and *T. Schrefl*³ *1. Institut d'Electronique Fondamentale, ORSAY Cedex, France; 2. IMEC, Leuven, Belgium; 3. Department of Engineering materials, University of Sheffield, Sheffield, United Kingdom*
- 10:00 GD-04. MgO-based Spin Torque Oscillators with above 0.1uW output power.** *P.K. Muduli*¹, *S. Bonetti*¹, *J. Garcia*¹, *J. Åkerman*^{1,2} and *O. Heinonen*³ *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Stockholm 16440, Sweden; 2. Physics Department, Göteborg University, Göteborg 41296, Sweden; 3. Seagate Technology, 7801 Computer Avenue South, Bloomington 55435, MN, USA*
- 10:15 GD-05. Time domain studies of spin torque oscillators based on MgO tunnel junctions.** *D. Houssameddine*¹, *J. Michel*^{2,1}, *K. Garello*^{2,1}, *P. Vincent*², *U. Ebels*¹, *B. Delaet*², *S. Florez*³, *J. Katine*³, *D. Mauri*³, *A. Zeltser*³, *O. Ozatay*³, *L. Folks*³, *B.D. Terris*³, *B. Viala*^{2,1}, *B. Dieny*¹ and *M. Cyrille*² *1. SPINTEC Laboratory URA 2512 CEA/CNRS, Grenoble, France; 2. CEA-LETI-MINATEC, Grenoble, France; 3. HITACHI Global Storage Technologies, San José, CA, USA*

- 10:30 GD-06. Zero field precession and hysteretic threshold currents in spin torque oscillators with tilted polarizer.** Y. Zhou¹, S. Bonetti¹, C. Zha¹ and J. Åkerman^{1,2} *1. Institute of Microelectronics and Information Technology, Royal Institute of Technology, Stockholm-Kista, Sweden; 2. Physics Department, Göteborg University, 412 96 Göteborg, Sweden*
- 10:45 GD-07. Non-stationary magnetization dynamics driven by spin-transfer-torque in nanoscale spin-valves.** G. Finocchio¹, G. Siracusano¹, L. Torres² and B. Azzerboni¹ *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. de fisica aplicada, Universidad de Salamanca, Salamanca, Spain*
- 11:00 GD-08. Phase control of cooperative dynamics of an array of spin-torque nano-oscillators.** V. Tiberkevich¹, O. Dmytriiev^{1,2} and A. Slavin¹ *1. Physics, Oakland University, Rochester, MI, USA; 2. Institute of Magnetism, Kyiv, Ukraine*
- 11:15 GD-09. Nonlinearity reduction in spin-transfer oscillators under the external field applied in the directions near the hard axis.** K. Mizushima¹, T. Nagasawa¹, K. Kudo¹, Y. Saito¹ and R. Sato¹ *1. Toshiba Corporate Research & Development Center, Kawasaki, Kanagawa, Japan*
- 11:30 GD-10. Hard transitions to magnetic vortex self-oscillations in spin-transfer nanocontacts.** M.T. Wallis¹, C. Serpico², M. Kuepferling³, H. Nembach¹, M.R. Pufall¹, W.H. Rippard¹, A. Imtiaz¹, M. Pasquale³, P. Krivosik⁴ and P. Kabos¹ *1. Electromagnetics Division, National Institute for Standards and Technology (NIST), Boulder, CO, USA; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 3. Dept. of Electromagnetism, Institute of Metrological Research (INRiM), Torino, Italy; 4. Dept. of Physics, Colorado State University, Fort Collins, CO, USA*
- 11:45 GD-11. Coexistence of propagating and nonpropagating spin wave modes in a nanocontact spin torque oscillator.** S. Bonetti¹, P. Muduli¹, F. Mancoff² and J. Åkerman^{1,3} *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology (KTH), Kista-Stockholm, Sweden; 2. Everspin Technologies, Inc., Chandler, AZ, USA; 3. Physics Department, Göteborg University, Göteborg, Sweden*

FRIDAY
MORNING
9:00

ROOM 307

Session GE
MICROWAVE MATERIALS AND
DEVICES

Andrei Slavin, Session Chair
Oakland University

- 9:00 GE-01. An investigation of magnetic and mechanical properties of planar composite filling by Co-based glass-coated microwires.** *N. Pankratov*¹, *F. Qin*¹, *H. Peng*¹, *L. Panina*², *M. Ipatov*³ and *A. Zhukov*³ *1. Advanced Composite Centre for Innovation and Science, Aerospace Engineering, University of Bristol, Bristol, United Kingdom; 2. School of computing, Communication and Electronics, University of Plymouth, Plymouth, United Kingdom; 3. Dpto. de Física de Materiales, Fac. Químicas, Universidad del País Vasco, San Sebastian, Spain*
- 9:15 GE-02. Effects of different kinds of loss on the performance of regular polygonal invisible cloak.** *Q. Wu*¹, *K. Zhang*¹, *G. Yang*¹, *F. Meng*¹ and *L. Li*² *1. Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. National University of Singapore, Singapore, Singapore*
- 9:30 GE-03. Nonreciprocal spin waves in Co-Ta-Zr magnetic films.** *P. Khalili Amiri*^{1,2}, *B. Rejaei*¹, *M. Vroubel*³, *Y. Zhuang*⁴, *D. Lee*⁵ and *S.X. Wang*⁵ *1. Delft University of Technology, Delft, Netherlands; 2. University of California at Los Angeles, Los Angeles, CA, USA; 3. NXP Semiconductors, Nijmegen, Netherlands; 4. Wright State University, Dayton, OH, USA; 5. Stanford University, Stanford, CA, USA*
- 9:45 GE-04. Strong magnetoelectric coupling in spin-spray deposited ferrite/ferroelectric heterostructures.** *M. Liu*¹, *O. Obi*¹, *J. Lou*¹, *S. Stoute*¹ and *N.X. Sun*¹ *1. Electrical and Computer engineering, Northeastern University, Boston, MA, USA*
- 10:00 GE-05. Spin Wave Resonance in Single-Side Pinned Permalloy Nano Films.** *K. Sun*^{1,2}, *Y. Song*¹, *W. Tong*¹, *M. Wu*¹ and *Z. Lan*² *1. Department of Physics, Colorado State University, Fort Collins, CO, USA; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

- 10:15 GE-06. Analysis of grain shape and orientation in BaFe₁₂O₁₉-ferrites using electron backscatter diffraction (EBSD).** *A. Koblischka-Veneva¹, M.R. Koblischka², Y. Chen³, V.G. Harris³ and F. Mücklich¹* *1. Institute of Functional Materials, Saarland University, Saarbruecken, Germany; 2. Experimental Physics, Saarland University, Saarbruecken, Germany; 3. Department of Electrical and Computer Engineering, and the Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA, USA*
- 10:30 GE-07. Nonreciprocal spin wave scattering on a magnonic crystal.** *A.V. Chumak¹, M.P. Kostylev², A.A. Serga¹, S. Wolff¹ and B. Hillebrands¹* *1. Fachbereich Physik, Nano+Bio Center, and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. School of Physics, University of Western Australia, Crawley, WA, Australia*
- 10:45 GE-08. Magnetostatic spin wave modes in ferromagnetic tube.** *A. Kozhanov¹, D. Ouellette¹, M. Rodwell¹, D. Lee², S. Wang² and J. Allen²* *1. CNSI, UC Santa Barbara, Santa Barbara, CA, USA; 2. Stanford University, Stanford, CA, USA*
- 11:00 GE-09. Permeability and Permittivity in ferromagnetic resonance state in single layered Ni₈₁Fe₁₉ micron-scale wire.** *A. Yamaguchi^{1,2}, K. Motoi¹, H. Miyajima¹, T. Uchiyama³ and Y. Utsumi⁴* *1. Department of Physics, Keio University, 3-14-1, Hiyoshi, Yokohama, Kanagawa, Japan; 2. PRESTO, JST, 4-1-8, Honcho Kawaguchi, Saitama, Japan; 3. Department of Electrical Engineering and Computer Science, Nagoya University, Furo-cho, Chikusa-ku, Nagoya, Japan; 4. Laboratory of Advanced Science and Technology for Industry, University of Hyogo, 3-1-2, Koto, Kamigori-cho, Ako-gun, Hyogo, Japan*
- 11:15 GE-10. Microstrip tunable band-pass filter using ferrites (nano-particles) coupled lines.** *B.K. Kuanr¹, V. Veerakumar¹, A.V. Kuanr², K. Lingam³, S.R. Mishra³, R.E. Camley¹ and Z. Celinski¹* *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, USA; 2. Physics Department, Rajguru College of Applied Science for Women, Delhi, India; 3. Physics Department, University of Memphis, Memphis, TN, USA*

FRIDAY
MORNING
9:00

ROOM 308

Session GF
SPIN TRANSPORT AND
MAGNETORESISTANCE (II)

Albrecht Jander, Session Chair
Oregon State University

- 9:00 GF-01. MR Enhancement of CPP spin valves with FeCo nanocontacts by high-temperature annealing.** *H.N. Fuke*¹, S. Hashimoto¹, M. Takagishi¹ and H. Iwasaki¹ *I. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*
- 9:15 GF-02. The effect of randomness on the magnetoresistance of domain walls confined in a nano-oxide-layer.** *J. Sato*¹, K. Matsushita¹ and H. Imamura¹ *I. Nanotechnology Research Institute, Advanced Industrial Science and Technology, Tsukuba, Japan*
- 9:30 GF-03. Pseudo spin valves based on $L1_0$ (111) FePt with tilted anisotropy.** *C. Zha*¹, J. Persson¹, S. Bonetti¹, Y. Fang¹ and J. Åkerman^{1,2} *I. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Kista, Sweden; 2. Physics Department, Göteborg University, Göteborg, Sweden*
- 9:45 GF-04. Interlayer coupling through Cu spacer in the [Pd/Co]/Pd/Co/Cu(t)/Co/[Pd/Co]/FeMn exchange biased spin-valves with perpendicular anisotropy.** *J. Heo*¹, H. Joo², N. Thiagarajah², K. Lee¹ and S. Bae² *I. Physics, Thin Film Magnetic Laboratory(TFML), Dankook University, Chonan, Korea, South; 2. Electrical and Computer Engineering, Biomagnetics Laboratory(BML) & Information Storage Materials Laboratory(ISML), National University of Singapore, Singapore, Singapore*
- 10:00 GF-05. Nano-oxide layer formation mechanism on the surface of $\text{Co}_2(\text{CrFe})\text{Si}$ full Heusler alloy for nanocontacts CPP-spin valves.** *Y. Shiokawa*¹, T. Otsuka¹, S. Kawasaki¹, T. Mano¹, K. Miyake¹, M. Doi¹ and M. Sahashi¹ *I. Electronic Engineering, Tohoku univ., Sendai, Japan*
- 10:15 GF-06. Spin polarization in half metals probed by femtosecond spin excitation. (Invited)** *M.G. Muenzenberg*¹ *I. I. Phys. Institute, Goettingen University, Goettingen, Germany*

- 10:45 GF-07. First order reversal curve analysis of magnetization and magnetoresistance of Co/Cu multilayer thin films***. *R.K. Dumas*¹, *P. Greene*¹ and *K. Liu*¹ *1. Physics Department, University of California, Davis, Davis, CA, USA*
- 11:00 GF-08. Signal propagation in time-dependent collinear spin transport.** *H. Schneider*¹ and *Y. Zhu*¹ *1. Physics Department and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

**FRIDAY
MORNING
9:00**

ROOM 309-310

**Session GG
MOTORS AND ACTUATORS (II)**
Toshiyuki Ueno, Session Chair
University of Tokyo

- 9:00 GG-01. Torque scaling laws for interior and exterior rotor permanent magnet machines.** *T. Reichert*¹, *T. Nussbaumer*² and *J.W. Kolar*¹ *1. Power Electronic Systems Laboratory, ETH Zurich, Zurich, Switzerland; 2. Levitronix GmbH, Zurich, Switzerland*
- 9:15 GG-02. Novel bearingless motor concept with a non-integer stator-slot/pole-pair ratio 24/13.** *F. Zürcher*¹, *T. Nussbaumer*², *W. Gruber*³ and *J.W. Kolar*¹ *1. Power Electronic Systems Laboratory, ETH Zurich, Zurich, Switzerland; 2. Levitronix GmbH, Zuerich, Switzerland; 3. ACCM GmbH (Johannes Kepler Universität Linz), Linz, Austria*
- 9:30 GG-03. Design of multi-function pwm inverter applied to analysis of core loss under non-sinusoidal waveforms.** *Y. Lai*¹, *K. Kuo*¹, *C. Wu*¹, *J. Yen*¹ and *C. Chou*¹ *1. Mechanical Engineering, National Taiwan University, Taipei, Taiwan*
- 9:45 GG-04. Design and experimental validation of a magnetostrictive linear motor using Fe-Ga (Galfenol) alloys.** *Z. Zhang*¹, *T. Ueno*² and *T. Higuchi*² *1. Tokyo University of Science, 2641 Yamazaki, Noda, Chiba, Japan; 2. The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan*

- 10:00 GG-05. The loss characteristics of amorphous core on permanent magnet type motor/generator.** *J. Lee*¹, *S. Han*¹, *Y. Han*¹, *N. Jeong*¹, *T. Sung*¹ and *B. Park*¹ *1. superconductivity and applications group, Korea Electric Power Research Institute, Daejeon, Korea, South*
- 10:15 GG-06. Optimizing the slot geometry to reduce the losses in PMSM.** *Y. Tang*¹, *Y. Xu*¹, *J. Zou*¹, *L. Yang*² and *W. Meng*² *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Lin Quan Motor Factory, Guiyang, China*
- 10:30 GG-07. 3d to 2d equivalence for cogging force computation of a novel transverse flux permanent magnet linear machine.** *W. Qian*¹, *Z.J. Bin*¹, *Z. Mei*¹, *X.Y. Xiang*¹ and *M. Wei*² *1. Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Linquan Motor Factory, Guiyang, Guizhou, China*
- 10:45 GG-08. Theoretical and simulation analysis of influences of stator tooth width on cogging torque of PMSMs.** *J. Xintong*¹, *J. Xintong*¹, *X. Jingwei*¹ and *L. Yongping*¹ *1. Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*
- 11:00 GG-09. An interpolative finite element modeling of a large solid pole synchronous machine and its starting process simulation.** *Y. Li*¹, *S. Ho*², *W. Fu*² and *W. Liu*² *1. Johnson Electric Inc, Hong Kong, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*
- 11:15 GG-10. Back EMF analysis of a novel axial flux permanent magnet synchronous machine with segmented and laminated stator.** *W. Fei*¹ and *P. Luk*¹ *1. Department of Engineering Systems and Management, DCMT Cranfield University, Shrivenham, Oxfordshire, United Kingdom*
- 11:30 GG-11. Assessing anomalous losses with dynamic hysteresis models: a confrontation with Bertotti's experiments.** *V.G. Mazauric*^{1,2}, *M.J. Drouineau*^{2,1} and *P.F. Wendling*³ *1. Innovation Dept., Schneider Electric, Grenoble, France; 2. Center for Applied Mathematics, Mines ParisTech, Sophia Antipolis, France; 3. Magsoft Corporation, Ballston Spa, NY, USA*

A

- Ababei G. (EE-08)105
 Abdallah A. (BT-04) 46
 Abe K. (AE-11) 9
 Abe M. (CB-03)52
 Abe M. (EG-03)108
 Abe M. (GC-05)156
 Abe S. (DR-06) 89
 Abe T. (AU-07)24
 Abe T. (BQ-03) 40
 Abelmann L. (AC-06) 4
 Abid M. (AQ-04)15
 Abid M. (CS-10)68
 Abo G.S. (CG-02)59
 Abo G.S. (DF-02)80
 Abo G.S. (DP-08)84
 Abo G.S. (EH-04)110
 Abo G.S. (FD-09)132
 Abo G.S. (FE-07)134
 Achotte N. (CG-06) 59
 Adedoyin A. (AS-16)21
 Adenot-Engelvin A. (AG-06) ..12
 Adeyeye A. (EQ-01)113
 Adeyeye A.O. (BR-05)43
 Adolph N. (CB-04) 52
 Afsar M. (BF-10) 35
 Afsar M.N. (BF-07) 35
 Agafonov Y.A. (BR-07) 43
 Agarwal N. (AB-03) 3
 Agnew J. (FG-03)137
 Ahn C. (FU-07)149
 Ahn D. (DV-08) 97
 Ahn S. (CS-03) 67
 Ahn S. (ET-11)120
 Ahn W. (CG-02) 59
 Ahn W. (DF-02) 80
 Akahane K. (FP-06)141
 Akai T. (FC-04)129
 Åkerman J. (AC-01) 4
 Åkerman J. (AF-08) 10
 Åkerman J. (CT-04) 69
 Åkerman J. (FG-07)138
 Åkerman J. (GD-04)158
 Åkerman J. (GD-06)159
 Åkerman J. (GD-11)159
 Åkerman J. (GF-03)162
 Akinaga H. (EG-12)109
 Akiyama M. (FE-09)134
 Akkidas P. (ES-09)118
 Albertini F. (DD-08) 78
 Albrecht M. (BC-04) 29
 Albrecht M. (GC-12)157
 Albrecht T.R. (BC-09) 30
 Alex M. (AD-03) 6
 Alexandrakis V. (AF-06) 10
 Alexandrou M. (DQ-03) 86
 Aley N.P. (EQ-05)113
 Aley N.P. (FG-03)137
 Algarabel P. (FB-11)129
 Ali M. (ER-06)115
 Ali N. (EQ-02)113
 Aliev F. (AC-12) 5
 Allag H. (CE-06) 56
 Allen J. (GE-08)161
 Allenspach R. (BE-10) 33
 Allia P. (DD-08) 78
 Allwood D. (EC-09)102
 Allwood D.A. (EE-01)104
 Altounian Z. (FR-11)145
 Amara Y. (BV-03) 49
 Amaral J. (FB-11)129
 Amaral J.S. (ES-13)118
 Amaral V. (FB-11)129
 Amaral V.S. (ES-13)118
 Ambrose T. (EA-02) 98
 Amin N. (AT-10) 22
 Amos N. (CQ-02) 63
 Amos N. (EC-04)101
 An L. (AC-05) 4
 Anane A. (BD-01) 30
 Anayi F. (FT-06)147
 Anderson P.I. (FQ-01)141
 Andjelic Z. (FR-06)144
 Ando K. (ED-03)103
 Ando K. (ER-02)115
 Ando K. (GD-02)158
 Ando Y. (DD-06) 78
 Andre T. (CF-02) 58
 Andreev A.V. (ES-12)118
 Andrei P. (AS-16) 21
 Andrieu S. (AE-05) 8
 Andrieu S. (AF-02) 10
 Andrieu S. (BQ-04) 40
 Angani C.S. (CQ-08) 64
 Aniya M. (CP-15) 62
 Antal A. (CE-02) 56
 Anthony M.J. (AP-11) 14
 Aoi H. (CD-05) 55
 Aoi H. (EF-04)106
 Aoki H. (BA-06) 27
 Aoki Y. (EU-12)122
 Aoyama H. (DR-01) 88
 Apetrei A. (DT-04) 94
 Apolinario A. (DQ-05) 86
 Arai K. (CR-10) 65
 Arai K. (GB-09)155
 Arai K. (GB-10)155
 Araujo J.P. (BQ-08) 41
 Araujo J.P. (CS-06) 67
 Araujo J.P. (DQ-05) 86
 Araújo J.P. (ES-13)118
 Araujo J.P. (FB-11)129
 Arbiol J. (EU-03)121
 Arbiol J. (FB-03)127
 Arenholz E. (AB-06) 3
 Ariake J. (CP-03) 61
 Ariake J. (CP-13) 62
 Arimatsu K. (EH-06)110
 Arou Chelvane J. (DU-08) ... 95
 Arou Chelvane J. (FS-07) ...146
 Arrias G. (EB-08)100
 Asahi T. (AD-11) 7
 Asai M. (DP-07) 84
 Asai M. (EF-09)107
 Asano H. (BQ-16) 42
 Asano H. (DD-01) 77
 Asano T. (CR-14) 66
 Asenjo A. (AC-09) 5
 Asenjo A. (AC-10) 5
 Assmann D. (BC-04) 29
 Ato M. (AB-04) 3
 Atxitia U. (BB-08)28

- Atxitia U. (CE-10)57
 Auffret S. (AA-06)2
 Auffret S. (AE-10)9
 Auffret S. (FP-01)140
 Aung K. (CP-11)62
 Auslender M. (ES-03)117
 Awad A. (AC-12)5
 Awana V. (FS-02)145
 Awana V. (FS-06)146
 Awana V.P. (EP-11)112
 Awana V.P. (FV-03)150
 Aziz A. (ER-06)115
 Azuma D. (FC-01)129
 Azzerboni B. (AS-08)20
 Azzerboni B. (AS-14)20
 Azzerboni B. (ER-11)116
 Azzerboni B. (GD-07)159
- B**
- Baatar N. (BV-10)50
 Bader S.D. (CA-03)51
 Badini G.A. (CR-01)64
 Badini-Confalonieri
 G.A. (DF-03)80
 Bae J. (CW-03)73
 Bae J. (EV-05)123
 Bae S. (CG-02)59
 Bae S. (DF-02)80
 Bae S. (DP-08)84
 Bae S. (DR-10)89
 Bae S. (EH-04)110
 Bae S. (EQ-09)114
 Bae S. (FD-09)132
 Bae S. (FE-07)134
 Bae S. (FG-09)138
 Bae S. (GF-04)162
 Baek M. (FR-04)144
 Baek Y. (DV-08)97
 Baer L. (FG-01)137
 Bahmani A. (EP-08)112
 Bai D. (DC-04)76
 Bai X. (AF-03)10
 Bain J. (EF-03)106
 Bain J.A. (BC-07)29
 Bain J.A. (CP-02)61
 Bain J.A. (EC-03)101
 Balachandran J. (CG-09)60
 Balagurov L.A. (BR-07)43
 Balakrishnan S. (GB-02)154
 Balamane H. (EC-01)101
 Balasubramanian
 B. (GC-04)156
 Balogh L. (CE-02)56
 Balogh L. (FR-05)144
 Baltag O.I. (CR-02)64
 Baltz V. (BC-03)29
 Bance S. (BE-02)32
 Bance S. (BE-06)33
 Bance S. (EC-09)102
 Bance S. (EE-01)104
 Banerjee A. (ES-04)117
 Barakat G. (BV-03)49
 Barham M. (AP-12)14
 Barker J. (DB-04)75
 Barman A. (BB-05)28
 Barman A. (EE-09)105
 Barman A. (FP-06)141
 Barnes C. (BB-06)28
 Barnes C.H. (EB-10)100
 Bartashevich M.I. (ES-12)118
 Bartolome J. (DT-06)94
 Baryshev A.V. (EP-03)111
 Bashir A. (BE-02)32
 Bashir A. (DC-05)76
 Bashir M.A. (BE-06)33
 Bashir M.A. (EC-09)102
 Bashir M.A. (EE-01)104
 Basit L. (DT-01)93
 Bataille A.M. (BQ-04)40
 Bate D. (FG-02)137
 Bauer H. (EC-11)102
 Bazaliy Y.B. (EU-08)122
 Beatrice C. (BF-06)35
 Beaujour J. (CF-04)58
 Beaujour J.L. (AF-02)10
 Beck F. (BS-01)44
 Bedau D. (CF-04)58
 Bellara A. (BV-03)49
 Belle B.D. (CP-08)62
 Belle B.D. (DQ-03)86
 Belski A. (EB-07)100
 Belski A. (FC-10)130
 Ben Youssef J. (DG-01)81
 Ben Youssef J. (FG-05)137
 Ben-Amar Baranga
 A. (DR-12)90
 Bènevènt E. (CG-01)59
 Bènevènt E. (DG-02)81
 Bennett L.H. (CE-08)57
 Berakdar J. (AS-06)19
 Bergmair B. (FC-06)130
 Berman D. (DP-06)84
 Berman D. (DP-07)84
 Berman D. (DP-16)85
 Béron F. (EE-03)105
 Bertacco R. (DG-05)82
 Bertotti G. (AS-05)19
 Bertotti G. (BE-01)32
 Bertotti G. (DE-02)79
 Bertotti G. (FD-06)132
 Bertotti G. (FD-07)132
 Bertram H. (AD-03)6
 Bertram H. (BC-06)29
 Bertram H.N. (BC-10)30
 Bhagavatula V. (CP-09)62
 Bhagavatula V. (EF-03)106
 Bhalla G.L. (FS-02)145
 Bhat S. (EP-13)112
 Bhat S.V. (FS-03)145
 Bialek B. (FR-07)144
 Bianchini L. (ER-13)116
 Bianchini L. (GD-03)158
 Bilzer C. (FG-01)137
 Bin Z.J. (CV-07)72
 Bin Z.J. (GG-07)164
 Bitar S. (AP-08)14
 Blamire M. (ER-06)115
 Blanco J. (AG-07)12
 Blanco J. (AG-09)12
 Blanco J. (BS-02)44
 Bland J. (BB-06)28

- Bo Wha L. (DG-08)82
 Bogy D.B. (CC-07)53
 Bohacek J. (GB-01)154
 Bohlens S. (BB-02)27
 Bohlens S. (BE-09)33
 Bohlens S. (BE-10)33
 Bohlens S. (CT-07)69
 Bohn F. (BS-06)45
 Bohra M. (BF-05)35
 Bokor J. (BB-01)27
 Bollero A. (BC-03)29
 Bolte M. (AR-01)16
 Bolte M. (BB-02)27
 Bolte M. (BE-10)33
 Bolte M. (FD-04)131
 Bolzan M. (ES-11)118
 Bonder M.J. (GB-02)154
 Bonell F. (AE-05)8
 Bonell F. (BQ-04)40
 Bonet C. (EQ-05)113
 Bonetti S. (AC-01)4
 Bonetti S. (AF-08)10
 Bonetti S. (GD-04)158
 Bonetti S. (GD-06)159
 Bonetti S. (GD-11)159
 Bonetti S. (GF-03)162
 Bonfim M. (AA-06)2
 Bonin R. (DE-02)79
 Bonin R. (FD-06)132
 Bonin R. (FD-07)132
 Boone C. (GD-01)158
 Boone T. (EC-01)101
 Borchers J.A. (FB-02)127
 Borghs G. (AF-12)11
 Bormio-Nunes C. (BG-10)37
 Bottauscio O. (CR-06)65
 Bottauscio O. (DE-01)78
 Boulle O. (FD-10)133
 Bouzehouane K. (FD-03)131
 Bowen D. (EH-09)110
 Braganca P.M. (CF-03)58
 Brahim R. (CU-07)71
 Brand O. (DR-13)90
 Brandt R. (BB-01)27
 Brandt R. (DQ-01)86
 Brauer P. (DA-03)75
 Braun K.F. (GC-12)157
 Brombacher C. (BC-04)29
 Brosseau C. (DG-01)81
 Brown S.L. (ED-02)103
 Brudny J.F. (BT-05)47
 Bryan M.T. (EE-01)104
 Bryant H.C. (CB-04)52
 Bublik V.T. (BR-07)43
 Buchanan K. (FP-03)140
 Buda L. (CF-07)58
 Buda-Prejbeanu L. (EA-06)99
 Buergler D.E. (CT-01)68
 Buhrman R.A. (AE-01)7
 Buhrman R.A. (CF-03)58
 Burke A.C. (EP-09)112
 Burkhardt G.L. (AP-09)14
 Burnette J.E. (FC-08)130
 Burrowes C. (AA-04)2
 Burton W.C. (BG-09)37
 Buschbeck J. (AP-04)13
 Buschbeck J. (AP-05)13
 Butler K.S. (CB-04)52
 Butta M. (CR-01)64
 Butta M. (CR-05)65
 Butta M. (FC-05)129
 Byun I. (BT-02)46
- ## C
- C. Infante I. (ES-02)117
 Cabrini S. (BB-01)27
 Cai C.M. (DR-01)88
 Cai K. (CP-09)62
 Cai Y. (EF-08)107
 Caicedo J. (ES-02)117
 Caloz C. (EE-06)105
 Camley R.E. (AR-06)17
 Camley R.E. (CS-01)66
 Camley R.E. (DQ-09)87
 Camley R.E. (FE-04)134
 Camley R.E. (GE-10)161
 Canizo-Cabrera A. (BQ-07)40
 Cao B. (AV-04)24
 Cao G. (BF-01)34
 Cao J. (AE-04)8
 Cao J.X. (BG-09)37
 Cao R. (FD-02)131
 Cao Z. (FT-05)147
 Carara M. (BS-01)44
 Carara M. (BS-06)45
 Cardoso S. (EB-08)100
 Carey M. (ED-09)104
 Carey M.J. (EA-03)98
 Carey M.J. (FG-04)137
 Carignan L. (EE-03)105
 Carignan L. (EE-06)105
 Carlizoz L. (GA-04)153
 Carman G. (DG-04)81
 Carman G.P. (AC-02)4
 Carpentieri M. (ER-10)116
 Carrey J. (FF-06)136
 Carrey J. (GB-04)154
 Caruntu D. (EB-06)100
 Casey J.P. (AP-09)14
 Casoli F. (DD-08)78
 Cassoret B. (BT-05)47
 Castel V. (DG-01)81
 Cattoni A. (DG-05)82
 Celegato F. (AB-05)3
 Celegato F. (AC-11)5
 Celegato F. (DD-08)78
 Celik S. (ES-09)118
 Celinski Z. (AR-06)17
 Celinski Z. (CS-01)66
 Celinski Z. (CT-01)68
 Celinski Z. (DQ-09)87
 Celinski Z. (FE-04)134
 Celinski Z. (GE-10)161
 Cesaretti J.M. (DR-13)90
 Cespedes O. (EB-04)100
 Cespedes O. (EB-05)100
 Cha E. (CC-11)54
 Cha J.J. (AE-01)7
 Cha Y. (CR-11)66
 Cha Y. (FT-03)147
 Chabalko M.J. (EC-03)101

- Chady T. (CQ-09) 64
 Chamberlain R.D. (BD-08) 31
 Champion E. (CD-06) 55
 Champion E. (EC-05) 101
 Chan K. (FA-05) 126
 Chan M. (CB-02) 52
 Chan M. (DF-08) 81
 Chan W. (BR-02) 43
 Chandra Rao P.B. (FS-08) 146
 Chandrashekar G. (AR-13) ... 18
 Chandrashekar G. (FS-08) ... 146
 Chandrashekariaih S. (EA-03) . 98
 Chang C. (CT-06) 69
 Chang C. (DG-04) 81
 Chang C. (DQ-10) 87
 Chang C. (ET-03) 119
 Chang C. (FR-13) 145
 Chang C.R. (FD-02) 131
 Chang H. (AR-08) 17
 Chang J. (AQ-09) 16
 Chang J. (ES-06) 117
 Chang J. (FF-12) 136
 Chang L. (DQ-11) 87
 Chang S. (EQ-03) 113
 Chang Uk J. (DG-08) 82
 Chang W. (AR-08) 17
 Chang W. (BP-09) 38
 Chang Y. (AP-03) 13
 Chang Y. (BQ-07) 40
 Chang Y. (FW-08) 152
 Chantrell R. (CE-09) 57
 Chantrell R.W. (CE-10) 57
 Chantrell R.W. (DB-04) 75
 Chantrell R.W. (DE-03) 79
 Chantrell R.W. (EC-06) 101
 Chantrell R.W. (FG-02) 137
 Chao C. (BQ-17) 42
 Chao C. (DQ-10) 87
 Chao C.P. (GA-05) 153
 Chapelsky C. (EH-07) 110
 Chappert C. (AA-04) 2
 Chappert C. (BD-09) 31
 Chappert C. (ED-06) 103
 Chappert C. (ER-03) 115
 Chappert C. (ER-12) 116
 Chappert C. (ER-13) 116
 Chappert C. (FD-01) 131
 Chappert C. (FG-01) 137
 Chappert C. (GD-03) 158
 Chau K. (BU-02) 48
 Chau K. (BU-04) 48
 Chau K. (BV-01) 49
 Chau K. (CW-01) 73
 Chau K. (DV-07) 97
 Chau K. (FW-01) 151
 Chau K. (FW-02) 151
 Chau K. (FW-04) 151
 Chau K. (FW-05) 152
 Chaudret B. (FF-06) 136
 Chaudret B. (GB-04) 154
 Che X. (DP-09) 84
 Chechenin N.G. (EQ-10) 114
 Chembrolu V.H. (DP-06) 84
 Chemnitz S. (FC-07) 130
 Chen B. (BP-14) 39
 Chen C. (DQ-07) 87
 Chen C. (ET-08) 120
 Chen C. (GB-05) 154
 Chen C.H. (DE-08) 79
 Chen F. (GC-09) 157
 Chen H. (EW-05) 125
 Chen H. (GB-06) 155
 Chen J. (AC-03) 4
 Chen J. (BQ-11) 41
 Chen J. (FU-09) 149
 Chen J. (GA-05) 153
 Chen J. (GB-05) 154
 Chen J.T. (EV-03) 123
 Chen J.W. (BR-08) 44
 Chen J.X. (FP-07) 141
 Chen J.y. (AV-03) 24
 Chen M. (DP-02) 83
 Chen M. (DU-10) 95
 Chen N. (EH-10) 111
 Chen P. (CS-11) 68
 Chen P.J. (CE-08) 57
 Chen Q. (ED-02) 103
 Chen R. (DP-12) 85
 Chen S. (AQ-07) 15
 Chen S. (BF-10) 35
 Chen S. (CP-04) 61
 Chen S. (CQ-02) 63
 Chen S. (CU-01) 70
 Chen S. (DU-09) 95
 Chen S. (EH-01) 109
 Chen S. (FR-13) 145
 Chen S.H. (FD-02) 131
 Chen T. (EQ-03) 113
 Chen W. (AR-10) 18
 Chen W. (AR-11) 18
 Chen W. (AR-11) 18
 Chen W. (ED-09) 104
 Chen W. (ET-08) 120
 Chen X. (CV-04) 72
 Chen Y. (AT-09) 22
 Chen Y. (BC-08) 29
 Chen Y. (CC-09) 54
 Chen Y. (CQ-10) 64
 Chen Y. (ET-04) 119
 Chen Y. (GE-06) 161
 Cheng C. (EU-06) 121
 Cheng H. (BP-12) 38
 Cheng M. (BU-01) 47
 Cheng M. (DV-05) 97
 Cheng M. (FW-02) 151
 Cheng M. (FW-04) 151
 Cheng M. (FW-05) 152
 Cheng S. (FC-08) 130
 Cheng S. (FU-05) 148
 Cheng X. (GD-01) 158
 Cheong C. (CP-10) 62
 Cheong Y. (CQ-08) 64
 Chern G. (BQ-17) 42
 Chervinsky M.M. (BF-04) 34
 Chevalier A. (BF-09) 35
 Chi K. (FE-03) 133
 Chi Y. (GC-08) 157
 Chiampi M. (CR-06) 65
 Chiampi M. (DE-01) 78
 Chiang C. (BR-02) 43
 Chiba A. (BU-06) 48
 Chiba A. (DS-10) 92

- Chiba A. (DV-12)97
 Chiba A. (FQ-11)143
 Chiba D. (AA-05)2
 Chiba D. (BA-03)26
 Chiba D. (CA-01)51
 Chiba T. (CP-03)61
 Chien C. (ET-04)119
 Chikara S. (BF-01)34
 Chikuma K. (AU-08)24
 Childress J. (GD-01)158
 Childress J.R. (CF-03)58
 Childress J.R. (EA-03)98
 Chinnsamy C.N. (AT-08)22
 Chinnsamy N. (GC-06)157
 Chiriari H. (AG-04)12
 Chiriari H. (AV-11)25
 Chiriari H. (BS-03)45
 Chiriari H. (BS-04)45
 Chiriari H. (EE-08)105
 Chi-Shun T. (DG-07)82
 Chiu C. (GA-05)153
 Chiu Y. (DP-01)83
 Chizhik A. (AG-09)12
 Chizhik A. (BS-02)44
 Cho B. (DQ-04)86
 Cho E. (BC-11)30
 Cho H. (AU-04)23
 Cho H. (FQ-09)142
 Cho J. (AE-06)8
 Cho J. (AV-07)25
 Cho J. (EU-09)122
 Cho J. (FH-08)139
 Cho M. (AV-07)25
 Cho M. (CU-03)70
 Cho S. (BT-06)47
 Cho S. (DR-02)88
 Cho Y. (BD-04)31
 Cho Y. (CS-03)67
 Cho Y. (CT-02)69
 Cho Y. (CW-07)74
 Cho Y. (DQ-06)87
 Cho Y. (FH-06)139
 Cho Y. (FP-04)140
 Cho Y. (FS-05)146
 Choa Y. (FT-03)147
 Chockalingam S. (EP-13)112
 Choe S. (BD-04)31
 Choe S. (CS-03)67
 Choe S. (CT-02)69
 Choe S. (DQ-06)87
 Choe S. (ET-11)120
 Choe S. (FP-04)140
 Choe S. (FP-05)140
 Choe S. (FS-05)146
 Choi B. (FD-09)132
 Choi B.C. (BB-07)28
 Choi B.C. (DD-02)77
 Choi C. (CG-02)59
 Choi C. (CP-06)61
 Choi C. (CP-07)61
 Choi C. (DF-02)80
 Choi D. (CW-07)74
 Choi H. (AV-10)25
 Choi H. (CU-04)71
 Choi H. (EQ-06)113
 Choi J. (BU-07)48
 Choi J. (DC-07)77
 Choi J. (DV-08)97
 Choi J. (EV-09)124
 Choi J. (FQ-07)142
 Choi J. (FQ-09)142
 Choi J. (FQ-10)142
 Choi J. (FU-06)149
 Choi K. (CU-09)71
 Choi Y. (AE-07)8
 Choi Y. (DQ-02)86
 Choi Y. (ER-04)115
 Choi Y. (FH-08)139
 Chong T. (CP-09)62
 Chou C. (CT-06)69
 Chou C. (EU-06)121
 Chou C. (GG-03)163
 Chou H. (AF-10)11
 Chou H. (CU-08)71
 Chow T. (AU-03)23
 Chshiev M. (EA-06)99
 Chu I. (DB-07)76
 Chuang C. (AR-08)17
 Chubykalo-Fesenko
 O. (AC-04)4
 Chubykalo-Fesenko
 O. (AC-10)5
 Chubykalo-Fesenko
 O. (BB-08)28
 Chubykalo-Fesenko
 O. (CE-10)57
 Chubykalo-Fesenko
 O. (FG-02)137
 Chumak A.V. (FE-06)134
 Chumak A.V. (GE-07)161
 Chun B. (AQ-04)15
 Chun B. (BQ-14)41
 Chun B. (EQ-08)114
 Chun J. (FU-06)149
 Chun M. (EU-09)122
 Chun Y. (FQ-07)142
 Chun Y. (FU-06)149
 Chung C. (BP-08)38
 Chung H. (BT-08)47
 Chung H. (FW-03)151
 Chung K. (EP-07)112
 Chung P. (EW-05)125
 Chung P. (EW-06)125
 Chung S. (CG-05)59
 Chung T. (AC-02)4
 Chung T. (CW-02)73
 Chung T. (DG-04)81
 Cimpoesu D. (AT-07)22
 Cimpoesu D. (CF-09)58
 Cimpoesu D. (CS-02)66
 Ciubotaru F. (BB-03)27
 Clark A. (BG-03)36
 Clark A.E. (BG-09)37
 Coaquira J.A. (CS-08)67
 Coca E. (FT-04)147
 Coey J. (AQ-05)15
 Coey J. (AQ-06)15
 Coey J. (BQ-11)41
 Coey J. (BQ-12)41
 Coey M. (AC-03)4
 Cohen L.F. (FC-03)129
 Coisson M. (AC-11)5

- Coisson M. (BF-06)35
 Coisson M. (DD-08)78
 Colak L. (EE-10)106
 Colak L. (GB-02)154
 Colizzi G. (CE-01)56
 Colliex C. (FB-03)127
 Consolo G. (AS-08)20
 Consolo G. (AS-14)20
 Consolo G. (ER-11)116
 Cornejo D.R. (EG-05)108
 Cornelissen S. (ER-13)116
 Cornelissen S. (GD-03)158
 Cornia A. (GC-02)156
 Corodeanu S. (AG-04)12
 Corodeanu S. (BS-03)45
 Corrêa M.A. (BS-06)45
 Covington M. (ED-01)102
 Cowburn R.P. (BD-03)31
 Cowburn R.P. (EE-05)105
 Cox D. (FC-03)129
 Craig B. (DB-04)75
 Crawford T.M. (ED-01)102
 Crevecoeur G. (BT-04)46
 Cros V. (BD-01)30
 Cros V. (ED-03)103
 Cros V. (ER-02)115
 Cros V. (ER-09)116
 Cros V. (FD-03)131
 Cros V. (GD-02)158
 Crotti G. (CR-06)65
 Crozat P. (ER-03)115
 Crozat P. (ER-13)116
 Cruz J.R. (BP-09)38
 Cucchiara J. (CT-10)70
 Cucchiara J. (FD-05)132
 Cugat O. (GA-04)153
 Cui F. (EB-06)100
 Cui W. (EG-06)108
 Cui X. (AR-05)17
 Cuihuan L. (CQ-07)64
 Cullen J. (BG-02)36
 Curcic M. (FD-04)131
 Cuseo J.M. (AP-08)14
 Cyrille M. (CF-07)58
 Cyrille M. (GD-05)158
- d**
- d'Aquino M. (AS-05)19
 d'Aquino M. (BE-01)32
 d'Aquino M. (DE-02)79
 d'Aquino M. (FD-06)132
 d'Aquino M. (FD-07)132
 Da Silva F. (FC-11)130
 Dai Q. (CC-05)53
 Daigle A. (FE-02)133
 Dakyo B. (BV-03)49
 Damsgaard C.D. (FB-04)128
 Daniil M. (GA-02)153
 Das J. (EH-11)111
 Das S. (AD-02)6
 Das S. (DC-03)76
 Das S. (ES-13)118
 Das T. (DU-08)95
 Dash S.P. (FF-08)136
 Dauchez N. (CV-05)72
- David J.C. (AP-11)14
 Davino D. (AP-02)13
 De D. (ES-04)117
 de Franco V.C. (EG-05)108
 de Groot C.H. (AQ-08)16
 de Jong M.P. (FF-08)136
 De La Figuera J. (AR-04)17
 de la Figuera J. (DD-04)78
 de la Peña F. (FB-03)127
 De Melis M. (DS-07)91
 de Pablo J.J. (BC-09)30
 Dean J. (BE-02)32
 Dean J. (EC-09)102
 Dean J. (EG-11)109
 Dean J. (ER-13)116
 Dean J. (FG-04)137
 Dean J.S. (BE-06)33
 Dean J.S. (EE-01)104
 Dede M. (CQ-03)63
 Dekadjevi D.T. (FG-05)137
 Delaët B. (CF-07)58
 Delaet B. (GD-05)158
 Delalande M. (AC-06)4
 Delamare J. (GA-04)153
 Delaye M.T. (CF-06)58
 Delenia E.M. (CF-03)58
 Della Torre E. (CE-08)57
 Deng J. (GC-10)157
 Deng S. (CP-11)62
 Deng-Chi L. (DG-07)82
 Deranlot C. (FD-03)131
 Deranlot C. (FF-11)136
 Desvaux C. (FF-06)136
 Detcheverry F. (BC-09)30
 Devine M. (CV-03)72
 Devolder T. (ED-06)103
 Devolder T. (ER-03)115
 Devolder T. (ER-12)116
 Devolder T. (ER-13)116
 Devolder T. (FD-01)131
 Devolder T. (FG-01)137
 Devolder T. (GD-03)158
 Dezelak K. (CW-06)73
 Dhagat P. (BD-08)31
 Dhagat P. (FE-06)134
 Diaconu A. (CS-02)66
 Diao Z. (AC-03)4
 Diao Z. (AQ-04)15
 Diaz Michelena M. (DA-04)75
 Didier T. (CU-07)71
 Diegel M. (BD-02)30
 Diegel M. (BD-11)32
 Diény B. (AE-10)9
 Diény B. (BC-03)29
 Diény B. (CF-06)58
 Diény B. (CF-07)58
 Diény B. (EA-06)99
 Diény B. (FP-01)140
 Diény B. (GD-05)158
 Dimian M. (AS-16)21
 Dimian M. (FT-04)147
 Ding J. (BC-08)29
 Ding Y. (AR-12)18
 Ding Y. (CU-06)71
 Ding Y. (DB-05)76
 Dinulovic D. (EF-10)107

Djémia P. (AS-02)	19
Djuhana D. (AS-12)	20
Dmitriev A. (AC-01)	4
Dmytriiev O. (ER-08)	116
Dmytriiev O. (GD-08)	159
Do H. (CC-05)	53
Dobisz E. (BC-09)	30
Dobrinescu A. (AS-18)	21
Doi M. (AR-09)	17
Doi M. (DB-07)	76
Doi M. (ER-01)	114
Doi M. (GF-05)	162
Doi T. (AD-08)	7
Doi T. (DP-06)	84
Doi T. (DP-14)	85
Doi T. (DP-15)	85
Dolinar D. (CW-06)	73
Donahue M.J. (AS-09)	20
Donciu C. (AS-17)	21
Dong Y. (CD-02)	54
Donohoe G.W. (EH-04)	110
Donohoe G.W. (FD-09)	132
Dorrell D. (FH-03)	139
Dorrell D.G. (BU-10)	49
Dorrell D.G. (BU-11)	49
Dorrell D.G. (BU-12)	49
Dorrell D.G. (FH-05)	139
dos Santos A. (FB-11)	129
Dovek M. (DC-04)	76
Dovek M. (DP-17)	85
Dragos O. (EE-08)	105
Drewello V. (AE-09)	9
Drewello V. (BQ-05)	40
Drews A. (AR-01)	16
Drews A. (BB-02)	27
Drews A. (FD-04)	131
Drouhin H. (FD-08)	132
Drouineau M.J. (GG-11)	164
Drulis H. (FV-04)	150
Du J. (AF-03)	10
Du Y. (BG-03)	36
Du Y. (BR-09)	44
Duan C. (BR-04)	43
Duan S. (CC-08)	54
Duan S. (CD-07)	55
Dubenko I. (EQ-02)	113
Dubourg S. (AG-06)	12
Dubuguet V. (AG-06)	12
Ducruet C. (CF-06)	58
Duguet E. (GB-01)	154
Dumas R. (DQ-01)	86
Dumas R.K. (AF-08)	10
Dumas R.K. (EE-02)	104
Dumas R.K. (GF-07)	163
Dumitru I. (AT-07)	22
Dupre L. (BT-04)	46
Dussaux A. (ER-02)	115
Dussaux A. (FD-03)	131
Duyan G. (CQ-07)	64
Duyan G. (DS-16)	93
Dwevedi S. (EU-01)	121

E

Earhart C.M. (GB-11)	155
Ebels U. (CF-07)	58

Ebels U. (GD-05)	158
Eberbeck D. (EB-01)	99
Edelman H. (AQ-01)	15
Edelstein A. (FC-08)	130
Egawa G. (CQ-04)	63
Egawa G. (DP-11)	84
Egawa Y. (AD-11)	7
Egelhoff W.F. (CG-05)	59
Egelhoff, Jr W.E. (FC-08)	130
Egelhoff, Jr. W.F. (AE-01)	7
Eguchi S. (BQ-01)	39
Eguchi S. (BQ-02)	40
Eguchi S. (EA-01)	98
Ehrenberg H. (FB-09)	128
Eilers G. (AE-09)	9
Eilers G. (BQ-05)	40
Ekram S. (BU-10)	49
Ekram S. (BU-11)	49
Eleftheriou E. (EF-09)	107
Elena R. (DS-04)	91
Emley N.C. (CF-03)	58
Enachescu C. (AS-18)	21
Enachescu C. (DT-04)	94
Enders A. (FS-01)	145
Endo H. (AR-09)	17
Endo H. (BP-18)	39
Endo H. (ER-01)	114
Endo Y. (BQ-03)	40
Endo Y. (BS-10)	45
Engelen J. (AC-06)	4
Entel P. (CE-05)	56
Epherre R. (GB-01)	154
Erden M. (FA-04)	126
Eriksson O. (AB-07)	3
Ernult F. (AE-07)	8
Estradé S. (EU-03)	121
Estradé S. (FB-03)	127
Evans R. (DE-03)	79
Evans R.F. (FG-02)	137

F

Fachler S. (AP-04)	13
Fachler S. (AP-05)	13
Fachler S. (AP-06)	14
Faini G. (FD-10)	133
Fal T. (FE-04)	134
Fan J. (AG-10)	12
Fan J. (CG-08)	60
Fan J. (CR-03)	65
Fan X. (FD-02)	131
Fan Y. (FW-05)	152
Fan Z. (BP-12)	38
Fang X. (FT-05)	147
Fang Y. (AC-01)	4
Fang Y. (GF-03)	162
Fangohr H. (BE-10)	33
Faria R.N. (FV-05)	150
Farrer I. (AQ-10)	16
Fasig D. (ES-09)	118
Fassbender J. (BB-04)	27
Faupel F. (EH-02)	109
Fecher G.H. (DT-01)	93
Fegan D.L. (CB-04)	52
Fei W. (FW-06)	152
Fei W. (GG-10)	164

- Felser C. (DT-01)93
 Feng G. (AC-03)4
 Feng G. (BQ-11)41
 Feng J. (BQ-11)41
 Feng M. (FR-10)144
 Feng Z. (CC-11)54
 Fermon C. (EB-08)100
 Fernandez R. (CQ-02)63
 Fernandez R. (EC-04)101
 Ferrara E. (CR-06)65
 Ferrater C. (DG-05)82
 Ferré J. (BC-03)29
 Ferreira R. (BQ-08)41
 Fert A. (BD-01)30
 Fert A. (ED-03)103
 Fert A. (ER-02)115
 Fert A. (ER-09)116
 Fert A. (FD-03)131
 Fert A. (FF-11)136
 Fert A. (GD-02)158
 Fettar F. (AR-03)17
 Fettar F. (FP-01)140
 Fichtner P.F. (EG-05)108
 Fidler J. (BE-05)33
 Fidler J. (CD-01)54
 Fidler J. (EC-09)102
 Filippetti A. (CE-01)56
 Filoti G. (DT-06)94
 Finkel P. (FC-12)130
 Finocchio G. (AS-08)20
 Finocchio G. (AS-14)20
 Finocchio G. (GD-07)159
 Fiorentini V. (CE-01)56
 Fiorillo F. (BF-06)35
 Fiorillo F. (CR-06)65
 Fischer G.A. (FC-08)130
 Fischer P. (DQ-02)86
 Fischer P. (FP-03)140
 Flatau A.B. (AP-14)15
 Flatau A.B. (BG-02)36
 Flatau A.B. (BG-05)36
 Flechsig K. (EW-07)125
 Flick E. (EB-07)100
 Flores A.F. (CR-12)66
 Florez S. (EE-04)105
 Florez S. (GD-05)158
 Florez S.H. (ED-09)104
 Flynn E.R. (CB-04)52
 Folks L. (ED-09)104
 Folks L. (EE-04)105
 Folks L. (GD-05)158
 Fonin M. (AF-09)11
 Fontana R. (EF-11)107
 Fontcuberta J. (DG-05)82
 Fontcuberta J. (ES-02)117
 Fontcuberta J. (EU-03)121
 Fontcuberta J. (FB-03)127
 Fowley C. (AQ-06)15
 Franchin M. (BE-10)33
 Fratello V.J. (BF-03)34
 Fredriksson H. (AC-01)4
 Freeman C. (EG-11)109
 Freire C. (CS-06)67
 Freitas P. (AE-04)8
 Freitas P.P. (BQ-08)41
 Freitas P.P. (EB-08)100
 Fricke L. (CT-03)69
 Froemter R. (CT-07)69
 Fu A. (EB-02)99
 Fu C. (CT-06)69
 Fu C. (EU-06)121
 Fu J. (DF-06)80
 Fu W. (CV-09)72
 Fu W. (CW-11)74
 Fu W. (DE-07)79
 Fu W. (DS-08)91
 Fu W. (DS-15)92
 Fu W. (EH-05)110
 Fu W. (EH-10)111
 Fu W. (FQ-04)142
 Fu W. (FU-09)149
 Fu W. (GG-09)164
 Fu Y. (AF-03)10
 Fujii N. (FQ-02)141
 Fujii T. (CR-07)65
 Fujikawa Y. (EW-01)124
 Fujikura M. (AU-08)24
 Fujimaki N. (AU-07)24
 Fujita A. (CG-09)60
 Fujita N. (AQ-02)15
 Fujiwara H. (AF-04)10
 Fujiwara K. (EH-08)110
 Fukami S. (AA-05)2
 Fukami S. (BD-05)31
 Fukao T. (BU-06)48
 Fukao T. (DV-12)97
 Fukao T. (FQ-11)143
 Fukatani N. (BQ-16)42
 Fuke H.N. (ER-01)114
 Fuke H.N. (GF-01)162
 Fukuchi S. (EH-08)110
 Fukuda K. (FA-01)126
 Fukuma Y. (AF-04)10
 Fukuma Y. (BB-05)28
 Fukuma Y. (FP-06)141
 Fukunaga H. (BT-03)46
 Fukunaga H. (DU-07)95
 Fukushima A. (ED-03)103
 Fukushima A. (ER-02)115
 Fukushima A. (GD-02)158
 Fukushima H. (BP-18)39
 Fukuzawa K. (EW-01)124
 Fullerton E. (BC-02)29
 Fullerton E.E. (AF-01)9
 Fullerton E.E. (BC-06)29
 Fullerton E.E. (CT-10)70
 Fullerton E.E. (FD-05)132
 Fumihiro S. (FU-01)148
 Furiya K. (DS-05)91
 Furubayashi T. (EA-05)99
 Furubayashi T. (FB-05)128
 Furuya A. (BQ-06)40
 Fusil S. (FD-03)131
 Futamoto M. (DD-07)78
 Fuwa A. (EW-01)124
- G**
- Gabay A. (EG-01)107
 Gabay A. (EG-07)108
 Gade N.R. (BR-08)44
 Gaidis M.C. (ED-02)103

- Gallego S. (AR-04)17
 Gallop J.C. (FC-03)129
 Gambhir S.S. (EB-02)99
 Gan H. (AE-03)8
 Gan H. (FF-01)135
 Gan Z. (FW-07)152
 Gang Q. (FE-03)133
 Gao J. (AT-09)22
 Gao K. (CD-09)55
 Gao Y. (DS-10)92
 Gao Y. (EH-08)110
 Gao Z. (ED-07)103
 Garad H. (AR-03)17
 Garad H. (FP-01)140
 Garcia J. (GD-04)158
 Garcia M. (CA-03)51
 García-Cuenca M. (DG-05)82
 Garcia-Vazquez V. (BQ-07)40
 Gardner D.S. (XA-03)1
 Garello K. (CG-01)59
 Garello K. (DG-02)81
 Garello K. (GD-05)158
 Garshelis I.J. (AP-08)14
 Garshelis I.J. (DR-07)89
 Garzon S. (ED-01)102
 Gaster R. (EB-09)100
 Gatzten H. (EB-07)100
 Gatzten H. (FC-10)130
 Gatzten H.H. (EF-10)107
 Gau C. (DT-05)94
 Gaudin G. (AA-06)2
 Gazquez J. (FB-02)127
 Gee S. (DP-08)84
 Geiler A.L. (AT-08)22
 Geiler A.L. (AT-09)22
 Gen F. (AQ-05)15
 Genevaux J. (CV-05)72
 George J. (FF-11)136
 Georges B. (ED-03)103
 Georges B. (ER-02)115
 Georges B. (FD-03)131
 Georges B. (GD-02)158
 Gerber A. (EH-02)109
 Germano J. (EB-08)100
 Gerthsen D. (AF-09)11
 Geshev J. (AR-03)17
 Ghasemi A. (EG-08)108
 Ghidini M. (ES-11)118
 Ghivelder L. (BG-10)37
 Gibbs M.R. (BG-04)36
 Gibson G. (FA-06)127
 Gim G. (CS-03)67
 Girgis E. (BB-07)28
 Girod S. (AF-02)10
 Giustiniani A. (AP-02)13
 Glathe S. (BD-02)30
 Glathe S. (ET-09)120
 Gliga S. (CT-01)68
 Go S. (CW-03)73
 Go S. (CW-04)73
 Go S. (CW-10)74
 Godsell J.F. (AR-07)17
 Goh C. (CD-03)54
 Goh C. (CP-10)62
 Golovanov O.A. (EE-07)105
 Gomes R.C. (BS-01)44
 Gomi S. (AD-08)7
 Goncharov A. (BE-02)32
 Goncharov A. (BE-06)33
 Goncharov A. (DC-05)76
 Goncharov A. (EE-01)104
 Goncharov A. (EG-11)109
 Goncharov A. (ER-13)116
 Gonchrov A. (EC-09)102
 Gong W. (FT-05)147
 Gong Y. (BU-04)48
 Gong Y. (BV-01)49
 Gonzalez E. (AC-10)5
 Gonzalez J. (AG-09)12
 Gonzalez J. (BS-02)44
 Gonzalez J. (ES-12)118
 Gorodetsky G. (ES-03)117
 Goswami R. (GA-02)153
 Göthelid M. (AF-08)10
 Gotoh Y. (CR-08)65
 Gottwald M. (AF-02)10
 Graham C.D. (DE-08)79
 Greaves S. (FA-03)126
 Greaves S.J. (BP-13)39
 Greaves S.J. (DC-08)77
 Greene P. (EE-02)104
 Greene P. (GF-07)163
 Greneche J. (AG-04)12
 Grigoras M. (EE-08)105
 Grishin A.M. (EP-04)111
 Groessinger R. (AP-13)14
 Grollier J. (BD-01)30
 Grollier J. (ED-03)103
 Grollier J. (ER-02)115
 Grollier J. (ER-09)116
 Grollier J. (FD-03)131
 Grollier J. (GD-02)158
 Gruber W. (GG-02)163
 Grünberg P.A. (CT-01)68
 Grünebohm A. (CE-05)56
 Gruner M.E. (CE-05)56
 Grunwaldova V. (GB-01)154
 Gschneidner, Jr.
 K.A. (GA-03)153
 Gu D. (BR-10)44
 Guan L. (CD-08)55
 Guan Y.F. (ED-02)103
 Guizhi X. (DS-16)93
 Gunduz Akdogan
 N. (EG-07)108
 Guo H. (CE-04)56
 Guo L. (DS-11)92
 Guo V.W. (CP-01)60
 Guo V.W. (DP-10)84
 Guo Y. (DV-06)97
 Guo Y. (DV-11)97
 Guo Y. (FH-03)139
 Guo Y. (FH-05)139
 Guo Y. (FR-01)143
 Guo Y. (FR-02)143
 Guo Y. (FR-03)144
 Guo Y. (FR-12)145
 Guo Y. (FT-05)147
 Guo Y. (FU-09)149
 Guo Y.G. (FP-02)140
 Guo Y.G. (FP-07)141
 Guo Z. (AC-05)4

Gupta A. (ES-04)	117
Gusarov A. (DR-12)	90
Guslienکو K. (AC-04)	4
Guslienکو K.Y. (DQ-02)	86
Gusliyenکو K. (AC-12)	5
Gutfleisch O. (AP-07)	14
Gutfleisch O. (EG-11)	109
Gutfleisch O. (FB-07)	128
Gutfleisch O. (FB-08)	128
Gutfleisch O. (GA-01)	153
Güth K. (GA-01)	153
Gwon O. (BU-09)	48
Gyu-Tak K. (CW-05)	73
Gyu-Tak K. (CW-08)	74

H

Ha K. (FW-12)	152
Hadimani R.L. (FB-10)	128
Hadjipanayis G.C. (EE-10)	106
Hadjipanayis G.C. (EG-01)	107
Hadjipanayis G.C. (EG-07)	108
Hadjipanayis G.C. (GB-02)	154
Hadova E. (GB-01)	154
Hadziselimovi Ć M. (EV-11)	124
Haga A. (AU-05)	23
Hagiwara J. (FQ-06)	142
Halder E. (BD-02)	30
Halder E. (BD-11)	32
Hall D. (EB-09)	100
Hall M. (BD-08)	31
Halloran S.T. (FC-11)	130
Hamada N. (DR-01)	88
Hamaguchi T. (AC-07)	5
Hamann C. (BB-04)	27
Hammel P.C. (AB-01)	2
Han D. (AC-12)	5
Han D. (AS-15)	20
Han D. (CS-05)	67
Han H. (AU-04)	23
Han J. (BD-06)	31
Han P. (FQ-07)	142
Han P. (FU-06)	149
Han S. (AQ-09)	16
Han S. (BT-06)	47
Han S. (ES-06)	117
Han S. (FF-12)	136
Han S. (FQ-08)	142
Han S. (GG-05)	164
Han T. (BR-02)	43
Han T. (EU-10)	122
Han X. (BQ-11)	41
Han X. (CE-04)	56
Han X. (CT-06)	69
Han X. (GC-01)	156
Han X.F. (AV-03)	24
Han Y. (GG-05)	164
Hanada M. (FF-05)	135
Hancock Y. (CE-03)	56
Handa H. (CB-03)	52
Handa H. (CS-04)	67
Handa H. (DS-02)	90
Handa H. (GC-05)	156
Handa Y. (DS-13)	92
Handa Y. (GB-08)	155
Hang G. (AC-05)	4
Hansen B. (BB-01)	27
Hansen J.B. (FB-04)	128
Hao H. (FH-02)	138
Harada M. (BQ-13)	41
Haraguchi Y. (AU-05)	23
Harish Kumar N. (FS-07)	146
Harrell J.W. (AV-08)	25
Harris V.G. (AT-08)	22
Harris V.G. (AT-09)	22
Harris V.G. (FR-10)	144
Harris V.G. (GC-06)	157
Harris V.G. (GE-06)	161
Harteneck B. (BB-01)	27
Hartmann U. (CQ-01)	63
Hasegawa H. (AE-03)	8
Hasegawa H. (ED-05)	103
Hasegawa H. (FF-01)	135
Hasegawa H. (FQ-02)	141
Hasegawa R. (FC-01)	129
Hasegawa T. (CP-13)	62
Hashi S. (CR-10)	65
Hashi S. (GB-09)	155
Hashimoto A. (AD-08)	7
Hashimoto A. (DP-06)	84
Hashimoto A. (DP-15)	85
Hashimoto M. (CD-04)	55
Hashimoto S. (GB-03)	154
Hashimoto S. (GF-01)	162
Haskel D. (BF-01)	34
Hassan S.S. (ES-07)	118
Hassan S.S. (FB-04)	128
Hassan S.S. (FF-03)	135
Hatch G.P. (CV-10)	72
Hathaway H.J. (CB-04)	52
Hatsukade Y. (FC-04)	129
Hattori M. (DB-03)	75
Hattori T. (GC-05)	156
Hauet T. (AF-01)	9
Hauet T. (EE-04)	105
Hauser A. (DT-04)	94
Hawkins A. (BB-01)	27
Hayakawa J. (AE-03)	8
Hayakawa J. (ED-05)	103
Hayakawa J. (ED-06)	103
Hayakawa J. (FD-01)	131
Hayakawa J. (FF-01)	135
Hayami T. (DS-14)	92
Hayashi K. (ES-08)	118
Hayashi N. (BP-18)	39
Hayward T.J. (EB-10)	100
He A. (AP-10)	14
He C. (FB-02)	127
He J. (CC-08)	54
He J. (CQ-10)	64
He K. (AB-03)	3
He Y. (CU-05)	71
Heczko O. (AP-04)	13
Heczko O. (AP-05)	13
Heczko O. (AP-06)	14
Heidmann J. (DC-01)	76
Heidmann J. (DC-02)	76
Heidmann J. (DC-06)	77
Heim E. (EB-01)	99
Heindl R. (ER-07)	115
Heindl R. (FC-11)	130
Heinen J. (FD-10)	133

- Heinonen O. (DB-04)75
 Heinonen O. (GD-04)158
 Hellwig O. (BC-01)28
 Hellwig O. (BC-05)29
 Hellwig O. (BC-09)30
 Helmer A. (FD-01)131
 Hengchuan L. (FW-11)152
 Henry Y. (AF-01)9
 Henry Y. (CT-10)70
 Henry Y. (FD-05)132
 Heo J. (EP-03)111
 Heo J. (GF-04)162
 Hérault J. (CF-06)58
 Hermsdoerfer S.J. (CS-05)67
 Hernandez Heredero
 R. (AC-04)4
 Herper H.C. (CE-05)56
 Herranz G. (ES-02)117
 Herranz G. (FB-03)127
 Hertel R. (CE-11)57
 Hertel R. (CT-01)68
 Herynek V. (GB-01)154
 Hettstedt F. (EH-02)109
 Hetzler S.R. (EF-11)107
 Heyderman L. (FD-10)133
 Heyderman L.J. (BC-05)29
 Heyderman L.J. (ED-10)104
 Heyne L. (ED-10)104
 Heyne L. (FD-10)133
 Heyun L. (BV-11)50
 Heyun L. (FW-11)152
 Hicken R.J. (EE-09)105
 Hickey B. (ER-06)115
 Hidaka N. (DG-06)82
 Higgins A.K. (DE-08)79
 Higo Y. (CT-05)69
 Higuchi T. (BG-08)37
 Higuchi T. (GG-04)163
 Hijikata K. (BU-06)48
 Hill E.W. (DQ-03)86
 Hillebrands B. (BB-03)27
 Hillebrands B. (CS-05)67
 Hillebrands B. (FE-05)134
 Hillebrands B. (FE-06)134
 Hillebrands B. (FE-08)134
 Hillebrands B. (GE-07)161
 Hinzke D. (EC-06)101
 Hirano H. (AU-08)24
 Hirasawa K. (DC-08)77
 Hirata K. (AD-08)7
 Hirata K. (DP-06)84
 Hirata K. (DP-15)85
 Hirata K. (FH-11)139
 Hirohata A. (FF-03)135
 Hirosato S. (AU-05)23
 Hirota T. (AC-07)5
 Hirota Y. (CG-09)60
 Hirotsune A. (EC-01)101
 Hisada S. (EH-06)110
 Hjörvarsson B. (AB-07)3
 Hnin Y. (BC-08)29
 Ho H. (CC-09)54
 Ho M. (DB-05)76
 Ho S. (CV-09)72
 Ho S. (CW-11)74
 Ho S. (DE-07)79
 Ho S. (DS-08)91
 Ho S. (DS-15)92
 Ho S. (EH-05)110
 Ho S. (EH-10)111
 Ho S. (FQ-04)142
 Ho S. (GG-09)164
 Hoffmann A. (CA-03)51
 Hofmann H. (CB-05)52
 Hogg C. (BC-07)29
 Hogg C. (CP-02)61
 Höink V. (CG-05)59
 Ho-Jin A. (CW-05)73
 Ho-jin A. (CW-08)74
 Hokkyo J. (AD-11)7
 Holmes J.D. (GC-01)156
 Holzapfel V. (GC-12)157
 Homma T. (CP-15)62
 Homrich R.P. (CR-12)66
 Honda N. (CP-03)61
 Honda N. (CP-12)62
 Honda N. (CP-13)62
 Hong B. (EB-10)100
 Hong D. (CP-06)61
 Hong D. (CP-07)61
 Hong D. (FU-07)149
 Hong J. (BV-06)50
 Hong J. (BV-12)51
 Hong J. (CQ-02)63
 Hong J. (EV-08)124
 Hong J. (FQ-12)143
 Hong J. (FW-12)152
 Hong Woo P. (DG-08)82
 Hong Y. (CG-02)59
 Hong Y. (DF-02)80
 Hong Y. (DP-08)84
 Hong Y. (EH-04)110
 Hong Y. (FD-09)132
 Hong Y. (FE-07)134
 Hong Y.K. (DD-02)77
 Hongyong G. (DS-16)93
 Honjo H. (ET-05)119
 Honkura Y. (DR-01)88
 Honkura Y. (FV-09)150
 Hono K. (AE-02)8
 Hono K. (AG-04)12
 Hono K. (BQ-16)42
 Hono K. (EA-05)99
 Hono K. (FB-05)128
 Hopkins J. (CC-08)54
 Horng L. (BQ-17)42
 Horng L. (DQ-07)87
 Horng L. (DQ-10)87
 Horsley D. (DF-08)81
 Horsley D.A. (CB-02)52
 Horvat J. (EV-11)124
 Hoshino K. (DB-02)75
 Hoshiya H. (DB-02)75
 Hosomi M. (CT-05)69
 Hou H. (AD-06)6
 Hou H. (DP-12)85
 Hou H. (DS-15)92
 Houssameddine D. (GD-05)158
 Houssameddine D. (CF-07)58
 Hrabovsky D. (ES-02)117
 Hristova K.R. (CB-02)52
 Hrkac G. (BE-02)32

- Hrkac G. (BE-06)33
 Hrkac G. (DC-05)76
 Hrkac G. (EC-09)102
 Hrkac G. (EE-01)104
 Hrkac G. (EG-11)109
 Hrkac G. (ER-03)115
 Hrkac G. (ER-12)116
 Hrkac G. (ER-13)116
 Hrkac G. (GD-03)158
 Hsiao P. (AS-04)19
 Hsieh M. (BU-10)49
 Hsieh M. (BU-11)49
 Hsieh M. (EU-02)121
 Hsieh M. (FH-05)139
 Hsu C. (EP-12)112
 Hsu C. (GC-07)157
 Hsu D. (BR-02)43
 Hsu H. (AF-10)11
 Hsu J. (AR-12)18
 Hsu J. (CU-06)71
 Hsu J. (DP-01)83
 Hsu J. (DP-03)83
 Hsu L. (BU-05)48
 Hsu L. (FW-09)152
 Hsu S. (AT-04)22
 Hsu T. (ES-01)117
 Hsu Y. (CV-06)72
 Hu B. (CQ-02)63
 Hu G. (ED-02)103
 Hu S. (BC-08)29
 Hu W. (EB-02)99
 Hu X. (FV-01)149
 Hu Y. (CE-04)56
 Hua M. (CS-11)68
 Hua W. (BU-01)47
 Huai Y. (XA-01)1
 Huaiwu Z. (DU-03)95
 Huang C. (BQ-17)42
 Huang C. (BT-01)46
 Huang G. (FW-09)152
 Huang H. (FG-08)138
 Huang J. (FW-08)152
 Huang J. (GB-06)155
 Huang K. (AR-08)17
 Huang M. (BG-03)36
 Huang P.Y. (AE-01)7
 Huang S. (BE-12)34
 Huang S. (GB-06)155
 Huang T. (BC-08)29
 Huang T. (CC-09)54
 Huang X. (BV-05)50
 Huang Y. (AD-06)6
 Huang Y. (AP-03)13
 Huang Y. (AV-01)24
 Huang Y. (DV-03)96
 Huang Y. (FB-04)128
 Huang Z. (AC-08)5
 Huber D.L. (CB-04)52
 Huber W.D. (CD-10)55
 Hung C. (EP-12)112
 Hung C. (ET-04)119
 Hung C. (GC-07)157
 Hung D. (AR-12)18
 Hung D. (CU-06)71
 Hung-Yu C. (AV-05)25
 Hur J. (BU-08)48
 Hur Y. (BV-09)50
 Husain M.K. (AQ-08)16
 Hutchins R.A. (EF-09)107
 Hwang C. (CV-06)72
 Hwang C. (FU-05)148
 Hwang D. (BQ-14)41
 Hwang D. (FG-09)138
 Hwang E. (FA-05)126
 Hwang G. (EU-06)121
 Hwang I. (BQ-10)41
 Hwang J. (BQ-14)41
 Hwang J. (EQ-08)114
 Hwang K. (EV-04)123
 Hwang S. (BV-07)50
 Hwang S. (FW-10)152
 Hwang T. (EP-10)112
 Hwua Y. (CS-11)68
 Hyodo A. (DS-14)92
 Hyun S. (EU-07)122
- I
- Ibarra M.R. (FB-11)129
 Ibusuki T. (BQ-01)39
 Ibusuki T. (BQ-02)40
 Ibusuki T. (ER-14)116
 Ichihara S. (DS-01)90
 Ichihara T. (CD-04)55
 Ichihara Y. (FV-08)150
 Ichimura M. (ED-05)103
 Ichinokura O. (EH-06)110
 Ide H. (CD-04)55
 Igarashi M. (BP-16)39
 Ihm H. (EV-12)124
 Ijäs M. (CE-03)56
 Ikeda K. (BS-07)45
 Ikeda N. (DP-16)85
 Ikeda S. (AE-02)8
 Ikeda S. (AE-03)8
 Ikeda S. (ED-05)103
 Ikeda S. (ED-06)103
 Ikeda S. (FD-01)131
 Ikeda S. (FF-01)135
 Ikegami K. (FS-09)146
 Ikehata Y. (GB-03)154
 Ikeya H. (CQ-04)63
 Ikkawi R. (CQ-02)63
 Ikkawi R. (EC-04)101
 Ilgaz D. (ED-10)104
 Ilic B. (AC-12)5
 Ilyn M. (ES-12)118
 Im J. (CW-03)73
 Im J. (EV-05)123
 Im M. (FP-03)140
 Imai Y. (AD-12)7
 Imai Y. (BQ-13)41
 Imaino W. (DP-07)84
 Imaino W. (DP-16)85
 Imamura H. (CT-08)69
 Imamura H. (ER-05)115
 Imamura H. (GF-02)162
 Imamura T. (CC-02)53
 Imano Y. (BS-10)45
 Imaoka N. (EG-03)108
 Imtiaz A. (ER-07)115
 Imtiaz A. (GD-10)159

- Inaba N. (AQ-02)15
 Infante G. (AG-08)12
 Infante G. (CR-01)64
 Infante I.C. (FB-03)127
 Inokuchi T. (FF-10)136
 Inomata A. (BC-10)30
 Inomata K. (EA-05)99
 Inomata K. (FB-05)128
 Inomata K. (FF-03)135
 Inomoto O. (EB-05)100
 Inoue A. (AG-02)11
 Inoue J. (FC-02)129
 Inoue M. (CV-08)72
 Inoue M. (EP-01)111
 Inoue M. (EP-03)111
 Inoue M. (EP-07)112
 Inoue T. (AD-08)7
 Inoue T. (DP-06)84
 Inoue T. (DP-14)85
 Inoue T. (DP-15)85
 Ipatov M. (AG-07)12
 Ipatov M. (GE-01)160
 Iramina K. (DS-09)91
 Iramina K. (DS-14)92
 Irvine A.C. (CA-02)51
 Isavnin A.G. (FV-02)150
 Ishida G. (EG-04)108
 Ishida S. (BQ-16)42
 Ishihara Y. (EH-08)110
 Ishii O. (DR-05)89
 Ishikawa K. (BV-02)49
 Ishikawa K. (DS-01)90
 Ishikawa M. (FF-10)136
 Ishikuro H. (CG-07)60
 Ishio S. (CP-13)62
 Ishio S. (CP-14)62
 Ishio S. (CQ-04)63
 Ishio S. (DP-11)84
 Ishitsuka M. (DG-06)82
 Ishiwata N. (AA-05)2
 Ishiwata N. (BD-05)31
 Ishiyama K. (BS-08)45
 Ishiyama K. (CR-10)65
 Ishiyama K. (DF-04)80
 Isogami S. (AE-06)8
 Isogami S. (BQ-17)42
 Isogami S. (DQ-07)87
 Isono Y. (CR-07)65
 Itami S. (FF-05)135
 Ito K. (ED-05)103
 Ito K. (ED-06)103
 Ito K. (FD-01)131
 Ito K. (FF-01)135
 Ito N. (AD-02)6
 Ito N. (DC-03)76
 Itoh H. (AQ-03)15
 Itoh T. (CU-02)70
 Itoi H. (DR-06)89
 Itou M. (DU-01)94
 Iusan D. (AF-11)11
 Iwamoto R. (AV-13)26
 Iwasa Y. (BA-06)27
 Iwasaki H. (ER-01)114
 Iwasaki H. (FA-01)126
 Iwasaki H. (GF-01)162
 Iwasaki K. (EP-01)111
 Iwasaki S. (DV-12)97
 Iwasieczko W. (FV-04)150
 Iwata S. (CP-05)61
- ## J
- Jaafar M. (AC-09)5
 Jaafar M. (AC-10)5
 Jackson J. (CE-09)57
 Jacob A.P. (GC-01)156
 Jacobsen C.S. (FB-04)128
 Jaetao J.E. (CB-04)52
 Jaeyeong K. (DG-08)82
 Jaffrès H. (FF-11)136
 Jain S. (BR-05)43
 Jalli M. (BQ-09)41
 Jalli J. (CG-02)59
 Jalli J. (DF-02)80
 Jalli J. (DP-08)84
 Jalli J. (EH-04)110
 Jalli J. (FD-09)132
 Jalli J. (FE-07)134
 Jamek M. (FC-06)130
 Jander A. (BD-08)31
 Jander A. (FE-06)134
 Jang D. (AS-13)20
 Jang D. (CV-02)72
 Jang E. (BP-11)38
 Jang G. (FH-10)139
 Jang K. (BU-09)48
 Jang K. (EV-10)124
 Jang S. (BU-07)48
 Jang S. (BV-04)50
 Jang S. (CW-09)74
 Jang S. (EV-09)124
 Jang S. (FQ-08)142
 Jang S. (FQ-09)142
 Jang S. (FQ-10)142
 Jang T. (DU-04)95
 Jang W. (CU-03)70
 Jang Y. (DQ-04)86
 Jansen J. (CV-01)71
 Jansen R. (FF-08)136
 Janssen J. (AU-01)23
 Janssen J. (CV-01)71
 Jaramillo G. (CB-02)52
 Jaramillo G. (DF-08)81
 Jausovec A.V. (EE-05)105
 Javad F. (CU-07)71
 Javed A. (BG-04)36
 Javerliac V. (BD-09)31
 Jawaharlal H. (BF-02)34
 Jay J. (FG-05)137
 Jedryka E. (FB-03)127
 Jee K. (BS-05)45
 Jendelova P. (GB-01)154
 Jenkins C.A. (DT-01)93
 Jeon I. (AV-07)25
 Jeon K. (DU-05)95
 Jeon S. (EF-08)107
 Jeon S. (FH-10)139
 Jeong D. (AS-15)20
 Jeong J. (CS-12)68
 Jeong J. (EQ-07)114
 Jeong J. (ET-07)120
 Jeong J. (FC-09)130

- Jeong J.R. (EB-10)100
 Jeong N. (GG-05)164
 Jeong Y. (DV-04)96
 Jeung G. (BT-08)47
 Jeung W. (DR-03)88
 Jewell G.W. (EV-03)123
 Jewell G.W. (FQ-03)141
 Jeyadevan B. (BS-11)46
 Jhang W. (GB-06)155
 Jhon M.S. (EW-05)125
 Jhon M.S. (EW-06)125
 Ji J. (FW-04)151
 Jia L. (CU-01)70
 Jia L. (EU-05)121
 Jia Q. (BP-04)38
 Jia Z. (AV-08)25
 Jian L. (BV-01)49
 Jian L. (DV-07)97
 Jian W. (GC-09)157
 Jiang H. (BV-05)50
 Jiang J. (BU-04)48
 Jiang J. (BV-01)49
 Jiang X. (ED-02)103
 Jiang Z. (BD-10)32
 Jianzhong J. (DV-01)96
 Jianzhong J. (EV-01)123
 Jibin Z. (FH-07)139
 Jiles D.C. (DE-06)79
 Jiles D.C. (EU-04)121
 Jiles D.C. (FB-10)128
 Jiles D.C. (FU-08)149
 Jin C. (CW-03)73
 Jin C. (EV-05)123
 Jin C. (FT-07)148
 Jin E. (DP-17)85
 Jin H. (EV-08)124
 Jin L. (DF-07)81
 Jin Q. (BR-04)43
 Jin Q. (DP-09)84
 Jin Q. (DP-13)85
 Jin S. (CP-06)61
 Jin S. (CP-07)61
 Jin Y. (CE-08)57
 Jinbo Y. (DC-08)77
 Jing Y. (AQ-11)16
 Jing Y. (BR-03)43
 Jingwei X. (GG-08)164
 Jo J. (EV-04)123
 Jogo A. (EA-01)98
 Johansen T.H. (FP-02)140
 John S.E. (AP-11)14
 Johnson K. (CC-08)54
 Johnston A. (DB-04)75
 Joo H. (FG-09)138
 Joo H. (GF-04)162
 Joo Y. (EU-09)122
 Jordan B. (FU-04)148
 Joshi A. (EP-11)112
 Ju B. (BS-09)45
 Ju C. (CU-08)71
 Juan Z. (CV-07)72
 Jubert P. (DP-07)84
 Jubert P. (DP-16)85
 Jun S. (AS-11)20
 Juneja P. (EB-03)99
 Jung D. (DV-02)96
 Jung H. (AS-13)20
 Jung H. (CD-06)55
 Jung H. (CV-02)72
 Jung H. (CW-02)73
 Jung H. (DQ-02)86
 Jung J. (CG-11)60
 Jung M. (FP-05)140
 Jungwirth T. (CA-02)51
- ## K
- K t C. (EV-01)123
 K. t C. (DV-01)96
 Kabos P. (ER-07)115
 Kabos P. (GD-10)159
 Kadomura T. (BS-08)45
 Kaestne B. (CA-02)51
 Kai J. (GC-09)157
 Kai S. (EB-05)100
 Kaiser C. (DB-05)76
 Kaiser C. (DB-06)76
 Kaka S. (ED-01)102
 Kakazei G. (AC-12)5
 Kakazei G.N. (EU-08)122
 Kakegawa K. (CB-03)52
 Kakehashi H. (BT-03)46
 Kalezhi J. (CP-08)62
 Kalinikos B. (AT-02)21
 Käll M. (AC-01)4
 Kaltofen R. (BB-04)27
 Kamabe H. (BP-10)38
 Kamala Bharathi K. (EU-01)121
 Kaman O. (GB-01)154
 Kamata K. (AU-05)23
 Kamionka T. (FD-04)131
 Kamisaka F. (CR-10)65
 Kanai H. (BQ-06)40
 Kanai H. (DB-03)75
 Kanai H. (ER-14)116
 Kanai Y. (DC-08)77
 Kanai Y. (FA-03)126
 Kanak J. (AE-04)8
 Kanamori T. (GB-03)154
 Kanazawa T. (BR-11)44
 Kanda M. (EW-02)125
 Kaneko F. (DR-06)89
 Kanetaka H. (CR-10)65
 Kanetaka H. (GB-09)155
 Kang D. (CW-04)73
 Kang D. (CW-07)74
 Kang D. (FH-06)139
 Kang G. (BU-08)48
 Kang H. (BC-09)30
 Kang S. (CF-05)58
 Kano H. (CT-05)69
 Kanou Y. (FQ-06)142
 Kao M. (ET-04)119
 Kao Y. (BQ-15)42
 Karci O. (CQ-03)63
 Karimi A. (EP-08)112
 Karis O. (AF-08)10
 Karis O. (AF-11)11
 Karl H. (EP-02)111
 Karna S.K. (EP-12)112
 Karna S.K. (GC-07)157
 Karpenkov A. (FB-08)128

- Karpenkov D. (FB-08)128
 Kartavykh A.V. (BR-07) 43
 Karthik S.V. (AE-02) 8
 Kasai M. (CR-07) 65
 Kasai S. (AA-05) 2
 Kasai S. (ET-12)120
 Kashiwagi T. (FQ-02)141
 Kaspar P. (GB-01)154
 Kasuya R. (CG-09) 60
 Katada H. (DC-03) 76
 Kataoka K. (AV-13) 26
 Katayama T. (ED-03)103
 Katayama Y. (DS-09) 91
 Katayama Y. (DS-14) 92
 Katine J. (CT-10) 70
 Katine J. (EA-03) 98
 Katine J. (EC-01)101
 Katine J. (EE-04)105
 Katine J. (GD-01)158
 Katine J. (GD-05)158
 Katine J.A. (CF-03) 58
 Katine J.A. (ED-09)104
 Katine J.A. (FD-05)132
 Kato F. (DD-01) 77
 Kato H. (AQ-02) 15
 Kato K. (DB-02) 75
 Kato K. (DS-13) 92
 Kato K. (GB-08)155
 Kato K. (GB-10)155
 Kato T. (BF-08) 35
 Kato T. (CP-05) 61
 Katoh Y. (ET-05)119
 Katsnelson E.Z. (BF-04) 34
 Katsuhiko N. (CR-07) 65
 Kauffmann P. (GA-04)153
 Kaufman S. (AP-06) 14
 Kaufmann S. (AP-05) 13
 Kavcic A. (FA-04)126
 Kawahara S. (DD-05) 78
 Kawamura N. (CP-03) 61
 Kawasaki M. (BA-06) 27
 Kawasaki S. (GF-05)162
 Kayama S. (FT-01)147
 Kayano T. (GB-03)154
 Kazakova O. (FC-03)129
 Kazakova O. (GC-01)156
 Kazantseva N. (EC-06)101
 Kemmet S. (EP-06)112
 Kent A.D. (AF-02) 10
 Kent A.D. (CF-04) 58
 Kercher D.S. (BC-09) 30
 Keyan K.R. (BT-07) 47
 Khaleeq-ur-Rahman
 M. (AV-03) 24
 Khalili Amiri P. (GE-03)160
 Khan A.A. (AE-08) 9
 Khartsev S.I. (EP-04)111
 Khim S. (EU-09)122
 Khivintsev Y. (FE-04)134
 Khizroev S. (CQ-02) 63
 Khizroev S. (DQ-11) 87
 Khizroev S. (EC-04)101
 Khomenko E. (EQ-10)114
 Khurshid H. (GB-02)154
 Khvalkovskiy A.V. (BD-01) ... 30
 Khvalkovskiy A.V. (CE-11) ... 57
 Khvalkovskiy A.V. (ER-09) ...116
 Ki-Bong J. (CW-05) 73
 Ki-Bong J. (CW-08) 74
 Kief M. (CD-11) 55
 Kikuchi T. (CG-09) 60
 Kiliani G. (AF-09) 11
 Kim B. (BU-08) 48
 Kim B. (CG-10) 60
 Kim B. (EH-04)110
 Kim B. (EU-09)122
 Kim B. (FV-06)150
 Kim B. (FV-07)150
 Kim C. (CQ-08) 64
 Kim C. (CS-12) 68
 Kim C. (CU-09) 71
 Kim C. (DR-11) 89
 Kim C. (EQ-07)114
 Kim C. (EQ-09)114
 Kim C. (EU-07)122
 Kim C. (EU-11)122
 Kim C. (FC-09)130
 Kim D. (AE-06) 8
 Kim D. (AS-11) 20
 Kim D. (AS-12) 20
 Kim D. (BT-08) 47
 Kim D. (BV-06) 50
 Kim D. (DR-03) 88
 Kim D. (DR-09) 89
 Kim D. (DS-04) 91
 Kim D. (DU-04) 95
 Kim D. (EP-10)112
 Kim D. (EQ-06)113
 Kim D. (EQ-09)114
 Kim D. (ET-07)120
 Kim D. (ET-11)120
 Kim D. (EW-05)125
 Kim D. (FC-09)130
 Kim D. (FS-05)146
 Kim D. (FV-07)150
 Kim G. (BU-09) 48
 Kim G. (CQ-08) 64
 Kim G. (DF-02) 80
 Kim G. (EV-10)124
 Kim G. (FE-07)134
 Kim H. (AQ-09) 16
 Kim H. (BC-11) 30
 Kim H. (DR-04) 89
 Kim H. (DU-04) 95
 Kim H. (ES-06)117
 Kim H. (FF-12)136
 Kim H. (FQ-10)142
 Kim I. (AS-13) 20
 Kim I. (BU-07) 48
 Kim I. (EV-09)124
 Kim J. (AA-04) 2
 Kim J. (BU-07) 48
 Kim J. (DR-02) 88
 Kim J. (DR-09) 89
 Kim J. (DU-05) 95
 Kim J. (EP-03)111
 Kim J. (EQ-06)113
 Kim J. (ER-13)116
 Kim J. (FD-01)131
 Kim J. (FP-04)140
 Kim J. (FW-12)152
 Kim J.V. (ER-03)115

- Kim J.V. (ER-12)116
 Kim J.V. (FG-01)137
 Kim J.V. (GD-03)158
 Kim K. (AQ-09)16
 Kim K. (BD-04)31
 Kim K. (BQ-10)41
 Kim K. (BQ-10)41
 Kim K. (CR-11)66
 Kim K. (CS-03)67
 Kim K. (CT-02)69
 Kim K. (CW-04)73
 Kim K. (DQ-06)87
 Kim K. (DR-02)88
 Kim K. (EQ-06)113
 Kim K. (ES-06)117
 Kim K. (ET-07)120
 Kim K. (ET-11)120
 Kim K. (EU-09)122
 Kim K. (EV-05)123
 Kim K. (FF-12)136
 Kim K. (FP-04)140
 Kim K. (FT-03)147
 Kim K. (FT-07)148
 Kim K. (FW-10)152
 Kim M. (AB-08)3
 Kim M. (BQ-14)41
 Kim M. (FQ-07)142
 Kim M. (FU-06)149
 Kim P. (BV-07)50
 Kim S. (AC-12)5
 Kim S. (AS-15)20
 Kim S. (AV-13)26
 Kim S. (BS-09)45
 Kim S. (BT-02)46
 Kim S. (BT-06)47
 Kim S. (CS-05)67
 Kim S. (CU-09)71
 Kim S. (CW-03)73
 Kim S. (DQ-02)86
 Kim S. (DU-04)95
 Kim S. (DV-02)96
 Kim S. (EQ-08)114
 Kim S. (ER-04)115
 Kim S. (EV-05)123
 Kim S. (FG-09)138
 Kim S. (FH-08)139
 Kim S. (FQ-12)143
 Kim S. (FV-06)150
 Kim S.G. (DP-08)84
 Kim T. (BQ-14)41
 Kim W. (CW-04)73
 Kim W. (DV-02)96
 Kim W. (ET-07)120
 Kim W. (EU-07)122
 Kim Y. (AE-06)8
 Kim Y. (AS-03)19
 Kim Y. (AV-06)25
 Kim Y. (AV-07)25
 Kim Y. (BQ-14)41
 Kim Y. (BS-05)45
 Kim Y. (DR-04)89
 Kim Y. (DU-04)95
 Kim Y. (DV-10)97
 Kim Y. (EC-02)101
 Kim Y. (EQ-08)114
 Kim Y. (EQ-08)114
 Kim Y. (ET-07)120
 Kim Y. (FR-04)144
 Kim Y.K. (AV-03)24
 Kimling J. (FD-10)133
 Kimura H. (AQ-02)15
 Kimura N. (BA-06)27
 Kimura T. (BB-05)28
 Kimura T. (FP-06)141
 King J. (DE-03)79
 Kirino F. (AQ-02)15
 Kirino F. (DD-07)78
 Kirschner J. (AB-02)2
 Kirschner J. (FS-01)145
 Kirschner J. (GC-03)156
 Kishan H. (EP-11)112
 Kishan H. (FS-02)145
 Kishan H. (FS-06)146
 Kishan H. (FV-03)150
 Kishi Y. (CR-07)65
 Kishimoto M. (DP-14)85
 Kishimoto M. (GB-03)154
 Kisu L. (DQ-04)86
 Kita E. (GB-03)154
 Kitakami O. (BS-10)45
 Klacui M. (BB-08)28
 Klai M. (AA-03)1
 Kläui M. (ED-10)104
 Kläui M. (FD-10)133
 Klementova M. (GB-01)154
 Klik I. (FR-13)145
 Klopčič B. (CW-06)73
 Knight A. (EP-09)112
 Knight A.M. (EH-07)110
 Knipling K.E. (GA-02)153
 Nobel M. (EE-03)105
 Knoechel R. (EH-02)109
 Knut R. (AF-11)11
 Ko K. (BU-07)48
 Ko K. (CW-09)74
 Ko K. (FQ-08)142
 Ko K. (FQ-09)142
 Ko K. (FQ-10)142
 Kobayashi K. (AU-05)23
 Kobayashi K. (AU-07)24
 Kobayashi K. (BQ-06)40
 Kobayashi K. (DB-03)75
 Kobayashi S. (DD-01)77
 Kobayashi T. (DS-01)90
 Kobe S. (EG-02)108
 Kobe S. (FB-09)128
 Koblichka M.R. (CQ-01)63
 Koblichka M.R. (GE-06)161
 Koblichka-Veneva
 A. (GE-06)161
 Kobljanskiy Y.V. (FE-01)133
 Koblyanskiy Y.V. (CG-03)59
 Kodama D. (BS-11)46
 Kodama K. (EA-05)99
 Koerner T. (EP-02)111
 Koga F. (FC-02)129
 Koh C. (BV-10)50
 Koh C. (DV-04)96
 Koh C. (FW-03)151
 Kohara T. (DR-06)89
 Kohata Y. (DS-13)92
 Kohata Y. (GB-08)155

- Kohn A. (BE-06) 33
 Kohn A. (FG-04) 137
 Kohnno S. (DR-06) 89
 Koike K. (AQ-02) 15
 Koizumi I. (AD-11) 7
 Kolar J.W. (GG-01) 163
 Kolar J.W. (GG-02) 163
 Kolb U. (DT-01) 93
 Kolodzey J. (FD-02) 131
 Kolthammer J. (DD-02) 77
 Komagaki K. (BQ-06) 40
 Komagaki K. (DB-03) 75
 Komine T. (BP-01) 37
 Komine T. (ET-10) 120
 Komineas S. (BB-06) 28
 Kondo K. (BF-12) 35
 Kondo Y. (CP-03) 61
 Kondo Y. (CP-13) 62
 Kong S. (DP-10) 84
 Konishi H. (BP-01) 37
 Kono T. (FQ-11) 143
 Konoto M. (ER-02) 115
 Konrad A. (CE-07) 56
 Konstantinidis N. (GC-02) 156
 Koo D. (FQ-07) 142
 Koo D. (FU-06) 149
 Koo D. (FU-07) 149
 Koo H. (AQ-09) 16
 Koo H. (ES-06) 117
 Koo H. (FF-12) 136
 Koo J. (AS-13) 20
 Koonkarnkhai S. (BP-06) 38
 Koopmans B. (FD-10) 133
 Korolev K.A. (BF-10) 35
 Kosai H. (FU-04) 148
 Koshkid'ko Y.S. (FB-08) 128
 Kostylev M.P. (GE-07) 161
 Kotnala R.K. (FV-03) 150
 Kou Z. (AF-03) 10
 Kovacs A. (BE-06) 33
 Kovacs A. (FG-04) 137
 Kovintavewat P. (BP-06) 38
 Koyama T. (AA-05) 2
 Kozaki Y. (DU-01) 94
 Kozhanov A. (GE-08) 161
 Krafft C. (BF-03) 34
 Krafft C. (EH-09) 110
 Krashenninikov
 A.V. (BD-01) 30
 Krishnan A. (BP-02) 37
 Krishnatrya B.J. (AF-02) 10
 Krivorotov I. (GD-01) 158
 Krivosik P. (EH-11) 111
 Krivosik P. (GD-10) 159
 Kroeger R. (FG-03) 137
 Kronast F. (ED-10) 104
 Kroop D. (EH-09) 110
 Krueger B. (CT-07) 69
 Krüger B. (AR-01) 16
 Krüger B. (BB-02) 27
 Krüger B. (BE-09) 33
 Krüger B. (BE-10) 33
 Krüger B. (FD-04) 131
 Kruglyak V.V. (EE-09) 105
 Kryder M.H. (CF-01) 57
 Krzyk S. (BB-08) 28
 Kuanr A.V. (AR-06) 17
 Kuanr A.V. (CS-01) 66
 Kuanr A.V. (DQ-09) 87
 Kuanr A.V. (GE-10) 161
 Kuanr B. (FE-04) 134
 Kuanr B.K. (AR-06) 17
 Kuanr B.K. (CS-01) 66
 Kuanr B.K. (DQ-09) 87
 Kuanr B.K. (GE-10) 161
 Kubel F. (AP-13) 14
 Kubota H. (ED-03) 103
 Kubota H. (ER-02) 115
 Kubota H. (GD-02) 158
 Kubota M. (EW-02) 125
 Kubota T. (AG-02) 11
 Kubotera H. (CC-02) 53
 Kudo K. (GD-09) 159
 Kudo T. (CR-14) 66
 Kuepferling M. (ER-07) 115
 Kuepferling M. (GD-10) 159
 Kulandaivel J. (AR-13) 18
 Kulemanov I.V. (BR-07) 43
 Kulkarni A. (EH-02) 109
 Kulkarni S. (CG-06) 59
 Kum J. (DF-02) 80
 Kum J. (FE-07) 134
 Kumar A. (FV-03) 150
 Kumar B. (CP-02) 61
 Kumar B. (EF-08) 107
 Kumar B. (FA-05) 126
 Kumar N. (FS-06) 146
 Kume W. (FF-05) 135
 Kuncser V. (DT-06) 94
 Kun-Tung W. (DG-07) 82
 Kuo C. (AV-05) 25
 Kuo C. (DQ-10) 87
 Kuo K. (BQ-17) 42
 Kuo K. (GG-03) 163
 Kuo M. (CT-06) 69
 Kuo M. (EU-06) 121
 Kuo P. (DP-03) 83
 Kurashina T. (AT-01) 21
 Kurlyandskaya G. (DF-01) 80
 Kurniawan W. (EF-10) 107
 Kuroda T. (CG-07) 60
 Kushibe A. (DS-10) 92
 Kustov M. (GA-04) 153
 Kusunoki T. (DR-06) 89
 Kuz'min M.D. (FB-07) 128
 Kwon B. (EV-04) 123
 Kwon H. (FE-07) 134
 Kwon H. (FV-06) 150
 Kwon J. (BV-07) 50
 Kwon J. (DR-14) 90
 Kwon S. (BV-12) 51
 Kwon S. (FW-12) 152
- ## L
- Labrune M. (AS-02) 19
 Lachaize S. (GB-04) 154
 Lacour D. (FD-05) 132
 Lacroix L. (GB-04) 154
 Lafferty B. (EQ-05) 113
 Lafferty B. (FG-03) 137
 Lagae L. (AF-12) 11

- Lagae L. (BB-03)27
 Lagae L. (ER-03)115
 Lagae L. (ER-12)116
 Lagae L. (ER-13)116
 Lagae L. (GD-03)158
 Laguna-Marco
 M.A. (BF-01)34
 Lai B. (FV-10)151
 Lai C. (AD-06)6
 Lai C. (AV-01)24
 Lai C. (BE-12)34
 Lai C. (BQ-15)42
 Lai C. (DP-12)85
 Lai C. (FG-08)138
 Lai M. (CV-06)72
 Lai Y. (AP-05)13
 Lai Y. (GG-03)163
 Lam V. (CU-03)70
 Lambertson R. (DB-04)75
 Lampasi D. (AV-12)25
 Lamsal J. (DU-08)95
 Lan Y. (GC-08)157
 Lan Z. (GE-05)160
 Landfester K. (GC-12)157
 Landis S. (BC-03)29
 Langer J. (BQ-08)41
 Laraoui A. (BB-03)27
 Larson R.S. (CB-04)52
 Lashgari K. (AF-11)11
 Latha B. (GC-06)157
 Laughlin D.E. (AD-05)6
 Laughlin D.E. (DP-10)84
 Laver M. (BG-02)36
 Laver M. (FB-02)127
 Lavers J. (CE-07)56
 Lavers J. (FR-03)144
 Lavers J. (FR-12)145
 Lavers J.D. (FR-01)143
 Law R. (AF-05)10
 Lazarovits B. (CE-09)57
 Lazarovits B. (FR-05)144
 le Fèvre A. (AC-06)4
 Le Graët C. (FG-05)137
 LeBlanc J. (BG-09)37
 Lee B. (BC-11)30
 Lee B. (CQ-02)63
 Lee B. (EC-04)101
 Lee B. (FW-12)152
 Lee C. (AR-10)18
 Lee C. (BD-04)31
 Lee C. (BP-08)38
 Lee C. (CC-11)54
 Lee C. (CS-03)67
 Lee C. (CT-02)69
 Lee C. (DQ-06)87
 Lee C. (DR-14)90
 Lee C. (ET-08)120
 Lee C. (FP-04)140
 Lee C. (FQ-12)143
 Lee C. (FS-05)146
 Lee D. (BC-11)30
 Lee D. (BU-09)48
 Lee D. (DU-02)94
 Lee D. (EV-10)124
 Lee D. (FF-09)136
 Lee D. (FV-07)150
 Lee D. (GE-03)160
 Lee D. (GE-08)161
 Lee H. (BD-04)31
 Lee H. (BD-06)31
 Lee H. (CP-01)60
 Lee H. (DP-10)84
 Lee H. (DP-10)84
 Lee H. (EH-01)109
 Lee H. (FS-04)146
 Lee I. (DV-09)97
 Lee I. (EU-11)122
 Lee J. (AR-10)18
 Lee J. (AU-04)23
 Lee J. (AV-06)25
 Lee J. (BD-04)31
 Lee J. (BE-05)33
 Lee J. (BP-05)38
 Lee J. (BV-04)50
 Lee J. (BV-06)50
 Lee J. (CD-01)54
 Lee J. (CG-02)59
 Lee J. (CG-02)59
 Lee J. (CS-03)67
 Lee J. (CS-05)67
 Lee J. (CT-02)69
 Lee J. (CU-08)71
 Lee J. (CW-03)73
 Lee J. (CW-04)73
 Lee J. (CW-10)74
 Lee J. (DF-02)80
 Lee J. (DF-02)80
 Lee J. (DP-08)84
 Lee J. (DP-12)85
 Lee J. (DQ-06)87
 Lee J. (DV-02)96
 Lee J. (DV-09)97
 Lee J. (DV-10)97
 Lee J. (EH-04)110
 Lee J. (EQ-06)113
 Lee J. (ET-07)120
 Lee J. (ET-08)120
 Lee J. (EV-05)123
 Lee J. (EV-12)124
 Lee J. (FE-07)134
 Lee J. (FP-05)140
 Lee J. (FQ-07)142
 Lee J. (FQ-08)142
 Lee J. (FR-07)144
 Lee J. (FT-07)148
 Lee J. (FW-12)152
 Lee J. (GG-05)164
 Lee K. (BD-04)31
 Lee K. (BD-06)31
 Lee K. (BT-02)46
 Lee K. (CS-03)67
 Lee K. (DQ-02)86
 Lee K. (ER-04)115
 Lee K. (FH-08)139
 Lee K. (FS-05)146
 Lee K. (GF-04)162
 Lee M. (BC-11)30
 Lee N. (BQ-14)41
 Lee S. (AS-03)19
 Lee S. (AS-12)20
 Lee S. (AS-13)20
 Lee S. (BQ-14)41

- Lee S. (BQ-14) 41
 Lee S. (BT-08) 47
 Lee S. (BV-06) 50
 Lee S. (BV-12) 51
 Lee S. (CV-02) 72
 Lee S. (DQ-04) 86
 Lee S. (ET-07) 120
 Lee S. (FQ-08) 142
 Lee S. (FQ-09) 142
 Lee S. (FQ-12) 143
 Lee S. (FT-03) 147
 Lee T. (AQ-09) 16
 Lee U. (BV-04) 50
 Lee W. (AB-08) 3
 Lee W. (AU-02) 23
 Lee W. (FQ-12) 143
 Lee Y. (CU-03) 70
 Lee Y. (FQ-10) 142
 Lehdorff R. (CT-01) 68
 Lei G. (FR-03) 144
 Lei G. (FR-12) 145
 Leifer K. (AB-07) 3
 Leighton C. (FB-02) 127
 Leitão D.P. (DQ-05) 86
 Lemaitre A. (FF-11) 136
 Lemarquand G. (CV-05) 72
 Leng Q. (DB-05) 76
 Leng Q. (DB-06) 76
 Leong S. (BC-08) 29
 Leong S. (CC-09) 54
 Leven B. (CS-05) 67
 Levron D. (DR-12) 90
 Lewis E.R. (BD-03) 31
 Lewis E.R. (EE-05) 105
 Li A. (DU-06) 95
 Li A. (FV-10) 151
 Li C. (CV-03) 72
 Li C. (DQ-01) 86
 Li C. (EP-12) 112
 Li C. (GC-07) 157
 Li D. (FV-10) 151
 Li F. (EW-04) 125
 Li G. (DQ-13) 88
 Li H. (CC-04) 53
 Li H. (CC-10) 54
 Li H. (EV-07) 123
 Li J. (CW-07) 74
 Li J. (DP-09) 84
 Li J. (FH-04) 139
 Li K. (AP-03) 13
 Li L. (DG-03) 81
 Li L. (EG-10) 109
 Li L. (GE-02) 160
 Li N. (CC-07) 53
 Li S. (BC-02) 29
 Li S. (BC-06) 29
 Li S. (BE-04) 33
 Li S. (BP-15) 39
 Li S. (BR-11) 44
 Li S. (FS-10) 146
 Li W. (BU-04) 48
 Li W. (DU-06) 95
 Li W. (DV-04) 96
 Li W. (EB-07) 100
 Li W. (EP-12) 112
 Li W. (FV-10) 151
 Li W. (GC-07) 157
 Li X. (AG-10) 12
 Li X. (AR-05) 17
 Li X. (CG-08) 60
 Li X. (CR-03) 65
 Li X.V. (AQ-08) 16
 Li Y. (AE-01) 7
 Li Y. (CV-07) 72
 Li Y. (DS-11) 92
 Li Y. (FH-07) 139
 Li Y. (FQ-04) 142
 Li Y. (FR-03) 144
 Li Y. (FS-10) 146
 Li Y. (GG-09) 164
 Li Z. (AF-12) 11
 Li Z. (EW-07) 125
 Liang K. (FW-08) 152
 Liang Y. (DG-03) 81
 Liao J. (AD-06) 6
 Liao J. (DP-09) 84
 Liao J. (DP-12) 85
 Liao L. (GA-05) 153
 Lidbaum H. (AB-07) 3
 Liebig A. (AB-07) 3
 Lim D. (EC-02) 101
 Lim I. (DB-06) 76
 Lim J. (CS-02) 66
 Lim J. (DT-02) 93
 Lim S. (BV-09) 50
 Lim S. (DR-04) 89
 Lin C. (AF-10) 11
 Lin C. (BQ-15) 42
 Lin C. (BQ-17) 42
 Lin C. (BQ-17) 42
 Lin C. (CS-09) 68
 Lin C. (DT-05) 94
 Lin C. (EU-02) 121
 Lin G. (DP-02) 83
 Lin G. (DU-10) 95
 Lin J. (BR-02) 43
 Lin J. (DQ-07) 87
 Lin J. (ES-01) 117
 Lin J. (EU-10) 122
 Lin K. (DP-01) 83
 Lin K. (EQ-03) 113
 Lin L. (FG-09) 138
 Lin M. (AD-06) 6
 Lin M. (AP-03) 13
 Lin M. (DP-12) 85
 Lin M. (DU-11) 96
 Lin M. (FA-05) 126
 Lin M. (FV-10) 151
 Lin W. (AV-05) 25
 Lin Y. (AR-12) 18
 Lin Z. (FT-05) 147
 Lin Z.W. (FP-02) 140
 Lin Z.W. (FP-07) 141
 Ling W. (CU-05) 71
 Ling W. (FS-10) 146
 Lingam K. (GE-10) 161
 Lingxiao X. (DS-16) 93
 Liou S. (FC-11) 130
 Litvinov D. (CQ-02) 63
 Litvinov D. (DQ-11) 87
 Litvinov D. (EC-04) 101
 Litvinov J. (DS-03) 91

- Liu B. (AC-05) 4
 Liu B. (BC-08) 29
 Liu B. (CD-03) 54
 Liu B. (CP-10) 62
 Liu C. (CV-06) 72
 Liu C. (CW-01) 73
 Liu C. (EV-07) 123
 Liu C. (FU-05) 148
 Liu C. (FW-01) 151
 Liu D. (CE-04) 56
 Liu D. (DV-11) 97
 Liu F. (CV-09) 72
 Liu F. (DE-07) 79
 Liu H. (AV-04) 24
 Liu H. (CF-04) 58
 Liu I. (AV-01) 24
 Liu J. (AP-07) 14
 Liu J. (AV-09) 25
 Liu J. (EG-01) 107
 Liu K. (AF-08) 10
 Liu K. (AU-03) 23
 Liu K. (DC-04) 76
 Liu K. (DQ-01) 86
 Liu K. (EE-02) 104
 Liu K. (GF-07) 163
 Liu L. (CV-06) 72
 Liu M. (BA-04) 26
 Liu M. (FE-02) 133
 Liu M. (FT-08) 148
 Liu M. (GE-04) 160
 Liu S. (EP-12) 112
 Liu S. (GC-07) 157
 Liu W. (EG-06) 108
 Liu W. (FQ-04) 142
 Liu W. (GG-09) 164
 Liu X. (BP-12) 38
 Liu X. (BR-11) 44
 Liu X. (DP-04) 83
 Liu X. (EA-03) 98
 Liu X. (EF-02) 106
 Liu X. (EG-04) 108
 Liu X. (EG-08) 108
 Liu X. (EV-02) 123
 Liu X. (FR-11) 145
 Liu Y. (AG-03) 12
 Liu Y. (CU-01) 70
 Liu Y. (DC-04) 76
 Liu Z. (BB-01) 27
 Liu Z. (BP-14) 39
 Liu Z. (DQ-01) 86
 Liu Z. (ES-10) 118
 Liu Z. (FH-04) 139
 Livshitz B. (BC-02) 29
 Livshitz B. (BC-06) 29
 Livshitz B. (BC-10) 30
 Livshitz B. (BE-03) 32
 Livshitz B. (BE-04) 33
 Llandro J. (EB-10) 100
 Lodder C. (AC-06) 4
 Lofland S. (FC-12) 130
 Loginova E. (DD-04) 78
 Lograsso T. (BG-03) 36
 Lograsso T.A. (BG-09) 37
 Lomakin V. (BC-02) 29
 Lomakin V. (BC-06) 29
 Lomakin V. (BC-10) 30
 Lomakin V. (BE-03) 32
 Lomakin V. (BE-04) 33
 Lomonova E. (AU-01) 23
 Lomonova E. (CV-01) 71
 Lomonova E.A. (FH-09) 139
 Long P. (DU-03) 95
 Lopez S.F. (BT-05) 47
 Lopez-Diaz L. (AS-14) 20
 Lou J. (BA-04) 26
 Lou J. (FT-08) 148
 Lou J. (GE-04) 160
 Loureiro J.F. (EB-08) 100
 Lovato D.M. (CB-04) 52
 Loya M. (CP-06) 61
 Lu H. (AF-03) 10
 Lu H. (BR-09) 44
 Lu J. (DV-04) 96
 Lu J. (GC-10) 157
 Lu Q. (EV-06) 123
 Lu S. (CS-09) 68
 Lu S. (DT-05) 94
 Lu S. (EU-02) 121
 Lu W. (AF-07) 10
 Lu W. (EQ-04) 113
 Lu Y. (FG-03) 137
 Lu Z. (AF-04) 10
 Lu Z. (BR-09) 44
 Ludwig F. (EB-01) 99
 Luk P. (FW-06) 152
 Luk P. (GG-10) 164
 Luo F. (BC-05) 29
 Luo P. (AC-05) 4
 Lupu N. (AG-04) 12
 Lupu N. (EE-08) 105
 Lyle A. (FD-09) 132
 Lyubina J. (FB-07) 128
 Lyubina J. (FB-08) 128
 Lyubina J. (GA-01) 153
- ### M
- Ma B. (BR-04) 43
 Ma B. (DP-13) 85
 Ma H. (EB-06) 100
 Ma M. (BQ-09) 41
 Ma Q. (BQ-11) 41
 Ma T. (AG-01) 11
 Ma T. (AP-10) 14
 Ma T. (BG-07) 36
 Ma X. (EF-02) 106
 Maass W. (BQ-08) 41
 Maat S. (EA-03) 98
 Magen C. (FB-11) 129
 Magiera M.P. (BE-07) 33
 Magnes W. (DA-04) 75
 Magni A. (AB-05) 3
 Mahato R.N. (DT-03) 93
 Mai K. (EF-08) 107
 Majetich S.A. (BC-07) 29
 Majetich S.A. (CP-02) 61
 Makarov D. (BC-04) 29
 Makeeva G.S. (EE-07) 105
 Maki T. (GB-07) 155
 Makino A. (AG-02) 11
 Malátek M. (CG-08) 60
 Malavé A. (AP-01) 13

- Malik S.K. (DT-03)93
 Malik S.K. (DU-08)95
 Malinowsky G. (FD-10)133
 Malkinski L.M. (AT-06)22
 Malkinski L.M. (DQ-08)87
 Malkinski L.M. (DQ-09)87
 Malkinski L.M. (DT-02)93
 Malmhall R. (ED-08)104
 Mamiya H. (CG-09)60
 Mancoff F. (GD-11)159
 Mancoff F.B. (CF-02)58
 Mandru I. (DT-06)94
 Manfrini M. (ER-03)115
 Manfrini M. (ER-12)116
 Mangin S. (AF-01)9
 Mangin S. (AF-02)10
 Mangin S. (CT-10)70
 Mangin S. (FD-05)132
 Mankey G. (AF-04)10
 Mann A. (BB-08)28
 Mano T. (DB-07)76
 Mano T. (EP-07)112
 Mano T. (GF-05)162
 Manzin A. (DE-01)78
 Mao M. (EG-09)109
 Mao S. (BP-15)39
 Mao S. (CD-08)55
 Mar'ci'c T. (EV-11)124
 Maranville B.B. (FB-02)127
 Marchon B. (CC-01)53
 Marchon B. (CC-05)53
 Marcus J. (FP-01)140
 Marinescu M. (EG-01)107
 Markandeyulu G. (EU-01)121
 Markandeyulu G. (FS-07)146
 Markou A. (AF-06)10
 Marson R. (CS-01)66
 Martens M. (FD-04)131
 Marti X. (DG-05)82
 Martí X. (EU-03)121
 Martin I. (AB-01)2
 Martin N. (BB-04)27
 Martinez E. (ER-10)116
 Marukame T. (FF-10)136
 Maruyama T. (AR-02)16
 Maruyama T. (ED-04)103
 Maruyama T. (FF-04)135
 Maruyama Y. (BP-16)39
 Marysko M. (GB-01)154
 Mascaraque A. (AR-04)17
 Mascaraque A. (DD-04)78
 Massicotte M. (EE-06)105
 Masuda M. (BD-07)31
 Masugata Y. (ED-04)103
 Masuko J. (ER-14)116
 Mather P.G. (CF-02)58
 Mathon O. (AB-05)3
 Matsubaguchi S. (DP-05)83
 Matsubara M. (ER-14)116
 Matsuda K. (BD-07)31
 Matsuda K. (BQ-13)41
 Matsuhashi D. (FH-01)138
 Matsui H. (EF-05)106
 Matsuki H. (CR-09)65
 Matsuki H. (DS-05)91
 Matsuki H. (DS-13)92
 Matsuki H. (FU-01)148
 Matsuki H. (GB-08)155
 Matsukura F. (AE-03)8
 Matsukura F. (BA-03)26
 Matsukura F. (CA-01)51
 Matsukura F. (FF-01)135
 Matsumoto A. (DP-05)83
 Matsumoto H. (BS-10)45
 Matsumoto R. (ED-03)103
 Matsumura S. (GB-08)155
 Matsunuma S. (AD-08)7
 Matsunuma S. (DP-06)84
 Matsunuma S. (DP-15)85
 Matsuoka H. (BR-11)44
 Matsuoka H. (FV-09)150
 Matsushita K. (ER-05)115
 Matsushita K. (GF-02)162
 Matsuu T. (AD-08)7
 Matsuu T. (DP-06)84
 Matsuu T. (DP-15)85
 Matsuura A. (AU-05)23
 Matsuyama K. (EC-07)102
 Matsuzoe Y. (CR-14)66
 Mattei J. (BF-09)35
 Mattern N. (FB-09)128
 Mattheis R. (BB-04)27
 Mattheis R. (BD-02)30
 Mattheis R. (BD-11)32
 Mattheis R. (ET-09)120
 Matzumoto R. (ER-02)115
 Mauri D. (CF-03)58
 Mauri D. (GD-05)158
 Mayergoz I. (EH-09)110
 Mayergoz I. (FD-06)132
 Mayergoz I.D. (BE-01)32
 Mayergoz I.D. (BF-03)34
 Mayergoz I.D. (DE-02)79
 Mayergoz I.D. (FD-07)132
 Mazauric V.G. (GG-11)164
 Maziewski A. (BS-02)44
 Mazo-Zuluaga J. (FG-10)138
 Mc Cord J. (AF-01)9
 McAvoy P. (EH-09)110
 McCartney M.R. (AB-03)3
 McCarty K.F. (DD-04)78
 McClelland G. (DP-07)84
 McClelland G. (DP-16)85
 McCord J. (AP-05)13
 McCord J. (BB-04)27
 McDaniel T.W. (AD-04)6
 McGuinness P.J. (EG-02)108
 McGuinness P.J. (FB-09)128
 McMichael R.D. (AT-05)22
 McQueeney R. (BG-03)36
 Meena R.S. (EP-11)112
 Meere R.T. (CG-06)59
 Meessen K.J. (FH-09)139
 Meguro S. (FP-06)141
 Meguro T. (ED-05)103
 Mehmood N. (AP-13)14
 Mei Z. (GG-07)164
 Meier G. (AA-02)1
 Meier G. (AR-01)16
 Meier G. (BB-02)27
 Meier G. (BE-10)33
 Meier G. (FD-04)131

- Mejía-López J. (FG-10)138
 Melikhov Y. (DE-06)79
 Melikhov Y. (EU-04)121
 Melikhov Y. (FB-10)128
 Melikhov Y. (FU-08)149
 Melkov G.A. (CG-03)59
 Melkov G.A. (FE-01)133
 Meloy R. (BG-06)36
 Men H. (AG-02)11
 Ménard D. (EE-03)105
 Ménard D. (EE-06)105
 Mendez H. (BP-15)39
 Mendonça T.M. (ES-13)118
 Meng F. (DF-06)80
 Meng F. (DG-03)81
 Meng F. (GE-02)160
 Meng H. (AC-05)4
 Meng H. (GC-10)157
 Meng W. (GG-06)164
 Meng Y. (CC-07)53
 Merayo J. (DA-03)75
 Merkt U. (AR-01)16
 Merkt U. (BE-09)33
 Merkt U. (BE-10)33
 Mertens R. (AF-12)11
 Mesler B.L. (FP-03)140
 Messner W.C. (EF-03)106
 Metlushko V. (AC-12)5
 Meyners D. (AP-01)13
 Miard A. (FF-11)136
 Michel J. (GD-05)158
 Mihajlovic G. (CA-03)51
 Mikami H. (BF-08)35
 Miles J.J. (CP-08)62
 Miles J.J. (DQ-03)86
 Miles J.J. (FA-05)126
 Miller C.W. (FF-07)136
 Miloslavsky L. (DB-06)76
 Min J. (AV-06)25
 Min T. (ED-02)103
 Mina M. (CG-04)59
 Mina M. (EP-06)112
 Ming C. (FW-07)152
 Miron I. (AA-06)2
 Mishima C. (FV-09)150
 Mishra S.R. (CS-01)66
 Mishra S.R. (GE-10)161
 Misra D. (AV-08)25
 Missell F.P. (EG-05)108
 Mita S. (EF-01)106
 Mita S. (EF-05)106
 Mitani S. (FB-05)128
 Mitarai H. (FV-09)150
 Mito S. (EP-07)112
 Mitra A. (CP-15)62
 Mitrelias T. (EB-10)100
 Mitsuhashi H. (DP-14)85
 Mitsumata C. (DR-05)89
 Mitsuya Y. (EW-01)124
 Mittal A. (EB-03)99
 Miura K. (AE-03)8
 Miura K. (CD-05)55
 Miura K. (ED-05)103
 Miura K. (FF-01)135
 Miura S. (ET-05)119
 Miura Y. (AE-11)9
 Miura Y. (AT-01)21
 Miura Y. (FT-01)147
 Miwa M. (FQ-06)142
 Miyagawa H. (BB-07)28
 Miyagi D. (CQ-06)63
 Miyagi D. (EU-12)122
 Miyajima H. (GE-09)161
 Miyajima T. (BQ-01)39
 Miyajima T. (BQ-06)40
 Miyake K. (ER-01)114
 Miyake K. (GF-05)162
 Miyamoto H. (BP-16)39
 Miyamoto N. (FF-02)135
 Miyazaki H. (DV-12)97
 Miyazawa T. (DP-11)84
 Miyazawa T. (EP-03)111
 Mizuguchi T. (CR-07)65
 Mizuno T. (CR-07)65
 Mizusaki S. (DU-01)94
 Mizushima K. (GD-09)159
 Mizutani N. (DS-01)90
 Mizutani T. (AB-04)3
 Mo N. (EH-11)111
 Mochizuki H. (EP-01)111
 Moeller D. (CT-07)69
 Mohamed B. (CU-07)71
 Mohri K. (GB-07)155
 Möller D. (BE-10)33
 Mönch I. (BB-04)27
 Monreal G. (DR-13)90
 Monson T.C. (CB-04)52
 Montaigne F. (AE-05)8
 Montaigne F. (AF-01)9
 Moolekamp F.E. (EP-05)112
 Moon K. (DU-05)95
 Moon K. (ET-11)120
 Moon K. (FP-05)140
 Moon S. (EU-11)122
 Moore J. (FC-03)129
 Moore T. (AA-06)2
 Morais P.C. (CS-08)67
 Morales M. (AV-02)24
 Morales M. (FB-06)128
 Morales M.B. (GC-06)157
 Moreland J. (FC-11)130
 Morellon L. (FB-11)129
 Morimoto Y. (FV-08)150
 Morisako A. (BR-11)44
 Morisako A. (EG-04)108
 Morisako A. (EG-08)108
 Moriya H. (FR-09)144
 Moriya R. (ED-02)103
 Moriyama T. (FD-02)131
 Morley N.A. (BG-04)36
 Mornet S. (GB-01)154
 Morris M.A. (GC-01)156
 Morton S. (ET-13)120
 Moser A. (EE-04)105
 Moses A.J. (EU-04)121
 Moses A.J. (FQ-01)141
 Moses A.J. (FT-06)147
 Motohashi K. (DP-16)85
 Motoi K. (GE-09)161
 Motta C.C. (FV-05)150
 Moutafis C. (BB-06)28
 Movshovich R. (AB-01)2

- Mryasov O. (CS-10)68
 Mryasov O.N. (EA-02)98
 Msaed A. (GA-04)153
 Mu C. (CU-05)71
 Mu C. (EU-05)121
 Mücklich F. (GE-06)161
 Mudivarthi C. (BG-02)36
 Muduli P. (GD-11)159
 Muduli P.K. (GD-04)158
 Mueller R. (CR-12)66
 Muenzenberg M. (BQ-05)40
 Muenzenberg M.G. (AE-09)9
 Muenzenberg M.G. (BB-08)28
 Muenzenberg M.G. (GF-06)162
 Mugnaioli E. (DT-01)93
 Mukai R. (AD-01)6
 Mukovskii Y.M. (ES-03)117
 Muller D.A. (AE-01)7
 Münzenberg M. (AE-08)9
 Murakami A. (DR-03)88
 Murakami H. (ET-10)120
 Murakami K. (GC-11)157
 Murakami M. (CR-04)65
 Muramatsu K. (AU-05)23
 Muramatsu K. (DS-10)92
 Muramatsu K. (EH-08)110
 Muramatsu K. (FH-01)138
 Muraoka H. (BP-13)39
 Muraoka H. (CD-05)55
 Muraoka H. (DC-08)77
 Muraoka H. (EF-04)106
 Muraoka H. (FA-03)126
 Murata T. (AU-07)24
 Murata Y. (DP-05)83
 Murmann B. (EB-09)100
 Muroga S. (FT-02)147
 Murooka Y. (AE-07)8
 Murphy N. (DA-02)75
 Musha A. (DP-05)83
 Mutoh H. (FA-01)126
 Myint L.M. (BP-07)38
- N**
- Na S. (AP-14)15
 Na S.M. (BG-05)36
 Nabavi S. (CP-02)61
 Nabavi S. (EF-03)106
 Nagahama T. (ED-03)103
 Nagahara K. (BD-05)31
 Nagano I. (GB-03)154
 Nagasaka K. (EA-01)98
 Nagasawa T. (GD-09)159
 Nagata Y. (DU-01)94
 Nagato K. (AC-07)5
 Nahid A.I. (DD-06)78
 Najafi M. (BE-09)33
 Najafi M. (BE-10)33
 Najafi M. (CT-07)69
 Nakagawa H. (CD-04)55
 Nakagawa S. (AD-08)7
 Nakagawa S. (AD-12)7
 Nakagawa S. (DP-06)84
 Nakagawa S. (DP-15)85
 Nakagawa S. (FF-02)135
 Nakagawa T. (CB-03)52
- Nakagawa T. (EG-03)108
 Nakagawa T. (GC-05)156
 Nakai T. (DF-04)80
 Nakamoto K. (AD-02)6
 Nakamoto K. (CD-04)55
 Nakamoto K. (DC-03)76
 Nakamura K. (EH-06)110
 Nakamura S. (BA-06)27
 Nakamura T. (ER-01)114
 Nakamura Y. (EF-04)106
 Nakamura Y. (GB-07)155
 Nakane R. (ES-08)118
 Nakano M. (BT-03)46
 Nakano M. (CQ-06)63
 Nakano M. (DU-07)95
 Nakano M. (EU-12)122
 Nakao M. (AC-07)5
 Nakatani R. (DD-05)78
 Nakatani T. (DD-05)78
 Nakatani T. (EA-05)99
 Nakatani Y. (AA-05)2
 Nakatani Y. (AS-10)20
 Nakatani Y. (BA-03)26
 Nakatani Y. (BE-11)34
 Nakatani Y. (BP-18)39
 Nakatani Y. (ET-12)120
 Nakayama H. (CU-02)70
 Nakazawa M. (BP-01)37
 Nam B. (CR-11)66
 Nam B. (FT-03)147
 Nam H. (BP-08)38
 Nam H. (FH-08)139
 Nam I. (DF-02)80
 Nam I. (DR-03)88
 Nam J. (EU-09)122
 Nam K. (ET-07)120
 Nam N. (AF-07)10
 Narayanan V. (BF-05)35
 Naresh M. (EB-03)99
 Narita N. (EC-07)102
 Nasrullah A. (DS-03)91
 Natali M. (ES-11)118
 Nayak A. (EF-07)107
 Nazaretski E. (AB-01)2
 Nealey P.F. (BC-09)30
 Negi R. (FA-05)126
 Nembach H. (ER-07)115
 Nembach H. (GD-10)159
 Nembach H.T. (EC-11)102
 Nemoto H. (EC-01)101
 Nenkov K. (FB-07)128
 Neumann T. (FE-05)134
 Neumann T.M. (FE-08)134
 Ng V. (BR-06)43
 Ng V. (CC-09)54
 Ng Y. (CP-09)62
 Ngoc Nguyen M. (AA-04)2
 Nguyen E. (GB-11)155
 Nguyen H.M. (AS-04)19
 Nguyen N.T. (EQ-04)113
 Nguyen T.D. (FB-06)128
 Niarchos D. (BB-07)28
 Niayesh K. (EP-08)112
 Nie Y. (AR-06)17
 Niemann R. (AP-04)13
 Nigam A.K. (DT-03)93

- Niitsu K. (CG-07) 60
 Niizeki T. (BQ-12) 41
 Nikitin S.A. (FV-04) 150
 Nikolaev K. (EA-02) 98
 Nikolic B.K. (FD-02) 131
 Nimori S. (EG-12) 109
 Ning N. (AG-10) 12
 Ning N. (CR-03) 65
 Nirmala R. (DT-03) 93
 Nishimura K. (CV-08) 72
 Nishitani Y. (BA-03) 26
 Nishiyama T. (DD-07) 78
 Nistor C. (EC-10) 102
 Nistor L.E. (AE-10) 9
 Niu D. (AC-08) 5
 Niu D. (DQ-12) 88
 Niu S. (BU-02) 48
 Nlebedim I. (AP-11) 14
 Nlebedim I.C. (EU-04) 121
 Noguchi H. (DP-07) 84
 Noguchi H. (EF-09) 107
 Noguchi K. (FV-09) 150
 Noguchi S. (AT-01) 21
 Noguchi S. (AV-13) 26
 Noguchi S. (BF-08) 35
 Noh M. (CU-04) 71
 Nojima T. (BA-06) 27
 Noma K. (BQ-06) 40
 Noma K. (DB-03) 75
 Nonaka T. (CR-09) 65
 Noro Y. (DU-01) 94
 Novak V. (CA-02) 51
 Novitski N. (AR-03) 17
 Novosad V. (DS-04) 91
 Nowak J.J. (ED-02) 103
 Nowak U. (BE-07) 33
 Nowak U. (CE-09) 57
 Nowak U. (CE-10) 57
 Nowak U. (EC-06) 101
 Nozaki T. (AR-02) 16
 Nozaki T. (ED-04) 103
 Nozaki T. (FF-04) 135
 Nozaki Y. (EC-07) 102
 Nozière J. (BD-09) 31
 Nozières J.P. (CF-06) 58
 Nussbaumer T. (GG-01) 163
 Nussbaumer T. (GG-02) 163
 Nutter P.W. (DQ-03) 86
- O**
- O'Brien D.T. (GA-04) 153
 O'Brien L.A. (BD-03) 31
 O'Brien L.A. (EE-05) 105
 O'Connor C. (AV-04) 24
 O'Connor C.J. (EB-06) 100
 O'Donnell T. (AR-07) 17
 O'Donnell T. (CG-06) 59
 O'Grady K. (EQ-05) 113
 O'Grady K. (FG-03) 137
 O'Mathuna S. (CG-06) 59
 O'Sullivan E.J. (ED-02) 103
 Obermeier E. (EF-10) 107
 Obi O. (BA-04) 26
 Obi O. (GE-04) 160
 Obi Y. (FE-02) 133
 Obol M. (BF-07) 35
 Ocker B. (BQ-08) 41
 Oda T. (GB-03) 154
 OELCER S. (EF-06) 106
 Ogasawara H. (BT-03) 46
 Ogasawara S. (BU-06) 48
 Ogata Y. (AD-12) 7
 Ogata Y. (FU-02) 148
 Oguz K. (AQ-06) 15
 Oguz K. (BQ-12) 41
 Oh H. (DP-10) 84
 Oh H. (EC-02) 101
 Oh S. (AS-11) 20
 Oh S. (AS-12) 20
 Oh S. (DB-05) 76
 Oh S. (DB-06) 76
 Oh S. (DR-11) 89
 Oh S. (EQ-07) 114
 Oh S. (ET-07) 120
 Oh S. (FC-09) 130
 Oh S. (FT-03) 147
 Oh Y. (CP-06) 61
 Oh Y. (CP-07) 61
 Ohashi S. (BU-03) 48
 Ohinata T. (EH-06) 110
 Ohkohchi N. (GB-03) 154
 Ohkubo T. (AE-02) 8
 Ohmi T. (DG-06) 82
 Ohmori H. (CT-05) 69
 Ohmori H. (FF-02) 135
 Ohnishi T. (DU-01) 94
 Ohno H. (AE-02) 8
 Ohno H. (AE-03) 8
 Ohno H. (BA-03) 26
 Ohno H. (CA-01) 51
 Ohno H. (ED-05) 103
 Ohno H. (ED-06) 103
 Ohno H. (FD-01) 131
 Ohno H. (FF-01) 135
 Ohsaki H. (DS-12) 92
 Ohshima N. (AA-05) 2
 Ohshima N. (BD-05) 31
 Ohta M. (EC-07) 102
 Ohtake M. (DD-07) 78
 Ohtani T. (FC-04) 129
 Ohtomo A. (BA-06) 27
 Ohtomo Y. (GB-10) 155
 Ohwaki T. (DP-14) 85
 Ohyama H. (BQ-17) 42
 Oka H. (AB-02) 2
 Oka H. (FS-01) 145
 Oka H. (GC-03) 156
 Okada H. (AV-13) 26
 Okada Y. (DR-05) 89
 Okamoto S. (BS-10) 45
 Okamoto Y. (EF-04) 106
 Okamura S. (DB-02) 75
 Okanuma S. (FU-02) 148
 Okigawa Y. (AB-04) 3
 Okitsu T. (FH-01) 138
 Okubo K. (FE-10) 134
 Okuyama H. (AE-07) 8
 Ölçer S. (EF-09) 107
 Olivetti E. (AB-05) 3
 Olivetti E.S. (AC-11) 5
 Olson T. (CC-01) 53

- Ong C. (CP-10)62
 Ono H. (BF-12)35
 Ono H. (DP-16)85
 Ono K. (CC-03)53
 Ono K. (CC-06)53
 Ono T. (AA-05)2
 Ono T. (ET-12)120
 Onodera S. (DP-16)85
 Oogane M. (DD-06)78
 Oppeneer P.M. (AB-07)3
 Oral A. (CQ-03)63
 Orlov A.F. (BR-07)43
 Orlyanchik V. (FB-02)127
 Ortega L. (AR-03)17
 Ortega L. (FP-01)140
 Osaka T. (AD-11)7
 Osawa H. (EF-04)106
 Oshima H. (EA-01)98
 Osorio E. (GC-02)156
 Osterfeld S. (EB-09)100
 Osterfeld S.J. (EB-02)99
 Ostrowski M. (CD-11)55
 Otani Y. (AE-07)8
 Otani Y. (BB-05)28
 Otani Y. (FP-06)141
 Otome D. (CQ-06)63
 Otsuka I. (BS-08)45
 Otsuka T. (GF-05)162
 Ou C. (DP-02)83
 Ou C. (DU-10)95
 Ou J. (EH-01)109
 Ou N. (DD-03)77
 Ou Y. (GC-09)157
 Ouchi K. (CP-12)62
 Ouchi T. (CP-15)62
 Ouellette D. (GE-08)161
 Ouyang H. (DP-01)83
 Ouyang H. (EQ-03)113
 Óvári T. (BS-03)45
 Óvári T. (BS-04)45
 Oyama D. (AU-07)24
 Ozatay O. (EE-04)105
 Ozatay O. (GD-05)158
 Ozawa T. (GB-10)155

P

- Pakala M. (DB-05)76
 Pakala M. (DB-06)76
 Pakala M. (EG-09)109
 Pal A. (EP-11)112
 Pal S. (AV-02)24
 Palade P. (DT-06)94
 Palfreyman J.J. (EB-10)100
 Pan T. (BP-15)39
 Pan W. (DU-06)95
 Pan W. (FV-10)151
 Pan Y. (AB-09)3
 Panagiotopoulos I. (AF-06)10
 Pang D. (FQ-05)142
 Pang X. (EB-06)100
 Panina L. (GE-01)160
 Pankov V. (AR-03)17
 Pankratov N. (GE-01)160
 Pankratov N.Y. (FV-04)150
 Pannetier-Lecoeur
 M. (EB-08)100
 Pape F. (EF-10)107
 Paperno E. (DR-12)90
 Pappas D.P. (FC-11)130
 Papusoi C. (CF-07)58
 Pardavi-Horvath
 M. (EE-07)105
 Park B. (AV-10)25
 Park B. (CA-02)51
 Park B. (GG-05)164
 Park C. (DB-05)76
 Park C. (DB-06)76
 Park D. (CQ-08)64
 Park D. (DR-08)89
 Park G. (CR-13)66
 Park G. (DR-09)89
 Park G. (FR-04)144
 Park I. (AS-03)19
 Park I. (FR-04)144
 Park J. (AB-08)3
 Park J. (AE-03)8
 Park J. (BS-09)45
 Park J. (BV-09)50
 Park J. (CU-03)70
 Park J. (EV-09)124
 Park J. (FF-01)135
 Park K. (BV-09)50
 Park M. (FD-09)132
 Park N. (BV-09)50
 Park S. (AA-04)2
 Park S. (AU-02)23
 Park S. (CG-02)59
 Park S. (CS-04)67
 Park S. (DC-07)77
 Park S. (DF-02)80
 Park S. (DS-02)90
 Park S. (FE-07)134
 Park Y. (BV-09)50
 Park Y. (CG-10)60
 Park Y. (CG-11)60
 Park Y. (CU-04)71
 Park Y. (FF-12)136
 Park Y. (FQ-08)142
 Park Y. (FQ-10)142
 Park Y. (FQ-12)143
 Parkhomenko Y.N. (BR-07)43
 Parkin S. (AA-01)1
 Parkin S. (ED-02)103
 Pascarelli S. (AB-05)3
 Pascarelli S. (BG-01)36
 Pashkevich M. (AR-03)17
 Pasquale M. (AB-05)3
 Pasquale M. (ER-07)115
 Pasquale M. (GD-10)159
 Pasricha R. (FV-03)150
 Pastushenkov Y.G. (FB-08)128
 Pastushenkov Y.G. (FV-04)150
 Patel R.S. (FF-08)136
 Pathak A.K. (EQ-02)113
 Patron L. (DT-06)94
 Patton C.E. (EH-11)111
 Paul W.I. (AP-11)14
 Paulides J. (AU-01)23
 Paulides J.J. (FH-09)139
 Pavel M. (DS-06)91
 Payne R. (EE-04)105
 Pearson J.E. (CA-03)51

- Pecharsky V.K. (GA-03)153
 Pei W. (CP-14)62
 Peiró F. (EU-03)121
 Peiró F. (FB-03)127
 Peixoto T.R. (EG-05)108
 Pelekhov D.V. (AB-01)2
 Peng H. (GE-01)160
 Peng X. (CD-11)55
 Pereira A.M. (CS-06)67
 Pereira A.M. (FB-11)129
 Pereira C. (CS-06)67
 Pereira E. (CS-06)67
 Périgo E.A. (FV-05)150
 Pernechele C. (ES-11)118
 Perov N.S. (BR-07)43
 Persson J. (AC-01)4
 Persson J. (AF-08)10
 Persson J. (GF-03)162
 Petculescu G. (BG-09)37
 Petit D. (BD-03)31
 Petit D. (EE-05)105
 Petkov N. (GC-01)156
 Petrilá I. (DE-05)79
 Pfahler C. (BC-04)29
 Pfannkuche D. (AR-01)16
 Pfannkuche D. (BE-09)33
 Pfannkuche D. (BE-10)33
 Pfannkuche D. (CT-07)69
 Pham H. (CF-09)58
 Pham H. (CS-02)66
 Phan M. (AV-02)24
 Phan M. (FB-06)128
 Phan M.H. (GC-06)157
 Phang J. (CC-09)54
 Phung T.Q. (FB-06)128
 Pi W. (DR-03)88
 Pi'sek P. (EV-11)124
 Piao H. (AS-12)20
 Pihler J. (CW-06)73
 Ping J. (BV-11)50
 Pinho M. (CV-05)72
 Piramanayagam S. (AD-07)6
 Piramanayagam S. (AF-05)10
 Piramanayagam S. (CP-11)62
 Pirota K.R. (DQ-05)86
 Pirota K.R. (EE-03)105
 Pizzini S. (AA-06)2
 Plaindoux P. (FP-01)140
 Plamada A. (ET-02)119
 Pleite J. (BF-11)35
 Plettl A. (BC-04)29
 Plumer M. (BE-08)33
 Podmiljsak B. (FB-09)128
 Pogossian S.P. (FG-05)137
 Pollert E. (GB-01)154
 Polte M. (FA-06)127
 Ponnavaikko M. (AR-13)18
 Poon C. (EC-01)101
 Popa V. (FT-04)147
 Portemont C. (CF-06)58
 Postolache P. (DE-05)79
 Pourmand N. (GB-11)155
 Prasad S. (BF-05)35
 Prejbeanu I.L. (CF-06)58
 Prenat G. (XA-02)1
 Primdahl F. (DA-03)75
 Psuj G. (CQ-09)64
 Pu Y. (CA-01)51
 Pufall M.R. (ER-07)115
 Pufall M.R. (GD-10)159
 Puliafito V. (ER-11)116
 Pusch D. (FR-06)144
 Pwint N. (BA-04)26
 Pyo S. (EV-10)124
- ## Q
- Qian W. (CV-07)72
 Qian W. (GG-07)164
 Qiang Y. (EG-06)108
 Qin F. (GE-01)160
 Qiu J. (AC-05)4
 Qiu J. (DV-11)97
 Qiu J. (FT-05)147
 Qiu X. (BR-04)43
 Quandt E. (AP-01)13
 Quandt E. (EH-02)109
 Quandt E. (FC-07)130
 Quaresma P. (CS-06)67
 Queffélec P. (BF-09)35
- ## R
- R N. (DU-08)95
 Radhakrishnan R. (BP-02)37
 Raghunathan A. (DE-06)79
 Raghunathan S. (FF-09)136
 Ragusa C. (AS-05)19
 Rajagopal K. (CW-12)74
 Rajagopal K. (FU-03)148
 Rajanikanth A. (BQ-16)42
 Rajh T. (DS-04)91
 Ralph D.C. (CF-03)58
 Ram S. (ES-04)117
 Ramana V. (DG-08)82
 Ramanathan K. (BF-05)35
 Ramaswamy S. (AR-13)18
 Ramaswamy S. (FS-08)146
 Ramesh Kumar K. (FS-07)146
 Ramesh R. (BA-01)26
 Ramos A. (AR-03)17
 Ramos A. (FP-01)140
 Rana P. (DB-05)76
 Ranjan R. (ED-08)104
 Rantschler J.O. (DQ-11)87
 Ranvah N. (AP-11)14
 Ranvah N. (EU-04)121
 Rao S.S. (FS-03)145
 Ravaud R. (CV-05)72
 Ravelosona D. (AA-04)2
 Ravelosona D. (CT-10)70
 Ravelosona D. (FD-05)132
 Rawlings M. (GA-02)153
 Ray B. (FU-04)148
 Read D.E. (BD-03)31
 Read D.E. (EE-05)105
 Read J.C. (AE-01)7
 Rebei A. (CE-10)57
 Reboh S. (EG-05)108
 Reed D. (BA-04)26
 Reed D. (FT-08)148
 Reichert T. (GG-01)163

- Reis M.S. (ES-13)118
 Reiss G. (AE-08) 9
 Reiss G. (AE-09) 9
 Reiss G. (BQ-05) 40
 Rejaei B. (GE-03)160
 Rellinghaus B. (GA-01)153
 Ren Y. (BR-05) 43
 Renaud P. (FF-06)136
 Rengasamy A.R. (BT-07) 47
 Repetto M. (AS-05) 19
 Respaud M. (FF-06)136
 Respaud M. (GB-04)154
 Restorff J. (BG-03) 36
 Restorff J. (BG-06) 36
 Restorff J.B. (AP-08) 14
 Restorff J.B. (BG-05) 36
 Restorff J.B. (BG-09) 37
 Restrepo J. (FG-10)138
 Reyne G. (GA-04)153
 Rhee J. (BQ-14) 41
 Rhee J. (EQ-08)114
 Rhensius J. (ED-10)104
 Rhensius J. (FD-10)133
 Rho K. (AU-04) 23
 Rice P.M. (CF-03) 58
 Richter K. (AG-08) 12
 Richter M. (FB-07)128
 Rigato F. (EU-03)121
 Ripka P. (CG-08) 60
 Ripka P. (CR-01) 64
 Ripka P. (CR-05) 65
 Ripka P. (FC-05)129
 Rippard W.H. (ER-07)115
 Rippard W.H. (GD-10)159
 Risso A. (BP-03) 37
 Ritchie D.A. (AQ-10) 16
 Rivadulla F. (EB-08)100
 Rivas J. (EB-08)100
 Rivkin K. (AS-07) 20
 Rizzo N.D. (CF-02) 58
 Roberts H. (DE-03) 79
 Robertson N. (EC-01)101
 Robertson P.A. (EB-10)100
 Rodary G. (AB-02) 2
 Rodary G. (FS-01)145
 Rodary G. (GC-03)156
 Rodmacq B. (AA-06) 2
 Rodmacq B. (AE-10) 9
 Rodmacq B. (BC-03) 29
 Rodmacq B. (FP-01)140
 Rodwell M. (GE-08)161
 Rogalev A. (BR-07) 43
 Rogers M. (BE-08) 33
 Rogosky M. (CF-04) 58
 Rosa W.O. (AC-09) 5
 Ross C.A. (BB-07) 28
 Roussigné Y. (AS-02) 19
 Rovers H. (CV-01) 71
 Roy A.G. (EG-09)109
 Roy S. (AR-07) 17
 Roy S.K. (ES-04)117
 Rozenberg E. (ES-03)117
 Rubi M. (FD-08)132
 Ruchhoeft P. (DQ-11) 87
 Ruchhoeft P. (DS-03) 91
 Rudd R. (AP-12) 14
 Rudge J. (BB-07) 28
 Rudge J. (DD-02) 77
 Rüdiger U. (AF-09) 11
 Rüdiger U. (ED-10)104
 Rüdiger U. (FD-10)133
 Ruehrig M. (FG-01)137
 Ruffoni M.P. (AB-05) 3
 Ruffoni M.P. (BG-01) 36
 Rührig M. (AP-01) 13
 Ruiz R. (BC-09) 30
 Ruotolo A. (FD-03)131
 Russek S.E. (FC-11)130
 Ruzs J. (AB-07) 3
 Ryan W. (FA-04)126
 Ryu K. (FS-04)146
- ### S
- S.Ananda K. (DR-11) 89
 Saalfeld H. (EF-10)107
 Sablik M.J. (AP-09) 14
 Sahashi M. (AR-09) 17
 Sahashi M. (DB-07) 76
 Sahashi M. (ER-01)114
 Sahashi M. (GF-05)162
 Sahoo S.C. (BF-05) 35
 Saitho S. (ET-05)119
 Saitner M. (BC-04) 29
 Saito H. (CQ-04) 63
 Saito H. (DP-11) 84
 Saito T. (AU-06) 23
 Saito T. (AU-08) 24
 Saito Y. (FF-10)136
 Saito Y. (FS-09)146
 Saito Y. (GD-09)159
 Saitoh E. (CA-04) 51
 Sakai T. (AT-08) 22
 Sakamoto K. (EH-06)110
 Sakamoto K. (EW-02)125
 Sakamoto Y. (FQ-02)141
 Sakane Y. (AC-07) 5
 Sakuma A. (FR-09)144
 Sakurai K. (CR-08) 65
 Sakurai Y. (DU-01) 94
 Salas R. (BF-11) 35
 Salmon J. (EH-07)110
 Sam B. (DS-04) 91
 Samata H. (DU-01) 94
 Sampaio J. (BD-03) 31
 Sampaio J. (EE-05)105
 Sanchez F. (DG-05) 82
 Sanchez F. (ES-02)117
 Sanchez F. (EU-03)121
 Sanchez F. (FB-03)127
 Sander D. (AB-02) 2
 Sander D. (FS-01)145
 Sander D. (GC-03)156
 Sandhu A. (CS-04) 67
 Sandhu A. (DS-02) 90
 Sankaranarayanan V. (DT-03) 93
 Sant A. (CW-12) 74
 Sant A. (FU-03)148
 Santoni A. (DD-02) 77
 Santos B. (AR-04) 17
 Santos B. (DD-04) 78
 Santos C.T. (BG-10) 37

- Sanyal B. (AF-11)11
 Sapelkin A. (BR-07) 43
 Saraikin V.V. (BR-07) 43
 Sarangi S. (EP-13)112
 Saraswat K. (FF-09)136
 Sarella A. (CS-12)68
 Sarella A. (EQ-07)114
 Sarella A. (FC-09)130
 Sasada I. (CR-04)65
 Sasada I. (FC-02)129
 Sasakawa T. (FQ-02)141
 Sasaki H. (AU-05)23
 Sasaki R. (ED-05)103
 Sasaki Y. (DP-14)85
 Sasayama K. (DR-01)88
 Sassik H. (AP-13)14
 Sasso C.P. (AB-05)3
 Sato A. (BT-03)46
 Sato F. (CR-09)65
 Sato F. (DS-05)91
 Sato F. (DS-13)92
 Sato H. (GB-08)155
 Sato J. (ER-05)115
 Sato J. (GF-02)162
 Sato M. (BQ-01)39
 Sato M. (BQ-02)40
 Sato M. (ER-14)116
 Sato R. (GD-09)159
 Sato T. (AS-10)20
 Sato T. (AT-01)21
 Sato T. (BE-11)34
 Sato T. (BS-07)45
 Sato T. (CR-09)65
 Sato T. (DP-16)85
 Sato T. (DS-05)91
 Sato T. (DS-13)92
 Sato T. (FT-01)147
 Sato T. (FU-01)148
 Sato T. (GB-08)155
 Sato T. (GB-09)155
 Sato Turtelli R. (AP-13)14
 Sato Y. (BV-08)50
 Sato Y. (DB-02)75
 Sawada K. (AR-09)17
 Sawada K. (BD-07)31
 Sawicki M. (BA-03)26
 Sbiaa R. (AD-07)6
 Sbiaa R. (AF-05)10
 Sbiaa R. (CP-11)62
 Schabes M.E. (AD-03)6
 Schaefers M. (BQ-05)40
 Schebaum O. (AE-08)9
 Schedin F. (DQ-03)86
 Scheerbaum N. (AP-06)14
 Scheerbaum N. (AP-07)14
 Schelp L.F. (BS-01)44
 Scherer II D.J. (DQ-08)87
 Scherzinger M. (BD-11)32
 Schilling M. (EB-01)99
 Schilling P. (DT-02)93
 Schmalhorst J. (AE-08)9
 Schmid A.K. (AR-04)17
 Schmid A.K. (DD-04)78
 Schmidt H. (BB-01)27
 Schmidt H. (DQ-01)86
 Schmool D. (CS-06)67
 Schneider C.M. (CT-01)68
 Schneider H. (GF-08)163
 Schneider M. (EC-11)102
 Schneider R. (AF-09)11
 Scholl A. (ET-13)120
 Schratzberger J. (BE-05)33
 Schreck E. (DP-17)85
 Schrefl T. (BE-01)32
 Schrefl T. (BE-02)32
 Schrefl T. (BE-06)33
 Schrefl T. (CD-01)54
 Schrefl T. (DC-05)76
 Schrefl T. (EC-09)102
 Schrefl T. (EE-01)104
 Schrefl T. (EG-11)109
 Schrefl T. (ER-03)115
 Schrefl T. (ER-12)116
 Schrefl T. (ER-13)116
 Schrefl T. (FC-06)130
 Schrefl T. (FG-04)137
 Schrefl T. (GD-03)158
 Schuermann U. (EH-02)109
 Schuhl A. (AA-06)2
 Schuhl A. (AE-10)9
 Schuller I. (DQ-01)86
 Schultheiss H. (BB-03)27
 Schultheiss H. (CS-05)67
 Schultz L. (AP-04)13
 Schultz L. (AP-05)13
 Schultz L. (BB-04)27
 Schultz L. (GA-01)153
 Schumacher H.W. (CT-03)69
 Schwarz K. (EB-01)99
 Scofield J. (FU-04)148
 See P. (FC-03)129
 Seetala N. (AV-08)25
 Seibt M. (AE-09)9
 Seibt M. (BQ-05)40
 Sekhar S. (EB-03)99
 Seki T. (ED-04)103
 Seki T. (FB-05)128
 Sekino M. (DS-12)92
 Sellmyer D. (GC-04)156
 Sellmyer D.J. (EG-07)108
 Seo J. (CW-02)73
 Seo K. (CR-13)66
 Seo S. (BD-04)31
 Seo S. (BQ-10)41
 Seo S. (CS-03)67
 Seo S. (CT-02)69
 Seo S. (DQ-06)87
 Seo S. (FP-04)140
 Seo S. (FS-05)146
 Seong W. (DF-02)80
 Seoung W. (CG-02)59
 Serga A.A. (FE-05)134
 Serga A.A. (FE-06)134
 Serga A.A. (FE-08)134
 Serga A.A. (GE-07)161
 Sergeant P. (BT-04)46
 Serpico C. (AS-05)19
 Serpico C. (BE-01)32
 Serpico C. (DE-02)79
 Serpico C. (ER-07)115
 Serpico C. (FD-06)132
 Serpico C. (FD-07)132

- Serpico C. (GD-10)159
 Serrano-Guisan S. (CT-03)69
 Serret G. (AA-06)2
 Sethupathi K. (DT-03)93
 Seung Hoon L. (CW-05)73
 Seung Hoon L. (CW-08)74
 Shames A.I. (ES-03)117
 Shamsuzzoha M. (AV-08)25
 Shan R. (EA-05)99
 Shang C. (DB-05)76
 Shao K. (FR-12)145
 Shao K.R. (FR-01)143
 Sharif R. (AV-03)24
 Sharma M. (EB-03)99
 Sharma M. (EE-09)105
 Sharma M. (FB-02)127
 Sharma S. (EE-09)105
 Shaw J.M. (EC-11)102
 Shazadi S. (AV-03)24
 Shcherbachev K.D. (BR-07) ..43
 Shelford L.R. (EE-09)105
 Shen C. (ET-04)119
 Shen J. (AT-03)21
 Shen J. (FB-01)127
 Shen J. (FH-02)138
 Shen J. (FW-06)152
 Shen K. (ET-04)119
 Shen X. (CC-11)54
 Shen X. (DS-11)92
 Sherlock T.J. (DS-03)91
 Shi C. (EF-02)106
 Shi J. (BC-08)29
 Shi J. (CA-01)51
 Shih H. (GC-08)157
 Shih Y. (ES-01)117
 Shiimoto M. (DC-03)76
 Shikada K. (DD-07)78
 Shim I. (EU-11)122
 Shim J. (AS-11)20
 Shim J. (AS-12)20
 Shim J. (EQ-06)113
 Shima H. (EG-12)109
 Shimada Y. (BS-10)45
 Shimada Y. (BS-11)46
 Shimizu A. (CR-07)65
 Shimizu T. (GC-11)157
 Shimizu Y. (CC-06)53
 Shimizu Y. (EA-01)98
 Shimotani H. (BA-06)27
 Shin I. (ES-06)117
 Shin J. (FH-06)139
 Shin J. (FH-08)139
 Shin K. (BD-04)31
 Shin K. (CS-03)67
 Shin K. (CT-02)69
 Shin K. (DQ-06)87
 Shin K. (DR-04)89
 Shin K. (FP-05)140
 Shin M. (EC-02)101
 Shin P. (BV-10)50
 Shin P. (FW-03)151
 Shin S. (EQ-06)113
 Shin S. (FS-04)146
 Shina M. (FQ-06)142
 Shingubara S. (GC-11)157
 Shinjo T. (AR-02)16
 Shinjo T. (ED-04)103
 Shinjo T. (FF-04)135
 Shinnoh T. (AU-08)24
 Shinoda K. (BS-11)46
 Shinohara K. (BV-08)50
 Shintaku K. (AD-09)7
 Shiokawa Y. (GF-05)162
 Shiota Y. (AR-02)16
 Shiota Y. (FF-04)135
 Shirai M. (AE-11)9
 Shiraishi M. (AR-02)16
 Shiraishi M. (ED-04)103
 Shiraishi M. (FF-04)135
 Shirakashi J. (FF-05)135
 Shirakata Y. (DG-06)82
 Shiratsuchi Y. (DD-05)78
 Shiroishi Y. (BP-16)39
 Shiroishi Y. (FA-01)126
 Shishikura C. (BQ-16)42
 Shon J. (CR-11)66
 Shrabstein A. (FE-02)133
 Shuhua F. (BV-11)50
 Shuhua F. (FW-11)152
 Shuker R. (DR-12)90
 Shuto Y. (CF-08)58
 Shvets I. (CS-10)68
 Shyu J. (DD-03)77
 Siao Y. (CS-09)68
 Siao Y. (DT-05)94
 Siao Y. (EU-02)121
 Siegner U. (GC-12)157
 Siekman M. (CQ-04)63
 Sierra J. (AC-12)5
 Sievers S. (GC-12)157
 Silva A.S. (CS-06)67
 Silva T.J. (EC-11)102
 Simon E. (CS-07)67
 Sinova J. (CA-02)51
 Siotani Y. (GC-11)157
 Siracusano G. (GD-07)159
 Siu-lau H. (BV-11)50
 Skokov K.P. (FB-08)128
 Skokov K.P. (FV-04)150
 Skomski R. (GC-04)156
 Skumryev V. (DG-05)82
 Slaughter J.M. (CF-02)58
 Slavin A. (ER-08)116
 Slavin A. (GD-08)159
 Slavin A.N. (BB-03)27
 Slavin A.N. (CG-03)59
 Slavin A.N. (FE-01)133
 Smekhova A. (BR-07)43
 Smith D. (DQ-11)87
 Smith D.J. (AB-03)3
 Smith K. (CF-02)58
 Smith N. (EA-03)98
 Smyth J. (DP-17)85
 Snyder J.E. (DE-06)79
 Snyder J.E. (EU-04)121
 Snyder J.E. (FB-10)128
 Soh J. (BT-06)47
 Sohn J. (BC-11)30
 Solak H.H. (BC-05)29
 Solberg J. (AS-01)19
 Solzi M. (ES-11)118
 Somkun S. (FQ-01)141

- Somkun S. (FT-06)147
 Sommer R.L. (BS-06) 45
 Sonehara M. (AT-01) 21
 Sonehara M. (FT-01)147
 Song A. (AV-06) 25
 Song H. (DR-08) 89
 Song K. (AV-10) 25
 Song M. (BV-09) 50
 Song S. (CD-08) 55
 Song Y. (EH-11)111
 Song Y. (FS-10)146
 Song Y. (GE-05)160
 Sonobe Y. (BP-13) 39
 Sonobe Y. (CP-15) 62
 Sossmeier K.D. (BS-01) 44
 Sousa C.T. (DQ-05) 86
 Sousa J.B. (BQ-08) 41
 Sousa J.B. (DQ-05) 86
 Sousa J.B. (FB-11)129
 Sousa R. (CF-07) 58
 Sousa R.C. (CF-06) 58
 Souza-Neto N. (BF-01) 34
 Speliotis T. (BB-07) 28
 Spenato D. (FG-05)137
 Spinu C. (DT-02) 93
 Spinu L. (AT-07) 22
 Spinu L. (CF-09) 58
 Spinu L. (CS-02) 66
 Spitzer R. (ET-06)119
 Srikanth H. (AV-02) 24
 Srikanth H. (FB-06)128
 Srikanth H. (GC-06)157
 Srinivasan K. (AF-05)10
 Stadler S. (EQ-02)113
 Stancil D.D. (EC-03)101
 Stancu A. (AF-06)10
 Stancu A. (AS-18) 21
 Stancu A. (AT-07) 22
 Stancu A. (CF-09) 58
 Stancu A. (CS-02) 66
 Stancu A. (DE-04) 79
 Stancu A. (DE-05) 79
 Stancu A. (DS-06) 91
 Stancu A. (DT-04) 94
 Stancu A. (ET-02)119
 Steigmann D. (AP-12) 14
 Steinhoff G. (EB-07)100
 Stipe B.C. (EC-01)101
 Stobiewsky T. (AE-04) 8
 Stognij A. (AR-03)17
 Stohr J. (BA-02) 26
 Stoian G. (AV-11) 25
 Stokes K.L. (DT-02) 93
 Stokes K.L. (EP-05)112
 Stoleriu L. (AF-06)10
 Stoleriu L. (DE-05) 79
 Stoleriu L. (DT-04) 94
 Stoll H. (FD-04)131
 Stoute S. (BA-04) 26
 Stoute S. (FE-02)133
 Stoute S. (GE-04)160
 Strache T. (BB-04) 27
 Strand T. (EC-01)101
 Strangeway R.J. (DA-01) 74
 Strelkov N. (EA-06) 99
 Stritzker B. (EP-02)111
 Strnat R.M. (DE-08) 79
 Stumberger B. (EV-11)124
 Stumberger G. (CW-06) 73
 Stupakiewicz A. (BS-02) 44
 Sturm S. (EG-02)108
 Su H. (AQ-11) 16
 Su H. (AT-03) 21
 Su H. (EU-05)121
 Su W. (AR-08) 17
 Su Y. (ET-03)119
 Suess D. (BE-05) 33
 Suess D. (CD-01) 54
 Suess D. (DC-05) 76
 Suess D. (EC-09)102
 Suess D. (FC-06)130
 Sugahara S. (CF-08) 58
 Sugahara S. (ES-08)118
 Sugahara S. (ET-01)119
 Sugano R. (ED-05)103
 Sugasawara S. (FP-06)141
 Sugibayashi T. (ET-05)119
 Sugihara Y. (DS-01) 90
 Sugimoto Y. (DD-01) 77
 Sugita R. (BP-01) 37
 Sugita R. (ET-10)120
 Sugiyama A. (AD-11) 7
 Sugiyama H. (FF-10)136
 Sugiyama H. (FS-09)146
 Sugiyama M. (AD-02) 6
 Sugiyama M. (DC-03) 76
 Suhaimi N. (BP-01) 37
 Sukegawa H. (EA-05) 99
 Sukegawa H. (FB-05)128
 Sukegawa H. (FF-03)135
 Sukhov A. (AS-06) 19
 Sul S. (BC-11) 30
 Summers E.M. (BG-06) 36
 Sun A. (DP-01) 83
 Sun A. (DP-03) 83
 Sun J.Z. (CT-04) 69
 Sun J.Z. (ED-02)103
 Sun K. (BR-03) 43
 Sun K. (EC-10)102
 Sun K. (GE-05)160
 Sun L. (AF-03)10
 Sun L. (DQ-12) 88
 Sun L. (DQ-13) 88
 Sun N. (BA-04) 26
 Sun N. (FE-02)133
 Sun N.X. (FT-08)148
 Sun N.X. (GE-04)160
 Sun T. (EV-08)124
 Sun X. (BU-01) 47
 Sun Y. (EG-10)109
 Sunaga K. (BQ-06) 40
 Sung S. (BV-04) 50
 Sung S. (CW-09) 74
 Sung T. (GG-05)164
 Sung W. (FE-07)134
 Sunohara T. (FQ-11)143
 Supnithi P. (BP-07) 38
 Sur J.C. (DP-08) 84
 Suto M. (CG-09) 60
 Suzuki H. (CQ-05) 63
 Suzuki H. (EF-03)106
 Suzuki H. (ER-01)114

Suzuki J. (DU-07)	95
Suzuki M. (AE-11)	9
Suzuki M. (BQ-03)	40
Suzuki M. (CP-03)	61
Suzuki S. (FC-04)	129
Suzuki T. (AF-07)	10
Suzuki T. (BD-05)	31
Suzuki T. (BS-07)	45
Suzuki T. (DP-01)	83
Suzuki T. (EQ-04)	113
Suzuki Y. (AR-02)	16
Suzuki Y. (BP-16)	39
Suzuki Y. (ED-03)	103
Suzuki Y. (ED-04)	103
Suzuki Y. (FF-04)	135
Svec P. (AP-13)	14
Svedlindh P. (AF-08)	10
Svedlindh P. (AF-11)	11
Syslo R. (FD-09)	132
Syu J. (AR-10)	18
Syu J. (ET-08)	120
Syue M. (CT-06)	69
Syue M. (EU-06)	121
Szambolics H. (AA-06)	2
Szilva A. (CS-07)	67
Szunyogh L. (CE-02)	56
Szunyogh L. (CE-09)	57
Szunyogh L. (CS-07)	67
Szunyogh L. (FR-05)	144

T

Tabat N. (AS-07)	20
Tachiki S. (DD-01)	77
Tada M. (CB-03)	52
Tada M. (EG-03)	108
Tada M. (GC-05)	156
Tadatsu T. (FC-02)	129
Tagawa I. (FA-01)	126
Tagawa I. (FA-02)	126
Tagawa N. (EW-02)	125
Taguchi K. (CP-03)	61
Tai C. (AB-09)	3
Tai C. (GB-05)	154
Takada K. (DF-04)	80
Takagi H. (EP-07)	112
Takagi M. (GB-03)	154
Takagi T. (GB-03)	154
Takagishi M. (ER-01)	114
Takagishi M. (GF-01)	162
Takahashi H. (ED-05)	103
Takahashi H. (ED-06)	103
Takahashi H. (FD-01)	131
Takahashi H. (FG-06)	137
Takahashi K. (BT-03)	46
Takahashi K. (FF-05)	135
Takahashi M. (AE-06)	8
Takahashi M. (BQ-17)	42
Takahashi M. (DB-03)	75
Takahashi M. (DQ-07)	87
Takahashi M. (EQ-09)	114
Takahashi M. (FG-06)	137
Takahashi N. (BC-11)	30
Takahashi N. (CQ-06)	63
Takahashi N. (CR-08)	65
Takahashi N. (EU-12)	122

Takahashi T. (AB-04)	3
Takahashi Y.K. (AE-02)	8
Takahashi Y.K. (EA-05)	99
Takahashi Y.K. (FB-05)	128
Takahata O. (BF-12)	35
Takahata T. (EH-08)	110
Takamura Y. (ES-08)	118
Takanashi K. (FB-05)	128
Takano F. (EG-12)	109
Takano H. (DP-07)	84
Takano H. (EF-09)	107
Takano K. (CC-05)	53
Takano K. (DC-04)	76
Takano K. (DP-17)	85
Takeda S. (CQ-05)	63
Takeda Y. (BQ-16)	42
Takeda Y. (DD-01)	77
Takemoto M. (BU-06)	48
Takemoto M. (DV-12)	97
Takemoto M. (FQ-11)	143
Takemura Y. (DR-06)	89
Takenoiri S. (FA-01)	126
Takeuchi I. (BA-05)	26
Takezawa M. (FV-08)	150
Takiishi H. (FV-05)	150
Takura T. (DS-05)	91
Takura T. (FU-01)	148
Talbi Y. (AS-02)	19
Talke F. (CC-04)	53
Talke F.E. (CC-10)	54
Talke F.E. (CP-07)	61
Tan A. (EW-03)	125
Tan E. (AF-05)	10
Tan H. (AD-07)	6
Tan K. (BP-14)	39
Tan R. (AE-06)	8
Tan R. (AV-06)	25
Tan R.P. (FF-06)	136
Tanaka A. (EA-01)	98
Tanaka H. (DR-06)	89
Tanaka H. (FA-01)	126
Tanaka S. (FC-04)	129
Tanaka T. (EC-07)	102
Tanaka T. (ER-01)	114
Tanaka Y. (DV-12)	97
Tanaka Y. (FQ-11)	143
Tanamoto T. (FS-09)	146
Tanasa R. (DE-04)	79
Tanase M. (DT-02)	93
Tang M.X. (AT-10)	22
Tang M.X. (AT-11)	22
Tang X. (AQ-11)	16
Tang X. (AT-03)	21
Tang X. (BR-03)	43
Tang Y. (GG-06)	164
Tani H. (AC-07)	5
Tani H. (EW-02)	125
Tanigawa H. (AA-05)	2
Tanigawa H. (ET-12)	120
Taniguchi T. (CT-08)	69
Tanimoto H. (FU-01)	148
Tantaswad P. (BP-07)	38
Tao S. (AG-01)	11
Tao Z. (AR-05)	17
Taratorin A. (DB-01)	75
Taratorin A. (DC-06)	77

- Tate M. (AS-10)20
 Tateishi K. (EC-07)102
 Tauc S. (DS-01)90
 Tavares P.B. (ES-13)118
 Taylor W.P. (DR-13)90
 Tedesco A.C. (CS-08)67
 Tehrani S. (CF-02)58
 Teixeira J.M. (BQ-08)41
 Temneanu M. (AS-17)21
 Teng M. (EF-02)106
 Teng Y. (AQ-07)15
 Teramoto A. (DG-06)82
 Terao M. (EW-02)125
 Terazono Y. (AU-07)24
 Tereshina E.A. (ES-12)118
 Terris B. (EC-01)101
 Terris B. (EE-04)105
 Terris B.D. (ED-09)104
 Terris B.D. (GD-05)158
 Tessier T.E. (CB-04)52
 Thakur A. (BF-09)35
 Thamakam S. (BP-06)38
 Thede C. (FC-07)130
 Thibaudeau P. (AG-06)12
 Thiel K. (AE-09)9
 Thiel K. (BQ-05)40
 Thiele J.U. (ED-10)104
 Thielsch J. (GA-01)153
 Thiruvadigal J.D. (FS-08)146
 Thiyagarajah N. (GF-04)162
 Thomas A. (AE-08)9
 Thomas A. (AE-09)9
 Thomas A. (BQ-05)40
 Thomas A.S. (EV-03)123
 Thomas A.S. (FQ-03)141
 Thomas M. (AP-04)13
 Thomas M. (AP-05)13
 Thomas M. (AP-06)14
 Thomson T. (BC-05)29
 Thomson T. (DQ-03)86
 Tiberkevich V. (ER-08)116
 Tiberkevich V. (GD-08)159
 Tiberkevich V.S. (FE-01)133
 Tiberto P. (AC-11)5
 Tiberto P. (DD-08)78
 Tibu M. (BS-04)45
 Tioh J. (CG-04)59
 Tiusan C. (AE-05)8
 Tiusan C. (BQ-04)40
 Tjernberg O. (AF-08)10
 Tkachuk S. (BF-03)34
 Tohji K. (BS-11)46
 Tomita H. (ED-04)103
 Tomoda Y. (FF-05)135
 Tong H. (AG-01)11
 Tong S. (AP-03)13
 Tong W. (GE-05)160
 Topuria T. (DP-06)84
 Torabi A. (BP-15)39
 Torabi A. (CD-06)55
 Torabi A.F. (EC-05)101
 Torija M.A. (FB-02)127
 Torrejon J. (DF-03)80
 Torres L. (AS-08)20
 Torres L. (ER-10)116
 Torres L. (GD-07)159
 Toyoda N. (AC-07)5
 Trahms L. (EB-01)99
 Tran M. (FF-11)136
 Tran Q. (DR-11)89
 Tran Quang H. (FC-09)130
 Trapananti A. (AB-05)3
 Tripathi R. (FS-02)145
 Tripathy D. (EQ-01)113
 Trouilloud P.L. (ED-02)103
 Trypiniotis T. (EB-10)100
 Tsai C. (ET-04)119
 Tsai C.S. (FE-03)133
 Tsai J. (DP-02)83
 Tsai J. (DU-10)95
 Tsai M. (BU-05)48
 Tsai M. (FW-09)152
 Tsai R. (CS-11)68
 Tsai W. (BQ-15)42
 Tsai Y. (DQ-10)87
 Tsay J. (AR-08)17
 Tschegg E. (FC-06)130
 Tseng H. (AE-01)7
 Tseng Y. (BF-01)34
 Tserkovnyak Y. (FD-02)131
 Tsuchida K. (DR-01)88
 Tsuchiura H. (FR-09)144
 Tsunashima S. (CP-05)61
 Tsunekawa K. (AE-07)8
 Tsunematsu H. (AE-07)8
 Tsunoda M. (AE-06)8
 Tsunoda M. (BQ-17)42
 Tsunoda M. (DB-03)75
 Tsunoda M. (DQ-07)87
 Tsunoda M. (EQ-09)114
 Tsunoda M. (FG-06)137
 Tsutsumi M. (FE-10)134
 Tsuyama S. (DS-14)92
 Tsymbol L. (EU-08)122
 Tu C. (CV-06)72
 Tulapurkar A. (ED-04)103
 Tung M. (AP-03)13
 Tung N. (CU-03)70
 Turgut Z. (FU-04)148
- U
- Ubben K. (AE-09)9
 Uchida S. (BC-11)30
 Uchikawa Y. (DS-07)91
 Uchiyama T. (DF-05)80
 Uchiyama T. (GB-07)155
 Uchiyama T. (GE-09)161
 Udvardi L. (CE-02)56
 Udvardi L. (CE-09)57
 Udvardi L. (FR-05)144
 Ueda T. (CB-03)52
 Ueda T. (FE-09)134
 Uehara Y. (BQ-06)40
 Uehara Y. (DB-03)75
 Uehara Y. (ER-14)116
 Uemura T. (BD-07)31
 Uemura T. (BQ-13)41
 Ueno K. (BA-06)27
 Ueno S. (DS-12)92
 Ueno S. (DS-14)92
 Ueno S. (EB-04)100

Ueno S. (EB-05)	100
Ueno T. (BG-08)	37
Ueno T. (GG-04)	163
Uesaka Y. (BP-18)	39
Ujfalussy B. (CS-07)	67
Umehara N. (CC-06)	53
Umehara S. (BQ-01)	39
Umehara S. (BQ-02)	40
Umenei A.E. (FU-08)	149
Umezawa H. (EP-01)	111
Urakami Y. (DC-03)	76
Ustinov A.B. (AT-02)	21
Utsumi Y. (DF-05)	80
Utsumi Y. (GE-09)	161
Uzumaki T. (AD-01)	6

V

Vaccari C.B. (CS-08)	67
Vajpayee A. (EP-11)	112
Valcu B.F. (AD-04)	6
Valcu B.F. (AD-10)	7
Valsangiacom C. (DT-06)	94
van den Berg J. (GC-02)	156
van der Laan G. (AB-06)	3
van der Laan G. (ET-13)	120
van der Laan G. (FF-03)	135
van der Meulen M.I. (GC-01)	156
van der Zant H. (GC-02)	156
van Ek J. (CD-06)	55
Van Ek J. (EC-05)	101
van Kampen M. (BB-03)	27
Van Kampen M. (ER-03)	115
Van Kampen M. (ER-12)	116
Van Roy W. (AF-12)	11
Van V. (EF-01)	106
Van Wacyenberge B. (FD-04)	131
Vandenbossche L. (BT-04)	46
Vanderheijden P. (EA-03)	98
Vanhaverbeke A. (BE-10)	33
Varela M. (DG-05)	82
Varela M. (FB-02)	127
Varga R. (AG-08)	12
Vashghani Farahani A. (CE-07)	56
Vasic B. (BP-02)	37
Vasic B. (FA-04)	126
Vazquez M. (AC-10)	5
Vazquez M. (AG-08)	12
Vázquez M. (CR-01)	64
Vazquez M. (DF-03)	80
Vazquez M. (DQ-05)	86
Vdovin V.I. (BR-07)	43
Veca G.M. (AV-12)	25
Vedyayev A. (EA-06)	99
Veerakumar V. (AR-06)	17
Veerakumar V. (CS-01)	66
Veerakumar V. (DQ-09)	87
Veerakumar V. (FE-04)	134
Veerakumar V. (GE-10)	161
Venkatesan V. (EF-06)	106
Venkatesh S. (FS-07)	146
Ventura J. (BQ-08)	41
Ventura J. (DQ-05)	86

Venturini E.L. (CB-04)	52
Verma L.K. (BR-06)	43
Veverka P. (GB-01)	154
Viala B. (CG-01)	59
Viala B. (DG-02)	81
Viala B. (GD-05)	158
Vicent J.L. (AC-10)	5
Vichienecom K. (BP-07)	38
Victoria R.H. (CD-02)	54
Vieira J.M. (ES-13)	118
Vieth M. (AP-01)	13
Vijayakumar K.K. (BT-07)	47
Villas-Boas V. (EG-05)	108
Vinai F. (AC-11)	5
Vinai F. (DD-08)	78
Vincent J.N. (BT-05)	47
Vincent P. (GD-05)	158
Virtic P. (EV-11)	124
Vishnubhotla S. (CS-12)	68
Vishnubhotla S. (EQ-07)	114
Visone C. (AP-02)	13
Visscher P.B. (BP-17)	39
Viswanathan I. (AT-08)	22
Vittoria C. (AT-08)	22
Vittoria C. (AT-09)	22
Vittoria C. (FR-10)	144
Vlasak G. (AP-13)	14
Vo K. (EA-03)	98
Vogel J. (AA-06)	2
Volchkov S. (DF-01)	80
von Hofe T. (AP-01)	13
Vroubel M. (GE-03)	160
Vyas K. (EB-10)	100

W

Wallis M.T. (ER-07)	115
Wallis M.T. (GD-10)	159
Walls M. (FB-03)	127
Walowski J. (BB-08)	28
Walter M. (AE-09)	9
Wang A. (EV-07)	123
Wang B. (FE-03)	133
Wang C. (AC-05)	4
Wang C. (EP-12)	112
Wang C. (EU-02)	121
Wang C. (FH-02)	138
Wang C. (FW-08)	152
Wang C. (GC-07)	157
Wang D. (AT-11)	22
Wang D. (ET-04)	119
Wang H. (BP-14)	39
Wang H. (DP-04)	83
Wang H. (DU-06)	95
Wang H. (FV-10)	151
Wang J. (AF-03)	10
Wang J. (AT-09)	22
Wang J. (CC-05)	53
Wang J. (CD-06)	55
Wang J. (DP-04)	83
Wang J. (DQ-10)	87
Wang J. (EC-05)	101
Wang J. (ED-08)	104
Wang J. (EH-05)	110
Wang J. (FW-09)	152
Wang K.L. (GC-01)	156

- Wang L. (AC-05) 4
 Wang L. (AQ-01) 15
 Wang L. (EH-03) 110
 Wang L. (EU-05) 121
 Wang L. (FH-02) 138
 Wang N. (CG-06) 59
 Wang S. (BR-09) 44
 Wang S. (CD-09) 55
 Wang S. (DP-03) 83
 Wang S. (DV-06) 97
 Wang S. (DV-11) 97
 Wang S. (FT-05) 147
 Wang S. (GE-08) 161
 Wang S.H. (FP-07) 141
 Wang S.X. (CB-01) 52
 Wang S.X. (EB-02) 99
 Wang S.X. (EB-09) 100
 Wang S.X. (FF-09) 136
 Wang S.X. (GB-11) 155
 Wang S.X. (GE-03) 160
 Wang T. (CP-14) 62
 Wang W. (BD-10) 32
 Wang W. (BR-10) 44
 Wang W. (EA-05) 99
 Wang W. (ES-01) 117
 Wang W. (FF-03) 135
 Wang X. (AT-11) 22
 Wang X. (CQ-10) 64
 Wang X. (ED-07) 103
 Wang Y. (BQ-15) 42
 Wang Y. (CD-12) 55
 Wang Y. (DS-03) 91
 Wang Y. (DS-08) 91
 Wang Y. (DV-06) 97
 Wang Y. (DV-11) 97
 Wang Y. (EC-08) 102
 Wang Y. (EH-05) 110
 Wang Y. (ET-04) 119
 Wang Y. (FW-05) 152
 Wang Y. (GB-11) 155
 Wangler A. (DE-08) 79
 Ward T.Z. (FB-01) 127
 Watanabe A. (CR-09) 65
 Watanabe T. (DP-14) 85
 Webb R.A. (ED-01) 102
 Weber R.J. (CG-04) 59
 Weber R.J. (EP-06) 112
 Weddemann A. (BQ-05) 40
 Wedekind S. (AB-02) 2
 Wedekind S. (FS-01) 145
 Wedekind S. (GC-03) 156
 Wegewijs M. (GC-02) 156
 Wegrowe J. (FD-08) 132
 Wehlus T. (EP-02) 111
 Wei D. (AR-12) 18
 Wei D. (BR-01) 42
 Wei D. (CD-09) 55
 Wei D. (CU-06) 71
 Wei D. (EQ-03) 113
 Wei D. (FV-01) 149
 Wei H. (BQ-11) 41
 Wei H. (FW-07) 152
 Wei K. (CS-11) 68
 Wei M. (FH-07) 139
 Wei M. (GG-07) 164
 Wei S. (DP-09) 84
 Wei X. (GC-04) 156
 Weigand M. (FD-04) 131
 Weili Y. (CQ-07) 64
 Weili Y. (DS-16) 93
 Weissman M.B. (FB-02) 127
 Wen Q. (AG-03) 12
 Wen Q. (BR-10) 44
 Wen Q. (CU-01) 70
 Wendling P.F. (GG-11) 164
 Westin G. (AF-11) 11
 Whig R. (CF-02) 58
 White D. (AP-12) 14
 White D. (AS-01) 19
 White R.L. (GB-11) 155
 Wikberg M. (AF-08) 10
 Wikberg M. (AF-11) 11
 Wiley J.B. (CS-02) 66
 Wiley J.B. (DT-02) 93
 Will I. (AC-08) 5
 Will I.G. (AQ-10) 16
 Willard M.A. (GA-02) 153
 Williams M. (FA-02) 126
 Williams P.I. (EU-04) 121
 Willson R.C. (DS-03) 91
 Wilson R.J. (EB-02) 99
 Wilson R.J. (GB-11) 155
 Winkler G. (EC-09) 102
 Wisniowski P. (AE-04) 8
 Wojcik M. (FB-03) 127
 Wolf D.E. (BE-07) 33
 Wolff S. (GE-07) 161
 Won B. (EU-07) 122
 Wong J. (AQ-10) 16
 Wong J. (AR-05) 17
 Wong J. (EE-02) 104
 Wong P. (AC-08) 5
 Wong P. (AU-03) 23
 Wong P. (DQ-12) 88
 Wong P. (ET-13) 120
 Wong S. (AD-07) 6
 Wong S. (AF-05) 10
 Woo B. (FU-07) 149
 Woo S. (FW-03) 151
 Woodcock T.G. (EG-11) 109
 Woodcock T.G. (GA-01) 153
 Worledge D.C. (ED-02) 103
 Wu C. (EP-12) 112
 Wu C. (ES-05) 117
 Wu C. (GC-07) 157
 Wu C. (GG-03) 163
 Wu H. (AQ-04) 15
 Wu H. (CS-10) 68
 Wu J. (AC-08) 5
 Wu J. (AF-03) 10
 Wu J. (AG-10) 12
 Wu J. (AQ-10) 16
 Wu J. (AV-06) 25
 Wu J. (AV-07) 25
 Wu J. (BQ-17) 42
 Wu J. (CR-03) 65
 Wu J. (CU-06) 71
 Wu J. (DD-03) 77
 Wu J. (DQ-10) 87
 Wu J. (DQ-12) 88
 Wu J. (DQ-13) 88
 Wu J. (DU-09) 95

Wu J. (DU-09)	95
Wu J. (EH-01)	109
Wu J. (ET-13)	120
Wu J. (FB-04)	128
Wu K. (AR-12)	18
Wu K. (CU-06)	71
Wu L. (AG-05)	12
Wu M. (EC-10)	102
Wu M. (FW-08)	152
Wu M. (GE-05)	160
Wu M.C. (ER-06)	115
Wu Q. (DF-06)	80
Wu Q. (DF-07)	81
Wu Q. (DG-03)	81
Wu Q. (GE-02)	160
Wu R.Q. (BG-09)	37
Wu T. (AR-10)	18
Wu T. (AR-11)	18
Wu T. (AV-05)	25
Wu T. (BQ-07)	40
Wu T. (BQ-17)	42
Wu T. (DD-03)	77
Wu T. (DG-04)	81
Wu T. (ET-08)	120
Wu W. (AV-01)	24
Wu Y. (DC-04)	76
Wu Y. (DS-11)	92
Wu Z. (GC-09)	157
Wunderlich J. (CA-02)	51
Wun-Fogle M. (AP-08)	14
Wun-Fogle M. (BG-03)	36
Wun-Fogle M. (BG-05)	36
Wun-Fogle M. (BG-09)	37
Wuori E. (ET-06)	119
Wuttig M. (BG-02)	36

X

Xi H. (AT-10)	22
Xi H. (AT-11)	22
Xi H. (ED-07)	103
Xia K. (ET-13)	120
Xianbing W. (BV-11)	50
Xiang X.Y. (GG-07)	164
Xianghong Z. (DS-16)	93
Xiao J. (BR-10)	44
Xiao J.Q. (FD-02)	131
Xiaoguang Y. (CQ-07)	64
Xie B. (AS-05)	19
Xie L. (FV-01)	149
Xie Z. (AR-05)	17
Xing Q. (BG-03)	36
Xing X. (FE-02)	133
Xinghe F. (FH-07)	139
Xintong J. (GG-08)	164
Xintong J. (GG-08)	164
Xu G. (DS-08)	91
Xu G. (DS-15)	92
Xu J. (CC-06)	53
Xu L. (BU-01)	47
Xu L. (EB-02)	99
Xu W. (DV-06)	97
Xu W. (DV-11)	97
Xu X. (CA-02)	51
Xu Y. (AC-08)	5
Xu Y. (AF-03)	10

Xu Y. (AQ-10)	16
Xu Y. (AR-05)	17
Xu Y. (DQ-12)	88
Xu Y. (DQ-13)	88
Xu Y. (ES-07)	118
Xu Y. (ET-13)	120
Xu Y. (FB-04)	128
Xu Y. (FF-03)	135
Xu Y. (GG-06)	164

Y

Yabukami S. (CR-10)	65
Yabukami S. (GB-09)	155
Yabukami S. (GB-10)	155
Yagi M. (BS-08)	45
Yaguchi H. (BV-02)	49
Yakushiji K. (ED-03)	103
Yakushijin K. (ER-02)	115
Yakushijin K. (GD-02)	158
Yamada G. (AA-05)	2
Yamada I. (AC-07)	5
Yamada K. (GB-03)	154
Yamada T. (DR-06)	89
Yamagata S. (AE-07)	8
Yamaguchi A. (DF-05)	80
Yamaguchi A. (GE-09)	161
Yamaguchi M. (BF-12)	35
Yamaguchi M. (BQ-03)	40
Yamaguchi M. (BS-10)	45
Yamaguchi M. (BS-11)	46
Yamaguchi M. (FT-02)	147
Yamaguchi-Sekino S. (DS-12)	92
Yamaji K. (BQ-16)	42
Yamakawa K. (CP-12)	62
Yamamoto H. (AE-03)	8
Yamamoto H. (ED-05)	103
Yamamoto H. (FF-01)	135
Yamamoto M. (BD-07)	31
Yamamoto M. (BQ-13)	41
Yamamoto M. (DR-01)	88
Yamamoto S. (CF-08)	58
Yamamoto S. (ET-01)	119
Yamamoto T. (DS-10)	92
Yamanishi S. (GC-11)	157
Yamasaki J. (FV-08)	150
Yamasawa K. (AT-01)	21
Yamasawa K. (FT-01)	147
Yamauchi T. (AE-07)	8
Yamauchi Y. (CP-05)	61
Yamazaki K. (AU-05)	23
Yamazaki K. (AU-07)	24
Yamazaki K. (DS-10)	92
Yamazaki K. (FQ-06)	142
Yamazaki M. (FV-09)	150
Yamazaki T. (CQ-06)	63
Yan A. (EG-10)	109
Yan G. (BU-05)	48
Yan G. (FW-09)	152
Yan M. (AG-01)	11
Yan M. (AP-10)	14
Yan M. (BG-07)	36
Yan S. (GC-10)	157
Yan W. (DE-07)	79
Yan W. (DS-08)	91

- Yan W. (DS-11)92
 Yan W. (DS-15)92
 Yanagihara H. (GB-03)154
 Yanai T. (BT-03)46
 Yanai T. (DU-07)95
 Yanes R. (AC-10)5
 Yanes R. (FG-02)137
 Yang B. (EV-04)123
 Yang C. (BT-08)47
 Yang C. (FG-08)138
 Yang D. (CQ-10)64
 Yang F. (EG-06)108
 Yang G. (DF-06)80
 Yang G. (FE-02)133
 Yang G. (FR-02)143
 Yang G. (FW-06)152
 Yang G. (GE-02)160
 Yang H. (CS-11)68
 Yang J. (DQ-07)87
 Yang J. (ET-03)119
 Yang K. (EQ-03)113
 Yang L. (GG-06)164
 Yang Q. (AG-03)12
 Yang Q. (BR-10)44
 Yang Q. (CV-09)72
 Yang Q. (DS-15)92
 Yang R. (AT-04)22
 Yang S. (BT-01)46
 Yang S. (ET-04)119
 Yao L. (AF-09)11
 Yao Q. (EG-06)108
 Yao X. (ED-08)104
 Yao X. (FT-06)147
 Yao Y. (AQ-07)15
 Yao Y. (AR-08)17
 Yao Y. (AR-12)18
 Yao Y. (BR-01)42
 Yao Y. (CP-04)61
 Yao Y. (CU-06)71
 Yao Y. (DU-09)95
 Yao Y. (FW-08)152
 Yasumori J. (BP-13)39
 Ye L. (AR-10)18
 Ye L. (ED-01)102
 Ye L. (ET-08)120
 Ye Y. (EV-02)123
 Ye Y. (EV-06)123
 Yeh Y. (BU-11)49
 Yelon A. (EE-03)105
 Yelon A. (EE-06)105
 Yelon W.B. (DU-08)95
 Yen C. (ET-04)119
 Yen J. (GG-03)163
 Yevgen M. (AP-11)14
 Yi D. (DG-07)82
 Yi I. (FH-08)139
 Yim H. (BQ-14)41
 Yonemaru A. (BT-03)46
 Yong-De Y. (DG-07)82
 Yongping L. (GG-08)164
 Yongxiang X. (FH-07)139
 Yonnet J. (CE-06)56
 Yoo B. (DR-02)88
 Yoo B. (FH-11)139
 Yoo J. (AP-14)15
 Yoo J. (BG-05)36
 Yoo J. (DC-07)77
 Yoon H. (BV-10)50
 Yoon S. (AT-09)22
 Yoon S. (CS-12)68
 Yoon S. (DQ-04)86
 Yoon S. (EQ-09)114
 Yoon S.D. (AT-08)22
 Yoon Y. (CP-07)61
 Yoshida K. (DC-08)77
 Yoshida S. (BF-12)35
 Yoshida S. (BP-04)38
 Yoshida S. (BS-10)45
 Yoshikawa N. (FA-01)126
 Yoshimoto K. (DD-01)77
 Yoshimura S. (CQ-04)63
 Yoshimura S. (DP-11)84
 Yoshino M. (AD-11)7
 Yoshizawa Y. (FP-02)140
 You C. (BD-06)31
 You C. (EQ-06)113
 You D. (BU-07)48
 You D. (BV-04)50
 You D. (CW-09)74
 You D. (EV-09)124
 You S. (ES-10)118
 Youhua W. (CQ-07)64
 Youhua W. (DS-16)93
 Young P. (DT-02)93
 Yu C. (AQ-07)15
 Yu C. (CP-04)61
 Yu C. (DU-09)95
 Yu G. (DV-01)96
 Yu G. (EV-01)123
 Yu H. (EB-02)99
 Yu H. (EB-09)100
 Yu H. (ES-10)118
 Yu J. (FV-06)150
 Yu J. (FV-07)150
 Yu M. (AT-06)22
 Yu M. (DQ-08)87
 Yu M. (EB-06)100
 Yu S. (AS-11)20
 Yu S. (AS-12)20
 Yu S. (FB-06)128
 Yu Y. (DQ-02)86
 Yu Y. (DR-03)88
 Yuan F. (DP-03)83
 Yuan H. (AD-05)6
 Yuan J. (FV-01)149
 Yuan L. (FC-11)130
 Yuan Z. (BC-08)29
 Yuan Z. (CD-03)54
 Yuan Z. (CP-10)62
 Yuanqiang S. (DU-03)95
 Yuanxun L. (DU-03)95
 Yuasa S. (ED-03)103
 Yuasa S. (ER-02)115
 Yuasa S. (GD-02)158
 Yubuta K. (AG-02)11
 Yuhasz W.M. (BG-09)37
 Yuxiang Y. (CG-07)60

Z

- Zagorodnii V. (FE-04)134
 Zang C. (CQ-02)63

- Zaporojtchenko V. (EH-02) . . . 109
 Zawilski B. (FP-01) . . . 140
 Zeltser A. (FG-04) . . . 137
 Zeltser A. (GD-05) . . . 158
 Zeng D. (ES-10) . . . 118
 Zeng H.T. (BD-03) . . . 31
 Zeng H.T. (EE-05) . . . 105
 Zermatten P. (AA-06) . . . 2
 Zha C. (DP-13) . . . 85
 Zha C. (FG-07) . . . 138
 Zha C. (GD-06) . . . 159
 Zha C. (GF-03) . . . 162
 Zhai H. (AF-03) . . . 10
 Zhai H. (DQ-12) . . . 88
 Zhai H. (DQ-13) . . . 88
 Zhai Y. (AC-08) . . . 5
 Zhai Y. (AF-03) . . . 10
 Zhai Y. (DQ-12) . . . 88
 Zhai Y. (DQ-13) . . . 88
 Zhang B. (CV-10) . . . 72
 Zhang F. (BR-09) . . . 44
 Zhang G. (EG-10) . . . 109
 Zhang H. (AG-03) . . . 12
 Zhang H. (AQ-11) . . . 16
 Zhang H. (AT-03) . . . 21
 Zhang H. (BR-03) . . . 43
 Zhang H. (BR-10) . . . 44
 Zhang H. (CU-01) . . . 70
 Zhang H. (CU-05) . . . 71
 Zhang H. (EU-05) . . . 121
 Zhang H. (EW-01) . . . 124
 Zhang H. (FS-10) . . . 146
 Zhang J. (AP-10) . . . 14
 Zhang J. (BG-07) . . . 36
 Zhang J. (DV-05) . . . 97
 Zhang K. (CD-07) . . . 55
 Zhang K. (DF-06) . . . 80
 Zhang K. (DG-03) . . . 81
 Zhang K. (FV-01) . . . 149
 Zhang K. (GE-02) . . . 160
 Zhang P. (DR-10) . . . 89
 Zhang R. (AR-05) . . . 17
 Zhang R. (FC-11) . . . 130
 Zhang S. (BP-14) . . . 39
 Zhang S. (CP-09) . . . 62
 Zhang W. (AQ-10) . . . 16
 Zhang W. (AR-05) . . . 17
 Zhang W. (BP-12) . . . 38
 Zhang W. (DQ-13) . . . 88
 Zhang W. (EG-12) . . . 109
 Zhang W. (ET-13) . . . 120
 Zhang X. (AG-05) . . . 12
 Zhang X. (BR-04) . . . 43
 Zhang X. (BU-02) . . . 48
 Zhang X. (DC-04) . . . 76
 Zhang X. (DS-08) . . . 91
 Zhang Y. (FR-01) . . . 143
 Zhang Z. (BR-04) . . . 43
 Zhang Z. (CW-11) . . . 74
 Zhang Z. (DP-13) . . . 85
 Zhang Z. (EG-06) . . . 108
 Zhang Z. (EH-09) . . . 110
 Zhang Z. (GG-04) . . . 163
 Zhao H. (DP-04) . . . 83
 Zhao J. (GC-10) . . . 157
 Zhao W. (BD-09) . . . 31
 Zhao W. (FW-04) . . . 151
 Zhao Z. (DE-07) . . . 79
 Zhemchuzhna L. (BF-06) . . . 35
 Zheng H. (CC-04) . . . 53
 Zheng H. (CC-10) . . . 54
 Zheng J. (DU-11) . . . 96
 Zheng J. (FB-04) . . . 128
 Zheng L. (CC-07) . . . 53
 Zheng S. (ET-08) . . . 120
 Zheng Y. (AT-11) . . . 22
 Zheng Y. (ED-07) . . . 103
 Zheng Y. (GC-10) . . . 157
 Zheng Z. (ES-10) . . . 118
 Zheng Z. (EV-02) . . . 123
 Zhong X. (ES-10) . . . 118
 Zhong Z. (AT-03) . . . 21
 Zhong Z. (BR-03) . . . 43
 Zhou G. (BV-05) . . . 50
 Zhou T. (CD-03) . . . 54
 Zhou W. (AV-04) . . . 24
 Zhou W. (EB-06) . . . 100
 Zhou W.L. (AT-06) . . . 22
 Zhou W.L. (DQ-08) . . . 87
 Zhou Y. (CT-04) . . . 69
 Zhou Y. (EA-04) . . . 98
 Zhou Y. (FR-08) . . . 144
 Zhou Y. (GD-06) . . . 159
 Zhu J. (CD-12) . . . 55
 Zhu J. (CP-01) . . . 60
 Zhu J. (CT-09) . . . 70
 Zhu J. (DP-10) . . . 84
 Zhu J. (DV-03) . . . 96
 Zhu J. (DV-06) . . . 97
 Zhu J. (DV-11) . . . 97
 Zhu J. (EC-08) . . . 102
 Zhu J. (FA-05) . . . 126
 Zhu J. (FH-03) . . . 139
 Zhu J. (FR-12) . . . 145
 Zhu J. (FT-05) . . . 147
 Zhu J. (FU-09) . . . 149
 Zhu J. (FV-01) . . . 149
 Zhu J. (GD-01) . . . 158
 Zhu J.G. (FP-02) . . . 140
 Zhu J.G. (FP-07) . . . 141
 Zhu L. (EW-04) . . . 125
 Zhu M. (AT-05) . . . 22
 Zhu M. (DU-06) . . . 95
 Zhu R. (BP-17) . . . 39
 Zhu W. (ED-07) . . . 103
 Zhu X. (CF-05) . . . 58
 Zhu X. (CT-09) . . . 70
 Zhu X. (FW-02) . . . 151
 Zhu Y. (FE-03) . . . 133
 Zhu Y. (GF-08) . . . 163
 Zhu Z. (CV-04) . . . 72
 Zhu Z. (EV-03) . . . 123
 Zhu Z. (FQ-03) . . . 141
 Zhuang Y. (GE-03) . . . 160
 Zhukov A. (AG-07) . . . 12
 Zhukov A. (AG-08) . . . 12
 Zhukov A. (AG-09) . . . 12
 Zhukov A. (BS-02) . . . 44
 Zhukov A. (ES-12) . . . 118
 Zhukov A. (GE-01) . . . 160
 Zhukova V. (AG-07) . . . 12
 Zhukova V. (ES-12) . . . 118

Ziemann P. (BC-04)	29	Zou X. (DQ-13)	88
Zih-Siang W. (DG-07)	82	Zuo X. (FR-10)	144
Zinenko V.I. (BR-07)	43	Zürcher F. (GG-02)	163
Ziqiang Z. (FW-11)	152	Zuzek Rozman K. (EG-02) ...	108
Zong B. (AC-05)	4	Zvezdin A.K. (BD-01)	30
Zong B. (BC-08)	29	Zvezdin A.K. (ER-09)	116
Zou J. (GG-06)	164	Zvezdin K.A. (BD-01)	30
Zou W. (BR-09)	44	Zvezdin K.A. (ER-09)	116
Zou X. (AC-08)	5	Zyazin A. (GC-02)	156
Zou X. (DQ-12)	88		