

# MMM 2023



HYATT  
REGENCY  
DALLAS

OCTOBER 30 -  
NOVEMBER 3



# PROGRAM BOOK

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



# CONFERENCE SCHEDULE-AT-A-GLANCE

MONDAY, OCTOBER 30, 2023

12:00 pm to 1:00 pm

Magnetic Sensor Challenge Instructional Meeting (*Pre-Registration Required*) *Cumberland K*

Outreach Challenge Instructional Meeting (*Pre-Registration Required*) *Cumberland L*

12:30 pm to 1:00 pm

Magnetic Sound Concert *Pegasus A*

1:00 pm to 4:30 pm

TU Tutorial: Machine Learning in Magnetism *Reunion EF*

4:30 pm to 6:00 pm

Welcome Reception *Skyline Terrace*

6:15 pm to 7:45 pm

Young Professional Lightning Talks *Reunion EF*

TUESDAY, OCTOBER 31, 2023

8:30 am to 12:00 pm • Oral Sessions

AA Frontier Topics in Antiferromagnetism: Altermagnetism and Topology *Reunion EF*

AB Neuromorphic Computing I *Reunion GH*

AC Microscopy & Characterization I: Scanning Probes and Materials *Reunion A*

AD Magnetization Dynamics I: Micromagnetics and Modeling *Reunion B*

AE Complex Oxides (Bulk, Films and Heterostructures) *Reunion C*

AF Fundamental Properties I: 2D and Topological Materials *Pegasus A*

AG Interdisciplinary Topics I: Magnetic Forces and Nanoparticles; Biomedicine; Education and Outreach *Pegasus B*

9:00 am to 12:00 pm • Poster Sessions *Marsalis Hall A*

AP Fundamental Properties II: Magnetic Phase Transitions in 2D Systems and Complex Alloys

AQ Hard Magnetic Materials I

AR Soft Magnetic Materials I

AS Multi-Functional Magnetic Materials and Applications I

11:45 am to 1:15 pm

Meet the Speakers (*Pre-Registration Required*) *Baker*

12:00 pm to 1:00 pm

Magnetics Society Standards Committee Meeting (*open to all*) *Cumberland L*

1:30 pm to 5:00 pm • Oral Sessions

BA Rare-Earth Spintronics *Reunion EF*

BB Neuromorphic Computing II *Reunion GH*

BC Magneto-ionics *Reunion A*

BD Domain Wall, Vortex, and Skyrmion Dynamics and Devices I *Reunion B*

BE 3D Magnetism *Reunion C*

**BF** Fundamental Properties III: 2D and Topological Materials II *Pegasus A*

**BG** Sensors, High Frequency Devices, and Power Devices *Pegasus B*

**2:00 pm to 5:00 pm • Poster Sessions** *Marsalis Hall A*

**BP** Spin Waves and Magnonics I

**BQ** Spin Hall and Related Effects I

**BR** Skyrmions and Antiferromagnets

**BS** Spin Orbitronics I

**4:30 pm to 6:00 pm**

Bierstube *Marsalis Hall A*

**4:30 pm to 6:00 pm**

Women in Magnetism Networking Event *Bogel's Billiards*

**6:15 pm to 7:45 pm**

**XA** Evening Session I: Realism in Micromagnetics *Reunion EF*

**WEDNESDAY, NOVEMBER 1, 2023**

**8:30 am to 12:00 pm • Oral Sessions**

**CA** Recent Advances in Cavity Magnonics *Reunion EF*

**CB** Skyrmions *Reunion GH*

**CC** Multiferroic Materials and Magnetoelectric Phenomena *Reunion A*

**CD** Magnetization Dynamics II: Spin Pumping and FMR *Reunion B*

**CE** Spin Orbitronics II *Reunion C*

**CF** Fundamental Properties IV: 2D and Topological Materials *Pegasus A*

**CG** Biomedical Applications I *Pegasus B*

**9:00 am to 12:00 pm • Poster Sessions** *Marsalis Hall A*

**CP** Domain Wall, Vortex, and Skyrmion Dynamics and Devices II

**CQ** Magnetization Dynamics III: Micromagnetics and Modeling

**CR** Microscopy & Characterization II

**CS** Magnetic Sensors and High Frequency Devices

**11:45 am to 1:15 pm**

Ethics in Publications Workshop  
(Pre-Registration Required) *Cumberland EFGH*

**1:30 pm to 5:00 pm • Oral Sessions**

**DA** Emerging Topics in Magnetic Tunnel Junctions: Altermagnetism, Probabilistic Computing and Energy Efficient Switching *Reunion EF*

**DB** Antiferromagnets: Electric Switching and Spin-Orbit Torques *Reunion GH*

**DC** Magneto-ionic and New Magnetoelectric Materials *Reunion A*

**DD** Magnetization Dynamics IV: Ultrafast Magnetism *Reunion B*

**DE** Spin Hall and Related Effects II *Reunion C*

**DF** Fundamental Properties V: Magnetic Phases in Topological Materials and Complex Alloys *Pegasus A*

**DG** Domains and Anisotropy in Magnetic Junctions *Pegasus B*

**2:00 pm to 5:00 pm • Poster Sessions***Marsalis Hall A*

- DP** Structured Materials and Magnetic Recording
- DQ** Interdisciplinary Topics II: Magnetic Forces and Nanoparticles; Biomedicine; Education and Outreach
- DR** Shielding, Levitation and Propulsion

**4:30 pm to 6:00 pm**Bierstube *Marsalis Hall A***6:15 pm to 6:30 pm**Awards Presentation *Reunion EF***6:30 pm to 8:00 pm**

- YA** Evening Session 2: Magneto-Ionics *Reunion EF*

**THURSDAY, NOVEMBER 2, 2023****8:30 am to 12:00 pm • Oral Sessions**

- EA** Orbitronics: From Orbital Currents Created by Charge Currents to Creation by Light or RF Excitation *Reunion EF*
- EB** Neuromorphic Junctions and New Design *Reunion GH*
- EC** Soft Magnetic Materials II: Amorphous and Nanocrystalline Materials *Reunion A*
- ED** Spin Waves and Magnonics II *Reunion B*
- EE** Magnetic Nanoparticles and Exchange Bias Systems *Reunion C*
- EF** Hard Magnetic Materials II *Pegasus A*
- EG** New Applications and Sensors and Other Emerging Topics *Pegasus B*

**9:00 to 12:00 pm • Poster Sessions***Marsalis Hall A*

- EP** Magnetic Tunnel Junctions and Devices
- EQ** Thin Films, Multilayers and Interface Effects II
- ER** Magnetoelectric Materials
- ES** Magnetics for Power Electronics and Control

**11:45 am to 1:15 pm**

Meet the Experts (*Pre-Registration Required*) *Baker*

Magnetic Sensor Challenge Final Presentations *Pegasus B*

Outreach Challenge Final Presentations *Pegasus A*

**1:30 pm to 5:00 pm • Oral Sessions**

- FA** Imaging Magnetic Textures at the Nanoscale *Reunion EF*
- FB** Antiferromagnets: Non-collinear Spin Structures and Dynamics *Reunion GH*
- FC** Soft Magnetic Materials III: Crystalline Alloys *Reunion A*
- FD** Next-Generation MRAM Technology *Reunion B*
- FE** Thin Films, Multilayers and Interface Effects I *Reunion C*
- FF** Magneto-Caloric Materials and Devices *Pegasus A*
- FG** New Materials and Interfaces for Magnetic Junctions *Pegasus B*

**2:00 pm to 5:00 pm • Poster Sessions***Marsalis Hall A*

- FP** Neuromorphic Computing III
- FQ** Magnetics for Power Electronics and Transformers
- FR** Biomedical Applications II

**4:30 pm to 6:00 pm**Bierstube *Marsalis Hall A*Students in Magnetism Networking Event *Cumberland J***6:15 pm to 7:45 pm**Student Evening Session:  
Spotting the Next Big Idea *Reunion EF***FRIDAY, NOVEMBER 3, 2023****8:30 am to 12:00 pm • Oral Sessions****GA** Magnetization Dynamics in Two-Dimensional van der Waals Magnets *Reunion EF***GB** Microscopy & Characterization III: Spin Textures, Magnetic Interactions, Nanoparticle Dynamics and X-ray Methods *Reunion GH***GC** Soft Magnetic Materials IV: Ferrites and Garnets *Reunion A***GD** Spin Injection and Spin Torque Devices *Reunion B***GE** Half-Metallic Materials, Magnetic Semiconductors and Other Advanced Materials for Spintronics *Reunion C***GF** Multi-Functional Magnetic Materials and Applications II *Pegasus A***GG** Magnetic Recording *Pegasus B***POSTER VIRTUAL ONLY SESSIONS***Available on digital conference library after the in-person Conference***VP1** Domain Wall, Vortex, and Skyrmion Dynamics and Devices**VP2** Fundamental Properties and Cooperative Phenomena**VP3** Hard Magnetic Materials**VP4** Interdisciplinary and Emerging Topics: Biomedical Applications; Magnetic Fluids and Separations; New Applications and Other Emerging Topics**VP5** Magnetic Recording**VP6** Magnetic Sensors and High Frequency Devices**VP7** Magnetization Dynamics and Switching**VP8** Magnetoelectric Materials**VP9** Magnetoresistance and Associated Effects**VP10** Microscopy & Characterization**VP11** Multi-Functional Magnetic Materials and Applications**VP12** Sensors, High Frequency Devices, and Power Devices**VP13** Soft Magnetic Materials**VP14** Spin Hall and Related Effects**VP15** Spin Orbitronics**VP16** Structured Materials**VP17** Thin Films, Multilayers and Interface Effects

## SCOPE OF THE CONFERENCE



The 68<sup>th</sup> Annual Conference on Magnetism and Magnetic Materials (MMM 2023) is sponsored jointly by AIP Publishing and the IEEE Magnetism Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend and contribute to the technical sessions. The technical program will include invited and contributed papers in oral and poster sessions, invited symposia, a tutorial, and several special sessions. This Conference provides an outstanding opportunity for worldwide participants to meet their colleagues and collaborators and discuss developments in all areas of magnetism research.

### OFFICIAL HOTEL & CONFERENCE LOCATION

---

#### Hyatt Regency Dallas

300 Reunion Blvd.  
Dallas, TX 75207

### TIME ZONE

---

Dallas is located in the US Central Time Zone.

### CITY INFORMATION

---

Everything *IS* bigger in Texas!



Dallas is the third largest city in Texas, conveniently located close to Fort Worth and the Dallas Fort Worth International Airport. Its numerous neighborhoods, from Downtown, to Uptown, and everything in-between, are made up of a diverse group of cultures, religions, and lifestyles, with big food, big style and big entertainment around every corner. Reunion Tower, located at the Hyatt Regency (the Conference hotel), is a great place to start! Take in a breath-taking view of the city from the observation deck 407-feet above street level (guests at the Conference hotel receive a 20% discount) or grab a drink and dinner at one of the hottest new restaurants in town, Crown Block. The Perot Museum of Science and Nature and the Dallas Museum of Art are just two of the many fantastic museums that Dallas has to offer, and the hotel is within walking distance of many other attractions including Dealey Plaza and the Historic West End. Check out all there is to do in Dallas at [www.visitdallas.com](http://www.visitdallas.com).

## REGISTRATION

---

The Conference Registration Desk will be located outside the Reunion Ballroom on the Lobby Level. Attendees are required to wear name badges to enter all Conference events.

### Registration hours:

Monday .....	12:30 pm - 6:30 pm
Tuesday .....	7:30 am - 6:30 pm
Wednesday .....	8:00 am - 4:30 pm
Thursday .....	8:00 am - 4:30 pm

## CONFERENCE ABSTRACT BOOK

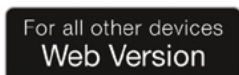
---

The Conference abstract book is available for download on the Conference website at <https://magnetism.org/program-overview>.

## MOBILE APP

---

The **MyItinerary by ScholarOne** mobile app provides onsite attendees with instant access to the entire onsite Conference program including abstracts, speakers, and the schedule of events. You can use it to build your own customized schedule and to get in touch with other attendees.



*Download the app here and select MMM 2023!*

## SOCIAL MEDIA

---

Attendees are encouraged to share their photos from the Conference using #MMM2023. Please do not include any presentation content in the background of your photos.



@MMMConf



#MMM2023

## DIGITAL CONFERENCE LIBRARY

---

MMM 2023 will offer access to a digital conference library for on-demand viewing of the Tutorial, Symposia, Evening Sessions, virtual posters, and some of the oral presentations. Access to this digital conference library will be made available to conference attendees from November 10, 2023 to January 10, 2024.

## PUBLICATIONS

---

Conference papers will be published online in early 2024 in *AIP Advances* as a special topic. *AIP Advances* is an open access journal published by AIP Publishing, and articles are freely available to read, download and share. All previously published MMM articles can be viewed at <http://mmm.aip.org>, and published Conference papers are identified by presentation IDs. **All MMM Conference papers published in *AIP Advances* will be open access at no additional cost to the authors.**

## DAILY EVENTS

### COFFEE SERVICE

---

**Tuesday – Thursday**..... 8:00 am – 4:00 pm  
*Exhibit Hall, Marsalis A*

**Friday**.....8:00 am – 11:00 am  
*Reunion Foyer*

### BIERSTUBE

---

**Tuesday – Thursday**..... 4:30 pm – 6:00 pm  
*Exhibit Hall*

*Join us for a taste of the best local beers in town!*

*Tuesday Bierstube Supported by:*



Physical Review  
Materials

### ORAL SESSIONS

---

There will be seven simultaneous oral session rooms daily, including Symposia. Daily breaks are scheduled from 9:45 am - 10:15 am and 2:45 pm - 3:15 pm.

Tuesday ..... 8:30 am – 12:00 pm and 1:30 pm – 5:00 pm

Wednesday ..... 8:30 am – 12:00 pm and 1:30 pm – 5:00 pm

Thursday ..... 8:30 am – 12:00 pm and 1:30 pm – 5:00 pm

Friday ..... 8:30 am – 12:00 pm

### Poster Sessions

---

In-person poster sessions will be held in the Exhibit Hall daily. Presenters will be available during these times for Q&A.

Tuesday ..... 9:00 am – 12:00 pm and 2:00 pm – 5:00 pm

Wednesday ..... 9:00 am – 12:00 pm and 2:00 pm – 5:00 pm

Thursday ..... 9:00 am – 12:00 pm and 2:00 pm – 5:00 pm

There will be virtual poster sessions available in the digital conference library starting November 10, 2023.

### SESSION CHAIRS

---

On the day of their session, Oral and Poster Session Chairs should attend the Session Chair Breakfast at 7:45 am in Cumberland EFGH on the Exhibition Level of the hotel.

### SPEAKER REHEARSAL ROOM

---

Speakers are encouraged to test their laptop connections and screen resolution settings prior to the start of their session in the Speaker Rehearsal Room, located in Cumberland C on the Exhibition Level of the hotel. This room is available from Monday at 1:00 pm until Friday at 11:00 am.



## Symposia

Symposia talks consist entirely of invited talks by experts in the field and will be presented in Reunion Ballroom EF. **These sessions will be recorded and made available in the digital conference library on November 10, 2023.**

**Tuesday AA** Frontier Topics in Antiferromagnetism:  
8:30 am – 12:00 pm Altermagnetism and Topology

**Tuesday BA** Rare-earth Spintronics  
1:30 pm – 5:00 pm

**Wednesday CA** Recent Advances in Cavity Magnonics  
8:30 am – 12:00 pm

**Wednesday DA** Emerging Topics in Magnetic Tunnel  
1:30 pm – 5:00 pm Junctions: Altermagnetism, Probabilistic  
Computing and Energy Efficient Switching

**Thursday EA** Orbitronics: From Orbital Currents Created  
8:30 am – 12:00 pm by Charge Currents to Creation by Light or  
RF Excitation

**Thursday FA** Imaging Magnetic Textures at the Nanoscale  
1:30 pm – 5:00 pm

*Supported by*



**Friday GA** Magnetization Dynamics in Two-  
8:30 – 11:30 am Dimensional van der Waals Magnets

## MAGNETISM AS ART SHOWCASE

The Conference will host the Magnetism as Art Showcase to highlight the beauty of magnetism and magnetic materials. The four finalists will be chosen by a panel of judges and displayed at the Conference. **Be sure to vote for your favorite by 12:00 pm CT on Wednesday, November 1!**

## AWARDS

### ADVANCES IN MAGNETISM AWARD

*Supported by:*

# AIP Advances

*AIP Advances* will sponsor the third annual Advances in Magnetism Award. The Award will be presented to the best paper submitted as part of the MMM 2023 Conference and presented at the MMM 2025 Conference in Palm Beach, Florida. The winner will receive a cash prize of \$3,500 plus a travel allowance of \$2,500 for the next in-person MMM conference!

To be eligible for the award presented at the MMM 2025 Conference, the candidate must have a MMM 2023 Conference paper accepted for publication in *AIP Advances*.

If you have questions about eligibility or the selection process, contact [AIPAdvances-journalmanager@aip.org](mailto:AIPAdvances-journalmanager@aip.org).

## BEST POSTER AWARD

---

Supported by:

# GMW Associates

All posters presented in-person are eligible to receive this award. Winners are selected by the Poster Session Chairs and Program Co-Chairs, and are based on the level of research, quality of the poster, and clarity of the presentation. Please visit the winning posters which will be displayed all week outside the Exhibit Hall.

## BEST STUDENT PRESENTATION AWARD

---

Supported by:



This award recognizes and encourages excellence in graduate studies in the field of magnetism. There will be a \$1,000 one-year fellowship for the winner and a \$250 one-year fellowship for the remaining finalists. **Conference attendees are encouraged to attend the talks and support these young scientists.** The winner will be announced at the start of the Evening Session on Wednesday.

**CONGRATULATIONS TO  
THE MMM 2023 FINALISTS!**

---

**Tuesday, October 31, 2:30 pm**

**BG-13 Skyrmionic device for an offset-free 3D magnetic field sensor with high linear range enabled by spin-orbit-torques**

Sabri Koraltan, *University of Vienna*

---

**Tuesday, October 31, 3:27 pm**

**BE-04 3-Dimensional Magnetostatic Interactions in Fe/Au Barcode Nanowire Arrays**

Eunjin Jeong, *Korea University*

---

**Tuesday, October 31, 4:15 pm**

**BC-06 Magneto-Ionic Enhancement of Exchange Bias and Modulation of Ferromagnetic Bi-stability**

Muhammad Usama Hasan, *Massachusetts Institute of Technology*

---

**Wednesday, November 1, 9:30 am**

**CG-04 Assessing Drug Loaded Magnetic Nanoparticles Concentration with Magnetoelectric Based Lab-On-A-Chip Device for Diagnostic Applications**

Pankaj Pathak, *Indian Institute of Technology Delhi*

---

**Wednesday, November 1, 11:15 am**

**CB-08 Skyrmions in Magnetic Multilayer Thin Films Are Half-Integer Hopfions**

William Parker, *University of Oregon*

## TRAVEL AND CHILDCARE SUPPORT

---

Support for travel and childcare is offered to a limited number of attendees who attend MMM each year. Additionally, to promote broader participation, MMM offers support specifically to researchers at institutions in countries that are historically not well-represented at the Conference, or to those whose attendance is challenged by global events such as the invasion of Ukraine, or other limitations.

All support recipients for this Conference have already been informed about their selection. If you are interested in applying for support to attend a future MMM Conference, go to [www.magnetism.org](http://www.magnetism.org).

## SPECIAL SESSIONS AND EVENTS

### MONDAY, OCTOBER 30

---

#### MAGNETIC SOUND CONCERT

---

**Monday, October 30** ..... 12:30 pm – 1:00 pm  
*Pegasus A, Lobby Level*

L. Alexis Emelianoff is a multidisciplinary artist, developing systems to produce sound from electrical and magnetic phenomena. She will present a sound demonstration of ‘Spirit of Light’, a machine consisting of several laser-cut steel discs with patterns of magnets. The sound is sourced through magnetic and inductive pickups, then fed through software to a multichannel system including metal thundersheets, with complex textures created by the plate resonance and shifting electrical fields. Pulsing, hypnotic and even mystical, this soundscape grows out of ongoing research-creation in Magneto-acoustics. Alexis has traveled from Montréal seeking collaboration with scientists to further this practice.

To view a demo video of the machine, go to <https://vimeo.com/529853060>. For more information on other projects, go to [lutheriepostmoderne.com](http://lutheriepostmoderne.com).

#### TUTORIAL: MACHINE LEARNING IN MAGNETISM

---

**Monday, October 30** ..... 1:00 pm – 4:30 pm  
*Reunion EF, Lobby Level*

**This session will be recorded. The recording will be available in the digital conference library on November 10.** This tutorial will feature a hands-on training session to get you started in using machine learning, followed by three talks which will provide applications of machine learning in magnetism.

**Chair:** Cindi Dennis, *NIST*

**Speakers:** Silvia Vock, *Baua: Federal Institute for Occupational Safety and Health*

**Basic Introduction to Machine Learning in a Physical Context**

Shehrin Sayed, *TDK Global*

**Machine Learning for Application-Specific Materials Search**

Kenji Tanabe, *Toyota Technological Institute*  
**Future Method for Estimating Parameters in Magnetic Films**

Alexandria Will-Cole, *Northeastern University*  
**Application of Bayesian Optimization and Regression Analysis to Ferromagnetic Materials Development**

## WELCOME RECEPTION

---

**Monday, October 30** ..... 4:30 pm – 6:00 pm  
*Skyline Terrace*

## YOUNG PROFESSIONALS LIGHTNING TALKS

---

**Monday, October 30** ..... 6:15 pm – 7:30 pm  
*Reunion EF, Lobby Level*

**This session will be recorded. The recording will be available in the digital conference library on November 10.** This special session will challenge young professionals to present their research in an understandable manner to an audience outside of their field *in just three minutes*. The winner will receive a cash prize! **Light food and drinks will be served.**

**Chair:** Dmytro Bozhko, *University of Colorado, Colorado Springs*

## TUESDAY, OCTOBER 31

---

### IEEE MAGNETICS SOCIETY STANDARDS COMMITTEE MEETING

---

**Tuesday, October 31** ..... 12:00 pm – 1:00 pm  
*Cumberland L, Exhibition Level*

Whether you're a founding member of the Magnetics Society Standards Committee, an IEEE Fellow or just an interested conference attendee, we'd love to have you join us to meet other like-minded individuals and learn more about what we can do now that we have formed this Standards Committee! **Light food and drinks will be served.**

### MEET THE SPEAKERS

---

**Tuesday, October 31** ..... 12:00 pm – 1:00 pm  
*Baker, Atrium Level*

*Supported by:*



This always-popular event provides young researchers with the exclusive opportunity to participate in a small-group discussion over lunch with a distinguished group of invited speakers from MMM. **Lunch will be served. Pre-registration is required.**

**Speakers:** Antonio Azevedo, *Universidade Federal de Pernambuco*

**Spin-orbitronics and spin dynamics**

Jack Carter-Gartside, *Imperial College London*  
**Neuromorphic computing and magnonics**

Arno Ehresmann, *University of Kassel*  
**Magnetic thin films (magnetoresistance, multilayers, exchange bias, etc.), magnetic particle transport in liquids for lab-on-chip systems, and 3D magnetic micro- and nanostructures**

Satoru Emori, *Virginia Institute of Technology*  
**Magnetization dynamics in thin-film systems**

Jean Anne Incorvia, *University of Texas at Austin*  
**Magnetic computing and spintronics**

Valentine Novosad, *Argonne National Laboratory*  
**Magnetic and superconducting films and patterned heterostructures**

Ricardo Sousa, *SPINTEC*  
**MRAM/magnetic tunnel junctions**

Bethanie Stadler, *University of Minnesota*  
**Magnetic nanowires and magneto photonics**

Hiroaki Sukegawa, *National Institute  
for Materials Science, Japan*  
**Magnetic tunnel junctions, epitaxial growth  
of magnetic thin films/multilayers, STT/SOT-  
MRAM, MR sensors**

Silvia Vock, *Baua: Federal Institute  
for Occupational Safety and Health*  
**Machine learning**

## WOMEN IN MAGNETISM NETWORKING EVENT

**Tuesday, October 31**..... 4:30 pm – 6:00 pm  
*Bogel's Billiards, Atrium Level*

Supported by:



This long-standing and highly successful event brings together women working in magnetism and magnetic materials to become acquainted with other women in the profession, and to discuss a range of topics including leadership, work-life balance, and professional development. All Conference attendees are invited to attend.

## BIERSTUBE

**Tuesday, October 31**..... 4:30 pm – 6:00 pm  
*Exhibit Hall, Marsalis A*

*Join us for a taste of the best local beers in town!*

*Tuesday Bierstube supported by:*



## EVENING SESSION 1: REALISM IN MICROMAGNETICS

**Tuesday, October 31**..... 6:15 pm – 7:45 pm  
*Reunion EF, Lobby Level*

This session will be recorded. The recording will be available in the digital conference library on November 10. This evening session will focus on recent efforts to improve the realism of micromagnetic simulations of magnetic materials and devices as compared to experimental measurements.

**Chair:** Michael Donahue, *NIST*

**Speakers:** Alessandra Manzin, *Istituto Nazionale  
di Ricerca Metrologica*

**From 1D to 3D Computational Micromagnetics  
for Realistic Simulations of Magnetic  
Nanomaterials and Nanodevices**

Vitaliy Lomakin, *University of California,  
San Diego*

**Pushing the Boundaries of Micromagnetic  
Modeling: Multiphysics Integration and High-  
Performance Computation**

### ETHICS IN PUBLICATIONS WORKSHOP

---

**Wednesday, November 1** ..... 11:45 am – 1:15 pm  
*Cumberland EFGH, Exhibition Level*

This workshop will focus on ethics in all stages of the publication process, from authors, to reviewers, to editors, and the role of journals. Discussions will focus around examples of ethical and non-ethical decisions and behaviors. **Lunch will be served. Pre-registration is required.**

**Chair:** Connie Li, *Naval Research Lab*

**Speakers:** Luigi Longobardi, *IEEE*  
Melissa Patterson, *AIP Publishing*

### BIERSTUBE

---

**Wednesday, November 1** ..... 4:30 pm – 6:00 pm  
*Exhibit Hall, Marsalis A*

*Join us for a taste of the best local beers in town!*

### AWARDS PRESENTATION

---

**Wednesday, November 1** ..... 6:15 pm – 6:30 pm  
*Reunion EF, Lobby Level*

**This session will be recorded. The recording will be available in the digital conference library on November 10.** Just prior to the start of the Wednesday Evening Session, we will hold a brief awards presentation to honor the following:

- Best Student Presentation Award Finalists and Winner
- Magnetism as Art Showcase Finalists and Winner
- Advances in Magnetism Winner (presented by AIPP)

### EVENING SESSION 2: MAGNETO-IONICS

---

**Wednesday, November 1** ..... 6:30 pm – 8:00 pm  
*Reunion EF, Lobby Level*

**This session will be recorded. The recording will be available in the digital conference library on November 10.**

*Supported by:*



This session will focus on recent efforts in magneto-ionics, where electric fields are used to control the magnetic properties of a ferromagnet by ionic transport or by modifying the oxidation state of the interfacial atoms.

**Chair:** Karin Leistner, *TU Chemnitz*

**Speakers:** Liza Herrera Diez, *Centre for Nanoscience and Nanotechnologies*

**Oxygen-based Magneto-Ionics: Mechanisms, Recent Developments and Perspectives**

Geoffrey Beach, *MIT*

**When Smaller is Better: Advancing Magneto-Ionics with Protons**

MEET THE EXPERTS

---

Thursday, November 2 ..... 12:00 pm – 1:00 pm  
*Baker, Atrium Level*

Supported by:



This interactive event provides young researchers with the exclusive opportunity to participate in a small-group discussion over lunch with a distinguished group of magnetism experts, on career planning, technical paper writing and publication, job searches and interviews, society involvement, and more. **Lunch will be served. Pre-registration is required.**

- Experts:** Gerrit Bauer, *Tohoku University*  
**Applied theoretical physics, including spin transport**
- Liza Herrera Diez, *University of Paris at Saclay*  
**Magnetoionics**
- Cathrine Frandsen, *Technical University of Denmark*  
**Magnetic nanoparticles, fundamental properties and applications**
- Can-Ming Hu, *University of Manitoba*  
**Magnetization dynamics and cavity magnonics**
- Chanyong Hwang, *Korea Research Institute of Standards and Science*  
**Voltage control of magnetism**
- Kyung-Jin Lee, *Korea Institute of Science and Technology*  
**Magnetization dynamics and spin transport**
- Vitaliy Lomakin, *University of California at San Diego*  
**Micromagnetic simulations**
- Jonathan Sun, *IBM*  
**MRAM**
- Yayoi Takamura, *University of California at Davis*  
**Complex oxide thin films, heterostructures, and nanostructures, synchrotron radiation based measurements**
- Shan Wang, *Stanford University*  
**Biological applications of nanomagnets, MRAM/spintronics**

OUTREACH CHALLENGE

---

Final Presentations

Thursday, November 2 ..... 11:45 am – 1:15 pm  
*Pegasus A, Lobby Level*

**Co-Chairs:** Cindi Dennis, *NIST* and Anjan Soumyanarayanan, *National University of Singapore*

We have all been taught the fundamentals of magnetism and magnetic materials and their applications. The Outreach Challenge will give participants the opportunity to create a program/demonstration to educate non-scientists on some aspect of the targeted areas. Participants will meet Monday at noon for an instructional meeting (participants must register in advance). Teams will choose one topic and then use their ingenuity to develop an outreach program/demonstration to be presented on Thursday. The team with the most creative and best presented solutions will receive a prize and be recognized on

the Conference website. **All attendees are invited to watch the final presentations. Light refreshments will be served.**

## MAGNETIC SENSOR CHALLENGE

### Final Presentations

**Thursday, November 2** ..... 11:45 am – 1:15 pm  
*Pegasus B, Lobby Level*

**Chair:** Phil Mather, *Bosch Sensortec GmbH*

Magnetic sensors fill a crucial technology space across multiple industries. While many of you have had a chance to develop materials for or perform laboratory tests on magnetic sensors, it is likely that you didn't fully explore their practical use. To expand these skills, we have created the Magnetic Sensor Challenge. Participants will meet Monday at noon for an instructional meeting (participants must register in advance). Teams will be provided with magnetoresistive sensors, magnets, and an Arduino design kit, and they will use their creativity to develop a sensor circuit and perform measurements to be presented on Thursday. The team with the most creative and best presented solutions will receive a prize and be recognized on the Conference website. **All attendees are invited to watch the final presentations. Light refreshments will be served.**

## BIERSTUBE

**Thursday, November 2** ..... 4:30 pm – 6:00 pm  
*Exhibit Hall, Marsalis A*

*Join us for a taste of the best local beers in town!*

## STUDENTS IN MAGNETISM NETWORKING EVENT

**Thursday, November 2** ..... 4:30 pm – 6:00 pm  
*Cumberland J, Exhibition Level*

All Graduate Students are invited to this networking event with snacks, games, and giveaways (including free T-shirts!). Bring your drink from the Bierstube and join us! Sign up for a free T-shirt here: [www.studentsinmagnetism.org/mmm2023](http://www.studentsinmagnetism.org/mmm2023)

## STUDENT EVENING SESSION: SPOTTING THE NEXT BIG IDEA

**Thursday, November 2** ..... 6:15 pm – 7:45 pm  
*Reunion EF, Lobby Level*

**This session will be recorded. The recording will be available in the digital conference library on November 10.** This special session will feature a panel discussion on how to identify the next big idea in magnetism – both characteristics to look for and what to consider before switching research directions. **Light food and drinks will be served.**

**Chair:** Nicola Morley, *University of Sheffield*

**Panelists:** Geoffrey Beach, *Massachusetts Institute of Technology*

Julie Borchers, *NIST*

Chris Leighton, *University of Minnesota*

Nicoleta Lupu, *National Institute of R&D for Technical Physics*

Chris Marrows, *University of Leeds*

Tiffany Santos, *Western Digital*

Thomas Schrefl, *University for Continuing Education Krems*

Yoichiro Tanaka, *Tohoku University*



# CONFERENCE ORGANIZATION

## STEERING COMMITTEE

General Chair .....	Barry Zink
Chair-Elect .....	Mark Stiles
Past Chair .....	Yayoi Takamura
Co-Treasurers .....	Jean Anne Incorvia and Timo Kuschel
Program Committee Co-Chairs.....	Hendrik Ohldag, Karin Leistner, and Takahiro Moriyama
Publications Chair .....	Connie Li
Exhibits Co-Chairs .....	Igor Barsukov, Ilya Krivorotov, and Eric Montoya
Awards and Travel Support Chair .....	Emilie Jue
Publicity Co-Chairs .....	Xin Fan and Sophie Morley
Special Events Chair .....	Cindi Dennis
IEEE Magnetics Society	
Representative .....	Rudolf Schäfer
AIP Publishing Representatives .....	Bill Burke, Ginny Herbert, and Melissa Patterson
Conference Manager .....	Molly Bartkowski
Abstracts/Publications Manager .....	Regina Mohr
Special Events & Partner	
Support Manager .....	Shelbie Jenkins
Registration Manager .....	Ashley Cesare
Editors .....	Claas Abert, Yacine Amara, Felipe Bohn, Ravi L. Hadimani, Jiayan Law, Nicoleta Lupu, Manh-Huong Phan, Prem Piramanayagam, and Ciro Visone

## PROGRAM COMMITTEE (Note: Subcommittee leads in *italics*)

- I. Fundamental Properties and Cooperative Phenomena**  
*Cheng Song, Anna Isaeva*
- II. Magneto-electronic Materials and Phenomena**  
*Jordi Sort, Geoffrey Beach, Tatsuya Yamamoto*
- III. Spintronics – Fundamentals and Devices**  
*Jingsheng Chen, Atsufumi Hirohata, Axel Hoffmann,  
KabJin Kim, Ran Cheng, Satoru Emori,  
Shunsuke Fukumi, Yuki Hibino, Shinya Kasai,  
Christopher Safranski, Tomohiro Taniguchi,  
Weigang Wang*
- IV. Magnetization Dynamics and Micromagnetics**  
*Anjan Barman, Roopali Kukreja, Johan Akerman,  
Dazhi Hou, Benjamin Jungfleisch, Shigemi Mizukami,  
Dieter Suess*
- V. Soft Magnetic Materials**  
*Mi-Young Im, Nicoleta Lupu, Jinke Tang*
- VI. Hard Magnetic Materials**  
*Thomas Woodcock, George Hadjipanayis, David Brown,  
Everett Carpenter*
- VII. Structured Materials**  
*Lise-Marie Lacroix, Nicolas Rougemaille, Cristina Bran,  
Dustin Gilbert, Markus Goessler, Yayoi Takamura*
- VIII. Multi-Functional Magnetic Materials  
and Applications**  
*Fanny Beron, Katharina Ollefs, Radhika Barua,  
Christian Binek, Minh-Hai Nguyen, Georgeta Salvan*

- IX. Magnetic Recording and Magnetic Sensors**  
*Yukiko Takahashi, Anna Giordano, Chi-Feng Pai*
- X. High Frequency and Power Devices**  
*Paola Tiberto, Yasushi Endo, Connor Smith*
- XI. Interdisciplinary and Emerging Topics**  
*Thomas Feggeler, Zoe Boekelheide,  
Carolin Schmitz-Antoniak*
- XII. Magnetic Characterization**  
*Sebastian Wintz, Rajesh Chopdekar, Jeffrey McCord*

## **ONSITE ORAL SESSION CHAIRS**

---

- AA Frontier Topics in Antiferromagnetism:  
Altermagnetism and Topology**  
*Badih Assaf, Michelle Jamer*
- AB Neuromorphic Computing I**  
*Joseph Friedman, Jayasimha Atulasimha*
- AC Microscopy & Characterization I: Scanning  
Probes and Materials**  
*Max Birch*
- AD Magnetization Dynamics I: Micromagnetics  
and Modeling**  
*Anna Semisalova, Michael Tanksalvala*
- AE Complex Oxides (Bulk, Films and Heterostructures)**  
*Geoffrey Beach, Vipul Chaturvedi*
- AF Fundamental Properties I: 2D and Topological  
Materials**  
*Jiahao Han*
- AG Interdisciplinary Topics I: Magnetic Forces  
and Nanoparticles; Biomedicine; Education  
and Outreach**  
*Sakhrat Khizroev*
- BA Rare-Earth Spintronics**  
*Alejandro Leon*
- BB Neuromorphic Computing II**  
*Jayasimha Atulasimha, Joseph Friedman*
- BC Magneto-ionics**  
*Chris Leighton*
- BD Domain Wall, Vortex, and Skyrmion Dynamics  
and Devices I**  
*Dazhi Hou, Wanjun Jiang*
- BE 3D Magnetism**  
*Peter Fischer*
- BF Fundamental Properties III: 2D and Topological  
Materials II**  
*Suvayan Saha*
- BG Sensors, High Frequency Devices, and Power Devices**  
*Sara Mills, Zhenchao Wen*
- CA Recent Advances in Cavity Magnonics**  
*Andrew Kent*
- CB Skyrmions**  
*Jiadong Zang*
- CC Multiferroic Materials and Magnetoelectric  
Phenomena**  
*Jordi Sort, Paola Tiberto*
- CD Magnetization Dynamics II: Spin Pumping and FMR**  
*Marco Coisson*
- CE Spin Orbitronics II**  
*Albert Park*

- CF Fundamental Properties IV: 2D and Topological Materials**  
Rakshit Jain
- CG Biomedical Applications I**  
Arno Ehresmann
- DA Emerging Topics in Magnetic Tunnel Junctions: Altermagnetism, Probabilistic Computing and Energy Efficient Switching**  
Weigang Wang
- DB Antiferromagnets: Electric Switching and Spin-Orbit Torques**  
Matthew Daniels
- DC Magneto-ionic and New Magnetoelectric Materials**  
Dhritiman Bhattacharya, Kai Liu
- DD Magnetization Dynamics IV: Ultrafast Magnetism**  
Ezio Iacocca
- DE Spin Hall and Related Effects II**  
Shun Kanai
- DF Fundamental Properties V: Magnetic Phases in Topological Materials and Complex Alloys**  
Xianzhe Chen
- DG Domains and Anisotropy in Magnetic Junctions**  
Razan Aboljadayel
- EA Orbitronics: From Orbital Currents Created by Charge Currents to Creation by Light or RF Excitation**  
Mairbek Chshiev
- EB Neuromorphic Junctions and New Design**  
Atsufumi Hirohata
- EC Soft Magnetic Materials II: Amorphous and Nanocrystalline Materials**  
Nicola Morley, Alpha N'Diaye
- ED Spin Waves and Magnonics II**  
Jack Gartside
- EE Magnetic Nanoparticles and Exchange Bias Systems**  
Denys Makarov, Volker Neu, Yayoi Takamura
- EF Hard Magnetic Materials II**  
J. Ping Liu
- EG New Applications and Sensors and Other Emerging Topics**  
Minh-Hai Nguyen
- FA Imaging Magnetic Textures at the Nanoscale**  
Jack Gartside
- FB Antiferromagnets: Non-collinear Spin Structures and Dynamics**  
Dominik Kriegner
- FC Soft Magnetic Materials III: Crystalline Alloys**  
Arcady Zhukov
- FD Next-Generation MRAM Technology**  
Jonathan Sun
- FE Thin Films, Multilayers and Interface Effects I**  
Markus Goessler
- FF Magneto-Caloric Materials and Devices**  
Andrei Rogalev
- FG New Materials and Interfaces for Magnetic Junctions**  
Van Dai Nguyen, Thomas Scheike
- GA Magnetization Dynamics in Two-Dimensional van der Waals Magnets**  
Axel Hoffmann

- GB Microscopy & Characterization III: Spin Textures, Magnetic Interactions, Nanoparticle Dynamics and X-ray Methods**  
Sophie Morley
- GC Soft Magnetic Materials IV: Ferrites and Garnets**  
Liuliu Han
- GD Spin Injection and Spin Torque Devices**  
Ryo Ohshima
- GE Half-Metallic Materials, Magnetic Semiconductors and Other Advanced Materials for Spintronics**  
Kenji Nawa
- GF Multi-Functional Magnetic Materials and Applications II**  
Harshida Parmar
- GG Magnetic Recording**  
Simon Greaves

## **ONSITE POSTER SESSION CHAIRS**

- AP Fundamental Properties II: Magnetic Phase Transitions in 2D Systems and Complex Alloys**  
Lei Han
- AQ Hard Magnetic Materials I**  
Thomas Schrefl
- AR Soft Magnetic Materials I**  
Nicoleta Lupu
- AS Multi-Functional Magnetic Materials and Applications I**  
Thomas Feggeler, Hendrik Ohldag
- BP Spin Waves and Magnonics I**  
Joseph Sklenar
- BQ Spin Hall and Related Effects I**  
Michael Kitcher
- BR Skyrmions and Antiferromagnets**  
Wei Zhang
- BS Spin Orbitronics I**  
Gen Yin
- CP Domain Wall, Vortex, and Skyrmion Dynamics and Devices II**  
Xianzhe Chen
- CQ Magnetization Dynamics III: Micromagnetics and Modeling**  
Chuanpu Liu
- CR Microscopy & Characterization II**  
Claas Abert
- CS Magnetic Sensors and High Frequency Devices**  
Laura Rehm
- DP Structured Materials and Magnetic Recording**  
Yayoi Takamura
- DP Structured Materials and Magnetic Recording**  
Varaprasad Bollapragada
- DQ Interdisciplinary Topics II: Magnetic Forces and Nanoparticles; Biomedicine; Education and Outreach**  
Frank Abel
- DR Shielding, Levitation and Propulsion**  
Mai Phuong Nguyen
- EP Magnetic Tunnel Junctions and Devices**  
Minori Goto

- EQ Thin Films, Multilayers and Interface Effects II**  
Dustin Gilbert
- ER Magnetoelectric Materials**  
Markus Goessler
- ES Magnetics for Power Electronics and Control**  
Changgeng Zhang
- FP Neuromorphic Computing III**  
Yusuke Imai
- FQ Magnetics for Power Electronics and Transformers**  
Marco Trapanese
- FR Biomedical Applications II**  
Hendrik Ohldag

## **VIRTUAL POSTER SESSION CHAIRS**

- VP1 Domain Wall, Vortex, and Skyrmion Dynamics and Devices**  
Susmita Saha
- VP2 Fundamental Properties and Cooperative Phenomena**  
Cheng Song
- VP3 Hard Magnetic Materials**  
Tetsuji Saito
- VP4 Interdisciplinary and Emerging Topics: Biomedical Applications; Magnetic Fluids and Separations; New Applications and Other Emerging Topics**  
Thomas Feggeler
- VP5 Magnetic Recording**  
Varaprasad Bollapragada
- VP6 Magnetic Sensors and High Frequency Devices**  
Tian-Yue Chen
- VP7 Magnetization Dynamics and Switching**  
Alpha N'Diaye
- VP8 Magnetoelectric Materials**  
Julius de Rojas
- VP9 Magnetoresistance and Associated Effects**  
Shunsuke Fukami
- VP10 Microscopy & Characterization**  
Kotsugi Masato
- VP11 Multi-Functional Magnetic Materials and Applications**  
Georgeta Salvan
- VP12 Sensors, High Frequency Devices, and Power Devices**  
Sho Muroga
- VP12 Sensors, High Frequency Devices, and Power Devices**  
Connor Smith
- VP13 Soft Magnetic Materials**  
Hee-Sung Han
- VP14 Spin Hall and Related Effects**  
Jingsheng Chen
- VP15 Spin Orbitronics**  
Tai Kong
- VP16 Structured Materials**  
Takahiro Moriyama
- VP17 Thin Films, Multilayers and Interface Effects**  
Nicolas Rougemaille

## MMM ADMINISTRATIVE COMMITTEE

---

Chair..... Yayoi Takamura  
Chair-Elect ..... Barry Zink  
Next Joint MMM-Intermag  
Conference Chair ..... Mark Stiles  
Next MMM Conference Chair..... Tiffany Santos  
Executive Secretary/Treasurer ..... Kristen Buchanan  
IEEE Magnetics Society  
Representative..... Rudolf Schäfer  
AIP Publishing Representative ..... Bill Burke  
Recording Secretaries ..... Molly Bartkowski  
and Regina Mohr

### *IEEE Appointed Members*

#### **Term expiring**

#### **December 1, 2023:**

Cindi Dennis, Pallavi Dhagat,  
Atsufumi Hirohata, Mark Kief,  
Masahiro Yamaguchi

#### **Term expiring**

#### **February 1, 2025:**

Kristen Buchanan, Christopher  
Marrows, Dafine Ravelosona,  
Beth Stadler, Shinji Yuasa

#### **Term expiring**

#### **December 1, 2025:**

Hendrik Ohldag, Chris Rea,  
Aurelie Spiesser, Yoichiro  
Tanaka, Mingzhong Wu

### *AIPP Appointed Members*

#### **Term expiring**

#### **December 1, 2023:**

Alina Deac, Kai Liu,  
Yoshichika Otani, Mark Stiles,  
Matthew Willard

#### **Term expiring**

#### **February 1, 2025:**

Minn-Tsong Lin, Tim Mewes,  
Jordi Sort, Yuri Suzuki,  
Jianhua Zhao

#### **Term expiring**

#### **December 1, 2025:**

Victorino Franco, Jean Anne  
Incorvia, Sean Langridge,  
Takahiro Moriyama,  
Sophie Morley

## FUTURE CONFERENCES

---

### **2024 Intermag Conference**

May 6-10, 2024, Rio de Janeiro, Brazil

### **16<sup>th</sup> Joint MMM-Intermag Conference**

January 13-17, 2025, New Orleans, LA

### **70<sup>th</sup> Annual Conference on Magnetism and Magnetic Materials**

October 27-31, 2025, Palm Beach, FL

### **2026 Intermag Conference**

April 13-17, 2026, Manchester, England

## JOIN OUR MAILING LIST

---

To join our mailing list, please visit [www.magnetism.org](http://www.magnetism.org) or contact [info@magnetism.org](mailto:info@magnetism.org).

# CONFERENCE POLICIES

## CAMERA, CELL PHONE AND VIDEO RECORDING POLICIES

---

By registering for this meeting, all attendees acknowledge that they may be photographed by Conference personnel while at events, and that those photos may be used for promotional purposes, in Conference publications and websites, and on social media sites. Any recording of sessions (audio, video, still photography, etc.) intended for personal use, distribution, publication, or copyright is strictly prohibited. Attendees violating this policy may be asked to leave the session.

## CODE OF CONDUCT

---

The objective of the Conference organizers is to create a collegial, inclusive, and professional environment at the Conference in order to facilitate and support open scientific discourse and advance knowledge in the field of magnetism. Creating this environment is the responsibility of all participants, including attendees, speakers, vendors, exhibitors, Conference management staff and organizers. It is the policy of the Conference that all meeting and Conference participants will conduct themselves in a professional manner that is welcoming and free from any form of bias, discrimination, harassment, or retaliation.

Accordingly, participants are required to treat each other with respect and consideration and avoid any actions or statements based on individual characteristics such as age, ancestry, color, disability or handicap, national origin, race, religion, gender, sexual or affectional orientation, gender identity, gender expression, appearance, matriculation, political affiliation, marital status, veteran status, or any other characteristic protected by law. Discriminatory or harassing behavior of any kind will not be tolerated. Harassment includes but is not limited to inappropriate or intimidating behavior and language, unwelcome jokes or comments, unwanted touching or attention, offensive images, and stalking.

Violations of this policy, or those additionally referred to in the IEEE Code of Conduct, should be reported to the Conference organizers, management staff, or to the IEEE Magnetics Society President. Sanctions may range from verbal or written warning to ejection from the meeting without refund. Retaliation for complaints of inappropriate conduct will not be tolerated.

## PRIVACY POLICY

---

By registering for MMM 2023, you agree to receive emails related to this Conference for a period up to three months after the Conference concludes. Your personal information is for Conference use only and will not be shared with anyone else. During the registration process, you will also have the option to join the mailing list for future MMM, Joint, Intermag and ICM Conferences and also for the IEEE Magnetics Society. If you do not select this option, you will not receive any emails for future Conferences. You can modify your email preferences at any time by contacting us at [info@magnetism.org](mailto:info@magnetism.org).



**AJA**  
International

**Booth 20**

AJA is a manufacturer of thin film deposition systems including magnetron sputtering, e-beam evaporation, thermal evaporation, and ion milling systems. Founded in Scituate, MA, USA in 1989 by William Hale, MBA, BS Physics, the company was established as a supplier of innovative physical vapor deposition (PVD) products. With many systems and magnetron sputter sources shipped worldwide, AJA International, Inc. continues to discover innovative design solutions which are often copied but never equaled. The company truly remains THE CUTTING EDGE IN THIN FILM TECHNOLOGY.

Contact: Keven James  
Email: [topgun@ajaint.com](mailto:topgun@ajaint.com)  
Website: <http://www.ajaint.com>

---



**attocube**

WITTENSTEIN group

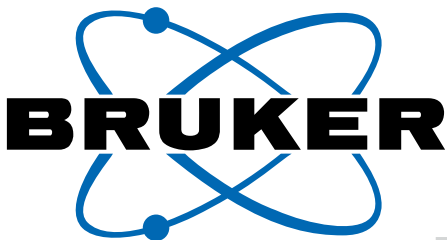
**Booth 15**

attocube offers a broad portfolio of customizable liquid and dry research cryostats for diverse setups and conditions. Due to their low vibration characteristics, these cryostats are predestined to be combined with our microscopes, nanopositioners, cryogenic objectives and interferometric sensors, and thus always offer the perfect conditions for your research tasks.

Contact: Patrizia Kellner  
Email: [patrizia.kellner@attocube.com](mailto:patrizia.kellner@attocube.com)  
Website: <http://www.attocube.com>

---



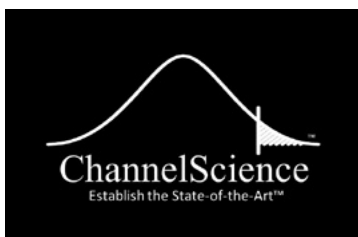


**Booth 16**

Bruker's SmartTip™ CIPT solutions offer several high-field, high-accuracy instruments for both industry and academia to perform current-in-plane tunneling measurements. Both in-plane and perpendicular field options are available. Driven by a mission to provide innovative solutions to our customers, we aim to enable MEMS-based microprobe technologies through co-operation and collaboration with our customers. Our SmartTip solutions are positioned to advance high-tech nanotechnology-based microprobe applications with a commitment to quality and continuous improvement in development.

Contact: Aina Afzal  
Email: [aina.afzal@bruker.com](mailto:aina.afzal@bruker.com)  
Website: <http://www.bruker.com/nano>

---



**Booth 2**

ChannelScience is funded by US Department of Energy grant DE-SC0021879 to develop breakthrough technology to read legacy magnetic tape formats better than original equipment. We are on a mission to unlock “New Value in Old Data” for AI/ML applications by accessing irreproducible data from deteriorating legacy tapes.

Contact: Charles Sobey  
Email: [csobey@ChannelScience.com](mailto:csobey@ChannelScience.com)  
Website: <https://www.channelscience.com/>

---



**Booth 17**

CIQTEK is a high-end scientific instrument manufacturing enterprise. Its main business includes magnetic resonance, quantum precision measurement, quantum computing, scanning electron microscope, analytical instrument, BET specific surface area, etc.

Contact: Jiang Ming  
Email: [info@ciqtek.com](mailto:info@ciqtek.com)  
Website: <https://en.ciqtek.com/>

---

# GMW Associates

Booth 11

GMW offers Electromagnet Systems for magnetic material, thin film, and spintronics studies including Miniature Projected Field Electromagnets with options for in-plane field, vertical field and true 3-axis vector field versions. Instantaneous fields applied to a single device of  $>2\text{T}$  are possible, as are  $>0.77\text{T}$  continuous fields over a 4mm array. Dipole magnets for FMR and EPR applications and full-wafer test are available with fields to  $\pm 2\text{T}$  and true bipolar operation. New 1.5mm thin NMR probes are now available. GMW also offer Field Measurement Transducers and Complete Magnetic Field Mapping Systems, including digital and analog magnetic field probes with  $\pm 100\mu\text{T}$ ,  $\pm 8\text{mT}$ ,  $\pm 3\text{T}$  and  $\pm 14\text{T}$  (up to 20T uncalibrated); and magnetic field transducers with analog output, full-scale field ranges to  $\pm 20\text{T}$  and frequency response from dc to 75kHz.

Contact: Viki Beatty  
Email: [vbeatty@gmw.com](mailto:vbeatty@gmw.com)  
Website: <http://www.gmw.com>

---



## Lake Shore

CRYOTRONICS

Booth 3

Lake Shore offers VSMS that combine simple operation, high measurement speed, 15-nemu sensitivity, and fields to 3.6 T for magnetic material characterization applications; superconducting magnet systems; electromagnet platforms; and cryogenic probe stations with integrated magnets for on-wafer magneto-transport, DC, RF, and microwave measurements. Also available: a modular synchronous source measure system that combines the convenience of DC and AC sourcing with DC and AC measurement (including a lock-in's sensitivity) for advanced measurement applications, including spin-orbit torque measurements; Hall measurement solutions; teslameters and other magnetic instruments; Hall sensors; temperature sensors and instruments; and cryostats and other lab cryogenic equipment.

Contact: Allyson Graham  
Email: [ally.graham@lakeshore.com](mailto:ally.graham@lakeshore.com)  
Website: <https://www.lakeshore.com/>

---



#### Booth 13

MicroSense and Capres joined forces as KLA companies. MicroSense sensitive and fast VSMs offer the widest range of options of resistive magnet VSMs. MicroSense also offers non-contact, wafer or disk metrology systems for MRAM, hard disk, head and sensor manufacturing and R&D. CAPRES' unique microprobe and tool technology enables direct measurements of Sheet Resistance, Hall Mobility, and Active Carrier Density on thin films, on wafers up to 300 mm for R&D and production QC. Our unique CIPTech<sup>®</sup>, PKMRAM<sup>®</sup> and KerrMapper<sup>®</sup> systems are the tools of choice for characterizing magnetic films in the MRAM, Read Head and Magnetic Sensor industry.

Contact: Erik Samwel  
Email: [erik.samwel@kla.com](mailto:erik.samwel@kla.com)  
Website: <http://www.microsense.net>

---



## NANOMAGNETICS INSTRUMENTS

#### Booth 12

NanoMagnetics Instruments was established in Oxford in 1998 and we are manufacturers of Scanning Probe Microscopes (SPMs) and measurement systems for a variety of scientific and technological fields.

Contact: Oguz Genc  
Email: [sales@nanomagnetics-inst.com](mailto:sales@nanomagnetics-inst.com)  
Website: <https://www.nanomagnetics-inst.com/>

---



#### Booth 4

Qnami develops ultrasensitive magnetic imaging tools based on quantum sensors. The Qnami ProteusQ microscope uses NV diamond sensors to quantitatively measure magnetic properties at the nanoscale in a wide range of materials without perturbing their magnetic order. ProteusQ is used to shed light on yet unknown magnetic phenomena in novel quantum materials and supports the development of new, energy-efficient spintronics devices. Qnami enthusiastically brings quantum sensing outside the lab to push the frontiers of materials science and in particular of nanomagnetism.

Contact: Lucia Garbini  
Email: [lucia.garbini@qnami.ch](mailto:lucia.garbini@qnami.ch)  
Website: <http://www.qnami.ch>

---



## Booth 5

Quantum Design manufactures automated material characterization systems providing temperatures from 0.05 to 1000 K, magnetic fields up to 16 tesla, and a wide range of measurements, including: magnetometry, electrical transport, heat capacity, thermal transport, and FMR. Instruments include the PPMS<sup>®</sup>, SQUID-based MPMS<sup>®</sup>3, VersaLab<sup>®</sup>, and DynaCool<sup>®</sup>. Additionally, Quantum Design manufactures helium liquefiers and recovery systems, an innovative 7 tesla magneto-optical cryostat (OptiCool<sup>®</sup>), and a correlated AFM/SEM microscopy platform (FusionScope<sup>™</sup>). Quantum Design also distributes direct write lithography systems, NanoMOKE, FMR spectrometers, rapid-cycle sub-kelvin cryostats, compact Helium-ion beam process technology to enhance the magnetic properties of thin films, and NV-based scanning magnetometry.

Contact: Melissa Figueroa  
Email: [melissa@qdusa.com](mailto:melissa@qdusa.com)  
Website: <http://www.qdusa.com>

---



## Booth 14

QZabre commercializes Nitrogen-vacancy (NV) diamond technology. Our product line includes scanning diamond tips, diamond membranes with pillars, a confocal microscope for NV and diamond characterization as well as a turnkey scanning NV magnetometer (QSM). The QSM combines nanometer resolution with quantitative mapping of magnetic fields with uT-sensitivity at unprecedented speed. Demonstrated applications of the QSM include imaging magnetic textures such as spin cycloids, skyrmions, domain walls, antiferromagnets and ferromagnets, investigating memory devices and mapping surface current densities. The QSM has a built-in vector magnet to bias the sample up to 550mT and an integrated MOKE setup for complementary measurements.

Contact: Simon Josephy  
Email: [simon@qzabre.com](mailto:simon@qzabre.com)  
Website: <https://qzabre.com/>

---



# Zurich Instruments

**Booth 19**

Zurich Instruments makes cutting-edge instrumentation for scientists and technologists who work in advanced laboratories and are passionate about phenomena often difficult to measure. Our offering includes lock-in amplifiers, arbitrary waveform generators, impedance analyzers, phase-locked loops, digitizers, boxcar averagers, and quantum computing control systems.

Contact: Michael O'Leary

Email: [michaelo@zhinst.com](mailto:michaelo@zhinst.com)

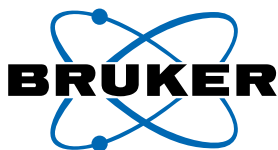
Website: <https://www.zhinst.com/americas/en>

---

# THANK YOU TO OUR SUPPORTERS!



AIP Advances



evicomagnetics

GMW Associates



MONDAY  
AFTERNOON  
1:00

REUNION EF

**Session TU**

**TUTORIAL: MACHINE LEARNING IN MAGNETISM**

Cindi Dennis, Chair

National Institute of Standards and Technology, Gaithersburg,  
MD, United States

**1:00**

**TU-01. Basic Introduction to Machine Learning in a Physical Context.**  
*(Invited) S. Vock<sup>1</sup> 1. Federal Institute for Occupational Safety and  
Health, Dresden, Germany*

**2:00**

**TU-02. Machine Learning for Application-Specific Materials Search.**  
*(Invited) S. Sayed<sup>1</sup> 1. University of California, Berkeley, Berkeley,  
CA, United States*

**2:50**

**TU-03. Future Method for Estimating Parameters in Magnetic  
Films. (Invited) K. Tanabe<sup>1</sup> 1. Toyota Technological Institute,  
Nagoya, Japan**

**3:40**

**TU-04. Application of Bayesian Optimization and Regression  
Analysis to Ferromagnetic Materials Development.**  
*(Invited) A.R. Will-Cole<sup>1</sup> 1. Northeastern University, Boston,  
MA, United States*

TUESDAY  
MORNING  
8:30

REUNION EF

**Session AA**

**FRONTIER TOPICS IN ANTIFERROMAGNETISM:  
ALTERMAGNETISM AND TOPOLOGY**

Michelle Jamer, Co-Chair

U.S. Naval Academy, Annapolis, MD, United States

Badih Assaf, Co-Chair

University of Notre Dame, Notre Dame, IN, United States

**8:30**

**AA-02. D-wave Magnetism in Spintronics: the Emergence of  
Altermagnetism. (Invited) J. Sinova<sup>1,2</sup> 1. Institute of Physics,  
Johannes Gutenberg University Mainz, Mainz, Germany;  
2. Department of Physics and Astronomy, Texas A&M University,  
College Station, TX, United States**

9:06

- AA-01. Altermagnetism in 3- and 2-D: simple symmetry constraints and functionalization. (Invited)** I. Mazin<sup>1</sup> and L. Šmejkal<sup>2</sup>  
1. *Physics & Astronomy, George Mason University, Fairfax, VA, United States*; 2. *Johannes Gutenberg-Universität Mainz, Mainz, Germany*

9:42

**Break**

10:15

- AA-03. Andreev Reflection in Altermagnets. (Invited)** C. Sun<sup>1</sup>, A. Brataas<sup>1</sup> and J. Linder<sup>1</sup> 1. *Center for Quantum Spintronics, Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway*

10:51

- AA-04. Quantum Geometric Detection and Control of a Layered Antiferromagnet. (Invited)** Q. Ma<sup>1</sup> 1. *Physics, Boston College, Chestnut Hill, MA, United States*

11:27

- AA-05. Anomalous Hall Effect in Unconventional Compensated Magnets. (Invited)** D. Kriegner<sup>1,2</sup> 1. *Institute of Physics AVCR, Prague, Czechia*; 2. *Technical University Dresden, Dresden, Germany*

TUESDAY  
MORNING  
8:30

REUNION GH

### Session AB

## NEUROMORPHIC COMPUTING I

Jayasimha Atulasimha, Co-Chair

Virginia Commonwealth University, Richmond, VA, United States

Joseph Friedman, Chair

The University of Texas at Dallas, Richardson, TX, United States

8:30

- AB-01. Spin-Hall nano-oscillators based on ferrimagnetic insulator-transition metal heterostructures. (Invited)** H. Ren<sup>1,2</sup>, X. Zheng<sup>3,4</sup>, S. Channa<sup>5</sup>, G. Wu<sup>1</sup>, D.A. O'Mahoney<sup>6</sup>, Y. Suzuki<sup>3,4</sup> and A.D. Kent<sup>1</sup> 1. *Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States*; 2. *Design Department, TDK Headway Technologies Inc., Milpitas, CA, United States*; 3. *Department of Applied Physics, Stanford University, Stanford, CA, United States*; 4. *Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA, United States*; 5. *Department of Physics, Stanford University, Stanford, CA, United States*; 6. *Department of Materials Science and Engineering, Stanford University, Stanford, CA, United States*



9:06

- AB-02. Artificial Spin Ice Dynamics Probed by Tunnel Magnetoresistance.** C. Sullivan<sup>1</sup>, H. Chen<sup>2</sup>, B. Fang<sup>3</sup>, X. Zhang<sup>3</sup> and S. Majetich<sup>2</sup> *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 3. Materials Science and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

9:18

- AB-03. Pattern recognition by a single spin torque oscillator with time multiplexing.** Y. Imai<sup>1</sup> and T. Taniguchi<sup>2</sup> *1. The University of Tokyo, Bunkyo-ku, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

9:30

- AB-04. Experimental Demonstration of Unsupervised Online Learning with Stochastic STT-MTJ Switching.** P. Zhou<sup>1</sup>, A.J. Edwards<sup>1</sup>, F. Mancoff<sup>2</sup>, S. Aggarwal<sup>2</sup> and J.S. Friedman<sup>1</sup> *1. Department of Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States; 2. Everspin Technologies, Inc., Chandler, AZ, United States*

9:42

Break

10:15

- AB-05. Domain Wall – Magnetic Tunnel Junction Integrate-and-Fire Neuron with Auto-Reset.** C. Cui<sup>1</sup>, J. Kwon<sup>1</sup> and J.C. Incorvia<sup>1</sup> *1. Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States*

10:27

- AB-06. Stochastic Domain Wall-Magnetic Tunnel Junction Artificial Neurons in Spiking Neural Networks for Enhanced Noise Resilience.** S. Liu<sup>1</sup>, T. Leonard<sup>1</sup>, H. Jin<sup>1</sup> and J.C. Incorvia<sup>1</sup> *1. Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States*

10:39

- AB-07. A Leaky-Integrate-and-Fire spiking neuron by a Spin-Orbit Torque device.** R.I. Salinas<sup>1</sup> and C. Lai<sup>1</sup> *1. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

10:51

- AB-08. Multilayer spintronic devices as a synapse and neuron for neuromorphic computing.** A.H. Lone<sup>1</sup>, X. Zou<sup>1</sup>, G. Isaac Maciel Garcia<sup>1</sup>, G. Setti<sup>1</sup> and H. Fariborzi<sup>1</sup> *1. Computer, Electrical and Mathematical Sciences and Engineering Division, King Abdullah University of Science and Technology, Jeddah, Saudi Arabia*

11:03

- AB-09. Withdrawn**

11:03

- AB-10. Experimental demonstration of a heavy-metal-ferromagnetic-metal-multilayer-based, bulk-spin-orbit-torque-driven domain-wall synapse device for neuromorphic crossbar arrays.** *R.S. Yadav<sup>1</sup>, P. Gupta<sup>1</sup>, A. Sadashiva<sup>2</sup>, P.K. Muduli<sup>1</sup> and D. Bhowmik<sup>2</sup>* 1. *Department of Physics, Indian Institute of Technology Delhi, New Delhi, India;* 2. *Indian Institute of Technology Bombay, Department of Electrical Engineering, Mumbai, India*

11:15

- AB-11. Validation of the Néel-Arrhenius law in nanomagnetic tunnel junctions.** *S. Kanai<sup>1,2</sup>, M. Elyasi<sup>3,4</sup>, G. Bauer<sup>5,6</sup>, H. Ohno<sup>7,8</sup> and S. Fukami<sup>9,10</sup>* 1. *JST-PRESTO, Kawasaki, Japan;* 2. *Division for the Establishment of Frontier Sciences of Organization for Advanced Studies, Tohou University, Sendai, Japan;* 3. *Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan;* 4. *WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan;* 5. *Institute for Materials Research, Tohoku University, Sendai, Japan;* 6. *Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, Beijing, China;* 7. *Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan;* 8. *Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan;* 9. *Graduate School of Engineering, Tohoku University, Sendai, Japan;* 10. *Inamori Research Institute for Science, Sendai, Japan*

TUESDAY  
MORNING  
8:30

REUNION A

### Session AC

## MICROSCOPY & CHARACTERIZATION I: SCANNING PROBES AND MATERIALS

Max Birch, Chair

RIKEN Center for Emergent Matter Science, Tokyo, Japan

8:30

- AC-01. Magnetic Force Microscopy – a quantitative Method for probing Magnetic Textures and their Dynamics on the Nanoscale. (Invited)** *V. Neu<sup>1</sup>* 1. *IFW Dresden, Dresden, Germany*

9:06

- AC-02. Depth Profiling for Embedded Metallic Nanostructures using Conductive Atomic Force Microscopy.** *A.K. Toh<sup>1</sup> and V. Ng<sup>1</sup>* 1. *Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

9:18

- AC-03. Evaluation of Martensite transformation temperatures using magnetometry.** *N.J. Jones*<sup>1</sup>, *P.K. Lambert*<sup>2</sup>, *J.H. Yoo*<sup>1</sup>, *S.M. Na*<sup>1</sup> and *C.R. Fisher*<sup>3</sup> *1. Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, MD, United States; 2. Applied Physics Laboratory, Johns Hopkins University, Laurel, MD, United States; 3. Welding, Processing, and NDE Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, MD, United States*

9:30

- AC-04. Discussing the Universality Law in Magnetically Detected Residual Stresses in Steels.** *T.V. Damatopoulou*<sup>1</sup>, *S. Angelopoulos*<sup>1</sup>, *X. Vourna*<sup>1</sup>, *A. Ktena*<sup>2</sup> and *E. Hristoforou*<sup>1</sup> *1. Laboratory of Electronic Sensors, National TU of Athens, Athens, Greece; 2. National and Kapodistrian University of Athens, Athens, Greece*

9:42

Break

10:15

- AC-05. Nitrogen-Vacancy Microscopy of Antiferromagnetic Domains in Undoped and Boron Doped Cr<sub>2</sub>O<sub>3</sub> Thin Films. (Invited)** *A. Erickson*<sup>1</sup>, *A. Mahmood*<sup>2</sup>, *S. Shah*<sup>2</sup>, *R. Timalina*<sup>1</sup>, *I. Fescenko*<sup>3</sup>, *C. Binek*<sup>2</sup> and *A. Laraoui*<sup>1,2</sup> *1. Department of Mechanical & Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Department of Physics and Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE, United States; 3. Laser Centre, University of Latvia, Riga, Latvia*

10:51

- AC-06. Accelerating scanning rates for cw-ODMR NV magnetometry and increasing sensitivity using pulsed protocols.** *B. Josteinson*<sup>1</sup>, *G. Puebla Hellmann*<sup>1</sup>, *A. Morales*<sup>1</sup>, *J. Rhensius*<sup>1</sup> and *S. Josephy*<sup>1</sup> *1. QZabre Ltd, Zurich, Switzerland*

11:03

- AC-07. Magnetic Imaging of Individual Nanoparticles Using Nitrogen-Vacancy Microscopy.** *S. Lamichhane*<sup>1</sup>, *K. McElveen*<sup>2</sup>, *A. Erickson*<sup>3</sup>, *I. Fescenko*<sup>4</sup>, *S. Sun*<sup>2</sup>, *R. Timalina*<sup>3</sup>, *Y. Guo*<sup>2</sup>, *S. Liou*<sup>1</sup>, *R. Lai*<sup>2</sup> and *A. Laraoui*<sup>3</sup> *1. Department of Physics & Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Department of Chemistry, University of Nebraska-Lincoln, Lincoln, NE, United States; 3. Department of Mechanical & Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE, United States; 4. Laser center, University of Latvia, Riga, Latvia*

11:15

- AC-08. Determining the Sign of the Dzyaloshinskii-Moriya Interaction at the Magnetron Sputtered Ir|Co Interface.** *M.C. de Jong*<sup>1</sup>, *M.J. Meijer*<sup>1</sup>, *B. Koopmans*<sup>1</sup> and *R. Lavrijsen*<sup>1</sup> *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

Session AD

**MAGNETIZATION DYNAMICS I: MICROMAGNETICS  
AND MODELING**

Anna Semisalova, Co-Chair  
University of Duisburg-Essen, Duisburg, Germany

Michael Tanksalvala, Co-Chair  
NIST, Boulder, CO, United States

8:30

- AD-01. Solving periodic micromagnetic problems using finite element method.** *F. Ai<sup>1,2</sup> and V. Lomakin<sup>1,2</sup>* 1. *Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA, United States;* 2. *Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA, United States*

8:42

- AD-02. Vision for Unified Micromagnetic Modelling (UMM).** *H. Fangohr<sup>1,2</sup>, M. Lang<sup>1,2</sup>, S. Holt<sup>1</sup>, S. Pathak<sup>1</sup>, K. Zulfiqar<sup>1,3</sup> and M. Beg<sup>4</sup>* 1. *Computational Science, Max Planck Institute for the Structure and Dynamics of Matter (MPSD), Hamburg, Germany;* 2. *Engineering and Physical Sciences, University of Southampton, Southampton, United Kingdom;* 3. *Physics, University of Hamburg, Hamburg, Germany;* 4. *Imperial College, London, United Kingdom*

8:54

- AD-03. Molecular Field Coefficient Modeling of Temperature-Dependent Ferrimagnetism in a Complex Oxide.** *M. Gross<sup>1</sup>, T. Su<sup>1</sup>, J.J. Bauer<sup>1</sup> and C.A. Ross<sup>1</sup>* 1. *MIT, Cambridge, MA, United States*

9:06

- AD-04. Generalized Drift Diffusion Model for Micromagnetics: Unifying Interface and Bulk Spin Transfer Torques, Spin Hall effect, and Anomalous Hall Effect.** *X. Wang<sup>1</sup> and V. Lomakin<sup>1</sup>* 1. *ECE, UCSD, San Diego, CA, United States*

9:18

- AD-05. Spatial Metrics for Physical Reservoir Computing: Insights from Skyrmion Reservoir Audio Classification.** *R. Msiska<sup>1,2</sup>, J. Love<sup>1</sup>, J. Mulkers<sup>2</sup>, J. Leliaert<sup>2</sup> and K. Everschor-Sitte<sup>1</sup>* 1. *Faculty of Physics and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Duisburg, Germany;* 2. *Department of Solid State Sciences, Ghent University, Ghent, Belgium*

**AD-06. Reduced Order Model for Hard Magnetic Films.**

*H.A. Moustafa<sup>1</sup>, W. Rigaut<sup>2</sup>, Y. Hong<sup>2</sup>, T. Devillers<sup>2</sup>, N. Dempsey<sup>2</sup>, T. Schrefl<sup>1,3</sup> and H. Oezelt<sup>1</sup>* 1. *Department for Integrated Sensor Systems, University of Continuing Education Krems, Wiener Neustadt, Austria;* 2. *Institute Néel, Université Grenoble Alpes, CNRS, Grenoble INP, Grenoble, France;* 3. *Christian Doppler Laboratory for Magnet Design through Physics Informed Machine Learning, Department for Integrated Sensor Systems, University of Continuing Education Krems, Wiener Neustadt, Austria*

9:42

**Break**

10:15

**AD-07. Field-assisted spin-orbit-torque-driven dynamics in monodomain Mn<sub>3</sub>Sn with perpendicular magnetic anisotropy.**

*A. Shukla<sup>1</sup>, S. Qian<sup>1</sup> and S. Rakheja<sup>1</sup>* 1. *Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States*

10:27

**AD-08. Withdrawn**

10:27

**AD-09. Nodal Finite-Difference Micromagnetics.** *C. Abert<sup>1</sup>, R. Allayarov<sup>1</sup>, F. Bruckner<sup>1</sup>, S. Koraltan<sup>1</sup>, S. Pathak<sup>2</sup>, H. Fangohr<sup>2</sup> and D. Suess<sup>1</sup>* 1. *University of Vienna, Vienna, Austria;* 2. *Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany*

10:39

**AD-10. Machine Learning Approaches for Magnetic Nanoparticles Applications in Biomedicine. (Invited)** *M. Coisson<sup>1</sup>, G. Barrera<sup>1</sup>, F. Celegato<sup>1</sup>, P. Allia<sup>1</sup> and P. Tiberto<sup>1</sup>* 1. *INRIM, Torino, Italy*

11:15

**AD-11. Parallel-In-Time Integration of the LLG With the Parallel Full Approximation Scheme in Time and Space.**

*R. Kraft<sup>1</sup>, S. Koraltan<sup>2,3</sup>, D. Suess<sup>1,2</sup> and C. Abert<sup>1,2</sup>* 1. *Research Platform MMM Mathematics-Magnetism-Materials, University of Vienna, Vienna, Austria;* 2. *Physics of Functional Materials, University of Vienna, Vienna, Austria;* 3. *Vienna Doctoral School in Physics, University of Vienna, Vienna, Austria*

11:27

**AD-12. Hybrid A-phi - correction method for solving eddy current problem with micromagnetics.**

*J. Duan<sup>1</sup> and V. Lomakin<sup>1</sup>* 1. *University of California, San Diego, San Diego, CA, United States*

**Session AE**  
**COMPLEX OXIDES (BULK, FILMS AND  
HETEROSTRUCTURES)**

Geoffrey Beach, Co-Chair  
Massachusetts Institute of Technology, Cambridge, MA, United States  
Vipul Chaturvedi, Co-Chair  
University of Minnesota, Minneapolis, MN, United States

8:30

- AE-01. Significant Reduction of Dead Layers and Magnetic Anisotropy Change in a Transferred  $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$  Thin Film on a Si Substrate.** *T. Arai*<sup>1</sup>, S. Kaneta-Takada<sup>1</sup>, L. Anh<sup>1,2</sup>, M. Kobayashi<sup>1,2</sup>, M. Onodera<sup>3</sup>, K. Kinoshita<sup>3</sup>, R. Moriya<sup>3</sup>, T. Machida<sup>3</sup>, M. Tanaka<sup>1,2</sup> and S. Ohya<sup>1,2</sup> *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 2. Center for Spintronics Research Network, The University of Tokyo, Tokyo, Japan; 3. Institute of Industrial Science, The University of Tokyo, Tokyo, Japan*

8:42

- AE-02. Vertically Aligned Nanocomposites and Exchange Coupling of Multiferroic  $\text{LuFeO}_3$  and Magnetic  $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$  Thin Films.** *E. Cho*<sup>1</sup> and C.A. Ross<sup>1</sup> *1. Massachusetts Institute of Technology, Cambridge, MA, United States*

8:54

- AE-03. Scattering-Dependent Transport of  $\text{SrRuO}_3$  Films: From Weyl Fermion Transport to Hump-Like Hall Effect Anomaly.** *S. Kaneta-Takada*<sup>2,1</sup>, Y. Wakabayashi<sup>2</sup>, Y. Krockenberger<sup>2</sup>, H. Irie<sup>2</sup>, S. Ohya<sup>1,3</sup>, M. Tanaka<sup>1,3</sup>, Y. Taniyasu<sup>2</sup> and H. Yamamoto<sup>2</sup> *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo, Japan; 2. NTT Basic Research Laboratories, Atsugi, Japan; 3. Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo, Japan*

9:06

- AE-04. Spin-flop Coupling at  $\text{La}_{0.5}\text{Sr}_{0.5}\text{FeO}_3/\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  Interfaces.** *I. Nihal*<sup>1</sup>, D.Y. Sasaki<sup>1</sup>, M. Feng<sup>1</sup>, C. Klewe<sup>2</sup>, P. Shafer<sup>3</sup>, A. Scholl<sup>2</sup> and Y. Takamura<sup>1</sup> *1. Materials Science and Engineering, University of California, Davis, CA, United States; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Brookhaven National Laboratory, Upton, NY, United States*

9:18

- AE-05. Garnet-perovskite epitaxial nanocomposite films templated by single-crystalline perovskite nanosheets.** *K. Hayashi*<sup>1,2</sup>, L. Nurdiwijayanto<sup>2</sup>, R. Ma<sup>2</sup>, T. Sasaki<sup>2</sup>, T. Taniguchi<sup>2</sup> and C.A. Ross<sup>1</sup> *1. Department of Materials Science and Engineering, MIT, Cambridge, MA, United States; 2. Research Center for Materials Nanoarchitectonics, National Institute for Materials Science (NIMS), Tsukuba, Japan*

- AE-06. Tuning In-plane Magnetic Anisotropy and Exchange Bias in Epitaxial Complex Oxide Heterostructures.** *M. Feng*<sup>1</sup>, *N. Ahlm*<sup>1</sup>, *D.Y. Sasaki*<sup>1</sup>, *I. Chiu*<sup>2</sup>, *A. N'Diaye*<sup>3</sup>, *P. Shafer*<sup>4</sup>, *C. Klewe*<sup>3</sup>, *A. Mehta*<sup>5</sup> and *Y. Takamura*<sup>1</sup> *1. Materials Science and Engineering, University of California, Davis, Davis, CA, United States; 2. Chemical Engineering, University of California, Davis, Davis, CA, United States; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. Brookhaven National Laboratory, Upton, NY, United States; 5. Linear Coherent Light Source, SLAC National Accelerator Laboratory, Menlo Park, CA, United States*

9:42

Break

10:15

- AE-07. Voltage-Controlled Magnetism Driven by Electrical Triggering of a Metal-Insulator Transition. (Invited)** *P. Salev*<sup>1</sup>, *D.Y. Sasaki*<sup>2</sup>, *L. Fratino*<sup>3,4</sup>, *I. Volvach*<sup>5</sup>, *E. Kisiel*<sup>6</sup>, *A. Frano*<sup>6</sup>, *V. Lomakin*<sup>5</sup>, *M. Rozenberg*<sup>4</sup>, *Y. Takamura*<sup>2</sup> and *I.K. Schuller*<sup>6</sup> *1. Department of Physics & Astronomy, University of Denver, Denver, CO, United States; 2. Department of Materials Science and Engineering, University of California Davis, Davis, CA, United States; 3. Laboratoire de Physique Theorique et Modelisation, CY Cergy Paris Universite, Cergy-Pontoise, France; 4. CNRS Laboratoire de Physique des Solides, Universite Paris-Saclay, Orsay, France; 5. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States; 6. Department of Physics, University of California San Diego, La Jolla, CA, United States*

10:51

- AE-08. On the Low-temperature Local Magnetic Disorder, Orbital Degeneracy and Exchange Interactions in Highly Frustrated Spinel (ZnCu)[Fe<sub>1-x</sub>Mn<sub>x</sub>]<sub>2</sub>O<sub>4</sub>.** *S.K. Jena*<sup>1</sup> and *S. Thota*<sup>1</sup> *1. Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India*

11:03

- AE-09. Fully Spin Polarized Ultrathin La<sub>0.8</sub>Sr<sub>0.2</sub>MnO<sub>3</sub> Films.** *F. Stramaglia*<sup>1</sup>, *G. Panchal*<sup>1</sup>, *F. Nolting*<sup>1</sup> and *C.A. Vaz*<sup>1</sup> *1. Swiss Light Source, Paul Scherrer Institut, Villigen PSI, Switzerland*

11:15

- AE-10. Magnetism and magnetotransport behavior of SrRuO<sub>3</sub>/La<sub>0.35</sub>Pr<sub>0.25</sub>Ca<sub>0.4</sub>MnO<sub>3</sub> heterostructures.** *K. Alka*<sup>1,2</sup>, *P.K. Siwach*<sup>1,2</sup>, *P. Manral*<sup>3</sup>, *V.K. Malik*<sup>3</sup>, *G.D. Varma*<sup>3</sup> and *H.K. Singh*<sup>1,2</sup> *1. Electrical and Electronics Division, CSIR-National Physical Laboratory, New Delhi, India; 2. Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, India; 3. Department of Physics, IIT Roorkee, Roorkee, India*

11:27

- AE-11. Evidence of insulating ferromagnetic state in polycrystalline  $\text{Pr}_{0.58}\text{Ca}_{0.42}\text{MnO}_3$ .** *A.K. Singh*<sup>1,2</sup>, S. Chauhan<sup>3</sup>, P.K. Siwach<sup>1,2</sup> and H.K. Singh<sup>1,2</sup> 1. *Electrical and electronics metrology division, CSIR-National Physical Laboratory, Dr. K. S. Krishnan Marg, New Delhi-110012, India, New Delhi, India*; 2. *Academy of Scientific and Innovative Research (AcSIR), Ghaziabad-201002, India, Ghaziabad, India*; 3. *Department of Physics, SSJDW Government P.G. College, Rakikhet, Uttarakhand-263645, India, Ranikhet, India*

11:39

- AE-12. Imprinted atomic displacements drive spin-orbital order in a vanadate perovskite.** *P. Radhakrishnan*<sup>1,2</sup>, K.S. Rabinovich<sup>1</sup>, A.V. Boris<sup>1</sup>, K. Fuersich<sup>1</sup>, M. Minola<sup>1</sup>, G. Christiani<sup>1</sup>, G. Logvenov<sup>1</sup>, B. Keimer<sup>1</sup> and E. Benckiser<sup>1</sup> 1. *Max Planck Institute for Solid State Research, Stuttgart, Germany*; 2. *Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States*

11:51

- AE-13. Mapping Three-dimensional Atomic Order in Rare-Earth Iron Garnets.** *A. Kaczmarek*<sup>1</sup>, Y. Song<sup>1</sup>, A. Penn<sup>2</sup>, G. Beach<sup>1</sup> and C.A. Ross<sup>1</sup> 1. *Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*; 2. *MIT nano, Massachusetts Institute of Technology, Cambridge, MA, United States*

TUESDAY  
MORNING  
8:30

PEGASUS A

**Session AF**  
**FUNDAMENTAL PROPERTIES I: 2D AND**  
**TOPOLOGICAL MATERIALS**

Jiahao Han, Chair  
Tohoku University, Sendai, Japan

8:30

- AF-01. New Research Trends in Two-Dimensional van der Waals Magnetism. (Invited)** *M. Phan*<sup>1</sup> 1. *University of South Florida, Tampa, FL, United States*

9:06

- AF-02. Magnetism in Quantum Flatland: Novel Excitons and Moiré Physics from First Principles. (Invited)** *T. Cao*<sup>1</sup> 1. *University of Washington, Seattle, WA, United States*

9:42

Break



10:15

- AF-03. Moiré magnetism in twisted double bilayer CrI<sub>3</sub>. (Invited)**  
*L. Zhao<sup>1</sup> I. University of Michigan, Ann Arbor, MI, United States*

10:51

- AF-04. Electronic structure and magnetic properties of chiral molecular adsorbed two-dimensional 1T-MnSe<sub>2</sub> Monolayers.**  
*W. Mi<sup>1</sup> I. Department of Applied Physics, Tianjin University, Tianjin, China*

11:03

- AF-05. Magnetic anisotropy probed by magnetic torque in a van der Waals antiferromagnetic CrPS<sub>4</sub>.** *J. Seo<sup>1</sup>, S. Lim<sup>1</sup>, H. Shin<sup>1</sup>, J. Kim<sup>1</sup>, K. Jeong<sup>1</sup>, J. Hong<sup>1</sup>, K. Moon<sup>1</sup>, M. Kim<sup>1</sup>, N. Lee<sup>1</sup> and Y. Choi<sup>1</sup> I. Physics, Yonsei University, Seoul, The Republic of Korea*

11:15

- AF-06. Magnetic properties of newly discovered Ir<sub>3</sub>Ga<sub>2.4</sub>Si<sub>4.6</sub> single crystals.** *B.K. Rai<sup>1</sup>, A.B. Bretaña<sup>1</sup> and B.S. Conner<sup>1</sup> I. Savannah River National Laboratory, Aiken, SC, United States*

11:27

- AF-07. Temperature-Induced Magnetostructural Coupling of Weyl Fermions in Co<sub>2</sub>MnGa.** *N. Schulz<sup>1</sup>, A. Chanda<sup>1</sup>, G. Pantano<sup>1</sup>, N. Alzahrani<sup>1</sup>, E. Clements<sup>2</sup>, M.A. McGuire<sup>2</sup>, D. Arena<sup>1</sup>, A. Markou<sup>3,4</sup>, J.D. Gayles<sup>1</sup>, C. Felser<sup>4</sup>, M. Phan<sup>1</sup> and H. Srikanth<sup>1</sup>*  
*I. Physics, University of South Florida, Tampa, FL, United States; 2. Oak Ridge National Laboratory, Oak Ridge, TN, United States; 3. University of Ioannina, Ioannina, Greece; 4. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

11:39

- AF-08. Withdrawn**

11:39

- AF-09. Magnetic Antiskyrmions in 2D van der Waals Magnets Engineered by Layer Stacking.** *K. Huang<sup>1</sup>, E. Schwartz<sup>1</sup>, D. Shao<sup>1</sup>, A.A. Kovalev<sup>1</sup> and E. Tsybmal<sup>1</sup> I. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States*

**Session AG**  
**INTERDISCIPLINARY TOPICS I: MAGNETIC  
FORCES AND NANOPARTICLES; BIOMEDICINE;  
EDUCATION AND OUTREACH**

Sakhrat Khizroev, Chair  
University of Miami, Coral Gables, FL, United States

8:30

- AG-01. Emerging Applications of Magnetic Nanoparticles for MRI Contrast: Positive T1 Contrast at Low Field and “Color” Contrast at High Field. (Invited)** S. Oberdick<sup>1,2</sup>, K. Jordanova<sup>1</sup>, J. Lundstrom<sup>1,3</sup>, G. Parigi<sup>4</sup>, M. Poorman<sup>5</sup>, K. Keenan<sup>1</sup>, S. Dodd<sup>6</sup>, A. Koretsky<sup>6</sup> and G. Zabow<sup>1</sup> 1. NIST, Boulder, CO, United States; 2. Physics, CU Boulder, Boulder, CO, United States; 3. University of Illinois at Urbana-Champaign, Urbana, IL, United States; 4. Magnetic Resonance Center (CERM), University of Florence, Florence, Italy; 5. Hyperfine, Guilford, CT, United States; 6. NINDS, NIH, Bethesda, MD, United States

9:06

- AG-02. T<sub>1</sub>-T<sub>2</sub> Dual MRI Contrast by Thermal Plasma Synthesized Janus Nanomaterials.** K. Deka<sup>1</sup>, G.A. Deshpande<sup>1</sup>, J. Fischer<sup>2</sup>, M. Bock<sup>2</sup> and V.L. Mathe<sup>1</sup> 1. Department of Physics, Savitribai Phule Pune University, Pune, India; 2. Department of Radiology, University Medical Center Freiburg, Freiburg, Germany

9:18

- AG-03. A modality for estimating the NMR relaxation time using angular correlation between successive  $\gamma$  rays.** W. Matsumoto<sup>1</sup>, F. Boyu<sup>2</sup>, Y. Tamai<sup>1</sup>, T. Ueki<sup>1</sup>, M. Fushimi<sup>1</sup>, K. Shimazoe<sup>1</sup>, H. Takahashi<sup>1</sup> and M. Sekino<sup>1</sup> 1. Department of Bioengineering, The University of Tokyo, Bunkyo-ku, Japan; 2. Department of Nuclear Engineering and Management, The University of Tokyo, Bunkyo-ku, Japan

9:30

- AG-04. Generation of Synthetic Magnetic Resonance Images via Bloch Simulation.** R. Ferrero<sup>1</sup>, M. Vicentini<sup>1</sup> and A. Manzin<sup>1</sup> 1. Istituto Nazionale di Ricerca Metrologica (INRiM), Torino, Italy

9:42

Break

10:15

- AG-05. Magnetic Stray Field Landscapes from Engineered Domains for Full Motion Control of Magnetic Micro- and Nano Particles. (Invited)** A. Ehresmann<sup>1</sup> 1. Institute of Physics, Kassel University, Kassel, Germany

10:51

- AG-06. An Optimization Method of Magnetic Field Generating Magnetic Force Field for Magnetic Nanoparticles Control.** *M. Fushimi*<sup>1</sup>, *H. Yoshioka*<sup>1</sup> and *M. Sekino*<sup>1</sup> *1. The University of Tokyo, Tokyo, Japan*

11:03

- AG-07. Optimization algorithm to generate robust magnetic force of the magnetic navigation system against position error of the magnetic robot.** *D. Lee*<sup>1</sup>, *J. Kwon*<sup>1</sup> and *G. Jang*<sup>1</sup> *1. Mechanical Engineering, Hanyang University, Seoul, The Republic of Korea*

11:15

- AG-08. Multifunctional effects in magnetic nanoparticles for precision medicine.** *G. Barrera*<sup>1</sup>, *P. Tiberto*<sup>1</sup> and *P. Allia*<sup>1</sup> *1. Advance Materials and Life sciences, INRIM, Torino, Italy*

11:27

- AG-09. Design and Characterization of Colloidal Magnetic Nano-Objects for Thermal Magnetic Particle Imaging.** *F.M. Abel*<sup>1</sup>, *M.T. Merritt*<sup>1,2</sup>, *E. De Lima Correa*<sup>1</sup>, *T.Q. Bui*<sup>1</sup>, *A.J. Biacchi*<sup>1</sup>, *M.J. Donahue*<sup>1</sup>, *S.I. Woods*<sup>1</sup>, *A.R. Hight Walker*<sup>1</sup> and *C. Dennis*<sup>1</sup> *1. National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. Morgan State University, Baltimore, MD, United States*

11:39

- AG-10. Impact of Surface Stabilization on Colloidal and Magnetic Structure of Nanoflowers.** *J.A. Borchers*<sup>1</sup>, *K. Krycka*<sup>1</sup>, *B. dos Santos Correa*<sup>1</sup>, *A. Sharma*<sup>2</sup>, *E. Correa*<sup>1</sup>, *Y. Dang*<sup>1</sup>, *M.J. Donahue*<sup>1</sup>, *C. Gruettner*<sup>3</sup>, *R. Ivkov*<sup>2</sup> and *C. Dennis*<sup>1</sup> *1. NIST, Gaithersburg, MD, United States; 2. Johns Hopkins University School of Medicine, Baltimore, MD, United States; 3. Micromod Partikeltechnologie, GmbH, Rostock, Germany*

11:51

- AG-11. A mechanical model for teaching the Stoner-Wohlfarth model to undergraduate students.** *V. Franco*<sup>1</sup>, *Á. Quintero-Suárez*<sup>1</sup> and *J. Law*<sup>1</sup> *1. University of Seville, Seville, Spain*

12:03

- AG-12. Talking about magnets – information retrieval with large language models.** *C. Wager*<sup>1</sup>, *J. Fischbacher*<sup>2</sup>, *A. Kornell*<sup>1</sup>, *H.A. Moustafa*<sup>2</sup>, *H. Oezelt*<sup>2</sup>, *A. Kovacs*<sup>2</sup>, *Q. Ali*<sup>1</sup>, *M. Gusenbauer*<sup>2</sup> and *T. Schrefl*<sup>1</sup> *1. Christian Doppler Laboratory for Magnet design through physics informed machine learning, University for Continuing Education Krems, Wiener Neustadt, Austria; 2. Department for Integrated Sensor Systems, University for Continuing Education Krems, Wiener Neustadt, Austria*

**Session AP**  
**FUNDAMENTAL PROPERTIES II: MAGNETIC PHASE**  
**TRANSITIONS IN 2D SYSTEMS AND**  
**COMPLEX ALLOYS**  
**(Poster Session)**

Lei Han, Chair  
Tsinghua University, Beijing, China

- AP-01. Valley polarized snake trajectories in anisotropic Weyl semimetals.** *C. Yesilyurt*<sup>1</sup> *1. Nanoelectronics Research Center, Istanbul, Turkey*
- AP-02. Complex magnetic ordering in  $\text{EuAl}_4 - \text{A } ^{151}\text{Eu}$  Mössbauer study.** *D. Ryan*<sup>1</sup>, *B. Kuthanazhi*<sup>2,3</sup>, *N. Jo*<sup>4</sup>, *B. Ueland*<sup>2,3</sup>, *R.J. McQueeny*<sup>2,3</sup>, *S. Riberolles*<sup>2,3</sup>, *X. Wang*<sup>5</sup> and *P.C. Canfield*<sup>2,3</sup> *1. Physics, McGill University, Montreal, QC, Canada; 2. Ames National Laboratory, Ames, IA, United States; 3. Physics and Astronomy, Iowa State University, Ames, IA, United States; 4. Physics, University of Michigan, Ann Arbor, MI, United States; 5. Neutron Scattering Division, Oak Ridge National Laboratory, Oak Ridge, TN, United States*
- AP-03. Twist  $p_z$  Orbital and Spin Moment of the Wavy-Graphene on  $\text{Li}_0\text{-FePd}$  Epitaxial Films.** *H. Naganuma*<sup>7,11</sup>, *M. Uemoto*<sup>1</sup>, *M. Nishijima*<sup>2</sup>, *H. Adachi*<sup>1</sup>, *H. Shinya*<sup>3,4</sup>, *I. Mochizuki*<sup>5</sup>, *M. Kobayashi*<sup>3</sup>, *A. Hirata*<sup>6</sup>, *B. Dlubak*<sup>9</sup>, *T. Ono*<sup>1</sup>, *P. Seneor*<sup>7,9</sup>, *J. Robertson*<sup>8,7</sup> and *K. Amemiya*<sup>10</sup> *1. Kobe University, Kobe, Japan; 2. The Electron Microscopy Center, Tohoku University, Sendai, Japan; 3. CSRN, The University of Tokyo, Tokyo, Japan; 4. RIEC, Tohoku University, Sendai, Japan; 5. Slow Positron Facility, KEK, Tsukuba, Japan; 6. Waseda University, Tokyo, Japan; 7. CSIS, Tohoku University, Sendai, Japan; 8. Cambridge University, Cambridge, United Kingdom; 9. CNRS/Thales, Palaiseau, France; 10. PF, KEK, Tsukuba, Japan; 11. CIES, Tohoku University, Sendai, Japan*
- AP-04. Impurity effect on magnetic and thermal properties of  $S=3/2$  spin gap system  $\text{Ba}_3\text{Ca}(\text{Ru}_{1-x}\text{Nb}_x)_2\text{O}_9$ .** *Y. Ochiai*<sup>2</sup>, *I. Terasaki*<sup>1</sup> and *Y. Yasui*<sup>2</sup> *1. Physics, Nagoya university, Nagoya, Japan; 2. Physics, Meiji university, Kanagawa, Japan*
- AP-05. Magneto band-structure effect for two-dimensional spintronic devices.** *W. Zhu*<sup>1</sup>, *C. Song*<sup>1</sup> and *F. Pan*<sup>1</sup> *1. Materials Science and Engineering, Tsinghua University, Beijing, China*
- AP-06. Exploring the critical behavior of the anomalous spin-glass transition in  $\text{Ga}_{1-x}\text{Mn}_x\text{S}$ .** *T.M. Pekarek*<sup>1</sup>, *J.H. Blackburn*<sup>1</sup>, *I. Miotkowski*<sup>2</sup> and *A.K. Ramdas*<sup>2</sup> *1. Physics, Univ. of N. Florida, Jacksonville, FL, United States; 2. Physics, Purdue, W. Lafayette, IN, United States*
- AP-07. Electronic, magnetic, and structural properties of  $\text{MnCrNbAl}$  and  $\text{MnCrTaAl}$ .** *B. Schmidt*<sup>1</sup>, *P. Shand*<sup>1</sup>, *P. Kharel*<sup>2</sup> and *P. Lukashev*<sup>1</sup> *1. Physics, University of Northern Iowa, Cedar Falls, IA, United States; 2. Physics, South Dakota State University, Brookings, SD, United States*

- AP-08. Theoretical understanding of magnetic phase transition in magnetocaloric  $\text{Er}_{2-x}\text{Yb}_x\text{In}$  compound.** R.K. Chouhan<sup>1</sup>, A. Biswas<sup>1</sup>, A. Thayer<sup>2</sup> and Y. Mudryk<sup>1</sup> 1. Ames National Laboratory, US Department of Energy, Ames, IA, United States; 2. Blue Origin, LLC, Kent, WA, United States
- AP-09. Magnetic field-induced narrow first-order and metamagnetic phase transitions of  $\text{Nd}_5\text{Ge}_3$ : Magnetization, muon spin relaxation and neutron diffraction study.** S. Samatham<sup>1</sup>, V. Yenugonda<sup>2</sup>, B. Gowrinaidu<sup>3</sup>, P. Manuel<sup>4</sup>, D. Khalyavin<sup>4</sup>, S. Cottrell<sup>4</sup>, A. Hillier<sup>4</sup> and K. Suresh<sup>5</sup> 1. Department of Physics, Chaitanya Bharathi Institute of Technology, Hyderabad, India; 2. Department of Physics, Indian Institute of Technology Kanpur, Kanpur, India; 3. Department of Physics, Government College Rajahmundry, Rajamahendravaram, India; 4. Rutherford Appleton Laboratory, ISIS Neutron and Muon Source, Oxfordshire, United Kingdom; 5. Department of Physics, Indian Institute of Technology Bombay, Powai, India
- AP-10. Superconducting exchange coupling with Vanadium interlayer.** S. Bhakat<sup>1</sup> and A. Pal<sup>1</sup> 1. Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai, India
- AP-11. Withdrawn**
- AP-12. Study of Path Dependent Magnetic States in  $\text{CoS}_{2-x}\text{Se}_x$  ( $x=0.24, 0.26, 0.28$ ).** S. Karmakar<sup>1</sup>, R. Joshi<sup>1</sup>, K. Kumar<sup>1</sup> and R. Rawat<sup>1</sup> 1. UGC-DAE Consortium for Scientific Research, Indore, India

TUESDAY  
MORNING  
9:00

MARSALIS HALL A

**Session AQ**  
**HARD MAGNETIC MATERIALS I**  
**(Poster Session)**

Thomas Schrefl, Chair  
Danube University Krems, Wiener Neustadt, Austria

- AQ-01. Hard magnetic properties of  $\text{Fe}_{16}\text{N}_2$  magnets.** T. Saito<sup>2</sup> and H. Yamamoto<sup>1</sup> 1. Neoji-Consul, Kyoto, Japan; 2. Chiba Institute of Technology, Narashino, Japan
- AQ-02. Magnetic properties of  $(\text{Sm,Zr})(\text{Fe,Co})_{10-x}\text{Ti}_x$  bulk magnets.** T. Saito<sup>1</sup> and D. Hamane<sup>2</sup> 1. Chiba Institute of Technology, Narashino, Japan; 2. The University of Tokyo, Kashiwa, Japan
- AQ-03. Fabrication and Magnetic Properties of Anisotropic  $\text{Sm}(\text{Fe,X})_{12}$  Powder and High Density Bulk Magnet.** J. Park<sup>1</sup>, T. Zhou<sup>1,2</sup> and C. Choi<sup>1</sup> 1. Department of Magnetic Materials, Korea Institute of Materials Science, Changwon, The Republic of Korea; 2. Pusan National University, Pusan, The Republic of Korea
- AQ-04. Withdrawn**

- AQ-05. Influence of low sintering temperature of substituted M-type barium hexaferrite on its static and highfrequency magnetic properties.** *K. Rana*<sup>1,2</sup>, *M. Tomar*<sup>1</sup> and *A. Thakur*<sup>2</sup> *1. Physics, University of Delhi, Delhi, India; 2. Innovative Science Research Society (ISRS), Shimla, India*
- AQ-06. Now VP3-13**
- AQ-08. Enhanced Hard Magnetism of Synthetic  $L1_0$ -FeNi.** *I. Hlova*<sup>1</sup>, *Y. Mudryk*<sup>1</sup>, *O. Dolotko*<sup>1</sup> and *A. Biswas*<sup>1</sup> *1. Ames National Laboratory, Ames, IA, United States*
- AQ-09. Segregation of Al and its effect on coercivity in Nd-Fe-B.** *X. Liu*<sup>1</sup> and *C.I. Nlebedim*<sup>1</sup> *1. Ames National Laboratory, Ames, IA, United States*
- AQ-10. Now VP3-14**
- AQ-11. A Design of Stainless Nd-based Permanent Magnets without Coatings and the Corrosion Mechanism Research.** *M. Zhu*<sup>1</sup>, *Y. Wu*<sup>1</sup>, *Y. Fang*<sup>1</sup> and *W. Li*<sup>1</sup> *1. Central Iron and Steel Research Institute, Beijing, China*
- AQ-12. Recycling of Nd-Fe-B Magnets through Grain Boundary Diffusion with Rare Earth Fluorides.** *C.I. Nlebedim*<sup>1</sup> and *X. Liu*<sup>1</sup> *1. Division of Critical Materials, Ames National Laboratory, Ames, IA, United States*
- AQ-14. Novel and ultra-sharp magnetization in  $\text{Sm}(\text{Ni}_{0.5}\text{Fe}_{0.4}\text{Al}_{0.1})_5$ .** *W. Yang*<sup>1</sup>, *T. Zhu*<sup>1</sup>, *Z. Luo*<sup>1</sup>, *S. Liu*<sup>1</sup>, *J. Han*<sup>1</sup>, *H. Du*<sup>1</sup>, *Q. Xu*<sup>1</sup>, *C. Wang*<sup>1</sup> and *J. Yang*<sup>1</sup> *1. Peking University, Beijing, China*
- AQ-15. Effect of TiC nanoparticle on microstructure and magnetic properties in Nd-Fe-B sintered Magnet.** *H.G. Parmar*<sup>1</sup>, *I. Vela*<sup>1</sup>, *X. Liu*<sup>1</sup> and *C.I. Nlebedim*<sup>1</sup> *1. Ames National Laboratory, Ames, IA, United States*
- AQ-16. Now VP3-12**

**Session AR**  
**SOFT MAGNETIC MATERIALS I**  
**(Poster Session)**

Nicoleta Lupu, Chair

National Institute of R&D for Technical Physics, Iasi, Romania

- AR-02. Electrically Insulation of Three Fluid Jet Gas-Liquid Atomized FINEMET Powders with a High Resistivity Organosilane Coating to Preserve Magnetic Properties.** F. Borza<sup>1</sup>, D. Gherca<sup>1</sup>, I. Murgulescu<sup>1</sup>, M. Tibu<sup>1</sup>, G. Stoian<sup>1</sup>, M. Grigoras<sup>1</sup> and N. Lupu<sup>1</sup> *1. National Institute of R&D for Technical Physics, Iasi, Romania*
- AR-03. Direct Observation of Magnetic Domain Walls in Glass-Coated Amorphous Nanowires and Submicronic Wires.** G. Ababei<sup>1</sup>, G. Stoian<sup>1</sup>, H. Chiriac<sup>1</sup>, N. Lupu<sup>1</sup> and T.A. Ovari<sup>1</sup> *1. Dept. of Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*
- AR-04. Harmonic measurement in FFP of Gd<sup>3+</sup>-doped MnFe<sub>2</sub>O<sub>4</sub> Nanoparticles for MPI Applications.** T. Sakamoto<sup>1</sup>, K. Nii<sup>1</sup>, T. Moriwaki<sup>1</sup>, Y. Fujita<sup>1</sup>, H. Amano<sup>1</sup> and Y. Ichiyanagi<sup>1,2</sup> *1. Engineering Science, Yokohama National university, Yokohama, Japan; 2. Osaka University, Osaka, Japan*
- AR-05. Influence of scanning strategy on magnetic properties of 630 stainless steel fabricated by directed energy deposition method.** K. Kinoshita<sup>1</sup>, M. Sakamoto<sup>1</sup> and S. Imatani<sup>1</sup> *1. Graduate School of Energy Science, Kyoto University, Kyoto, Japan*
- AR-06. High frequency magnetic properties of submicron-sized Fe-Ni-B amorphous particles synthesized by aqueous solution reduction method.** K. Wakabayashi<sup>1</sup>, T. Miyazaki<sup>2</sup>, M. Nguyen<sup>1</sup>, S. Muroga<sup>1</sup> and Y. Endo<sup>1,3</sup> *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Faculty of Engineering, Tohoku University, Sendai, Japan; 3. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan*
- AR-07. Effects of Bulk Sulfur Content on Annealing Texture and Magnetic Properties in AlN-free and Mn-Contained Fe-3.2%Si Electrical Steels.** J. Ahn<sup>1</sup>, K. Lee<sup>1</sup>, H. Gil<sup>1</sup>, S. Yoo<sup>2</sup>, Y. Ahn<sup>2</sup>, G. Oh<sup>2</sup>, C. Kang<sup>2</sup>, N. Heo<sup>3</sup> and J. Kim<sup>1</sup> *1. Hanyang University, Ansan-si, The Republic of Korea; 2. Hyundai Steel R&D center, Dangjin, The Republic of Korea; 3. Thermvac, Hwaseong, The Republic of Korea*
- AR-08. Modelling of magnetization process of compacted Fe-based powder by Jiles-Atherton model.** D. Olekšáková<sup>1</sup>, P. Kollár<sup>2</sup> and M. Jakubčín<sup>2</sup> *1. Technical University of Košice, Prešov, Slovakia; 2. P. J. Šafárik University in Košice, Košice, Slovakia*

**AR-09. Magnetization process of compacted iron powder in small magnetic fields.** P. Kollár<sup>1</sup>, D. Olekšáková<sup>2</sup>, M. Tkáč<sup>1</sup>, R. Maciaszek<sup>1</sup> and J. Füzér<sup>1</sup> *1. Institute of Physics, Faculty of Science, P. J. Šafárik University in Košice, Košice, Slovakia; 2. Institute of Manufacturing Management, Faculty of Manufacturing Technologies, Technical University of Košice, Prešov, Slovakia*

**AR-10. Withdrawn**

**AR-11. A Study on the Elemental Distribution Behaviors of Fe-based Nanocrystal Ribbons using Atom Probe Tomography.** K. Lee<sup>1</sup>, J. Ahn<sup>1</sup>, H. Im<sup>2</sup>, J. Jeong<sup>2</sup> and J. Kim<sup>1</sup> *1. Department of Materials Science and Chemical Engineering, Hanyang University, Ansan, The Republic of Korea; 2. Metal Powder Department, Korea Institute of Materials Science, Chacngwon, The Republic of Korea*

**AR-12. Ferrite Magnetic Characteristic Simulation at Different Temperature with Recurrent Neural Network Model.** H. Zhang<sup>1</sup>, Q. Yang<sup>2</sup>, C. Zhang<sup>1</sup>, Y. Li<sup>1</sup> and Y. Chen<sup>1</sup> *1. Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. Electronic Engineering, Tianjin University of Technology, Tianjin, China*

TUESDAY  
MORNING  
9:00

MARSALIS HALL A

**Session AS**  
**MULTI-FUNCTIONAL MAGNETIC MATERIALS**  
**AND APPLICATIONS I**  
**(Poster Session)**

Thomas Feggeler, Co-Chair  
Lawrence Berkeley National Laboratory, Berkeley, CA, United States  
Hendrik Ohldag, Co-Chair  
Lawrence Berkeley National Laboratory, Berkeley, CA, United States

**AS-01. Anomalous Nernst effects in TbCo and GdCo alloys for heat flux sensing.** M. Odagiri<sup>1</sup>, H. Imaeda<sup>1</sup>, S. Sumi<sup>1</sup>, H. Awano<sup>1</sup> and K. Tanabe<sup>1</sup> *1. Toyota Technological Institute, Nagoya, Japan*

**AS-02. Magnetic and magnetocaloric properties of GdZn<sub>1-y</sub>Ga<sub>y</sub> (y= 0-0.2).** A. Biswas<sup>1</sup>, T. Del Rose<sup>1</sup> and Y. Mudryk<sup>1</sup> *1. Ames National Laboratory, Iowa State University, Ames, IA, United States*

**AS-03. Significant sensitivity improvement of a heat flux sensor based on anomalous Nernst effect by uneven structure.** H. Imaeda<sup>1</sup>, M. Odagiri<sup>1</sup>, M. Sakamoto<sup>1</sup>, S. Sumi<sup>1</sup>, H. Awano<sup>1</sup> and K. Tanabe<sup>1</sup> *1. Toyota Technological Institute, Nagoya, Japan*



**AS-04. Preparation, structural and magnetic properties of MnFePSi-based glass-coated microwires.** M. Salaheldeen<sup>1,2</sup>, V. Zhukova<sup>1,3</sup>, M. Ipatov<sup>1,3</sup>, A. Zhukov<sup>1,3</sup> and A. Wedeni<sup>1,3</sup>  
1. Department of Polymers and Advanced Materials, Faculty of Chemistry, University of the Basque Country, UPV/EHU, San Sebastian, Spain; 2. Physics Department, Faculty of Science, Sohag University, Sohag, Egypt; 3. Department of Applied Physics, University of the Basque Country, UPV/EHU, San Sebastian, Spain

**AS-05. Magnetic and magnetocaloric properties of the multi-component  $Mn_{0.5}Fe_{0.5}Ni_{0.95}Cr_{0.05}Si_{0.95}Al_{0.05}$  intermetallic compound.** A. Bhatta<sup>1</sup>, J.F. Casey<sup>2</sup>, S. Bhattacharjee<sup>1</sup>, A. Pathak<sup>2,3</sup> and M. Khan<sup>1</sup> 1. Physics, Miami University, Oxford, OH, United States; 2. Physics, SUNY Buffalo State University, Buffalo, NY, United States; 3. GE Research, Niskayuna, NY, United States

**AS-06. New measurement method and instrument for direct measurement of the adiabatic temperature change to enable magnetic refrigeration.** B. Bosch-Santos<sup>1</sup>, C.F. Amigo<sup>1</sup>, S.W. Young<sup>1</sup>, R. Shull<sup>1</sup>, J. Wu<sup>1</sup>, M. Kedzierski<sup>1</sup> and C. Dennis<sup>1</sup>  
1. National Institute of Standards and Technology, Gaithersburg, MD, United States

TUESDAY  
AFTERNOON  
1:30

REUNION EF

**Session BA  
RARE-EARTH SPINTRONICS**

Alejandro Leon, Chair  
Metropolitan University of Technology, Santiago, Chile

1:30

**BA-01. Rare earth site occupancy: a path to designing anisotropy, compensation, and interfacial properties of ferrimagnetic iron garnets. (Invited)** C.A. Ross<sup>1</sup> 1. Massachusetts Institute of Technology, Cambridge, MA, United States

2:06

**BA-02. 4f Local Moments in Spintronics. (Invited)** G. Bauer<sup>1,2</sup> 1. AIMR, Tohoku University, Sendai, Japan; 2. KITS, UCAS, Beijing, China

2:42

Break

3:15

**BA-03. Compensated ferrimagnets for unconventional spintronics. (Invited)** W. Jiang<sup>1</sup> 1. Physics Department, Tsinghua University, Beijing, China

- BA-04. Magnon transport and topological magnetic textures in rare-earth magnetic insulators. (Invited) S. Velez<sup>1</sup>**  
*1. Universidad Autonoma de Madrid, Madrid, Spain*

4:27

- BA-05. Antiferromagnetic Metal Phase and Memory Behavior in a Rare-Earth Nickelate. (Invited) S. Doyle<sup>1</sup>, Q. Song<sup>2</sup>, G.A. Pan<sup>1</sup>, I. El Baggari<sup>3</sup>, D. Ferenc Segedin<sup>1</sup>, D. Córdoba Carrizales<sup>1</sup>, J. Nordlander<sup>1</sup>, C. Tzschaschel<sup>4</sup>, S. Xu<sup>4</sup>, P. Shafer<sup>5</sup>, L. Moreschini<sup>6,7</sup> and J. Mundy<sup>1</sup>**  
*1. Physics, Harvard University, Cambridge, MA, United States; 2. Cornell University, Ithaca, NY, United States; 3. The Rowland Institute at Harvard, Harvard University, Cambridge, MA, United States; 4. Chemistry and Chemical Biology, Harvard University, Cambridge, MA, United States; 5. Lawrence Berkeley National Laboratory, Advanced Light Source, Berkeley, CA, United States; 6. Physics, University of California, Berkeley, Berkeley, CA, United States; 7. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*

TUESDAY  
 AFTERNOON  
 1:30

REUNION GH

**Session BB**  
**NEUROMORPHIC COMPUTING II**

Jayasimha Atulasimha, Co-Chair  
 Virginia Commonwealth University, Richmond, VA, United States  
 Joseph Friedman, Co-Chair  
 The University of Texas at Dallas, Richardson, TX, United States

1:30

- BB-01. Perpendicular Magnetic-Tunnel-Junction Nanopillars for True Random Number Generation. (Invited) L. Rehm<sup>1</sup>, M. Morshed<sup>2</sup>, C.C. Capriata<sup>3</sup>, S. Misra<sup>4</sup>, J. Smith<sup>4</sup>, M. Pinarbasi<sup>5</sup>, A.W. Ghosh<sup>2</sup>, B.G. Malm<sup>3</sup> and A.D. Kent<sup>1</sup>**  
*1. Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States; 2. Department of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA, United States; 3. Division of Electronics and Embedded Systems, KTH Royal Institute of Technology, Stockholm, Sweden; 4. Sandia National Laboratories, Albuquerque, NM, United States; 5. Spin Memory Inc., Fremont, CA, United States*

2:06

- BB-02. Performance of Domain Wall-Magnetic Tunnel Junction Neuromorphic Computing Devices under Electron Beam and Heavy Ion Irradiation. T. Leonard<sup>1</sup>, C. Bennett<sup>2</sup>, T.P. Xiao<sup>2</sup>, D. Hughart<sup>2</sup> and J.C. Inorvia<sup>1</sup>**  
*1. UT Austin, Austin, TX, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States*

2:18

**BB-03. Switching Attempt Times of Superparamagnetic Tunnel Junctions as a Function of Diameter and Temperature.**

*H. Kaneko*<sup>1,2</sup>, *R. Ota*<sup>1,2</sup>, *K. Kobayashi*<sup>1,2</sup>, *S. Kanai*<sup>1,3</sup>, *M. Elyasi*<sup>4,5</sup>, *G. Bauer*<sup>4,6</sup>, *H. Ohno*<sup>1,7</sup> and *S. Fukami*<sup>1,7</sup> 1. *RIEC, Tohoku Univ., Sendai, Japan*; 2. *Graduate School of Engineering, Tohoku Univ., Sendai, Japan*; 3. *National Institutes for Quantum Science and Technology, Takasaki, Japan*; 4. *WPI-AIMR, Tohoku Univ., Sendai, Japan*; 5. *IMR, Tohoku Univ., Sendai, Japan*; 6. *Kavli ITS, UCAS, Beijing, China*; 7. *CSIS, Tohoku Univ., Sendai, Japan*

2:30

**BB-04. Magnetic Tunnel Junction Random Number Generators Applied to Dynamically Tuned Probability Trees Driven by Spin Orbit Torque.**

*A. Maicke*<sup>1</sup>, *S. Liu*<sup>1</sup>, *J. Kwon*<sup>1</sup>, *P.W. Bessler*<sup>1</sup>, *J. Smith*<sup>2</sup>, *J.B. Aimone*<sup>2</sup>, *S. Misra*<sup>2</sup>, *C.D. Schuman*<sup>3</sup>, *S.G. Cardwell*<sup>2</sup> and *J.C. Incorvia*<sup>1</sup> 1. *University of Texas at Austin, Austin, TX, United States*; 2. *Sandia National Labs, Albuquerque, NM, United States*; 3. *University of Tennessee, Knoxville, Knoxville, TN, United States*

2:42

**Break**

3:15

**BB-05. Probabilistic computing with voltage-controlled dynamics in magnetic tunnel junctions. (Invited)**

*Y. Shao*<sup>1</sup>, *C. Duffee*<sup>1</sup>, *E. Raimondo*<sup>2</sup>, *N. Melendez*<sup>3</sup>, *V. Lopez Dominguez*<sup>1</sup>, *J. Katine*<sup>3</sup>, *G. Finocchio*<sup>2</sup> and *P. Khalili Amiri*<sup>1</sup> 1. *Department of Electrical and Computer Engineering, Northwestern University, Evanston, Evanston, IL, United States*; 2. *Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*; 3. *Western Digital Corporation, San Jose, CA, United States*

3:51

**BB-06. Non-volatile binary radio-frequency synapses using vortex polarities.**

*L. Mazza*<sup>2</sup>, *M. Menshaway*<sup>1</sup>, *V. Puliafito*<sup>2</sup>, *M. Carpentieri*<sup>2</sup>, *A. Jenkins*<sup>3</sup>, *R. Ferreira*<sup>3</sup>, *L. Benetti*<sup>3</sup>, *A. Schulman*<sup>3</sup>, *J. Grollier*<sup>1</sup> and *F.A. Mizrahi*<sup>1</sup> 1. *Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France*; 2. *Politecnico di Bari, Bari, Italy*; 3. *International Iberian Nanotechnology Laboratory (INL), Braga, Portugal*

4:03

**BB-07. Quantized Magnetic Domain Wall Synapse based Autoencoder for Efficient Unsupervised Learning.**

*M. Alam*<sup>1</sup>, *W. Misba*<sup>1</sup> and *J. Atulasimha*<sup>1,2</sup> 1. *Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States*; 2. *Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA, United States*

4:15

**BB-08. A spiking neural network device based on Skyrmionic neurons and synapses.**

*M. Tey*<sup>1</sup>, *X. Chen*<sup>1</sup>, *P. Ho*<sup>1</sup> and *A. Soumyanarayanan*<sup>1,2</sup> 1. *Institute for Materials Research and Engineering, Singapore, Singapore*; 2. *Physics, National University of Singapore, Singapore, Singapore*

- BB-09. Integration of Magnetic Josephson Junction in Circuits for Neuromorphic Computing.** *E. Jué*<sup>2,1</sup>, D. Olaya<sup>2,1</sup>, M.R. Pufall<sup>3</sup>, I. Haygood<sup>3</sup>, M. Castellanos Beltran<sup>3</sup>, J. Biesecker<sup>3</sup>, P. Hopkins<sup>3</sup>, S. Benz<sup>3</sup>, W.H. Rippard<sup>3</sup> and M.L. Schneider<sup>3</sup> *1. Department of Physics, University of Colorado, Boulder, Boulder, CO, United States; 2. Associate of the National Institute of Standards and Technology, Boulder, CO, United States; 3. National Institute of Standards and Technology, Boulder, CO, United States*

TUESDAY  
AFTERNOON  
1:30

REUNION A

**Session BC  
MAGNETO-IONICS**

Chris Leighton, Chair  
University of Minnesota, Minneapolis, MN, United States

1:30

- BC-01. Magneto-Ionics with Alternative Ionic Species. (Invited)** C.J. Jensen<sup>1</sup>, A. Quintana<sup>1</sup>, G. Chen<sup>1</sup>, Z. Chen<sup>1</sup>, M. Robertson<sup>2</sup>, A.A. Firme<sup>3</sup>, P. Quarterman<sup>4</sup>, A.J. Grutter<sup>4</sup>, P.P. Balakrishnan<sup>4</sup>, H. Zhang<sup>4</sup>, D. Zheng<sup>5</sup>, C. Liu<sup>5</sup>, C. Ophus<sup>6</sup>, A. Schmid<sup>6</sup>, A. Davydov<sup>4</sup>, X. Zhang<sup>5</sup> and K. Liu<sup>1</sup> *1. Georgetown University, Washington, DC, United States; 2. University of California, Davis, Davis, CA, United States; 3. University of Wyoming, Laramie, WY, United States; 4. NIST, Gaithersburg, MD, United States; 5. KAUST, Thuwal, Saudi Arabia; 6. Lawrence Berkeley Laboratory, Berkeley, CA, United States*

2:06

- BC-02. Solid/Liquid Electrolyte Engineering to Boost Cyclability During Magneto-ionic Actuation. (Invited)** Z. Tan<sup>1</sup>, Z. Ma<sup>1</sup>, L. Fuentes-Rodríguez<sup>2</sup>, O. Liedke<sup>3</sup>, M. Butterling<sup>3</sup>, A. Attallah<sup>3</sup>, E. Hirschmann<sup>3</sup>, A. Wagner<sup>3</sup>, L. Abad<sup>4</sup>, N. Casañ<sup>2</sup>, A. Lopeandia<sup>1,5</sup>, E. Menéndez<sup>1</sup> and J. Sort<sup>1,6</sup> *1. Universitat Autònoma de Barcelona, Bellaterra, Spain; 2. Institut de Ciència de Materials de Barcelona, ICMAB, Bellaterra, Spain; 3. Institute of Radiation Physics, Helmholtz-Zentrum Dresden, Rossendorf, Germany; 4. Institut de Microelectrònica de Barcelona (IMB-CNM-CSIC). Campus de la UAB, Bellaterra, Spain; 5. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Bellaterra, Spain; 6. Institució Catalana de Recerca i Estudis Avançats, ICREA, Barcelona, Spain*

2:42

Break

3:15

- BC-03. Solid-State Lithium Magnetoionics for Voltage Control of Perpendicular Magnetic Anisotropy and Skyrmions in Thin Films. (Invited)** M. Ameziane<sup>1,2</sup>, J. Huhtasalo<sup>3</sup>, L. Flajšman<sup>2</sup>, R. Mansell<sup>2</sup>, V. Havu<sup>2</sup>, P. Rinke<sup>2</sup> and S. van Dijken<sup>2</sup> *1. Paul Scherrer Institute, Zurich, Switzerland; 2. Aalto University, Espoo, Finland; 3. University of Helsinki, Helsinki, Finland*

- BC-04. Magneto-Ionic Control of Exchange Bias in  $Mn_4N/Mn_3N_2$  Heterostructures.** Z. Chen<sup>1</sup>, C.J. Jensen<sup>1</sup>, C. Liu<sup>2</sup>, X. Zhang<sup>2</sup> and K. Liu<sup>1</sup> *1. Physics, Georgetown University, Washington, DC, United States; 2. King Abdullah University of Science & Technology, Thuwal, Saudi Arabia*

4:03

- BC-05. Magneto-ionic physical reservoir computing.** M. Rajib<sup>1</sup>, D. Bhattacharya<sup>2</sup>, M.F. Chowdhury<sup>1</sup>, C.J. Jensen<sup>2</sup>, G. Chen<sup>2</sup>, K. Liu<sup>2</sup> and J. Atulasimha<sup>1,3</sup> *1. Mechanical and Nuclear Engineering Department, Virginia Commonwealth University, Richmond, VA, United States; 2. Department of Physics, Georgetown University, Washington, DC, United States; 3. Electrical and Computer Engineering Department, Virginia Commonwealth University, Richmond, VA, United States*

4:15

- BC-06. Magneto-Ionic Enhancement of Exchange Bias and Modulation of Ferromagnetic Bi-stability.** M. Hasan<sup>1\*</sup>, A.E. Kossak<sup>1</sup> and G. Beach<sup>1</sup> *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*

4:27

- BC-07. Magneto-Ionic Control of Perpendicular Magnetic Anisotropy for Energy-Efficient Spintronic Devices.** A. Islam<sup>1,2</sup>, A. Mahendra<sup>1,2</sup>, S. Acharya<sup>1,2</sup>, Y. Zhang<sup>1,2</sup> and S. Granville<sup>1,2</sup> *1. Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand; 2. MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand*

4:39

- BC-08. Magneto-ionic control of anisotropy and skyrmions in Co/Ni multilayers.** D. Bhattacharya<sup>1</sup>, M. Rajib<sup>2</sup>, C.J. Jensen<sup>1</sup>, G. Chen<sup>1</sup>, J. Atulasimha<sup>2</sup> and K. Liu<sup>1</sup> *1. Department of Physics, Georgetown University, Washington, DC, United States; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States*

**Session BD**  
**DOMAIN WALL, VORTEX, AND SKYRMION**  
**DYNAMICS AND DEVICES I**

Wanjun Jiang, Co-Chair  
Tsinghua University, Beijing, China  
Dazhi Hou, Co-Chair  
University of Science and Technology of China, Hefei, China

1:30

- BD-01. Non-trivial Charge-dependent Spin Phenomena in Topological Spin Textures. (Invited) H. Han<sup>1,2</sup>** 1. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. Department of Materials and Science Engineering, Korea National University of Transportation, Chungju, The Republic of Korea

2:06

- BD-02. Skyrmion dynamics and the Skyrmion-Excited Spin Wave Fractal Network. (Invited) D.A. Gilbert<sup>1,2</sup>** 1. Materials Science and Engineering, University of Tennessee, Knoxville, TN, United States; 2. Physics Department, University of Tennessee, Knoxville, TN, United States

2:42

**Break**

3:15

- BD-03. Understanding Spin-texture Behavior in van der Waals Ferromagnets Using Cryo Lorentz Electron Microscopy. (Invited) Y. Li<sup>1</sup>** 1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States

3:51

- BD-04. Domain Walls in the Presence of In-Plane Anisotropies: Structure Tuning and Domain Imprinting.** K. Franke<sup>1</sup>, E. Haltz<sup>1,2</sup>, C. Ophus<sup>3</sup>, A. Schmid<sup>3</sup> and C. Marrows<sup>1</sup> 1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Université Sorbonne Paris Nord, Villetaneuse, France; 3. National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, CA, United States

4:03

- BD-05. Withdrawn**

- BD-06. Unraveling Stochastic Domain Wall Motion: Insights from LTEM Imaging in a Nanoscale Magnetic Galton Board System.** *T.R. Cote*<sup>1,2</sup>, *D. Sanz Hernandez*<sup>4</sup>, *F. Montaigne*<sup>3</sup>, *J. Grollier*<sup>4</sup>, *L. Georgopoulos*<sup>1</sup>, *C. Phatak*<sup>1,2</sup>, *A. Petford-Long*<sup>1,2</sup> and *H. Arava*<sup>1</sup>  
*1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 2. Materials Science & Engineering, Northwestern University, Evanston, IL, United States; 3. CNRS Institut Jean Lamour, Université de Lorraine, Nancy, France; 4. Unité Mixte de Physique, Centre National de la Recherche Scientifique/Thales, Université Paris Saclay, Palaiseau, France*

- BD-07. Magnetic droplet soliton pairs. (Invited)** *S. Jiang*<sup>2</sup>, *S. Chung*<sup>3</sup>, *M. Ahlberg*<sup>1</sup>, *A. Frisk*<sup>1</sup>, *Q. Le*<sup>1</sup>, *H. Mazraati*<sup>4</sup>, *A. Houshang*<sup>1</sup>, *O. Heinonen*<sup>5,6</sup> and *J. Akerman*<sup>1,7</sup>  
*1. University of Gothenburg, Göteborg, Sweden; 2. School of Microelectronics, South China University of Technology, Guangzhou, China; 3. Department of Physics Education, Korea National University of Education, Cheongju, The Republic of Korea; 4. KTH Royal Institute of Technology, Stockholm, Sweden; 5. Argonne National Laboratory, Lemont, IL, United States; 6. Seagate Technology, Bloomington, MN, United States; 7. Tohoku University, Sendai, Japan*

TUESDAY  
 AFTERNOON  
 1:30

REUNION C

**Session BE**  
**3D MAGNETISM**

Peter Fischer, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- BE-01. Curvilinear and 3D micromagnetism: geometrically curved ferro- and antiferromagnets. (Invited)** *D. Makarov*<sup>1</sup>  
*1. Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany*

- BE-02. 3D Magnetic Nanowire Networks for Neuromorphic Computing. (Invited)** *D. Bhattacharya*<sup>1</sup>, *Z. Chen*<sup>1</sup>, *C. Langton*<sup>1</sup>, *E. Marlowe*<sup>1</sup>, *C.J. Jensen*<sup>1</sup>, *J. Malloy*<sup>1</sup>, *C. Liu*<sup>2</sup>, *E.C. Burks*<sup>3</sup>, *D.A. Gilbert*<sup>4</sup>, *X. Zhang*<sup>2</sup>, *G. Yin*<sup>1</sup> and *K. Liu*<sup>1</sup>  
*1. Department of Physics, Georgetown University, Washington, DC, United States; 2. Materials Science and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 3. Department of Physics, University of California, Davis, Davis, CA, United States; 4. Materials Science and Engineering, University of Tennessee, Knoxville, Knoxville, TN, United States*

**Break**

3:15

- BE-03. Magnetic vortex structure in three-dimensional pyramidal Fe nanofilms studied with Kerr microscopy.** *J. Juhari*<sup>1</sup>, L.N. Pamasi<sup>1</sup>, N. Hosoi<sup>1</sup>, N. Mabarroh<sup>1</sup>, A.N. Hattori<sup>2</sup>, H. Tanaka<sup>2</sup>, S. Yoshimura<sup>3</sup> and K. Hattori<sup>1</sup> *1. Nara Institute of Science and Technology, Ikoma, Japan; 2. Osaka University, Osaka, Japan; 3. Akita University, Akita, Japan*

3:27

- BE-04. 3-Dimensional Magnetostatic Interactions in Fe/Au Barcode Nanowire Arrays.** *E. Jeong*<sup>2\*</sup>, A. Samardak<sup>1</sup>, Y. Jeon<sup>2</sup>, V. Samardak<sup>1</sup>, A. Kozlov<sup>1</sup>, K. Rogachev<sup>1</sup>, A. Ognev<sup>1</sup>, G. Kim<sup>2</sup>, M. Ko<sup>2</sup>, A. Samardak<sup>1</sup> and Y. Kim<sup>2</sup> *1. Far Eastern Federal University, Vladivostok, Russian Federation; 2. Korea University, Seoul, The Republic of Korea*

3:39

- BE-05. Domain Wall Formation and Dynamics in Interconnected Helical Nanowires.** *J. Fullerton*<sup>1</sup> and C. Phatak<sup>1,2</sup> *1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 2. Department of Materials Science and Engineering, Northwestern University, Evanston, IL, United States*

3:51

- BE-06. Magnetic Charge Ordering in 3D Artificial Spin-ice. (Invited)** A. Van den Berg<sup>1</sup>, M. Saccone<sup>2</sup>, E. Harding<sup>1</sup>, S. Singh<sup>1</sup>, S. Giblin<sup>1</sup>, F. Flicker<sup>1</sup> and S. Ladak<sup>1</sup> *1. School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom; 2. Los Alamos National Laboratory, Los Alamos, NM, United States*

4:27

- BE-07. 3D Printing of Flexible Magnetic Composites Using Digital Light Processing.** *N. Tarabay*<sup>1</sup>, J.A. Lopez Medina<sup>3</sup> and C. Velez<sup>2</sup> *1. Department of Electrical Engineering and Computer Science, University of California, Irvine, Irvine, CA, United States; 2. Department of Mechanical and Aerospace Engineering, University of California, Irvine, Irvine, CA, United States; 3. Centro de Nanociencias y Nanotecnología, Universidad Nacional Autónoma de México, Ensenada, Mexico*

TUESDAY  
AFTERNOON  
1:30

PEGASUS A

**Session BF**  
**FUNDAMENTAL PROPERTIES III: 2D AND**  
**TOPOLOGICAL MATERIALS II**

Suwayan Saha, Chair  
Saha Institute of Nuclear Physics, Kolkata, India

1:30

- BF-01. Robust negative longitudinal magnetoresistance and spin-orbit torque in sputtered Pt<sub>3</sub>Sn and Pt<sub>3</sub>Sn<sub>x</sub>Fe<sub>1-x</sub> topological semimetal. (Invited)** *D. Zhang*<sup>1</sup> *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*



2:06

- BF-02.  $^{151}\text{Eu}$  Mössbauer study of flux-grown ferromagnetic and antiferromagnetic forms of  $\text{EuCd}_2\text{As}_2$ .** D. Ryan<sup>1</sup>, N. Jo<sup>2</sup>, B. Kuthanazhi<sup>3,4</sup>, S.L. Bud'ko<sup>3,4</sup> and P.C. Canfield<sup>3,4</sup> 1. *Physics, McGill University, Montreal, QC, Canada*; 2. *Physics, University of Michigan, Ann Arbor, MI, United States*; 3. *Ames National Laboratory, Ames, IA, United States*; 4. *Physics and Astronomy, Iowa State University, Ames, IA, United States*

2:18

- BF-03. Vortex phase transition and TAFF study of superconducting Fe (Te, Se) thin films.** R. Kumar<sup>1</sup>, A. Mitra<sup>1</sup> and G.D. Varma<sup>1</sup> 1. *Physics, Indian Institute of Technology Roorkee, Roorkee, India*

2:30

- BF-04. Spin-liquid State in Magnetically Diluted Jahn-Teller Active Spinel Pyrochlore ( $\text{ZnFe}_2\text{O}_4$ ).** S.K. Jena<sup>1</sup> and S. Thota<sup>1</sup> 1. *Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India*

2:42

Break

3:15

- BF-05. Revealing unconventional quantum oscillations and non-trivial electronic states at  $\text{EuO}/\text{KTaO}_3$  interface.** R. Km<sup>1</sup>, M. Duman<sup>2</sup>, M.K. Chan<sup>1</sup>, S. Chakraverty<sup>2</sup> and N. Harrison<sup>1</sup> 1. *NHMFL, Los Alamos National Laboratory, Los Alamos, NM, United States*; 2. *Quantum Materials and Devices, Institute of NanoScience and Technology, Mohali, India*

3:27

- BF-06. Spin-flop quasi metamagnetic, anisotropic magnetic, and transport behavior of Ho substituted  $\text{ErMn}_6\text{Sn}_6$  kagome magnet.** J.F. Casey<sup>1</sup>, S. Samatham<sup>2</sup>, C. Burgio<sup>1</sup>, N. Kramer<sup>1</sup>, A. Sawon<sup>1</sup>, J. Huff<sup>1</sup> and A. Pathak<sup>1,3</sup> 1. *Physics, Buffalo State University, Buffalo, NY, United States*; 2. *Physics, Chaitanya Bharathi Institute of Technology, Hyderabad, India*; 3. *GE Research, Niskayuna, NY, United States*

3:39

- BF-07. Large tuneable exchange fields due to purely paramagnetically limited domain wall superconductivity.** P. Banerjee<sup>1</sup> and A. Pal<sup>1,2</sup> 1. *Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Mumbai, India*; 2. *Centre of Excellence in Quantum Information Computing Science & Technology, Indian Institute of Technology Bombay, Mumbai, India*

3:51

- BF-08. Magnetism in Molecule-based Systems: from Paramagnetic Complexes to Hard Magnets.** R. Clérac<sup>1</sup>, P. Perlepe<sup>1</sup>, I. Oyarzabal Epelde<sup>1,2</sup>, C. Mathonière<sup>1</sup>, K.S. Pedersen<sup>1,3</sup>, M. Rouzies<sup>1</sup>, N. Yutronkie<sup>1,4</sup>, F. Wilhelm<sup>4</sup> and A. Rogalev<sup>4</sup> 1. *CNRS, Centre de Recherche Paul Pascal, Pessac, France*; 2. *University of the Basque Country, San Sebastian, Spain*; 3. *Department of Chemistry, Technical University of Denmark, Kgs. Lyngby, Denmark*; 4. *European Synchrotron Radiation Facility, Grenoble, France*

4:03

- BF-09. Magnetic Ground States of Non-linear Antiferromagnetic Coordination Polymer Chains.** *S. Vaidya*<sup>1</sup>, *R. Johnson*<sup>2</sup>, *J. Singleton*<sup>3</sup>, *J. Manson*<sup>4</sup> and *P. Goddard*<sup>1</sup> *1. Physics, University of Warwick, Coventry, United Kingdom; 2. University College London, London, United Kingdom; 3. National High Magnetic Field Laboratory, Los Alamos, NM, United States; 4. Eastern Washington University, Washington, WA, United States*

4:15

- BF-10. Magnetism of Multifunctional Metal-Organic Frameworks Incorporating Tailored Combinations of Multiple Rare-Earth Cations.** *E. Bartolome*<sup>5,4</sup>, *A. Arauzo*<sup>1,2</sup>, *M. Valvidares*<sup>3</sup> and *J. Giner Planas*<sup>4</sup> *1. Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC, Zaragoza, Spain; 2. Condensed Matter Physics, University of Zaragoza, Zaragoza, Spain; 3. ALBA Synchrotron, Barcelona, Spain; 4. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Barcelona, Spain; 5. EUSS Research Group, Escola Universitària Salesiana de Sarrià (EUSS), Barcelona, Spain*

TUESDAY  
AFTERNOON  
1:30

PEGASUS B

**Session BG**  
**SENSORS, HIGH FREQUENCY DEVICES,**  
**AND POWER DEVICES**

**Zhenchao Wen, Co-Chair**  
National Institute for Materials Science (NIMS), Tsukuba, Japan  
**Sara Mills, Co-Chair**  
U.S. Naval Research Laboratory, Washington, DC, United States

1:30

- BG-01. A Fresh Look at Magnetic Materials for Electric Machines: State of the Art and Beyond. (Invited)** *C. Chinnasamy*<sup>1</sup>, *V. Rallabandi*<sup>1</sup> and *V.G. Harris*<sup>2</sup> *1. Oak Ridge National Laboratory, Knoxville, TN, United States; 2. Northeastern University, Boston, MA, United States*

2:06

- BG-02. Barium Ferrite / Carbon Nanotube Composites for Millimeter-wave Electromagnetic Shielding Enhanced by Ferromagnetic Resonance Absorption.** *B.M. Mears*<sup>1</sup>, *F.M. Freeman*<sup>1</sup>, *Y. Yoon*<sup>1</sup> and *D. Arnold*<sup>1</sup> *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL, United States*

2:18

- BG-03. Selection of Magnetic Materials for AC Filter Inductors in PWM Inverters.** *T. Yamaguchi*<sup>1</sup> and *H. Matsumori*<sup>1</sup>  
*1. Department of Electrical and Mechanical Engineering, Nagoya Institute of Technology, Nagoya, Japan*

2:30

**BG-13. Skyrmionic device for an offset-free 3D magnetic field sensor with high linear range enabled by spin-orbit-torques.**

*S. Koraltan*<sup>1\*</sup>, *R. Gupta*<sup>2</sup>, *C. Schmitt*<sup>2</sup>, *A. Ducevic*<sup>1</sup>, *F. Bruckner*<sup>1</sup>, *C. Abert*<sup>1</sup>, *A. Satz*<sup>3</sup>, *K. Pruegl*<sup>3</sup>, *M. Kirsch*<sup>3</sup>, *S. Zeilinger*<sup>3</sup>, *J. Güttinger*<sup>3</sup>, *G. Jakob*<sup>2</sup>, *M. Kläui*<sup>2</sup> and *D. Suess*<sup>1</sup> *1. Physics of Functional Materials, University of Vienna, Vienna, Austria; 2. Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany; 3. Infineon Technologies, Villach, Austria*

2:42

**Break**

3:15

**BG-04. Fast and Accurate Transient Simulation of Magnetic Gears.**

*A. Sahoo*<sup>1</sup> and *V.K. Hari*<sup>1</sup> *1. Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Mumbai, India*

3:27

**BG-05. A Novel Measurement-protection-integrated Current Transformer Based on Composite Core.**

*Z. Zhang*<sup>1</sup>, *B. Chen*<sup>1</sup>, *C. Tian*<sup>1</sup>, *Y. Chen*<sup>1</sup> and *S. Liu*<sup>2</sup> *1. Wuhan University, Wuhan, China; 2. State Grid Shanghai Municipal Electric Power Company, Shanghai, China*

3:39

**BG-06. A railgun concept for space launches and return travel from the Moon.**

*M. Trapanese*<sup>1</sup>, *M. Scozzaro*<sup>1</sup>, *A. Iones*<sup>1</sup> and *F. Raimondi*<sup>1</sup> *1. Palermo University, Palermo, Italy*

3:51

**BG-07. Origin of white noise in high-sensitive GMR sensor using AC modulation.**

*Y. Higashi*<sup>1</sup>, *A. Kikitsu*<sup>1</sup>, *Y. Kurosaki*<sup>1</sup> and *S. Shirotori*<sup>1</sup> *1. Toshiba Corporation, Kawasaki, Japan*

4:03

**BG-09. Butterfly motion of magneto-mechanical energy sensor for ambient ac field.**

*S. Yoon*<sup>1</sup> *1. Korea Institute of Industrial Technology, Gwangju, The Republic of Korea*

4:15

**BG-12. Surface Acoustic Wave Actuated MEMS Magnetoelectric Antennas.**

*C. Zhang*<sup>1</sup>, *H. Gu*<sup>1</sup>, *Y. Ji*<sup>1</sup> and *T. Nan*<sup>1</sup> *1. School of Integrated Circuits and Beijing National Research Center for Information Science and Technology (BNRist), Tsinghua University, Beijing, China*

**Session BP**  
**SPIN WAVES AND MAGNONICS I**  
**(Poster Session)**

Joseph Sklenar, Chair  
Wayne State University, Detroit, MI, United States

- BP-02. Observation of magnon-phonon coupling in propagating spin wave modes.** *A.M. Park<sup>1</sup>, M. Song<sup>1</sup>, Y. Soon<sup>1</sup>, P.C. Van<sup>2</sup>, J. Jeong<sup>2</sup> and K. Kim<sup>1</sup>* *1. Physics, KAIST, Daejeon, The Republic of Korea; 2. Material Science and Engineering, Chungnam National University, Daejeon, The Republic of Korea*
- BP-03. Withdrawn**
- BP-04. Spin Waves realizing the classical analog of a quantum state superposition for computation and sensing.** *P. Micaletti<sup>1</sup> and F. Montoncello<sup>1</sup>* *1. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, Italy*
- BP-05. Footprints of the specific artificial spin ice microstate on the dynamic properties of its spin waves.** *P. Micaletti<sup>1</sup> and F. Montoncello<sup>1</sup>* *1. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, Italy*
- BP-06. Adjusting spin dynamics in ferromagnetic nanodisk arrays.** *W. Bang<sup>1</sup>, M. Kaffash<sup>2</sup> and B. Jungfleisch<sup>2</sup>* *1. Korea University of Technology and Education, Cheonan, The Republic of Korea; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE, United States*
- BP-07. Withdrawn**
- BP-08. Reinforcing spin wave amplitude non-reciprocity via multiple mechanisms.** *J. Lim<sup>1,2</sup>, R. Klause<sup>1,2</sup>, Y. Li<sup>3</sup>, V. Novosad<sup>3</sup> and A. Hoffmann<sup>1,4</sup>* *1. Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States; 2. Materials Research Laboratory, University of Illinois Urbana-Champaign, Urbana, IL, United States; 3. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 4. Department of Physics, University of Illinois Urbana-Champaign, Urbana, IL, United States*
- BP-09. Directional Effects of Interfacial Dzyaloshinskii-Moriya Interactions for Spin Waves in Ferromagnetic Nanorings.** *B. Hussain<sup>1</sup> and M.G. Cottam<sup>2</sup>* *1. Natural Sciences, University of Michigan-Dearborn, Dearborn, MI, United States; 2. Physics and Astronomy, University of Western Ontario, London, ON, Canada*
- BP-10. Conversion of propagating magnon polarization into charge current.** *Y. Shiota<sup>1,2</sup>, T. Taniguchi<sup>3</sup>, D. Hayashi<sup>1</sup>, R. Hisatomi<sup>1,2</sup>, T. Moriyama<sup>4</sup> and T. Ono<sup>1,2</sup>* *1. Institute for Chemical Research, Kyoto University, Uji, Japan; 2. Center for Spintronics Research Network, Kyoto University, Uji, Japan; 3. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 4. Department of Material Physics, Nagoya University, Nagoya, Japan*

- BP-11. Precise determination of ferromagnetic exchange in thin films.** *J. Wissler*<sup>1</sup>, *M. Tanksalvala*<sup>1</sup>, *J.M. Shaw*<sup>1</sup> and *H. Nembach*<sup>1</sup> *1. NIST, Boulder, CO, United States*
- BP-13. Broken Symmetry Induced Magnon-Magnon Coupling in a Synthetic Ferrimagnet.** *M. Hossain*<sup>1</sup>, *H. Chen*<sup>1</sup>, *S. Bhatt*<sup>1</sup>, *M. Kaffash*<sup>1</sup>, *J. Sklenar*<sup>2</sup>, *J. Xiao*<sup>1</sup> and *B. Jungfleisch*<sup>1</sup>  
*1. University of Delaware, Newark, DE, United States;*  
*2. Wayne State University, Detroit, MI, United States*
- BP-14. Observation of magnon-phonon coupling in two-dimensional ferromagnetic Fe<sub>3</sub>GeTe<sub>2</sub>.** *N. Bansal*<sup>1</sup>, *Q. Li*<sup>1</sup>, *P. Nufer*<sup>1</sup>, *L. Zhang*<sup>2,3</sup>, *A.A. Haghighirad*<sup>4</sup>, *Y. Mokrousov*<sup>3,5</sup> and *W. Wulfhekel*<sup>1,4</sup> *1. Physics Institute (PHI), Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. School of Physics and Electronic Engineering, Jiangsu University, Zhenjiang, China; 3. Peter Gruenberg Institut (PGI-1) and Institute for Advanced Simulation (IAS-1) Forschungszentrum Juelich GmbH, Juelich, Germany; 4. Institute for Quantum Materials and Technologies, Karlsruhe Institute of Technology, Karlsruhe, Germany; 5. Institute of Physics, Johannes Gutenberg-University Mainz, Mainz, Germany*
- BP-15. Amplification of propagating spin waves interacting with a rapidly cooling magnon gas.** *P. Artemchuk*<sup>1</sup>, *V. Tyberkevych*<sup>1</sup> and *A.N. Slavin*<sup>1</sup> *1. Department of Physics, Oakland University, Rochester, MI, United States*

**BP-16. Withdrawn**

TUESDAY  
AFTERNOON  
2:00

MARSALIS HALL A

**Session BQ**  
**SPIN HALL AND RELATED EFFECTS I**  
**(Poster Session)**

**Michael Kitcher, Chair**

Massachusetts Institute of Technology, Cambridge, MA, United States

**BQ-01. Withdrawn**

- BQ-03. Experimental Measurement Scheme for Spin Swapping Effect.** *K. Kim*<sup>1</sup>, *M. Kim*<sup>1,2</sup>, *W. Shim*<sup>1</sup> and *S. Choe*<sup>1</sup>  
*1. Department of Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea*

- BQ-04. Current Induced Magnetization Switching in Ferromagnetic Heusler Alloy Co<sub>2</sub>MnAl-based Magnetic Trilayers.** *M. Wang*<sup>1</sup>, *C. Pan*<sup>1</sup>, *X. Qiu*<sup>1</sup> and *Z. Shi*<sup>1</sup> *1. Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology and Pohl Institute of Solid State Physics and School of Physics Science and Engineering, Tongji University, Shanghai, China*

- BQ-05. Role of a 2D Magnetic Interlayer on Thermally Driven Spin Current in Pt/YIG Systems.** C. Hung<sup>1</sup>, A. Chanda<sup>1</sup>, V. Kalappattil<sup>2</sup>, D. Zhou<sup>3</sup>, D. Arena<sup>1</sup>, M. Wu<sup>2</sup>, M. Terrones<sup>3</sup>, H. Srikanth<sup>1</sup> and M. Phan<sup>1</sup> *1. Physics, University of South Florida, Tampa, FL, United States; 2. Physics, Colorado State University, Fort Collins, CO, United States; 3. Physics, Pennsylvania State University, State College, PA, United States*
- BQ-06. Terahertz Probing of Interfacial Curie Temperatures in Spintronic Thin-Film Stacks.** O. Gueckstock<sup>1,2</sup>, R. Rouzegar<sup>1,2</sup>, D. Engel<sup>3</sup>, S. Eisebitt<sup>3,5</sup>, S. Auffret<sup>4</sup>, V. Baltz<sup>4</sup>, G. Jakob<sup>6</sup>, M. Kläui<sup>6</sup>, T.S. Seifert<sup>1</sup> and T. Kampfrath<sup>1,2</sup> *1. Freie Universität Berlin, Berlin, Germany; 2. Fritz-Haber-Institute of the Max Planck Society, Berlin, Germany; 3. Max Born Institute, Berlin, Germany; 4. University Grenoble Alpes, Grenoble, France; 5. Technische Universität Berlin, Berlin, Germany; 6. Johannes-Gutenberg- Universität Mainz, Mainz, Germany*
- BQ-07. Origin of the unconventional temperature dependence of the spin Hall effects in a compensated ferrimagnetic insulator.** C. Hung<sup>1</sup>, A. Chanda<sup>1</sup>, C. Holzmann<sup>2</sup>, M. Albrecht<sup>2</sup>, N. Schulz<sup>1</sup>, D. Detellem<sup>1</sup>, N. Alzahrani<sup>1</sup>, D. Arena<sup>1</sup>, M. Phan<sup>1</sup> and H. Srikanth<sup>1</sup> *1. Physics, University of South Florida, Tampa, FL, United States; 2. Institute of Physics, University of Augsburg, Augsburg, Germany*
- BQ-08. Interfacial Static and Dynamic Exchange Coupling in a Heterostructure of CoFeB and a Perpendicular Ferrimagnetic Insulator Thulium Iron Garnet.** W. Misba<sup>1</sup>, D.B. Gopman<sup>2</sup>, M. Gross<sup>3</sup>, J.E. Shoup<sup>2</sup>, K. Hayashi<sup>3</sup>, C.A. Ross<sup>3</sup> and J. Atulasisimha<sup>1</sup> *1. Virginia Commonwealth University, Richmond, VA, United States; 2. National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Massachusetts Institute of Technology, Cambridge, MA, United States*
- BQ-09. Unexpected Enhancement of the Field-like Spin-orbit Torque in Ultrathin Ferromagnetic Regime.** J. Yoon<sup>1</sup>, M. Kim<sup>1,2</sup>, S. Lee<sup>1</sup>, D. Kim<sup>2</sup> and S. Choe<sup>1</sup> *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology, Seoul, The Republic of Korea*
- BQ-10. Enhanced spin current generation near magnetic transition in amorphous cobalt silicon.** C. Hsu<sup>1,2</sup>, H. Kleidermacher<sup>1,3</sup>, E. Blenkinsop<sup>1</sup>, J. Webster<sup>1</sup>, S. Hsu<sup>1</sup>, S. Sayed<sup>1</sup>, A. N'Diaye<sup>2</sup>, F. Hellman<sup>1</sup> and S. Salahuddin<sup>1,2</sup> *1. University of California Berkeley, Berkeley, CA, United States; 2. Lawrence Berkeley National Lab, Berkeley, CA, United States; 3. Stanford University, Stanford, CA, United States*
- BQ-11. Negative effective Gilbert's damping constant through spin pumping in FM/HM bilayer system.** P. Sharma<sup>1</sup>, K. Begari<sup>1</sup>, B. Lim<sup>1</sup> and C. Kim<sup>1</sup> *1. Department of Physics and Chemistry, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, The Republic of Korea*

**Session BR**  
**SKYRMIONS AND ANTIFERROMAGNETS**  
**(Poster Session)**

Yi Li, Co-Chair

Argonne National Laboratory Lemont, IL,  
United States

Wei Zhang, Co-Chair

University of North Carolina at Chapel Hill, Chapel Hill, NC,  
United States

- BR-01. Origin and Mechanism of Unusual Anomalous Hall Effect Response in GdFeCo-Ta-TbFeCo.** R.C. Bhatt<sup>1,2</sup>, L. Ye<sup>1,2</sup>, N. Huang<sup>1,2</sup> and T. Wu<sup>1,2</sup> *1. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliu, Taiwan; 2. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliu, Taiwan*
- BR-02. Magnetoresistance Hysteresis in Altermagnet Candidate  $\alpha$ -MnTe Grown by MBE on III-V Semiconductors.** S. Bey<sup>1</sup>, S. Bac<sup>1</sup>, B. Márkus<sup>2,1</sup>, J. Wang<sup>1</sup>, D. Beke<sup>2,1</sup>, S.P. Bennett<sup>4</sup>, A. Ievlev<sup>5</sup>, M. Zhukovsky<sup>3</sup>, T. Orlova<sup>3</sup>, L. Forró<sup>2,1</sup>, X. Liu<sup>1</sup> and B. Assaf<sup>1</sup> *1. Department of Physics and Astronomy, University of Notre Dame, Notre Dame, IN, United States; 2. Stravropoulos Center for Complex Quantum Matter, University of Notre Dame, Notre Dame, IN, United States; 3. Notre Dame Integrated Imaging Facility, University of Notre Dame, Notre Dame, IN, United States; 4. Materials Science and Technology, U.S. Naval Research Laboratory, Washington, DC, United States; 5. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, United States*
- BR-03. Large Transverse Magnetoresistance in AFM/FM Perovskite Oxide Bilayers: A Potential System for Low-Field Controllable AFM Spin Transport.** M.R. Natale<sup>1</sup>, S. Bleser<sup>1</sup>, D.Y. Sasaki<sup>2</sup>, I. Nihal<sup>2</sup>, M. Roos<sup>1</sup>, Y. Takamura<sup>2</sup> and B.L. Zink<sup>1</sup> *1. Physics and Astronomy, University of Denver, Denver, CO, United States; 2. Materials Science and Engineering, University of California Davis, Davis, CA, United States*
- BR-04. Anisotropic Magnetoresistance in Thin Film FeRh|Pt and FeRh|SiN Bilayers with Varying Film Thicknesses.** E. Blake<sup>1</sup>, C. Fitzpatrick<sup>1</sup>, A. Pedroza<sup>1</sup>, S.K. Patel<sup>2</sup>, H. Ren<sup>2</sup>, P. Sparks<sup>1</sup>, E. Fullerton<sup>2</sup> and J. Eckert<sup>1</sup> *1. Physics, Harvey Mudd College, Claremont, CA, United States; 2. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States*
- BR-05. Withdrawn**
- BR-06. Temperature dependent spin Seebeck voltages in thermally-evaporated chromium thin films.** S. Bleser<sup>1</sup>, M.R. Natale<sup>1</sup>, R. Greening<sup>1</sup>, X. Fan<sup>1</sup> and B.L. Zink<sup>1</sup> *1. University of Denver, Denver, CO, United States*

**BR-07. Glassy behavior determined by transport in antiferromagnet  $\text{Fe}_{1/3}\text{NbS}_2$ .** S. Shim<sup>1,2</sup>, M. Huq<sup>3</sup>, K. Lu<sup>1,2</sup>, A. Murzabekova<sup>1,2</sup>, F. Mahmood<sup>1,2</sup>, G. MacDougall<sup>1,2</sup> and N. Mason<sup>4,2</sup> *1. Physics, University of Illinois at Urbana-Champaign, Urbana, IL, United States; 2. Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL, United States; 3. Physics & Astronomy, Amherst College, Amherst, MA, United States; 4. Pritzker School of Molecular Engineering, University of Chicago, Chicago, IL, United States*

**BR-08. Withdrawn**

**BR-09. The Nucleation of Magnetic Skyrmion Bubbles in Synthetic Antiferromagnetic Microwires Using Air-bridge Vertical Spin Injection Devices.** R. Aboljadayel<sup>1</sup>, C.E. Barker<sup>1</sup>, M. Rosamond<sup>1</sup>, S. Finizio<sup>2</sup>, G. Burnell<sup>1</sup> and C. Marrows<sup>1</sup> *1. University of Leeds, Leeds, United Kingdom; 2. Paul Scherrer Institut, Villigen, Switzerland*

**BR-10. Voltage control of the skyrmion phases and its Brownian motion.** M. Kasagawa<sup>1</sup>, S. Miki<sup>1,3</sup>, K. Hashimoto<sup>1</sup>, R. Ishikawa<sup>2</sup>, M. Goto<sup>1,3</sup>, H. Nomura<sup>1,3</sup> and Y. Suzuki<sup>1,3</sup> *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. Ulvac-Osaka University Joint Research Laboratory for Future Technology, ULVAC, Osaka, Japan; 3. OTRI-Osaka, Osaka, Japan*

**BR-11. Near-Landauer Reversible Skyrmion Logic with Voltage-Based Propagation.** B. Walker<sup>1</sup>, K. Muthukrishnan<sup>1</sup>, R. Thapa<sup>1</sup>, X. Hu<sup>1</sup>, M.P. Frank<sup>2</sup>, F. Garcia-Sanchez<sup>3</sup>, A.J. Edwards<sup>1</sup> and J.S. Friedman<sup>1</sup> *1. Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States; 3. Departamento de Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

**BR-13. Chiral Inversion of Resonant Modes in  $\text{Gd}_x\text{Fe}_{1-x}$  Ferrimagnetic Alloy.** C. Chen<sup>1</sup>, C. Zheng<sup>1</sup>, Y. Liu<sup>1</sup> and J. Zhang<sup>1</sup> *1. School of Physics, Tongji University, Shanghai, China*

**BR-14. Withdrawn**

**BR-15. Simultaneous High Charge-Spin Conversion Efficiency and Large Spin Diffusion Length in Antiferromagnetic  $\text{RuO}_2$ .** Y. Zhang<sup>1</sup>, H. Bai<sup>1</sup>, L. Han<sup>1</sup>, C. Chen<sup>1</sup>, Y. Zhou<sup>1</sup>, F. Pan<sup>1</sup> and C. Song<sup>1</sup> *1. Tsinghua University, Beijing, China*

TUESDAY  
AFTERNOON  
2:00

MARSALIS HALL A

**Session BS**  
**SPIN ORBITRONICS I**  
**(Poster Session)**

Gen Yin, Chair  
Georgetown University, Washington, DC, United States

**BS-01. Withdrawn**



**BS-02. Magnetization reversal induced by spin-orbit torque in perpendicularly magnetized (Mn-Cr)AlGe/W bilayer system.** *T. Kubota*<sup>1</sup>, *T. Kato*<sup>2</sup>, *S. Honda*<sup>3</sup>, *Y. Sonobe*<sup>2,4</sup> and *K. Takanashi*<sup>5,1</sup> *1. Tohoku University, Sendai, Japan; 2. Nagoya University, Nagoya, Japan; 3. Kansai University, Suita, Japan; 4. Waseda University, Tokyo, Japan; 5. Japan Atomic Energy Agency, Tokai, Japan*

**BS-03. Tunable spin-orbit torque in Cu based heterostructures by HfO<sub>2</sub> gating.** *M. Kim*<sup>1</sup>, *C. Yun*<sup>1</sup>, *S. Yu*<sup>1</sup>, *J. Park*<sup>1</sup>, *Y. Jo*<sup>1</sup> and *K. Rhie*<sup>2</sup> *1. Applied Physics, Korea University, Sejong, The Republic of Korea; 2. Display and semiconductor physics, Korea University, Sejong, The Republic of Korea*

**BS-04. Spin Synergistic Torque Switching in CoTb Ferrimagnetic Perpendicular Magnetic Tunnel Junction.** *W. Zhu*<sup>1,2</sup>, *M. Tang*<sup>1,2</sup> and *X. Qiu*<sup>1,2</sup> *1. School of Physics Science and Engineering, Tongji University, Shanghai, China; 2. Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, Tongji University, Shanghai, China*

**BS-06. Tuning effective spin hall angle of Pt/Co/Pt based perpendicularly magnetized system.** *S. Maji*<sup>1</sup>, *K.P. Chauhan*<sup>1</sup>, *I. Bhat*<sup>1</sup>, *A. Mukhopadhyay*<sup>1</sup>, *S. Kayal*<sup>1</sup> and *P. Kumar*<sup>1</sup> *1. Physics, Indian Institute of Science, Bangalore, India*

TUESDAY  
EVENING  
6:15

REUNION EF

**Session XA**  
**EVENING SESSION 1: REALISM IN**  
**MICROMAGNETICS**

**Michael Donahue, Chair**  
National Institute of Standards and Technology, Gaithersburg,  
MD, United States

6:15

**XA-01. From 1D to 3D Computational Micromagnetics for Realistic Simulations of Magnetic Nanomaterials and Nanodevices.** *(Invited) A. Manzin*<sup>1</sup>, *R. Ferrero*<sup>1</sup> and *M. Vicentini*<sup>1</sup> *1. Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy*

7:00

**XA-02. Pushing the Boundaries of Micromagnetic Modeling: Multiphysics Integration and High-Performance Computation.** *(Invited) V. Lomakin*<sup>1</sup> *1. Center for Memory and Recording Research and Department of Electrical and Computer Engineering, University of California, San Diego, San Diego, CA, United States*

**Session CA**  
**RECENT ADVANCES IN CAVITY MAGNONICS**

Andrew Kent, Chair  
New York University, New York, NY, United States

**8:30**

- CA-01. Coherent Microwave Emission Using Cavity Magnonics. (Invited) C. Hu<sup>1</sup>** *1. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

**9:06**

- CA-02. Strong photon-magnon coupling using a lithographically defined organic ferrimagnet. (Invited) G.D. Fuchs<sup>1</sup>** *1. Cornell University, Ithaca, NY, United States*

**9:42**

**Break**

**10:15**

- CA-03. Exciton-coupled coherent magnons in a 2D magnetic semiconductor. (Invited) Y. Bae<sup>1</sup>** *1. Columbia University, New York, NY, United States*

**10:51**

- CA-04. Direct probing of strong magnon-photon coupling in a planar geometry. (Invited) M. Kaffash<sup>1</sup>, A. Rai<sup>1</sup>, D. Wagle<sup>1</sup>, T. Meyer<sup>2</sup>, J. Xiao<sup>1</sup> and B. Jungfleisch<sup>1</sup>** *1. University of Delaware, Newark, DE, United States; 2. THATec Innovation GmbH, Ludwigshafen, Germany*

**11:27**

- CA-05. Time-domain Coherent Magnon Interference with On-chip Superconducting Hybrid Magnonic Circuits. (Invited) M. Song<sup>1,2</sup>, T. Polakovic<sup>3</sup>, T.W. Cecil<sup>4</sup>, J. Pearson<sup>1</sup>, R. Divan<sup>5</sup>, W. Kwok<sup>1</sup>, U. Welp<sup>1</sup>, A. Hoffmann<sup>6</sup>, K. Kim<sup>2</sup>, V. Novosad<sup>1</sup> and Y. Li<sup>1</sup>** *1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 2. Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 3. Physics Division, Argonne National Laboratory, Lemont, IL, United States; 4. High Energy Physics Division, Argonne National Laboratory, Lemont, IL, United States; 5. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL, United States; 6. Department of Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States*

**Session CB**  
**SKYRMIONS**

Jiadong Zang, Chair  
University of New Hampshire, Durham, NH, United States

8:30

- CB-01. Voltage-controlled Skyrmion Brownian Devices with Zero- Or Ultralow-Energy Consumption. (Invited)** R. Ishikawa<sup>1</sup>, S. Miki<sup>2</sup>, M. Goto<sup>2</sup>, H. Nomura<sup>2</sup>, E. Tamura<sup>2</sup> and Y. Suzuki<sup>2</sup> *1. ULVAC-Osaka University Joint Research Laboratory for Future Technology, ULVAC, Suita, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

9:06

- CB-02. The evolution of magnetic phases leading to Skyrmions in a Fe/Gd multilayer system probed through simultaneous transport and scattering experiments.** A. Us Saleheen<sup>3</sup>, A. Singh<sup>1</sup>, D.W. Raftrey<sup>2</sup>, M. McCarter<sup>3</sup>, R. Tumbleson<sup>2</sup>, S. Montoya<sup>4</sup>, S. Kevan<sup>3</sup>, S.A. Morley<sup>3</sup> and S. Roy<sup>3</sup> *1. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. University of California Santa Cruz, Santa Cruz, CA, United States; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. University of California San Diego, San Diego, CA, United States*

9:18

- CB-03. Central Role of Structural Disorder on the Chiral Helimagnetic Order in Cr<sub>1/3</sub>NbS<sub>2</sub>.** X. Li<sup>1,2</sup>, B. Ding<sup>1</sup>, X. Xi<sup>1</sup>, W. Wang<sup>3</sup> and Y. Lau<sup>1,2</sup> *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. Tiangong University, Tianjin, China*

9:30

- CB-04. Ordered creation and motion of skyrmions with surface acoustic wave.** C. Song<sup>1</sup>, R. Chen<sup>1</sup> and F. Pan<sup>1</sup> *1. Tsinghua University, Beijing, China*

9:42

**Break**

10:15

- CB-05. Magnetic skyrmions toward advanced microelectronic applications. (Invited)** C. Hwang<sup>1</sup> *1. Korea Research Institute of Standards and Science, Daejeon, The Republic of Korea*

10:51

- CB-06. Residual anomalous Hall effect and its spin-textural origin in chiral multilayers.** G. Krishnaswamy<sup>1</sup>, T. Yingzhe<sup>1,2</sup>, X. Wong<sup>1</sup>, E. Chue<sup>1,2</sup>, H. Tan<sup>2</sup>, H. Tan<sup>2</sup>, R. Lim<sup>2</sup>, X. Chen<sup>2</sup>, N. Yakovlev<sup>1</sup> and A. Soumyanarayanan<sup>1,2</sup> *1. Department of Physics, National University of Singapore, Singapore, Singapore; 2. Institute of Materials Research & Engineering, A\*STAR, Singapore, Singapore, Singapore*

11:03

- CB-07. Chiral Coupling of Two Orthogonal Magnetizations in a Single Ferrimagnetic GdCo Layer.** *S. Ko*<sup>1</sup>, *J. Park*<sup>2</sup>, *H. Kim*<sup>1,3</sup>, *J. Park*<sup>1</sup>, *A. Lee*<sup>4</sup>, *J. Yuk*<sup>2</sup>, *A.M. Park*<sup>1</sup> and *K. Kim*<sup>1</sup> *1. Physics, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 2. Material Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 3. Physics, Korea University, Seoul, The Republic of Korea; 4. Korea Basic Science Institute, Daejeon, The Republic of Korea*

11:15

- CB-08. Skyrmions in Magnetic Multilayer Thin Films Are Half-Integer Hopfions.** *W. Parker*<sup>1\*</sup>, *J.A. Reddinger*<sup>1</sup> and *B. McMorran*<sup>1</sup> *1. Physics, University of Oregon, Eugene, OR, United States*

11:27

- CB-09. Quantum Computation Based on Magnetic Skyrmions. (Invited)** *C. Psaroudaki*<sup>1</sup> *1. Physics, École Normale Supérieure, Paris, France*

WEDNESDAY  
MORNING  
8:30

REUNION A

**Session CC**  
**MULTIFERROIC MATERIALS AND**  
**MAGNETOELECTRIC PHENOMENA**

*Paola Tiberto, Co-Chair*  
*INRIM, Torino, Italy*

*Jordi Sort, Co-Chair*

*Universitat Autònoma de Barcelona, Cerdanyola del Valles, Spain*

8:30

- CC-01. Novel tetragonal phase and multiferroism in (1-x)BiFeO<sub>3</sub>-(x)BaTiO<sub>3</sub> films. (Invited)** *L. Martin*<sup>1,2</sup> *1. Materials Science and NanoEngineering and Rice Advanced Materials Institute, Rice University, Houston, TX, United States; 2. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*

9:06

- CC-02. Magnetoelectric order in Antiferromagnetic SrMnO<sub>3</sub> Thin Films. (Invited)** *T. Banerjee*<sup>1</sup> *1. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

9:42

**Break**

10:15

- CC-03. **Pressure effect on 4d-4f coupled multiferroic compound,  $\text{Ba}_3\text{HoRu}_2\text{O}_9$ .** T. Basu<sup>1</sup>, E. Kushwaha<sup>1</sup>, M. Kumar<sup>1</sup>, G. Roy<sup>1</sup> and A. Santos<sup>2</sup> 1. *Rajiv Gandhi Institute of Petroleum Technology, Jais, India*; 2. *Neutron Scattering Division, Oak Ridge National Lab, Oak Ridge, TN, United States*

10:27

- CC-04. **Exploring the Ferroelectric Order and Linear High-Field Magnetoelectric Coupling in  $\text{Na}_2\text{Co}_2\text{TeO}_6$ : Implications for a Kitaev Compound.** S. Mukherjee<sup>1</sup> and S. Giri<sup>1</sup> 1. *School of Physical Sciences, Indian Association for the Cultivation of Science, Kolkata, India*

10:39

- CC-05. **The Anisotropic Variation of Magnetic Moment Arrangement with Respect to Temperature in Monolayer  $\text{NbOI}_2$ .** G. Zhang<sup>1</sup> and Q. Chen<sup>1</sup> 1. *School of Physics, Southeast University, Nanjing, China*

10:51

- CC-06. **Manipulating Metastability: Quenched Control of Topological Skyrmions in Multiferroics.** N.P. Nazirkar<sup>2</sup>, R. Harder<sup>1</sup> and E. Fohntung<sup>2</sup> 1. *Advanced Photon Source, Argonne National Lab, Lemont, IL, United States*; 2. *Materials Sciences and Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States*

11:03

- CC-07. **A Robust High-temperature Multiferroic Device with Tunable Magnetic Chiral Fluctuation.** Z. Lim<sup>1,2</sup>, C. Li<sup>3</sup>, G. Omar<sup>1</sup> and A. Ariando<sup>1</sup> 1. *Physics, National University of Singapore, Singapore, Singapore*; 2. *Soft Materials Department, IMRE, A\*STAR, Singapore, Singapore*; 3. *Department of Materials Science and Engineering, Southern University of Science and Technology (SUSTECH), Shenzhen, China*

11:15

- CC-08. **Withdrawn**

11:15

- CC-09. **Tuning magnetic anisotropy by a ferroelectric phase transition in ferromagnetic-piezoelectric heterostructure with giant magnetoelectric effect.** P. Finkel<sup>1</sup> and T.R. Mion<sup>1</sup> 1. *NRL, Washington, DC, United States*

11:27

- CC-10. **Magnetoelectric  $\text{CoV}_2\text{O}_6$  Spin ice lattice – Role of Fe inter-play in Co-based spin chains.** K. Preethi Meher<sup>1</sup> 1. *Central University of Tamilnadu, Thiruvavur, India*

- CC-11. Light-induced Ferromagnetic Resonance Shift in Magnetoelectric Heterostructure.** *P. Pathak*<sup>1</sup>, *A. Kumar*<sup>2</sup> and *D. Mallick*<sup>1</sup> *1. Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India; 2. Physics, Indian Institute of Technology Delhi, New Delhi, India*

WEDNESDAY  
MORNING  
8:30

REUNION B

**Session CD**  
**MAGNETIZATION DYNAMICS II: SPIN PUMPING AND FMR**

**Marco Coisson, Chair**  
INRIM, Torino, Italy

8:30

- CD-01. Magneto-dynamic modulation via antiferromagnetic coupling structure on permalloy/Holmium interface.** *M. Tian*<sup>1</sup>, *Q. Chen*<sup>1</sup>, *P. Wong*<sup>2</sup>, *R. Liu*<sup>3</sup>, *F. Silly*<sup>4</sup>, *M. Silly*<sup>5</sup>, *P. Ohresser*<sup>5</sup>, *B. You*<sup>3</sup>, *J. Du*<sup>3</sup>, *A. Wee*<sup>6</sup>, *J. Rojas-Sanchez*<sup>7</sup>, *Z. Huang*<sup>1</sup>, *W. Zhang*<sup>2</sup> and *Y. Zhai*<sup>1</sup> *1. Key Laboratory of Quantum Materials and Devices of Ministry of Education, School of Physics, Southeast University, Nanjing, China; 2. School of Microelectronics, Northwestern Polytechnical University, Xi'an, China; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China; 4. Université Paris-Saclay, Gif sur Yvette, France; 5. Synchrotron SOLEIL, Gif sur Yvette, France; 6. National University of Singapore, Singapore, Singapore; 7. Université de Lorraine, Nancy, France*

8:42

- CD-02. Impact on Gilbert damping in ultrathin ferromagnetic film from surface magnetic anisotropy.** *S. Yoshii*<sup>1</sup>, *R. Ohshima*<sup>1</sup>, *Y. Ando*<sup>1</sup> and *M. Shiraishi*<sup>1</sup> *1. Kyoto University, Kyoto, Japan*

8:54

- CD-03. Amplification of electron-mediated spin currents by stimulated spin pumping.** *B.J. Assouline*<sup>1</sup>, *M. Brik*<sup>1</sup>, *N. Bernstein*<sup>1</sup> and *A. Capua*<sup>1</sup> *1. Applied Physics, Hebrew University of Jerusalem, Jerusalem, Israel*

9:06

- CD-04. Structural and magnetic properties of thin cobalt films with mixed hcp and fcc phases.** *G.I. Patel*<sup>1</sup>, *F. Ganss*<sup>1</sup>, *R. Salikhov*<sup>1</sup>, *S. Stienen*<sup>1</sup>, *L. Fallarino*<sup>2,1</sup>, *R. Ehrler*<sup>3</sup>, *R. Gallardo*<sup>4</sup>, *O. Hellwig*<sup>1,3</sup>, *K. Lenz*<sup>1</sup> and *J. Lindner*<sup>1</sup> *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. CIC energiGUNE, Vitoria-Gasteiz, Spain; 3. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 4. Departamento de Física, Federico Santa María Technical University, Valparaíso, Chile*

9:18

- CD-05. Spin Pumping into A15 Spin Hall Candidates as Unconventional Superconductors.** *Y. Qian*<sup>1,2</sup>, A. Hoffmann<sup>1</sup>, V. Novosad<sup>2</sup> and Y. Li<sup>2</sup> *1. Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States; 2. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States*

9:30

- CD-06. Vertically Graded Single-Layer Fe-Ni Alloys with Low Damping and Sizeable Spin-Orbit Torques.** *R.E. Maizel*<sup>1</sup>, S. Wu<sup>1</sup>, P.P. Balakrishnan<sup>2</sup>, A.J. Grutter<sup>2</sup>, C. Kinane<sup>3</sup>, A. Caruana<sup>3</sup>, P. Nakarmi<sup>4</sup>, B. Nepal<sup>4</sup>, D.A. Smith<sup>1</sup>, Y. Lim<sup>1</sup>, J.L. Jones<sup>1</sup>, W.C. Thomas<sup>1</sup>, J. Zhao<sup>5</sup>, M. Michel<sup>5</sup>, T. Mewes<sup>4</sup> and S. Emori<sup>1</sup> *1. Physics, Virginia Polytechnic Institute, Blacksburg, VA, United States; 2. Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. ISIS-Neutron and Muon Source, STFC Rutherford Appleton Laboratory, Didcot, United Kingdom; 4. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL, United States; 5. Department of Geosciences, Virginia Polytechnic Institute, Blacksburg, VA, United States*

9:42

**Break**

10:15

- CD-07. High-Bandwidth, Element-Specific Ferromagnetic Resonance Spectroscopy with an Ultrafast EUV Source. (Invited)** *M. Tanksalvala*<sup>1</sup> *1. PML, NIST, Boulder, CO, United States*

10:51

- CD-08. Cation-Specific Magnetization Dynamics Probed by X-ray Ferromagnetic Resonance. (Invited)** *S. Emori*<sup>1</sup> *1. Virginia Tech, Blacksburg, VA, United States*

11:27

- CD-09. Withdrawn**

11:27

- CD-10. Large Anomalous Frequency Shift in Perpendicular Standing Spin Wave Modes Induced by Thin Metallic Overlayers.** *B. Lee*<sup>1</sup>, T. Fakhru<sup>1</sup>, C.A. Ross<sup>1</sup> and G. Beach<sup>1</sup> *1. Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*

**Session CE**  
**SPIN ORBITRONICS II**

Albert Park, Chair  
Korea Advanced Institute of Science and Technology, Daejeon,  
The Republic of Korea

**8:30**

- CE-01. Spin Orbit driven effects in Graphene/Ferromagnet interfaces. (Invited)** A. Gudín<sup>1</sup>, I. Arnay<sup>1</sup>, P. Olleros-Rodríguez<sup>1</sup>, B. Muñoz<sup>1</sup>, A. Guedeja-Marrón<sup>2</sup>, M. Varela<sup>2</sup>, M. Valvidares<sup>3</sup>, M. Jugovac<sup>4</sup>, S. Bluegel<sup>5</sup>, G. Bihlmayer<sup>5</sup>, M. Valbuena<sup>1</sup>, J. Camarero<sup>1</sup>, R. Miranda<sup>1</sup> and P. Perna<sup>1</sup> *1. IMDEA Nanoscience, Madrid, Spain; 2. Universidad Complutense de Madrid, Madrid, Spain; 3. ALBA synchrotron, Cerdanyola, Spain; 4. ELETTRA synchrotron, Trieste, Italy; 5. PGI and IAS, Forschungszentrum Jülich, Jülich, Germany*

**9:06**

- CE-02. Field-free spin-orbit torque switching in synthetic antiferromagnetic system using interfacial Dzyaloshinskii-Moriya interaction.** Y. Saito<sup>1</sup>, S. Ikeda<sup>1,2</sup>, N. Tezuka<sup>3</sup>, H. Inoue<sup>1</sup> and T. Endoh<sup>1,4</sup> *1. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan; 2. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 3. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan; 4. Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan*

**9:18**

- CE-03. Dzyaloshinskii-Moriya Spin Density.** A.O. Leon<sup>1</sup> and A.B. Cahaya<sup>2</sup> *1. Departamento de Física, Universidad Tecnológica Metropolitana, Santiago, Chile; 2. Universitas Indonesia, Jakarta, Indonesia*

**9:30**

- CE-04. Investigating Orbital Hall Effect Materials for Efficient Magnetization Control with In-plane and Perpendicular Magnetic Anisotropic Ferromagnets.** R. Gupta<sup>1</sup>, A. Bose<sup>1</sup>, C. Bouard<sup>2</sup>, D. Go<sup>1,4</sup>, F. Kammerbauer<sup>1</sup>, S. Martin<sup>2</sup>, G. Jakob<sup>1</sup>, Y. Mokrousov<sup>1,4</sup>, M. Drouard<sup>2</sup> and M. Kläui<sup>1,3</sup> *1. Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany; 2. ANTAIOS, Meylan, France; 3. Department of Physics, Center for Quantum Spintronic, Trondheim, Norway; 4. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany*

**9:42**

**Break**



10:15

- CE-05. Unconventional Spin-Orbit Torques (SOT) in Sputtered Thin Films and Multilayers for Advanced Spintronics. (Invited)**  
F. Xue<sup>1</sup>, M. DC<sup>2,3</sup>, W. Hwang<sup>1</sup>, W. Tsai<sup>2</sup> and S. Wang<sup>1,2</sup>  
1. *Electrical Engineering, Stanford University, Stanford, CA, United States*; 2. *Materials Science and Engineering, Stanford University, Stanford, CA, United States*; 3. *Intel Corp., Hillsboro, OR, United States*

10:51

- CE-06. Strain induced anisotropy of interfacial Dzyaloshinski-Moria Interactions.** E. Savostin<sup>2</sup> and V. Lomakin<sup>1</sup> 1. *ECE, UCSD, La Jolla, CA, United States*; 2. *MAE, UCSD, La Jolla, CA, United States*

11:03

- CE-07. Gradient-Induced Symmetry Breaking in Pt/Co Multilayer Structures.** H. Ko<sup>1</sup> and Y. Kim<sup>1</sup> 1. *Korea University, Seoul, The Republic of Korea*

11:15

- CE-08. Spin-orbit torque in antiferromagnetic Mn<sub>3</sub>Pt with various structural ordering.** C. Zhang<sup>1</sup>, L. Yu<sup>1</sup>, M. Al-Mahdawi<sup>2</sup> and M. Oogane<sup>1,2</sup> 1. *Department of Applied Physics, Tohoku University, Sendai, Japan*; 2. *Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan*

11:27

- CE-09. Unconventional higher-order spin-orbit torques in monolayer Fe<sub>3</sub>GeTe<sub>2</sub>.** F. Xue<sup>1,2</sup>, M.D. Stiles<sup>2</sup> and P.M. Haney<sup>2</sup>  
1. *Department of Physics, University of Alabama at Birmingham, Birmingham, AL, United States*; 2. *Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States*

11:39

- CE-10. Bulk spin-orbit effect in single rare earth-transition metal alloy on the magnetization switching.** P. Lee<sup>1,2</sup>, S. Mangin<sup>2</sup> and C. Lai<sup>1</sup> 1. *Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*; 2. *Physics, Institute Jean Lamour, Nancy, France*

11:51

- CE-11. Self-generated anomalous Hall spin-orbit torque.**  
E.A. Montoya<sup>1,2</sup>, X. Pei<sup>2</sup> and I.N. Krivorotov<sup>2</sup> 1. *Physics and Astronomy, University of Utah, Salt Lake City, UT, United States*; 2. *Physics and Astronomy, University of California, Irvine, Irvine, CA, United States*

**Session CF**  
**FUNDAMENTAL PROPERTIES IV: 2D AND**  
**TOPOLOGICAL MATERIALS**

Rakshit Jain, Chair  
Cornell University, Ithaca, NY, United States

8:30

- CF-01. Decoding Spin Interactions in a Helical Spin Structure.** *(Invited)* B. Wilfong<sup>1</sup>, D. Graf<sup>5</sup>, G.M. Stephen<sup>6</sup>, R. Barua<sup>4</sup>, S.P. Bennett<sup>2</sup>, J. Prestigiacomo<sup>2</sup>, D. Heiman<sup>3</sup> and M.E. Jamer<sup>1</sup>  
1. Physics, United States Naval Academy, Annapolis, MD, United States; 2. Naval Research Laboratory, Washington, DC, United States; 3. Physics, Northeastern University, Boston, MA, United States; 4. Department of Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 5. National High Magnetic Field Laboratory, Tallahassee, FL, United States; 6. Laboratory for Physical Sciences, College Park, MD, United States

9:06

- CF-02. Quantum Annealers to Advance Understanding of Frustrated Magnetic Lattices.** *(Invited)* A. Lopez-Bezanilla<sup>2</sup>, A.D. King<sup>1</sup> and C. Nisoli<sup>2</sup> 1. D-Wave Quantum, Burnaby, BC, Canada; 2. Los Alamos National Laboratory, Los Alamos, NM, United States

9:42

**Break**

10:15

- CF-03. Correlation of Griffiths Phase with Magnetic Phase Transition in Nanocrystalline  $\text{La}_{0.4}(\text{Ca}_{0.5}\text{Sr}_{0.5})_{0.6}\text{MnO}_3$ .** S. Saha<sup>1</sup>, S. Bandyopadhyay<sup>2</sup> and I. Das<sup>1</sup> 1. Condensed Matter Physics, Saha Institute of Nuclear Physics, Kolkata, India; 2. Department of Physics, University of Calcutta, Kolkata, India

10:27

- CF-04. Magnetic properties of microwave-processed ferromagnetic  $\text{La}_2\text{CoMnO}_6$ .** M. Marimuthu<sup>1</sup> and R. Mahendiran<sup>1</sup> 1. Physics, National University of Singapore, Singapore, Singapore

10:27

- CF-05. First-principle Calculations of Magnetic Properties of  $\text{Ho}_6(\text{Fe,Mn})\text{Bi}_2$  Compounds for Magnetic Refrigeration Applications.** A.J. Garcia-Adeva<sup>1</sup>, E. Apiñaniz<sup>1</sup>, A. Herrero Hernandez<sup>2</sup>, I.R. Aseguinolaza<sup>2</sup> and A. Oleaga<sup>2</sup> 1. Departamento de Física Aplicada, Universidad del País Vasco (UPV/EHU), Vitoria, Spain; 2. Departamento de Física Aplicada, Universidad del País Vasco (UPV/EHU), Bilbao, Spain

10:39

- CF-06. Transport and magnetic transitions in Dirac fermion system via the Zeeman field.** *H. Lin<sup>2</sup>, T. Ma<sup>1</sup> and J. Meng<sup>1</sup>* 1. *Physics, Beijing Normal University, Beijing, China;* 2. *School of Physics, Zhejiang University, Hangzhou, China*

10:51

- CF-07. Control of the asymmetric band structure in Mn<sub>2</sub>Au by a ferromagnetic driver layer.** *Y. Lytvynenko<sup>1,2</sup>, O. Fedchenko<sup>1</sup>, S. Chernov<sup>1,3</sup>, S. Babenkov<sup>1</sup>, D. Vasilyev<sup>1</sup>, O. Tkach<sup>1,4</sup>, A. Hloskovsky<sup>3</sup>, T. Peixoto<sup>3</sup>, C. Schlueter<sup>3</sup>, V. Grigorev<sup>1,5</sup>, M. Filianina<sup>1,5</sup>, S. Sobolev<sup>1</sup>, A. Kleibert<sup>6</sup>, M. Kläui<sup>1</sup>, J. Demsar<sup>1</sup>, G. Schönhense<sup>1</sup>, M. Jourdan<sup>1</sup> and H. Elmers<sup>1</sup>* 1. *Institute of Physics, Johannes Gutenberg-University, Mainz, Germany;* 2. *Institute of Magnetism of the NAS and MES of Ukraine, Kyiv, Ukraine;* 3. *Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany;* 4. *Sumy State University, Sumy, Ukraine;* 5. *Department of Physics, Stockholm University, Stockholm, Sweden;* 6. *Paul Scherrer Institute, Swiss Light Source, Villigen, Switzerland*

11:03

- CF-08. Withdrawn**

11:03

- CF-09. Study of Spin Glass State in Co doped NdMnO<sub>3</sub>.** *F.H. Bhat<sup>1</sup> and G. Anjum<sup>2</sup>* 1. *Physics, Islamic University of Science and Technology, Awantipora, India;* 2. *Physics, S P College, Srinagar, India*

11:15

- CF-10. Glassy magnetism in bilayer Co/Gd metallic ferrimagnets.** *L.A. Hernandez<sup>1</sup>, R. Greening<sup>1</sup>, M. Roos<sup>1</sup>, X. Fan<sup>1</sup> and B.L. Zink<sup>1</sup>* 1. *Physics and Astronomy, University of Denver, Denver, CO, United States*

WEDNESDAY  
MORNING  
8:30

PEGASUS B

**Session CG**  
**BIOMEDICAL APPLICATIONS I**  
Arno Ehresmann, Chair  
University of Kassel, Kassel, Germany

8:30

- CG-01. Wireless Brain Stimulation With Magnetolectric Nanoparticles. (Invited)** *P. Liang<sup>1</sup>, E. Zhang<sup>2</sup>, M. Abdel-Mottaleb<sup>3</sup>, S. Chen<sup>4,1</sup>, V. Andre<sup>3</sup>, M. Shotbolt<sup>3</sup> and S. Khizroev<sup>2,5</sup>* 1. *Cellular Nanomed, Irvine, CA, United States;* 2. *Electrical and Computer Engineering, University of Miami, Coral Gables, FL, United States;* 3. *Biomedical Engineering, University of Miami, Coral Gables, FL, United States;* 4. *Chemical, Environmental and Materials Engineering, University of Miami, Coral Gables, FL, United States;* 5. *Biochemistry and Molecular Biology, University of Miami, Miami, FL, United States*

- CG-02. Wireless Multi-channel Control over Motor Cortex with Magnetolectric Nanoparticles.** *E. Zhang*<sup>1</sup>, *M. Abdel-Mottaleb*<sup>2</sup>, *M. Alberteris*<sup>1</sup>, *B. Navarrete*<sup>1</sup>, *V. Andre*<sup>2</sup>, *M. Shotbolt*<sup>2</sup>, *I. Smith*<sup>2</sup>, *B. Noga*<sup>3</sup>, *P. Liang*<sup>4</sup> and *S. Khizroev*<sup>1</sup> *1. Electrical and Computer Engineering, University of Miami, Coral Gables, FL, United States; 2. Biomedical Engineering, University of Miami, Coral Gables, FL, United States; 3. Neurosurgery, University of Miami, Miami, FL, United States; 4. Cellular Nanomed, Irvine, CA, United States*

9:18

- CG-03. Optimized Design of Transcranial Magnetic Stimulator Coils with Reduced Influence of Individual Variabilities of Head Geometry.** *S. Liu*<sup>1</sup>, *A. Kuwahata*<sup>2</sup> and *M. Sekino*<sup>1</sup> *1. Department of Bioengineering, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan*

9:30

- CG-04. Assessing Drug Loaded Magnetic Nanoparticles Concentration with Magnetolectric Based Lab-On-A-Chip Device for Diagnostic Applications.** *P. Pathak*<sup>1\*</sup>, *V.K. Yadav*<sup>1</sup>, *S. Das*<sup>2</sup> and *D. Mallick*<sup>1</sup> *1. Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India; 2. CARE, Indian Institute of Technology Delhi, New Delhi, India*

9:42

Break

10:15

- CG-05. Novel Multi-Magnetic Material Transcranial Magnetic Stimulation (TMS) Coil Designs for Small Animals Application.** *M. Tashli*<sup>1</sup>, *A. Mhaskar*<sup>2,1</sup>, *G. Weistroffer*<sup>3</sup>, *D. Kumbhare*<sup>4</sup>, *M. Baron*<sup>5,6</sup> and *R.L. Hadimani*<sup>1,7</sup> *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Biomedical Sciences, Mills E. Godwin High School, Richmond, VA, United States; 3. Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 4. Neurosurgery, Louisiana State University Health Center, Shreveport, LA, United States; 5. McGuire Research Institute, Hunter Holmes McGuire VA Medical Center, Richmond, VA, United States; 6. Neurology, Virginia Commonwealth University, Richmond, VA, United States; 7. Martino's Biomedical Imaging Center, Harvard Medical School, Boston, MA, United States*

10:27

- CG-06. Development of a High-Efficiency and Wide-Irradiation Coil for Transcranial Magnetic Stimulation Therapy at Home.** *M. Fushimi*<sup>1</sup>, *Y. Kawasaki*<sup>1</sup>, *K. Yamamoto*<sup>1</sup> and *M. Sekino*<sup>1</sup> *1. The University of Tokyo, Tokyo, Japan*

10:39

- CG-07. Anti-CD3 $\epsilon$  Conjugated Magnetic Nanoparticles (Fe<sub>3</sub>O<sub>4</sub>) for Targeted Inhibition of Cytokine Storm: Intravenous and Dermal Stamp Patch Based Transdermal Approaches.**  
*M. Hasan*<sup>1,2</sup>, *J. Choi*<sup>1</sup> and *S. Lee*<sup>1</sup> 1. *Department of Digital Healthcare Engineering, Sangji University, Wonju, The Republic of Korea*; 2. *Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh*

10:51

- CG-08. Multifunctional platform for photothermal hyperthermia combined with luminescence nanothermometry probes.**  
*M. Horcajo Fernandez*<sup>1</sup>, *D. Arranz*<sup>1</sup>, *R. Weigand*<sup>2</sup> and *P. de la Presa*<sup>1</sup> 1. *Institute of Applied Magnetism, Complutense University of Madrid, Madrid, Spain*; 2. *Department of Optics, Complutense University of Madrid, Madrid, Spain*

11:03

- CG-09. Wireless Temperature Measurement Using Magnetic Nanoparticle during Magnetic Hyperthermia Operation.**  
*A. Kuwahata*<sup>1,2</sup>, *R. Shinohara*<sup>3</sup>, *T. Kagami*<sup>2</sup> and *S. Yabukami*<sup>2,1</sup>  
1. *Graduate School of Engineering, Tohoku University, Sendai, Japan*; 2. *Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan*; 3. *School of Engineering, Tohoku University, Sendai, Japan*

11:15

- CG-10. Enhanced Magnetic Hyperthermia in CoFe<sub>2</sub>O<sub>4</sub> Nanorods.**  
*J. Mohapatra*<sup>1</sup>, *J. George*<sup>1</sup>, *N.A. Molwani*<sup>1</sup>, *P. Joshi*<sup>1</sup> and *J. Liu*<sup>1</sup>  
1. *Department of Physics, University of Texas at Arlington, Arlington, FL, United States*

11:27

- CG-11. Ferromagnetic Resonance-based Heat Dissipation in Dumbbell-like Au-Fe<sub>3</sub>O<sub>4</sub> Nanoparticles.** *L. Tonthat*<sup>1</sup>, *A. Kuwahata*<sup>1</sup> and *S. Yabukami*<sup>1</sup> 1. *Tohoku University, Sendai, Japan*

WEDNESDAY  
MORNING  
9:00

MARSALIS HALL A

**Session CP**  
**DOMAIN WALL, VORTEX, AND SKYRMION**  
**DYNAMICS AND DEVICES II**  
**(Poster Session)**

*Xianzhe Chen*, Chair  
University of California, Berkeley, Berkeley, CA, United States

- CP-01. Correlation between Dzyaloshinskii-Moriya interaction and lattice constant through in-vacuum measurement at Pt/Co single interface.** *J. Yu*<sup>1</sup>, *S. Lee*<sup>1</sup>, *J. Chang*<sup>1</sup>, *M. Kim*<sup>1</sup>, *J. Yoon*<sup>1</sup>, *J. Shin*<sup>1</sup>, *W. Shim*<sup>1</sup> and *S. Choe*<sup>1</sup> 1. *Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea*

**CP-02. Withdrawn**

- CP-03. Stochasticity of magnetic domain-wall motion in tech-relevant speed regime.** *M. Kim*<sup>1</sup>, *S. Lee*<sup>1</sup>, *M. Kim*<sup>1</sup> and *S. Choe*<sup>1</sup> *1. Department of Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea*
- CP-04. Magnetic texture-based design of artificial neurons and synapses.** *D. Das*<sup>1</sup>, *C. Yunuo*<sup>1</sup>, *J. Wang*<sup>1</sup> and *X. Fong*<sup>1</sup> *1. National University of Singapore, Singapore, Singapore*
- CP-05. Real-time detection of fast current driven domain wall motion by using magneto-optical readout method in GdFe magnetic wire memory.** *N. Suzuki*<sup>1</sup>, *K. Wainai*<sup>1</sup>, *K. Nomura*<sup>1</sup>, *M. Mohammadi*<sup>1</sup>, *S. Sumi*<sup>1</sup>, *K. Tanabe*<sup>1</sup> and *H. Awano*<sup>1</sup> *1. Toyota Technological Institute, Nagoya, Japan*
- CP-06. Dynamics of Disordered Magnetic Helices Probed With Coherent Soft X-Ray Scattering.** *R. Tumbleson*<sup>3,2</sup>, *E. Holingworth*<sup>1</sup>, *A. Singh*<sup>2</sup>, *D.W. Raftrey*<sup>3,2</sup>, *M. McCarter*<sup>2</sup>, *A.U. Saleheen*<sup>2</sup>, *S.A. Morley*<sup>2</sup>, *P. Fischer*<sup>2</sup>, *F. Hellman*<sup>1</sup>, *S. Kevan*<sup>2</sup> and *S. Roy*<sup>2,3</sup> *1. Physics, University of California - Berkeley, Berkeley, CA, United States; 2. Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Physics, University of California - Santa Cruz, Santa Cruz, CA, United States*
- CP-07. Effects of embedded topological defects on the resonance modes of magnetic skyrmions.** *T. Staggers*<sup>1</sup> and *S. Pollard*<sup>1</sup> *1. Physics and Materials Science, University of Memphis, Memphis, TN, United States*
- CP-08. Changed to VP1-06**
- CP-09. Controlling Stable Bloch Points with Electric Currents.** *M. Lang*<sup>2,1</sup>, *S. Pathak*<sup>2</sup>, *S. Holt*<sup>2</sup>, *M. Beg*<sup>3</sup> and *H. Fangohr*<sup>2,1</sup> *1. Engineering and Physical Sciences, University of Southampton, Southampton, United Kingdom; 2. Computational Science, Max Planck Institute for the Structure and Dynamics of Matter (MPSD), Hamburg, Germany; 3. Department of Earth Science and Engineering, Imperial College, London, United Kingdom*
- CP-10. Atomistic Study of Local Forces and Dynamics of Multi-sublattice Skyrmions.** *E.A. Tremsina*<sup>1,2</sup> and *G. Beach*<sup>2</sup> *1. Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. Department of Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*
- CP-12. Analysis of information current between skyrmions in cellular automaton-type device.** *K. Emoto*<sup>1</sup>, *H. Mori*<sup>1</sup>, *R. Ishikawa*<sup>2</sup>, *S. Miki*<sup>1,3</sup>, *M. Goto*<sup>1,3</sup>, *H. Nomura*<sup>1,3</sup>, *E. Tamura*<sup>1,3</sup> and *Y. Suzuki*<sup>1,3</sup> *1. Graduate school of Engineering Science, Osaka University, Toyonaka, Japan; 2. ULVAC, Inc., Suita, Japan; 3. OTRI-Osaka, Osaka University, Toyonaka, Japan*

**Session CQ**  
**MAGNETIZATION DYNAMICS III:**  
**MICROMAGNETICS AND MODELING**  
**(Poster Session)**

Chuanpu Liu, Co-Chair  
Colorado State University, Fort Collins, CO, United States  
Mingzhong Wu, Co-Chair  
Northeastern University, Boston, MA, United States

- CQ-01. Power-Phase Relation in Ultra-compact ‘Magnon Microwave Antenna’ for Generation of Microwaves with Tuneable Frequencies.** A. Samanta<sup>1,2</sup> and S. Roy<sup>1,2</sup>  
*1. Micropower Devices and Nanomagnetism Group, Tyndall National Institute, Cork, Ireland; 2. School of Physics, National University of Ireland - University College Cork, Cork, Ireland*
- CQ-02. Antiferro/ferromagnetic coupling of ultrathin middle-MgO layer in multilayered CoFeB/MgO magnetic tunnel junction by first-principles calculation and micromagnetic simulation.** H. Naganuma<sup>1,2</sup>, C. Kaneta<sup>1</sup>, T. Nguyen<sup>2</sup>, H. Honjo<sup>1</sup>, K. Nishioka<sup>1</sup>, S. Ikeda<sup>1</sup> and T. Endoh<sup>1,3</sup>  
*1. CIES, Tohoku University, Sendai, Japan; 2. CSIS, Tohoku University, Sendai, Japan; 3. Graduate School of Engineering, Tohoku University, Sendai, Japan*
- CQ-03. magnum.np - a PyTorch based GPU enhanced Finite Difference Micromagnetic Simulation Framework.** F. Bruckner<sup>1</sup>, S. Koraltan<sup>1</sup>, C. Abert<sup>1</sup> and D. Suess<sup>1</sup>  
*1. Physics of Functional Materials, University of Vienna, Vienna, Austria*
- CQ-04. Direct-Current Electrical Detection of Surface-Acoustic-Wave-Driven Ferromagnetic Resonance.** C. Chen<sup>1</sup> and C. Song<sup>1</sup>  
*1. School of Materials Science and Engineering, Tsinghua University, Beijing, China*
- CQ-05. Simulating interactions between antiferromagnetic NiO and circularly polarized THz light.** T. Jeffrey<sup>1</sup>, B. Jungfleisch<sup>2</sup> and J. Sklenar<sup>1</sup>  
*1. Physics and Astronomy, Wayne State University, Detroit, MI, United States; 2. Physics and Astronomy, University of Delaware, Newark, DE, United States*
- CQ-07. Electronic Heat Bath Simulations for Ultrafast Spin Dynamics.** J. Ross<sup>1</sup>, R. Chantrell<sup>1</sup> and R. Evans<sup>1</sup>  
*1. School of Physics, Engineering and Technology, University of York, York, United Kingdom*
- CQ-08. ML-based Magnetization Field Classification.** S. Pathak<sup>1</sup>, K. Rahir<sup>2</sup>, S. Holt<sup>1</sup>, M. Lang<sup>2,1</sup> and H. Fangohr<sup>1,2</sup>  
*1. Computational Science, Max Planck Institute for the Structure and Dynamics of Matter (MPSD), Hamburg, Germany; 2. Faculty of Engineering and Physical Sciences, University of Southampton, Southampton, United Kingdom*
- CQ-09. Efficient Micromagnetic Modelling of Strongly Interacting Nanomagnets.** A. Manzin<sup>1</sup>, R. Ferrero<sup>1</sup> and M. Vicentini<sup>1</sup>  
*1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy*

- CQ-10. Optical Detection of Antiferromagnetic Resonance in van der Waals Antiferromagnets.** *A. Melendez<sup>1</sup>, S. Das<sup>1</sup>, I. Kao<sup>2</sup>, F. Ayala Rodriguez<sup>1</sup>, W. Liu<sup>3</sup>, B. Lv<sup>3</sup>, S. Singh<sup>2</sup> and C. Hammel<sup>1</sup>* 1. *Physics, The Ohio State University, Columbus, OH, United States;* 2. *Physics, Carnegie Mellon University, Pittsburgh, PA, United States;* 3. *University of Texas Dallas, Dallas, TX, United States*
- CQ-11. Helicity-dependent optical control of the magnetization state emerging from the Landau-Lifshitz-Gilbert equation.** *B.J. Assouline<sup>1</sup> and A. Capua<sup>1</sup>* 1. *Applied Physics, Hebrew University of Jerusalem, Jerusalem, Israel*
- CQ-12. High-frequency response of magnetic nanoparticle arrays studied with micromagnetic simulations.** *K. Brzuszek<sup>2</sup>, C.A. Ross<sup>1</sup> and A. Janutka<sup>2</sup>* 1. *Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States;* 2. *Department of Theoretical Physics, Wroclaw University of Science and Technology, Wroclaw, Poland*
- CQ-13. Ferromagnetic resonance investigation of CoFeB/W bilayers on SiO<sub>2</sub>, MgO, and Al<sub>2</sub>O<sub>3</sub> substrates.** *U. Karki<sup>1</sup>, J. Cox<sup>2</sup>, T. Mewes<sup>1</sup> and J.B. Mohammadi<sup>2</sup>* 1. *Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States;* 2. *Physics, Loyola University, New Orleans, LA, United States*
- CQ-14. Complex field-reversal dynamics in nanomagnetic systems.** *M.D. Saccone<sup>1</sup> and F. Caravelli<sup>1</sup>* 1. *T4/CNLS, Los Alamos National Laboratory, Los Alamos, NM, United States*

WEDNESDAY  
MORNING  
9:00

MARSALIS HALL A

**Session CR**  
**MICROSCOPY & CHARACTERIZATION II**  
**(Poster Session)**

Claas Abert, Chair  
University of Vienna, Vienna, Austria

- CR-01. On the origin of systematic errors in VSM Torque Curves.** *A. Sapkota<sup>1</sup>, L. Rodriguez<sup>2</sup>, K. Dieckow<sup>1</sup>, D. Binod<sup>2</sup>, C. Howlader<sup>2,4</sup>, J. Tate<sup>2,3</sup> and W. Geerts<sup>1,2</sup>* 1. *Physics, Texas State University, San Marcos, TX, United States;* 2. *Materials Science, Engineering and Commercialization, Texas State University, San Marcos, TX, United States;* 3. *Ingram School of Engineering, Texas state University, San Marcos, TX, United States;* 4. *Electroninks, Austin, TX, United States*
- CR-02. Computational Modelling of a Triaxial Vibrational Sample Magnetometer.** *L. Rodriguez<sup>1</sup>, A. Sapkota<sup>2</sup>, J. Tate<sup>1</sup> and W. Geerts<sup>1,2</sup>* 1. *MSEC, Texas State University, San Marcos, TX, United States;* 2. *Physics, Texas State University, San Marcos, TX, United States*



- CR-03. Magneto Optical Characterization of TCO Films using Standard and Enhanced Cavity Configurations.** *M. Syed*<sup>1</sup>, *S. Reza*<sup>1</sup>, *P. Miller*<sup>1</sup> and *B. Roop*<sup>1</sup> *1. Physics & Optical Engineering, Rose-Hulman Institute of Technology, Terre Haute, IN, United States*
- CR-04. Magnetometry of Buried Co-based Nanolayers by Hard X-ray Photoelectron Spectroscopy.** *A. Hloskovsky*<sup>1</sup>, *C. Schlueter*<sup>1</sup> and *G. Fecher*<sup>2</sup> *1. Photon Science / DESY, Hamburg, Germany; 2. Max Planck Institute for Chemical Physics of Solids, Hamburg, Germany*
- CR-05. Withdrawn**
- CR-06. Withdrawn**
- CR-07. Structural, Magnetic, and Magnetocaloric effect in Al doped ErCr<sub>1-x</sub>Al<sub>x</sub>O<sub>3</sub> (x = 0.25, 0.5) orthochromites.** *J. Sultana*<sup>1</sup>, *A. Sawon*<sup>2</sup>, *G. Brzykcy*<sup>2</sup>, *A. Pathak*<sup>2</sup> and *S. Mishra*<sup>1</sup> *1. Physics and Materials Science, The University of Memphis, Memphis, TN, United States; 2. Physics, Buffalo State(The State University of Newyork), Buffalo, NY, United States*
- CR-08. Withdrawn**
- CR-09. Magnetic Imaging Method of Individual Barcode Nanowires using Diamond Nitrogen-Vacancy Centers.** *E. Oh*<sup>1</sup>, *J. Yoon*<sup>2</sup>, *J. Moon*<sup>1</sup>, *J. Chung*<sup>2</sup>, *Y. Kim*<sup>9</sup>, *K. Kim*<sup>2</sup>, *H. Kang*<sup>3</sup>, *Y. Jeon*<sup>10</sup>, *S. Lee*<sup>4</sup>, *K. Han*<sup>5,6</sup>, *D. Lee*<sup>7,6</sup>, *C. Lee*<sup>8</sup>, *Y. Kim*<sup>1,9</sup> and *D. Lee*<sup>2</sup> *1. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 2. Department of Physics, Korea University, Seoul, The Republic of Korea; 3. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea; 4. Center for Multidimensional Carbon Materials (CMCM), Institute for Basic Science (IBS), Ulsan, The Republic of Korea; 5. Department of Neuroscience, Korea University College of Medicine, Seoul, The Republic of Korea; 6. BK21 Graduate Program, Department of Biomedical Sciences, Korea University College of Medicine, Seoul, The Republic of Korea; 7. Department of Anatomy, Korea University College of Medicine, Seoul, The Republic of Korea; 8. Department of Electrical and Computer Engineering, Seoul National University, Seoul, The Republic of Korea; 9. Institute for High Technology Materials and Devices, Korea University, Seoul, The Republic of Korea; 10. Institute of Engineering Research, Korea University, Seoul, The Republic of Korea*
- CR-10. Quantitative Imaging of Nanoscale Spin Textures in Epitaxial Quantum Materials.** *M. Sim*<sup>1</sup>, *Z. Lim*<sup>1</sup>, *M. Pardo-Almanza*<sup>2</sup>, *Y. Fujisawa*<sup>2</sup>, *H. Tan*<sup>3</sup>, *X. Chen*<sup>3</sup>, *Y. Okada*<sup>2</sup>, *A. Ariando*<sup>1</sup> and *A. Soumyanarayanan*<sup>1,3</sup> *1. Department of Physics, National University of Singapore (NUS), Singapore, Singapore; 2. Quantum Materials Science Unit, Okinawa Institute of Science and Technology (OIST), Okinawa, Japan; 3. Institute of Materials Research and Engineering (IMRE, A\*STAR), Singapore, Singapore*

- CR-11. Hybrid Bimodal Magnetic Force Microscopy.** *D. Fernández Brito*<sup>1</sup>, J.A. Lopez Medina<sup>2</sup>, E.A. Murillo Bracamontes<sup>4</sup>, M.A. Palomino Ovando<sup>1</sup> and J.J. Gervacio Arciniega<sup>3,1</sup>  
1. *Facultad de Ciencias Físico Matemáticas, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico;*  
2. *Fisicoquímica, Centro de Nanociencias y Nanotecnología - Universidad Nacional Autónoma de México, Ensenada, Mexico;*  
3. *Física, Consejo Nacional de Humanidades Ciencias y Tecnologías, Puebla, Mexico;* 4. *Nanoestructuras, Centro de Nanociencias y Nanotecnología - Universidad Nacional Autónoma de México, Ensenada, Mexico*

WEDNESDAY  
MORNING  
9:00

MARSALIS HALL A

**Session CS**  
**MAGNETIC SENSORS AND HIGH FREQUENCY DEVICES**

**(Poster Session)**

Laura Rehm, Chair

New York University, New York City, NY, United States

- CS-01. AC Susceptibility Measurement of Magnetic Nanoparticles Using an Optically Pumped Magnetometer.** *T. Sasayama*<sup>1</sup>, S. Taue<sup>2</sup> and T. Yoshida<sup>1</sup> 1. *Department of Electrical and Electronic Engineering, Kyushu University, Fukuoka, Japan;* 2. *School of System Engineering, Kochi University of Technology, Kochi, Japan*
- CS-02. Ultralow power magnetic tactile sensor development using the modified MRAM architecture.** J. Cho<sup>1</sup>, W. Ju<sup>1</sup>, D. Kim<sup>1</sup>, D. Lee<sup>1</sup> and J. Kim<sup>1</sup> 1. *Division of Nanotechnology, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, The Republic of Korea*
- CS-03. Anomalies in the Magnetostrictive Modulation of Love Surface Acoustic Waves.** J.D. Aguilera<sup>2</sup>, L. Soria<sup>2</sup>, R. Loriente<sup>2</sup>, R. Ranchal<sup>2,3</sup>, I. Gràcia Tortadés<sup>1</sup>, S. Vallejos<sup>1</sup>, A. Hernando<sup>2</sup>, P. Palacios<sup>2</sup>, D. Matatagui<sup>2</sup> and P. de la Presa<sup>2</sup>  
1. *Instituto de Microelectrónica de Barcelona, Barcelona, Spain;* 2. *Institute of Applied Magnetism, Complutense University of Madrid, Madrid, Spain;* 3. *Material Physics, Complutense University of Madrid, Madrid, Spain*
- CS-04. High-frequency magnetic response of crystalline and nanocrystalline antiferromagnetic NiO.** A. Janutka<sup>1</sup> and K. Brzuszek<sup>1</sup> 1. *Department of Theoretical Physics, Wrocław University of Science and Technology, Wrocław, Poland*
- CS-05. Tuning of Magnetoplasmon Coupling between Graphene Scatterers for the Optimal Design of Adjustable Metasurfaces.** S.A. Amanatiadis<sup>1</sup>, T. Ohtani<sup>3</sup>, Y. Kanai<sup>2</sup> and N.V. Kantartzis<sup>1</sup> 1. *Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece;* 2. *Department of Engineering, Niigata Institute of Technology, Kashiwazaki, Japan;* 3. *Asahikawa City, Asahikawa, Japan*

- CS-06. A micromagnetic study of the fractional resonance response driven by voltage-controlled magnetic anisotropy.**  
*A. Giordano<sup>1</sup>, A. Grimaldi<sup>1</sup>, E. Raimondo<sup>1</sup>, R. Tomasello<sup>2</sup>, M. Carpentieri<sup>2</sup> and G. Finocchio<sup>1</sup>* 1. *University of Messina, Messina, Italy;* 2. *Politecnico di Bari, Bari, Italy*
- CS-07. Evaluation of structure and magnetic properties in amorphous dust core for high frequency device application.**  
*M. Nguyen<sup>1</sup>, S. Yoshida<sup>2</sup>, S. Okamoto<sup>2,3</sup>, T. Miyazaki<sup>4</sup> and Y. Endo<sup>1,5</sup>* 1. *Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan;* 2. *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan;* 3. *National Institute for Material Science (NIMS), Tsukuba, Japan;* 4. *Faculty of Engineering, Tohoku University, Sendai, Japan;* 5. *Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan*
- CS-08. High-frequency Loss Modeling of Nanocrystalline Core Considering Nonuniform Distribution of Flux Density.**  
*W. Meng<sup>1</sup>, Y. Li<sup>1</sup>, C. Zhang<sup>1</sup>, H. Sun<sup>1</sup> and Z. Wan<sup>1</sup>* 1. *School of Electrical Engineering, Hebei University of Technology, Tianjin, China*

WEDNESDAY  
 AFTERNOON  
 1:30

REUNION EF

**Session DA**  
**EMERGING TOPICS IN MAGNETIC TUNNEL**  
**JUNCTIONS: ALTERMAGNETISM, PROBABILISTIC**  
**COMPUTING AND ENERGY EFFICIENT SWITCHING**

Weigang Wang, Chair  
 University of Arizona, Tucson, AZ, United States

1:30

- DA-01. Antiferromagnetic Tunnel Junctions for Spintronics. (Invited)**  
*E. Tsymbal<sup>1</sup>* 1. *University of Nebraska-Lincoln, Lincoln, NE, United States*

2:06

- DA-02. Spin-torque switching and tunnel magnetoresistance using an antiferromagnetic Weyl semimetal. (Invited)** *S. Miwa<sup>1</sup>, X. Chen<sup>2,1</sup>, T. Higo<sup>2,1</sup>, K. Tanaka<sup>2,3</sup>, R. Arita<sup>3,4</sup> and S. Nakatsuji<sup>2,5</sup>*  
 1. *The Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan;* 2. *Department of Physics, The University of Tokyo, Bunkyo, Japan;* 3. *Research Center for Advanced Science and Technology, The University of Tokyo, Meguro, Japan;* 4. *Center for Emergent Matter Science, RIKEN, Wako, Japan;* 5. *Institute for Quantum Matter, Johns Hopkins University, Baltimore, MD, United States*

2:42

Break

3:15

- DA-03. Record for tunnel magnetoresistance of 631% at room temperature with barrier interface control technology. (Invited) H. Sukegawa<sup>1</sup> 1. National Institute for Materials Science, Tsukuba, Japan**

3:51

- DA-04. Spin-Transfer-Torque MRAM: The Next Revolution in Memory. (Invited) G. Hu<sup>1</sup> 1. IBM Research, Yorktown Heights, NY, United States**

4:27

- DA-05. Using Stochasticity and Randomness in Magnetic Tunnel Junctions for Energy-Efficient Computing Beyond Memory. (Invited) J.C. Incorvia<sup>1</sup>, T. Leonard<sup>1</sup>, S. Liu<sup>1</sup>, H. Jin<sup>1</sup>, J. Kwon<sup>1</sup>, C. Cui<sup>1</sup>, N. Zogbi<sup>1</sup>, A. Maicke<sup>1</sup>, S. Karki<sup>1</sup>, P.W. Bessler<sup>1</sup>, Z. Khodzaev<sup>1</sup>, V.C. Rogers<sup>1</sup>, C. Bennett<sup>2</sup>, T.P. Xiao<sup>2</sup>, S.G. Cardwell<sup>2</sup>, C.D. Schuman<sup>3</sup>, S. Agarwal<sup>2</sup>, M.J. Marinella<sup>2</sup>, J. Smith<sup>2</sup>, S. Misra<sup>2</sup> and J.B. Aimone<sup>2</sup> 1. Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States; 3. Electrical Engineering and Computer Science, University of Tennessee, Knoxville, TN, United States**

WEDNESDAY  
AFTERNOON  
1:30

REUNION GH

### Session DB

## ANTIFERROMAGNETS: ELECTRIC SWITCHING AND SPIN-ORBIT TORQUES

Matthew Daniels, Chair  
National Institute of Standards and Technology

1:30

- DB-01. Coherent Antiferromagnetic Spintronics. (Invited) J. Han<sup>1</sup>, R. Cheng<sup>2</sup>, L. Liu<sup>3</sup>, H. Ohno<sup>1</sup> and S. Fukami<sup>1</sup> 1. Tohoku University, Sendai, Japan; 2. University of California, Riverside, Riverside, CA, United States; 3. Massachusetts Institute of Technology, Cambridge, MA, United States**

2:06

- DB-02. Phase Field Modelling of Magnetoelasticity in Antiferromagnets. R.A. Mackay<sup>1,2</sup>, J. Barker<sup>1,2</sup> and S.P. Fitzgerald<sup>3,2</sup> 1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. The Bragg Centre for Materials Research, Leeds, United Kingdom; 3. School of Mathematics, University of Leeds, Leeds, United Kingdom**

- DB-03. Now BR-15**

2:18

- DB-04. Spin current generation in collinear antiferromagnet RuO<sub>2</sub>.** *T. Nguyen*<sup>1,2</sup>, *T. Vu*<sup>3</sup>, *Y. Saito*<sup>2</sup>, *S. DuttaGupta*<sup>4,1</sup>, *H. Naganuma*<sup>1,2</sup>, *S. Ikeda*<sup>1,2</sup> and *T. Endoh*<sup>1,2</sup> *1. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 2. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Japan; 4. Saha Institute of Nuclear Physics, West Bengal, India*

2:30

- DB-05. Spin-charge conversion via altermagnetic spin splitting effect in RuO<sub>2</sub>.** *H. Bai*<sup>1</sup> and *C. Song*<sup>1</sup> *1. Tsinghua University, Beijing, China*

2:42

Break

3:15

- DB-06. Electrical Manipulation of Spin-splitting Antiferromagnet Mn<sub>5</sub>Si<sub>3</sub>.** *L. Han*<sup>1</sup>, *C. Song*<sup>1</sup> and *F. Pan*<sup>1</sup> *1. Tsinghua University, Beijing, China*

3:27

- DB-07. Exotic Spin-Orbit Torque in Antiferromagnetic Topological Insulator MnBi<sub>2</sub>Te<sub>4</sub>.** *J. Tang*<sup>1</sup> and *R. Cheng*<sup>2,1</sup> *1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA, United States; 2. Department of Electrical and Computer Engineering, University of California, Riverside, Riverside, CA, United States*

3:39

- DB-08. Coexistence of magnon-induced and rashba-induced unidirectional magnetoresistance in antiferromagnet.** *Z. Zheng*<sup>1</sup> and *J. Chen*<sup>1</sup> *1. Department of Material Science and Engineering, National University of Singapore, Singapore, Singapore*

3:51

- DB-09. Unidirectional Spin Hall Magnetoresistance in Antiferromagnetic Heterostructures.** *Y. Cheng*<sup>1</sup>, *J. Tang*<sup>2</sup>, *J. Michel*<sup>3</sup>, *S. Chong*<sup>1</sup>, *F. Yang*<sup>3</sup>, *R. Cheng*<sup>3</sup> and *K. Wang*<sup>1</sup> *1. Electrical and Computer Engineering, UCLA, Los Angeles, CA, United States; 2. Department of Physics & Astronomy, University of California Riverside, Riverside, CA, United States; 3. Physics, The Ohio State University, Columbus, OH, United States*

4:03

- DB-11. A Multi-state Analog Magnetic Memory Neuromorphic Processor Based on an Artificial Antiferromagnetic Domain Wall Device.** *Y. Huang*<sup>1</sup>, *Y. Huang*<sup>1</sup>, *C. Cheng*<sup>1</sup>, *Y. Wu*<sup>1</sup>, *Y. Lin*<sup>1</sup>, *W. Chang*<sup>2</sup> and *Y. Tseng*<sup>1</sup> *1. National Yang Ming Chiao Tung University, Hsinchu, Taiwan; 2. Powerchip Semiconductor Manufacturing Corporation, Hsinchu, Taiwan*

4:15

- DB-12. Withdrawn**

**Session DC**  
**MAGNETO-IONIC AND NEW MAGNETOELECTRIC**  
**MATERIALS**

Kai Liu, Co-Chair

Georgetown University, Washington, DC, United States

Dhritiman Bhattacharya, Co-Chair

Georgetown University, Washington, DC, United States

1:30

**DC-01. Hysteresis and Reversibility Across the Voltage-Driven Perovskite-Brownmillerite Ferromagnet-Antiferromagnet Transition in Ultrathin  $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_{3-\delta}$  films. (Invited)**

W.M. Postiglione<sup>1</sup>, G. Yu<sup>1</sup>, V. Chaturvedi<sup>1</sup>, K. Heltemes<sup>1</sup>, A. Jacobson<sup>1</sup>, H. Zhou<sup>2</sup>, M. Greven<sup>1</sup> and C. Leighton<sup>1</sup>

1. University of Minnesota, Minneapolis, MN, United States;

2. Argonne National Lab, Argonne, MN, United States

2:06

**DC-02. Fast and giant modulation of magnetism in 3d-4f magnets by small voltages.** X. Ye<sup>1</sup>, H. Singh<sup>1</sup>, H. Zhang<sup>1</sup>, B. Gault<sup>3</sup>, R. Kruk<sup>2</sup>, K.P. Skokov<sup>1</sup>, H. Hahn<sup>2</sup> and O. Gutfleisch<sup>1</sup> 1. Technical University of Darmstadt, Darmstadt, Germany; 2. Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany; 3. Department of Microstructure Physics and Alloy Design Max-Planck-Institut für Eisenforschung GmbH (MPIE), Dusseldorf, Germany

2:18

**DC-03. Voltage-Modulated Magnetization and Angular Momenta in Pd/Co/Pd Trilayers.** A.E. Kossak<sup>1</sup>, A. Kaczmarek<sup>1</sup> and G. Beach<sup>1</sup> 1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States

2:30

**DC-04. Identifying axion insulator by quantized magnetoelectric effect in antiferromagnetic tunnel junction.** R. Cheng<sup>1,2</sup> and Y. Li<sup>1</sup> 1. Electrical and Computer Engineering, University of California, Riverside, Riverside, CA, United States; 2. Physics and Astronomy, University of California, Riverside, Riverside, CA, United States

2:42

**Break**

3:15

**DC-05. Nanoscale imaging of skyrmion lattices under external electric fields.** M. Han<sup>1</sup> and Y. Zhu<sup>1</sup> 1. Condensed Matter Physics & Materials Science, Brookhaven National Laboratory, Upton, NY, United States

3:27

- DC-06. Tuning Coercivity and Domain Wall Velocity in CoPd Multilayers via Hydrogen-Loading.** M. Bischoff<sup>1</sup>, O. Hellwig<sup>2,3</sup>, K. Leistner<sup>1</sup> and M. Goessler<sup>1</sup> *1. Institute of Chemistry, Chemnitz University of Technology, Chemnitz, Germany; 2. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 3. Institute of Ion Beam Physics and Materials Research, Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany*

3:39

- DC-07. Intrinsic exchange bias in van der Waals alloy Cr<sub>0.45</sub>Pt<sub>0.55</sub>Te<sub>2</sub>.** R. Bailey-Crandell<sup>1</sup>, A. Williams<sup>2</sup>, W. Huey<sup>2</sup>, W. Zhou<sup>1</sup>, J.E. Goldberger<sup>2</sup> and R.K. Kawakami<sup>1</sup> *1. Physics, Ohio State University, Columbus, OH, United States; 2. Chemistry, Ohio State University, Columbus, OH, United States*

3:51

- DC-08. Withdrawn**

3:51

- DC-09. GdWN<sub>3</sub>: A New Magnetic Nitride Perovskite.** R.W. Smaha<sup>1</sup>, K. Yazawa<sup>1,2</sup>, S. Bauers<sup>1</sup> and A. Zakutayev<sup>1</sup> *1. National Renewable Energy Laboratory, Golden, CO, United States; 2. Colorado School of Mines, Golden, CO, United States*

4:03

- DC-11. Understanding the origins of induced net magnetism in the strained interface of a thin-film antiferromagnetic perovskite.** S.A. Morley<sup>1</sup>, S.M. Griffin<sup>1</sup>, P. Quarterman<sup>3</sup>, B. Kirby<sup>3</sup>, J.A. Borchers<sup>3</sup> and D. Lederman<sup>2</sup> *1. Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. Physics Department, University of California Santa Cruz, Santa Cruz, CA, United States; 3. NIST Center for Neutron Research, Gaithersburg, MD, United States*

WEDNESDAY  
AFTERNOON  
1:30

REUNION B

**Session DD**  
**MAGNETIZATION DYNAMICS IV: ULTRAFAST**  
**MAGNETISM**

Ezio Iacocca, Chair  
University of Colorado Colorado Springs, Colorado Springs,  
CO, United States

1:30

- DD-01. Unraveling Optically Induced Ultrafast Modification of Nanoscale Magnetic Textures. (Invited)** R. Kukreja<sup>1</sup> *1. Materials Science and Engineer, University of California, Davis, CA, United States*

2:06

- DD-02. Soliton nucleation in ultrafast periodically pumped 1D ferromagnetic chain by the pseudo-spectral Landau-Lifshitz equation. (Invited)** K. Rockwell<sup>1</sup>, J. Hirst<sup>2</sup>, T. Ostler<sup>3</sup> and E. Iacocca<sup>1</sup> 1. Center for Magnetism and Magnetic Materials, University of Colorado Colorado Springs, Colorado Springs, CO, United States; 2. Materials and Engineering Research Institute, Sheffield Hallam University, Sheffield, United Kingdom; 3. Department of Physics and Mathematics, University of Hull, Hull, United Kingdom

2:42

Break

3:15

- DD-03. Effects of Inertia in Spin Dynamics of Anisotropic Ferromagnets. (Invited)** A.S. Semisalova<sup>1</sup>, M. Cherkasskii<sup>1,2</sup> and M. Farle<sup>1</sup> 1. Faculty of Physics and CENIDE, University of Duisburg-Essen, Duisburg, Germany; 2. Institute for Theoretical Solid State Physics, RWTH Aachen University, Aachen, Germany

3:51

- DD-04. Antiferromagnetic Switching in Mn<sub>2</sub>Au Using a Novel Laser Induced Optical Torque on Ultrafast Timescales.** J. Ross<sup>1</sup>, P. Gavrilova<sup>2</sup>, T. Adamantopoulos<sup>3</sup>, R. Otxoa<sup>2</sup>, O. Chubykalo-Fesenko<sup>2</sup>, R. Chantrell<sup>1</sup>, Y. Mokrousov<sup>3</sup> and R. Evans<sup>1</sup> 1. Physics, Engineering and Technology, University of York, York, United Kingdom; 2. CSIC, Madrid, Spain; 3. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany

4:03

- DD-05. The MagneDyn beamline at the FERMI free electron laser.** M. Malvestuto<sup>1</sup> 1. Elettra Sincrotrone Trieste, Trieste, Italy

4:15

- DD-06. Experimental evidence for ultrashort-lived spin polarons in EuSe.** S.C. van Kooten<sup>1</sup>, G. Springholz<sup>2</sup> and A.B. Henriques<sup>1</sup> 1. Instituto de Física, Universidade de São Paulo, São Paulo, Brazil; 2. Institute of Semiconductor and Solid State Physics, Johannes Kepler Universität Linz, Linz, Austria

4:27

- DD-07. Vortex Motion Mediated Back-and-Forth Magnetization Switching in Ferrimagnets.** X. Zhang<sup>1</sup>, Z. Xu<sup>1</sup> and Z. Zhu<sup>1,2</sup> 1. ShanghaiTech University, Shanghai, China; 2. Shanghai Engineering Research Center of Energy Efficient and Custom AI IC, Shanghai, China



**Session DE**  
**SPIN HALL AND RELATED EFFECTS II**

Shun Kanai, Chair  
Tohoku University, Sendai, Japan

1:30

- DE-01. Giant Efficiency and Anisotropy of Spin Hall Effect in Bismuth. (Invited)** *R. Ohshima*<sup>1,2</sup> *1. Kyoto University, Kyoto, Japan; 2. CSRN Kyoto, Kyoto, Japan*

2:06

- DE-02. Ultrastrong Magnon-Magnon Coupling and Chiral Symmetry Breaking in a 3D Magnonic Metamaterial. (Invited)** *J.C. Gartside*<sup>1</sup>, *T. Dion*<sup>2</sup>, *K.D. Stenning*<sup>3</sup>, *A. Vanstone*<sup>1</sup>, *H.H. Holder*<sup>1</sup>, *R. Sultana*<sup>4</sup>, *M. Kaffash*<sup>4</sup>, *G. Alatteili*<sup>5</sup>, *V. Martinez*<sup>5</sup>, *T. Kimura*<sup>2</sup>, *B. Jungfleisch*<sup>4</sup>, *E. Iacocca*<sup>5</sup>, *W.R. Branford*<sup>1</sup> and *H. Kurebayashi*<sup>3</sup> *1. Physics, Imperial College London, London, United Kingdom; 2. Solid State Physics Laboratory, Kyushu University, Fukuoka, Japan; 3. University College London, London, United Kingdom; 4. Physics & Astronomy, University of Delaware, Newark, DE, United States; 5. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO, United States*

2:42

**Break**

3:15

- DE-03. Spin/orbital Hall and Nernst effects in bulk, interface, and impurity-doped systems: First-principles study.** *K. Nawa*<sup>1,2</sup>, *Y. Tsujide*<sup>1</sup>, *S.H. Rhim*<sup>3</sup>, *M. Hayashi*<sup>4</sup> and *K. Nakamura*<sup>1</sup> *1. Mie University, Tsu, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. The University of Ulsan, Ulsan, The Republic of Korea; 4. The University of Tokyo, Bunkyo-ku, Japan*

3:27

- DE-04. Spin Superfluidity: Geometrically Enhanced Efficiencies and the Nonlocal Manifestation of Spin Hall Magnetoresistance in Nonlocal Devices.** *M.D. Kitcher*<sup>1</sup> and *G. Beach*<sup>1</sup> *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*

3:39

- DE-05. First-principles analysis of transverse spin diffusion in a disordered Pt film.** *K. Belashchenko*<sup>1</sup>, *G.G. Baez-Flores*<sup>1</sup>, *W. Fang*<sup>1</sup>, *A.A. Kovalev*<sup>1</sup>, *M.D. Stiles*<sup>2</sup> and *P.M. Haney*<sup>2</sup> *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States*

- DE-06. Influence of non-uniform magnetization perturbation on spin-orbit torque measurements.** *R. Greening<sup>1</sup> and X. Fan<sup>1</sup>* *1. Physics, University of Denver, Denver, CO, United States*

- DE-07. Zero-field polarity-reversible Josephson supercurrent diodes enabled by a proximity-magnetized Pt barrier.** *K. Jeon<sup>1,2</sup>, J. Kim<sup>2</sup>, J. Yoon<sup>2</sup>, J. Jeon<sup>2</sup>, H. Han<sup>2</sup>, A. Cottet<sup>3</sup>, T. Kontos<sup>3</sup> and S. Parkin<sup>2</sup>* *1. Chung-Ang University (CAU), Seoul, The Republic of Korea; 2. Max Planck Institute of Microstructure Physics, Halle/Saale, Germany; 3. Laboratoire de Physique de l'Ecole Normale Supérieure, Paris, France*

- DE-08. Orbital torque in Cr/CoFeB/MgO stack compatible with SOT-MRAM application.** *S. Chiba<sup>1,2</sup>, Y. Marui<sup>1</sup>, H. Ohno<sup>1,3</sup> and S. Fukami<sup>1,3</sup>* *1. Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku Univ., Sendai, Japan; 2. Graduate School of Engineering, Tohoku Univ., Sendai, Japan; 3. CSIS, Tohoku Univ., Sendai, Japan*

- DE-09. Now VP14-03**

- DE-10. Artificial helical spin structures in AFM/FM/AFM multilayers set by SOT control of AFM.** *W. Choi<sup>1</sup>, S. Yoon<sup>1</sup>, J. Ha<sup>1</sup>, H. Kim<sup>2</sup> and J. Hong<sup>1</sup>* *1. Physics & Chemistry, Daegu Gyeongbuk Institute of Science & Technology, Daegu, The Republic of Korea; 2. Korea Research Institute of Standards and Science, Daejeon, The Republic of Korea*

- DE-11. Measurement of the Orbital Hall Effect in Cu and Al by spin-torque FMR and optical FMR.** *Y. Ben Tal<sup>1</sup>, A. Rothschild<sup>1</sup>, N. Am-Shalom<sup>1</sup>, N. Bernstein<sup>1</sup>, B.J. Assouline<sup>1</sup> and A. Capua<sup>1</sup>* *1. Applied Physics, The Hebrew University in Jerusalem, Jerusalem, Israel*

Session DF

**FUNDAMENTAL PROPERTIES V: MAGNETIC  
PHASES IN TOPOLOGICAL MATERIALS AND  
COMPLEX ALLOYS**

Xianzhe Chen, Chair

University of California, Berkeley, Berkeley, CA, United States

1:30

- DF-01. Gate-tunable anomalous Hall effect in a 3D topological insulator/2D magnet van der Waals heterostructure. (Invited)** R. Jain<sup>1</sup>, M. Roddy<sup>1</sup>, V. Gupta<sup>1</sup>, B. Huang<sup>1</sup>, Y. Ren<sup>2</sup>, X. Zhang<sup>1</sup>, H. Alnaser<sup>3</sup>, A. Vashist<sup>3</sup>, D. Xiao<sup>2</sup>, D. Muller<sup>1</sup>, V. Deshpande<sup>3</sup>, T. Sparks<sup>3</sup> and D.C. Ralph<sup>1</sup> 1. Cornell University, Ithaca, NY, United States; 2. University of Washington, Seattle, WA, United States; 3. University of Utah, Salt Lake city, UT, United States

2:06

- DF-02. Terahertz spintronic emission from 2D transition metal dichalcogenides and their van der Waals heterostructures. (Invited)** K. Abdukayumov<sup>1</sup>, M. Micica<sup>2</sup>, F. Ibrahim<sup>1</sup>, S.M. Massabeau<sup>7</sup>, C. Vergnaud<sup>1</sup>, A. Marty<sup>1</sup>, J. Veuillen<sup>3</sup>, P. Mallet<sup>3</sup>, I. de Moraes<sup>1</sup>, D. Dosenovic<sup>4</sup>, A. Ouerghi<sup>5</sup>, V. Renard<sup>6</sup>, F. Mesple<sup>6</sup>, F. Bonell<sup>1</sup>, H. Okuno<sup>4</sup>, M. Chshiev<sup>1</sup>, J. George<sup>7</sup>, H. Jaffres<sup>7</sup>, S. Dhillon<sup>2</sup> and M. Jamet<sup>1</sup> 1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-Spintec, Grenoble, France; 2. Laboratoire de Physique de l'Ecole Normale Supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université de Paris, Paris, France; 3. Université Grenoble Alpes, CNRS, Grenoble INP, Institut NEEL, Grenoble, France; 4. Université Grenoble Alpes, CEA, IRIG-MEM, Grenoble, France; 5. Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, Palaiseau, France; 6. Université Grenoble Alpes, CEA, CNRS, IRIG-PHELIQS, Grenoble, France; 7. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France

2:42

Break

3:15

- DF-03. Ferroelectric Switching of Berry Curvature Dipole in a Topological Crystalline Insulator at Room Temperature. (Invited)** T. Nishijima<sup>1</sup> 1. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan

3:51

- DF-04. Topological Weyl semimetal and Griffith's phase-like behavior of CrFeVGa: A Combined Theoretical and Experimental Studies.** J. Nag<sup>1</sup>, P. Sreeparvathy<sup>1</sup>, R. Venkatesh<sup>2</sup>, P. Babu<sup>3</sup>, K. Suresh<sup>1</sup> and A. Alam<sup>1</sup> 1. Physics, IIT Bombay, Mumbai, India; 2. Physics, UGC-DAE Consortium for Scientific Research, Indore, India; 3. Physics, UGC-DAE Consortium for Scientific Research, Mumbai Centre, Mumbai, India

- DF-05. Impact of strain on induced magnetism and perpendicular magnetocrystalline anisotropy in MoSe<sub>2</sub> with a Mo vacancy.** T. Ochirkhuyag<sup>1</sup>, B. Narangerel<sup>1</sup>, O. Bayarsaikhan<sup>2</sup>, G. Munkhsaikhan<sup>2</sup> and D. Odkhuu<sup>1,3</sup> 1. *Incheon National University, Incheon, The Republic of Korea*; 2. *School of Applied Sciences, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia*; 3. *Institute of Physics and Technology, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia*

- DF-06. Room-temperature nonlinear Hall effect driven by Berry curvature dipole in NbIrTe<sub>4</sub>.** J. Lee<sup>1,2</sup>, A. Wang<sup>3</sup>, S. Chen<sup>4</sup>, M. Kwon<sup>5</sup>, J. Hwang<sup>6</sup>, M. Cho<sup>5</sup>, K. Son<sup>7</sup>, D. Han<sup>7</sup>, J. Choi<sup>7</sup>, Y. Kim<sup>5</sup>, S. Mo<sup>1</sup>, C. Petrovic<sup>4</sup>, C. Hwang<sup>8</sup>, S. Park<sup>9</sup>, C. Jang<sup>7</sup> and H. Ryu<sup>7</sup> 1. *Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*; 2. *Max Planck POSTECH Center for Complex Phase Materials, Pohang University of Science and Technology, Pohang, The Republic of Korea*; 3. *Chongqing University, Chong Qing Shi, China*; 4. *Brookhaven National Laboratory, Upton, NY, United States*; 5. *Kyunghee University, Seoul, The Republic of Korea*; 6. *Kangwon National University, Gangwondo, The Republic of Korea*; 7. *Korea Institute of Science and Technology, Seoul, The Republic of Korea*; 8. *Pusan National University, Busan, The Republic of Korea*; 9. *Soongsil University, Seoul, The Republic of Korea*

- DF-07. Theory-Led Pathways to Two-Dimensional Magnetism.** S.M. Griffin<sup>1</sup> 1. *Lawrence Berkeley National Laboratory, Berkeley, CA, United States*

- DF-08. 2D ferromagnetic Fe<sub>5-x</sub>GeTe<sub>2</sub> films on graphene with Curie temperature above room temperature.** H. Lv<sup>1</sup>, J. Herfort<sup>1</sup>, M. Ramsteiner<sup>1</sup>, A. Kassa<sup>1</sup>, A. da Silva<sup>1</sup>, M. Hanke<sup>1</sup>, A. Trampert<sup>1</sup>, R. Engel-Herbert<sup>1</sup> and J. Lopes<sup>1</sup> 1. *Paul-Drude-Institute of Solid State Electronics, Berlin, Germany*

**Session DG**  
**DOMAINS AND ANISOTROPY IN MAGNETIC  
JUNCTIONS**

Razan Aboljadayel, Chair  
University of Leeds, Leeds, United Kingdom

1:30

**DG-01. Perpendicular Magnetic Tunnel Junctions with a Monoatomic-Layer-Controlled CoPt(111) layer and a MgO(111) Barrier.**

J. Song<sup>1,2</sup>, T. Scheike<sup>1</sup>, C. He<sup>1</sup>, Z. Wen<sup>1</sup>, T. Ohkubo<sup>1</sup>, K. Kim<sup>3</sup>, H. Sukegawa<sup>1</sup> and S. Mitani<sup>1,2</sup> *1. National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Graduate School of Science and Technology, University of Tsukuba, Tsukuba, Japan; 3. Samsung Advanced Institute of Technology, Suwon, The Republic of Korea*

1:42

**DG-02. Giant Tunneling Magnetoresistance in Magnetic Tunnel Junctions with a Single Ferromagnetic Electrode.**

K. Samanta<sup>1</sup>, D. Shao<sup>2</sup>, T.R. Paudel<sup>3</sup> and E. Tsymbal<sup>1</sup> *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Key Laboratory of Materials Physics, Institute of Solid-State Physics, HFIPS, Chinese Academy of Sciences, Hefei, China; 3. Department of Physics, South Dakota School of Mines and Technology, Rapid City, SD, United States*

1:54

**DG-03. Unconventional Magnetoresistance and its Implications in Spin-Torque Characterization.**

H. Zhang<sup>1</sup> and R. Cheng<sup>1,2</sup> *1. Department of Electrical and Computer Engineering, University of California Riverside, Riverside, CA, United States; 2. Department of Physics and Astronomy, University of California Riverside, Riverside, CA, United States*

2:06

**DG-04. Nanoscale domain wall devices with magnetic tunnel junction read and write. (Invited)**

V. Nguyen<sup>1</sup>, E. Raymenants<sup>1,2</sup>, D. Wan<sup>1</sup>, Y. Canvel<sup>1</sup>, D. Giuliano<sup>1,2</sup>, B. Vermeulen<sup>1,2</sup>, S. Rao<sup>1</sup>, K. Wostyn<sup>1</sup> and S. Couet<sup>1</sup> *1. IMEC, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium*

2:42

**Break**

3:15

**DG-05. Towards Fully Electrically Controlled Domain-Wall Logic.**

B. Vermeulen<sup>1,2</sup>, E. Raymenants<sup>1</sup>, V. Pham<sup>3,1</sup>, B. Caerts<sup>2</sup>, S. Pizzini<sup>3</sup>, B. Soree<sup>1,4</sup>, S. Couet<sup>1</sup>, K. Wostyn<sup>1</sup>, V. Nguyen<sup>1</sup> and K. Temst<sup>2,1</sup> *1. IMEC, Leuven, Belgium; 2. Department of Physics and Astronomy, KU Leuven, Leuven, Belgium; 3. Université Grenoble Alpes, CNRS, Institut Néel, Grenoble, France; 4. Department of Electrical Engineering (ESAT), KU Leuven, Leuven, Belgium*

3:27

- DG-06. Constant Bit Shift Motion of Recorded Magnetic Domains in Magnetic Nanowire Device with Step Trap Sites.** *D. Kato*<sup>1</sup>, *M. Takahashi*<sup>1</sup>, *K. Ogura*<sup>1</sup>, *Y. Iguchi*<sup>1</sup> and *Y. Miyamoto*<sup>1</sup> *1. Science & Technology Research Labs., NHK (Japan Broadcasting Corp.), Tokyo, Japan*

3:39

- DG-07. Drastically Enhancement for Stable and Fast Domain Wall Motion in GdFe Nanowires by Laser-Annealing Treatment of Wire Edges.** *M. Mohammadi*<sup>1</sup>, *S. Sumi*<sup>1</sup>, *Y. Miyose*<sup>1</sup>, *K. Tanabe*<sup>1</sup> and *H. Awano*<sup>1</sup> *1. Memory Engineering Laboratory, Toyota Technological Institute, Nagoya, Japan*

3:51

- DG-08. A Path Towards Synthetic Antiferromagnets in Nanoscale Domain Wall Devices.** *D. Giuliano*<sup>2,1</sup>, *V. Nguyen*<sup>2</sup>, *Y. Canvel*<sup>2</sup>, *Y. Li*<sup>2</sup>, *A. Palomino*<sup>2</sup>, *R. Carpenter*<sup>2</sup>, *S. Rao*<sup>2</sup>, *C. Fleischmann*<sup>2,1</sup>, *K. Temst*<sup>1,2</sup>, *K. Wostyn*<sup>2</sup> and *S. Couet*<sup>2</sup> *1. Physics and Astronomy, KU Leuven, Leuven, Belgium; 2. Imec, Leuven, Belgium*

4:03

- DG-09. Bias Dependence of Tunneling Magnetoresistance in Magnetic Tunnel Junctions with Antiferromagnetic Pt<sub>x</sub>Mn<sub>1-x</sub>.** *A.T. Habiboglu*<sup>1</sup>, *B. Hong*<sup>1</sup>, *P. Khanal*<sup>1</sup>, *B. Larsen*<sup>1</sup>, *B. Zhou*<sup>1</sup>, *J. O'Brien*<sup>1</sup>, *C. Eckel*<sup>1</sup>, *K. Warrilow*<sup>1</sup>, *A. Enriquez*<sup>1</sup> and *W. Wang*<sup>1</sup> *1. Physics, University of Arizona, Tucson, AZ, United States*

4:15

- DG-10. Three Types of Nano Crystal Domain Structures in Fully Epitaxial fcc-Co/MgO/Co(111) Magnetic Tunnel Junctions.** *C. He*<sup>1</sup>, *K. Masuda*<sup>1</sup>, *J. Song*<sup>1,2</sup>, *T. Scheike*<sup>1</sup>, *Z. Wen*<sup>1</sup>, *H. Sukegawa*<sup>1</sup>, *Y. Miura*<sup>1</sup>, *T. Ohkubo*<sup>1</sup>, *K. Hono*<sup>1</sup> and *S. Mitani*<sup>1,2</sup> *1. National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. University of Tsukuba, Tsukuba, Japan*

4:27

- DG-11. Design of Domain Wall Magnetic Tunnel Junction Logic Devices and Circuits Using Voltage Controlled Magnetic Anisotropy.** *N. Zogbi*<sup>1</sup>, *S. Liu*<sup>1</sup>, *C. Bennett*<sup>2</sup>, *S. Agarwal*<sup>2</sup>, *M.J. Marinella*<sup>3</sup>, *J.C. Incorvia*<sup>1</sup> and *T.P. Xiao*<sup>2</sup> *1. Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States; 3. Arizona State University, Phoenix, AZ, United States*

**Session DP**  
**STRUCTURED MATERIALS AND MAGNETIC**  
**RECORDING**  
**(Poster Session)**

Yayoi Takamura, Co-Chair

University of California, Davis, Davis, CA, United States

Varaprasad Bollapragada, Co-Chair

Carnegie Mellon University, Pittsburgh, PA, United States

- DP-01. Geometrical Structure induced Magnetic Anisotropy in Three-dimensional Ferromagnetic Iron Nanofilms.** *K. Hattori<sup>1</sup>, L.N. Pamasi<sup>1</sup>, J. Juharni<sup>1</sup>, N. Hosoito<sup>1</sup>, N. Mabarroh<sup>1</sup>, A.N. Hattori<sup>2</sup>, H. Tanaka<sup>2</sup> and S. Yoshimura<sup>3</sup>*  
*1. Nara Institute of Science and Technology, Ikoma, Japan; 2. SANKEN, Osaka University, Ibaraki, Japan; 3. Faculty of Engineering Science, Akita University, Akita, Japan*
- DP-02. Exchange bias mediated by semiconductor with spin-orbit coupling.** *A.B. Cahaya<sup>1</sup>, A.A. Anderson<sup>1</sup>, A. Azhar<sup>2</sup> and M.A. Majidi<sup>1</sup>*  
*1. Physics, Universitas Indonesia, Depok, Indonesia; 2. Physics and Astronomy, The University of Manchester, Manchester, United Kingdom*
- DP-03. Study on strength of a 3D structure composed of multiple magnetic microbeads chains.** *Y. Lin<sup>1</sup>, C. Liang<sup>1</sup>, Y. Li<sup>1</sup> and H. Hsieh<sup>1</sup>*  
*1. Mechanical and Aerospace, Chung-Cheng Institute of Technology, National Defense University, Taoyuan, Taiwan*
- DP-05. Phase Enhancement and Crystallinity Tuning of Iron Oxide Nanorods via Annealing.** *S.B. Attanayake<sup>1</sup>, A. Chanda<sup>1</sup>, R. Das<sup>2</sup>, M. Phan<sup>1</sup> and H. Srikanth<sup>1</sup>*  
*1. Physics, University of South Florida, Tampa, FL, United States; 2. South East Technological University, Waterford, Ireland*
- DP-06. Synergistic effects of reduced graphene oxide and nickel doping on the magnetic and sensing properties of Ni- Co<sub>3</sub>O<sub>4</sub> – rGO nanoparticles.** *L.J. Cardenas Flechas<sup>1</sup> and M. Rincón Joya<sup>2</sup>*  
*1. Mechanical Engineering, Universidad de América, Bogotá, Colombia; 2. Physics, Universidad Nacional de Colombia, Bogotá, Colombia*
- DP-07. Withdrawn**
- DP-08. Domain Wall Creep for Assessing Exchange-Bias in Ferromagnet/Antiferromagnet Thin Films.** *M. Hasan<sup>1</sup> and G. Beach<sup>1</sup>*  
*1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*
- DP-09. 3D Structure of Dipole Antiskyrmion in Fe/Gd Multilayers.** *J.A. Reddinger<sup>1</sup> and B. McMorran<sup>1</sup>*  
*1. Physics, University of Oregon, Eugene, OR, United States*
- DP-10. Withdrawn**

**DP-11. Comparison of Magnetization Thermal Stability for MAMR Media with Different Layer Anisotropy Structures.**

*T. Tanaka<sup>1</sup>, X. Ya<sup>2</sup>, S. Onaka<sup>1</sup> and Y. Kanai<sup>3</sup> 1. ISEE, Kyushu University, Fukuoka, Japan; 2. Artificial Intelligence and Big Data College, Chongqing College of Electronic Engineering, Chongqing, China; 3. Department of Engineering, Niigata Institute of Technology, Kashiwazaki, Japan*

**DP-12. Suppression of in-plane (001) texture component in FePt-oxide granular films by adding a carbon buffer layer.**

*K. Tham<sup>1</sup>, R. Kushibiki<sup>1</sup> and S. Saito<sup>2</sup> 1. Tanaka Kikinzoku Kogyo K. K., Tsukuba, Japan; 2. Electronic Engineering, Tohoku University, Sendai, Japan*

WEDNESDAY  
AFTERNOON  
2:00

MARSALIS HALL A

**Session DQ**

**INTERDISCIPLINARY TOPICS II: MAGNETIC FORCES AND NANOPARTICLES; BIOMEDICINE; EDUCATION AND OUTREACH  
(Poster Session)**

Frank Abel, Chair

National Institute of Standards and Technology, Gaithersburg, MD, United States

**DQ-01. Integration of Fiber Tracts in Anatomically Accurate Brain Models during Transcranial Magnetic Stimulation.**

*C.J. Lewis<sup>1</sup>, C.M. Harris<sup>2,4</sup>, N. Mittal<sup>1</sup>, C.L. Peterson<sup>1</sup> and R.L. Hadimani<sup>2,3</sup> 1. Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 3. Psychiatry, Harvard Medical School, Boston, MA, United States; 4. Center for Biological Data Science, Virginia Commonwealth University, Richmond, VA, United States*

**DQ-02. Withdrawn**

**DQ-03. The Effect of Functional Magnetic Resonance Imaging Connectivity on Transcranial Magnetic Stimulation Outcomes in Schizophrenia Participants.**

*C.J. Lewis<sup>1</sup>, N. Mittal<sup>1,2</sup>, A.K. Pandurangi<sup>4</sup>, U.M. Mehta<sup>5</sup> and R.L. Hadimani<sup>2,3</sup> 1. Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 3. Psychiatry, Harvard Medical School, Boston, MA, United States; 4. Psychiatry, Virginia Commonwealth University, Richmond, VA, United States; 5. Psychiatry, National Institute of Mental Health & Neurosciences, Bangalore, India*

**DQ-04. Ferrofluid droplets for visualizing tides in educational settings.**

*Z. Boekelheide<sup>1</sup> 1. Physics, Lafayette College, Easton, PA, United States*



- DQ-05. Mn-Zn ferrite nanoparticles as an agent for imaging and hyperthermia treatment.** N. Kataoka<sup>1</sup>, T. Ishikawa<sup>1</sup>, T. Kondo<sup>1</sup>, A. Usui<sup>3</sup>, Y. Hosokai<sup>4</sup> and Y. Ichiyangi<sup>1,2</sup>  
*1. Physics, Yokohama National University, Yokohama, Japan; 2. Osaka University, Toyonaka, Japan; 3. Medicine, Tohoku University, Sendai, Japan; 4. Radiological Sciences, International University of Health and Welfare, Otawara, Japan*
- DQ-06. Magnetic response of the magnetic nanoparticles/protein aggregation for protein detection.** K. Kaneko<sup>1</sup>, T. Murayama<sup>1</sup>, J. Honda<sup>1</sup>, L. Tonthat<sup>1</sup>, K. Okita<sup>1</sup> and S. Yabukami<sup>1</sup>  
*1. Tohoku University, Sendai, Japan*
- DQ-07. Surface receive coil dedicated for rat kidney with high sensitivity in vivo magnetic resonance imaging.** M. Takahashi<sup>1</sup>, M. Fushimi<sup>2</sup>, S. Yabukami<sup>1</sup>, M. Sekino<sup>2</sup> and A. Kuwahata<sup>1</sup>  
*1. Tohoku University, Sendai, Japan; 2. The University of Tokyo, Tokyo, Japan*
- DQ-08. Enhancing heating efficiency of magnetic hyperthermia by using pulsed magnetic fields.** Y. Adachi<sup>1</sup>, A. Kuwahata<sup>1</sup> and E. Nakamura<sup>2,1</sup>  
*1. Engineering, Tohoku university, Sendai, Japan; 2. High Energy Accelerator Research Organization (KEK), Tsukuba, Japan*
- DQ-09. Micromagnetic Stimulation ( $\mu$ MS) of the Vagus Nerve: An in vivo Study.** R. Saha<sup>1</sup>, D. Van Helden<sup>2</sup>, M.S. Hopper<sup>1</sup>, W. Low<sup>3</sup>, T. Netoff<sup>4</sup>, J. Osborn<sup>2</sup> and J. Wang<sup>1</sup>  
*1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Department of Surgery, University of Minnesota, Minneapolis, MN, United States; 3. Department of Neurosurgery, University of Minnesota, Minneapolis, MN, United States; 4. Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States*
- DQ-10. In Silico Experiments to Guide Preclinical Tests of Magnetic Hyperthermia.** M. Vicentini<sup>1</sup>, R. Ferrero<sup>1</sup> and A. Manzin<sup>1</sup>  
*1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy*
- DQ-11. Estimating Location of the Hook-Wire for Breast-Conserving Surgery Using a Magnetometer.** O. Debnath<sup>1</sup>, A. Kuwahata<sup>2</sup>, Y. Sunaga<sup>1</sup>, S. Chikaki<sup>1</sup>, M. Kaneko<sup>3</sup>, M. Kusakabe<sup>4</sup> and M. Sekino<sup>1</sup>  
*1. The University of Tokyo, Tokyo, Japan; 2. Tohoku University, Sendai, Japan; 3. Osaka University, Osaka, Japan; 4. Matrix Cell Research Institute Inc., Ibaraki, Japan*
- DQ-12. Withdrawn**
- DQ-13. Mapping the Design Space for Heating with Magnetic Nanowires.** A. Harpel<sup>1</sup> and B. Stadler<sup>1</sup>  
*1. University of Minnesota, Minneapolis, MN, United States*
- DQ-14. Magnetics and Music: the Voice of the Machine.** A. Emelianoff<sup>1,2</sup>  
*1. Lutherie Postmoderne, Montreal, QC, Canada; 2. CIRMMT McGill, Montreal, QC, Canada*

**DQ-15. Magnetic Nanoparticles (MNPs) Based Additively Manufactured Computational and Memory Devices.** *R.A. Mendonsa<sup>1</sup>, S. Liang<sup>1</sup> and J. Wang<sup>1</sup> 1. Electrical Engineering, University of Minnesota, Minneapolis, MN, United States*

**DQ-16. Photo-actuated Ferrofluid Cavities for Nonreciprocal Acoustic Wave Transmission.** *M. Yao<sup>1</sup>, A. Neogi<sup>1</sup>, Z. Wang<sup>1</sup>, Y. Jin<sup>2</sup> and Q. Wang<sup>1</sup> 1. University of Electronic Science and Technology of China, Institute of Fundamental and Frontier Sciences, Chengdu, China; 2. University of North Texas, Department of Physics, Denton, TX, United States*

WEDNESDAY  
AFTERNOON  
2:00

MARSALIS HALL A

**Session DR**  
**SHIELDING, LEVITATION AND PROPULSION**  
**(Poster Session)**

Mai Phuong Nguyen, Chair  
Tohoku University, Sendai, Japan

**DR-01. Effect of EM Absorbers Placed on Aperture Side within Enclosure on Shielding Effectiveness.** *J. Kwon<sup>1</sup> 1. Radio Research Department, ETRI, Daejeon, The Republic of Korea*

**DR-02. A Study on Reduction of Magnet Usage and Cogging Torque through the Intersect Consequent Model.** *H. Kim<sup>1</sup>, S. Song<sup>1</sup>, D. Jung<sup>2</sup>, D. Choi<sup>1</sup> and W. Kim<sup>1</sup> 1. Department of Electrical Engineering, Gachon University, Seongnam-si, The Republic of Korea; 2. Halla University, Wonju-si, The Republic of Korea*

**DR-03. Comparison and Analysis of Electromagnetic Characteristics According to the Slot-Number of 210kW-class MG-PMSM for Urban Railway Vehicle.** *I. Jo<sup>1</sup>, J. Lee<sup>1</sup>, H. Lee<sup>2</sup>, J. Lee<sup>2</sup>, J. Lim<sup>2</sup>, S. Kim<sup>1</sup> and C. Park<sup>2</sup> 1. Hanyang University, Seoul, The Republic of Korea; 2. Korea National University of Transportation, Uiwang-si, The Republic of Korea*

**DR-04. Withdrawn**

**DR-05. Study on the Reduction of Eddy Current Loss of Permanent Magnet Synchronous Motor considering PWM.** *Y. Lee<sup>1</sup>, I. Jang<sup>2</sup>, I. Yang<sup>3</sup>, N. Jo<sup>1</sup> and W. Kim<sup>1</sup> 1. Department of Electrical Engineering, Gachon University, Seongnam-Si, The Republic of Korea; 2. Electric Powertrain Core Technology Team, Hyundai Mobis, YoungIn-Si, The Republic of Korea; 3. Department of Electrical Engineering, Hanyang University, Seoul-Si, The Republic of Korea*

- DR-07. Electromagnetic Drag Force Analysis According to Changes in Material and Shape Characteristics of Steel Tubes for Superconducting EDS Propulsion Type Hyperloop System.** S. Kim<sup>1</sup>, H. Lee<sup>3</sup>, J. Lee<sup>1</sup> and W. Cho<sup>2</sup> 1. *Electrical Engineering, Hanyang University, Seoul, The Republic of Korea*; 2. *Steel Structure Research Group, POSCO, Pohang-si, The Republic of Korea*; 3. *Department of Railway Engineering, Korea National University of Transportation, Uiwang-si, The Republic of Korea*
- DR-08. Withdrawn**
- DR-09. Experimental verification for electromagnetic and thermal characteristics of a high-speed permanent magnet motor with two different rotors.** J. Woo<sup>1</sup>, J. Shin<sup>2</sup>, K. Shin<sup>1</sup> and J. Choi<sup>1</sup> 1. *Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea*; 2. *Electrical Engineering, TNE Korea Co, Cheongju, The Republic of Korea*
- DR-10. Design of Magnetization Yoke to Reduce the number of Double Spoke Type PMSM Magnetization Using I-Core.** D. Choi<sup>1</sup>, D. Nam<sup>1</sup>, Y. Lee<sup>1</sup>, N. Jo<sup>1</sup> and W. Kim<sup>1</sup> 1. *Gachon University, Seongnam, The Republic of Korea*
- DR-11. Effects of Permanent Magnets on Batteries in an Electrical Vehicle.** A.P. Singh<sup>1</sup> and C.I. Nlebedim<sup>1</sup> 1. *Critical Material Institute, Ames National Laboratory, Ames, IA, United States*
- DR-13. Thermal Reduction Method for Outer Rotor Assembly of Magnetic-Geared Permanent Magnet Synchronous Motor for Tram Traction.** J. Lim<sup>1</sup>, H. Lee<sup>1</sup>, J. Lee<sup>1</sup>, I. Jo<sup>2</sup>, S. Kim<sup>2</sup>, T. Kim<sup>3</sup> and C. Park<sup>1</sup> 1. *Korea National University of Transportation, Uiwang-si, The Republic of Korea*; 2. *Hanyang University, Seoul, The Republic of Korea*; 3. *University of Michigan-Dearborn, Dearborn, MI, United States*
- DR-14. A Study on Eddy Current Loss Reduction in Single Phase Claw-Pole Motor.** N. Jo<sup>1</sup>, H. Pyo<sup>1</sup>, Y. Lee<sup>1</sup>, D. Kim<sup>2</sup> and W. Kim<sup>1</sup> 1. *Gachon University, Gyeonggi-do, The Republic of Korea*; 2. *Hanyang University, Seoul, The Republic of Korea*
- DR-15. Electromagnetic characteristics analysis of winding process error in parallel delta-connection BLDC motor.** H. Shin<sup>1</sup> and M. Koo<sup>1</sup> 1. *Korea Institute of Industrial Technology, Gimje-si, The Republic of Korea*
- DR-16. Analysis of Multilayer Shielding Panels With Absorbing Materials Between Two Conducting Plates.** J. Kwon<sup>1</sup> and H. Park<sup>2</sup> 1. *Electronics and Telecommunications Research Institute, Daejeon, The Republic of Korea*; 2. *The University of Suwon, Hwaseong, The Republic of Korea*

**Session YA**  
**EVENING SESSION 2: MAGNETO-IONICS**

Karin Leistner, Chair  
Technische Universität Chemnitz, Chemnitz, Germany

6:15

**Award Presentations**

6:30

- YA-01. **Oxygen-based Magneto-ionics: Mechanisms, Recent Developments and Perspectives. (Invited)** L. Herrera Diez<sup>1</sup>  
*1. Centre for Nanoscience and Nanotechnology CNRS- Université Paris Saclay, Palaiseau, France*

7:15

- YA-02. **When Smaller is Better: Advancing Magneto-ionics with Protons. (Invited)** G. Beach<sup>1</sup> *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*

**Session EA**  
**ORBITRONICS: FROM ORBITAL CURRENTS  
CREATED BY CHARGE CURRENTS TO  
CREATION BY LIGHT OR RF EXCITATION**

Mairbek Chshiev, Chair  
SPINTEC, Univ. Grenoble Alpes, CEA, CNRS, Grenoble, France

8:30

- EA-01. **Orbitronics: Light-induced Orbit Currents in Terahertz Emission Experiments. (Invited)** Y. Xu<sup>1</sup>, F. Zhang<sup>1</sup>, H. Jaffres<sup>2</sup>, Y. Liu<sup>1</sup>, R. Xu<sup>1</sup>, Y. Jiang<sup>1</sup>, H. Cheng<sup>1</sup>, A. Fert<sup>2</sup> and W. Zhao<sup>1</sup>  
*1. Beihang University, Beijing, China; 2. Université Paris-Saclay, Palaiseau, France*

9:06

- EA-02. **Generation of Orbital Currents Driven by Spin Pumping. (Invited)** E.S. Santos<sup>1</sup>, J.E. Abrão<sup>1</sup>, J.B. Mendes<sup>2</sup> and A. Azevedo<sup>1</sup>  
*1. Physics, Federal University of Pernambuco, Recife, Brazil; 2. Physics, Federal University of Viçosa, Viçosa, Brazil*

9:42

**Break**

10:15

- EA-03. **Orbital Torque and Orbital Pumping. (Invited) K. Lee<sup>1</sup>**  
*1. Department of Physics, KAIST, Daejeon, The Republic of Korea*

10:51

- EA-04. **First-Principles Investigation of Orbital Edelstein Effect in Co/Al Heterostructure. (Invited) S. Nikolaev<sup>1</sup>, M. Chshiev<sup>2</sup> and A. Fert<sup>3</sup>** *1. Osaka University, Osaka, Japan; 2. SPINTEC, Univ. Grenoble Alpes, CEA, CNRS, Grenoble, France; 3. UMR CNRS-Thales, Paris, France*

11:27

- EA-05. **Orbital Torques and Orbital Magnetoresistance in Transition-Metal Elements. (Invited) G. Sala<sup>1</sup>** *1. University of Geneva, Geneva, Switzerland*

THURSDAY  
MORNING  
8:30

REUNION GH

### Session EB

## NEUROMORPHIC JUNCTIONS AND NEW DESIGN

Atsufumi Hirohata, Chair  
University of York, York, United Kingdom

8:30

- EB-01. **Stochastic Charge Transport and Noise Characteristic in AlO<sub>x</sub> Magnetic Tunnel Junctions.** *C. Chen<sup>1</sup>, B. Huang<sup>1</sup>, Y. Tang<sup>1</sup>, C. Gonzalez-Ruano<sup>2</sup>, F. Aliev<sup>2</sup> and J. Hong<sup>3</sup>* *1. Department of Physics, National Central University, Taoyuan City, Taiwan; 2. Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 3. Department of Physics, Tamkang University, New Taipei City, Taiwan*

8:42

- EB-02. **Bias voltage robustness in double-free-layer stochastic magnetic tunnel junction.** *R. Ota<sup>1,2</sup>, K. Kobayashi<sup>1,2</sup>, K. Hayakawa<sup>1,2</sup>, S. Kanai<sup>1,3</sup>, K.Y. Camsari<sup>4</sup>, H. Ohno<sup>1,3</sup> and S. Fukami<sup>1,3</sup>* *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Grad. School Eng., Tohoku University, Sendai, Japan; 3. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 4. Department of Electrical and Computer Engineering, UC Santa Barbara, Santa Barbara, CA, United States*

8:54

- EB-03. **Reduced sensitivity to process-voltage-temperature variations in stochastic magnetic actuated random transducer devices.** *M. Morshed<sup>1</sup>, L. Rehm<sup>2</sup>, A. Shukla<sup>3</sup>, S. Ganguly<sup>4</sup>, S. Rakheja<sup>3</sup>, A.D. Kent<sup>2</sup> and A.W. Ghosh<sup>1</sup>* *1. University of Virginia, Charlottesville, VA, United States; 2. New York University, New York, NY, United States; 3. University of Illinois at Urbana-Champaign, Champaign, IL, United States; 4. Virginia Commonwealth University, Richmond, VA, United States*

- EB-04. Fully spintronic RF neural network. (Invited)** A. Ross<sup>1</sup>, N. Leroux<sup>1</sup>, A. De Riz<sup>1</sup>, D. Markovic<sup>1</sup>, D. Sanz Hernandez<sup>1</sup>, J. Trastoy<sup>1</sup>, P. Bortolotti<sup>1</sup>, D. Querlioz<sup>2</sup>, L. Martins<sup>3</sup>, L. Benetti<sup>3</sup>, M.S. Claro<sup>3</sup>, P. Anacleto<sup>3</sup>, A. Schulman<sup>3</sup>, T. Taris<sup>4</sup>, J. Begueret<sup>4</sup>, S. Saïghi<sup>4</sup>, A. Jenkins<sup>3</sup>, R. Ferreira<sup>3</sup>, A.F. Vincent<sup>4</sup>, *F.A. Mizrahi*<sup>1</sup> and J. Grollier<sup>1</sup> *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, Palaiseau, France; 3. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal; 4. Univ. Bordeaux, CNRS, Bordeaux INP, IMS, Talence, France*

9:42

Break

10:15

- EB-05. Easy-plane magnetic tunnel junction as an entropy source for computing.** *J.Z. Sun*<sup>1</sup>, C. Safranski<sup>1</sup>, P. Trouilloud<sup>1</sup>, C. D'Emic<sup>1</sup>, P. Hashemi<sup>1</sup> and G. Hu<sup>1</sup> *1. IBM T. J. Watson Research Center, Yorktown Heights, NY, United States*

10:27

- EB-06. Hybrid MRAM/SRAM Bit Cell with Self-Terminating MTJ Readout.** *D. Biswas*<sup>1</sup>, S.R. Evans<sup>1</sup>, M.J. Rickard<sup>1</sup>, A. Fowler<sup>1</sup>, Y. Makris<sup>1</sup>, N. Hassan<sup>1</sup>, A.J. Edwards<sup>1</sup> and J.S. Friedman<sup>1</sup> *1. Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*

10:39

- EB-07. Spintronic physical unclonable functions based on magnetoresistive memory.** *J. Kang*<sup>1</sup>, D. Han<sup>1</sup>, D. Koh<sup>1</sup>, S. Ko<sup>1</sup>, K. Lee<sup>2</sup>, J. Lee<sup>3</sup>, C. Park<sup>4</sup>, J. Ahn<sup>4</sup>, M. Yu<sup>4</sup>, M. Pakala<sup>4</sup>, S. Lee<sup>1</sup>, J. Park<sup>2</sup>, K. Kim<sup>1</sup> and B. Park<sup>1</sup> *1. Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 2. Korea University, Seoul, The Republic of Korea; 3. Hyundai Motor Company, Hwaseong, The Republic of Korea; 4. Applied Materials, Santa Clara, CA, United States*

10:51

- EB-08. High Data Rate Spin-Wave Transmitter.** *K. Xue*<sup>1</sup> and R. Victora<sup>1</sup> *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

11:03

- EB-09. Properties of ideal soft magnetic material, FeAlSi films for ultra-sensing spintronics device application.** *S. Akamatsu*<sup>1,2</sup>, B. Lee<sup>3</sup>, Y. Hou<sup>1</sup>, M. Oogane<sup>2</sup>, G. Beach<sup>3</sup> and J. Moodera<sup>1,4</sup> *1. Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 4. Physics, Massachusetts Institute of Technology, Cambridge, MA, United States*

11:15

- EB-10. Enhancing Performance of Anisotropic Magneto-resistive Sensors through Interface Engineering.** *R.F. Constantino*<sup>1,2</sup>, G. Brites<sup>1,2</sup>, P. Araujo<sup>1,2</sup>, R. Macedo<sup>1</sup> and S. Cardoso<sup>1,2</sup> *1. Instituto de Engenharia de Sistemas E Computadores – Microsistemas e Nanotecnologias (INESC MN), Lisbon, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal*

11:27

- EB-11. Withdrawn**

11:27

- EB-12. Higher-Order Nonlinear Transverse Spin Hall Magnetoresistance.** *T. Shiino*<sup>1</sup>, P.C. Van<sup>2</sup>, H. Kim<sup>3</sup>, J. Choi<sup>1</sup>, K. Lee<sup>3</sup>, K. Kim<sup>3</sup>, J. Jeong<sup>2</sup> and B. Park<sup>1</sup> *1. Department of Materials Science and Engineering, KAIST, Daejeon, The Republic of Korea; 2. Department of Material Science and Engineering, Chungnam National University, Daejeon, The Republic of Korea; 3. Department of Physics, KAIST, Daejeon, The Republic of Korea*

THURSDAY  
MORNING  
8:30

REUNION A

### Session EC

## SOFT MAGNETIC MATERIALS II: AMORPHOUS AND NANOCRYSTALLINE MATERIALS

Nicola Morley, Co-Chair

University of Sheffield, Sheffield, United Kingdom

Alpha N'Diaye, Co-Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

8:30

- EC-01. Nucleation barriers and Hysteresis in Soft Magnetic Alloys. (Invited)** *A. Renuka Balakrishna*<sup>1</sup> *1. Materials Department, University of California, Santa Barbara, Santa Barbara, CA, United States*

9:06

- EC-02. Extreme Temperature Stability of Induced Anisotropies in Co-rich Nanocrystalline Ribbon.** *T. Paplham*<sup>1</sup>, A. Leary<sup>2</sup>, Z. Wang<sup>1</sup> and P. Ohodnicki<sup>1,3</sup> *1. Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, United States; 2. NASA Glenn Research Center, Cleveland, OH, United States; 3. Department of Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA, United States*

9:18

- EC-03. Theory of amorphous chiral spin textures: a case study of amorphous FeGe.** *T. Bayaraa*<sup>1,2</sup> and *S.M. Griffin*<sup>1,2</sup> *1. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*

9:30

- EC-04. Temperature influence on magnetic properties and magnetoimpedance effect of Co-rich glass-coated microwires.** *P. Corte-Leon*<sup>1,3</sup>, *I. Skorvanek*<sup>2</sup>, *F. Andrejka*<sup>2</sup>, *M. Jakubcin*<sup>2</sup>, *V. Zhukova*<sup>1,3</sup> and *A. Zhukov*<sup>1,3</sup> *1. Dept. Polymers and Advanced Materials, University of Basque Country, UPV/EHU, San Sebastian, Spain; 2. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia; 3. Dept. Applied Physics I, Escuela de Ingeniería de Gipuzkoa EIG, University of Basque Country, UPV/EHU, San Sebastian, Spain*

9:42

Break

10:15

- EC-05. Design of soft magnetic materials for low energy loss in the high-frequency range. (Invited)** *K. Ono*<sup>1</sup> *1. Osaka University, Suita, Japan*

10:51

- EC-06. Giant Magneto-Impedance Effect in Core-Shell CoP@Cu Microwires in a Wide Range of Frequencies.** *C. Iglesias*<sup>1</sup>, *J. Marques de Lima*<sup>1</sup>, *E. Padrón-Hernández*<sup>1</sup>, *J. Sinnecker*<sup>2</sup>, *S. Rezende*<sup>1</sup> and *F. de Araujo Machado*<sup>1</sup> *1. Departamento de Física, UFPE, Recife, Brazil; 2. CBPF, Rio de Janeiro, Brazil*

11:03

- EC-07. Stress-annealing influenced anelastic microstructural transformations in Co-based amorphous wires.** *S. Corodeanu*<sup>1</sup>, *G. Ababei*<sup>1</sup>, *M. Grigoras*<sup>1</sup>, *T.A. Ovari*<sup>1</sup>, *H. Chiriac*<sup>1</sup> and *N. Lupu*<sup>1</sup> *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

11:15

- EC-08. Soft Magnetic Properties of Nanostructured Fe-rich Alloys Upon the Formation of BCC Nanocrystallites.** *A. Talaat*<sup>2,1</sup>, *P. Corte-Leon*<sup>2,1</sup>, *V. Zhukova*<sup>2,1</sup>, *M. Ipatov*<sup>2,1</sup> and *A. Zhukov*<sup>2,1</sup> *1. Department of Applied Physics I, UPV/EHU, San Sebastian, Spain; 2. Department of Polymers and Advanced Materials, UPV/EHU, San Sebastian, Spain*

11:27

- EC-09. Controllable magnetic anisotropy in Fe-rich microwires.** *P. Corte-Leon*<sup>1,2</sup>, *V. Zhukova*<sup>1,2</sup>, *J. Blanco*<sup>2</sup>, *A. Talaat*<sup>1,2</sup>, *M. Ipatov*<sup>1,2</sup> and *A. Zhukov*<sup>1,2</sup> *1. Department of Polymers and Advanced Materials, UPV/EHU, Donostia, Spain; 2. Department of Applied Physics I, UPV/EHU, Donostia, Spain*



**Session ED**  
**SPIN WAVES AND MAGNONICS II**  
Jack Gartside, Chair  
Imperial College London, London, United Kingdom

8:30

- ED-03. Acousto-Plasmo-Magnonics in a 2D Artificial Magnonic Crystal.** *S. Pal*<sup>1</sup>, P.K. Pal<sup>1</sup>, R. Fabiha<sup>2</sup>, S. Bandyopadhyay<sup>2</sup> and A. Barman<sup>1</sup> *1. Condensed Matter and Materials Physics, S.N.Bose National Centre for Basic Sciences, Kolkata, India; 2. Department of Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA, United States*

8:42

- ED-05. Magnetic Resonance Imaging of Coherent Spin Waves in Ferrimagnetic Insulator TmIG Thin Films.** R. Timalisina<sup>1</sup>, H. Wang<sup>2</sup>, B. Giri<sup>2</sup>, A. Erickson<sup>1</sup>, X. Xu<sup>2</sup> and A. Laraoui<sup>1,2</sup>  
*1. Department of Mechanical & Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Department of Physics and Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE, United States*

8:54

- ED-06. Resonant Dynamics, Spin Wave Generation, and Spin Wave Annealing in Three-Dimensional Skymionic Lattices. (Invited)** *T. Srivastava*<sup>1,2</sup>, Y. Sassi<sup>2</sup>, F. Ajejas<sup>2</sup>, A. Vecchiola<sup>2</sup>, I. Ngouagnia<sup>3</sup>, H. Hurdequint<sup>3</sup>, K. Bouzehouane<sup>2</sup>, N. Reyren<sup>2</sup>, V. Cros<sup>2</sup>, T. Devolder<sup>1</sup>, J. Kim<sup>1</sup> and G. de Loubens<sup>3</sup> *1. Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, 91120, Palaiseau, France; 2. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, 91767, Palaiseau, France; 3. SPEC, CEA, CNRS, Université Paris-Saclay, 91191, Gif-sur-Yvette, France*

9:30

- ED-07. Time-Resolved Spin-Wave Imaging Using Ultrafast Electron Microscopy.** *C. Liu*<sup>1,2</sup>, F. Ai<sup>3</sup>, S. Reisbick<sup>2</sup>, A. Pofelski<sup>2</sup>, M. Han<sup>2</sup>, V. Lomakin<sup>3</sup> and Y. Zhu<sup>2,1</sup> *1. Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY, United States; 2. Condensed Matter Physics and Material Science, Brookhaven National Laboratory, Upton, NY, United States; 3. Department of ECE, UC San Diego, La Jolla, CA, United States*

9:42

**Break**

10:15

- ED-08. Observation of nonlinear acoustic-to-optic magnonic interaction in a synthetic antiferromagnet.** *M. You*<sup>1</sup>, *M. Song*<sup>1</sup>, *A.M. Park*<sup>1</sup>, *D. Lee*<sup>2</sup>, *S. Kim*<sup>2</sup> and *K. Kim*<sup>1</sup> *1. Physics, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 2. Physics and Energy Harvest Storage Research Center, University of Ulsan, Ulsan, The Republic of Korea*

10:27

- ED-09. Coherent control of collective nuclear quantum states via transient magnons.** *G. Meier*<sup>1</sup>, *L. Bocklage*<sup>2</sup> and *R. Röhlsberger*<sup>3</sup> *1. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany; 2. DESY, Hamburg, Germany; 3. Helmholtz-Institut Jena, Jena, Germany*

10:39

- ED-10. Two-Qubit Magnon-Mediated Quantum Gates.** *C. Trevillian*<sup>1</sup> and *V. Tyberkevych*<sup>1</sup> *1. Physics, Oakland University, Rochester, MI, United States*

10:51

- ED-11. Hybrid Magnonics in Hybrid Perovskite Antiferromagnets.** *A. Comstock*<sup>1</sup>, *C. Chou*<sup>2</sup>, *Z. Wang*<sup>3</sup>, *T. Wang*<sup>1</sup>, *R. Song*<sup>4</sup>, *J. Sklenar*<sup>5</sup>, *A. Amassian*<sup>1</sup>, *W. Zhang*<sup>6</sup>, *H. Lu*<sup>3</sup>, *L. Liu*<sup>2</sup>, *M. Beard*<sup>7</sup> and *D. Sun*<sup>1</sup> *1. North Carolina State University, Raleigh, NC, United States; 2. Massachusetts Institute of Technology, Cambridge, MA, United States; 3. The Hong Kong University of Science and Technology, Kowloon, China; 4. Duke University, Durham, NC, United States; 5. Wayne State University, Detroit, MI, United States; 6. University of North Carolina, Chapel Hill, NC, United States; 7. National Renewable Energy Laboratory, Golden, CO, United States*

THURSDAY  
MORNING  
8:30

REUNION C

### Session EE

## MAGNETIC NANOPARTICLES AND EXCHANGE BIAS SYSTEMS

Yayoi Takamura, Co-Chair

University of California, Davis, Davis, CA, United States

Denys Makarov, Co-Chair

Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

Volker Neu, Co-Chair

IFW Dresden, Dresden, Germany

8:30

- EE-01. From Nano to Macro – Increasing Actuator Performance Starting with High-Remanence Magnetic Nanostructures.** *(Invited)* *A. El-Ghazaly*<sup>1</sup>, *Y. Chen*<sup>2</sup> and *L. Cestarollo*<sup>2</sup> *1. Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States; 2. Materials Science and Engineering, Cornell University, Ithaca, NY, United States*

- EE-02. Laser-Induced Field-Free Exchange Bias Reversal. (Invited)**  
*F. van Riel<sup>1</sup>, B. Koopmans<sup>1</sup> and D. Leitao<sup>1</sup> 1. Applied Physics and Science Education, Eindhoven University of Technology, Eindhoven, Netherlands*

9:42

Break

10:15

- EE-03. Tunable magnetization dynamics of magnetic nanoparticles for temperature sensing and biomedical imaging. (Invited)**  
*T.Q. Bui<sup>1</sup>, S. Oberdick<sup>3,2</sup>, F.M. Abel<sup>1</sup>, A.J. Biacchi<sup>1</sup>, E. Correa<sup>1</sup>, K.N. Quelhas<sup>1</sup>, M. Henn<sup>1,4</sup>, W.L. Tew<sup>1</sup>, A.R. Hight Walker<sup>1</sup>, C. Dennis<sup>1</sup>, M.J. Donahue<sup>1</sup> and S.I. Woods<sup>1</sup> 1. National Institute of Standards and Technology (NIST), Gaithersburg, MD, United States; 2. University of Colorado, Boulder, CO, United States; 3. National Institute of Standards and Technology (NIST), Boulder, CO, United States; 4. University of Maryland, College Park, MD, United States*

10:51

- EE-04. Superparticles with excellent superparamagnetic and hyperthermia properties for advanced biomedical applications.** *S.B. Attanayake<sup>1</sup>, M. Nguyen<sup>2</sup>, A. Chanda<sup>1</sup>, T. Randall Lee<sup>2</sup>, H. Srikanth<sup>1</sup> and M. Phan<sup>1</sup> 1. Physics, University of South Florida, Tampa, FL, United States; 2. Department of Chemistry, University of Houston, Houston, TX, United States*

11:03

- EE-05. Simulating Spin Configurations in Arrays of Spinel Ferrite Nanoparticles.** *N. Kim<sup>1</sup>, H. Chen<sup>2</sup>, H. Wang<sup>2</sup>, S. Majetich<sup>1,2</sup>, Y. Ijiri<sup>3</sup>, K. Krycka<sup>4</sup>, J.A. Borchers<sup>4</sup> and J. Rhyne<sup>4</sup> 1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 3. Physics and Astronomy, Oberlin College, Oberlin, OH, United States; 4. NIST, Gaithersburg, MD, United States*

11:15

- EE-06. Gænice: a general model for magnon band structure of artificial spin ices.** *G. Alatteili<sup>1</sup>, V. Martinez<sup>1</sup>, A. Roxburgh<sup>1</sup>, J.C. Gartside<sup>2</sup>, O. Heinonen<sup>3</sup>, S. Gliga<sup>4</sup> and E. Jacocca<sup>1</sup> 1. University of Colorado Colorado Springs, Colorado Springs, CO, United States; 2. Imperial College London, London, United Kingdom; 3. Seagate Technology, Bloomington, MN, United States; 4. Paul Scherrer Institute, Villigen PSI, Switzerland*

11:27

- EE-07. Giant Uniaxial Magnetic Anisotropy and Zero-Field-Cooled Exchange Bias in Half-Metallic Compensated Ferrimagnetic CrFeS<sub>2</sub> Single Crystals.** *J. Liang<sup>1,2</sup>, X. Xi<sup>1</sup>, W. Wang<sup>3</sup> and Y. Lau<sup>1,2</sup> 1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. Tiangong University, Tianjin, China*

11:39

- EE-08. **Effect of *fcc* to *bcc* Transformation on Exchange Bias in Single-Layer FeCoNiMnAl<sub>x</sub> Thin Films.** *W. Beeson*<sup>1</sup>, *D. Bista*<sup>1</sup>, *G. Yin*<sup>1</sup> and *K. Liu*<sup>1</sup> *1. Department of Physics, Georgetown University, Washington, DC, United States*

11:51

- EE-09. **Modelling of magnetic nanoparticle dipole-dipole interactions in random clusters for hyperthermia application.** *R. Ferrero*<sup>1</sup>, *M. Vicentini*<sup>1</sup> and *A. Manzin*<sup>1</sup> *1. Istituto Nazionale di Ricerca Metrologica (INRiM), Torino, Italy*

THURSDAY  
MORNING  
8:30

PEGASUS A

**Session EF**  
**HARD MAGNETIC MATERIALS II**

*J. Ping Liu*, Chair  
University of Texas at Arlington, Arlington, TX, United States

8:30

- EF-01. **Production of Sm<sub>2</sub>Fe<sub>17</sub>N<sub>3</sub> magnets.** *T. Saito*<sup>1</sup> *1. Chiba Institute of Technology, Narashino, Japan*

8:42

- EF-02. **Engineering grain boundary for high performance Dy-free-NdFeB sintered magnets with Pr-Al-Cu additions.** *W. Tang*<sup>1</sup>, *G. Ouyang*<sup>1</sup>, *J. Wang*<sup>1</sup>, *H. Dasari*<sup>2</sup>, *M.J. Kramer*<sup>1,2</sup>, *J. Cui*<sup>1,2</sup> and *I. Anderson*<sup>1,2</sup> *1. Ames National Laboratory, Ames, IA, United States; 2. Materials Science & Engineering, Iowa State University, Ames, IA, United States*

8:54

- EF-03. **Achieving optimal processing of grinding sludge in the manufacturing of Sm<sub>2</sub>Co<sub>17</sub> magnets to contribute to a waste-free economy.** *S. Khoshsima*<sup>1</sup>, *F. Kafexhiu*<sup>1</sup>, *T. Tomse*<sup>1</sup>, *K. Zuzek*<sup>1,2</sup> and *S. Sturm*<sup>1,2</sup> *1. Nanostructured Materials, Institute Jozef Stefan, Ljubljana, Slovenia; 2. Jozef Stefan International Postgraduate School, Ljubljana, Slovenia*

9:06

- EF-04. **Magnetic and crystalline microstructures of dual-main-phase (Nd, Ce)-Fe-B sintered magnets.** *Y. Xiao*<sup>1</sup>, *Y. Fang*<sup>1</sup>, *T. Liu*<sup>1</sup>, *M. Zhu*<sup>1</sup> and *W. Li*<sup>1</sup> *1. Central Iron and Steel Research Institute, Beijing, China*

9:18

- EF-05. **Withdrawn**

- EF-06. Efficient Hybrid NdFeB – SmFeN Bonded Magnets.** *H.G. Parmar<sup>1</sup>, M.P. Paranthaman<sup>2</sup> and C.I. Nlebedim<sup>1</sup> 1. Critical Materials Institute, Ames National Laboratory, Ames, IA, United States; 2. Critical Materials Institute, Oak Ridge National Laboratory, Tennessee, IA, United States*

9:30

- EF-07. Correlating the Degree of Alignment and Physical Interactions During the Processing of Anisotropic Bonded Magnets.** *C.I. Nlebedim<sup>1</sup>, X. Liu<sup>1</sup> and M.P. Paranthaman<sup>2</sup> 1. Division of Critical Materials, Ames National Laboratory, Ames, IA, United States; 2. Nanomaterials Chemistry Group, Oak Ridge National Laboratory, Oak Ridge, TN, United States*

9:42

Break

10:15

- EF-08. Intrinsically hard magnetic TbCu<sub>7</sub>-type Sm-Fe based compounds with high anisotropy field.** *D. Angayarkanni Ramamurthy<sup>1,2</sup>, D. Ogawa<sup>1</sup>, P. Tozman Karanikolas<sup>1</sup>, H. Sepehri-Amin<sup>1,2</sup>, K. Hono<sup>1,2</sup> and Y. Takahashi<sup>1</sup> 1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Science and Technology, University of Tsukuba, Tsukuba, Japan*

10:27

- EF-09. Electronic structure and magnetocrystalline anisotropy of W-type hexaferrites.** *R. Islam<sup>1</sup>, S.P. Madsen<sup>1</sup> and M. Christensen<sup>2</sup> 1. Mechanical and Production Engineering, Aarhus University, Aarhus, Denmark; 2. Center for Materials Crystallography, Department of Chemistry and Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Aarhus, Denmark*

10:39

- EF-10. The Magnetic Anisotropy of Field-Assisted 3D Printed Nylon Strontium Ferrite Composites.** *O.K. Arigbabowo<sup>2</sup>, M. Khadka<sup>1</sup>, J. Tate<sup>2,1</sup> and W. Geerts<sup>2,3</sup> 1. Ingram School of Engineering, Texas State University, San Marcos, TX, United States; 2. Materials Science, Engineering, and Commercialization, Texas State University, San Marcos, TX, United States; 3. Department of Physics, Texas State University, San Marcos, TX, United States*

10:51

- EF-11. Crystal Anisotropy of Strontium Ferrite and PA-12 3D Fused Filament Fabrication (FFF).** *G.L. Espinosa Rodriguez<sup>1</sup>, J. Alvarado<sup>2</sup>, O.K. Arigbabowo<sup>3</sup>, J. Tate<sup>2,3</sup> and W. Geerts<sup>1,3</sup> 1. Physics, Texas State University, San Marcos, TX, United States; 2. Ingram School of Engineering, Texas State University, San Marcos, TX, United States; 3. Materials Science, Engineering, and Commercialization, Texas State University, San Marcos, TX, United States*

11:03

- EF-12. 4f-electrons driven giant magnetic and optical anisotropy in site-substituted M-type strontium-hexaferrite.** *D. Paudyal<sup>1</sup> and C. Bhandari<sup>1</sup> 1. Ames Laboratory, Ames, IA, United States*

11:15

**EF-13. Magnetic Hardening of Iron Carbide Nanocrystals.**

J. Mohapatra<sup>1</sup>, X. Meiyang<sup>1</sup>, P. Joshi<sup>1</sup>, N.A. Molwani<sup>1</sup>, J. Ruiz<sup>1</sup> and J. Liu<sup>1</sup> *1. Department of Physics, University of Texas at Arlington, Arlington, TX, United States*

11:27

**EF-14. Thermal Stability and Intrinsic Magnetism of Mn-Bi-Ge alloys: A Potential Gap Permanent Magnet.**

U. Enkhtur<sup>1</sup>, T. Ochirkhuyag<sup>1</sup>, K. Odbadrakh<sup>2</sup> and O. Dorj<sup>1,3</sup> *1. Department of Physics, Incheon National University, Incheon, The Republic of Korea; 2. National Institute for Computational Sciences, Oak Ridge, TN, United States; 3. Institute of Physics and Technology, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia*

THURSDAY  
MORNING  
8:30

PEGASUS B

**Session EG**

**NEW APPLICATIONS AND SENSORS AND OTHER  
EMERGING TOPICS**

Minh-Hai Nguyen, Chair  
Kepler Computing, Milpitas, CA, United States

8:30

**EG-01. Induction Heating of Magnetic Nanoparticles for Catalytic Hydrogen Production. (Invited)** C. Frandsen<sup>1</sup> *1. Physics, Technical University of Denmark, Kgs. Lyngby, Denmark*

9:06

**EG-02. Materials Informatics for Magnetic Materials Discovery.** N. Morley<sup>1</sup>, R. Rowan-Robinson<sup>1</sup> and Z. Leong<sup>1</sup> *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom*

9:18

**EG-03. Withdrawn**

9:18

**EG-04. Demonstration of a Magnetic Odometer for Downhole Robots.** H.R. Seren<sup>1</sup>, M. Deffenbaugh<sup>1</sup> and M. Larbi Zeghlache<sup>2</sup> *1. Houston Research Center, Aramco Americas, Houston, TX, United States; 2. EXPEC-ARC, Saudi Aramco, Dhahran, Saudi Arabia*

9:30

**EG-06. Electroless Deposition of NiFe on Flexible Substrate: Towards Wearable Magnetic Devices for High-Temperature Applications.** K. Akhil<sup>1</sup>, I.P. Seetoh<sup>1</sup>, X. Chen<sup>1</sup>, G. Lim<sup>1</sup> and C. Lai<sup>1</sup> *1. Temasek Laboratories, Nanyang Technological University, Singapore, Singapore, Singapore*

9:42

Break

10:15

- EG-05. High-Frequency Electromagnetic Characterization of Magnetic Nanoparticles. (Invited)** *J. Marqués-Fernández<sup>1</sup>, J.C. García-Martínez<sup>1</sup>, M. Salvador<sup>1</sup> and M. Rivas<sup>1</sup>* *1. Applied Physics, Universidad de Oviedo, Gijón, Spain*

10:51

- EG-07. Design and Characterization of High-Resolution Embedded Magnetic Thermometers for Thermal Magnetic Particle Imaging.** *F.M. Abel<sup>1</sup>, T.Q. Bui<sup>1</sup>, E. De Lima Correa<sup>1</sup>, A.J. Biacchi<sup>1</sup>, M.J. Donahue<sup>1</sup>, S.I. Woods<sup>1</sup>, A.R. Hight Walker<sup>1</sup> and C. Dennis<sup>1</sup>* *1. National Institute of Standards and Technology, Gaithersburg, MD, United States*

11:03

- EG-08. Symmetry and energetics of relaxation pathways in nanomagnetic clusters.** *F. Barrows<sup>2</sup>, I. Tapia<sup>1</sup>, P. Mellado<sup>1</sup> and H. Arava<sup>3</sup>* *1. Adolfo Ibáñez University, Santiago, Chile; 2. Los Alamos National Laboratory, Los Alamos, NM, United States; 3. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States*

11:15

- EG-09. Withdrawn**

11:15

- EG-10. Electromagnetic Noise Suppression of 26–30 GHz Range Harmonics from Switching Semiconductor Chips Using Spinodally Decomposed Fe–Cr–Co Flake Composite.** *M. Yamaguchi<sup>1</sup>, Y. Miyazawa<sup>1</sup>, S. Sugimoto<sup>2</sup>, S. Ashida<sup>3</sup>, K. Watanabe<sup>4</sup>, R. Sakai<sup>3</sup>, H. Uehara<sup>3</sup>, M. Nagata<sup>3</sup> and S. Tanaka<sup>3</sup>* *1. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan; 2. Department of Materials Science, Tohoku University, Sendai, Japan; 3. Graduate School of Science, Technology and Innovation, Kobe University, Kobe, Japan; 4. Radio Research Institute, National Institute of Information and Communications Technology, Koganei, Japan*

11:27

- EG-11. Development of sensing carbon fiber composites with continuous ferromagnetic microwires.** *V. Zhukova<sup>2,3</sup>, R. Garcia-Etxabe<sup>1</sup>, J. Malm<sup>4</sup>, C. Johansson<sup>4</sup>, F. Vallejo<sup>5</sup>, P. Olaskoaga<sup>5</sup>, M. Ipatov<sup>2,3</sup> and A. Zhukov<sup>2,3</sup>* *1. GAIKER Technology Centre, Basque Research and Technology Alliance (BRTA), Spain, Zamudio, Spain; 2. Dept. Advanced Polymers and Materials, University of Basque Country, UPV/EHU, San Sebastian, Spain; 3. Dept. Appl. Phys., University of Basque Country, UPV/EHU, San Sebastian, Spain; 4. Digital Systems, RISE Research Institutes of Sweden, Göteborg, Sweden; 5. IDEKO Technology Center, Basque Research and Technology Alliance (BRTA), Elgoibar, Spain*

**Session EP**  
**MAGNETIC TUNNEL JUNCTIONS AND DEVICES**  
**(Poster Session)**

Minori Goto, Chair  
Osaka University, Toyonaka, Japan

- EP-01. The role of capping layers on tunneling magnetoresistance and microstructure in CoFeB/MgO/CoFeB magnetic tunnel junctions upon annealing.** G. Kim<sup>1</sup>, S. Lee<sup>1</sup>, B. Park<sup>1</sup>, M. Lee<sup>2</sup> and Y. Kim<sup>2</sup> 1. KAIST, Daejeon, The Republic of Korea; 2. Korea University, Seoul, The Republic of Korea
- EP-03. Temperature Dependence of 1/f Noise in MTJs with Various Thickness of MgO Barrier Layers.** Y. Wang<sup>3</sup>, M. Al-Mahdawi<sup>1</sup>, Z. Jin<sup>2</sup> and M. Oogane<sup>3,1</sup> 1. CSIS, Tohoku University, Sendai, Japan; 2. State Key Laboratory of Transducer Technology, Aerospace Information Research Institute (AIR), Chinese Academy of Sciences, Beijing, China; 3. Department of Applied Physics, Tohoku University, Sendai, Japan
- EP-04. L1<sub>0</sub> FePd-Based Perpendicular Magnetic Tunnel Junctions with 65% Tunnel Magnetoresistance and Ultralow Switching Current Density.** D. Lyu<sup>1</sup>, J.E. Shoup<sup>2</sup>, A.T. Habiboglu<sup>3</sup>, Q. Jia<sup>1</sup>, P. Khanal<sup>3</sup>, B.R. Zink<sup>1</sup>, Y. Lv<sup>1</sup>, B. Zhou<sup>3</sup>, D.B. Gopman<sup>2</sup>, W. Wang<sup>3</sup> and J. Wang<sup>1</sup> 1. University of Minnesota, Minneapolis, MN, United States; 2. National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. University of Arizona, Tucson, AZ, United States
- EP-05. Withdrawn**
- EP-06. Improved Robustness against Magnetic Field in Spin-Orbit-Torque-Based Physical Unclonable Functions through Write-Back Operation.** D. Koh<sup>1</sup>, J. Kang<sup>1</sup>, T. Kim<sup>3</sup>, J. Lee<sup>2</sup>, J. Kwon<sup>2</sup>, S. Lee<sup>1</sup>, J. Park<sup>3</sup> and B. Park<sup>1</sup> 1. KAIST, Daejeon, The Republic of Korea; 2. Hyundai Motor Company, Hwaseong, The Republic of Korea; 3. Korea University, Seoul, The Republic of Korea
- EP-10. Now VP9-16**
- EP-12. Modulation of binary stochastic switching behavior in an imperfect perpendicularly magnetized magnetic tunnel junction.** J. Kwon<sup>1</sup>, S. Karki<sup>1</sup>, C. Cui<sup>1</sup>, H. Jin<sup>1</sup>, S. Liu<sup>1</sup>, S.G. Cardwell<sup>2</sup>, C.D. Schuman<sup>3</sup>, J. Smith<sup>2</sup>, S. Misra<sup>2</sup>, J.B. Aimone<sup>2</sup> and J.C. Incorvia<sup>1</sup> 1. Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States; 3. Electrical Engineering and Computer Science, University of Tennessee, Knoxville, TN, United States



- EP-13. Laser induced ultrafast magnetization reversal of Tb/Co-based Magnetic Tunnel Junctions.** D. Salomoni<sup>1</sup>, E.A. Tremsina<sup>2,1</sup>, Y. Peng<sup>3</sup>, L. Farcis<sup>1</sup>, S. Auffret<sup>1</sup>, M. Hehn<sup>3</sup>, G. Malinowski<sup>3</sup>, S. Mangin<sup>3</sup>, B. Dieny<sup>1</sup>, L.D. Buda-Prejbeanu<sup>1</sup>, R. Sousa<sup>1</sup> and I. Prejbeanu<sup>1</sup> *1. Univ. Grenoble Alpes/CNRS/CEA, SPINTEC, Grenoble, France; 2. Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA, United States; 3. Institut Jean Lamour, UMR CNRS 7198, Université de Lorraine, Nancy, France*
- EP-14. Structural and Magnetic Properties of RuFe.** S. Myrtle<sup>1</sup>, J. Besler<sup>1</sup>, M. Rojas<sup>1</sup>, D.H. Ryan<sup>2</sup>, R. Hübner<sup>3</sup>, P. Omelchenko<sup>1</sup>, Z.R. Nunn<sup>1</sup> and E. Girt<sup>1</sup> *1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Physics, McGill University, Montreal, QC, Canada; 3. Structural Analysis Electron Microscopy Laboratory, Institute of Ion Beam Physics and Materials Research, Dresden, Germany*
- EP-15. Chirality-Dependent Magnetoresistance through Highly Distorted 2D Chiral Hybrid Perovskites at Room Temperature.** I. Hwang<sup>1</sup>, M. Kang<sup>1</sup> and B. Park<sup>1</sup> *1. Department of Materials Science & Engineering, KAIST, Daejeon, The Republic of Korea*
- EP-16. Strong perpendicular magnetic anisotropy at Ta/CoFeB/MgO-based MTJs via microwave annealing.** L. Chang<sup>1</sup>, Y. Ho<sup>1,2</sup>, Y. Cheng<sup>1</sup> and S. Lee<sup>3</sup> *1. Mechanical and Mechatronics Systems Research Labs, Industrial Technology Research Institute (ITRI), Hsinchu County, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

THURSDAY  
MORNING  
9:00

MARSALIS HALL A

**Session EQ**  
**THIN FILMS, MULTILAYERS AND INTERFACE**  
**EFFECTS II**  
**(Poster Session)**

Dustin Gilbert, Chair  
University of Tennessee, Gaithersburg, MD, United States

- EQ-01. Optimization of Electromagnetic Microwave Absorption Performance for Fe<sub>50</sub>Co<sub>50</sub>/C-aerogel Composites.** C. Zhao<sup>1</sup>, S. Lv<sup>1</sup>, L. Song<sup>1</sup>, J. He<sup>1</sup> and D. Zhao<sup>1</sup> *1. Central Iron and Steel Research Institute, Beijing, China*
- EQ-02. Temperature Dependence of the Ferromagnetic Resonance Linewidth in a Weyl Semimetal Co<sub>2</sub>MnGa Thin Film.** N. Alzahrani<sup>1,2</sup>, N. Schulz<sup>1</sup>, A. Chanda<sup>1</sup>, M. Phan<sup>1</sup>, H. Srikanth<sup>1</sup>, D. Arena<sup>1</sup>, A. Markou<sup>3</sup> and C. Felser<sup>4</sup> *1. Physics, University of South Florida, Tampa, FL, United States; 2. Physics, University of Jeddah, Jeddah, Saudi Arabia; 3. Physics, University of Ioannina, Ioannina, Greece; 4. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

- EQ-03. Effect of MgO thickness on CoFe/MgO and CoFe/MgO/CoFe interfaces.** S. Ahn<sup>1</sup> 1. Pohang University of Science and Technology, Pohang, The Republic of Korea
- EQ-04. Magnetic properties of Er film obtained by pulsed laser deposition.** E. Rohde<sup>1,2</sup>, T.J. Del Rose<sup>2</sup> and Y. Mudryk<sup>2</sup>  
1. Department of Materials Science and Engineering, Iowa State University, Ames, IA, United States; 2. Ames National Laboratory of US DOE, Iowa State University, Ames, IA, United States
- EQ-05. GdFe-based nanostructured thin films with large perpendicular magnetic anisotropy for Spintronic applications.** M. Salaheldeen<sup>1,2</sup>, V. Zhukova<sup>1,3</sup>, M. Ipatov<sup>1,3</sup> and A. Zhukov<sup>1,3</sup> 1. Department of Polymers and Advanced Materials, University of the Basque Country, UPV/EHU, San Sebastian, Spain; 2. Physics, Sohag University, Sohag, Egypt; 3. Department of Applied Physics I, EIG, University of Basque Country, UPV/EHU, San Sebastian, Spain
- EQ-07. Temperature dependence of interlayer exchange fields in permalloy based synthetic antiferromagnets.** J. Sklenar<sup>1</sup>, K. Deng<sup>2</sup>, B. Flebus<sup>2</sup> and M. Subedi<sup>1</sup> 1. Wayne State University, Detroit, MI, United States; 2. Boston College, Chestnut Hill, MA, United States
- EQ-08. Static and Dynamic Magnetic Properties of Iron Oxide Nanoparticles in Colloid and Embedded in Polymer Nanocomposites.** E. Correa<sup>1</sup>, F.M. Abel<sup>1</sup>, C. Gruettner<sup>2</sup>, J.E. Seppala<sup>1</sup> and C. Dennis<sup>1</sup> 1. National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. Micromod Partikeltechnologie, Rostock, Germany
- EQ-09. Epitaxial Ru-Mo(0001) Thin Films with Nano-Scale Resistivity Gradient for Charge-Spin Conversion.** K. Tang<sup>1,2</sup>, C. He<sup>1</sup>, Z. Wen<sup>1</sup>, H. Sukegawa<sup>1</sup>, T. Ohkubo<sup>1</sup>, Y. Nozaki<sup>3</sup> and S. Mitani<sup>1,2</sup> 1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Science and Technology, University of Tsukuba, Tsukuba, Japan; 3. Department of Physics, Keio University, Yokohama, Japan
- EQ-10. Withdrawn**
- EQ-11. Compositionally magnetostrictive effect of Ta/CoFe(B)/MgO films with perpendicular magnetic anisotropy.** S. Ahn<sup>1</sup>  
1. Pohang University of Science and Technology, Pohang, The Republic of Korea
- EQ-12. Characterization of Magnetic Properties in (FeCo)<sub>1-x</sub>Gd<sub>x</sub> Ferrimagnetic Thin Films: Magnetometry and Spectroscopic Studies.** N. Alzahrani<sup>1,2</sup>, S. Saha<sup>4,3</sup>, R. Knut<sup>3</sup>, C. Luo<sup>5</sup>, F. Radu<sup>5</sup> and D. Arena<sup>1</sup> 1. Department of Physics, University of South Florida, Tampa, FL, United States; 2. Department of Physics, University of Jeddah, Jeddah, Saudi Arabia; 3. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 4. Department of Physics, Ashoka University, Sonapat, India; 5. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany

- EQ-13. Antiferromagnetic Coupling in Co/RuY/Co (Y = Co and Fe).** Z.R. Nunn<sup>1</sup>, J. Besler<sup>1</sup>, K.D. Winther<sup>1</sup>, S. Arapan<sup>2</sup>, D. Legut<sup>2</sup>, F. Schulz<sup>3</sup>, E. Goering<sup>3</sup>, T. Mckinnon<sup>1</sup>, S. Myrtle<sup>1</sup> and E. Girt<sup>1</sup>  
*1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. IT4Innovations, VSB Technical University of Ostrava, Ostrava, Czechia; 3. Modern Magnetic Systems, Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany*
- EQ-15. Influence of Gd substitution on the structure and magnetic properties of pulsed laser deposited Sr M-type hexaferrite thin films.** K.A. Murphy<sup>1</sup>, O. Fitchorova<sup>4,2</sup>, W. Liang<sup>3</sup> and V.G. Harris<sup>1</sup>  
*1. Center for Microwave Magnetic Materials and Integrated Circuits, Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, United States; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, United States; 3. Kostas Advanced Nano-Characterization Facility, Innovation Campus at Burlington MA, Northeastern University, Burlington, MA, United States; 4. KRI at Northeastern University, LLC, Burlington, MA, United States*

THURSDAY  
 MORNING  
 9:00

MARSALIS HALL A

**Session ER**  
**MAGNETOELECTRIC MATERIALS**  
**(Poster Session)**

Markus Goessler, Chair  
 Chemnitz University of Technology, Chemnitz, Germany

- ER-01. FeGaB Alloys for Magnetoelastic Coupling at Microwave Frequencies.** Z. Zhang<sup>1</sup> and A. Hoffmann<sup>1</sup>  
*1. Department of Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States*
- ER-02. Doping effect on magnetic properties of high-temperature multiferroic compound YBaCuFeO<sub>5</sub>.** Y. Yasui<sup>1</sup>, S. Kihara<sup>1</sup>, K. Ikeda<sup>1</sup> and T. Banshodani<sup>1</sup>  
*1. Physics, Meiji University, Kawasaki, Japan*
- ER-03. Enhanced Tunneling Electroresistance in Multiferroic Tunnel Junctions Through the Barrier Insulating-Metallic Transition.** B. Chi<sup>1</sup>, L. Jiang<sup>1</sup> and X. Han<sup>1</sup>  
*1. Institute of Physics CAS, Beijing, China*
- ER-04. Withdrawn**
- ER-05. Converse magnetoelectric response and tunable inductance in BaTiO<sub>3</sub>:BaFe<sub>12</sub>O<sub>19</sub> composites.** P. Mola II<sup>2</sup>, S.C. Mills<sup>3</sup>, T.R. Mion<sup>1</sup> and M. Staruch<sup>3</sup>  
*1. NOVA Research, Alexandria, VA, United States; 2. NREIP Intern, U.S. Naval Research Laboratory, Washington, DC, United States; 3. U.S. Naval Research Laboratory, Washington, DC, United States*

**ER-06. Electronic Transport in Structural Domains of Multiferroic SrMnO<sub>3</sub>.** J. van Rijn<sup>1</sup>, I. Bhaduri<sup>1</sup> and T. Banerjee<sup>1</sup> *1. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

**ER-07. Withdrawn**

**ER-08. Withdrawn**

**ER-09. Interfacial band structure of BaTiO<sub>3</sub>/La<sub>0.8</sub>Sr<sub>0.2</sub>MnO<sub>3</sub> multiferroic heterostructures probed with angle resolved photoemission spectroscopy.** F. Stramaglia<sup>1</sup>, M. Husanu<sup>2</sup>, V.N. Strocov<sup>1</sup>, F. Alarab<sup>1</sup>, F. Nolting<sup>1</sup> and C.A. Vaz<sup>1</sup> *1. Swiss Light Source, Paul Scherrer Institut, Villigen PSI, Switzerland; 2. National Institute of Materials Physics, Magurele, Romania*

**ER-10. Voltage-Controlled Easy-Cone States for Energy Efficient Spintronic Devices.** Y. Park<sup>1</sup>, J. Jeong<sup>1</sup>, Y. Jang<sup>3</sup>, M. Kang<sup>1</sup>, S. Lee<sup>1</sup>, J. Kang<sup>1</sup>, J. Park<sup>3</sup>, K. Lee<sup>2</sup> and B. Park<sup>1</sup> *1. Material Science and Engineering, KAIST, Daejeon, The Republic of Korea; 2. KAIST, Daejeon, The Republic of Korea; 3. Korea University, Seoul, The Republic of Korea*

**ER-11. Reversible controlling of perpendicular magnetic anisotropy in Co/Pd multilayers via gateless hydrogen absorption/desorption.** R. Shen<sup>2</sup>, C. Chen<sup>3</sup>, Y. Tang<sup>3</sup>, W. Lin<sup>4</sup> and J. Hong<sup>1</sup> *1. Department of Physics, Tamkang University, New Taipei City, Taiwan; 2. Bachelor's Program in Advance Materials Science, Tamkang University, New Taipei City, Taiwan; 3. Department of Physics, National Central University, Taoyuan City, Taiwan; 4. Department of Physics, National Taiwan Normal University, Taipei City, Taiwan*

THURSDAY  
MORNING  
9:00

MARSALIS HALL A

**Session ES**  
**MAGNETICS FOR POWER ELECTRONICS**  
**AND CONTROL**  
**(Poster Session)**

Changgeng Zhang, Chair  
Hebei University of Technology, Tianjin, China

**ES-01. Vibration Analysis of a Permanent Magnet Synchronous Generator Considering Electromagnetic Vibration Sources Under AC and DC Load Conditions.** W. Jung<sup>1</sup>, H. Lee<sup>1</sup>, J. Yang<sup>1</sup>, K. Shin<sup>2</sup> and J. Choi<sup>1</sup> *1. Chungnam National University, Daejeon, The Republic of Korea; 2. Chonnam National University, Yeosu, The Republic of Korea*

- ES-02. Optimization Design and Analysis of Axial Flux Permanent Magnet Motor with Halbach Array PM rotor Based on 3D Analytical Method.** *M. Koo*<sup>1</sup>, *H. Shin*<sup>2</sup> and *K. Shin*<sup>3</sup>  
*1. Automotive Materials & Components R&D Group, Korea Institute of Industrial Technology, Gwangju, The Republic of Korea; 2. Smart Agricultural Machinery R&D Group, Korea Institute of Industrial Technology, Gimje, The Republic of Korea; 3. Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea*
- ES-03. Analytical Study and Experimental Verification for Electromagnetic Characteristics of Surface Mounted Permanent Magnet Synchronous Machine considering Semi-Closed Slot.** *J. Yang*<sup>1</sup>, *H. Lee*<sup>1</sup>, *M. Nguyen*<sup>1</sup>, *T. Kim*<sup>1</sup>, *K. Shin*<sup>2</sup>, *Y. Kim*<sup>3</sup> and *J. Choi*<sup>1</sup> *1. Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Power System Engineering, Chonnam National University, Chonnam, The Republic of Korea; 3. Biosystems Machinery Engineering, Chungnam National University, Daejeon, The Republic of Korea*
- ES-04. Comparative Study on Heteropolar/Homopolar Magnetic Bearings for High-Speed Rotating Applications.** *S. Noh*<sup>1</sup>, *J. Park*<sup>1</sup>, *K. Shin*<sup>2</sup> and *H. Cho*<sup>3</sup> *1. Department of Convergence System Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Department of Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea; 3. Department of Electric, Electronic and Communication Engineering Education, Chungnam National University, Daejeon, The Republic of Korea*
- ES-05. Experimental Verification and Electromagnetic Analysis of Axial Flux Permanent Magnet Motor Using the Subdomain Method.** *J. Yang*<sup>1</sup>, *H. Lee*<sup>1</sup>, *S. Kim*<sup>1</sup>, *W. Jung*<sup>1</sup>, *K. Shin*<sup>2</sup>, *Y. Kim*<sup>3</sup> and *J. Choi*<sup>1</sup> *1. Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Power System Engineering, Chonnam National University, Chonnam, The Republic of Korea; 3. Biosystems Machinery Engineering, Chungnam National University, Daejeon, The Republic of Korea*
- ES-06. Characteristics Analysis and Experimental Study on Vibration from Electromagnetic Excitation Source of Permanent Magnet Synchronous Generator using Subdomain Method.** *K. Shin*<sup>1</sup>, *J. Choi*<sup>2</sup>, *K. Kim*<sup>3</sup> and *H. Cho*<sup>2</sup>  
*1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea*
- ES-07. Characteristic Analysis of Bearingless Motor Considering 3D Leakage Flux Using Equivalent Multilayer Method.** *M. Koo*<sup>1</sup>, *H. Shin*<sup>2</sup> and *K. Shin*<sup>3</sup> *1. Automotive Materials & Components R&D Group, Korea Institute of Industrial Technology, Gwangju, The Republic of Korea; 2. Smart Agricultural Machinery R&D Group, Korea Institute of Industrial Technology, Gimje, The Republic of Korea; 3. Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea*

- ES-08. Characteristic analysis for Improving Detent Force of Linear Oscillatory Generator with Spring Permanent Magnet for Stirling Engines Based on Subdomain Method.** K. Shin<sup>1</sup>, J. Choi<sup>2</sup>, H. Cho<sup>2</sup>, M. Koo<sup>3</sup>, K. Lee<sup>3</sup> and S. Lee<sup>3</sup>  
*1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Institute of Industrial Technology, Gwangju, The Republic of Korea*
- ES-09. Electromagnetic Analysis and Experimental Study of Permanent Magnet Synchronous Machine with Segmented Phase Modular Stator.** J. Lee<sup>1</sup>, K. Yu<sup>1</sup>, H. Ban<sup>1</sup>, J. Choi<sup>2</sup>, K. Kim<sup>3</sup>, H. Cho<sup>2</sup> and K. Shin<sup>1</sup> *1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea*
- ES-10. Electromagnetic Analysis of Wound Rotor Synchronous Machine using Improved Subdomain Technique considering Finite Permeability of Core.** K. Yu<sup>1</sup>, H. Ban<sup>1</sup>, J. Lee<sup>1</sup>, K. Shin<sup>1</sup>, J. Choi<sup>2</sup>, S. Sung<sup>3</sup> and J. Park<sup>3</sup> *1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea*
- ES-11. Improved Design and Analysis for Electromagnetic Performance of Magnetic Geared Permanent Magnet Machine According to Pole/Slot Combination.** K. Yu<sup>1</sup>, H. Ban<sup>1</sup>, J. Lee<sup>1</sup>, K. Shin<sup>1</sup>, J. Choi<sup>2</sup>, S. Sung<sup>3</sup> and J. Park<sup>3</sup>  
*1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea*
- ES-12. A Study on Motor Characteristics Based on Pole-Slot Combinations.** S. Kim<sup>1</sup> *1. Korea Electronics Technology Institute, Gangju Metropolitan City, The Republic of Korea*
- ES-15. Design of Continuous Repeater Power Transmission Coil for Wireless Power Transfer System for EVs with Consideration of Vehicle Deviation.** A. Saito<sup>1</sup>, Y. Oishi<sup>1</sup>, S. Miyahara<sup>3</sup>, F. Sato<sup>1</sup> and H. Matsuki<sup>2</sup> *1. Graduate School of Engineering, Tohoku Gakuin University, Sendai, Japan; 2. New Industry Creation Hatchery Center (NICHe), Tohoku University, Sendai, Japan; 3. Tohoku Gakuin University, Sendai, Japan*
- ES-16. Trade-off Between Torque Ripple and Vibration in a IPMSM by Examining the Temporal and Spatial Harmonics of Flux Density.** S. Lee<sup>1</sup>, G. Yun<sup>1</sup>, G.F. Lukman<sup>1</sup> and C. Lee<sup>1</sup>  
*1. Electrical Engineering, Pusan National University, Busan, The Republic of Korea*

**Session FA**  
**IMAGING MAGNETIC TEXTURES AT THE**  
**NANOSCALE**

Jack Gartside, Chair  
Imperial College London, London, United Kingdom

1:30

- FA-01. Tailoring Ferromagnetic and Antiferromagnetic Spin Textures in Nanostructured Complex Oxides. (Invited)** *Y. Takamura*<sup>1</sup>, *D.Y. Sasaki*<sup>1</sup>, *M. Lee*<sup>1</sup>, *R.V. Chopdekar*<sup>2</sup>, *A. Scholl*<sup>2</sup>, *S.T. Retterer*<sup>3</sup>, *P.S. Rickhaus*<sup>4</sup> and *J. Lenz*<sup>4</sup> *1. Materials Science and Engineering, University of California, Davis, Davis, CA, United States; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, United States; 4. QNami, Muttentz, Switzerland*

2:06

- FA-02. Direct imaging of electrical control of the magnetic texture in a multiferroic oxide. (Invited)** *P. Meisenheimer*<sup>1</sup>, *S. Zhou*<sup>2</sup>, *H. Zhang*<sup>1</sup>, *L.M. Caretta*<sup>2</sup>, *P. Stevenson*<sup>3</sup> and *R. Ramesh*<sup>1,4</sup> *1. University of California, Berkeley, Berkeley, CA, United States; 2. Brown University, Providence, RI, United States; 3. Northeastern University, Boston, MA, United States; 4. Rice University, Houston, TX, United States*

2:42

**Break**

3:15

- FA-03. Tracking 3D Magnetic Topological Nanodefects with X-rays. (Invited)** *M. Di Pietro Martínez*<sup>1</sup> *1. MPI-CPFS, Dresden, Germany*

3:51

- FA-04. Strain- and Strain-gradient-induced Phenomena in Cr<sub>2</sub>O<sub>3</sub>. (Invited)** *O. Pylypovskiy*<sup>1,2</sup> *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Kyiv Academic University, Kyiv, Ukraine*

4:27

- FA-05. Scanning Nitrogen-Vacancy Magnetometry of 2D Magnets. (Invited)** *M. Tschudin*<sup>1</sup>, *D. Broadway*<sup>1</sup>, *P. Reiser*<sup>1</sup>, *C. Schrader*<sup>1</sup> and *P. Maletinsky*<sup>1</sup> *1. University of Basel, Basel, Switzerland*

**Session FB**  
**ANTIFERROMAGNETS: NON-COLLINEAR SPIN  
STRUCTURES AND DYNAMICS**

Dominik Kriegner, Chair  
Czech Academy of Science, Prague, Czechia

1:30

- FB-01. Spin Polarized Tunneling in Antiferromagnet/Insulator/  
Ferromagnet Tunnel Junctions.** C. Chou<sup>1,2</sup>, B.C. McGoldrick<sup>2</sup>,  
T. Nguyen<sup>3</sup>, S. Ghosh<sup>4</sup>, A. Mkhoyan<sup>4</sup>, M. Li<sup>3</sup> and L. Liu<sup>2</sup>  
*1. Department of Physics, Massachusetts Institute of Technology,  
Cambridge, MA, United States; 2. Department of Electrical  
Engineering and Computer Science, Massachusetts Institute of  
Technology, Cambridge, MA, United States; 3. Department of  
Nuclear Science and Engineering, Massachusetts Institute of  
Technology, Cambridge, MA, United States; 4. Department of  
Chemical Engineering and Materials Science, University of  
Minnesota, Minneapolis, MN, United States*

1:42

- FB-02. Extraordinary Tunneling Magnetoresistance in  
Antiferromagnetic Tunnel Junctions with Antiperovskite  
Electrodes.** G. Gurung<sup>1,2</sup>, D. Shao<sup>3</sup> and E. Tsymbal<sup>1</sup>  
*1. Department of Physics and Astronomy, University of Nebraska-  
Lincoln, Lincoln, NE, United States; 2. Trinity College, University  
of Oxford, Oxford, United Kingdom; 3. Key Laboratory of  
Materials Physics, Institute of Solid-State Physics, HFIPS,  
Chinese Academy of Sciences, Hefei, China*

1:54

- FB-03. Comprehensive study of crystalline structure, magnetic and  
magnetotransport properties of Mn<sub>3</sub>Sn thin films with various  
thicknesses.** S. Wakabayashi<sup>4,3</sup>, J. Yoon<sup>4,3</sup>, K. Gas<sup>1,5</sup>, Y. Takeuchi<sup>6</sup>,  
Y. Yamane<sup>4,2</sup>, T. Uchimura<sup>4,3</sup>, Y. Sato<sup>4,3</sup>, K. Kishi<sup>4,3</sup>, S. Kanai<sup>4,1</sup>,  
M. Sawicki<sup>5</sup>, H. Ohno<sup>4,1</sup> and S. Fukami<sup>4,1</sup> *1. CSIS, Tohoku  
University, Sendai, Japan; 2. FRIS, Tohoku University, Sendai,  
Japan; 3. Graduate School of Engineering, Tohoku University,  
Sendai, Japan; 4. Laboratory for Nanoelectronics and Spintronics,  
RIEC, Tohoku University, Sendai, Japan; 5. Institute of Physics,  
Polish Academy of Sciences, Aleja Lotnikow, Poland; 6. WPI-AIMR,  
Tohoku University, Sendai, Japan*

2:06

- FB-04. Interfacial Dzyaloshinskii-Moriya interaction in a non-  
collinear antiferromagnet/heavy metal heterostructure.**  
T. Uchimura<sup>1,2</sup>, Y. Yamane<sup>1,3</sup>, T. Dohi<sup>1</sup>, J. Han<sup>1</sup>, J. Yoon<sup>1,2</sup>,  
Y. Sato<sup>1,2</sup>, S. Wakabayashi<sup>1,2</sup>, Y. Takeuchi<sup>4</sup>, S. Kanai<sup>1,5</sup>, J. Ieda<sup>6</sup>,  
H. Ohno<sup>1,5</sup> and S. Fukami<sup>1,5</sup> *1. RIEC, Tohoku University, Sendai,  
Japan; 2. Grad. Sch. Eng., Tohoku University, Sendai, Japan;  
3. FRIS, Tohoku University, Sendai, Japan; 4. WPI-AIMR, Tohoku  
University, Sendai, Japan; 5. CSIS, Tohoku University, Sendai,  
Japan; 6. ASRC, JAEA, Ibaraki, Japan*



2:18

- FB-05. Large Anomalous Hall Effect at Room Temperature in a Fermi-Level-Tuned Kagome Antiferromagnet  $Mn_3Ga$ .** L. Song<sup>1</sup>, F. Zhou<sup>2</sup>, H. Li<sup>2</sup>, X. Xi<sup>1</sup>, Y. Lau<sup>1,3</sup> and W. Wang<sup>2</sup>  
*1. Chinese Academy of Sciences, Institute of Physics, Beijing, China; 2. Tiangong University, Tianjin, China; 3. University of Chinese Academy of Sciences, Beijing, China*

2:30

- FB-06. Now VP11-13**

2:30

- FB-07. Withdrawn**

2:30

- FB-08. THz magnetism of antiferromagnetic  $CoF_2$  and  $NiO/Pt$  in the non-collinear phase.** *T.W. Metzger*<sup>1</sup>, K. Grishunin<sup>1</sup>, P. Fischer<sup>2</sup>, C. Reinoffer<sup>3</sup>, R. Dubrovin<sup>4</sup>, A. Arshad<sup>5</sup>, I. Ilyakov<sup>5</sup>, T.A. de Oliveira<sup>5</sup>, A. Ponomaryov<sup>5</sup>, J. Deinert<sup>5</sup>, S. Kovalev<sup>5</sup>, T. Kikkawa<sup>6</sup>, E. Saitoh<sup>6</sup>, R.V. Pisarev<sup>4</sup>, M.I. Katsnelson<sup>1</sup>, B.A. Ivanov<sup>1</sup>, P.H. van Loosdrecht<sup>3</sup>, A.V. Kimel<sup>1</sup>, D. Bossini<sup>2</sup> and E.A. Mashkovich<sup>3</sup> *1. Radboud University, Nijmegen, Netherlands; 2. University of Konstanz, Konstanz, Germany; 3. University of Cologne, Cologne, Germany; 4. Ioffe Institute, St. Petersburg, Russian Federation; 5. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 6. The University of Tokyo, Tokyo, Japan*

2:42

Break

3:15

- FB-09. Withdrawn**

3:15

- FB-10. Magnetism, Spin Dynamics and Spin Transport in 2D van der Waals Antiferromagnet  $CrPS_4$ .** C. Freeman<sup>1,2</sup>, Z. Xue<sup>2</sup>, S. Khan<sup>2</sup>, O. Kazakova<sup>1</sup>, H. Kurebayashi<sup>2</sup> and M. Cubukcu<sup>1,2</sup> *1. National Physical Laboratory, Teddington, United Kingdom; 2. University College London, London, United Kingdom*

3:27

- FB-11. Picosecond-scale Encoding of Laser Pulses in Analog Antiferromagnetic Memory.** *M. Surýnek*<sup>1</sup>, J. Zubáč<sup>2,1</sup>, K. Olejník<sup>2</sup>, F. Krizek<sup>2</sup>, A. Farkaš<sup>2,1</sup>, L. Nadvorník<sup>1</sup>, P. Kubaščík<sup>1</sup>, F. Trojánek<sup>1</sup>, V. Novák<sup>2</sup>, T. Jungwirth<sup>2,3</sup> and P. Němec<sup>1</sup> *1. Faculty of Mathematics and Physics, Charles University, Prague, Czechia; 2. Institute of Physics, Czech Academy of Sciences, Prague, Czechia; 3. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

3:39

- FB-12. Anomalous Hall transport in sputtered antiferromagnetic Mn<sub>3</sub>Ga epitaxial thin films.** *M. Raju*<sup>1</sup>, *T. Higo*<sup>2,3</sup>, *D. Hamane*<sup>4</sup>, *C. Broholm*<sup>1</sup> and *S. Nakatsuji*<sup>2,1</sup> *1. Institute for Quantum Matter, Physics and Astronomy, Johns Hopkins University, Baltimore, MD, United States; 2. Department of Physics, University of Tokyo, Tokyo, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan; 4. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan*

3:51

- FB-13. Manipulating chiral-spin transport with ferroelectric polarization. (Invited)** *X. Chen*<sup>1</sup> and *R. Ramesh*<sup>1</sup> *1. University of California, Berkeley, Berkeley, CA, United States*

THURSDAY  
AFTERNOON  
1:30

REUNION A

### Session FC

## SOFT MAGNETIC MATERIALS III: CRYSTALLINE ALLOYS

Arcady Zhukov, Chair

University of Basque Country and Ikerbasque, San Sebastian, Spain

1:30

- FC-01. Designing strong and ductile soft-magnetic multicomponent alloys for harsh environment. (Invited)** *L. Han*<sup>1</sup>, *O. Gutfleisch*<sup>2</sup>, *Z. Li*<sup>3</sup> and *D. Raabe*<sup>1</sup> *1. Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany; 2. Technische Universität Darmstadt, Darmstadt, Germany; 3. Central South University, Changsha, China*

2:06

- FC-02. Design of materials with low magnetic hysteresis: the unexpected role of magnetostriction.** *A. Singh*<sup>1</sup>, *G. Grekas*<sup>1,2</sup> and *R. James*<sup>1</sup> *1. Aerospace Engineering and Mechanics, University of Minnesota, Minneapolis, MN, United States; 2. Institute of Applied and Computational Mathematics, Foundation for Research and Technology, Heraklion, Greece*

2:18

- FC-03. Microstructure and magnetic properties evolution of CoFeMn<sub>x</sub>Al<sub>y</sub>Ti<sub>z</sub> alloys.** J. Gu<sup>1,2</sup>, J. Bai<sup>3,2</sup>, Z. Leong<sup>2</sup> and N. Morley<sup>2</sup> *1. State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, Qinhuangdao, China; 2. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 3. School of Materials Science and Engineering, Northeastern University, Shenyang, China*

2:30

- FC-04. Magnetic, structural, and transport properties of Heusler alloy Cr<sub>2</sub>FeSn.** G. Karthik<sup>1</sup>, M. Muthuvel<sup>2</sup>, K. Pradeep<sup>3</sup>, S.P. Nagappan Nair<sup>4</sup> and K. Ravichandran<sup>1</sup> *1. Department of Nuclear Physics, University of Madras, Chennai, India; 2. Defense Metallurgical Research Laboratory, Defence Research and Development Organisation, Hyderabad, India; 3. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai, India; 4. Department of Physics, Indian Institute of Technology, Chennai, India*

2:42

Break

3:15

- FC-05. A little bit of Information: Spin-Crossover and Magnetic Molecules for Information Science. (Invited)** A. N'Diaye<sup>1</sup> *1. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA, United States*

3:51

- FC-06. L1<sub>0</sub>-FePd(001) and epitaxial FePd|Ir|FePd (001) Synthetic Antiferromagnets on Si/SiO<sub>2</sub> Wafers.** D. Lyu<sup>2</sup>, J.E. Shoup<sup>1</sup>, D. Huang<sup>3</sup>, X. Wang<sup>3</sup>, J. Wang<sup>2</sup> and D.B. Gopman<sup>1</sup> *1. Materials Science and Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 3. Mechanical Engineering, University of Minnesota, Minneapolis, MN, United States*

4:03

- FC-07. Study of  $\alpha''$ -phase Fe<sub>16</sub>X<sub>2-n</sub>Y<sub>n</sub> (X,Y=N, C) Alloys by Molecular Dynamics Modeling.** J. Zhu<sup>1</sup>, J. Wang<sup>1</sup> and G. Guo<sup>1</sup> *1. Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, MN, United States*

4:15

- FC-08. Chemical Anisotropy for Magnetic Anisotropy in Anti-Perovskites.** S. O'Donnell<sup>1</sup>, R.W. Smaha<sup>2</sup>, S. Mahatara<sup>2</sup>, S. Lany<sup>2</sup>, S. Bauers<sup>2</sup> and J.R. Neilson<sup>1</sup> *1. Chemistry, Colorado State University, Fort Collins, CO, United States; 2. National Renewable Energy Lab, Golden, CO, United States*

**Session FD**  
**NEXT-GENERATION MRAM TECHNOLOGY**

Jonathan Sun, Chair  
IBM T. J. Watson Research Center, Yorktown Heights,  
NY, United States

**1:30**

- FD-01. High performance spintronic devices for microwave technology and computing. (Invited) G. Finocchio<sup>1</sup>** *1. University of Messina, Messina, Italy*

**2:06**

- FD-02. Thermal Stability Factor of  $L1_0$ -MnAl nanodot for STT-MRAM Applications.** *T. Shinoda<sup>1,4</sup>, Y. Takeuchi<sup>3</sup>, B. Jinnai<sup>3</sup>, J. Igarashi<sup>1</sup>, Y. Sato<sup>1,4</sup>, S. Fukami<sup>1,2</sup> and H. Ohno<sup>1,2</sup>* *1. Tohoku Univ., RIEC, Sendai, Japan; 2. Tohoku Univ., CSIS, Sendai, Japan; 3. Tohoku Univ., WPI-AIMR, Sendai, Japan; 4. Tohoku Univ., Graduate School of Engineering, Sendai, Japan*

**2:18**

- FD-03. Impacts of Bottom Ferromagnetic Layer's Microstructure on Switching and Memristivity Performance in a Tri-layer SOT Device.** *Y. Huang<sup>1</sup>, Y. Lin<sup>1</sup>, C. Cheng<sup>1</sup>, Y. Wu<sup>1</sup>, W. Chang<sup>2</sup> and Y. Tseng<sup>1</sup>* *1. National Yang Ming Chiao Tung University, Hsinchu, Taiwan; 2. Powerchip Semiconductor Manufacturing Corporation, Hsinchu, Taiwan*

**2:30**

- FD-04. Ultrafast SOT-induced magnetization switching in 75°-canted MTJ.** *T. Nguyen<sup>1,2</sup>, H. Naganuma<sup>2,1</sup>, H. Honjo<sup>2</sup>, S. Ikeda<sup>2,1</sup> and T. Endoh<sup>2,1</sup>* *1. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 2. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan*

**2:42**

**Break**

**3:15**

- FD-05. Using Transient Dynamics to Improve Switching Efficiency in In-Plane SOT-MRAM.** *S. Nallan<sup>1</sup> and J. Zhu<sup>1</sup>* *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, United States*

**3:27**

- FD-06. Ultra-highly Efficient SOT-writing in strained MTJs.** *H. Yoda<sup>1</sup>, Y. Ohsawa<sup>1</sup>, T. Kishi<sup>1</sup>, Y. Yamazaki<sup>1</sup>, T. Yoda<sup>1</sup> and T. Yoda<sup>1</sup>* *1. YODA-S, Inc., Tsukuba, Japan*

- FD-07. Competing Contributions from Spin-Transfer Torque, Voltage-Controlled Magnetic Anisotropy, and Joule Heating to Magnetic Properties in SOT-MRAM Devices.** *K. Fan*<sup>1,2</sup>, *K. Cai*<sup>1</sup>, *S. Van Beek*<sup>1</sup>, *G. Talmelli*<sup>1</sup>, *J. De Boeck*<sup>1,2</sup>, *B. Soree*<sup>1,2</sup>, *S. Rao*<sup>1</sup>, *K. Wostyn*<sup>1</sup> and *S. Couet*<sup>1</sup> *1. IMEC, Leuven, Belgium; 2. Department of Electrical Engineering (ESAT), KU Leuven, Leuven, Belgium*

## 3:51

- FD-08. Electric field manipulation of tunnel magnetoresistance through localized strain.** *S. Karki*<sup>1</sup>, *J. Kwon*<sup>1</sup>, *J.E. Davies*<sup>2</sup>, *R. Fabiha*<sup>3</sup>, *T. Leonard*<sup>1</sup>, *S. Bandyopadhyay*<sup>3</sup> and *J.C. Incorvia*<sup>1</sup> *1. Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States; 2. NVE Corporation, Eden Prairie, MN, United States; 3. Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA, United States*

## 4:03

- FD-09. Physically Unclonable Functions using Voltage-Controlled Magnetic Anisotropy Effect in Magnetic Tunnel Junctions.** *Y. Tanaka*<sup>1</sup>, *M. Goto*<sup>1,4</sup>, *A.K. Shukla*<sup>1</sup>, *K. Yoshikawa*<sup>1</sup>, *H. Nomura*<sup>1,3</sup>, *S. Miwa*<sup>1</sup>, *S. Tomishima*<sup>2</sup> and *Y. Suzuki*<sup>1,3</sup> *1. Osaka University, Toyonaka, Japan; 2. Intel Labs, Hillsboro, OR, United States; 3. CSRN-Osaka, OTRI-Osaka, Toyonaka, Japan; 4. University of Fukui, Fukui, Japan*

## 4:15

- FD-10. Giant spin-valve-like behavior induced by magnetic-field-controlled resistive switching in an Fe/MgO/Ge-based two-terminal device.** *M. Kaneda*<sup>1</sup>, *S. Tsuruoka*<sup>1</sup>, *T. Endo*<sup>1</sup>, *T. Takeda*<sup>1</sup>, *Y. Tadano*<sup>1</sup>, *T. Fukushima*<sup>2,3</sup>, *H. Shinya*<sup>1,4</sup>, *A. Masago*<sup>2,5</sup>, *M. Tanaka*<sup>1,4</sup>, *H. Katayama-Yoshida*<sup>2,4</sup> and *S. Ohya*<sup>1,4</sup> *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Japan; 2. Center for Spintronics Research Network, Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan; 4. Center for Spintronics Research Network, Graduate School of Engineering, The University of Tokyo, Bunkyo-ku, Japan; 5. Research Institute for Value-Added-Information Generation, Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan*

## 4:27

- FD-11. Reconfigurable physically unclonable functions based on nanoscale voltage-controlled magnetic tunnel junctions.** *Y. Shao*<sup>1</sup>, *N. Melendez*<sup>2</sup>, *F. Ebrahimi*<sup>3</sup>, *J. Katine*<sup>2</sup>, *G. Finocchio*<sup>4</sup> and *P. Khalili Amiri*<sup>1</sup> *1. Department of Electrical and Computer Engineering, Northwestern University, Evanston, IL, United States; 2. Western Digital Corporation, San Jose, CA, United States; 3. Fe Research Inc, Los Angeles, CA, United States; 4. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*

- FD-12. Hybrid Hardware Security Systems with Strain-Modulated Magnetic Anisotropy.** *A.N. Chin<sup>1</sup>, J.D. Arzate<sup>1</sup>, Y. Makris<sup>1</sup>, N. Hassan<sup>1</sup>, A.J. Edwards<sup>1</sup> and J.S. Friedman<sup>1</sup>* *1. Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*

THURSDAY  
AFTERNOON  
1:30

REUNION C

**Session FE**  
**THIN FILMS, MULTILAYERS AND INTERFACE**  
**EFFECTS I**

Markus Goessler, Chair  
Chemnitz University of Technology, Chemnitz, Germany

1:30

- FE-01. Generation of Highly Anisotropic Physical Properties in Ferromagnetic Thin films Controlled by their Differently Oriented Nano-sheets.** *(Invited) C. Favieres<sup>1,2</sup>, J. Vergara<sup>1,2</sup>, C. Magén<sup>3,4</sup>, M. Ibarra<sup>3,4</sup> and V. Madurga<sup>1</sup>* *1. Laboratorio de Magnetismo. Departamento de Ciencias. Física, Universidad Pública de Navarra (UPNA), Pamplona, Spain; 2. Instituto de Materiales Avanzados y Matemáticas, Universidad Pública de Navarra (UPNA), Pamplona, Spain; 3. Instituto de Nanociencia y de Materiales de Aragón (INMA), CSIC-Universidad de Zaragoza, Zaragoza, Spain; 4. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain*

2:06

- FE-02. Fabrication and characterization of Co<sub>25</sub>Fe<sub>75</sub>/Hf multilayer thin films to decrease the magnetic damping coefficient.** *S.C. Mills<sup>1</sup>, S.A. Mathews<sup>1</sup>, K. Bussmann<sup>1</sup> and M. Staruch<sup>1</sup>* *1. Material Science and Technology, U.S. Naval Research Laboratory, Washington, DC, United States*

2:18

- FE-03. Withdrawn**

2:18

- FE-04. Tuning the blocking temperature distribution of the Antiferromagnetic grains by organic molecules.** *L. Gnoli<sup>1</sup>, A. Riminucci<sup>1</sup>, R.K. Rakshit<sup>1</sup>, M. Singh<sup>1</sup>, A. Mezzi<sup>2</sup>, K. Lin<sup>3</sup>, S. Achilli<sup>4</sup>, E. Molteni<sup>4</sup>, G. Fratesi<sup>4</sup>, V.A. Dediu<sup>1</sup> and I. Bergenti<sup>1</sup>* *1. CNR-ISMN, Bologna, Italy; 2. CNR-ISMN, Monterotondo Scalo, Italy; 3. Department of Materials Science and Engineering, NCHU, Taichung City, Taiwan; 4. University of Milan, Milan, Italy*

2:30

- FE-05. Investigation of the Spin Rotation in a Ferrimagnetic Insulator with Easy Plane Anisotropy.** *Y. Song*<sup>1</sup>, *T. Nguyen*<sup>2</sup>, *K. Lasinger*<sup>1,3</sup>, *G. Beach*<sup>1</sup> and *C.A. Ross*<sup>1</sup> *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. Nuclear Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 3. Materials, ETH Zurich, Zurich, Switzerland*

2:42

Break

3:15

- FE-06. Growth-induced Changes in the Magnetic Properties of Co/Gd-based Synthetic Ferrimagnets for Magneto-Photonic Integration.** *T. Kools*<sup>1</sup>, *J. Hintermayr*<sup>1</sup>, *B. Koopmans*<sup>1</sup> and *R. Lavrijsen*<sup>1</sup> *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

3:27

- FE-07. Combinatorial thin film plasma processing for investigation of magnetic antiperovskite nitrides.** *S. Bauers*<sup>1</sup> *1. Materials Science, National Renewable Energy Laboratory, Golden, CO, United States*

3:39

- FE-09. Annealing Induced Anomalous Phase Transformation in Mn-Ni-Sn Heusler Alloy Thin Films Grown by RF Magnetron Sputtering.** *A. Verma*<sup>1,2</sup>, *K. Bhatt*<sup>1,2</sup>, *P.K. Siwach*<sup>1,2</sup>, *P. Kushwaha*<sup>1,2</sup>, *J. Dev*<sup>1,2</sup>, *J.S. Tawale*<sup>1</sup>, *G.D. Varma*<sup>3</sup>, *N. Singh*<sup>1,2</sup> and *H.K. Singh*<sup>1,2</sup> *1. CSIR-National Physical Laboratory, New Delhi, India; 2. Academy of Scientific and Innovative Research (AcSIR), CSIR-HRDC Campus, Kamla Nehru Nagar, Ghaziabad, India; 3. Department of Physics, IIT Roorkee, Roorkee, India*

3:51

- FE-10. Tuning of the out of plane component of the magnetization in electrodeposited NiFe thin films.** *N. Coton*<sup>1</sup>, *M. Jaafar*<sup>3</sup>, *J. Andrés González*<sup>2</sup>, *A. Begue*<sup>1</sup> and *R. Ranchal*<sup>1</sup> *1. Materials Physics, Universidad Complutense de Madrid, Madrid, Spain; 2. Universidad Castilla-La Mancha, Ciudad Real, Spain; 3. Condensed Matter Physics, Universidad Autonoma de Madrid, Madrid, Spain*

4:03

- FE-11. Molecular-Chemisorption-Induced Strong Modifications of the Magnetic Properties in Thin Polycrystalline Co Films.** *M. Benini*<sup>1</sup>, *G. Allodi*<sup>2</sup>, *A. Shumilin*<sup>3</sup>, *R.K. Rakshit*<sup>1</sup>, *M. Singh*<sup>1</sup>, *A. Riminucci*<sup>1</sup>, *P. Graziosi*<sup>1</sup>, *V. Kabanov*<sup>3</sup>, *T. Mertelj*<sup>3</sup>, *I. Bergenti*<sup>1</sup> and *V.A. Dediu*<sup>1</sup> *1. CNR-ISMN, Bologna, Italy; 2. Department of Mathematical, Physical and Informatics sciences, University of Parma, Parma, Italy; 3. Jozef Stefan Institute, Ljubljana, Slovenia*

**Session FF**

**MAGNETO-CALORIC MATERIALS AND DEVICES**

Andrei Rogalev, Chair  
ESRF, Grenoble, France

**1:30**

- FF-01. Can Magnetocaloric High-Entropy Alloys Go Far? (Invited)**  
*J. Law*<sup>1</sup>, *Á. Díaz-García*<sup>1</sup>, *L.M. Moreno-Ramírez*<sup>1</sup> and *V. Franco*<sup>1</sup>  
*1. University of Seville, Seville, Spain*

**2:06**

- FF-02. Effective Evaluations of Magnetocaloric Properties by Direct Measurement Methods.** *J. Kim*<sup>1</sup>, *K. Kang*<sup>1</sup>, *A. Lee*<sup>1</sup> and *K. Chung*<sup>1</sup> *1. Korea Institute of Materials Science, Changwon, The Republic of Korea*

**2:18**

- FF-03. Contribution of rare earth sublattice to total entropy change at the phase transition in magnetocaloric DyCo<sub>2</sub>.** *J. Lill*<sup>1</sup>, *B. Eggert*<sup>1</sup>, *J. Zhao*<sup>2</sup>, *D. Koch*<sup>3</sup>, *B. Beckmann*<sup>3</sup>, *B. Lavina*<sup>2,4</sup>, *A. Karpenkov*<sup>3</sup>, *M.Y. Hu*<sup>2</sup>, *K.P. Skokov*<sup>3</sup>, *T. Toellner*<sup>2</sup>, *E.E. Alp*<sup>2</sup>, *K. Ollefs*<sup>1</sup>, *O. Gutfleisch*<sup>3</sup> and *H. Wende*<sup>1</sup> *1. University of Duisburg-Essen, Duisburg, Germany; 2. Advanced Photon Source, Argonne National Laboratory, Lemont, IL, United States; 3. Technical University of Darmstadt, Darmstadt, Germany; 4. Center for Advanced Radiation Sources, The University of Chicago, Chicago, IL, United States*

**2:30**

- FF-04. Magnetocaloric effect and critical behavior of the novel Nd<sub>x</sub>Gd<sub>3-x</sub>CoNi intermetallic compounds.** *A. Oleaga*<sup>1</sup>, *A. Erkoreka*<sup>1</sup>, *A. Herrero Hernandez*<sup>1</sup>, *A. Provino*<sup>2</sup>, *D. Peddis*<sup>2,3</sup> and *P. Manfrinetti*<sup>2,4</sup> *1. Department of Applied Physics, University of the Basque Country, Bilbao, Spain; 2. Department of Chemistry and Industrial Chemistry, University of Genova, Genova, Italy; 3. Institute of Structure of Matter (ISM) – CNR, nM2-Lab, Rome, Italy; 4. Institute SPIN-CNR, Genova, Italy*

**2:42**

**Break**

**3:15**

- FF-05. Towards Additive Manufacturing of Thin-walled “Magnetocaloric Structures”.** *V. Sharma*<sup>1</sup>, *R.L. Hadimani*<sup>1,2</sup>, *H. Zhao*<sup>1</sup> and *R. Barua*<sup>1</sup> *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Glen Allen, VA, United States; 2. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States*



- FF-06. Laser Synthesis of FeRh Microstructures for Enhanced Magnetocaloric Refrigeration.** *S. Tahir*<sup>1</sup>, *C. Doñate Buendía*<sup>1</sup>, *D. Koch*<sup>2</sup>, *J. Landers*<sup>3</sup>, *S. Salamon*<sup>3</sup> and *B. Gökce*<sup>1</sup> *1. Chair of Materials Science and Additive Manufacturing, University of Wuppertal, Wuppertal, Germany; 2. Institute of Materials Science, Technical University of Darmstadt, Darmstadt, Germany; 3. Faculty of Physics and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Duisburg, Germany*

3:39

- FF-07. Magnetoelastic Coupling and Wide-Temperature Range Transition Behavior in (Mn,Ni,Fe)<sub>2</sub>(P,Si) Alloys.** *K. Kang*<sup>1</sup>, *A. Lee*<sup>1</sup> and *J. Kim*<sup>1</sup> *1. Korea Institute of Materials Science, Changwon, The Republic of Korea*

3:51

- FF-08. Magnetocaloric Effect and Magnetic, Electrical Properties in One-dimensional Spin Chain Antiferromagnet Eu<sub>4</sub>Ga<sub>8</sub>Ge<sub>16</sub> Compound.** *S. Cha*<sup>1</sup>, *J. Kim*<sup>1</sup>, *J. Yun*<sup>1</sup> and *J. Rhyee*<sup>1</sup> *1. Physics, Kyung Hee University, Yongin-si, The Republic of Korea*

4:03

- FF-09. Withdrawn**

4:03

- FF-10. Effect of quenching and post-annealing on magnetic, magnetocaloric, and crystallographic properties in giant magnetocaloric materials ErCo<sub>2</sub> and HoAl<sub>2</sub>.** *A.T. Saito*<sup>1</sup>, *T.D. Yamamoto*<sup>2</sup>, *H. Takeya*<sup>1</sup>, *K. Terashima*<sup>1</sup>, *Y. Takano*<sup>1</sup> and *T. Numazawa*<sup>1</sup> *1. National Institute for Materials Science, Tsukuba, Japan; 2. Dept. of Materials Science and Technology, Tokyo University of Science, Katsushika-ku, Japan*

4:15

- FF-11. Magnon Diffusion Length and Longitudinal Spin Seebeck Effect in Vanadium Tetracyanoethylene (V[TCNE]<sub>x</sub>, x ~ 2).** *D.R. Candido*<sup>1</sup>, *S.W. Kurfman*<sup>3</sup>, *B. Wooten*<sup>2</sup>, *Y. Zheng*<sup>2</sup>, *M. Newburger*<sup>3</sup>, *S. Cheng*<sup>3</sup>, *R.K. Kawakami*<sup>3</sup>, *J. Heremans*<sup>2,3</sup>, *M.E. Flatté*<sup>1</sup> and *E. Johnston-Halperin*<sup>3</sup> *1. Department of Physics and Astronomy, University of Iowa, Iowa City, IA, United States; 2. Department of Materials Science and Engineering, The Ohio State University, Columbus, OH, United States; 3. Department of Physics, The Ohio State University, Columbus, OH, United States*

4:27

- FF-12. Role of Debye temperature in achieving large adiabatic temperature change: case study on Pr<sub>2</sub>In.** *W. Liu*<sup>1</sup>, *F. Scheibel*<sup>1</sup>, *T. Gottschall*<sup>2</sup>, *I. Dirba*<sup>1</sup>, *N. Fortunato*<sup>1</sup>, *H. Zhang*<sup>1</sup>, *K.P. Skokov*<sup>1</sup> and *O. Gutfleisch*<sup>1</sup> *1. Materials Science, TU Darmstadt, Darmstadt, Germany; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

**Session FG**  
**NEW MATERIALS AND INTERFACES FOR**  
**MAGNETIC JUNCTIONS**

Thomas Scheike, Co-Chair  
National Institute for Materials Science (NIMS), Tsukuba, Japan  
Van Dai Nguyen, Co-Chair  
IMEC, Leuven, Belgium

1:30

- FG-01. Electronic, magnetic, and structural properties of CoVMnSb: ab initio study.** *P. Lukashev*<sup>1</sup>, A. Ramker<sup>1</sup>, B. Schmidt<sup>1</sup>, P. Shand<sup>1</sup>, P. Kharel<sup>2</sup>, V. Mkhitarian<sup>3</sup>, Z. Ning<sup>3</sup> and L. Ke<sup>3</sup> *1. Physics, University of Northern Iowa, Cedar Falls, IA, United States; 2. Physics, South Dakota State University, Brookings, SD, United States; 3. Ames National Laboratory, Ames, IA, United States*

1:42

- FG-02. Multi-state memory devices and mechanism for flat bands from chiral domain wall superlattices in magnetic Weyl semimetals.** *V.C. Rogers*<sup>1</sup>, S. Chaudhary<sup>2,3</sup>, R. Nguyen<sup>1</sup> and J.C. Incorvia<sup>1</sup> *1. Chandra Dept. of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States; 2. Dept. of Physics, Northeastern University, Boston, MA, United States; 3. Dept. of Physics, The University of Texas at Austin, Austin, TX, United States*

1:54

- FG-03. Observation and enhancement of room temperature bilinear magnetoelectric resistance in sputtered topological semimetal Pt<sub>3</sub>Sn.** *Y. Fan*<sup>1</sup>, Z. Cresswell<sup>1</sup>, Y. Yang<sup>1</sup>, W. Jiang<sup>1</sup>, Y. Lv<sup>1</sup>, T. Peterson<sup>1</sup>, D. Zhang<sup>1</sup>, J. Liu<sup>1</sup>, T. Low<sup>1</sup> and J. Wang<sup>1</sup> *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

2:06

- FG-04. Inverse tunnel magnetoresistance driven by interfacial resonance states in a (001)-oriented FeRh/MgO/FeCo junction.** *Z. Wen*<sup>1</sup>, T. Scheike<sup>1</sup>, C. He<sup>1</sup>, K. Masuda<sup>1</sup>, H. Sukegawa<sup>1</sup>, T. Ohkubo<sup>1</sup> and S. Mitani<sup>1</sup> *1. National Institute for Materials Science (NIMS), Tsukuba, Japan*

2:18

- FG-05. Interfacial Improvement by Introducing a Pulsed Current in a Magnetic Tunnel Junction.** T. Dale<sup>1</sup>, L. Soumah<sup>2</sup>, R. Sousa<sup>2</sup>, P. Talatchian<sup>2</sup>, L. Prejbeanu<sup>2</sup>, W.J. Frost<sup>1</sup> and A. Hirohata<sup>1,3</sup> *1. University of York, York, United Kingdom; 2. Spintec, Grenoble, France; 3. Tohoku University, Sendai, Japan*

2:30

- FG-06. Influence of Edge Roughness and elastic dephasing on performance parameters of MTJs.** *R.R. Pandey*<sup>1</sup> and A. Tulapurkar<sup>1</sup> *1. Electrical engineering, Indian Institute of Technology Bombay, Mumbai, India*

2:42

Break

3:15

- FG-07. Giant oscillatory tunnel magnetoresistance: an unsolved spin dependent tunneling puzzle. (Invited)** T. Scheike<sup>1</sup>, C. He<sup>1</sup>, Z. Wen<sup>1</sup>, H. Sukegawa<sup>1</sup> and S. Mitani<sup>1</sup> *1. National Institute for Materials Science, Tsukuba, Japan*

3:51

- FG-08. Analysis of Ferro- and Antiferromagnetic Memory Bits by Scanning NV Magnetometry.** P.S. Rickhaus<sup>1</sup>, V. Borrás<sup>1</sup>, R. Carpenter<sup>2</sup>, S. Couet<sup>2</sup>, L. Zaper<sup>3,1</sup>, S. Rao<sup>2</sup>, A. Stark<sup>1</sup>, M. Munsch<sup>1</sup>, H. Zhong<sup>1</sup>, C. Adelman<sup>2</sup>, P. van der Heide<sup>2</sup>, A. Finco<sup>4</sup>, V. Jacques<sup>4</sup>, V. Garcia<sup>5</sup> and P. Maletinsky<sup>3,1</sup> *1. Qnami, Basel, Switzerland; 2. IMEC, Leuven, Belgium; 3. University of Basel, Basel, Switzerland; 4. University of Montpellier, Montpellier, France; 5. CNRS-Thales, Palaiseau, France*

4:03

- FG-09. Influence of surface acoustic wave (SAW) on nano-sized in-plane magnetic tunnel junctions. (Invited)** B.R. Zink<sup>1</sup>, B. Ma<sup>1</sup>, D. Zhang<sup>1</sup>, D. Bhattacharya<sup>2</sup>, M. Abeed<sup>2</sup>, S. Bandyopadhyay<sup>2</sup>, J. Atulasimha<sup>2</sup> and J. Wang<sup>1</sup> *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Mechanical Engineering Department, Virginia Commonwealth University, Richmond, VA, United States*

4:39

- FG-10. Proximity-mediated Magnetotransport in Ferromagnetic/ Helimagnetic Fe/MnP Bilayers.** N.W. Mudiyansele<sup>1</sup>, C. Hung<sup>1</sup>, D. Detellem<sup>1</sup>, A. Chanda<sup>1</sup>, J.E. Shoup<sup>1</sup>, N. Alzahrani<sup>1</sup>, A. Duong<sup>2</sup>, J. Frisch<sup>3,4</sup>, M. Bär<sup>3,4</sup>, D. Arena<sup>1</sup>, H. Srikanth<sup>1</sup>, S. Witanachchi<sup>1</sup> and M. Phan<sup>1</sup> *1. Physics, University of South Florida, Tampa, FL, United States; 2. Phenikaa University, Hanoi, Vietnam; 3. Department of Interface Design, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Berlin, Germany; 4. Energy Materials In-situ Laboratory Berlin (EMIL), Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Berlin, Germany*

4:51

- FG-11. Spintronics with Black Phosphorus.** H. Wei<sup>1</sup>, M. Galbiati<sup>1</sup>, J. Peiro<sup>1</sup>, S.M. Dubois<sup>2</sup>, F. Brunnett<sup>1</sup>, V. Zatkan<sup>1</sup>, R. Galceran<sup>1</sup>, P. Brus<sup>3</sup>, F. Godel<sup>1</sup>, D. Perconte<sup>1</sup>, F. Bouamrane<sup>1</sup>, E. Gaufres<sup>4</sup>, A. Loiseau<sup>4</sup>, O. Bezencenet<sup>3</sup>, B. Servede<sup>3</sup>, F. Petroff<sup>1</sup>, J. Charlier<sup>2</sup>, M. Martin<sup>1</sup>, B. Dlubak<sup>1</sup> and P. Seneor<sup>1</sup> *1. Unité Mixte de Physique CNRS/Thales, University Paris-Saclay, Palaiseau, France; 2. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Belgium; 3. Thales Research and Technology, Palaiseau, France; 4. Laboratoire d'Étude des Microstructures, CNRS, ONERA, Université Paris-Saclay, Châtillon, France*

**Session FP**  
**NEUROMORPHIC COMPUTING III**  
**(Poster Session)**

Yusuke Imai, Chair  
The University of Tokyo, Bunkyo, Japan

- FP-01. Probabilistic Computing with Magnetic Tunnel Junctions.** *E. Raimondo*<sup>1</sup>, *Y. Shao*<sup>2</sup>, *A. Grimaldi*<sup>1</sup>, *A. Giordano*<sup>1</sup>, *M. Carpentieri*<sup>3</sup>, *P. Khalili Amiri*<sup>2</sup> and *G. Finocchio*<sup>1</sup>  
*1. University of Messina, Messina, Italy; 2. Northwestern University, Evanston, IL, United States; 3. Politecnico of Bari, Bari, Italy*
- FP-02. Probability-Distribution-Configurable True Random Number Generators Based on Spin-Orbit Torque Magnetic Tunnel Junctions.** *R. Zhang*<sup>1</sup>, *X. Li*<sup>1</sup>, *M. Zhao*<sup>1</sup>, *C. Wan*<sup>1</sup>, *X. Luo*<sup>1</sup>, *S. Liu*<sup>1</sup>, *Y. Zhang*<sup>1</sup>, *Y. Wang*<sup>1</sup>, *G. Yu*<sup>1</sup> and *X. Han*<sup>1</sup>  
*1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- FP-03. Modelling of Reservoir Computing in Out-of-Plane Artificial Spin Ice.** *J. Maes*<sup>1</sup>, *A. Kurenkov*<sup>2</sup> and *B. Van Waeyenberge*<sup>1</sup>  
*1. Solid State Sciences, Ghent University, Ghent, Belgium; 2. Mesoscopic Systems, ETH Zürich, Zürich, Switzerland*
- FP-05. SHE-MTJ based ReLU-max pooling functions for on-chip training of Neural Networks.** *V. Vadde*<sup>1</sup>, *B. Muralidharan*<sup>1</sup> and *A. Sharma*<sup>2</sup>  
*1. Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Electrical Engineering, Indian Institute of Technology Ropar, Rupnagar, India*
- FP-06. Weight transfer method of a Hardware Neural Network constructed by Magnetic Tunnel Junction neurons using Telegraphic Switching Phenomenon.** *J. Jang*<sup>1</sup> and *W. Park*<sup>1</sup>  
*1. Hanyang University, Seoul, The Republic of Korea*
- FP-07. Generation of multiple resistive state using superconductivity-controlled magnetism.** *B. Dutta*<sup>1</sup> and *A. Pal*<sup>1</sup>  
*1. Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Mumbai, India*
- FP-08. Echo State Network with Spin-Transfer Nano Oscillators.** *S. Qian*<sup>1</sup> and *S. Rakheja*<sup>1</sup>  
*1. Micro and Nanotechnology Laboratory, University of Illinois Urbana-Champaign, Champaign, IL, United States*
- FP-09. Volatile Resistive Switching Induced by Competing Magnetic Phases in  $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$  Thin Films for Neuromorphic Computing.** *A. Jaman*<sup>1,2</sup>, *A. Goossens*<sup>1,2</sup>, *J. van Rijn*<sup>2</sup> and *T. Banerjee*<sup>1,2</sup>  
*1. Groningen Cognitive System and Material Centre, University of Groningen, Groningen, Netherlands; 2. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

**Session FQ**  
**MAGNETICS FOR POWER ELECTRONICS**  
**AND TRANSFORMERS**  
**(Poster Session)**

Marco Trapanese, Chair  
Palermo University, Palermo, Italy

- FQ-02. Analysis of Variable Inductor Employing Vegetable-Based Transformer Oil with Magnetic Nanoparticles.** *M. Baek<sup>2</sup> and H. Lee<sup>1</sup>* 1. *Changshin University, Changwon-si, The Republic of Korea*; 2. *Korea Electrotechnology Research Institute, Changwon-si, The Republic of Korea*
- FQ-03. Magnetic properties of Fe-Ni powder core for high frequency device applications.** *M. Nguyen<sup>1</sup>, S. Yoshida<sup>2</sup>, S. Okamoto<sup>2,3</sup>, T. Miyazaki<sup>4</sup> and Y. Endo<sup>1,5</sup>* 1. *Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan*; 2. *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*; 3. *National Institute for Material Science (NIMS), Sendai, Japan*; 4. *Faculty of Engineering, Tohoku University, Sendai, Japan*; 5. *Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan*
- FQ-04. Analysis of electric streamer discharge current using the generalized energy method in vegetable-based transformer oil with magnetic nanoparticles and experimental validation.** *H. Lee<sup>1</sup>, H. Kang<sup>1</sup> and M. Baek<sup>2</sup>* 1. *Changshin University, Changwon-si, The Republic of Korea*; 2. *Korea Electrotechnology Research Institute, Changwon-si, The Republic of Korea*
- FQ-05. Investigation of Electromagnetic Noise in an Induction Cooktop by examining circular membrane vibration modes in terms of their harmonics.** *G. Yun<sup>1</sup>, S. Lee<sup>1</sup>, G.F. Lukman<sup>1</sup> and C. Lee<sup>1</sup>* 1. *Electrical Engineering, Pusan National University, Busan, The Republic of Korea*
- FQ-06. Improved Calculation of Core Losses of High-Speed Motors with Two Different Permanent Magnets Considering Higher order current harmonics.** *S. Kim<sup>1</sup>, J. Woo<sup>1</sup>, K. Shin<sup>2</sup> and J. Choi<sup>1</sup>* 1. *Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea*; 2. *Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea*
- FQ-07. Demagnetization Analysis of Outer Rotor Type BLDC Motors Considering Permanent Magnet Overhang Structure.** *T. Kim<sup>1</sup>, H. Shin<sup>1</sup>, J. Yang<sup>1</sup>, K. Shin<sup>2</sup>, Y. Kim<sup>1</sup> and J. Choi<sup>1</sup>* 1. *Chungnam National University, Daejeon, The Republic of Korea*; 2. *Chonnam National University, Yeosu, The Republic of Korea*

**FQ-08. Comparative Study on Design and Analysis of Interior Permanent Magnet Synchronous Motors with Different Rotor Structures based on Magnetic Equivalent Circuit Method and Finite Element Method.** *J. Lee<sup>1</sup>, K. Yu<sup>1</sup>, H. Ban<sup>1</sup>, J. Choi<sup>2</sup>, S. Sung<sup>3</sup>, J. Park<sup>3</sup>, C. Kim<sup>4</sup> and K. Shin<sup>1</sup>* 1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea; 4. Chungnam State University, Cheongyang, The Republic of Korea

**FQ-09. Electromagnetic analysis of permanent magnet-assisted synchronous reluctance motor based on magnetic equivalent circuit.** *S. Kim<sup>1</sup>, T. Kim<sup>1</sup>, W. Jung<sup>1</sup>, M. Nguyen<sup>1</sup>, K. Shin<sup>3</sup>, Y. Kim<sup>2</sup> and J. Choi<sup>1</sup>* 1. Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Bio-systems and Mechanical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 3. Power System Engineering, Chonnam National University, Yeosu, The Republic of Korea

**FQ-10. Analytical and Experimental Study of Electromagnetic Loss and Temperature Rise in Induction Machine.** *H. Ban<sup>1</sup>, K. Yu<sup>1</sup>, J. Lee<sup>1</sup>, J. Choi<sup>2</sup>, S. Sung<sup>3</sup>, J. Park<sup>3</sup> and K. Shin<sup>1</sup>* 1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea

**FQ-11. Comparison of Electromagnetic Performance in MW class Superconducting Machines according to Shielding and Structures Based on Analytical Method.** *H. Ban<sup>1</sup>, K. Yu<sup>1</sup>, J. Lee<sup>1</sup>, J. Choi<sup>2</sup>, K. Kim<sup>3</sup>, H. Cho<sup>2</sup> and K. Shin<sup>1</sup>* 1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. Korea Research Institute of Ships and Ocean Engineering, Daejeon, The Republic of Korea

**FQ-12. Maximizing the Output Power of Magnetically Geared Generator in Low-Speed Applications Using Analytical Method and Particle Swarm Optimization.** *M. Nguyen<sup>1</sup>, S. Kim<sup>1</sup>, H. Shin<sup>1</sup>, K. Shin<sup>2</sup>, A. Phung<sup>3</sup> and J. Choi<sup>1</sup>* 1. Chungnam National University, Daejeon, The Republic of Korea; 2. Chonnam National University, Yeosu, The Republic of Korea; 3. Hanoi University of Science and Technology, Hanoi, Vietnam

**FQ-13. Magnetic Force Calculation in PM Assembly Process of Direct-Drive Permanent Magnet Synchronous Generators based on Analytical Method.** *H. Shin<sup>1</sup>, K. Shin<sup>2</sup> and J. Choi<sup>1</sup>* 1. Chungnam National University, Daejeon, The Republic of Korea; 2. Chonnam National University, Yeosu, The Republic of Korea

**FQ-14. Volume Optimization of High-speed Surface-mounted Permanent Magnet Synchronous Motor Based on Sequential Quadratic Programming Technique and Analytical Solution.** *D. Hoang<sup>1</sup>, M. Nguyen<sup>1</sup>, J. Woo<sup>1</sup>, H. Shin<sup>1</sup>, K. Shin<sup>2</sup>, A. Phung<sup>3</sup> and J. Choi<sup>1</sup>* 1. Chungnam National University, Daejeon, The Republic of Korea; 2. Chonnam National University, Yeosu, The Republic of Korea; 3. Hanoi University of Science and Technology, Hanoi, Vietnam

- FQ-15. Inductance Derivation and Experimental Verification According to Operating Range of Interior Permanent Magnet Synchronous Motor.** K. Kwak<sup>1</sup>, J. Woo<sup>1</sup>, Y. Kim<sup>1</sup>, K. Shin<sup>2</sup> and J. Choi<sup>1</sup> *1. Chungnam National University, Daejeon, The Republic of Korea; 2. Chonnam National University, Yeosu, The Republic of Korea*

THURSDAY  
AFTERNOON  
2:00

MARSALIS HALL A

**Session FR**  
**BIOMEDICAL APPLICATIONS II**  
**(Poster Session)**

Hendrik Ohldag, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- FR-01. Temperature-Induced Dispersion of Magnetic Nanoparticles: Insights from ESR Experiments and Simulations.** B. Cheng<sup>1</sup>, J. Sakurai<sup>1</sup>, S. Hata<sup>1</sup> and C. Oka<sup>1</sup>  
*1. Micro-Nano Mechanical Science and Engineering, Nagoya University, Nagoya, Japan*
- FR-02. Differential Magnetization Dynamics of Superparamagnetic Iron Oxide Nanoparticles: Implications for Biomedical Applications and Magnetic Particle Imaging.** S.A. Shah<sup>1</sup>  
*1. Physics, Forman Christian College (University), Lahore, Pakistan*
- FR-03. Tissue Distribution Analysis of Anti-CD3 Conjugated Magnetic Nanoparticles (Fe<sub>3</sub>O<sub>4</sub>) Using In vivo Imaging System.** M. Hasan<sup>1,2</sup>, J. Choi<sup>1</sup> and S. Lee<sup>1</sup> *1. Department of Digital Healthcare Engineering, Sangji University, Wonju, The Republic of Korea; 2. Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh*
- FR-04. Dumbbell-like Au-Fe<sub>3</sub>O<sub>4</sub> Nanoparticles for Magnetic Hyperthermia.** L. Tonthat<sup>1</sup>, T. Ogawa<sup>1</sup> and S. Yabukami<sup>1</sup>  
*1. Tohoku University, Sendai, Japan*
- FR-05. Optimizing A Deep Learning Model for the Prediction of Electric Field Induced by Transcranial Magnetic Stimulation for Mild to Moderate Traumatic Brain Injury Patients.** Y.R. Saxena<sup>1,2</sup>, C.J. Lewis<sup>3</sup>, J.V. Lee<sup>1</sup>, L.M. Franke<sup>4,5</sup>, M. Alam<sup>1</sup>, M. Tashli<sup>1</sup>, J. Atulasimha<sup>1</sup> and R.L. Hadimani<sup>1,6</sup>  
*1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Maggie L Walker Governor's School, Richmond, VA, United States; 3. Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 4. Physical Medicine and Rehabilitation, Virginia Commonwealth University, Richmond, VA, United States; 5. Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA, United States; 6. Psychiatry, Harvard University, Boston, MA, United States*

- FR-06. Quantification of Cellular States through Magnetic Labeling Single-Cell Analysis Techniques.** C. Tsou<sup>1</sup>, T. Ger<sup>1</sup>, J. Huang<sup>1</sup> and H.A. Li<sup>2</sup> 1. Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan; 2. ARVIN Bio-Medical Devices Co., Hsinchu, Taiwan
- FR-07. Skin Permeability and Magnetic Susceptibility Analysis of Hyaluronic Acid-Based Magnetized Microneedles Containing Iron Oxide Nanoparticles.** J. Choi<sup>1</sup>, M. Hasan<sup>1,2</sup> and S. Lee<sup>1</sup> 1. Department of Digital Healthcare Engineering, Sangji University, Wonju, The Republic of Korea; 2. Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Sci. and Tech. University, Gopalganj, Bangladesh
- FR-08. Tuning the structural and magnetic properties of iron oxide nanoparticles.** X. Sun<sup>1</sup>, J. Zhang<sup>1</sup>, O. Petravic<sup>2</sup> and A. Tayal<sup>1</sup> 1. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany; 2. Jülich Centre for Neutron Science JCNS and Peter Grünberg Institut PGI, JARA-FIT, Forschungszentrum Jülich, Jülich, Germany
- FR-09. Feasibility Study on On-board Magnetoencephalography with Optically Pumped Magnetometers.** X. Cao<sup>1</sup>, M. Fushimi<sup>1</sup>, S. Chikaki<sup>1</sup> and M. Sekino<sup>1</sup> 1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Japan
- FR-10. A study on the scalability of the self-assembled magnetic millirobot for minimally invasive medicine.** Y. Lee<sup>1</sup>, S. Seo<sup>1</sup>, J. Lee<sup>1</sup> and S. Jeon<sup>1</sup> 1. Mechanical and Automotive Engineering, Kongju National University, Cheonan, The Republic of Korea
- FR-11. Cancer cell death induced by magneto-mechanical actuation of Fe-Cr-Nb-B magnetic particles loaded with chemotherapeutic drugs, carried by Stem cells to the cancer cell area.** H. Chiriac<sup>1</sup>, C. Stavila<sup>1,2</sup>, A.E. Minuti<sup>1,2</sup>, D. Herea<sup>1</sup> and N. Lupu<sup>1</sup> 1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, "A.I. Cuza" University, Iasi, Romania
- FR-12. Multidimensional Imaging of Phantoms with a Single-Sided Magnetic Particle Imaging Scanner.** C. McDonough<sup>1</sup>, J. Mattern<sup>1</sup>, J. Chrisekos<sup>1</sup> and A. Tonyushkin<sup>1</sup> 1. Oakland University, Rochester, MI, United States
- FR-13. Systematic Analysis of Parameters Affecting Colorization Performance for Magnetic Particle Spectroscopy Applications.** V.K. Chugh<sup>1</sup>, S. Liang<sup>2</sup>, V.D. Krishna<sup>3</sup>, P. Yari<sup>4</sup>, M.C. Cheeran<sup>3</sup>, K. Wu<sup>4</sup> and J. Wang<sup>1,2</sup> 1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States; 3. Veterinary Population Medicine, University of Minnesota, St. Paul, MN, United States; 4. Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States



- FR-14. Characteristics of Spatial Pulse Wave Velocity and Peripheral Blood Flow Velocity Measured Using Magnetoplethysmography and Photoplethysmography Devices.** *S. Lee*<sup>1</sup>, *R. Choi*<sup>1</sup>, *W. Kim*<sup>1</sup>, *M. Shin*<sup>1</sup>, *J. Choi*<sup>1</sup>, *M. Hasan*<sup>1,2</sup> and *B. Jung*<sup>3</sup> *1. Department of Digital Healthcare Engineering, Sangji University, Wonju, The Republic of Korea; 2. Department of Biochemistry and Molecular Biology, Bangabandhu Sk. Mujibur Rahman Sci. and Tech. University, Gopalganj, Bangladesh; 3. School of Biomedical Engineering, Yonsei University, Wonju, The Republic of Korea*
- FR-15. Electrically Conductive and Anatomically Accurate Physical Rat Brain Phantoms for Experimental Validation of Transcranial Magnetic Stimulation.** *W.H. Lohr*<sup>1</sup> and *R.L. Hadimani*<sup>2,3</sup> *1. Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 3. Martino's Center for Biomedical Engineering, Harvard University, Boston, MA, United States*
- FR-16. On Trajectory Control of Magnetized Spherical Solids Driven by Magnetic Force Through Soft Medium.** *Y. Malkova*<sup>2,1</sup>, *A. Guez*<sup>1</sup> and *G. Friedman*<sup>1</sup> *1. Electrical and Computer Engineering, Drexel University, Philadelphia, PA, United States; 2. Electrical and Computer Engineering, Exponent, New York, NY, United States*

FRIDAY  
MORNING  
8:30

REUNION EF

**Session GA**  
**MAGNETIZATION DYNAMICS IN TWO-DIMENSIONAL VAN DER WAALS MAGNETS**

**Axel Hoffmann, Chair**  
University of Illinois at Urbana-Champaign, Urbana, IL, United States

8:30

- GA-01. Probing spin dynamics of nm-thick Cr<sub>2</sub>Ge<sub>2</sub>Te<sub>6</sub> by superconducting resonators and time-resolved beam-scanning Kerr microscopy. (Invited)** *C. Zollitsch*<sup>1</sup>, *S. Khan*<sup>1</sup>, *M. Dabrowski*<sup>2</sup>, *I. Verzhbitskiy*<sup>3</sup>, *P.S. Keatley*<sup>2</sup>, *G. Eda*<sup>3</sup>, *R. Hicken*<sup>2</sup> and *H. Kurebayashi*<sup>1</sup> *1. University College London, London, United Kingdom; 2. University of Exeter, Exeter, United Kingdom; 3. National University of Singapore, Singapore, Singapore*

- GA-02. Probing Intrinsic Magnon Bandgap in Layered Perovskite Antiferromagnet by a Superconducting Resonator. (Invited)** Y. Li<sup>1,2</sup>, T. Draher<sup>1,2</sup>, A. Comstock<sup>3</sup>, Y. Xiong<sup>4</sup>, M. Haque<sup>5</sup>, E. Easy<sup>6</sup>, J. Qian<sup>7</sup>, T. Polakovic<sup>8</sup>, J. Pearson<sup>1</sup>, R. Divan<sup>9</sup>, J. Zuo<sup>7</sup>, X. Zhang<sup>6</sup>, U. Welp<sup>1</sup>, W. Kwok<sup>1</sup>, A. Hoffmann<sup>7</sup>, J. Luther<sup>5</sup>, M. Beard<sup>5</sup>, D. Sun<sup>3</sup>, W. Zhang<sup>4</sup> and V. Novosad<sup>1,8</sup> *1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 2. Department of Physics, Northern Illinois University, DeKalb, IL, United States; 3. Department of Physics and Organic and Carbon Electronics Laboratory, North Carolina State University, Raleigh, NC, United States; 4. Department of Physics & Astronomy, University of North Carolina, Chapel Hill, IL, United States; 5. Chemistry & Nanoscience Center, National Renewable Energy Laboratory, Golden, CO, United States; 6. Department of Mechanical Engineering, Stevens Institute of Technology, Stevens Institute of Technology, Hoboken, NJ, United States; 7. Department of Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States; 8. Physics Division, Argonne National Laboratory, Lemont, IL, United States; 9. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL, United States*

9:42

Break

10:15

- GA-03. Magnon-magnon interactions in layered antiferromagnets. (Invited)** J. Sklenar<sup>1</sup>, M. Subedi<sup>1</sup>, K. Deng<sup>2</sup>, Y. Xiong<sup>5</sup>, J. Mongeon<sup>2</sup>, M. Hossain<sup>3</sup>, P. Meisenheimer<sup>4</sup>, E. Zhou<sup>1</sup>, J. Heron<sup>4</sup>, B. Jungfleisch<sup>3</sup>, W. Zhang<sup>5</sup> and B. Flebus<sup>2</sup> *1. Wayne State University, Detroit, MI, United States; 2. Boston College, Chestnut Hill, MA, United States; 3. University of Delaware, Newark, DE, United States; 4. University of Michigan, Ann Arbor, MI, United States; 5. University of North Carolina, Chapel Hill, NC, United States*

10:51

- GA-04. Quantum Sensing and Imaging of Two-Dimensional van der Waals Magnets. (Invited)** C. Du<sup>1</sup> *1. Physics, Georgia Institute of Technology, Atlanta, GA, United States*

11:27

- GA-05. Probing spin dynamics with spin defects embedded in 3D and 2D systems. (Invited)** S. Singh<sup>1</sup> and C. Hammel<sup>2</sup> *1. Department of Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Department of Physics, The Ohio State University, Columbus, OH, United States*

Session GB

**MICROSCOPY & CHARACTERIZATION III:  
SPIN TEXTURES, MAGNETIC INTERACTIONS,  
NANOPARTICLE DYNAMICS AND X-RAY METHODS**

Sophie Morley, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

8:30

- GB-01. Imaging Stripes, Skyrmions and Higher-order Spin Textures in 2D Magnets. (Invited)** *M. Birch*<sup>1</sup>, L. Powalla<sup>2</sup>, K. Litzius<sup>3</sup>, S. Wintz<sup>4</sup>, F. Schulz<sup>5</sup>, F.S. Yasin<sup>1</sup>, M. Weigand<sup>4</sup>, D. Mayoh<sup>6</sup>, G. Balakrishnan<sup>6</sup>, L. Turnbull<sup>8</sup>, X. Yu<sup>1</sup>, O. Hovorka<sup>7</sup>, M. Burghard<sup>2</sup> and G. Schütz<sup>5</sup> *1. RIKEN Center for Emergent Matter Science, Wako, Japan; 2. Max Planck Institute for Solid State Physics, Stuttgart, Germany; 3. University of Augsburg, Augsburg, Germany; 4. Helmholtz Zentrum Berlin, Berlin, Germany; 5. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 6. Warwick University, Coventry, United Kingdom; 7. University of Southampton, Southampton, United Kingdom; 8. Durham University, Durham, United Kingdom*

9:06

- GB-02. Radial dependent stray field signature of chiral magnetic skyrmions.** *C.W. Barton*<sup>1</sup>, A. Fernandez-Scarioni<sup>2</sup>, B. Sakar<sup>2</sup>, S. Sievers<sup>2</sup>, F. Garcia-Sanchez<sup>3</sup>, P. Thompson<sup>4</sup>, F. Ajejas<sup>5</sup>, W. Legrand<sup>5</sup>, N. Reyren<sup>5</sup>, T. Thomson<sup>4</sup>, V. Cros<sup>5</sup>, H. Schumacher<sup>2</sup> and O. Kazakova<sup>1</sup> *1. National Physical Laboratory, Teddington, United Kingdom; 2. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 3. Universidad de Salamanca, Salamanca, Spain; 4. University of Manchester, Manchester, United Kingdom; 5. Unité Mixte de Physique, CNRS, Thales, Palaiseau, France*

9:18

- GB-03. Quantifying the topology of a skyrmion in 3D with soft x-ray laminography.** *D.W. Raftrey*<sup>1,2</sup>, S. Finizio<sup>4</sup>, R.V. Chopdekar<sup>3</sup>, T. Bayarar<sup>2</sup>, S.M. Griffin<sup>2</sup>, T. Santos<sup>3</sup> and P. Fischer<sup>1,2</sup> *1. Physics, University of California Santa Cruz, Santa Cruz, CA, United States; 2. Material Sciences Division, Lawrence Berkeley National Lab, Berkeley, CA, United States; 3. Western Digital Corporation, San Jose, CA, United States; 4. Paul Scherrer Institute, Villigen, Switzerland*

9:30

- GB-04. Unveiling unusual magnetic domain configurations in NiFe microbar ensembles by high-resolution soft X-ray ptychography.** T. Feggeler<sup>1,2</sup>, A. Levitan<sup>3,2</sup>, O. Brunn<sup>4,5</sup>, J. Sadilek<sup>4,6</sup>, H. Ohldag<sup>2,7</sup>, D.A. Shapiro<sup>2</sup>, R.W. Falcone<sup>1</sup>, K. Ollefs<sup>8</sup> and N. Rougemaille<sup>9</sup> *1. Department of Physics, University of California, Berkeley, Berkeley, CA, United States; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, United States; 4. Institute of Scientific Instruments, Czech Academy of Sciences, Brno, Czechia; 5. Institute of Physical Engineering, Brno University of Technology, Brno, Czechia; 6. Department of Microelectronics, Brno University of Technology, Brno, Czechia; 7. Department of Material Sciences and Engineering, Stanford University, Stanford, CA, United States; 8. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 9. Institut Néel, Grenoble INP, Université Grenoble Alpes, CNRS, Grenoble, France*

9:42

Break

10:15

- GB-05. Emerging Image Interpretation Paradigm for Advanced Material Design with an Extended Landau Free Energy Model. (Invited)** K. Masato<sup>1</sup> *1. Tokyo University of Science, Tokyo, Japan*

10:51

- GB-06. Magneto-optical detection of spin-orbit torque vector with first-order Kerr effects.** C.A. Gonzalez<sup>1</sup>, M. Abellan<sup>2</sup> and S. Oyarzun<sup>1</sup> *1. Physics, Universidad de Santiago, Santiago, Chile; 2. Physics, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile*

11:03

- GB-07. A Sensitive Magneto-Optic Kerr Effect and Optical Hall Effect Technique.** N. Am-Shalom<sup>1</sup>, M. Korcia<sup>1</sup>, N. Bernstein<sup>1</sup> and A. Capua<sup>1</sup> *1. Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel*

11:15

- GB-08. The Ferris ferromagnetic resonance technique: principles and applications.** A. Rothschild<sup>1</sup>, B.J. Assouline<sup>1</sup>, N. Am-Shalom<sup>1</sup>, N. Bernstein<sup>1</sup>, G. Daniel<sup>1</sup>, G. Cohen<sup>1</sup> and A. Capua<sup>1</sup> *1. The Hebrew University, Jerusalem, Israel*

11:27

- GB-09. The combined study of Valence band structure and magnetization behaviour of Cr-VO<sub>2</sub> thin films using the synchrotron-based spectroscopic technique.** A. Kumari<sup>1</sup> and V. Singh<sup>1</sup> *1. Department of Physics, Central University of South Bihar, Gaya, India*

11:39

- GB-10. New Versatile Tool Combining Element-specific and Macroscopic Measurements.** A. Aubert<sup>1</sup>, G. Gomez<sup>2,3</sup>, K.P. Skokov<sup>1</sup>, F. Wilhelm<sup>2</sup>, H. Wende<sup>3</sup>, A. Rogalev<sup>2</sup>, O. Gutfleisch<sup>1</sup> and K. Ollefs<sup>3</sup> *1. Functional Materials, Technische Universität Darmstadt, Darmstadt, Germany; 2. ESRF, Grenoble, France; 3. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany*

11:51

- GB-11. Withdrawn**

FRIDAY  
MORNING  
8:30

REUNION A

**Session GC**  
**SOFT MAGNETIC MATERIALS IV: FERRITES  
AND GARNETS**

Liuliu Han, Chair  
Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany

8:30

- GC-01. Magnetic hysteresis mechanism in  $\text{Lu}_{0.90}\text{Sr}_{0.10}\text{Cr}_{0.50}\text{Fe}_{0.50}\text{O}_3$  studied by Monte Carlo simulations. (Invited)** F. Lurgo<sup>1</sup>, R. Sanchez<sup>1</sup>, R. Carbonio<sup>2</sup> and O. Billoni<sup>3</sup> *1. Magnetic Resonance Laboratory, INN-CNEA-CONICET, San Carlos de Bariloche, Argentina; 2. INFIQC-UNC-CONICET, Córdoba, Argentina; 3. IFEG-UNC-CONICET, Córdoba, Argentina*

9:06

- GC-02. Wet Chemistry-Synthesized Fe/Mixed Ferrite Soft Magnetic Composites for High-Frequency Power Conversion.** W. Burgess<sup>1,2</sup>, J. Devkota<sup>1,2</sup> and B. Howard<sup>1</sup> *1. National Energy Technology Laboratory, Pittsburgh, PA, United States; 2. NETL Support Contractor, Pittsburgh, PA, United States*

9:18

- GC-03. Influence of Controlled Dipolar Interaction for Polymer Coated Gd Doped Magnetite Nanoparticles towards Magnetic Hyperthermia Application.** K. Hazarika<sup>1</sup> *1. Physics, NIT Nagaland, Dimapur, India*

9:30

- GC-04. All-around electromagnetic wave absorber based on Ni-Zn ferrite.** D. Mandal<sup>1</sup>, B. Bhandari<sup>1</sup>, S.V. Mullurkara<sup>1</sup> and P. Ohodnicki<sup>1</sup> *1. Mechanical Engineering and Material Sciences, University of Pittsburgh, Pittsburgh, PA, United States*

9:42

Break

10:15

- GC-05. **First-principles Study on Electronic Properties of Rare-earth Iron Garnet Mixed Crystals.** *Y. Yahagi*<sup>1</sup>, *Y. Omori*<sup>1</sup> and *M. Ishida*<sup>1</sup> *I. NEC Corporation, Tsukuba, Japan*

10:27

- GC-06. **Combinatorial FMR and MOKE measurement on magnetic garnet dots.** *Y. Omori*<sup>1</sup>, *H. Someya*<sup>1</sup> and *M. Ishida*<sup>1</sup> *I. NEC, Tokyo, Japan*

10:39

- GC-07. **Withdrawn**

10:39

- GC-08. **Magnetic interactions and reversal mechanisms of spinodally decomposed cobalt ferrites as a function of temperature using first order reversal curves (FORC).** *S.V. Mullurkara*<sup>1</sup>, *R. Egli*<sup>2</sup>, *B.C. Dodrill*<sup>3</sup>, *C. Radu*<sup>3</sup>, *S. Tan*<sup>4</sup> and *P. Ohodnicki*<sup>1</sup> *1. MEMS, University of Pittsburgh, Pittsburgh, PA, United States; 2. Zentralanstalt für Meteorologie und Geodynamik (ZAMG), Vienna, Austria; 3. Lake Shore Cryotronics, Westerville, OH, United States; 4. Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA, United States*

FRIDAY  
MORNING  
8:30

REUNION B

### Session GD

## SPIN INJECTION AND SPIN TORQUE DEVICES

Ryo Ohshima, Chair  
Kyoto University, Kyoto, Japan

8:30

- GD-01. **Topological spintronics in epitaxial Dirac and Weyl semimetal heterostructures. (Invited)** *N. Samarth*<sup>1</sup>, *W. Yanez*<sup>1</sup> and *Y. Ou*<sup>1</sup> *1. Physics, Penn State University, University Park, PA, United States*

9:06

- GD-02. **Efficient Spin-Orbit Torque Switching with Large Damping-Like Torque in Bi<sub>2</sub>Se<sub>3</sub>/Fe<sub>3</sub>GeTe<sub>2</sub> van der Waals Heterostructures.** *M. Lohmann*<sup>1</sup>, *D. Wickramaratne*<sup>1</sup>, *J. Moon*<sup>1</sup>, *M. Noyan*<sup>1</sup>, *H. Chuang*<sup>1</sup>, *B.T. Jonker*<sup>1</sup> and *C.H. Li*<sup>1</sup> *1. Naval Research Lab, Washington, DC, United States*

9:18

- GD-03. **Current-induced magnetization switching by two-dimensional van der Waals material ZrSe<sub>3</sub>.** *L. Cao*<sup>1</sup>, *Q. Chen*<sup>1</sup>, *Y. Zhu*<sup>1</sup>, *K. Tong*<sup>2</sup>, *J. Ma*<sup>2</sup>, *Z. Huang*<sup>1</sup>, *J. Wu*<sup>2</sup> and *Y. Zhai*<sup>1</sup> *1. Key Laboratory of Quantum Materials and Devices of Ministry of Education, School of Physics, Southeast University, Nanjing, China; 2. Department of Physics, Engineering and Technology, University of York, York, United Kingdom*

9:30

- GD-04. Anomalous Hall effect in heavy metal/ ferrimagnetic Mn<sub>4</sub>N epitaxial bilayers.** *W. Mi<sup>1</sup> 1. Department of Applied Physics, Tianjin University, Tianjin, China*

9:42

**Break**

10:15

- GD-05. Ultra-fast spin transfer torque switching in ferrimagnetic tunneling junctions.** *P. Khanal<sup>1</sup>, B. Zhou<sup>1</sup>, A. Enriquez<sup>1</sup>, K. Warrilow<sup>1</sup>, A.T. Habiboglu<sup>1</sup>, J. O'Brien<sup>1</sup> and W. Wang<sup>1</sup> 1. Physics, University of Arizona, Tucson, AZ, United States*

10:27

- GD-06. Spin Polarization and Magnetoresistance in a Si-based Spin MOSFET.** *S. Sato<sup>1,2</sup>, M. Tanaka<sup>1,2</sup> and R. Nakane<sup>1,3</sup> 1. Dept. of Electrical Eng. and Information Systems, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; 2. Center for Spintronics Research Network (CSRN), Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; 3. System Design Lab (d.lab), Graduate School of Engineering, The University of Tokyo, Tokyo, Japan*

10:39

- GD-07. Spin Signal Optimization in Metallic Non-Local Spin Valves via Tuned Interface Resistance.** *B. Kaiser<sup>1</sup>, J. Ramberger<sup>1</sup>, M. Norum<sup>1</sup>, J.E. Dewey<sup>1</sup> and C. Leighton<sup>1</sup> 1. Chemical Engineering and Material Science, University of Minnesota - Twin Cities, Minneapolis, MN, United States*

10:51

- GD-08. Influence of exchange coupling torque in hybrid spin transfer torque and spin-orbit torque switching of synthetic antiferromagnets.** *V. Kateel<sup>1,2</sup>, T. Vantilt<sup>1</sup>, S. Van Beek<sup>1</sup>, M.G. Monteiro<sup>1</sup>, G. Talmelli<sup>1</sup>, B. Soree<sup>1,2</sup>, J. De Boeck<sup>1,2</sup>, S. Couet<sup>1</sup> and S. Rao<sup>1</sup> 1. IMEC, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium*

11:03

- GD-09. Exotic Spin-Orbit Torques in Chiral Tellurium.** *S. Li<sup>1</sup>, C. Niu<sup>2</sup>, A. Hoffmann<sup>1</sup> and P. Ye<sup>2</sup> 1. University of Illinois at Urbana-Champaign, Urbana, IL, United States; 2. Purdue University, West Lafayette, IN, United States*

11:15

- GD-10. Spin injection through a Si-based ferromagnetic tunnel junction: a band diagram model.** *B. Yu<sup>1</sup>, S. Sato<sup>1,2</sup>, M. Tanaka<sup>1,2</sup> and R. Nakane<sup>1,3</sup> 1. Dept. of Electrical Eng. and Information Systems, School of Engineering, The University of Tokyo, Tokyo, Japan; 2. Center for Spintronics Research Network (CSRN), School of Engineering, The University of Tokyo, Tokyo, Japan; 3. System Design Lab (d.lab), School of Engineering, The University of Tokyo, Tokyo, Japan*

- GD-11. Unconventional Spin-Orbit Torque in CrPt<sub>3</sub>.** *R. Klause*<sup>1</sup>,  
*Y. Xiao*<sup>4</sup>, *J. Gibbons*<sup>3</sup>, *A. Hoffmann*<sup>1</sup> and *E. Fullerton*<sup>2</sup> *1. University of Illinois Urbana-Champaign, Urbana, IL, United States; 2. University of California San Diego, San Diego, CA, United States; 3. Western Digital, San Jose, CA, United States; 4. TDK, Milpitas, CA, United States*

FRIDAY  
 MORNING  
 8:30

REUNION C

**Session GE**  
**HALF-METALLIC MATERIALS, MAGNETIC SEMICONDUCTORS AND OTHER ADVANCED MATERIALS FOR SPINTRONICS**

Kenji Nawa, Chair  
 Mie University, Tsu, Japan

8:30

- GE-01. Controlled Spin Structure and Magnetic Anisotropy for Efficient Spintronics Applications.** (*Invited*) *J. Hong*<sup>1</sup>, *J. Ha*<sup>1</sup>, *H. Kim*<sup>2</sup>, *W. Choi*<sup>1</sup>, *S. Yoon*<sup>1</sup>, *B. Tran*<sup>1</sup> and *T. Kim*<sup>1</sup> *1. DGIST, Daegu, The Republic of Korea; 2. KRISS, Daejeon, The Republic of Korea*

9:06

- GE-02. Combinatorially Sputtered Co<sub>2</sub>Mn<sub>x</sub>Fe<sub>1-x</sub>Ge (0 ≤ x ≤ 1) Heusler Thin Films for High-Throughput Analysis of Magnetoresistance and Spin-Transfer Torque.** *V. Barwal*<sup>1</sup>, *H. Suto*<sup>1</sup>, *R. Toyama*<sup>1</sup> and *Y. Sakuraba*<sup>1</sup> *1. Research Center for Magnetic and Spintronics Materials, National Institute for Materials Science, Tsukuba, Japan*

9:18

- GE-03. Intrinsic Berry curvature driven anomalous Nernst thermopower in the semimetallic quaternary Heusler alloy CoFeVSb.** *A. Chanda*<sup>1</sup>, *J. Nag*<sup>2</sup>, *A. Alam*<sup>2</sup>, *K. Suresh*<sup>2</sup>, *M. Phan*<sup>1</sup> and *H. Srikanth*<sup>1</sup> *1. Physics, University of South Florida, Tampa, FL, United States; 2. Physics, Indian Institute of Technology Bombay, Bombay, India*

9:30

- GE-04. Spin-Gapless Semiconducting Heusler-Alloy Films.** *W. Li*<sup>1,2</sup>, *T. Sarfo*<sup>1</sup>, *K. Wang*<sup>1,3</sup>, *W. Kong*<sup>1,3</sup> and *A. Hirohata*<sup>1,4</sup> *1. University of York, York, United Kingdom; 2. Yanshan University, Yanshan, China; 3. City University of Hong Kong, Hong Kong, Hong Kong; 4. Tohoku University, Sendai, Japan*

9:42

Break



10:15

- GE-05. Low-temperature antiferromagnetism in quaternary Mn<sub>2</sub>FeSi<sub>0.5</sub>Al<sub>0.5</sub> alloys.** O. Zivotsky<sup>1</sup>, L. Gembalova<sup>1</sup>, K. Skotnicova<sup>2</sup>, I. Szurman<sup>2</sup>, T. Cegan<sup>2</sup>, J. Jurica<sup>2</sup>, O. Malina<sup>3</sup> and J. Cizek<sup>4</sup> 1. VSB - Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Ostrava, Czechia; 2. VSB - Technical University of Ostrava, Faculty of Materials Science and Technology, Ostrava, Czechia; 3. Regional Centre of Advanced Technologies and Materials, Czech Advanced Technology and Research Institute, Olomouc, Czechia; 4. Charles University Prague, Faculty of Mathematics and Physics, Prague, Czechia

10:27

- GE-06. Tailoring properties of Heusler alloys by elemental substitution: (Co<sub>2-α</sub>Mn<sub>α</sub>)FeGe, Co<sub>2</sub>(Fe<sub>1-β</sub>Mn<sub>β</sub>)Ge, and (Co<sub>2-α</sub>Fe<sub>α</sub>)MnGe.** P.R. LeClair<sup>1</sup>, R. Mahat<sup>1</sup>, J. Law<sup>2</sup>, V. Franco<sup>2</sup>, W.H. Butler<sup>1</sup> and A. Gupta<sup>1</sup> 1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 2. Fisica de la Materia Condensada, Universidad de Sevilla, Sevilla, Spain

FRIDAY  
MORNING  
8:30

PEGASUS A

**Session GF**  
**MULTI-FUNCTIONAL MAGNETIC MATERIALS**  
**AND APPLICATIONS II**

Harshida Parmar, Chair  
Ames Laboratory, Ames, IA, United States

8:30

- GF-01. Use of Nanoscale Perpendicular Spin Transfer Torque Magnetic Tunnel Junctions as Magnetic Sensors. (Invited)** R. Sousa<sup>1</sup>, H. Nicolas<sup>2</sup>, A. Mora-Hernandez<sup>1</sup>, H. Karaoui<sup>1</sup>, I. Prejbeanu<sup>1</sup>, L. Hebrard<sup>3</sup>, J. Kammerer<sup>3</sup> and J. Pascal<sup>2</sup> 1. Univ. Grenoble Alpes/CNRS/CEA, SPINTEC, Grenoble, France; 2. School of Life Sciences, University of Applied Sciences Northwestern Switzerland, Muttenz, Switzerland; 3. ICube, University of Strasbourg, Strasbourg, France

9:06

- GF-02. Strain-induced hardening of ferromagnetic Ni evidenced by off-axis electron microscopy and micromagnetic simulations. (Invited)** D. Kong<sup>2,3</sup>, A. Kovacs<sup>2</sup>, M. Charilaou<sup>1</sup>, F. Zheng<sup>2,4</sup>, L. Wang<sup>5</sup>, X. Han<sup>5</sup> and R.E. Dunin-Borkowski<sup>2</sup> 1. Department of Physics, University of Louisiana at Lafayette, Lafayette, LA, United States; 2. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich, Jülich, Germany; 3. Department of Physics and Optoelectronics, Beijing University of Technology, Beijing, China; 4. School of Physics and Optoelectronics, South China University of Technology, Guangzhou, China; 5. Institute of Microstructure and Properties of Advanced Materials, Beijing University of Technology, Beijing, China

9:42

Break

10:15

- GF-03. Simultaneous magnetization reversal in a magnetoelastic bilayer structure.** N. Coton<sup>1</sup>, J. Andrés González<sup>3</sup>, M. Maicas<sup>2</sup> and R. Ranchal<sup>1</sup> *1. Universidad Complutense de Madrid, Madrid, Spain; 2. Universidad Politecnica de Madrid, Madrid, Spain; 3. Universidad Castilla-La Mancha, Ciudad Real, Spain*

10:27

- GF-04. Mechanical and Magnetostrictive Properties of Additively Manufactured Fe<sub>81</sub>Al<sub>19</sub> rods.** N.J. Jones<sup>1</sup>, J.H. Yoo<sup>1</sup>, B.G. Kessel<sup>2</sup>, T.R. Mion<sup>3</sup>, E.F. Holcombe<sup>1,4</sup> and P.K. Lambert<sup>5</sup> *1. Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, MD, United States; 2. Additive Manufacturing Project Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, MD, United States; 3. Naval Research Laboratory, Washington, DC, United States; 4. Materials Science and Engineering Department, Johns Hopkins University, Baltimore, MD, United States; 5. Johns Hopkins University Applied Physics Laboratory, Laurel, MD, United States*

10:39

- GF-05. U-shape Magnetostrictive Harvester: Design and Experimental Validation.** D. Gandia<sup>1,2</sup>, E. Garayo<sup>1,2</sup>, J.J. Beato-López<sup>1,2</sup>, I. Royo<sup>1,2</sup> and C. Gomez-Polo<sup>1,2</sup> *1. Departamento de Ciencias, UPNA, Pamplona, Spain; 2. Institute for Advanced Materials and Mathematics INAMAT2, Upba, Pamplona, Spain*

10:51

- GF-06. Giant Magnetovolume Effects Including Negative Thermal Expansion in Thin Film Antiperovskite Manganese Nitrides.** S.K. Patel<sup>1,2</sup>, S.B. Hrkac<sup>2</sup>, J. Brock<sup>1</sup>, N. Hua<sup>2</sup>, H. Wen<sup>3</sup>, D. Walko<sup>3</sup>, O.G. Shpyrko<sup>2</sup> and E. Fullerton<sup>1</sup> *1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States; 2. Department of Physics, University of California San Diego, La Jolla, CA, United States; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL, United States*

11:03

- GF-07. Plastic deformation and damage detection using magnetostrictive Alfenol powder-epoxy composite patches.** S. Na<sup>1</sup>, J.H. Yoo<sup>1</sup>, B. Yoo<sup>2</sup>, D.J. Pines<sup>2</sup> and N.J. Jones<sup>1</sup> *1. Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center Carderock Division, West Bethesda, MD, United States; 2. Aerospace Engineering, University of Maryland, College Park, MD, United States*

11:15

- GF-08. Low-power On-chip Optical Devices Based on the Integration of Tunable Magnetic Nanomaterials.** M. Martí-Carrascosa<sup>1,2</sup>, J. Navarro-Arenas<sup>1,4</sup>, R. Torres-Cavanillas<sup>3,2</sup>, A. García-Regueiro<sup>2</sup>, A. Forment-Aliaga<sup>2</sup>, J. Parra<sup>1</sup>, T. Mengual<sup>1</sup>, P. Sanchis<sup>1</sup> and E. Pinilla-Cienfuegos<sup>1</sup> *1. Nanophotonics Technology Center, Universitat Politècnica de València, Valencia, Spain; 2. Instituto de Ciencia Molecular (ICMOL), Universitat de València, Paterna, Spain; 3. Department of Materials, University of Oxford, Oxford, United Kingdom; 4. Institute of Materials Science (ICMUV), Universitat de València, Paterna, Spain*

11:27

- GF-09. Integrating plasmonic entities into shape controlled magnetic nanomaterials.** *H. Khurshid*<sup>1</sup>, *R. Yoosuf*<sup>1</sup>, *D. Anjum*<sup>2</sup> and *H. Srikanth*<sup>3</sup> *1. University of Sharjah, Sharjah, United Arab Emirates; 2. Khalifa University, Abu Dhabi, United Arab Emirates; 3. University of South Florida, Tampa, FL, United States*

11:39

- GF-10. Template-Assisted Growth of Co-BaTiO<sub>3</sub> Vertically Aligned Nanocomposite Thin Films with Strong Magneto-optical Coupling Effect.** *Z. Hu*<sup>1</sup>, *J. Lu*<sup>2</sup>, *H. Dou*<sup>2</sup>, *J. Shen*<sup>2</sup>, *J. Barnard*<sup>2</sup>, *J. Liu*<sup>2</sup>, *X. Zhang*<sup>2</sup> and *H. Wang*<sup>1,2</sup> *1. Electrical and Computer Engineering, Purdue University, West Lafayette, IN, United States; 2. Materials Engineering, Purdue University, West Lafayette, IN, United States*

FRIDAY  
MORNING  
8:30

PEGASUS B

**Session GG**  
**MAGNETIC RECORDING**  
Simon Greaves, Chair  
Tohoku University, Sendai, Japan

8:30

- GG-01. Study of Grain-Patterned Highly-Ordered L1<sub>0</sub>-FePt HAMR Media Using Reactive Molecular Dynamics Method.** *J. Zhu*<sup>1</sup> and *J. Wang*<sup>1</sup> *1. Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, MN, United States*

8:42

- GG-02. Comparison of hBN and graphene nanosheet grain boundary materials for granular FePt-L1<sub>0</sub> thin films.** *V. Bollapragada*<sup>1</sup>, *C. Xu*<sup>1</sup>, *B.L. Reese*<sup>1</sup>, *D.E. Laughlin*<sup>1</sup> and *J. Zhu*<sup>1</sup> *1. ECE, Carnegie Mellon University, Pittsburgh, PA, United States*

8:54

- GG-03. Spin Torque Assist for HAMR Media.** *A. Ghoreyshi*<sup>1</sup>, *A. Venugopal*<sup>1</sup>, *Y. Fan*<sup>1</sup>, *C. Chow*<sup>1</sup>, *J. Gadbois*<sup>1</sup>, *P. Czoschke*<sup>1</sup> and *S. Hernandez*<sup>1</sup> *1. Seagate Technology LLC, Bloomington, MN, United States*

9:06

- GG-04. Recording Medium Configurations for Double-Layer Bit-Patterned Magnetic Recording.** *C. Buajong*<sup>1</sup> and *C. Warisarn*<sup>1</sup> *1. King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

9:18

- GG-05. Reducing Transition Jitters in Composite Media for Magnetic Recording.** *Y. Liu*<sup>1</sup> and *R.H. Victora*<sup>2,1</sup> *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

9:30

- GG-06. Bit-Island Arrangement and Signal Processing in Double-Layer Magnetic Recording Technology.** V. Sawangarom<sup>1</sup>, C. Buajong<sup>1</sup>, K. Kankhunthod<sup>1</sup> and C. Warisarn<sup>1</sup> *1. King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

9:42

**Break**

10:15

- GG-07. Capacitive Plasmonic Near Field Transducer with Tapering Design.** T. Du<sup>1</sup>, D.E. Laughlin<sup>1</sup> and J. Zhu<sup>1,2</sup> *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*

10:27

- GG-08. Magnetic Read Sensor Design using a Lateral Spin Valve.** R. Hao<sup>1</sup> and R. Victora<sup>1</sup> *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

10:39

- GG-09. Multilayer Perceptron-Based Array Reader Optimization for Ultra-High Density Magnetic Recording.** N. Rueangnetr<sup>1</sup> and C. Warisarn<sup>1</sup> *1. King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

VIRTUAL PLATFORM ONLY

### Session VP1

## DOMAIN WALL, VORTEX, AND SKYRMION DYNAMICS AND DEVICES (VIRTUAL) (Poster Virtual Session)

Susmita Saha, Chair  
Ashoka University, Haryana, India

- VP1-01. Current-induced domain wall motion in Pd/Co<sub>2</sub>MnGa with perpendicular magnetic anisotropy.** T. Koyama<sup>1</sup>, Y. Nishioka<sup>1</sup>, T. Uemura<sup>1</sup> and M. Yamanouchi<sup>1</sup> *1. Graduate School of Information Science and Technology, Hokkaido University, Sapporo City, Japan*
- VP1-02. Dynamic Susceptibility of Dipolar Coupled Magnetic Vortices.** T.G. Jales<sup>1</sup>, S.M. Martins Jr<sup>3</sup>, A.d. Carriço<sup>4</sup> and A.L. Dantas<sup>1,2</sup> *1. Department of Physics, State University of Rio Grande do Norte, Mossoró, Brazil; 2. Department of Science and Technology, State University of Rio Grande do Norte, NATAL, Brazil; 3. Department of Physics, State University of Maranhão, São Luís, Brazil; 4. Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil*

- VP1-03. Domain Wall Excitation by Spin Polarized Current.** F.V. Diniz<sup>1</sup>, T.G. Jales<sup>1</sup>, L.L. Oliveira<sup>2</sup>, A. Carriço<sup>3</sup> and A.L. Dantas<sup>1,2</sup> 1. Department of Physics, State University of Rio Grande do Norte, Mossoro, Brazil; 2. Department of Science and Technology, State University of Rio Grande do Norte, NATAL, Brazil; 3. Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil
- VP1-04. Realization of zero-field skyrmions in a magnetic tunnel junction.** B. He<sup>1,2</sup>, Y. Hu<sup>3</sup> and G. Yu<sup>1,2</sup> 1. Institute of Physics, Chinese Academy Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. Lanzhou university, Lanzhou, China
- VP1-05. Current Induced Conversion of Neel Stripe Domain to Pairs of Bimeron – Antibimeron in Square Nanodot.** B. Priyanka<sup>1</sup>, S. Syamlal<sup>1</sup>, H. Perumal<sup>1</sup> and J. Sinha<sup>1</sup> 1. Department of Physics and Nanotechnology, SRM Institute of Science and Technology, Chennai, India
- VP1-06. Stochastic Skyrmion Dynamics in Chambers and Application as Spike-Timing-Dependent Plasticity (STDP) Synapses.** Z. Khodzhaev<sup>1</sup>, E. Turgut<sup>2</sup> and J.C. Incorvia<sup>1</sup> 1. Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States; 2. Physics, Oklahoma State University, Stillwater, OK, United States

VIRTUAL PLATFORM ONLY

### Session VP2

## FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA (VIRTUAL) (Poster Virtual Session)

Cheng Song, Chair  
Tsinghua University, Beijing, China

- VP2-01. Numerical analysis of write-error-rate in magnetic-topological-insulator-based devices with voltage-controlled magnetization switching.** T. Komine<sup>1</sup> and T. Chiba<sup>2</sup> 1. Ibaraki University, Ibaraki, Japan; 2. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Miyagi, Japan
- VP2-02. Signature of non-Fermi liquid behaviour in itinerant Ni-Nb alloys.** D. Patra<sup>1</sup>, S. Vishvakarma<sup>1</sup> and S. Veeturi<sup>1</sup> 1. Physics, Indian Institute of Technology Madras, Chennai, India
- VP2-03. Magnetization Process of Antiferromagnetic Quantum Spin Chains with the Biquadratic Exchange Interaction.** T. Sakai<sup>1,2</sup> 1. School of Science, University of Hyogo, Kamigori, Japan; 2. SPring-8, National Institutes for Quantum Science and Technology, Sayo, Japan
- VP2-04. Spin dynamics of room temperature van der Waals (vdW) ferromagnets and their usage in microwave devices.** P. Kumar<sup>1</sup>, S. Patnaik<sup>1</sup> and B.K. Kuanr<sup>2</sup> 1. School of Physical Science, Jawaharlal Nehru University, New Delhi, India; 2. Special Centre for Nano Science, Jawaharlal Nehru University, New Delhi, India
- VP2-05. Effect of Vacancies on the Electronic and Magnetic Properties of Heusler Compound Mn<sub>2</sub>CoAl.** Z.W. Muthui<sup>1</sup> 1. Physical Sciences, Chuka University, Nakuru, Kenya

- VP2-06. Magnetism and magnetic anisotropy of a single rare-earth atom on transition metal dichalcogenides: A first-principles prediction.** *B. Narangerel*<sup>1</sup>, *T. Ochirkhuyag*<sup>1</sup>, *O. Bayarsaikhan*<sup>2</sup>, *G. Munkhsaikhan*<sup>2</sup> and *D. Odkhuu*<sup>1,3</sup>  
*1. Department of Physics, Incheon National University, Incheon, The Republic of Korea; 2. School of Applied Sciences, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia; 3. Institute of Physics and Technology, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia*
- VP2-07. Adjusting Magnetic Coercivity of Magnetic Filament via Current Compliance.** *F. Tan*<sup>1</sup>, *C.X. Lee*<sup>1</sup>, *T. Jin*<sup>1</sup>, *S. Li*<sup>1</sup> and *W. Lew*<sup>1</sup> *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

VIRTUAL PLATFORM ONLY

**Session VP3**  
**HARD MAGNETIC MATERIALS (VIRTUAL)**  
**(Poster Virtual Session)**

*Tetsuji Saito*, Chair  
 Chiba Institute of Technology, Narashino, Japan

- VP3-01. Solid-liquid phase separation diffused Nd-Fe-B sintered magnets by using DyH<sub>3</sub> nano powder realize high-efficiency coercivity improvement and overcome thickness limit.** *H. Wu*<sup>1</sup>, *W. Liu*<sup>1</sup>, *Z. Wang*<sup>1</sup>, *M. Yue*<sup>1</sup> and *D. Zhang*<sup>1</sup> *1. Beijing University of Technology, Beijing, China*
- VP3-02. The effect of powder shape on the magnetic anisotropy in NdFeB bonded magnets.** *Z. Qu*<sup>1</sup>, *Q. Wu*<sup>1</sup>, *M. Zhang*<sup>1</sup>, *Z. Wang*<sup>1</sup>, *M. Yue*<sup>1</sup> and *W. Liu*<sup>1</sup> *1. Beijing University of Technology, Beijing, China*
- VP3-03. Magnetic properties and microstructure of nanocrystalline (Sm,Zr)(Fe,Co,Ti)<sub>12</sub> magnets.** *L. Liu*<sup>1</sup>, *Y. Li*<sup>1</sup>, *X. Zhang*<sup>1</sup> and *M. Yue*<sup>1</sup> *1. Beijing University of Technology, Beijing, China*
- VP3-04. The effect of Nd content on the elemental interdiffusion mechanism of Nd-Dy-Fe-B magnets.** *Y. Qin*<sup>1</sup>, *W. Liu*<sup>1</sup>, *Z. Wang*<sup>1</sup>, *R. Du*<sup>1</sup> and *M. Yue*<sup>1</sup> *1. Faculty of Materials and Manufacturing, Key Laboratory of Advanced Functional Materials, Ministry of Education of China, Beijing University of Technology, Beijing, China*
- VP3-06. Effects of Lithium Addition on Structural and Magnetic Properties of M-type Strontium Hexaferrite.** *S. Yoon*<sup>1</sup>  
*1. Department of Physics, Gunsan National University, Gunsan, The Republic of Korea*
- VP3-07. Structure and Magnetic Properties of Nanocrystalline SmCo<sub>5</sub> and SmCo<sub>3</sub>Cu<sub>2</sub> Prepared by High Pressure Torsion.** *F. Wang*<sup>1</sup>, *P. Si*<sup>1</sup>, *Q. Wu*<sup>1</sup>, *H. Ge*<sup>1</sup>, *J. Park*<sup>2</sup> and *C. Choi*<sup>2</sup> *1. College of Materials Science and Chemistry, China Jiliang University, Hangzhou, China; 2. Korea Institute of Materials Science, Changwon, The Republic of Korea*

- VP3-08. Effect of chloride ion in plating baths on coercivity of electroplated Fe-Pt film magnets.** D. Fukushima<sup>1</sup>, A. Yamashita<sup>1</sup>, T. Yanai<sup>1</sup>, M. Nakano<sup>1</sup> and H. Fukunaga<sup>1</sup>  
*1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan*
- VP3-09. Structural and Magnetic Properties of Hexagonal Ferrite composites with Planar and Perpendicular Anisotropy.** S. Singh<sup>1</sup>, P. Sharma<sup>1</sup> and B. Chudasama<sup>1,2</sup>  
*1. School of Physics & Material Sciences, Thapar Institute of Engineering & Technology, Patiala, India; 2. TIET-VT Centre for Excellence in Emerging Materials, Thapar Institute of Engineering & Technology, Patiala, India*
- VP3-10. Optimization of microstructure in grain boundary diffusion processed sintered Nd-Fe-B magnets via Zr addition.** Z. Gao<sup>1</sup>, K. Zhong<sup>1,2</sup>, C. Wang<sup>3</sup>, M. Wu<sup>1</sup> and D. Shi<sup>1</sup>  
*1. Institute of Rare Earth Magnetic Materials, Xiamen Tungsten Co. Ltd., Xiamen, China; 2. Powder Metallurgy Research Institute, Central South University, Changsha, China; 3. College of Materials Science and Engineering, Fuzhou University, Fuzhou, China*
- VP3-11. Study on the Structural and Magnetic Properties of  $\tau$ -phase MnAl Prepared by Cryo Milling.** D. Liang<sup>1</sup>, T. Zhu<sup>1</sup>, Z. Shao<sup>1</sup>, Z. Luo<sup>1</sup>, S. Liu<sup>1</sup>, J. Han<sup>1</sup>, H. Du<sup>1</sup>, Q. Xu<sup>1</sup>, C. Wang<sup>1</sup>, W. Yang<sup>1</sup> and J. Yang<sup>1</sup>  
*1. Peking University, Beijing, China*
- VP3-12. Optimizing Sintering Conditions for Enhanced Magnetic Performance in LCCSFO Ferrite Permanent Magnets.** H. Muhammad<sup>1</sup>, H. Zhang<sup>1</sup>, Y. Li<sup>1</sup>, G. Zhaowen<sup>2</sup> and M. Yue<sup>1</sup>  
*1. College of Material Science and Engineering, Beijing University of Technology, Beijing, China; 2. Central South University, State Key Lab Powder Met, Beijing, China*
- VP3-13. Mechanochemical Synthesis of MnBi/Fe<sub>3</sub>C@C Exchange Coupled Hard Magnetic Nanocomposites.** S. Namuduri<sup>1</sup>, S. Shaw<sup>1</sup>, C. Upadhyay<sup>2</sup> and N. Prasad<sup>1</sup>  
*1. Department of Metallurgical Engineering, IIT(BHU), Varanasi, India; 2. School of Materials Science and Technology, IIT(BHU), Varanasi, India*
- VP3-14. Theoretical Study of Thermal Stability of  $\alpha''$ -Fe<sub>16</sub>N<sub>2</sub> Against Other Iron Nitrides.** P. Stoeckl<sup>1</sup>, P.W. Swatek<sup>2</sup> and J. Wang<sup>2,1</sup>  
*1. Physics, University of Minnesota, Minneapolis, MN, United States; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

VIRTUAL PLATFORM ONLY

### Session VP4

## INTERDISCIPLINARY AND EMERGING TOPICS: BIOMEDICAL APPLICATIONS; MAGNETIC FLUIDS AND SEPARATIONS; NEW APPLICATIONS AND OTHER EMERGING TOPICS (VIRTUAL) (Poster Virtual Session)

Thomas Feggeler, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- VP4-01. Magnetic Flux Density Distribution and Stimulus Resolution on the Figure-Eight Coil During Transcranial Magnetic Stimulation.** T. Torii<sup>1,2</sup> and A. Sato<sup>1</sup>  
*1. Department of Human Information Engineering, Tokai University, Kumamoto, Japan; 2. Graduate School of Science and Technology, Tokai University, Kumamoto, Japan*

- VP4-02. Detection of blood coagulation in an extracorporeal circuit using magnetic and absorbance properties.** H. Sakamoto<sup>1</sup>, N. Hibino<sup>1</sup>, Y. Mizukuchi<sup>2</sup>, A. Sato<sup>3</sup> and T. Torii<sup>3</sup> 1. Department of Clinical Engineering, Komatsu University, Komatsu, Japan; 2. Department of Clinical Engineering Center, Tonami General Hospital, Tonami, Japan; 3. Department of Human Information Engineering, Tokai University, Kumamoto, Japan
- VP4-03. Multi-core Superparamagnetic Nanoparticles for MPI and High-efficiency Drug Delivery.** S. Bai<sup>1</sup>, X. Zhang<sup>1</sup>, G. Hou<sup>1</sup>, X. Wang<sup>1</sup>, Y. Lin<sup>1</sup> and K. Li<sup>1</sup> 1. Shenyang University of Technology, Shenyang, China
- VP4-04. A new Insight into Anti-viral/microbial Activity: Validation of ClO<sub>2</sub>-Deriving Radical Chain Reactions under Exposure to Static Magnetic Field.** K. Saito<sup>1</sup>, H. Nakagawa<sup>2</sup>, M. Fujimoto<sup>3</sup>, R. Miyauchi<sup>1</sup> and S. Ebihara<sup>4</sup> 1. Aqueous Chlorine Dioxide Council, Tokyo, Japan; 2. Tokyo Denki University, Tokyo, Japan; 3. University of Human Arts and Sciences, Tokyo, Japan; 4. Chiyoda Paramedical Care Clinic, Tokyo, Japan
- VP4-05. Study on Wireless Power Transmission System for Real-Time Telemetry of Mouse Activity and Body Temperature.** T. Omori<sup>1</sup>, F. Sato<sup>1</sup>, F. Yoshiki<sup>2</sup> and S. Sasaki<sup>2</sup> 1. Graduate School of Engineering, Tohoku Gakuin University, Sendai, Japan; 2. Hikaridenshi Co.,Ltd, Osaka, Japan
- VP4-07. Anti-inflammatory effects of pulsed magnetic field on the immune system.** S. Kim<sup>1</sup> and H. Lee<sup>1</sup> 1. Sangji University, Wonju, The Republic of Korea
- VP4-09. Withdrawn**
- VP4-10. Withdrawn**
- VP4-11. Sedimentation Evaluation of High-Viscosity Linear Polysiloxane-Based Magnetorheological Fluids Using Automated Vertical Axis Inductance Monitoring System.** Y. Choi<sup>1</sup>, P. Szein<sup>2</sup>, G. Hiemenz<sup>2</sup> and N.M. Wereley<sup>1</sup> 1. Department of Aerospace Engineering, University of Maryland, College Park, MD, United States; 2. Innovital Systems Inc., Calverton, MD, United States
- VP4-12. A method for detecting and locating multiple weak magnetic target signals under the interference of strong magnetic sources.** S. Zhang<sup>1</sup>, J. Qiu<sup>1</sup>, H. Song<sup>1</sup>, H. Sun<sup>1</sup> and S. Huang<sup>1</sup> 1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China
- VP4-13. Repulsive Magnetic Levitation-based Electromagnetic Energy Harvesting of a Low-frequency Ocean Wave.** J. Park<sup>1</sup>, R. Pillai<sup>1</sup>, N.M. Wereley<sup>1</sup> and A. Flatau<sup>1</sup> 1. Aerospace Engineering, University of Maryland, College Park, MD, United States
- VP4-14. 3D Inversion of Magnetic Gradient Data Based on Equivalent Source Weighting Method.** S. Huang<sup>1</sup>, J. Qiu<sup>1</sup>, H. Sun<sup>1</sup> and S. Zhang<sup>1</sup> 1. Chongqing University, Chongqing, China
- VP4-15. Withdrawn**



**Session VP5**  
**MAGNETIC RECORDING (VIRTUAL)**  
**(Poster Virtual Session)**

Varaprasad Bollapragada, Chair  
 Carnegie Mellon University, Pittsburgh, PA, United States

- VP5-01. Effect of Ta buffer layer on the structural and magnetic properties of stoichiometric intermetallic FeAl alloy.** S. Bhardwaj<sup>1</sup>, P. Kumar<sup>2</sup>, R. Ghosh<sup>3</sup> and B.K. Kuanr<sup>1</sup>  
*1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India; 2. Department of Electronic Science, University of Delhi, South Campus, New Delhi, India; 3. Department of Electronics & Communication Engineering, Indraprastha Institute of Information Technology, New Delhi, India*
- VP5-02. Magnetic printing characteristics of burst signals by using double magnet mater media.** T. Komine<sup>1</sup> 1. Ibaraki University, Ibaraki, Japan
- VP5-03. Impact of thermal spin-transfer torque on all-optical switching in L1<sub>0</sub>-ordered FePt thin films.** J. Wang<sup>1</sup>, Z. Wen<sup>2</sup>, Y. Sasaki<sup>2</sup>, Y. Takahashi<sup>2</sup>, K. Uchida<sup>2</sup>, K. Takagi<sup>1</sup> and K. Ozaki<sup>1</sup> 1. National Institute of Advanced Industrial Science and Technology, Nagoya, Japan; 2. National Institute for Materials Science, Tsukuba, Japan
- VP5-04. Withdrawn**
- VP5-05. A Study on Acceleration of SP Decoder Using Reliability of Recording Sequence by Neural Network Based on Parity Check Result in SMR System.** M. Nishikawa<sup>1</sup>, Y. Nakamura<sup>1</sup>, Y. Kanai<sup>2</sup> and Y. Okamoto<sup>1</sup> 1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. Department of Engineering, Niigata Institute of Technology, Kashiwazaki, Japan

**Session VP6**  
**MAGNETIC SENSORS AND HIGH FREQUENCY**  
**DEVICES (VIRTUAL)**  
**(Poster Virtual Session)**

Tian-Yue Chen, Chair  
 New York University, New York, NY, United States

- VP6-01. Magnetic Tunnel Junction Micropillar with Magnetic Flux Concentrators for High-Sensitivity Magnetometers.** D. Tonini<sup>1</sup>, O. Benally<sup>1</sup>, Y. Chen<sup>1</sup>, B.R. Zink<sup>1</sup>, S. Liang<sup>2</sup>, V.K. Chugh<sup>1</sup>, Q. Jia<sup>1</sup>, R. Saha<sup>1</sup>, J. Chen<sup>1</sup>, K. Wu<sup>3</sup> and J. Wang<sup>1</sup>  
*1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States; 3. Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States*

- VP6-02. Design of Fe-based Amorphous Alloy Thin Sensor with Tunable Compensation Magnetic Resonance System.** C. Hsu<sup>1</sup> *1. Mechanical Engineering, Asia Eastern University of Science and Technology, Banqiao District, Taiwan*
- VP6-03. A Metal Object Detection System for Electric Vehicle Wireless Charging based on LC Oscillating Circuit and Reverse-Winding-Incorporated Detection Coils.** Y. Zheng<sup>1</sup>, R. Xie<sup>1</sup>, C. Liu<sup>1</sup>, X. Chen<sup>1</sup> and Y. Zhang<sup>1</sup> *1. Fuzhou University, College of Electrical Engineering and Automation, Fuzhou, China*
- VP6-04. Magnetic Tunnel Junction Molecular Spintronics-based chemical sensing device.** P. Tyagi<sup>1</sup> and P. Suh<sup>1</sup> *1. Mechanical Engineering, University of the District of Columbia, Washington, DC, United States*
- VP6-05. Fabrication of compact circular ring antenna loaded with Gd-YIG ferrites: Photon - Magnon Interaction.** S. Yadav<sup>1</sup>, M. Sharma<sup>2,1</sup> and B.K. Kuanr<sup>1</sup> *1. Special Centre For Nanoscience, Jawaharlal Nehru University, Southwest Delhi, India; 2. Department of Physics, Deshbandhu College, University of Delhi, Delhi, India*
- VP6-06. Ultra-Sensitive Magnetic Current Sensor for Smart Grid Applications.** G. Wang<sup>1</sup>, X. Liang<sup>1</sup>, H. Huang<sup>1</sup>, D. Ju<sup>1</sup> and J. Guo<sup>1</sup> *1. State Grid Smart Grid Research Institute Co., LTD., Beijing, China*
- VP6-07. Low-frequency Resonant Magnetolectric Sensors for Topology Identification of Power Distribution Network.** X. Liang<sup>1</sup>, G. Wang<sup>1</sup>, H. Huang<sup>1</sup>, Y. Lu<sup>1</sup>, D. Ju<sup>1</sup> and J. Guo<sup>1</sup> *1. State Grid Smart Grid Research Institute Co., LTD., Beijing, China*
- VP6-08. Two-dimensional Synchronous Motion Modulation MEMS Structure with High Modulation Efficiency.** Q. Jiao<sup>1</sup> and J. Chen<sup>1</sup> *1. State Key Laboratory of Transducer Technology, Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China*

VIRTUAL PLATFORM ONLY

**Session VP7**  
**MAGNETIZATION DYNAMICS AND SWITCHING**  
**(VIRTUAL)**  
**(Poster Virtual Session)**

Alpha N'Diaye, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- VP7-01. Size dependence of domain wall mediated switching dynamics of perpendicular magnetic tunnel junctions in the presence of reference layer stray field.** A. Nisar<sup>1</sup>, B. Kaushik<sup>1</sup> and T. Pramanik<sup>1</sup> *1. Electronics & Communication Engineering, Indian Institute of Technology Roorkee, Roorkee, India*

- VP7-02. Dynamic Stress-dependent Magnetostriction Model of Silicon Steel Based on Simplified Multi-scale and Jiles-Atherton Theory.** *T. Ben<sup>1</sup>, N. An<sup>1</sup>, L. Chen<sup>1</sup>, X. Zhang<sup>2</sup> and Y. Kong<sup>1</sup>* 1. *College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, China;* 2. *State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China*
- VP7-03. Study on the Loss Characteristics of Nanocrystals at Wideband Frequency Based on Improved Loss Separation Model.** *J. Zhou<sup>1,2</sup> and Y. Li<sup>1,2</sup>* 1. *Hebei University of Technology, Tianjin, China;* 2. *State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Tianjin, China*
- VP7-04. Effect of Fe to Ti ratio on the resonant microwave power absorption in  $\text{Co}_2\text{Fe}_{0.5}\text{Ti}_{0.5}\text{Si}$  (CFTS) quaternary Heusler alloy thin films.** *M. Rahaman<sup>1</sup>, L.A. Longchar<sup>1</sup>, P. Pardeep<sup>2</sup>, G. Basheed<sup>2</sup>, M. Muthuvel<sup>3</sup>, S. Kaul<sup>1</sup> and S. Srinath<sup>1</sup>* 1. *School of Physics, University of Hyderabad, Hyderabad, India;* 2. *CSIR-National Physical Laboratory (NPL), Dr. K. S. Krishnan Marg, India;* 3. *Advanced Magnetics Group, Defence Metallurgical Research Laboratory, Hyderabad, India*
- VP7-05. Transition States for Thermally Activated Switching of Perpendicular Magnetic Nanopillars in Transverse Fields.** *C.C. Capriata<sup>1,3</sup>, B.G. Malm<sup>1</sup>, G.D. Chaves-O'Flynn<sup>2</sup> and A.D. Kent<sup>3</sup>* 1. *Division of Electronics and Embedded Systems, KTH - Royal Institute of Technology, Stockholm, Sweden;* 2. *Thin Films, Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland;* 3. *Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States*
- VP7-06. Full Quantum Theory for Magnon Transport in Two-sublattice Magnetic Insulators and Magnon Junctions.** *T. Zhang<sup>1</sup> and X. Han<sup>1</sup>* 1. *Institute of Physics, Chinese Academy of Science, Beijing, China*
- VP7-07. Ultrastrong to Nearly Deep Strong Magnon-magnon Coupling in Synthetic Antiferromagnets with Intrinsic Symmetry Breaking.** *Y. Wang<sup>1</sup>, Y. Zhang<sup>2</sup>, J. Wei<sup>1</sup>, Z. Yan<sup>1</sup>, W. Yang<sup>2</sup>, B. He<sup>1</sup>, X. Luo<sup>1</sup>, W. He<sup>1</sup>, H. Xu<sup>1</sup>, J. Dong<sup>1</sup>, F. Ma<sup>2</sup>, P. Yan<sup>3</sup>, C. Wan<sup>1</sup>, X. Han<sup>1</sup> and G. Yu<sup>1</sup>* 1. *Institute of Physics, Chinese Academy of Sciences, Beijing, China;* 2. *School of Physics and Technology, Nanjing Normal University, Nanjing, China;* 3. *School of Electronic Science and Engineering and State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- VP7-08. Interlayer Dzyaloshinskii-Moriya Interaction Induced Ultrastrong Magnon-magnon Coupling in Synthetic Antiferromagnets.** *Y. Wang<sup>1</sup>, J. Xia<sup>1</sup>, C. Wan<sup>1</sup>, X. Han<sup>1</sup> and G. Yu<sup>1</sup>* 1. *Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- VP7-09. Efficient spin-orbit torque magnetization switching with the two-pulse scheme.** *T. Jin<sup>1</sup>, F. Tan<sup>1</sup>, S. Li<sup>1</sup> and W. Lew<sup>1</sup>* 1. *Nanyang Technological University, Singapore, Singapore*

**Session VP8**  
**MAGNETOELECTRIC MATERIALS (VIRTUAL)**  
**(Poster Virtual Session)**

Julius de Rojas, Chair  
 Oklahoma State University, Stillwater, OK, United States

- VP8-01. Realistic Spin Model for Multiferroic NiI<sub>2</sub>: Importance of Kitaev Interaction.** X. Li<sup>1</sup>, C. Xu<sup>1</sup>, B. Liu<sup>1</sup>, X. Li<sup>1</sup>, L. Bellaiche<sup>2</sup> and H. Xiang<sup>1</sup> *1. Fudan University, Shanghai, China; 2. University of Arkansas at Fayetteville, Fayetteville, AR, United States*
- VP8-02. Multilevel Magnetic Synapses Based on Voltage-Controlled Ion Migration for Neuromorphic Application.** M. Peda<sup>1</sup>, Z. Ma<sup>1</sup>, E. Pellicer<sup>1</sup>, E. Menéndez<sup>1</sup> and J. Sort<sup>1,2</sup> *1. Universitat Autònoma de Barcelona, Barcelona, Spain; 2. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*
- VP8-03. Withdrawn**
- VP8-04. Giant Magnetoimpedance effect and Spin Accumulation in Conjugated Polymeric Networks with Inhomogeneity.** S. Singh<sup>1,2</sup>, M. Rampur<sup>1</sup>, A. Chetty<sup>1</sup> and R. Joshi<sup>1</sup> *1. Physics, Central University of Karnataka, Kalaburagi, India; 2. Physics, Parishkar College of Global Excellence, Autonomous, Jaipur, India*

**Session VP9**  
**MAGNETORESISTANCE AND ASSOCIATED**  
**EFFECTS (VIRTUAL)**  
**(Poster Virtual Session)**

Shunsuke Fukami, Chair  
 Tohoku University, Sendai, Japan

- VP9-01. Revisiting the anisotropic magnetoresistance of reactively sputtered magnetite epitaxial films.** X. Liu<sup>1</sup> and W. Mi<sup>2</sup> *1. College of Science, Civil Aviation University of China, Tianjin, China; 2. Department of Applied Physics, Tianjin University, Tianjin, China*
- VP9-02. Spin Hall magnetoresistance in antiferromagnetic LSMO/Pt heterostructures.** R. Li<sup>1</sup> and C. Jin<sup>1</sup> *1. Tianjin Key Laboratory of Low Dimensional Materials Physics and Processing Technology, School of Science, Tianjin University, Tianjin, China*
- VP9-03. Optimization of the 3D Multi-level SOT-MRAMs.** H. Lin<sup>1</sup> and Y. Jiang<sup>1</sup> *1. Jiangnan University, Wuxi, China*

- VP9-04. Photo Voltaic effect on Metal/Insulator/Semiconductor (MIS) based Magnetic Tunnel Junction-Based Molecular Spintronics Devices (MTJMSD).** P. Tyagi<sup>1</sup> and P. Suh<sup>1</sup>  
*1. Mechanical Engineering, University of The District of Columbia, Washington, DC, United States*
- VP9-05. A novel non-destructive self-reference reading scheme for MTJ storage unit.** X. Jia<sup>1</sup> and Y. Jiang<sup>1</sup> *1. Jiangnan University, Wuxi, China*
- VP9-06. Improving the Performance of the Magnetic Tunnel Junction by Optimizing the CoFeB/MgO/CoFeB Stack.** C. Ghemes<sup>1</sup>, M. Tibu<sup>1</sup>, O. Dragos-Pinzaru<sup>1</sup>, N. Lupu<sup>1</sup> and H. Chiriac<sup>1</sup> *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- VP9-08. Study on the Performance of MTJ Array with Shielding Layer.** J. Xiong<sup>1,2</sup>, F. Jin<sup>1,2</sup>, L. Liu<sup>1,2</sup>, K. Dong<sup>1,2</sup>, J. Song<sup>1,2</sup> and W. Mo<sup>1,2</sup> *1. School of Automation, China University of Geosciences, Wuhan, China; 2. Hubei key Laboratory of Advanced Control and Intelligent Automation for Complex Systems, Wuhan, China*
- VP9-09. Advanced Hybrid MRAM based Novel GPU Cache System for Graphic Processing with High Efficiency.** S. Han<sup>1</sup> and Y. Jiang<sup>1</sup> *1. Department of Electrical Engineering, School of Internet of Things (IoTs), Jiangnan University, Wuxi, China*
- VP9-10. The Novel CPU Cache Architecture of MTJ based on Two-Dimensional Ferromagnetic Crystal.** S. Han<sup>1</sup> and Y. Jiang<sup>1</sup> *1. Department of Electrical Engineering, School of Internet of Things (IoTs), Jiangnan University, Wuxi, China*
- VP9-11. Modulation of Spin-orbit Torque and Large Enhancement of Perpendicular Magnetic Anisotropy in W/Co<sub>20</sub>Fe<sub>60</sub>B<sub>20</sub>/MgO by Ir Insertion Layer.** X. Luo<sup>1</sup>, X. Han<sup>1</sup> and G. Yu<sup>1</sup>  
*1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- VP9-12. Field-free SOT switching driven by spin current in a T-type ferromagnetic trilayer.** S. Liu<sup>1</sup>, C. Wan<sup>1</sup>, G. Yu<sup>1</sup> and X. Han<sup>1</sup> *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- VP9-13. Giant Tunneling Magnetoresistance in Spin-Filter Magnetic Tunnel Junctions Based on van der Waals A-Type Antiferromagnet CrSBr.** G. Lan<sup>1</sup>, X. Han<sup>1</sup> and G. Yu<sup>1</sup> *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing 100190, China, Beijing, China*
- VP9-14. Symmetrical Voltage-Controlled Stochasticity of Perpendicular Synthetic Antiferromagnetic Magnetic Tunnel Junctions.** Y. Lv<sup>1</sup>, B.R. Zink<sup>1</sup>, D. Zhang<sup>1</sup> and J. Wang<sup>1</sup> *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

- VP9-15. Stochastic p-Bits Based on Spin-Orbit Torque Magnetic Tunnel Junctions.** *X. Li*<sup>1</sup>, *M. Zhao*<sup>1</sup>, *X. Han*<sup>1</sup> and *C. Wan*<sup>1</sup>  
*1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China*
- VP9-16. Non-Uniform Superlattice Minimalistic Magnetic Tunnel Junction.** *S. Chakraborti*<sup>1</sup> and *A. Sharma*<sup>1</sup> *1. Electrical Engineering, Indian Institute of Technology, Ropar, Rupnagar, India*

VIRTUAL PLATFORM ONLY

**Session VP10**  
**MICROSCOPY & CHARACTERIZATION (VIRTUAL)**  
**(Poster Virtual Session)**

*Kotsugi Masato*, Chair  
Tokyo University of Science, Tokyo, Japan

- VP10-01. Characterization of carbon coated core-shell iron nanoparticles annealed by oxygen and nitrogen.** *C. Reynaga Gonzalez*<sup>1</sup>, *J. Baughman*<sup>1</sup>, *J. Shallenberger*<sup>2</sup>, *F.M. Iglesias*<sup>1</sup>, *A. Khodagulyan*<sup>1</sup>, *O. Bernal*<sup>1</sup> and *A.N. Kocharian*<sup>1</sup> *1. Physics and Astronomy, California State University, Los Angeles, CA, United States; 2. Material Research Institute, Pennsylvania State University, Road University Park, PA, United States*
- VP10-02. Shape Effects on Magnetic Behaviors of Sr-substituted BaM Ferrite Substrates Applied for Self-biased Circulators.** *X. Jiang*<sup>1</sup>, *Y. Gong*<sup>1</sup>, *Q. Su*<sup>1</sup>, *K. Sun*<sup>1</sup>, *C. Wu*<sup>1</sup>, *Q. Li*<sup>1</sup>, *Z. Yu*<sup>1</sup> and *Z. Lan*<sup>1</sup> *1. School of Materials and Energy, University of Electronic Science and Technology of China, Chengdu, China*
- VP10-03. The influence of hot-rolled densification on the properties of Nd-Fe-B magnets.** *L. Qian*<sup>1</sup>, *Y. Li*<sup>1</sup>, *L. Lingqi*<sup>1</sup>, *W. Liu*<sup>1</sup> and *M. Yue*<sup>1</sup> *1. Faculty of Materials and Manufacturing, Key Laboratory of Advanced Functional Materials, Ministry of Education of China, Beijing University of Technology, Beijing, China*
- VP10-04. A 2-D Magnetic Measuring System under the Co-loading of Temperature and Stress.** *J. Gao*<sup>2,1</sup>, *Y. Li*<sup>2,1</sup>, *Y. Dou*<sup>2,1</sup> and *S. Yue*<sup>2,1</sup> *1. Hebei University of Technology, Tianjin, China; 2. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Tianjin, China*
- VP10-05. Equalized Shape Feature Enhancement Method for Multiple Ferromagnetic Objects.** *H. Sun*<sup>1</sup>, *J. Qiu*<sup>1</sup>, *Z. Wang*<sup>1</sup>, *S. Zhang*<sup>1</sup> and *S. Huang*<sup>1</sup> *1. Key Laboratory of Optoelectronic Technology and System of Ministry of Education, College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- VP10-06. Withdrawn**

**Session VP11**  
**MULTI-FUNCTIONAL MAGNETIC MATERIALS**  
**AND APPLICATIONS (VIRTUAL)**  
**(Poster Virtual Session)**

Georgeta Salvan, Chair  
 Chemnitz University of Technology, Chemnitz, Germany

- VP11-01. Barnett effect in ferrofluids.** *M. Umeda*<sup>1</sup>, *H. Chudo*<sup>1</sup>, *M. Imai*<sup>1</sup>, *M. Matsuo*<sup>2</sup>, *N. Sato*<sup>1</sup>, *S. Maekawa*<sup>2,3</sup> and *E. Saitoh*<sup>1,4</sup> *1. Japan Atomic Energy Agency, Advanced Science Research Center, Tokai, Japan; 2. Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, Beijing, China; 3. Center for Emergent Matter Science, RIKEN, Wako, Japan; 4. Department of Applied Physics, The University of Tokyo, Hongo, Japan*
- VP11-02. Withdrawn**
- VP11-03. Enhancement of magnetoelectric coupling in laminate composites of textured Galfenol and PZT.** *J. Liu*<sup>1</sup>, *Z. He*<sup>1</sup>, *C. Mi*<sup>1</sup>, *Y. Sha*<sup>2</sup>, *X. Zhu*<sup>1</sup>, *L. Chen*<sup>1</sup> and *L. Zuo*<sup>2</sup> *1. School of Materials Science and Engineering, Shenyang University of Technology, Shenyang, China; 2. Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), Northeastern University, Shenyang, China*
- VP11-04. Investigation of Magnetic and Magnetocaloric Properties of Nanocrystalline Pr<sub>0.6</sub>Y<sub>0.1</sub>Ba<sub>0.3</sub>MnO<sub>3</sub> Manganite.** *G. Singh*<sup>1</sup>, *A. Gaur*<sup>1</sup>, *P. Bisht*<sup>1</sup> and *R.N. Mahato*<sup>1</sup> *1. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India*
- VP11-05. Magnetostructural transformation and magnetocaloric properties of Ni<sub>37.5</sub>Co<sub>12.5</sub>Mn<sub>35</sub>Ti<sub>15</sub>B<sub>x</sub> melt-spun ribbons (x= 0.00 and 0.04).** *M. López Cruz*<sup>1</sup>, *J.L. Sanchez*<sup>1</sup> and *R. Varga*<sup>2</sup> *1. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica, San Luis Potosí, Mexico; 2. CPM-TIP, Universidad Pavol Jozef Šafárik, Kosice, Slovakia*
- VP11-06. Magnetic and magnetocaloric properties of rare earth intermetallic compound Gd<sub>3</sub>Co<sub>4</sub>Ge<sub>13</sub>.** *A.V. Morozkin*<sup>1</sup>, *A.V. Garshev*<sup>1,3</sup>, *V.O. Yapaskurt*<sup>4</sup>, *S. Quezado*<sup>2</sup>, *S.K. Malik*<sup>2</sup> and *R. Nirmla*<sup>5</sup> *1. Department of Chemistry, Moscow State University, Moscow, Russian Federation; 2. Universidade Federal do Rio Grande do Norte, Natal, Brazil; 3. Faculty of Materials Science, Moscow State University, Moscow, Russian Federation; 4. Department of Petrology, Moscow State University, Moscow, Russian Federation; 5. Department of Physics, Indian Institute of Technology Madras, Chennai, India*
- VP11-07. Enhanced magnetic and magnetocaloric effects driven by interfacial magnetic coupling of rare earth element doped LCMO-Mn<sub>3</sub>O<sub>4</sub> nanocomposites.** *M. Azim*<sup>1</sup>, *J. Mohapatra*<sup>2</sup> and *S. Mishra*<sup>1</sup> *1. Physics and Material Science, University of Memphis, Memphis, TN, United States; 2. Physics, University of Texas at Arlington, Arlington, TX, United States*

VP11-08. **Withdrawn**

VP11-09. **On the phase constitution of near equiatomic bulk FeRh alloys: X-ray versus neutron diffraction and magnetization measurements.** *M. Arreguin Hernandez*<sup>1</sup>, *K. Padrón Alemán*<sup>2,3</sup>, *P. Álvarez Alonso*<sup>2</sup> and *J.L. Sanchez*<sup>1</sup>  
*1. Instituto Potosino de Investigación Científica y Tecnológica, San Luis Potosí, Mexico; 2. Departamento de Física, Universidad de Oviedo, Oviedo, Spain; 3. Diffraction Group, Institut Laue-Langevin, Grenoble, France*

VP11-10. **Optical and Magneto-optical Properties of Pulsed Laser Deposited Thulium Iron Garnet Thin Films.** *A. Sharma*<sup>1</sup>, *O. Ciubotariu*<sup>2</sup>, *P. Matthes*<sup>3</sup>, *S. Okano*<sup>1</sup>, *V. Zviagin*<sup>4</sup>, *J. Kalbáčová*<sup>1,5</sup>, *S. Gemming*<sup>1,6</sup>, *C. Himcinschi*<sup>7</sup>, *M. Grundmann*<sup>4</sup>, *D. Zahn*<sup>1,6</sup>, *M. Albrecht*<sup>2</sup> and *G. Salvan*<sup>1,6</sup>  
*1. Semiconductor Physics, Chemnitz University of Technology, Chemnitz, Germany; 2. University of Augsburg, Augsburg, Germany; 3. Fraunhofer Institute for Electronic Nanosystems, Chemnitz, Germany; 4. Universität Leipzig, Leipzig, Germany; 5. HORIBA Jobin Yvon GmbH, Oberursel, Germany; 6. Center of Materials, Architectures and Integration of Nanomembranes, Chemnitz University of Technology, Chemnitz, Germany; 7. Institute of Theoretical Physics, TU Bergakademie Freiberg, Freiberg, Germany*

VP11-11. **Magneto-Optic Interferometric System: exploring building blocks and subcircuits.** *N. Bouda*<sup>1</sup>, *N. Prabhu Gaunkar*<sup>1</sup>, *W. Theh*<sup>1</sup> and *M. Mina*<sup>1</sup> *1. Iowa State Univeristy, Ames, IA, United States*

VP11-12. **Withdrawn**

VP11-13. **Impact of nitrogen on large charge-to-spin conversion efficiency in a non-collinear antiperovskite Mn<sub>3</sub>PtN antiferromagnet.** *N. Tripathi*<sup>1</sup>, *S. Mishra*<sup>1</sup>, *S. Isogami*<sup>2</sup> and *Y. Takahashi*<sup>2</sup> *1. School of Materials Science & Technology, Indian Institute of Technology (BHU), Varanasi, India; 2. Research Center for Magnetism and Spintronics Materials, National Institute of Materials Science, Tsukuba, Japan*

VIRTUAL PLATFORM ONLY

**Session VP12**  
**SENSORS, HIGH FREQUENCY DEVICES, AND**  
**POWER DEVICES (VIRTUAL)**  
**(Poster Virtual Session)**

*Sho Muroga, Co-Chair*  
*Akita University, Akita, Japan*  
*Connor Smith, Co-Chair*  
*U.S. Naval Academy, Annapolis, MD, United States*

VP12-01. **Measurement and Modeling of the Residual Flux in the Single-Phase Three-Limb Transformer.** *Y. Wang*<sup>1</sup>, *Y. Ren*<sup>1</sup> and *C. Liu*<sup>1</sup> *1. Hebei University of Technology, Tianjin, China*



- VP12-02. Research on the simulation accuracy of static hysteresis loops of non-oriented silicon steels using a simplified LLG equation.** L. Chen<sup>1</sup>, Y. Li<sup>1</sup>, T. Ben<sup>1</sup>, Z. Zhang<sup>1</sup> and L. Jing<sup>1</sup>  
*1. College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, China*
- VP12-03. Withdrawn**
- VP12-04. Residual Flux Density Estimation of the Three-Phase Transformer using BP Neural Network.** Y. Wang<sup>1</sup>, Y. Ren<sup>1</sup> and C. Liu<sup>1</sup>  
*1. Hebei University of Technology, Tianjin, China*
- VP12-05. Investigation of the Over-Load Unintentional Remagnetization Effect in Series Hybrid Magnet Variable Flux Memory Machine.** R. Tu<sup>1</sup>, H. Yang<sup>1</sup>, H. Zheng<sup>2</sup> and H. Lin<sup>1</sup>  
*1. Southeast University, Nanjing, China; 2. Huawei Technologies Company Ltd., Shanghai, China*
- VP12-06. Investigation on Sensorless Operation of Two New Fault-Tolerant Interior Permanent Magnet Motors from Perspective of Flux-Intensifying Effect.** L. Zhang<sup>1</sup>, S. Deng<sup>1</sup>, X. Zhu<sup>1</sup> and Z. Xiang<sup>1</sup>  
*1. Jiangsu University, Zhenjiang City, China*
- VP12-07. A Saliency Ratio-Changeable Variable-Flux Permanent-Magnet Synchronous Machine for Performance Improvement in Overall Operating Region.** S. Zhang<sup>1</sup>, F. Wang<sup>1</sup>, H. Zhao<sup>1</sup> and P. Zheng<sup>2</sup>  
*1. College of Marine Electrical Engineering, Dalian Maritime University, Dalian, China; 2. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- VP12-08. Design strategies for enhancing magnetic field generators for optical switching applications.** N. Bouda<sup>1</sup>, N. Prabhu Gaunkar<sup>1</sup>, W. Theh<sup>1</sup> and M. Mina<sup>1</sup>  
*1. Iowa State University, Ames, IA, United States*
- VP12-09. Design and Investigation of Hybrid-Tooth Dual-Winding Vernier Permanent Magnet Motor with Improved Torque Performances.** D. Fan<sup>1</sup>, W. Shan<sup>1</sup> and X. Zhu<sup>1</sup>  
*1. School of electrical and information engineering, Jiangsu University, Zhenjiang, China*
- VP12-10. Comparison and Research on Load Characteristics of PM in Different Permanent Magnet Synchronous Machines.** P. Zheng<sup>1</sup>, X. Liang<sup>1</sup>, M. Wang<sup>1</sup>, J. Gao<sup>1</sup> and W. Li<sup>1</sup>  
*1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- VP12-11. Research on the Relationship between the Distribution of High-Permeability Materials of Rotors and Characteristics of Magnetic Field in Machines.** X. Liang<sup>1</sup>, M. Wang<sup>1</sup>, P. Zheng<sup>1</sup>, J. Gao<sup>1</sup> and W. Li<sup>1</sup>  
*1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- VP12-12. Torque Improvement of E-Core FSPM Motor using Double-Layer Distributed Armature Winding.** Y. Mao<sup>1</sup>, F. Xiao<sup>1</sup>, Y. Du<sup>1</sup>, X. Zhu<sup>1</sup>, L. Quan<sup>1</sup> and C. Zhang<sup>1</sup>  
*1. Jiangsu University, Zhenjiang, China*

- VP12-13. **A Pole-changing Double-side Flux Modulation Permanent Magnet Motor.** Z. He<sup>1</sup>, F. Xiao<sup>1</sup>, Y. Du<sup>1</sup>, X. Zhu<sup>1</sup> and Y. Mao<sup>1</sup>  
*I. Jiangsu University, Zhenjiang, China*
- VP12-14. **A Flux Reversal Motor with Halbach Array Magnets Inserted into Stator Teeth.** H. Chen<sup>1</sup>, F. Xiao<sup>1</sup>, Y. Du<sup>1</sup>, X. Zhu<sup>1</sup> and Y. Mao<sup>1</sup>  
*I. Jiangsu University, Zhenjiang, China*
- VP12-15. **Comparative Analysis of Graphene-copper and Copper Material used in Electric Motor Winding.** S. Xu<sup>1</sup>, J. Li<sup>1</sup>, D. Ma<sup>1</sup>, Y. Li<sup>1</sup>, X. Lu<sup>1</sup> and R. Pei<sup>1</sup>  
*I. Electrical Engineering, Shenyang University of Technology, Shenyang, China*
- VP12-16. **Optimization Study on Local Anti-demagnetization Ability of Rotor Permanent Magnet of High-speed Motor.** W. Li<sup>1</sup>, Q. Fan<sup>1</sup>, S. Xu<sup>1</sup>, D. Ma<sup>1</sup> and R. Pei<sup>1</sup>  
*I. Electrical Engineering, Shenyang University of Technology, Shenyang, China*
- VP12-17. **An Interoperable Wireless Power Transmitter for Unipolar and Bipolar Receiving Coils.** R. Xie<sup>1</sup>, W. Xu<sup>1</sup>, C. Liu<sup>1</sup>, Y. Zhuang<sup>1</sup> and Y. Zhang<sup>1</sup>  
*I. College of Electrical Engineering and Automation, Fuzhou University, Fuzhou, China*
- VP12-18. **A reconfigurable bipolar coil for wireless charging systems with interoperability and misalignment tolerance characteristics.** C. Liu<sup>1</sup>, R. Xie<sup>1</sup>, X. Chen<sup>1</sup> and Y. Zhang<sup>1</sup>  
*I. College of Electrical Engineering and Automation, Fuzhou University, Fuzhou, China*
- VP12-19. **Operation principle analysis of air-gap magnetic field modulation in flux-switching permanent-magnet double-rotor machine.** L. Mo<sup>1</sup>  
*I. Huaiyin Institute of Technology, Huai'an, China*
- VP12-20. **Performance Analysis of a Flux-Switching Double-Rotor PM Machine Considering PM demagnetization in Two Different PM Materials.** L. Mo<sup>1</sup>  
*I. Huaiyin Institute of Technology, Huai, China*
- VP12-21. **Investigation of the Excess Loss Behavior of the Grain-Oriented Steels in A High-Frequency Range Considering Skin Effect.** L. Chen<sup>1</sup>, Z. Zhang<sup>1</sup>, T. Ben<sup>1</sup>, D. Yan<sup>1</sup> and X. Zhang<sup>2</sup>  
*1. College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, China; 2. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China*
- VP12-22. **Withdrawn**
- VP12-23. **Research on Electromagnetic Transformation and Raising Knee Frequency of Hybrid Medium High Frequency Transformer.** C. Hsu<sup>1</sup>  
*I. Mechanical Engineering, Asia Eastern University of Science and Technology, Banqiao District, Taiwan*
- VP12-24. **Motor Vibration and Noise Dependence on Magnetostriction and Electromagnetic Power Variation Identify by AI Algorithm.** C. Hsu<sup>1</sup>  
*I. Mechanical Engineering, Asia Eastern University of Science and Technology, Banqiao District, Taiwan*

- VP12-25. A Pole-Changing Flux Reversal Permanent Magnet Motor.** Y. Du<sup>1</sup>, Z. Chen<sup>1</sup>, F. Xiao<sup>1</sup>, X. Zhu<sup>1</sup> and Y. Mao<sup>1</sup>  
*1. Jiangsu University, Zhenjiang, China*
- VP12-27. Design and analysis of a new series-parallel hybrid magnetic circuit permanent magnet synchronous motor.** S. Wang<sup>1</sup>, L. Mo<sup>1</sup> and K. Zhang<sup>1</sup> *1. Huaiyin Institute of Technology, Huaian, China*
- VP12-28. Research on the method of cogging torque reduction of new built-in permanent magnet motor.** K. Zhang<sup>1</sup>  
*1. Huaiyin Institute of Technology, Huaian, China*
- VP12-29. Determination of matching capacitor for a distance variable wireless power transfer system.** S. Lee<sup>1</sup>, D. Kim<sup>1</sup>, J. Cheon<sup>1</sup>, H. Park<sup>1</sup> and D. Kim<sup>1</sup> *1. Department of Automotive Engineering, Yeungnam University, Gyeongsan, The Republic of Korea*
- VP12-30. Synthesis of CoFe<sub>2</sub>O<sub>4</sub>/Mesoporous Carbon hybrid Nanocomposite with Enhanced Microwave Absorption in K and Ka-band.** P. Pantola<sup>1,2</sup>, S. Kumar<sup>2</sup>, D. Chaudhary<sup>2</sup>, P. Agarwal<sup>1</sup> and B.K. Kuanr<sup>2</sup> *1. School of Basic Sciences, Galgotias University, Greater Noida, India; 2. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India*
- VP12-31. Design and analysis of sticker-built-in hybrid permanent magnet synchronous motor for flywheel energy storage.** T. Qin<sup>1</sup> *1. Faculty of Automation, Huaiyin Institute of Technology, Huaian, China*
- VP12-32. Design and analysis of flux switching motor for flywheel energy storage battery based on UPS.** Z. Zhao<sup>1</sup> *1. Huaiyin Institute of Technology, Huaian, China*
- VP12-33. Comparison of flux-switching in-wheel PM machines with different PM configurations using magnetic gearing principle.** L. Mo<sup>1</sup> *1. Huaiyin Institute of Technology, Huai'an, China*
- VP12-34. Analytical-Based Design Methodology and Performance Analysis of a Novel Alterable-Magnetic-Circuit Variable Flux Memory Machine.** S. Zhang<sup>1</sup>, F. Wang<sup>1</sup>, Y. Nan<sup>1</sup> and P. Zheng<sup>2</sup> *1. College of Marine Electrical Engineering, Dalian Maritime University, Dalian, China; 2. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- VP12-35. Design and Analysis of a V-Shaped Leakage-Flux-Controllable PM Machine with Improved Torque Performances.** X. Cai<sup>1</sup> and X. Zhu<sup>1</sup> *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- VP12-36. D-q-axis Flux Design of Reverse-salient Multilayer Flux Barrier Motor with Wide Speed Range.** L. Ji<sup>1</sup> and L. Quan<sup>1</sup>  
*1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- VP12-37. Torque Enhancement Design and Comparison of a Hybrid Permanent Magnet Variable Leakage Flux Motor.** M. Yang<sup>1</sup> and L. Quan<sup>1</sup> *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

- VP12-38. Phase Shift Investigation of Dual-Three Phase V-Shaped PMVM for Improved Torque and Power Factor.** *D. Pang<sup>1</sup> and X. Zhu<sup>1</sup> 1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- VP12-39. Design Consideration of Magnet Characteristics for Variable Flux Memory Machines: An Application of (Ce, Nd)-Fe-B Magnets.** *S. Zhang<sup>1</sup>, F. Wang<sup>1</sup>, J. Zhu<sup>1</sup> and P. Zheng<sup>2</sup> 1. College of Marine Electrical Engineering, Dalian Maritime University, Dalian, China; 2. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- VP12-40. Electromagnetic performance improvement design method and characteristics analysis for conversion and use of synchronous condenser of coal-fired wound rotor synchronous generator.** *G. Jang<sup>1</sup> 1. Korea Electric Power Research Institute, Daejeon, The Republic of Korea*
- VP12-41. A study on axial motors to have a thin structure and high power density compared to radial motors.** *M. Youn<sup>1</sup>, D. Nam<sup>1</sup>, I. Yang<sup>2</sup>, M. Hong<sup>1</sup> and W. Kim<sup>1</sup> 1. Department of Electrical Engineering, Gachon University, Seongnam, The Republic of Korea; 2. Hanyang University, Seoul, The Republic of Korea*
- VP12-42. Electromagnetic Characteristic Analysis for Initial Design of Permanent Magnet Synchronous Generator Using Analytical Method.** *H. Lee<sup>1</sup>, J. Lee<sup>2</sup>, W. Jung<sup>1</sup>, J. Yang<sup>1</sup>, K. Shin<sup>3</sup> and J. Choi<sup>1</sup> 1. Chungnam National University, Daejeon, The Republic of Korea; 2. Hyundai Transys, Suwon, The Republic of Korea; 3. Chonnam National University, Yeosu, The Republic of Korea*
- VP12-43. A Core Loss Estimation Method Based on Improved Waveform Coefficient Steinmetz Equation for Asymmetric Triangular Flux Density Waveform.** *Y. Li<sup>1</sup>, K. Qin<sup>1</sup>, S. Mu<sup>1</sup> and J. Yin<sup>1</sup> 1. Hebei University of Technology, Tianjin, China*
- VP12-44. Simulation Analysis on Magnetic Core Loss Characteristic of Valve Reactor in UHVDC System.** *Y. Wang<sup>1</sup>, J. Yuan<sup>1</sup>, Z. Mo<sup>1</sup>, H. Zhou<sup>1</sup> and Y. Zheng<sup>1</sup> 1. Wuhan University, Wuhan, China*

**Session VP13**  
**SOFT MAGNETIC MATERIALS (VIRTUAL)**  
**(Poster Virtual Session)**

Hee-Sung Han, Chair  
 Korea National University of Transportation, Chungju,  
 The Republic of Korea

- VP13-01. Study of High-Speed Motor Rotors Based on the Local Carburization Strengthening Mechanism of Non-Grain Oriented Silicon Steel.** A. Wang<sup>1</sup>, Y. Li<sup>1</sup>, C. Zhao<sup>2</sup> and R. Pei<sup>1</sup> *1. Shenyang University of Technology, Shenyang, Liaoning, China; 2. Suzhou Yingci New Energy Technology Co., Ltd, Suzhou City, Jiangsu Province, China*
- VP13-02. Magnetic first-order reversal curves for highly neutron-irradiated Fe-Cu alloys.** S. Kobayashi<sup>1</sup>, K. Yomogida<sup>1</sup> and E. Nomura<sup>1</sup> *1. Iwate University, Morioka, Japan*
- VP13-03. A fabrication process of Fe-Ni films electroplated from gel electrolyte.** Y. Matsumoto<sup>1</sup>, R. Hosohata<sup>1</sup>, Y. Yamaguchi<sup>1</sup>, A. Yamashita<sup>1</sup>, T. Yanai<sup>1</sup>, M. Nakano<sup>1</sup> and H. Fukunaga<sup>1</sup> *1. Nagasaki University, Nagasaki, Japan*
- VP13-04. Withdrawn**
- VP13-05. The Role of Particle Size and Volume Fraction in Ferrite Microwave Absorbers.** A.S. Padgett<sup>1</sup>, S.R. Bishop<sup>2</sup>, A.S. Peretti<sup>2</sup> and L.N. Robinett<sup>1</sup> *1. High Voltage Science and Experiment, Sandia National Laboratories, Albuquerque, NM, United States; 2. Electronic, Optical, and Nano Sciences, Sandia National Laboratories, Albuquerque, NM, United States*
- VP13-07. Withdrawn**
- VP13-08. A Novel Hybrid Magnetic Material Based Three phase Saturated Core Fault Current Limiter.** J. Yuan<sup>1</sup>, Y. Sun<sup>1</sup> and H. Zhou<sup>1</sup> *1. School of Electrical Engineering and Automation, Wuhan University, Wuhan, China*
- VP13-09. Withdrawn**
- VP13-10. Study of Magnetostrictive Properties of Electrical Steel with Different Silicon Content Considering the Effect of Stress.** D. Ma<sup>1</sup>, B. Tian<sup>1</sup>, J. Li<sup>1</sup> and R. Pei<sup>1</sup> *1. Shenyang University of Technology, Shenyang, Liaoning, China*

- VP13-11. Correction and Identification Method of Energetic Hysteresis Model Parameters under Variable Temperature Conditions.** B. Chen<sup>1</sup>, Q. Zeng<sup>2</sup>, Y. Jia<sup>3</sup>, L. Huang<sup>1</sup> and B. Tang<sup>1</sup> 1. Hubei Provincial Engineering Technology Research Center for Power Transmission Line, Yichang, China; 2. College of Electrical Engineering and New Energy China Three Gorges University, Yichang, China; 3. Sanmenxia Electric Company State Grid Henan Electric Power Company, Sanmenxia, China
- VP13-12. Measurement of magnetic properties of Grain-Oriented electrical steel considering Multi-Physics Factors influence.** L. Chen<sup>1</sup>, X. Liu<sup>1</sup>, T. Ben<sup>1</sup>, D. Yan<sup>1</sup> and X. Zhang<sup>2</sup> 1. College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, China; 2. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China
- VP13-13. Analysis of Magnetostriction of Oriented Silicon Steel under Motor Magnetic Field.** Y. Li<sup>1</sup>, Z. Li<sup>1</sup>, X. Lu<sup>1</sup> and R. Pei<sup>1</sup> 1. Shenyang University of Technology, Shenyang, China
- VP13-14. Influence of Tensile and Compressive Stresses on Magnetic Property of Amorphous Laminated Sheets.** X. Zhu<sup>1</sup> and Y. Li<sup>1</sup> 1. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China
- VP13-15. Finite size effect on structural and static magnetic properties of CoFe<sub>2</sub>O<sub>4</sub> nanoparticles.** P. Kumar<sup>1,2</sup>, S. Kumar<sup>3</sup>, S. Pathak<sup>4</sup>, A. Singh<sup>5</sup>, K. Jain<sup>2</sup>, R. Pant<sup>2</sup> and J. Partridge<sup>1</sup> 1. Applied Physics, RMIT University, Melbourne, ACT, Australia; 2. Indian Reference Materials Divisions, CSIR-National Physical Laboratory, Delhi, India; 3. Department of Physics, Hindu College, Sonapat, India; 4. Department of Materials Science and Engineering, Seoul National University, Seoul, The Republic of Korea; 5. Department of Physics, IIT Jammu, Jammu, India

VIRTUAL PLATFORM ONLY

### Session VP14

## SPIN HALL AND RELATED EFFECTS (VIRTUAL) (Poster Session)

Jingsheng Chen, Chair

National University of Singapore, Singapore, Singapore

- VP14-01. Electric Field Gated Magnon Transistor.** Y. Wang<sup>1</sup>, T. Zhang<sup>1</sup>, C. Wan<sup>1</sup> and X. Han<sup>1</sup> 1. Institute of Physics, Chinese Academy of Sciences, Beijing, China
- VP14-02. Unusual Spin-orbit Torque Switching in Perpendicular Synthetic Antiferromagnets with Strong Interlayer Exchange Coupling.** X. Luo<sup>1</sup>, Y. Wang<sup>1</sup>, X. Han<sup>1</sup> and G. Yu<sup>1</sup> 1. Institute of Physics, Chinese Academy of Sciences, Beijing, China
- VP14-03. Laser-induced terahertz emission in Fe<sub>4</sub>N/Pt bilayers with negative spin polarization.** S. Isogami<sup>1</sup>, Y. Sasaki<sup>1</sup> and Y. Takahashi<sup>1</sup> 1. NIMS, Tsukuba, Japan

**Session VP15**  
**SPIN ORBITRONICS (VIRTUAL)**  
**(Poster Virtual Session)**

Tai Kong, Chair  
 University of Arizona, Tucson, AZ, United States

- VP15-01. Revisiting the Anomalous Hall Effects of Facing Target Sputtered Pt/Fe<sub>4</sub>N/MgO Epitaxial Heterostructures.** *X. Shi*<sup>1</sup> and *W. Mi*<sup>2</sup> *1. School of Physics and Electronic Engineering, Linyi University, Linyi, China; 2. Department of Applied Physics, Tianjin University, Tianjin, China*
- VP15-02. Threshold Current of Field-free Perpendicular Magnetization Switching Using Anomalous Spin-orbit Torque.** *T. Zhang*<sup>1</sup>, *C. Wan*<sup>1</sup> and *X. Han*<sup>1</sup> *1. Institute of Physics, Chinese Academy of Science, Beijing, China*
- VP15-03. Switching Model of Double Barrier Magnetic Tunnel Junction Based on Two-dimensional Materials.** *Y. Yuan*<sup>1</sup> and *Y. Jiang*<sup>1</sup> *1. Jiangnan University, WuXi, China*
- VP15-04. Field-free Spin-orbit Torque Switching of Magnetic Tunnel Junction Structure Based on Two-dimensional van der Waals WTe<sub>2</sub>.** *Y. Yuan*<sup>1</sup> and *Y. Jiang*<sup>1</sup> *1. Jiangnan University, WuXi, China*
- VP15-05. Thickness dependent structural, morphological and magnetic properties of PLD grown CoFe thin film.** *P. Kumar*<sup>5,1</sup>, *R. Kumar*<sup>2,1</sup>, *V. Sharma*<sup>3</sup>, *M.K. Khanna*<sup>4</sup> and *B.K. Kuanr*<sup>1</sup> *1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India; 2. Shaheed Rajguru College of Applied Sciences for Women, New Delhi, India; 3. Department of Physics, Colorado State University, Fort Collins, CO, United States; 4. Ramjas College, New Delhi, India; 5. Department of Electronic Science, University of Delhi, South Campus, New Delhi, India*
- VP15-06. Spin-orbit Torque-induced Magnetization Switching in Ta/GdFeCo/Ta Structures.** *H. Hu*<sup>1</sup>, *K. Wang*<sup>3</sup>, *Y. Tao*<sup>2</sup>, *L. Yang*<sup>2</sup> and *K. Dong*<sup>2</sup> *1. School of Future Technology, China University of Geosciences, WuHan City, China; 2. School of Automation, China University of Geosciences, WuHan City, China; 3. School of Mechanical and Electronic Engineering, East China University of Technology, Nanchang City, China*
- VP15-07. Withdrawn**
- VP15-08. Field-free spin-orbit torque switching enabled by interlayer Dzyaloshinskii-Moriya interaction.** *W. He*<sup>1</sup>, *C. Wan*<sup>1</sup> and *X. Han*<sup>1</sup> *1. Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China*

**Session VP16**  
**STRUCTURED MATERIALS (VIRTUAL)**  
**(Poster Virtual Session)**

Takahiro Moriyama, Chair  
 Nagoya University, Nagoya, Japan

- VP16-01. Enhanced heating efficiency for hollow Fe<sub>3</sub>O<sub>4</sub> spherical submicron particles.** *S. Kobayashi<sup>1</sup> and T. Tsuji<sup>1</sup> 1. Iwate University, Morioka, Japan*
- VP16-02. Stoichiometric effect on structural, morphological and magnetic properties of Co<sub>2</sub>FeGa Nanowires.** *S. Singh<sup>1</sup>, M. Sharma<sup>2,1</sup> and B.K. Kuanr<sup>1</sup> 1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India; 2. Department of Physics, Deshbandhu College, New Delhi, India*
- VP16-03. Withdrawn**

**Session VP17**  
**THIN FILMS, MULTILAYERS AND INTERFACE**  
**EFFECTS (VIRTUAL)**  
**(Poster Virtual Session)**

Nicolas Rougemaille, Chair  
 Centre National de la Recherche Scientifique/Thales, Grenoble, France

- VP17-01. Nitrogen implantation induced  $\alpha'$ -Fe<sub>8</sub>N phase transition in  $\alpha$ -Fe thin films and their stability.** *G. d'Andrea<sup>1</sup>, S. Zhou<sup>2</sup>, G. Gkouzia<sup>1</sup>, M. Major<sup>1</sup> and L. Alff<sup>1</sup> 1. Institute of Materials Science, Technische Universität Darmstadt, Darmstadt, Germany; 2. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- VP17-02. Enhanced coercivity in SmCo<sub>4</sub>Cu thin films induced by chromium interlayer.** *G. Gkouzia<sup>1</sup>, J. Soler Morala<sup>2</sup>, A. Kovacs<sup>3</sup>, D. Günzing<sup>4</sup>, M. Major<sup>1</sup>, R.E. Dunin-Borkowski<sup>3</sup>, C. Navio<sup>2</sup>, A. Bollero<sup>2</sup>, K. Ollefs<sup>4</sup> and L. Alff<sup>1</sup> 1. Materials Science, Technical University of Darmstadt, Darmstadt, Germany; 2. IMDEA Nanoscience, Madrid, Spain; 3. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Jülich, Germany; 4. Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, Duisburg, Germany*
- VP17-03. Low-temperature Manufacturable, Recyclable and Reconfigurable Liquid-metal/NdFeB Composites For Sensing and Robotic Applications.** *R. Zhao<sup>1</sup>, H. Wang<sup>1</sup>, Y. Shi<sup>1</sup>, Z. Zhu<sup>3,2</sup> and B. Zhang<sup>4</sup> 1. Zhongyuan-Petersburg Aviation Colledge, Zhongyuan University of Technology, Zhengzhou, China; 2. Nanchang Institute of Technology, Nanchang, China; 3. Zhejiang Sci-Tech University, Hangzhou, China; 4. Henan University of Animal Husbandry and Economy, Zhengzhou, China*



- VP17-04. Enhanced current-induced magnetization switching by forming ferrimagnetic interfacial alloy at Co/Ho heterojunction.** S. Li<sup>1,2</sup>, H. Poh<sup>1</sup>, T. Jin<sup>1</sup>, F. Tan<sup>1</sup>, S. Wu<sup>1</sup>, K. Shen<sup>1</sup>, Y. Jiang<sup>2</sup> and W. Lew<sup>1</sup> *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Department of Electrical Engineering, Jiangnan University, Wuxi, China*
- VP17-05. Understanding stability and behavior of Magnetic Tunnel Junction (MTJ) using Electron Spin Resonance (ESR).** B.N. Mengesha<sup>1</sup>, J. Estevez Hernandez<sup>1</sup>, A. Feutmba<sup>1</sup>, A. Grizzle<sup>1</sup>, J. Martinez-Lillo<sup>2</sup> and P. Tyagi<sup>1</sup> *1. Mechanical Engineering, University of the District of Columbia, Washington DC, DC, United States; 2. Instituto de Ciencia Molecular, Universidad de Valencia, Valencia, Spain*
- VP17-06. Studying Single-Molecule Magnet (SMM) induced coupling effect on Magnetic Tunnel Junction (MTJ) using Electron spin resonance (ESR).** B.N. Mengesha<sup>1</sup>, J. Estevez Hernandez<sup>1</sup>, A. Feutmba<sup>1</sup>, A. Grizzle<sup>1</sup>, J. Martinez-Lillo<sup>2</sup> and P. Tyagi<sup>1</sup> *1. Mechanical Engineering, University of the District of Columbia, Washington DC, DC, United States; 2. Instituto de Ciencia Molecular, Universidad de Valencia, Valencia, Spain*

Ababei, G. (AR-03) . . . . .	17	Alzahrani, N. (EQ-02) . . . . .	83
Ababei, G. (EC-07) . . . . .	74	Alzahrani, N. (EQ-12) . . . . .	84
Abad, L. (BC-02) . . . . .	22	Alzahrani, N. (FG-10) . . . . .	101
Abdel-Mottaleb, M. (CG-01) . . . . .	45	Am-Shalom, N. (DE-11) . . . . .	60
Abdel-Mottaleb, M. (CG-02) . . . . .	46	Am-Shalom, N. (GB-07) . . . . .	110
Abdukayumov, K. (DF-02) . . . . .	61	Am-Shalom, N. (GB-08) . . . . .	110
Abeed, M. (FG-09) . . . . .	101	Amanatiadis, S.A. (CS-05) . . . . .	52
Abel, F.M. (AG-09) . . . . .	13	Amano, H. (AR-04) . . . . .	17
Abel, F.M. (EE-03) . . . . .	77	Amassian, A. (ED-11) . . . . .	76
Abel, F.M. (EG-07) . . . . .	81	Amemiya, K. (AP-03) . . . . .	14
Abel, F.M. (EQ-08) . . . . .	84	Ameziane, M. (BC-03) . . . . .	22
Abellan, M. (GB-06) . . . . .	110	Amigo, C.F. (AS-06) . . . . .	19
Abert, C. (AD-09) . . . . .	7	An, N. (VP7-02) . . . . .	125
Abert, C. (AD-11) . . . . .	7	Anacleto, P. (EB-04) . . . . .	72
Abert, C. (BG-13) . . . . .	29	Anderson, A.A. (DP-02) . . . . .	65
Abert, C. (CQ-03) . . . . .	49	Anderson, I. (EF-02) . . . . .	78
Aboljadayel, R. (BR-09) . . . . .	34	Ando, R. (VP11-02) . . . . .	129
Abrão, J.E. (EA-02) . . . . .	70	Ando, Y. (CD-02) . . . . .	40
Acharya, S. (BC-07) . . . . .	23	Andre, V. (CG-01) . . . . .	45
Achilli, S. (FE-04) . . . . .	96	Andre, V. (CG-02) . . . . .	46
Adachi, H. (AP-03) . . . . .	14	Andrejka, F. (EC-04) . . . . .	74
Adachi, Y. (DQ-08) . . . . .	67	Andrés González, J. (FE-10) . . . . .	97
Adamantopoulos, T. (DD-04) . . . . .	58	Andrés González, J. (GF-03) . . . . .	116
Adelmann, C. (FG-08) . . . . .	101	Angayarkanni Ramamurthy, D. (EF-08) . . . . .	79
Agarwal, P. (VP12-30) . . . . .	133	Angelopoulos, S. (AC-04) . . . . .	5
Agarwal, R. (FB-09) . . . . .	91	Anh, L. (AE-01) . . . . .	8
Agarwal, S. (DA-05) . . . . .	54	Anjum, D. (GF-09) . . . . .	117
Agarwal, S. (DG-11) . . . . .	64	Anjum, G. (CF-09) . . . . .	45
Aggarwal, S. (AB-04) . . . . .	3	Apiñaniz, E. (CF-05) . . . . .	44
Aguilera, J.D. (CS-03) . . . . .	52	Arai, T. (AE-01) . . . . .	8
Ahlberg, M. (BD-07) . . . . .	25	Arapan, S. (EQ-13) . . . . .	85
Ahlm, N. (AE-06) . . . . .	9	Araujo, P. (EB-10) . . . . .	73
Ahn, J. (AR-07) . . . . .	17	Arauzo, A. (BF-10) . . . . .	28
Ahn, J. (AR-11) . . . . .	18	Arava, H. (BD-06) . . . . .	25
Ahn, J. (EB-07) . . . . .	72	Arava, H. (EG-08) . . . . .	81
Ahn, S. (EQ-03) . . . . .	84	Arena, D. (AF-07) . . . . .	11
Ahn, S. (EQ-11) . . . . .	84	Arena, D. (BQ-05) . . . . .	32
Ahn, Y. (AR-07) . . . . .	17	Arena, D. (BQ-07) . . . . .	32
Ai, F. (AD-01) . . . . .	6	Arena, D. (EQ-02) . . . . .	83
Ai, F. (ED-07) . . . . .	75	Arena, D. (EQ-12) . . . . .	84
Aimone, J.B. (BB-04) . . . . .	21	Arena, D. (FG-10) . . . . .	101
Aimone, J.B. (DA-05) . . . . .	54	Ariando, A. (CC-07) . . . . .	39
Aimone, J.B. (EP-12) . . . . .	82	Ariando, A. (CR-10) . . . . .	51
Ajejas, F. (ED-06) . . . . .	75	Arigbabowo, O.K. (EF-10) . . . . .	79
Ajejas, F. (GB-02) . . . . .	109	Arigbabowo, O.K. (EF-11) . . . . .	79
Akamatsu, S. (EB-09) . . . . .	72	Arita, R. (DA-02) . . . . .	53
Akerman, J. (BD-07) . . . . .	25	Arnay, I. (CE-01) . . . . .	42
Akhil, K. (EG-06) . . . . .	80	Arnold, D. (BG-02) . . . . .	28
Al-Mahdawi, M. (CE-08) . . . . .	43	Arora, D. (CC-08) . . . . .	39
Al-Mahdawi, M. (EP-03) . . . . .	82	Arranz, D. (CG-08) . . . . .	47
Alam, A. (DF-04) . . . . .	61	Arreguin Hernandez, M. (VP11-09) . . . . .	130
Alam, A. (ER-07) . . . . .	86	Arshad, A. (FB-08) . . . . .	91
Alam, A. (GE-03) . . . . .	114	Artemchuk, P. (BP-15) . . . . .	31
Alam, M. (BB-07) . . . . .	21	Arzate, J.D. (FD-12) . . . . .	96
Alam, M. (FR-05) . . . . .	105	Aseguinolaza, I.R. (CF-05) . . . . .	44
Alarab, F. (ER-09) . . . . .	86	Ashida, S. (EG-10) . . . . .	81
Alatteili, G. (DE-02) . . . . .	59	Assaf, B. (BR-02) . . . . .	33
Alatteili, G. (EE-06) . . . . .	77	Assouline, B.J. (CD-03) . . . . .	40
Alberteris, M. (CG-02) . . . . .	46	Assouline, B.J. (CQ-11) . . . . .	50
Albrecht, M. (BQ-07) . . . . .	32	Assouline, B.J. (DE-11) . . . . .	60
Albrecht, M. (VP11-10) . . . . .	130	Assouline, B.J. (GB-08) . . . . .	110
Alff, L. (VP17-01) . . . . .	138	Attallah, A. (BC-02) . . . . .	22
Alff, L. (VP17-02) . . . . .	138	Attanayake, S.B. (DP-05) . . . . .	65
Ali, Q. (AG-12) . . . . .	13	Attanayake, S.B. (EE-04) . . . . .	77
Aliev, F. (EB-01) . . . . .	71	Atulasimha, J. (BB-07) . . . . .	21
Alka, K. (AE-10) . . . . .	9	Atulasimha, J. (BC-05) . . . . .	23
Allayarov, R. (AD-09) . . . . .	7	Atulasimha, J. (BC-08) . . . . .	23
Allia, P. (AD-10) . . . . .	7	Atulasimha, J. (BQ-08) . . . . .	32
Allia, P. (AG-08) . . . . .	13	Atulasimha, J. (FG-09) . . . . .	101
Allodi, G. (FE-11) . . . . .	97	Atulasimha, J. (FR-05) . . . . .	105
Alnaser, H. (DF-01) . . . . .	61	Aubert, A. (GB-10) . . . . .	111
Alp, E.E. (FF-03) . . . . .	98	Auffret, S. (BQ-06) . . . . .	32
Alvarado, J. (EF-11) . . . . .	79	Auffret, S. (EP-13) . . . . .	83
Álvarez Alonso, P. (VP11-09) . . . . .	130	Awano, H. (AS-01) . . . . .	18
Alzahrani, N. (AF-07) . . . . .	11	Awano, H. (AS-03) . . . . .	18
Alzahrani, N. (BQ-07) . . . . .	32		

\*Best student presentation award finalist

Awano, H. (CP-05) . . . . .	48	Beach, G. (DE-04) . . . . .	59
Awano, H. (DG-07) . . . . .	64	Beach, G. (DP-08) . . . . .	65
Ayala Rodriguez, F. (CQ-10) . . . . .	50	Beach, G. (EB-09) . . . . .	72
Azevedo, A. (EA-02) . . . . .	70	Beach, G. (FE-05) . . . . .	97
Azhar, A. (DP-02) . . . . .	65	Beach, G. (YA-02) . . . . .	70
Azim, M. (VP11-07) . . . . .	129	Beard, M. (ED-11) . . . . .	76
<b>- B -</b>			
Babekov, S. (CF-07) . . . . .	45	Beard, M. (GA-02) . . . . .	108
Babu, P. (DF-04) . . . . .	61	Beato-López, J.J. (GF-05) . . . . .	116
Bac, S. (BR-02) . . . . .	33	Beckmann, B. (FF-03) . . . . .	98
Bae, Y. (CA-03) . . . . .	36	Beeson, W. (EE-08) . . . . .	78
Baek, M. (FQ-02) . . . . .	103	Beg, M. (AD-02) . . . . .	6
Baek, M. (FQ-04) . . . . .	103	Beg, M. (CP-09) . . . . .	48
Baez-Flores, G.G. (DE-05) . . . . .	59	Begari, K. (BQ-11) . . . . .	32
Bai, H. (DB-03) . . . . .	54	Begue, A. (FE-10) . . . . .	97
Bai, H. (DB-05) . . . . .	55	Beguere, J. (EB-04) . . . . .	72
Bai, J. (FC-03) . . . . .	93	Beke, D. (BR-02) . . . . .	33
Bai, S. (VP4-03) . . . . .	122	Belashchenko, K. (DE-05) . . . . .	59
Bailey-Crandell, R. (DC-07) . . . . .	57	Bellaiche, L. (VP8-01) . . . . .	126
Balakrishnan, G. (GB-01) . . . . .	109	Ben Tal, Y. (DE-11) . . . . .	60
Balakrishnan, P.P. (BC-01) . . . . .	22	Ben, T. (VP12-02) . . . . .	131
Balakrishnan, P.P. (CD-06) . . . . .	41	Ben, T. (VP12-21) . . . . .	132
Baltz, V. (BQ-06) . . . . .	32	Ben, T. (VP13-12) . . . . .	136
Ban, H. (ES-09) . . . . .	88	Ben, T. (VP7-02) . . . . .	125
Ban, H. (ES-10) . . . . .	88	Benally, O. (VP11-12) . . . . .	130
Ban, H. (ES-11) . . . . .	88	Benally, O. (VP6-01) . . . . .	123
Ban, H. (FQ-08) . . . . .	104	Benckiser, E. (AE-12) . . . . .	10
Ban, H. (FQ-10) . . . . .	104	Benetti, L. (BB-06) . . . . .	21
Ban, H. (FQ-11) . . . . .	104	Benetti, L. (EB-04) . . . . .	72
Bandyopadhyay, B. (ER-07) . . . . .	86	Benini, M. (FE-11) . . . . .	97
Bandyopadhyay, S. (CF-03) . . . . .	44	Bennett, C. (BB-02) . . . . .	20
Bandyopadhyay, S. (ED-03) . . . . .	75	Bennett, C. (DA-05) . . . . .	54
Bandyopadhyay, S. (FD-08) . . . . .	95	Bennett, C. (DG-11) . . . . .	64
Bandyopadhyay, S. (FG-09) . . . . .	101	Bennett, S.P. (BR-02) . . . . .	33
Banerjee, P. (BF-07) . . . . .	27	Bennett, S.P. (CF-01) . . . . .	44
Banerjee, T. (CC-02) . . . . .	38	Benz, S. (BB-09) . . . . .	22
Banerjee, T. (ER-06) . . . . .	86	Bergenti, I. (FE-04) . . . . .	96
Banerjee, T. (FP-09) . . . . .	102	Bergenti, I. (FE-11) . . . . .	97
Bang, W. (BP-06) . . . . .	30	Bernal, O. (VP10-01) . . . . .	128
Bangar, H. (FB-07) . . . . .	91	Bernstein, N. (CD-03) . . . . .	40
Bansal, N. (BP-14) . . . . .	31	Bernstein, N. (DE-11) . . . . .	60
Banshodani, T. (ER-02) . . . . .	85	Bernstein, N. (GB-07) . . . . .	110
Bär, M. (FG-10) . . . . .	101	Bernstein, N. (GB-08) . . . . .	110
Barker, C.E. (BR-09) . . . . .	34	Besler, J. (EP-14) . . . . .	83
Barker, J. (DB-02) . . . . .	54	Besler, J. (EQ-13) . . . . .	85
Barman, A. (ED-03) . . . . .	75	Bessler, P.W. (BB-04) . . . . .	21
Barnard, J. (GF-10) . . . . .	117	Bessler, P.W. (DA-05) . . . . .	54
Baron, M. (CG-05) . . . . .	46	Bey, S. (BR-02) . . . . .	33
Barrera, G. (AD-10) . . . . .	7	Bezencenet, O. (FG-11) . . . . .	101
Barrera, G. (AG-08) . . . . .	13	Bhaduri, I. (ER-06) . . . . .	86
Barrows, F. (EG-08) . . . . .	81	Bhakat, S. (AP-10) . . . . .	15
Bartolome, E. (BF-10) . . . . .	28	Bhandari, B. (GC-04) . . . . .	111
Barton, C.W. (GB-02) . . . . .	109	Bhandari, C. (EF-12) . . . . .	79
Barua, R. (CF-01) . . . . .	44	Bhardwaj, S. (VP5-01) . . . . .	123
Barua, R. (FF-05) . . . . .	98	Bhat, F.H. (CF-09) . . . . .	45
Barwal, V. (GE-02) . . . . .	114	Bhat, I. (BS-06) . . . . .	35
Basheed, G. (VP7-04) . . . . .	125	Bhatt, K. (FE-09) . . . . .	97
Basu, T. (CC-03) . . . . .	39	Bhatt, R.C. (BR-01) . . . . .	33
Bauer, G. (AB-11) . . . . .	4	Bhatt, S. (BP-13) . . . . .	31
Bauer, G. (BA-02) . . . . .	19	Bhatta, A. (AS-05) . . . . .	19
Bauer, G. (BB-03) . . . . .	21	Bhattacharjee, S. (AS-05) . . . . .	19
Bauer, J.J. (AD-03) . . . . .	6	Bhattacharya, D. (BC-05) . . . . .	23
Bauers, S. (DC-09) . . . . .	57	Bhattacharya, D. (BC-08) . . . . .	23
Bauers, S. (FC-08) . . . . .	93	Bhattacharya, D. (BE-02) . . . . .	25
Bauers, S. (FE-07) . . . . .	97	Bhattacharya, D. (FG-09) . . . . .	101
Baughman, J. (VP10-01) . . . . .	128	Bhowmik, D. (AB-10) . . . . .	4
Bayarara, T. (EC-03) . . . . .	74	Bhowmik, D. (VP4-15) . . . . .	122
Bayarara, T. (GB-03) . . . . .	109	Biacchi, A.J. (AG-09) . . . . .	13
Bayarsaikhan, O. (DF-05) . . . . .	62	Biacchi, A.J. (EE-03) . . . . .	77
Bayarsaikhan, O. (VP2-06) . . . . .	120	Biacchi, A.J. (EG-07) . . . . .	81
Beach, G. (AE-13) . . . . .	10	Biesecker, J. (BB-09) . . . . .	22
Beach, G. (BC-06) . . . . .	23	Bihlmayer, G. (CE-01) . . . . .	42
Beach, G. (CD-10) . . . . .	41	Billoni, O. (GC-01) . . . . .	111
Beach, G. (CP-10) . . . . .	48	Binek, C. (AC-05) . . . . .	5
Beach, G. (DC-03) . . . . .	56	Binod, D. (CR-01) . . . . .	50
		Birch, M. (GB-01) . . . . .	109
		Bischoff, M. (DC-06) . . . . .	57
		Bishop, S.R. (VP13-05) . . . . .	135

\*Best student presentation award finalist

Bisht, P. (CR-08)	51	Camsari, K.Y. (EB-02)	71
Bisht, P. (VP11-04)	129	Candido, D.R. (FF-11)	99
Bista, D. (EE-08)	78	Canfield, P.C. (AP-02)	14
Biswas, A. (AP-08)	15	Canfield, P.C. (BF-02)	27
Biswas, A. (AQ-08)	16	Canvel, Y. (DG-04)	63
Biswas, A. (AS-02)	18	Canvel, Y. (DG-08)	64
Biswas, D. (EB-06)	72	Cao, L. (GD-03)	112
Blackburn, J.H. (AP-06)	14	Cao, T. (AF-02)	10
Blake, E. (BR-04)	33	Cao, X. (FR-09)	106
Blanco, J. (EC-09)	74	Capriata, C.C. (BB-01)	20
Blenkinsop, E. (BQ-10)	32	Capriata, C.C. (VP7-05)	125
Bleser, S. (BR-03)	33	Capua, A. (CD-03)	40
Bleser, S. (BR-06)	33	Capua, A. (CQ-11)	50
Bluegel, S. (CE-01)	42	Capua, A. (DE-11)	60
Bock, M. (AG-02)	12	Capua, A. (GB-07)	110
Bocklage, L. (ED-09)	76	Capua, A. (GB-08)	110
Boeckelheide, Z. (DQ-04)	66	Caravelli, F. (CQ-14)	50
Bollapragada, V. (GG-02)	117	Carbonio, R. (GC-01)	111
Bollero, A. (VP17-02)	138	Cardenas Flechas, L.J. (DP-06)	65
Bonell, F. (DF-02)	61	Cardoso, S. (EB-10)	73
Borchers, J.A. (AG-10)	13	Cardwell, S.G. (BB-04)	21
Borchers, J.A. (DC-11)	57	Cardwell, S.G. (DA-05)	54
Borchers, J.A. (EE-05)	77	Cardwell, S.G. (EP-12)	82
Boris, A.V. (AE-12)	10	Caretta, L.M. (FA-02)	89
Borras, V. (FG-08)	101	Carpenter, R. (DG-08)	64
Bortolotti, P. (EB-04)	72	Carpenter, R. (FG-08)	101
Borza, F. (AR-02)	17	Carpentieri, M. (BB-06)	21
Bosch-Santos, B. (AS-06)	19	Carpentieri, M. (CS-06)	53
Bose, A. (CE-04)	42	Carpentieri, M. (FP-01)	102
Bossini, D. (FB-08)	91	Carriço, A. (VP1-03)	119
Bouamrane, F. (FG-11)	101	Carriço, A.d. (VP1-02)	118
Bouard, C. (CE-04)	42	Caruana, A. (CD-06)	41
Bouda, N. (VP11-11)	130	Casañ, N. (BC-02)	22
Bouda, N. (VP12-08)	131	Casey, J.F. (AS-05)	19
Bouzehouane, K. (ED-06)	75	Casey, J.F. (BF-06)	27
Boyu, F. (AG-03)	12	Castellanos Beltran, M. (BB-09)	22
Branford, W.R. (DE-02)	59	Cecil, T.W. (CA-05)	36
Brataas, A. (AA-03)	2	Cegan, T. (GE-05)	115
Bretaña, A.B. (AF-06)	11	Celegato, F. (AD-10)	7
Brik, M. (CD-03)	40	Cestarollo, L. (EE-01)	76
Brites, G. (EB-10)	73	Cha, S. (FF-08)	99
Broadway, D. (FA-05)	89	Chakraborti, S. (EP-10)	82
Brock, J. (GF-06)	116	Chakraverty, S. (BF-05)	27
Brohholm, C. (FB-12)	92	Chan, M.K. (BF-05)	27
Bruckner, F. (AD-09)	7	Chanda, A. (AF-07)	11
Bruckner, F. (BG-13)	29	Chanda, A. (BQ-05)	32
Bruckner, F. (CQ-03)	49	Chanda, A. (BQ-07)	32
Brunn, O. (GB-04)	110	Chanda, A. (DP-05)	65
Brunnett, F. (FG-11)	101	Chanda, A. (EE-04)	77
Brus, P. (FG-11)	101	Chanda, A. (EQ-02)	83
Brzuszek, K. (CQ-12)	50	Chanda, A. (FG-10)	101
Brzuszek, K. (CS-04)	52	Chanda, A. (GE-03)	114
Brzykcy, G. (CR-07)	51	Chang, J. (CP-01)	47
Buajong, C. (GG-04)	117	Chang, L. (EP-16)	83
Buajong, C. (GG-06)	118	Chang, W. (DB-11)	55
Bud'ko, S.L. (BF-02)	27	Chang, W. (FD-03)	94
Buda-Prejbeanu, L.D. (EP-13)	83	Channa, S. (AB-01)	2
Bui, T.Q. (AG-09)	13	Chantrell, R. (CQ-07)	49
Bui, T.Q. (EE-03)	77	Chantrell, R. (DD-04)	58
Bui, T.Q. (EG-07)	81	Charilaou, M. (GF-02)	115
Burgess, W. (GC-02)	111	Charlier, J. (FG-11)	101
Burghard, M. (GB-01)	109	Chaturvedi, V. (DC-01)	56
Burgio, C. (BF-06)	27	Chaudhary, D. (VP12-30)	133
Burks, E.C. (BE-02)	25	Chaudhary, S. (FG-02)	100
Burnell, G. (BR-09)	34	Chauhan, K.P. (BS-06)	35
Bussmann, K. (FE-02)	96	Chauhan, S. (AE-11)	10
Butler, W.H. (GE-06)	115	Chaves-O'Flynn, G.D. (VP7-05)	125
Butterling, M. (BC-02)	22	Cheeran, M.C. (FR-13)	106
		Chen, B. (BG-05)	29
		Chen, B. (VP13-11)	136
		Chen, C. (BR-13)	34
		Chen, C. (CQ-04)	49
		Chen, C. (DB-03)	54
		Chen, C. (EB-01)	71
		Chen, C. (ER-11)	86
		Chen, G. (BC-01)	22
		Chen, G. (BC-05)	23

- C -

\*Best student presentation award finalist

Chen, G. (BC-08).....	23	Choe, S. (CP-01).....	47
Chen, H. (AB-02).....	3	Choe, S. (CP-03).....	48
Chen, H. (BP-13).....	31	Choi, C. (AQ-03).....	15
Chen, H. (BR-05).....	33	Choi, C. (VP3-07).....	120
Chen, H. (EB-11).....	73	Choi, D. (DR-02).....	68
Chen, H. (EE-05).....	77	Choi, D. (DR-10).....	69
Chen, H. (VP12-14).....	132	Choi, J. (CG-07).....	47
Chen, J. (DB-08).....	55	Choi, J. (DF-06).....	62
Chen, J. (VP6-01).....	123	Choi, J. (DR-09).....	69
Chen, J. (VP6-08).....	124	Choi, J. (EB-12).....	73
Chen, L. (VP11-03).....	129	Choi, J. (ES-01).....	86
Chen, L. (VP12-02).....	131	Choi, J. (ES-03).....	87
Chen, L. (VP12-21).....	132	Choi, J. (ES-05).....	87
Chen, L. (VP13-12).....	136	Choi, J. (ES-06).....	87
Chen, L. (VP7-02).....	125	Choi, J. (ES-08).....	88
Chen, Q. (CC-05).....	39	Choi, J. (ES-09).....	88
Chen, Q. (CD-01).....	40	Choi, J. (ES-10).....	88
Chen, Q. (GD-03).....	112	Choi, J. (ES-11).....	88
Chen, R. (CB-04).....	37	Choi, J. (FQ-06).....	103
Chen, S. (CG-01).....	45	Choi, J. (FQ-07).....	103
Chen, S. (DF-06).....	62	Choi, J. (FQ-08).....	104
Chen, X. (BB-08).....	21	Choi, J. (FQ-09).....	104
Chen, X. (CB-06).....	37	Choi, J. (FQ-10).....	104
Chen, X. (CR-10).....	51	Choi, J. (FQ-11).....	104
Chen, X. (DA-02).....	53	Choi, J. (FQ-12).....	104
Chen, X. (EG-06).....	80	Choi, J. (FQ-13).....	104
Chen, X. (FB-13).....	92	Choi, J. (FQ-14).....	104
Chen, X. (VP12-18).....	132	Choi, J. (FQ-15).....	105
Chen, X. (VP6-03).....	124	Choi, J. (FR-03).....	105
Chen, Y. (AR-12).....	18	Choi, J. (FR-07).....	106
Chen, Y. (BG-05).....	29	Choi, J. (FR-14).....	107
Chen, Y. (EE-01).....	76	Choi, J. (VP12-42).....	134
Chen, Y. (VP13-07).....	135	Choi, R. (FR-14).....	107
Chen, Y. (VP6-01).....	123	Choi, W. (DE-10).....	60
Chen, Z. (BC-01).....	22	Choi, W. (GE-01).....	114
Chen, Z. (BC-04).....	23	Choi, Y. (AF-05).....	11
Chen, Z. (BE-02).....	25	Choi, Y. (VP4-11).....	122
Chen, Z. (VP12-25).....	133	Chong, S. (DB-09).....	55
Cheng, B. (FR-01).....	105	Chopdekar, R.V. (FA-01).....	89
Cheng, C. (DB-11).....	55	Chopdekar, R.V. (GB-03).....	109
Cheng, C. (FD-03).....	94	Chou, C. (ED-11).....	76
Cheng, H. (EA-01).....	70	Chou, C. (FB-01).....	90
Cheng, R. (DB-01).....	54	Chouhan, R.K. (AP-08).....	15
Cheng, R. (DB-07).....	55	Chow, C. (GG-03).....	117
Cheng, R. (DB-09).....	55	Chowdhury, M.F. (BC-05).....	23
Cheng, R. (DC-04).....	56	Chowdhury, N. (FB-09).....	91
Cheng, R. (DG-03).....	63	Chrisikos, J. (FR-12).....	106
Cheng, S. (FF-11).....	99	Christensen, M. (EF-09).....	79
Cheng, Y. (DB-09).....	55	Christiani, G. (AE-12).....	10
Cheng, Y. (EP-16).....	83	Chshiev, M. (DF-02).....	61
Cheon, J. (VP12-29).....	133	Chshiev, M. (EA-04).....	71
Cherkasskii, M. (DD-03).....	58	Chuang, H. (GD-02).....	112
Chernov, S. (CF-07).....	45	Chubykalo-Fesenko, O. (DD-04).....	58
Chetty, A. (VP8-04).....	126	Chudasama, B. (VP3-09).....	121
Chi, B. (ER-03).....	85	Chudo, H. (VP11-01).....	129
Chiba, S. (DE-08).....	60	Chue, E. (CB-06).....	37
Chiba, T. (VP2-01).....	119	Chugh, V.K. (FR-13).....	106
Chikaki, S. (DQ-11).....	67	Chugh, V.K. (VP6-01).....	123
Chikaki, S. (FR-09).....	106	Chung, J. (CR-09).....	51
Chin, A.N. (FD-12).....	96	Chung, K. (FF-02).....	98
Chinnasamy, C. (BG-01).....	28	Chung, S. (BD-07).....	25
Chiriari, H. (AR-03).....	17	Ciubotariu, O. (VP11-10).....	130
Chiriari, H. (EC-07).....	74	Cizek, J. (GE-05).....	115
Chiriari, H. (FR-11).....	106	Claro, M.S. (EB-04).....	72
Chiriari, H. (VP9-06).....	127	Clements, E. (AF-07).....	11
Chiu, I. (AE-06).....	9	Clérac, R. (BF-08).....	27
Cho, E. (AE-02).....	8	Cohen, G. (GB-08).....	110
Cho, H. (ES-04).....	87	Coisson, M. (AD-10).....	7
Cho, H. (ES-06).....	87	Comstock, A. (ED-11).....	76
Cho, H. (ES-08).....	88	Comstock, A. (GA-02).....	108
Cho, H. (ES-09).....	88	Conner, B.S. (AF-06).....	11
Cho, H. (FQ-11).....	104	Constantino, R.F. (EB-10).....	73
Cho, J. (CS-02).....	52	Córdova Carrizales, D. (BA-05).....	20
Cho, M. (DF-06).....	62	Corodeanu, S. (EC-07).....	74
Cho, W. (DR-07).....	69	Correa, E. (AG-10).....	13
Choe, S. (BQ-03).....	31	Correa, E. (EE-03).....	77
Choe, S. (BQ-09).....	32	Correa, E. (EQ-08).....	84

\*Best student presentation award finalist

Corte-Leon, P. (EC-04)	74
Corte-Leon, P. (EC-08)	74
Corte-Leon, P. (EC-09)	74
Cote, T.R. (BD-06)	25
Coton, N. (FE-10)	97
Coton, N. (GF-03)	116
Cottam, M.G. (BP-09)	30
Cottet, A. (DE-07)	60
Cottrell, S. (AP-09)	15
Couet, S. (DG-04)	63
Couet, S. (DG-05)	63
Couet, S. (DG-08)	64
Couet, S. (FD-07)	95
Couet, S. (FG-08)	101
Couet, S. (GD-08)	113
Cox, J. (CQ-13)	50
Cresswell, Z. (FG-03)	100
Cros, V. (ED-06)	75
Cros, V. (GB-02)	109
Cubukcu, M. (FB-10)	91
Cui, C. (AB-05)	3
Cui, C. (DA-05)	54
Cui, C. (EP-12)	82
Cui, J. (EF-02)	78
Czoschke, P. (GG-03)	117

- D -

d'Andrea, G. (VP17-01)	138
D'Emic, C. (EB-05)	72
da Silva, A. (DF-08)	62
Dabrowski, M. (GA-01)	107
Dale, T. (FG-05)	100
Damatopoulou, T.V. (AC-04)	5
Dang, Y. (AG-10)	13
Daniel, G. (GB-08)	110
Dantas, A.L. (VP1-02)	118
Dantas, A.L. (VP1-03)	119
Das, D. (CP-04)	48
Das, I. (CF-03)	44
Das, R. (DP-05)	65
Das, S. (CG-04)	46
Das, S. (CQ-10)	50
Dasari, H. (EF-02)	78
Davies, J.E. (FD-08)	95
Davydov, A. (BC-01)	22
DC, M. (CE-05)	43
de Araujo Machado, F. (EC-06)	74
De Boeck, J. (FD-07)	95
De Boeck, J. (GD-08)	113
de Jong, M.C. (AC-08)	5
de la Presa, P. (CG-08)	47
de la Presa, P. (CS-03)	52
De Lima Correa, E. (AG-09)	13
De Lima Correa, E. (EG-07)	81
de Loubens, G. (ED-06)	75
de Moraes, I. (DF-02)	61
de Oliveira, T.A. (FB-08)	91
De Riz, A. (EB-04)	72
Debnath, O. (DQ-11)	67
Dediu, V.A. (FE-04)	96
Dediu, V.A. (FE-11)	97
Deffenbaugh, M. (EG-04)	80
Deinert, J. (FB-08)	91
Deka, K. (AG-02)	12
Del Rose, T. (AS-02)	18
Del Rose, T.J. (EQ-04)	84
Dempsey, N. (AD-06)	7
Demsar, J. (CF-07)	45
Deng, K. (EQ-07)	84
Deng, K. (GA-03)	108
Deng, S. (VP12-06)	131
Dennis, C. (AG-09)	13
Dennis, C. (AG-10)	13
Dennis, C. (AS-06)	19
Dennis, C. (EE-03)	77
Dennis, C. (EG-07)	81

Dennis, C. (EQ-08)	84
Deshpande, G.A. (AG-02)	12
Deshpande, V. (DF-01)	61
Detellem, D. (BQ-07)	32
Detellem, D. (FG-10)	101
Dev, J. (FE-09)	97
Devillers, T. (AD-06)	7
Devkota, J. (GC-02)	111
Devolder, T. (ED-06)	75
Dewey, J.E. (GD-07)	113
Dhillon, S. (DF-02)	61
Di Pietro Martínez, M. (FA-03)	89
Díaz-García, Á. (FF-01)	98
Dieckow, K. (CR-01)	50
Dieny, B. (EP-13)	83
Ding, B. (CB-03)	37
Diniz, F.V. (VP1-03)	119
Dion, T. (DE-02)	59
Dirba, I. (FF-12)	99
Divan, R. (CA-05)	36
Divan, R. (GA-02)	108
Dlubak, B. (AP-03)	14
Dlubak, B. (FG-11)	101
Dodd, S. (AG-01)	12
Doddrill, B.C. (GC-08)	112
Dohi, T. (FB-04)	90
Dolotko, O. (AQ-08)	16
Donahue, M.J. (AG-09)	13
Donahue, M.J. (AG-10)	13
Donahue, M.J. (EE-03)	77
Donahue, M.J. (EG-07)	81
Doñate Buendía, C. (FF-06)	99
Dong, J. (VP7-07)	125
Dong, K. (VP15-06)	137
Dong, K. (VP9-08)	127
Dorj, O. (EF-14)	80
dos Santos Correa, B. (AG-10)	13
Dosenovic, D. (DF-02)	61
Dou, H. (GF-10)	117
Dou, Y. (VP10-04)	128
Doyle, S. (BA-05)	20
Dragos-Pinzaru, O. (VP9-06)	127
Draher, T. (GA-02)	108
Drouard, M. (CE-04)	42
Du, C. (GA-04)	108
Du, H. (AQ-14)	16
Du, H. (VP3-11)	121
Du, J. (CD-01)	40
Du, R. (VP3-04)	120
Du, T. (GG-07)	118
Du, Y. (VP12-12)	131
Du, Y. (VP12-13)	132
Du, Y. (VP12-14)	132
Du, Y. (VP12-25)	133
Duan, J. (AD-12)	7
Dubois, S.M. (FG-11)	101
Dubrovin, R. (FB-08)	91
Ducevic, A. (BG-13)	29
Duffee, C. (BB-05)	21
Duman, M. (BF-05)	27
Dunin-Borkowski, R.E. (GF-02)	115
Dunin-Borkowski, R.E. (VP17-02)	138
Duong, A. (FG-10)	101
Dutta, B. (FP-07)	102
DuttaGupta, S. (DB-04)	55

- E -

Easy, E. (GA-02)	108
Ebihara, S. (VP4-04)	122
Ebrahimi, F. (FD-11)	95
Eckel, C. (DG-09)	64
Eckert, J. (BR-04)	33
Eda, G. (GA-01)	107
Edwards, A.J. (AB-04)	3
Edwards, A.J. (BR-11)	34

\*Best student presentation award finalist

Edwards, A.J. (EB-06) . . . . .	72	Fernández Brito, D. (CR-11) . . . . .	52
Edwards, A.J. (FD-12) . . . . .	96	Fernandez-Scarioni, A. (GB-02) . . . . .	109
Eggert, B. (FF-03) . . . . .	98	Ferreira, R. (BB-06) . . . . .	21
Egli, R. (GC-08) . . . . .	112	Ferreira, R. (EB-04) . . . . .	72
Ehresmann, A. (AG-05) . . . . .	12	Ferrero, R. (AG-04) . . . . .	12
Ehrler, R. (CD-04) . . . . .	40	Ferrero, R. (CQ-09) . . . . .	49
Eisebitt, S. (BQ-06) . . . . .	32	Ferrero, R. (DQ-10) . . . . .	67
El Baggari, I. (BA-05) . . . . .	20	Ferrero, R. (EE-09) . . . . .	78
El-Ghazaly, A. (EE-01) . . . . .	76	Ferrero, R. (XA-01) . . . . .	35
Elmers, H. (CF-07) . . . . .	45	Fert, A. (EA-01) . . . . .	70
Elyasi, M. (AB-11) . . . . .	4	Fert, A. (EA-04) . . . . .	71
Elyasi, M. (BB-03) . . . . .	21	Fescenko, I. (AC-05) . . . . .	5
Emelianoff, A. (DQ-14) . . . . .	67	Fescenko, I. (AC-07) . . . . .	5
Emori, S. (CD-06) . . . . .	41	Feutmba, A. (VP17-05) . . . . .	139
Emori, S. (CD-08) . . . . .	41	Feutmba, A. (VP17-06) . . . . .	139
Emoto, K. (CP-12) . . . . .	48	Filianina, M. (CF-07) . . . . .	45
Endo, T. (FD-10) . . . . .	95	Finco, A. (FG-08) . . . . .	101
Endo, Y. (AR-06) . . . . .	17	Finizio, S. (BR-09) . . . . .	34
Endo, Y. (CS-07) . . . . .	53	Finizio, S. (GB-03) . . . . .	109
Endo, Y. (FQ-03) . . . . .	103	Finkel, P. (CC-09) . . . . .	39
Endoh, T. (CE-02) . . . . .	42	Finocchio, G. (BB-05) . . . . .	21
Endoh, T. (CQ-02) . . . . .	49	Finocchio, G. (CS-06) . . . . .	53
Endoh, T. (DB-04) . . . . .	55	Finocchio, G. (FD-01) . . . . .	94
Endoh, T. (FD-04) . . . . .	94	Finocchio, G. (FD-11) . . . . .	95
Engel-Herbert, R. (DF-08) . . . . .	62	Finocchio, G. (FP-01) . . . . .	102
Engel, D. (BQ-06) . . . . .	32	Firme, A.A. (BC-01) . . . . .	22
Enkhtur, U. (EF-14) . . . . .	80	Fischbacher, J. (AG-12) . . . . .	13
Enriquez, A. (DG-09) . . . . .	64	Fischer, J. (AG-02) . . . . .	12
Enriquez, A. (GD-05) . . . . .	113	Fischer, P. (CP-06) . . . . .	48
Erickson, A. (AC-05) . . . . .	5	Fischer, P. (FB-08) . . . . .	91
Erickson, A. (AC-07) . . . . .	5	Fischer, P. (GB-03) . . . . .	109
Erickson, A. (ED-05) . . . . .	75	Fisher, C.R. (AC-03) . . . . .	5
Erkoreka, A. (FF-04) . . . . .	98	Fitchorova, O. (EQ-15) . . . . .	85
Espinosa Rodriguez, G.L. (EF-11) . . . . .	79	Fitzgerald, S.P. (DB-02) . . . . .	54
Estevez Hernandez, J. (VP17-05) . . . . .	139	Fitzpatrick, C. (BR-04) . . . . .	33
Estevez Hernandez, J. (VP17-06) . . . . .	139	Flajšman, L. (BC-03) . . . . .	22
Evans, R. (CQ-07) . . . . .	49	Flatau, A. (VP4-13) . . . . .	122
Evans, R. (DD-04) . . . . .	58	Flatté, M.E. (FF-11) . . . . .	99
Evans, S.R. (EB-06) . . . . .	72	Flebus, B. (EQ-07) . . . . .	84
Everschor-Sitte, K. (AD-05) . . . . .	6	Flebus, B. (GA-03) . . . . .	108
- F -			
Fabiha, R. (ED-03) . . . . .	75	Fleischmann, C. (DG-08) . . . . .	64
Fabiha, R. (FD-08) . . . . .	95	Flicker, F. (BE-06) . . . . .	26
Fakhrlul, T. (CD-10) . . . . .	41	Fohtung, E. (CC-06) . . . . .	39
Falcone, R.W. (GB-04) . . . . .	110	Fong, X. (CP-04) . . . . .	48
Fallarino, L. (CD-04) . . . . .	40	Forment-Aliaga, A. (GF-08) . . . . .	116
Fan, D. (VP12-09) . . . . .	131	Forró, L. (BR-02) . . . . .	33
Fan, K. (FD-07) . . . . .	95	Fortunato, N. (FF-12) . . . . .	99
Fan, Q. (VP12-16) . . . . .	132	Fowler, A. (EB-06) . . . . .	72
Fan, X. (BR-06) . . . . .	33	Franco, V. (AG-11) . . . . .	13
Fan, X. (CF-10) . . . . .	45	Franco, V. (FF-01) . . . . .	98
Fan, X. (DE-06) . . . . .	60	Franco, V. (GE-06) . . . . .	115
Fan, Y. (FG-03) . . . . .	100	Frandsen, C. (EG-01) . . . . .	80
Fan, Y. (GG-03) . . . . .	117	Frank, M.P. (BR-11) . . . . .	34
Fang, B. (AB-02) . . . . .	3	Franke, K. (BD-04) . . . . .	24
Fang, W. (DE-05) . . . . .	59	Franke, L.M. (FR-05) . . . . .	105
Fang, Y. (AQ-11) . . . . .	16	Frano, A. (AE-07) . . . . .	9
Fang, Y. (EF-04) . . . . .	78	Fratesi, G. (FE-04) . . . . .	96
Fangohr, H. (AD-02) . . . . .	6	Fratino, L. (AE-07) . . . . .	9
Fangohr, H. (AD-09) . . . . .	7	Freeman, C. (FB-10) . . . . .	91
Fangohr, H. (CP-09) . . . . .	48	Freeman, F.M. (BG-02) . . . . .	28
Fangohr, H. (CQ-08) . . . . .	49	Friedman, G. (FR-16) . . . . .	107
Farcis, L. (EP-13) . . . . .	83	Friedman, J.S. (AB-04) . . . . .	3
Fariborzi, H. (AB-08) . . . . .	3	Friedman, J.S. (BR-11) . . . . .	34
Farkaš, A. (FB-11) . . . . .	92	Friedman, J.S. (EB-06) . . . . .	72
Farle, M. (DD-03) . . . . .	58	Friedman, J.S. (FD-12) . . . . .	96
Favieres, C. (FE-01) . . . . .	96	Frisch, J. (FG-10) . . . . .	101
Fecher, G. (CR-04) . . . . .	51	Frisk, A. (BD-07) . . . . .	25
Fedchenko, O. (CF-07) . . . . .	45	Frost, W.J. (FG-05) . . . . .	100
Feggeler, T. (GB-04) . . . . .	110	Fuchs, G.D. (CA-02) . . . . .	36
Felser, C. (AF-07) . . . . .	11	Fuentes-Rodríguez, L. (BC-02) . . . . .	22
Felser, C. (EQ-02) . . . . .	83	Fuersich, K. (AE-12) . . . . .	10
Feng, M. (AE-04) . . . . .	8	Fujimoto, M. (VP4-04) . . . . .	122
Feng, M. (AE-06) . . . . .	9	Fujisawa, Y. (CR-10) . . . . .	51
Ferenc Segedin, D. (BA-05) . . . . .	20	Fujita, Y. (AR-04) . . . . .	17
		Fukami, S. (AB-11) . . . . .	4
		Fukami, S. (BB-03) . . . . .	21
		Fukami, S. (DB-01) . . . . .	54

\*Best student presentation award finalist

Fukami, S. (DE-08) . . . . .	60
Fukami, S. (EB-02) . . . . .	71
Fukami, S. (FB-03) . . . . .	90
Fukami, S. (FB-04) . . . . .	90
Fukami, S. (FD-02) . . . . .	94
Fukunaga, H. (VP13-03) . . . . .	135
Fukunaga, H. (VP3-08) . . . . .	121
Fukushima, D. (VP3-08) . . . . .	121
Fukushima, T. (FD-10) . . . . .	95
Fullerton, E. (BR-04) . . . . .	33
Fullerton, E. (GD-11) . . . . .	114
Fullerton, E. (GF-06) . . . . .	116
Fullerton, J. (BE-05) . . . . .	26
Fushimi, M. (AG-03) . . . . .	12
Fushimi, M. (AG-06) . . . . .	13
Fushimi, M. (CG-06) . . . . .	46
Fushimi, M. (DQ-07) . . . . .	67
Fushimi, M. (FR-09) . . . . .	106
Füzer, J. (AR-09) . . . . .	18

- G -

Gadbois, J. (GG-03) . . . . .	117
Galbiati, M. (FG-11) . . . . .	101
Galceran, R. (FG-11) . . . . .	101
Gallardo, R. (CD-04) . . . . .	40
Gandia, D. (GF-05) . . . . .	116
Ganguly, S. (EB-03) . . . . .	71
Ganss, F. (CD-04) . . . . .	40
Gao, J. (VP10-04) . . . . .	128
Gao, J. (VP12-10) . . . . .	131
Gao, J. (VP12-11) . . . . .	131
Gao, Z. (VP3-10) . . . . .	121
Garayo, E. (GF-05) . . . . .	116
Garcia- Etxabe, R. (EG-11) . . . . .	81
Garcia-Adeva, A.J. (CF-05) . . . . .	44
Garcia-Martinez, J.C. (EG-05) . . . . .	81
García-Regueiro, A. (GF-08) . . . . .	116
Garcia-Sanchez, F. (BR-11) . . . . .	34
Garcia-Sanchez, F. (GB-02) . . . . .	109
Garcia, V. (FG-08) . . . . .	101
Garg, N. (VP4-15) . . . . .	122
Garshev, A.V. (VP11-06) . . . . .	129
Gartside, J.C. (DE-02) . . . . .	59
Gartside, J.C. (EE-06) . . . . .	77
Gas, K. (FB-03) . . . . .	90
Gaufres, E. (FG-11) . . . . .	101
Gault, B. (DC-02) . . . . .	56
Gaur, A. (VP11-04) . . . . .	129
Gavriiloaea, P. (DD-04) . . . . .	58
Gayles, J.D. (AF-07) . . . . .	11
Ge, H. (VP3-07) . . . . .	120
Geerts, W. (CR-01) . . . . .	50
Geerts, W. (CR-02) . . . . .	50
Geerts, W. (EF-10) . . . . .	79
Geerts, W. (EF-11) . . . . .	79
Gembalova, L. (GE-05) . . . . .	115
Gemming, S. (VP11-10) . . . . .	130
George, J. (CG-10) . . . . .	47
George, J. (DF-02) . . . . .	61
Georgopoulos, L. (BD-06) . . . . .	25
Ger, T. (FR-06) . . . . .	106
Gervacio Arciniega, J.J. (CR-11) . . . . .	52
Ghemes, C. (VP9-06) . . . . .	127
Gherca, D. (AR-02) . . . . .	17
Ghoreyshi, A. (GG-03) . . . . .	117
Ghosh, A.W. (BB-01) . . . . .	20
Ghosh, A.W. (EB-03) . . . . .	71
Ghosh, R. (VP5-01) . . . . .	123
Ghosh, S. (FB-01) . . . . .	90
Gibbons, J. (GD-11) . . . . .	114
Giblin, S. (BE-06) . . . . .	26
Gil, H. (AR-07) . . . . .	17
Gilbert, D.A. (BD-02) . . . . .	24
Gilbert, D.A. (BE-02) . . . . .	25
Giner Planas, J. (BF-10) . . . . .	28
Giordano, A. (CS-06) . . . . .	53

Giordano, A. (FP-01) . . . . .	102
Giri, B. (ED-05) . . . . .	75
Giri, S. (CC-04) . . . . .	39
Girt, E. (EP-14) . . . . .	83
Girt, E. (EQ-13) . . . . .	85
Giuliano, D. (DG-04) . . . . .	63
Giuliano, D. (DG-08) . . . . .	64
Gkouzia, G. (VP17-01) . . . . .	138
Gkouzia, G. (VP17-02) . . . . .	138
Gliga, S. (EE-06) . . . . .	77
Gnoli, L. (FE-04) . . . . .	96
Go, D. (CE-04) . . . . .	42
Goddard, P. (BF-09) . . . . .	28
Godel, F. (FG-11) . . . . .	101
Goering, E. (EQ-13) . . . . .	85
Goessler, M. (DC-06) . . . . .	57
Gökce, B. (FF-06) . . . . .	99
Goldberger, J.E. (DC-07) . . . . .	57
Gomez-Polo, C. (GF-05) . . . . .	116
Gomez, G. (GB-10) . . . . .	111
Gong, Y. (VP10-02) . . . . .	128
Gonzalez-Ruano, C. (EB-01) . . . . .	71
Gonzalez, C.A. (GB-06) . . . . .	110
Goossens, A. (FP-09) . . . . .	102
Gopman, D.B. (BQ-08) . . . . .	32
Gopman, D.B. (EP-04) . . . . .	82
Gopman, D.B. (FC-06) . . . . .	93
Goto, M. (BR-10) . . . . .	34
Goto, M. (CB-01) . . . . .	37
Goto, M. (CP-12) . . . . .	48
Goto, M. (FD-09) . . . . .	95
Gottschall, T. (FF-12) . . . . .	99
Gowrinaidu, B. (AP-09) . . . . .	15
Gràcia Tortadés, I. (CS-03) . . . . .	52
Graf, D. (CF-01) . . . . .	44
Granville, S. (BC-07) . . . . .	23
Graziosi, P. (FE-11) . . . . .	97
Greening, R. (BR-06) . . . . .	33
Greening, R. (CF-10) . . . . .	45
Greening, R. (DE-06) . . . . .	60
Grekas, G. (FC-02) . . . . .	92
Greven, M. (DC-01) . . . . .	56
Griffin, S.M. (DC-11) . . . . .	57
Griffin, S.M. (DF-07) . . . . .	62
Griffin, S.M. (EC-03) . . . . .	74
Griffin, S.M. (GB-03) . . . . .	109
Grigoras, M. (AR-02) . . . . .	17
Grigoras, M. (EC-07) . . . . .	74
Grigorev, V. (CF-07) . . . . .	45
Grimaldi, A. (CS-06) . . . . .	53
Grimaldi, A. (FP-01) . . . . .	102
Grishunin, K. (FB-08) . . . . .	91
Grizzle, A. (VP17-05) . . . . .	139
Grizzle, A. (VP17-06) . . . . .	139
Grollier, J. (BB-06) . . . . .	21
Grollier, J. (BD-06) . . . . .	25
Grollier, J. (EB-04) . . . . .	72
Gross, M. (AD-03) . . . . .	6
Gross, M. (BQ-08) . . . . .	32
Gruettner, C. (AG-10) . . . . .	13
Gruettner, C. (EQ-08) . . . . .	84
Grundmann, M. (VP11-10) . . . . .	130
Gutter, A.J. (BC-01) . . . . .	22
Gutter, A.J. (CD-06) . . . . .	41
Gu, H. (BG-12) . . . . .	29
Gu, J. (FC-03) . . . . .	93
Gudín, A. (CE-01) . . . . .	42
Gueckstock, O. (BQ-06) . . . . .	32
Guedaja-Marron, A. (CE-01) . . . . .	42
Guez, A. (FR-16) . . . . .	107
Günzing, D. (VP17-02) . . . . .	138
Guo, G. (FC-07) . . . . .	93
Guo, J. (BVP6-07) . . . . .	124
Guo, J. (VP6-06) . . . . .	124
Guo, Y. (AC-07) . . . . .	5
Gupta, A. (GE-06) . . . . .	115
Gupta, P. (AB-10) . . . . .	4

\*Best student presentation award finalist



Gupta, P. (FB-07) . . . . .	91	Hasan, M. (BC-06)* . . . . .	23
Gupta, R. (BG-13) . . . . .	29	Hasan, M. (CG-07) . . . . .	47
Gupta, R. (CE-04) . . . . .	42	Hasan, M. (DP-08) . . . . .	65
Gupta, V. (DF-01) . . . . .	61	Hasan, M. (FR-03) . . . . .	105
Gurung, G. (FB-02) . . . . .	90	Hasan, M. (FR-07) . . . . .	106
Gusenbauer, M. (AG-12) . . . . .	13	Hasan, M. (FR-14) . . . . .	107
Gutfleisch, O. (DC-02) . . . . .	56	Hashemi, P. (EB-05) . . . . .	72
Gutfleisch, O. (FC-01) . . . . .	92	Hashimoto, K. (BR-10) . . . . .	34
Gutfleisch, O. (FF-03) . . . . .	98	Hassan, N. (EB-06) . . . . .	72
Gutfleisch, O. (FF-12) . . . . .	99	Hassan, N. (FD-12) . . . . .	96
Gutfleisch, O. (GB-10) . . . . .	111	Hata, S. (FR-01) . . . . .	105
Güttinger, J. (BG-13) . . . . .	29	Hattori, A.N. (BE-03) . . . . .	26
- H -			
Ha, J. (DE-10) . . . . .	60	Hattori, A.N. (DP-01) . . . . .	65
Ha, J. (GE-01) . . . . .	114	Hattori, K. (BE-03) . . . . .	26
Habiboglu, A.T. (DG-09) . . . . .	64	Hattori, K. (DP-01) . . . . .	65
Habiboglu, A.T. (EP-04) . . . . .	82	Havu, V. (BC-03) . . . . .	22
Habiboglu, A.T. (GD-05) . . . . .	113	Hayakawa, K. (EB-02) . . . . .	71
Hadimani, R.L. (CG-05) . . . . .	46	Hayashi, D. (BP-10) . . . . .	30
Hadimani, R.L. (DQ-01) . . . . .	66	Hayashi, K. (AE-05) . . . . .	8
Hadimani, R.L. (DQ-03) . . . . .	66	Hayashi, K. (BQ-08) . . . . .	32
Hadimani, R.L. (FF-05) . . . . .	98	Hayashi, M. (DE-03) . . . . .	59
Hadimani, R.L. (FR-05) . . . . .	105	Haygood, I. (BB-09) . . . . .	22
Hadimani, R.L. (FR-15) . . . . .	107	Hazarika, K. (GC-03) . . . . .	111
Haghighirad, A.A. (BP-14) . . . . .	31	He, B. (VP1-04) . . . . .	119
Hahn, H. (DC-02) . . . . .	56	He, B. (VP7-07) . . . . .	125
Haltz, E. (BD-04) . . . . .	24	He, C. (DG-01) . . . . .	63
Hamane, D. (AQ-02) . . . . .	15	He, C. (DG-10) . . . . .	64
Hamane, D. (FB-12) . . . . .	92	He, C. (EQ-09) . . . . .	84
Hammel, C. (CQ-10) . . . . .	50	He, C. (FG-04) . . . . .	100
Hammel, C. (GA-05) . . . . .	108	He, C. (FG-07) . . . . .	101
Han, D. (DF-06) . . . . .	62	He, J. (EQ-01) . . . . .	83
Han, D. (EB-07) . . . . .	72	He, W. (VP15-08) . . . . .	137
Han, H. (BD-01) . . . . .	24	He, W. (VP7-07) . . . . .	125
Han, H. (DE-07) . . . . .	60	He, Z. (VP11-03) . . . . .	129
Han, J. (AQ-14) . . . . .	16	He, Z. (VP12-13) . . . . .	132
Han, J. (DB-01) . . . . .	54	Hebrard, L. (GF-01) . . . . .	115
Han, J. (FB-04) . . . . .	90	Hehn, M. (EP-13) . . . . .	83
Han, J. (VP3-11) . . . . .	121	Heiman, D. (CF-01) . . . . .	44
Han, K. (CR-09) . . . . .	51	Heinonen, O. (BD-07) . . . . .	25
Han, L. (DB-03) . . . . .	54	Heinonen, O. (EE-06) . . . . .	77
Han, L. (DB-06) . . . . .	55	Hellman, F. (BQ-10) . . . . .	32
Han, L. (FC-01) . . . . .	92	Hellman, F. (CP-06) . . . . .	48
Han, M. (DC-05) . . . . .	56	Hellwig, O. (CD-04) . . . . .	40
Han, M. (ED-07) . . . . .	75	Hellwig, O. (DC-06) . . . . .	57
Han, S. (VP9-09) . . . . .	127	Heltemes, K. (DC-01) . . . . .	56
Han, S. (VP9-10) . . . . .	127	Henn, M. (EE-03) . . . . .	77
Han, T. (VP13-07) . . . . .	135	Henriques, A.B. (DD-06) . . . . .	58
Han, X. (ER-03) . . . . .	85	Heo, N. (AR-07) . . . . .	17
Han, X. (FP-02) . . . . .	102	Herea, D. (FR-11) . . . . .	106
Han, X. (GF-02) . . . . .	115	Heremans, J. (FF-11) . . . . .	99
Han, X. (VP14-01) . . . . .	136	Herfort, J. (DF-08) . . . . .	62
Han, X. (VP14-02) . . . . .	136	Hernandez, L.A. (CF-10) . . . . .	45
Han, X. (VP15-02) . . . . .	137	Hernandez, S. (GG-03) . . . . .	117
Han, X. (VP15-08) . . . . .	137	Hernando, A. (CS-03) . . . . .	52
Han, X. (VP7-06) . . . . .	125	Heron, J. (GA-03) . . . . .	108
Han, X. (VP7-07) . . . . .	125	Herrera Diez, L. (YA-01) . . . . .	70
Han, X. (VP7-08) . . . . .	125	Herrero Hernandez, A. (CF-05) . . . . .	44
Han, X. (VP9-11) . . . . .	127	Herrero Hernandez, A. (FF-04) . . . . .	98
Han, X. (VP9-12) . . . . .	127	Hibino, N. (VP4-02) . . . . .	122
Han, X. (VP9-13) . . . . .	127	Hicken, R. (GA-01) . . . . .	107
Han, X. (VP9-15) . . . . .	128	Hiemenz, G. (VP4-11) . . . . .	122
Haney, P.M. (CE-09) . . . . .	43	Higashi, Y. (BG-07) . . . . .	29
Haney, P.M. (DE-05) . . . . .	59	Hight Walker, A.R. (AG-09) . . . . .	13
Hanke, M. (DF-08) . . . . .	62	Hight Walker, A.R. (EE-03) . . . . .	77
Hao, R. (GG-08) . . . . .	118	Hight Walker, A.R. (EG-07) . . . . .	81
Haque, M. (GA-02) . . . . .	108	Higo, T. (DA-02) . . . . .	53
Harder, R. (CC-06) . . . . .	39	Higo, T. (FB-12) . . . . .	92
Harding, E. (BE-06) . . . . .	26	Hillier, A. (AP-09) . . . . .	15
Hari, V.K. (BG-04) . . . . .	29	Himcinschi, C. (VP11-10) . . . . .	130
Harpel, A. (DQ-13) . . . . .	67	Hintermayr, J. (FE-06) . . . . .	97
Harris, C.M. (DQ-01) . . . . .	66	Hirata, A. (AP-03) . . . . .	14
Harris, V.G. (BG-01) . . . . .	28	Hirohata, A. (FG-05) . . . . .	100
Harris, V.G. (EQ-15) . . . . .	85	Hirohata, A. (GE-04) . . . . .	114
Harrison, N. (BF-05) . . . . .	27	Hirschmann, E. (BC-02) . . . . .	22
		Hirst, J. (DD-02) . . . . .	58
		Hisatomi, R. (BP-10) . . . . .	30
		Hloskovsky, A. (CF-07) . . . . .	45

\*Best student presentation award finalist

Hloskovsky, A. (CR-04)	51
Hlova, I. (AQ-08)	16
Ho, P. (BB-08)	21
Ho, Y. (EP-16)	83
Hoang, D. (FQ-14)	104
Hoffmann, A. (BP-08)	30
Hoffmann, A. (CA-05)	36
Hoffmann, A. (CD-05)	41
Hoffmann, A. (ER-01)	85
Hoffmann, A. (GA-02)	108
Hoffmann, A. (GD-09)	113
Hoffmann, A. (GD-11)	114
Holcombe, E.F. (GF-04)	116
Holder, H.H. (DE-02)	59
Holingworth, E. (CP-06)	48
Holt, S. (AD-02)	6
Holt, S. (CP-09)	48
Holt, S. (CQ-08)	49
Holzmann, C. (BQ-07)	32
Honda, J. (DQ-06)	67
Honda, S. (BS-02)	35
Hong, B. (DG-09)	64
Hong, J. (AF-05)	11
Hong, J. (DE-10)	60
Hong, J. (EB-01)	71
Hong, J. (ER-11)	86
Hong, J. (GE-01)	114
Hong, M. (VP12-41)	134
Hong, Y. (AD-06)	7
Honjo, H. (CQ-02)	49
Honjo, H. (FD-04)	94
Hono, K. (DG-10)	64
Hono, K. (EF-08)	79
Hopkins, P. (BB-09)	22
Hopper, M.S. (DQ-09)	67
Horcajo Fernandez, M. (CG-08)	47
Hosohata, R. (VP13-03)	135
Hosoito, N. (BE-03)	26
Hosoito, N. (DP-01)	65
Hosokai, Y. (DQ-05)	67
Hossain, M. (BP-13)	31
Hossain, M. (GA-03)	108
Hou, G. (VP4-03)	122
Hou, Y. (EB-09)	72
Houshang, A. (BD-07)	25
Hovorka, O. (GB-01)	109
Howard, B. (GC-02)	111
Howlader, C. (CR-01)	50
Hristoforou, E. (AC-04)	5
Hrkac, S.B. (GF-06)	116
Hsieh, H. (DP-03)	65
Hsu, C. (BQ-10)	32
Hsu, C. (VP12-23)	132
Hsu, C. (VP12-24)	132
Hsu, C. (VP6-02)	124
Hsu, S. (BQ-10)	32
Hu, C. (CA-01)	36
Hu, G. (DA-04)	54
Hu, G. (EB-05)	72
Hu, H. (VP15-06)	137
Hu, M.Y. (FF-03)	98
Hu, X. (BR-11)	34
Hu, Y. (VP1-04)	119
Hu, Z. (GF-10)	117
Hua, N. (GF-06)	116
Huang, B. (DF-01)	61
Huang, B. (EB-01)	71
Huang, D. (FC-06)	93
Huang, H. (VP6-06)	124
Huang, H. (VP6-07)	124
Huang, J. (FR-06)	106
Huang, K. (AF-09)	11
Huang, L. (VP13-11)	136
Huang, N. (BR-01)	33
Huang, S. (VP10-05)	128
Huang, S. (VP4-12)	122
Huang, S. (VP4-14)	122

Huang, Y. (DB-11)	55
Huang, Y. (FD-03)	94
Huang, Z. (CD-01)	40
Huang, Z. (GD-03)	112
Hübner, R. (EP-14)	83
Huey, W. (DC-07)	57
Huff, J. (BF-06)	27
Hughart, D. (BB-02)	20
Huhtasalo, J. (BC-03)	22
Hung, C. (BQ-05)	32
Hung, C. (BQ-07)	32
Hung, C. (FG-10)	101
Huq, M. (BR-07)	34
Hurdequint, H. (ED-06)	75
Husanu, M. (ER-09)	86
Hussain, B. (BP-09)	30
Hwang, C. (CB-05)	37
Hwang, C. (DF-06)	62
Hwang, I. (EP-15)	83
Hwang, J. (DF-06)	62
Hwang, W. (CE-05)	43

- I -

Iacocca, E. (DD-02)	58
Iacocca, E. (DE-02)	59
Iacocca, E. (EE-06)	77
Ibarra, M. (FE-01)	96
Ibrahim, F. (DF-02)	61
Ichyanagi, Y. (AR-04)	17
Ichyanagi, Y. (DQ-05)	67
Ieda, J. (FB-04)	90
Ievlev, A. (BR-02)	33
Igarashi, J. (FD-02)	94
Iglesias, C. (EC-06)	74
Iglesias, F.M. (VP10-01)	128
Iguchi, Y. (DG-06)	64
Ijiri, Y. (EE-05)	77
Ikeda, K. (ER-02)	85
Ikeda, S. (CE-02)	42
Ikeda, S. (CQ-02)	49
Ikeda, S. (DB-04)	55
Ikeda, S. (FD-04)	94
Ilyakov, I. (FB-08)	91
Im, H. (AR-11)	18
Imaeda, H. (AS-01)	18
Imaeda, H. (AS-03)	18
Imai, M. (VP11-01)	129
Imai, Y. (AB-03)	3
Imatani, S. (AR-05)	17
Incorvia, J.C. (AB-05)	3
Incorvia, J.C. (AB-06)	3
Incorvia, J.C. (BB-02)	20
Incorvia, J.C. (BB-04)	21
Incorvia, J.C. (CP-08)	48
Incorvia, J.C. (DA-05)	54
Incorvia, J.C. (DG-11)	64
Incorvia, J.C. (EP-12)	82
Incorvia, J.C. (FD-08)	95
Incorvia, J.C. (FG-02)	100
Inoue, H. (CE-02)	42
Iones, A. (BG-06)	29
Ipatov, M. (AS-04)	19
Ipatov, M. (EC-08)	74
Ipatov, M. (EC-09)	74
Ipatov, M. (EG-11)	81
Ipatov, M. (EQ-05)	84
Irie, H. (AE-03)	8
Isaac Maciel Garcia, G. (AB-08)	3
Ishida, M. (GC-05)	112
Ishida, M. (GC-06)	112
Ishikawa, R. (BR-10)	34
Ishikawa, R. (CB-01)	37
Ishikawa, R. (CP-12)	48
Ishikawa, T. (DQ-05)	67
Islam, A. (BC-07)	23
Islam, R. (EF-09)	79

\*Best student presentation award finalist

Isogami, S. (DE-09) . . . . .	60	Jin, H. (DA-05) . . . . .	54
Isogami, S. (FB-06) . . . . .	91	Jin, H. (EP-12) . . . . .	82
Ivanov, B.A. (FB-08) . . . . .	91	Jin, T. (VP17-04) . . . . .	139
Ivkov, R. (AG-10) . . . . .	13	Jin, T. (VP2-07) . . . . .	120
<b>- J -</b>			
Jaafar, M. (FE-10) . . . . .	97	Jin, T. (VP7-09) . . . . .	125
Jacobson, A. (DC-01) . . . . .	56	Jin, Y. (DQ-16) . . . . .	68
Jacques, V. (FG-08) . . . . .	101	Jin, Z. (EP-03) . . . . .	82
Jaffres, H. (DF-02) . . . . .	61	Jing, L. (VP12-02) . . . . .	131
Jaffres, H. (EA-01) . . . . .	70	Jinnai, B. (FD-02) . . . . .	94
Jain, K. (VP13-15) . . . . .	136	Jo, I. (DR-03) . . . . .	68
Jain, R. (DF-01) . . . . .	61	Jo, I. (DR-13) . . . . .	69
Jakob, G. (BG-13) . . . . .	29	Jo, N. (AP-02) . . . . .	14
Jakob, G. (BQ-06) . . . . .	32	Jo, N. (BF-02) . . . . .	27
Jakob, G. (CE-04) . . . . .	42	Jo, N. (DR-05) . . . . .	68
Jakubčín, M. (AR-08) . . . . .	17	Jo, N. (DR-10) . . . . .	69
Jakubcin, M. (EC-04) . . . . .	74	Jo, N. (DR-14) . . . . .	69
Jales, T.G. (VP1-02) . . . . .	118	Jo, Y. (BS-03) . . . . .	35
Jales, T.G. (VP1-03) . . . . .	119	Johansson, C. (EG-11) . . . . .	81
Jaman, A. (FP-09) . . . . .	102	Johnson, R. (BF-09) . . . . .	28
Jamer, M.E. (CF-01) . . . . .	44	Johnston-Halperin, E. (FF-11) . . . . .	99
James, R. (FC-02) . . . . .	92	Jones, J.L. (CD-06) . . . . .	41
Jamet, M. (DF-02) . . . . .	61	Jones, N.J. (AC-03) . . . . .	5
Jang, C. (DF-06) . . . . .	62	Jones, N.J. (GF-04) . . . . .	116
Jang, G. (AG-07) . . . . .	13	Jones, N.J. (GF-07) . . . . .	116
Jang, G. (VP12-40) . . . . .	134	Jonker, B.T. (GD-02) . . . . .	112
Jang, I. (DR-05) . . . . .	68	Jordanova, K. (AG-01) . . . . .	12
Jang, J. (FP-06) . . . . .	102	Josephy, S. (AC-06) . . . . .	5
Jang, Y. (ER-10) . . . . .	86	Joshi, P. (CG-10) . . . . .	47
Janutka, A. (CQ-12) . . . . .	50	Joshi, P. (EF-13) . . . . .	80
Janutka, A. (CS-04) . . . . .	52	Joshi, R. (AP-12) . . . . .	15
Jeffrey, T. (CQ-05) . . . . .	49	Joshi, R. (VP8-04) . . . . .	126
Jena, S.K. (AE-08) . . . . .	9	Josteinsson, B. (AC-06) . . . . .	5
Jena, S.K. (BF-04) . . . . .	27	Jourdan, M. (CF-07) . . . . .	45
Jenkins, A. (BB-06) . . . . .	21	Ju, D. (VP6-06) . . . . .	124
Jenkins, A. (EB-04) . . . . .	72	Ju, D. (VP6-07) . . . . .	124
Jensen, C.J. (BC-01) . . . . .	22	Ju, W. (CS-02) . . . . .	52
Jensen, C.J. (BC-04) . . . . .	23	Jué, E. (BB-09) . . . . .	22
Jensen, C.J. (BC-05) . . . . .	23	Jugovac, M. (CE-01) . . . . .	42
Jensen, C.J. (BC-08) . . . . .	23	Juharni, J. (BE-03) . . . . .	26
Jensen, C.J. (BE-02) . . . . .	25	Juharni, J. (DP-01) . . . . .	65
Jeon, J. (DE-07) . . . . .	60	Jung, B. (FR-14) . . . . .	107
Jeon, K. (DE-07) . . . . .	60	Jung, D. (DR-02) . . . . .	68
Jeon, S. (FR-10) . . . . .	106	Jung, W. (ES-01) . . . . .	86
Jeon, Y. (BE-04) . . . . .	26	Jung, W. (ES-05) . . . . .	87
Jeon, Y. (CR-09) . . . . .	51	Jung, W. (FQ-09) . . . . .	104
Jeong, E. (BE-04)* . . . . .	26	Jung, W. (VP12-42) . . . . .	134
Jeong, J. (AR-11) . . . . .	18	Jungfleisch, B. (BP-06) . . . . .	30
Jeong, J. (BP-02) . . . . .	30	Jungfleisch, B. (BP-13) . . . . .	31
Jeong, J. (EB-12) . . . . .	73	Jungfleisch, B. (CA-04) . . . . .	36
Jeong, J. (ER-10) . . . . .	86	Jungfleisch, B. (CQ-05) . . . . .	49
Jeong, K. (AF-05) . . . . .	11	Jungfleisch, B. (DE-02) . . . . .	59
Ji, L. (VP12-36) . . . . .	133	Jungfleisch, B. (GA-03) . . . . .	108
Ji, Y. (BG-12) . . . . .	29	Jungwirth, T. (FB-11) . . . . .	92
Jia, Q. (EP-04) . . . . .	82	Jurica, J. (GE-05) . . . . .	115
Jia, Q. (VP6-01) . . . . .	123	<b>- K -</b>	
Jia, X. (VP9-05) . . . . .	127	Kabanov, V. (FE-11) . . . . .	97
Jia, Y. (VP13-11) . . . . .	136	Kaczmarek, A. (AE-13) . . . . .	10
Jiang, L. (ER-03) . . . . .	85	Kaczmarek, A. (DC-03) . . . . .	56
Jiang, S. (BD-07) . . . . .	25	Kafexhiu, F. (EF-03) . . . . .	78
Jiang, W. (BA-03) . . . . .	19	Kaffash, M. (BP-06) . . . . .	30
Jiang, W. (FG-03) . . . . .	100	Kaffash, M. (BP-13) . . . . .	31
Jiang, X. (VP10-02) . . . . .	128	Kaffash, M. (CA-04) . . . . .	36
Jiang, Y. (EA-01) . . . . .	70	Kaffash, M. (DE-02) . . . . .	59
Jiang, Y. (VP15-03) . . . . .	137	Kagami, T. (CG-09) . . . . .	47
Jiang, Y. (VP15-04) . . . . .	137	Kaiser, B. (GD-07) . . . . .	113
Jiang, Y. (VP17-04) . . . . .	139	Kalappattil, V. (BQ-05) . . . . .	32
Jiang, Y. (VP9-03) . . . . .	126	Kalbáčová, J. (VP11-10) . . . . .	130
Jiang, Y. (VP9-05) . . . . .	127	Kammerbauer, F. (CE-04) . . . . .	42
Jiang, Y. (VP9-09) . . . . .	127	Kammerer, J. (GF-01) . . . . .	115
Jiang, Y. (VP9-10) . . . . .	127	Kampfrath, T. (BQ-06) . . . . .	32
Jiao, Q. (VP6-08) . . . . .	124	Kanai, S. (AB-11) . . . . .	4
Jin, C. (VP9-02) . . . . .	126	Kanai, S. (BB-03) . . . . .	21
Jin, F. (VP9-08) . . . . .	127	Kanai, S. (EB-02) . . . . .	71
Jin, H. (AB-06) . . . . .	3	Kanai, S. (FB-03) . . . . .	90
		Kanai, S. (FB-04) . . . . .	90

\*Best student presentation award finalist

Kanai, Y. (CS-05).....	52	Khizroev, S. (CG-01).....	45
Kanai, Y. (DP-11).....	66	Khizroev, S. (CG-02).....	46
Kanai, Y. (VP5-05).....	123	Khodagulyan, A. (VP10-01).....	128
Kaneda, M. (FD-10).....	95	Khodzhaev, Z. (CP-08).....	48
Kaneko, H. (BB-03).....	21	Khodzhaev, Z. (DA-05).....	54
Kaneko, K. (DQ-06).....	67	Khoshshima, S. (EF-03).....	78
Kaneko, M. (DQ-11).....	67	Khurshid, H. (GF-09).....	117
Kaneta-Takada, S. (AE-01).....	8	Kihara, S. (ER-02).....	85
Kaneta-Takada, S. (AE-03).....	8	Kikitsu, A. (BG-07).....	29
Kaneta, C. (CQ-02).....	49	Kikkawa, T. (FB-08).....	91
Kang, C. (AR-07).....	17	Kim, C. (BQ-11).....	32
Kang, H. (CR-09).....	51	Kim, C. (FQ-08).....	104
Kang, H. (FQ-04).....	103	Kim, D. (BQ-09).....	32
Kang, J. (EB-07).....	72	Kim, D. (CS-02).....	52
Kang, J. (EP-06).....	82	Kim, D. (DR-14).....	69
Kang, J. (ER-10).....	86	Kim, D. (VP12-29).....	133
Kang, K. (FF-02).....	98	Kim, G. (BE-04).....	26
Kang, K. (FF-07).....	99	Kim, G. (EP-01).....	82
Kang, M. (EP-15).....	83	Kim, H. (CB-07).....	38
Kang, M. (ER-10).....	86	Kim, H. (DE-10).....	60
Kankhunthod, K. (GG-06).....	118	Kim, H. (DR-02).....	68
Kantartzis, N.V. (CS-05).....	52	Kim, H. (EB-12).....	73
Kao, I. (CQ-10).....	50	Kim, H. (GE-01).....	114
Karaoui, H. (GF-01).....	115	Kim, J. (AF-05).....	11
Karki, S. (DA-05).....	54	Kim, J. (AR-07).....	17
Karki, S. (EP-12).....	82	Kim, J. (AR-11).....	18
Karki, S. (FD-08).....	95	Kim, J. (CS-02).....	52
Karki, U. (CQ-13).....	50	Kim, J. (DE-07).....	60
Karmakar, S. (AP-12).....	15	Kim, J. (ED-06).....	75
Karpenkov, A. (FF-03).....	98	Kim, J. (FF-02).....	98
Karthik, G. (FC-04).....	93	Kim, J. (FF-07).....	99
Kasagawa, M. (BR-10).....	34	Kim, J. (FF-08).....	99
Kassa, A. (DF-08).....	62	Kim, K. (BP-02).....	30
Kataoka, N. (DQ-05).....	67	Kim, K. (BQ-03).....	31
Katayama-Yoshida, H. (FD-10).....	95	Kim, K. (CA-05).....	36
Kateel, V. (GD-08).....	113	Kim, K. (CB-07).....	38
Katine, J. (BB-05).....	21	Kim, K. (CR-09).....	51
Katine, J. (FD-11).....	95	Kim, K. (DG-01).....	63
Kato, D. (DG-06).....	64	Kim, K. (EB-07).....	72
Kato, T. (BS-02).....	35	Kim, K. (EB-12).....	73
Katsnelson, M.I. (FB-08).....	91	Kim, K. (ED-08).....	76
Kaul, S. (VP7-04).....	125	Kim, K. (ES-06).....	87
Kaur, D. (CC-08).....	39	Kim, K. (ES-09).....	88
Kaushik, B. (VP7-01).....	124	Kim, K. (FQ-11).....	104
Kawakami, R.K. (DC-07).....	57	Kim, M. (AF-05).....	11
Kawakami, R.K. (FF-11).....	99	Kim, M. (BQ-03).....	31
Kawasaki, Y. (CG-06).....	46	Kim, M. (BQ-09).....	32
Kayal, S. (BS-06).....	35	Kim, M. (BS-03).....	35
Kazakova, O. (FB-10).....	91	Kim, M. (CP-01).....	47
Kazakova, O. (GB-02).....	109	Kim, M. (CP-03).....	48
Ke, L. (FG-01).....	100	Kim, N. (EE-05).....	77
Keatley, P.S. (GA-01).....	107	Kim, S. (DR-03).....	68
Kedzierski, M. (AS-06).....	19	Kim, S. (DR-07).....	69
Keenan, K. (AG-01).....	12	Kim, S. (DR-13).....	69
Keimer, B. (AE-12).....	10	Kim, S. (ED-08).....	76
Kent, A.D. (AB-01).....	2	Kim, S. (ES-05).....	87
Kent, A.D. (BB-01).....	20	Kim, S. (ES-12).....	88
Kent, A.D. (EB-03).....	71	Kim, S. (FQ-06).....	103
Kent, A.D. (VP7-05).....	125	Kim, S. (FQ-09).....	104
Kessel, B.G. (GF-04).....	116	Kim, S. (FQ-12).....	104
Kevan, S. (CB-02).....	37	Kim, S. (VP4-07).....	122
Kevan, S. (CP-06).....	48	Kim, T. (DR-13).....	69
Khadka, M. (EF-10).....	79	Kim, T. (EP-06).....	82
Khalili Amiri, P. (BB-05).....	21	Kim, T. (ES-03).....	87
Khalili Amiri, P. (FD-11).....	95	Kim, T. (FQ-07).....	103
Khalili Amiri, P. (FP-01).....	102	Kim, T. (FQ-09).....	104
Khalyavin, D. (AP-09).....	15	Kim, T. (GE-01).....	114
Khan, K. (FB-09).....	91	Kim, W. (DR-02).....	68
Khan, M. (AS-05).....	19	Kim, W. (DR-05).....	68
Khan, S. (FB-10).....	91	Kim, W. (DR-10).....	69
Khan, S. (GA-01).....	107	Kim, W. (DR-14).....	69
Khanal, P. (DG-09).....	64	Kim, W. (FR-14).....	107
Khanal, P. (EP-04).....	82	Kim, W. (VP12-41).....	134
Khanal, P. (GD-05).....	113	Kim, Y. (BE-04).....	26
Khanna, M.K. (VP15-05).....	137	Kim, Y. (CE-07).....	43
Kharel, P. (AP-07).....	14	Kim, Y. (CR-09).....	51
Kharel, P. (FG-01).....	100	Kim, Y. (DF-06).....	62

\*Best student presentation award finalist

Kim, Y. (EP-01) . . . . .	82	Kovalev, S. (FB-08) . . . . .	91
Kim, Y. (ES-03) . . . . .	87	Koyama, T. (VP1-01) . . . . .	118
Kim, Y. (ES-05) . . . . .	87	Kozlov, A. (BE-04) . . . . .	26
Kim, Y. (FQ-07) . . . . .	103	Kraft, R. (AD-11) . . . . .	7
Kim, Y. (FQ-09) . . . . .	104	Kramer, M.J. (EF-02) . . . . .	78
Kim, Y. (FQ-15) . . . . .	105	Kramer, N. (BF-06) . . . . .	27
Kimel, A.V. (FB-08) . . . . .	91	Kriegner, D. (AA-05) . . . . .	2
Kimura, T. (DE-02) . . . . .	59	Krishna, V.D. (FR-13) . . . . .	106
Kinane, C. (CD-06) . . . . .	41	Krishnaswamy, G. (CB-06) . . . . .	37
King, A.D. (CF-02) . . . . .	44	Krivorotov, I.N. (CE-11) . . . . .	43
Kinoshita, K. (AE-01) . . . . .	8	Krizek, F. (FB-11) . . . . .	92
Kinoshita, K. (AR-05) . . . . .	17	Krockenberger, Y. (AE-03) . . . . .	8
Kirby, B. (DC-11) . . . . .	57	Kruk, R. (DC-02) . . . . .	56
Kirsch, M. (BG-13) . . . . .	29	Krycka, K. (AG-10) . . . . .	13
Kishi, K. (FB-03) . . . . .	90	Krycka, K. (EE-05) . . . . .	77
Kishi, T. (FD-06) . . . . .	94	Ktena, A. (AC-04) . . . . .	5
Kisiel, E. (AE-07) . . . . .	9	Kuanr, B.K. (VP12-30) . . . . .	133
Kitcher, M.D. (DE-04) . . . . .	59	Kuanr, B.K. (VP15-05) . . . . .	137
Kläui, M. (BG-13) . . . . .	29	Kuanr, B.K. (VP16-02) . . . . .	138
Kläui, M. (BQ-06) . . . . .	32	Kuanr, B.K. (VP2-04) . . . . .	119
Kläui, M. (CE-04) . . . . .	42	Kuanr, B.K. (VP5-01) . . . . .	123
Kläui, M. (CF-07) . . . . .	45	Kuanr, B.K. (VP6-05) . . . . .	124
Klause, R. (BP-08) . . . . .	30	Kubaščík, P. (FB-11) . . . . .	92
Klause, R. (GD-11) . . . . .	114	Kubota, T. (BS-02) . . . . .	35
Kleibert, A. (CF-07) . . . . .	45	Kukreja, R. (DD-01) . . . . .	57
Kleidermacher, H. (BQ-10) . . . . .	32	Kumar, A. (CC-11) . . . . .	40
Klewe, C. (AE-04) . . . . .	8	Kumar, K. (AP-12) . . . . .	15
Klewe, C. (AE-06) . . . . .	9	Kumar, M. (CC-03) . . . . .	39
Km, R. (BF-05) . . . . .	27	Kumar, P. (BS-06) . . . . .	35
Knut, R. (EQ-12) . . . . .	84	Kumar, P. (VP13-15) . . . . .	136
Ko, H. (CE-07) . . . . .	43	Kumar, P. (VP15-05) . . . . .	137
Ko, M. (BE-04) . . . . .	26	Kumar, P. (VP2-04) . . . . .	119
Ko, S. (CB-07) . . . . .	38	Kumar, P. (VP5-01) . . . . .	123
Ko, S. (EB-07) . . . . .	72	Kumar, R. (BF-03) . . . . .	27
Kobayashi, K. (BB-03) . . . . .	21	Kumar, R. (VP15-05) . . . . .	137
Kobayashi, K. (EB-02) . . . . .	71	Kumar, S. (FB-09) . . . . .	91
Kobayashi, M. (AE-01) . . . . .	8	Kumar, S. (VP12-30) . . . . .	133
Kobayashi, M. (AP-03) . . . . .	14	Kumar, S. (VP13-15) . . . . .	136
Kobayashi, S. (VP13-02) . . . . .	135	Kumari, A. (GB-09) . . . . .	110
Kobayashi, S. (VP16-01) . . . . .	138	Kumbhare, D. (CG-05) . . . . .	46
Koch, D. (FF-03) . . . . .	98	Kurebayashi, H. (DE-02) . . . . .	59
Koch, D. (FF-06) . . . . .	99	Kurebayashi, H. (FB-10) . . . . .	91
Kocharian, A.N. (VP10-01) . . . . .	128	Kurebayashi, H. (GA-01) . . . . .	107
Koh, D. (EB-07) . . . . .	72	Kurenkov, A. (FP-03) . . . . .	102
Koh, D. (EP-06) . . . . .	82	Kurfman, S.W. (FF-11) . . . . .	99
Kollár, P. (AR-08) . . . . .	17	Kurosaki, Y. (BG-07) . . . . .	29
Kollár, P. (AR-09) . . . . .	18	Kusakabe, M. (DQ-11) . . . . .	67
Komine, T. (VP11-02) . . . . .	129	Kushibiki, R. (DP-12) . . . . .	66
Komine, T. (VP2-01) . . . . .	119	Kushwaha, E. (CC-03) . . . . .	39
Komine, T. (VP5-02) . . . . .	123	Kushwaha, P. (FE-09) . . . . .	97
Kondo, T. (DQ-05) . . . . .	67	Kuthanazhi, B. (AP-02) . . . . .	14
Kong, D. (GF-02) . . . . .	115	Kuthanazhi, B. (BF-02) . . . . .	27
Kong, W. (GE-04) . . . . .	114	Kuwahata, A. (CG-03) . . . . .	46
Kong, Y. (VP7-02) . . . . .	125	Kuwahata, A. (CG-09) . . . . .	47
Kontos, T. (DE-07) . . . . .	60	Kuwahata, A. (CG-11) . . . . .	47
Koo, M. (DR-15) . . . . .	69	Kuwahata, A. (DQ-07) . . . . .	67
Koo, M. (ES-02) . . . . .	87	Kuwahata, A. (DQ-08) . . . . .	67
Koo, M. (ES-07) . . . . .	87	Kuwahata, A. (DQ-11) . . . . .	67
Koo, M. (ES-08) . . . . .	88	Kwak, K. (FQ-15) . . . . .	105
Kools, T. (FE-06) . . . . .	97	Kwok, W. (CA-05) . . . . .	36
Koopmans, B. (AC-08) . . . . .	5	Kwok, W. (GA-02) . . . . .	108
Koopmans, B. (EE-02) . . . . .	77	Kwon, J. (AB-05) . . . . .	3
Koopmans, B. (FE-06) . . . . .	97	Kwon, J. (AG-07) . . . . .	13
Koraltan, S. (AD-09) . . . . .	7	Kwon, J. (BB-04) . . . . .	21
Koraltan, S. (AD-11) . . . . .	7	Kwon, J. (DA-05) . . . . .	54
Koraltan, S. (BG-13)* . . . . .	29	Kwon, J. (DR-01) . . . . .	68
Koraltan, S. (CQ-03) . . . . .	49	Kwon, J. (DR-16) . . . . .	69
Korcia, M. (GB-07) . . . . .	110	Kwon, J. (EP-06) . . . . .	82
Koretsky, A. (AG-01) . . . . .	12	Kwon, J. (EP-12) . . . . .	82
Kornell, A. (AG-12) . . . . .	13	Kwon, J. (FD-08) . . . . .	95
Kossak, A.E. (BC-06) . . . . .	23	Kwon, M. (DF-06) . . . . .	62
Kossak, A.E. (DC-03) . . . . .	56		
Kovacs, A. (AG-12) . . . . .	13		
Kovacs, A. (GF-02) . . . . .	115		
Kovacs, A. (VP17-02) . . . . .	138		
Kovalev, A.A. (AF-09) . . . . .	11		
Kovalev, A.A. (DE-05) . . . . .	59		

- L -

Ladak, S. (BE-06) . . . . .	26
Lai, C. (AB-07) . . . . .	3
Lai, C. (CE-10) . . . . .	43

\*Best student presentation award finalist

Lai, C. (EG-06) . . . . .	80	Lee, K. (ER-10) . . . . .	86
Lai, R. (AC-07) . . . . .	5	Lee, K. (ES-08) . . . . .	88
Lambert, P.K. (AC-03) . . . . .	5	Lee, M. (EP-01) . . . . .	82
Lambert, P.K. (GF-04) . . . . .	116	Lee, M. (FA-01) . . . . .	89
Lamichhane, S. (AC-07) . . . . .	5	Lee, N. (AF-05) . . . . .	11
Lan, G. (VP9-13) . . . . .	127	Lee, P. (CE-10) . . . . .	43
Lan, Z. (VP10-02) . . . . .	128	Lee, S. (BQ-09) . . . . .	32
Landers, J. (FF-06) . . . . .	99	Lee, S. (CG-07) . . . . .	47
Lang, M. (AD-02) . . . . .	6	Lee, S. (CP-01) . . . . .	47
Lang, M. (CP-09) . . . . .	48	Lee, S. (CP-03) . . . . .	48
Lang, M. (CQ-08) . . . . .	49	Lee, S. (CR-09) . . . . .	51
Langton, C. (BE-02) . . . . .	25	Lee, S. (EB-07) . . . . .	72
Lany, S. (FC-08) . . . . .	93	Lee, S. (EP-01) . . . . .	82
Laraoui, A. (AC-05) . . . . .	5	Lee, S. (EP-06) . . . . .	82
Laraoui, A. (AC-07) . . . . .	5	Lee, S. (EP-16) . . . . .	83
Laraoui, A. (ED-05) . . . . .	75	Lee, S. (ER-10) . . . . .	86
Larbi Zeghlache, M. (EG-04) . . . . .	80	Lee, S. (ES-08) . . . . .	88
Larsen, B. (DG-09) . . . . .	64	Lee, S. (ES-16) . . . . .	88
Lasinger, K. (FE-05) . . . . .	97	Lee, S. (FQ-05) . . . . .	103
Lau, Y. (CB-03) . . . . .	37	Lee, S. (FR-03) . . . . .	105
Lau, Y. (EE-07) . . . . .	77	Lee, S. (FR-07) . . . . .	106
Lau, Y. (FB-05) . . . . .	91	Lee, S. (FR-14) . . . . .	107
Laughlin, D.E. (GG-02) . . . . .	117	Lee, S. (VP12-29) . . . . .	133
Laughlin, D.E. (GG-07) . . . . .	118	Lee, Y. (DR-05) . . . . .	68
Lavina, B. (FF-03) . . . . .	98	Lee, Y. (DR-10) . . . . .	69
Lavrijsen, R. (AC-08) . . . . .	5	Lee, Y. (DR-14) . . . . .	69
Lavrijsen, R. (FE-06) . . . . .	97	Lee, Y. (FR-10) . . . . .	106
Law, J. (AG-11) . . . . .	13	Legrand, W. (GB-02) . . . . .	109
Law, J. (FF-01) . . . . .	98	Legut, D. (EQ-13) . . . . .	85
Law, J. (GE-06) . . . . .	115	Leighton, C. (DC-01) . . . . .	56
Le, Q. (BD-07) . . . . .	25	Leighton, C. (GD-07) . . . . .	113
Leary, A. (EC-02) . . . . .	73	Leistner, K. (DC-06) . . . . .	57
LeClair, P.R. (GE-06) . . . . .	115	Leitao, D. (EE-02) . . . . .	77
Lederman, D. (DC-11) . . . . .	57	Leliaert, J. (AD-05) . . . . .	6
Lee, A. (CB-07) . . . . .	38	Lenz, J. (FA-01) . . . . .	89
Lee, A. (FF-02) . . . . .	98	Lenz, K. (CD-04) . . . . .	40
Lee, A. (FF-07) . . . . .	99	Leon, A.O. (CE-03) . . . . .	42
Lee, B. (CD-10) . . . . .	41	Leonard, T. (AB-06) . . . . .	3
Lee, B. (EB-09) . . . . .	72	Leonard, T. (BB-02) . . . . .	20
Lee, C. (CR-09) . . . . .	51	Leonard, T. (DA-05) . . . . .	54
Lee, C. (ES-16) . . . . .	88	Leonard, T. (FD-08) . . . . .	95
Lee, C. (FQ-05) . . . . .	103	Leong, Z. (EG-02) . . . . .	80
Lee, C.X. (VP2-07) . . . . .	120	Leong, Z. (FC-03) . . . . .	93
Lee, D. (AG-07) . . . . .	13	Leroux, N. (EB-04) . . . . .	72
Lee, D. (CR-09) . . . . .	51	Levitani, A. (GB-04) . . . . .	110
Lee, D. (CS-02) . . . . .	52	Lew, W. (VP17-04) . . . . .	139
Lee, D. (ED-08) . . . . .	76	Lew, W. (VP2-07) . . . . .	120
Lee, H. (DR-03) . . . . .	68	Lew, W. (VP7-09) . . . . .	125
Lee, H. (DR-07) . . . . .	69	Lewis, C.J. (DQ-01) . . . . .	66
Lee, H. (DR-13) . . . . .	69	Lewis, C.J. (DQ-03) . . . . .	66
Lee, H. (ES-01) . . . . .	86	Lewis, C.J. (FR-05) . . . . .	105
Lee, H. (ES-03) . . . . .	87	Li, C. (CC-07) . . . . .	39
Lee, H. (ES-05) . . . . .	87	Li, C.H. (GD-02) . . . . .	112
Lee, H. (FQ-02) . . . . .	103	Li, H. (FB-05) . . . . .	91
Lee, H. (FQ-04) . . . . .	103	Li, H.A. (FR-06) . . . . .	106
Lee, H. (VP12-42) . . . . .	134	Li, J. (VP12-15) . . . . .	132
Lee, H. (VP4-07) . . . . .	122	Li, J. (VP13-10) . . . . .	135
Lee, J. (DF-06) . . . . .	62	Li, K. (VP4-03) . . . . .	122
Lee, J. (DR-03) . . . . .	68	Li, M. (FB-01) . . . . .	90
Lee, J. (DR-07) . . . . .	69	Li, Q. (BP-14) . . . . .	31
Lee, J. (DR-13) . . . . .	69	Li, Q. (VP10-02) . . . . .	128
Lee, J. (EB-07) . . . . .	72	Li, R. (VP9-02) . . . . .	126
Lee, J. (EP-06) . . . . .	82	Li, S. (GD-09) . . . . .	113
Lee, J. (ES-09) . . . . .	88	Li, S. (VP17-04) . . . . .	139
Lee, J. (ES-10) . . . . .	88	Li, S. (VP2-07) . . . . .	120
Lee, J. (ES-11) . . . . .	88	Li, S. (VP7-09) . . . . .	125
Lee, J. (FQ-08) . . . . .	104	Li, W. (AQ-11) . . . . .	16
Lee, J. (FQ-10) . . . . .	104	Li, W. (EF-04) . . . . .	78
Lee, J. (FQ-11) . . . . .	104	Li, W. (GE-04) . . . . .	114
Lee, J. (FR-10) . . . . .	106	Li, W. (VP12-10) . . . . .	131
Lee, J. (VP12-42) . . . . .	134	Li, W. (VP12-11) . . . . .	131
Lee, J.V. (FR-05) . . . . .	105	Li, W. (VP12-16) . . . . .	132
Lee, K. (AR-07) . . . . .	17	Li, X. (CB-03) . . . . .	37
Lee, K. (AR-11) . . . . .	18	Li, X. (FP-02) . . . . .	102
Lee, K. (EA-03) . . . . .	71	Li, X. (VP8-01) . . . . .	126
Lee, K. (EB-07) . . . . .	72	Li, X. (VP9-15) . . . . .	128
Lee, K. (EB-12) . . . . .	73	Li, Y. (AQ-16) . . . . .	16

\*Best student presentation award finalist

Li, Y. (AR-12)	18	Liu, K. (BC-04)	23
Li, Y. (BD-03)	24	Liu, K. (BC-05)	23
Li, Y. (BP-08)	30	Liu, K. (BC-08)	23
Li, Y. (CA-05)	36	Liu, K. (BE-02)	25
Li, Y. (CD-05)	41	Liu, K. (EE-08)	78
Li, Y. (CS-08)	53	Liu, L. (DB-01)	54
Li, Y. (DC-04)	56	Liu, L. (ED-11)	76
Li, Y. (DG-08)	64	Liu, L. (FB-01)	90
Li, Y. (DP-03)	65	Liu, L. (VP3-03)	120
Li, Y. (GA-02)	108	Liu, L. (VP9-08)	127
Li, Y. (VP10-03)	128	Liu, R. (CD-01)	40
Li, Y. (VP10-04)	128	Liu, S. (AB-06)	3
Li, Y. (VP12-02)	131	Liu, S. (AQ-14)	16
Li, Y. (VP12-15)	132	Liu, S. (BB-04)	21
Li, Y. (VP12-43)	134	Liu, S. (BG-05)	29
Li, Y. (VP13-01)	135	Liu, S. (CG-03)	46
Li, Y. (VP13-13)	136	Liu, S. (DA-05)	54
Li, Y. (VP13-14)	136	Liu, S. (DG-11)	64
Li, Y. (VP3-03)	120	Liu, S. (EP-12)	82
Li, Y. (VP7-03)	125	Liu, S. (FP-02)	102
Li, Z. (FC-01)	92	Liu, S. (VP3-11)	121
Li, Z. (VP13-13)	136	Liu, S. (VP9-12)	127
Liang, C. (DP-03)	65	Liu, T. (EF-04)	78
Liang, D. (VP3-11)	121	Liu, W. (CQ-10)	50
Liang, J. (EE-07)	77	Liu, W. (FF-12)	99
Liang, P. (CG-01)	45	Liu, W. (VP10-03)	128
Liang, P. (CG-02)	46	Liu, W. (VP3-01)	120
Liang, S. (DQ-15)	68	Liu, W. (VP3-02)	120
Liang, S. (FR-13)	106	Liu, W. (VP3-04)	120
Liang, S. (VP6-01)	123	Liu, X. (AQ-09)	16
Liang, W. (EQ-15)	85	Liu, X. (AQ-12)	16
Liang, X. (VP12-10)	131	Liu, X. (AQ-15)	16
Liang, X. (VP12-11)	131	Liu, X. (BR-02)	33
Liang, X. (VP6-06)	124	Liu, X. (EF-07)	79
Liang, X. (VP6-07)	124	Liu, X. (VP13-12)	136
Liedke, O. (BC-02)	22	Liu, X. (VP9-01)	126
Lill, J. (FF-03)	98	Liu, Y. (BR-13)	34
Lim, B. (BQ-11)	32	Liu, Y. (EA-01)	70
Lim, G. (EG-06)	80	Liu, Y. (GG-05)	117
Lim, J. (BP-08)	30	Logvenov, G. (AE-12)	10
Lim, J. (DR-03)	68	Lohmann, M. (GD-02)	112
Lim, J. (DR-13)	69	Lohr, W.H. (FR-15)	107
Lim, R. (CB-06)	37	Loiseau, A. (FG-11)	101
Lim, S. (AF-05)	11	Lomakin, V. (AD-01)	6
Lim, Y. (CD-06)	41	Lomakin, V. (AD-04)	6
Lim, Z. (CC-07)	39	Lomakin, V. (AD-12)	7
Lim, Z. (CR-10)	51	Lomakin, V. (AE-07)	9
Lin, H. (CF-06)	45	Lomakin, V. (CE-06)	43
Lin, H. (VP12-05)	131	Lomakin, V. (ED-07)	75
Lin, H. (VP9-03)	126	Lomakin, V. (XA-02)	35
Lin, K. (FE-04)	96	Lone, A.H. (AB-08)	3
Lin, W. (ER-11)	86	Longchar, L.A. (VP7-04)	125
Lin, Y. (DB-11)	55	Lopeandia, A. (BC-02)	22
Lin, Y. (DP-03)	65	Lopes, J. (DF-08)	62
Lin, Y. (FD-03)	94	López Cruz, M. (VP11-05)	129
Lin, Y. (VP4-03)	122	Lopez Dominguez, V. (BB-05)	21
Linder, J. (AA-03)	2	Lopez Medina, J.A. (BE-07)	26
Lindner, J. (CD-04)	40	Lopez Medina, J.A. (CR-11)	52
Lingqi, L. (VP10-03)	128	Lopez-Bezanilla, A. (CF-02)	44
Liou, S. (AC-07)	5	Loriente, R. (CS-03)	52
Litzius, K. (GB-01)	109	Love, J. (AD-05)	6
Liu, B. (VP8-01)	126	Low, T. (FG-03)	100
Liu, C. (BC-01)	22	Low, W. (DQ-09)	67
Liu, C. (BC-04)	23	Lu, H. (ED-11)	76
Liu, C. (BE-02)	25	Lu, J. (GF-10)	117
Liu, C. (ED-07)	75	Lu, K. (BR-07)	34
Liu, C. (VP12-01)	130	Lu, X. (VP12-15)	132
Liu, C. (VP12-04)	131	Lu, X. (VP13-13)	136
Liu, C. (VP12-17)	132	Lu, Y. (VP6-07)	124
Liu, C. (VP12-18)	132	Lukashev, P. (AP-07)	14
Liu, C. (VP6-03)	124	Lukashev, P. (FG-01)	100
Liu, J. (CG-10)	47	Lukman, G.F. (ES-16)	88
Liu, J. (EF-13)	80	Lukman, G.F. (FQ-05)	103
Liu, J. (FG-03)	100	Lundstrom, J. (AG-01)	12
Liu, J. (GF-10)	117	Luo, C. (EQ-12)	84
Liu, J. (VP11-03)	129	Luo, X. (FP-02)	102
Liu, K. (BC-01)	22	Luo, X. (VP14-02)	136

\*Best student presentation award finalist

Luo, X. (VP7-07) . . . . .	125
Luo, X. (VP9-11) . . . . .	127
Luo, Z. (AQ-14) . . . . .	16
Luo, Z. (VP3-11) . . . . .	121
Lupu, N. (AR-02) . . . . .	17
Lupu, N. (AR-03) . . . . .	17
Lupu, N. (EC-07) . . . . .	74
Lupu, N. (FR-11) . . . . .	106
Lupu, N. (VP9-06) . . . . .	127
Lurgo, F. (GC-01) . . . . .	111
Luther, J. (GA-02) . . . . .	108
Lv, B. (CQ-10) . . . . .	50
Lv, H. (DF-08) . . . . .	62
Lv, S. (EQ-01) . . . . .	83
Lv, Y. (EP-04) . . . . .	82
Lv, Y. (FG-03) . . . . .	100
Lv, Y. (VP9-14) . . . . .	127
Lytvynenko, Y. (CF-07) . . . . .	45
Lyu, D. (EP-04) . . . . .	82
Lyu, D. (FC-06) . . . . .	93

- M -

Ma, B. (FG-09) . . . . .	101
Ma, D. (VP12-15) . . . . .	132
Ma, D. (VP12-16) . . . . .	132
Ma, D. (VP13-10) . . . . .	135
Ma, F. (VP7-07) . . . . .	125
Ma, J. (GD-03) . . . . .	112
Ma, Q. (AA-04) . . . . .	2
Ma, R. (AE-05) . . . . .	8
Ma, T. (CF-06) . . . . .	45
Ma, Z. (BC-02) . . . . .	22
Ma, Z. (VP8-02) . . . . .	126
Mabarroh, N. (BE-03) . . . . .	26
Mabarroh, N. (DP-01) . . . . .	65
MacDougall, G. (BR-07) . . . . .	34
Macedo, R. (EB-10) . . . . .	73
Machida, T. (AE-01) . . . . .	8
Maciaszek, R. (AR-09) . . . . .	18
Mackay, R.A. (DB-02) . . . . .	54
Madsen, S.P. (EF-09) . . . . .	79
Madurga, V. (FE-01) . . . . .	96
Maekawa, S. (VP11-01) . . . . .	129
Maes, J. (FP-03) . . . . .	102
Magén, C. (FE-01) . . . . .	96
Mahat, R. (GE-06) . . . . .	115
Mahatara, S. (FC-08) . . . . .	93
Mahato, R.N. (CR-08) . . . . .	51
Mahato, R.N. (VP11-04) . . . . .	129
Mahendiran, R. (CF-04) . . . . .	44
Mahendra, A. (BC-07) . . . . .	23
Mahmood, A. (AC-05) . . . . .	5
Mahmood, F. (BR-07) . . . . .	34
Maicas, M. (GF-03) . . . . .	116
Maicke, A. (BB-04) . . . . .	21
Maicke, A. (DA-05) . . . . .	54
Maizel, R.E. (CD-06) . . . . .	41
Majetich, S. (AB-02) . . . . .	3
Majetich, S. (EE-05) . . . . .	77
Maji, S. (BS-06) . . . . .	35
Majidi, M.A. (DP-02) . . . . .	65
Major, M. (VP17-01) . . . . .	138
Major, M. (VP17-02) . . . . .	138
Makarov, D. (BE-01) . . . . .	25
Makris, Y. (EB-06) . . . . .	72
Makris, Y. (FD-12) . . . . .	96
Maletinsky, P. (FA-05) . . . . .	89
Maletinsky, P. (FG-08) . . . . .	101
Malik, S.K. (VP11-06) . . . . .	129
Malik, V.K. (AE-10) . . . . .	9
Malina, O. (GE-05) . . . . .	115
Malinowski, G. (EP-13) . . . . .	83
Malkova, Y. (FR-16) . . . . .	107
Mallet, P. (DF-02) . . . . .	61
Mallick, D. (CC-11) . . . . .	40
Mallick, D. (CG-04) . . . . .	46

Malloy, J. (BE-02) . . . . .	25
Malm, B.G. (BB-01) . . . . .	20
Malm, B.G. (VP7-05) . . . . .	125
Malm, J. (EG-11) . . . . .	81
Malvestuto, M. (DD-05) . . . . .	58
Mancoff, F. (AB-04) . . . . .	3
Mandal, D. (GC-04) . . . . .	111
Manfrinetti, P. (FF-04) . . . . .	98
Mangin, S. (CE-10) . . . . .	43
Mangin, S. (EP-13) . . . . .	83
Manral, P. (AE-10) . . . . .	9
Mansell, R. (BC-03) . . . . .	22
Manson, J. (BF-09) . . . . .	28
Manuel, P. (AP-09) . . . . .	15
Manzin, A. (AG-04) . . . . .	12
Manzin, A. (CQ-09) . . . . .	49
Manzin, A. (DQ-10) . . . . .	67
Manzin, A. (EE-09) . . . . .	78
Manzin, A. (XA-01) . . . . .	35
Mao, Y. (VP12-12) . . . . .	131
Mao, Y. (VP12-13) . . . . .	132
Mao, Y. (VP12-14) . . . . .	132
Mao, Y. (VP12-25) . . . . .	133
Marimuthu, M. (CF-04) . . . . .	44
Marinella, M.J. (DA-05) . . . . .	54
Marinella, M.J. (DG-11) . . . . .	64
Markou, A. (AF-07) . . . . .	11
Markou, A. (EQ-02) . . . . .	83
Markovic, D. (EB-04) . . . . .	72
Márkus, B. (BR-02) . . . . .	33
Marlowe, E. (BE-02) . . . . .	25
Marques de Lima, J. (EC-06) . . . . .	74
Marqués-Fernández, J. (EG-05) . . . . .	81
Marrows, C. (BD-04) . . . . .	24
Marrows, C. (BR-09) . . . . .	34
Marti-Carrascosa, M. (GF-08) . . . . .	116
Martin, L. (CC-01) . . . . .	38
Martin, M. (FG-11) . . . . .	101
Martin, S. (CE-04) . . . . .	42
Martinez-Lillo, J. (VP17-05) . . . . .	139
Martinez-Lillo, J. (VP17-06) . . . . .	139
Martinez, V. (DE-02) . . . . .	59
Martinez, V. (EE-06) . . . . .	77
Martins Jr, S.M. (VP1-02) . . . . .	118
Martins, L. (EB-04) . . . . .	72
Marty, A. (DF-02) . . . . .	61
Marui, Y. (DE-08) . . . . .	60
Masago, A. (FD-10) . . . . .	95
Masato, K. (GB-05) . . . . .	110
Mashkovich, E.A. (FB-08) . . . . .	91
Mason, N. (BR-07) . . . . .	34
Massabeau, S.M. (DF-02) . . . . .	61
Masuda, K. (DG-10) . . . . .	64
Masuda, K. (FG-04) . . . . .	100
Matatagui, D. (CS-03) . . . . .	52
Mathe, V.L. (AG-02) . . . . .	12
Mathews, S.A. (FE-02) . . . . .	96
Mathonière, C. (BF-08) . . . . .	27
Matsuki, H. (ES-15) . . . . .	88
Matsumori, H. (BG-03) . . . . .	28
Matsumoto, W. (AG-03) . . . . .	12
Matsumoto, Y. (VP13-03) . . . . .	135
Matsuo, M. (VP11-01) . . . . .	129
Mattern, J. (FR-12) . . . . .	106
Matthes, P. (VP11-10) . . . . .	130
Mayoh, D. (GB-01) . . . . .	109
Mazin, I. (AA-01) . . . . .	1
Mazraati, H. (BD-07) . . . . .	25
Mazza, L. (BB-06) . . . . .	21
McCarter, M. (CB-02) . . . . .	37
McCarter, M. (CP-06) . . . . .	48
McDonough, C. (FR-12) . . . . .	106
McElveen, K. (AC-07) . . . . .	5
McGoldrick, B.C. (FB-01) . . . . .	90
McGuire, M.A. (AF-07) . . . . .	11
Mckinnon, T. (EQ-13) . . . . .	85
McMorran, B. (CB-08) . . . . .	38

\*Best student presentation award finalist



McMorran, B. (DP-09) . . . . .	65	Miwa, S. (FD-09) . . . . .	95
McQueeny, R.J. (AP-02) . . . . .	14	Miyahara, S. (ES-15) . . . . .	88
Mears, B.M. (BG-02) . . . . .	28	Miyamoto, Y. (DG-06) . . . . .	64
Mehta, A. (AE-06) . . . . .	9	Miyauchi, R. (VP4-04) . . . . .	122
Mehta, U.M. (DQ-03) . . . . .	66	Miyazaki, T. (AR-06) . . . . .	17
Meier, G. (ED-09) . . . . .	76	Miyazaki, T. (CS-07) . . . . .	53
Meijer, M.J. (AC-08) . . . . .	5	Miyazaki, T. (FQ-03) . . . . .	103
Meisenheimer, P. (FA-02) . . . . .	89	Miyazawa, Y. (EG-10) . . . . .	81
Meisenheimer, P. (GA-03) . . . . .	108	Miyose, Y. (DG-07) . . . . .	64
Meiying, X. (EF-13) . . . . .	80	Mizrahi, F.A. (BB-06) . . . . .	21
Melendez, A. (CQ-10) . . . . .	50	Mizrahi, F.A. (EB-04) . . . . .	72
Melendez, N. (BB-05) . . . . .	21	Mizukuchi, Y. (VP4-02) . . . . .	122
Melendez, N. (FD-11) . . . . .	95	Mkhitarian, V. (FG-01) . . . . .	100
Mellado, P. (EG-08) . . . . .	81	Mkhoyan, A. (FB-01) . . . . .	90
Mendes, J.B. (EA-02) . . . . .	70	Mo, L. (VP12-19) . . . . .	132
Mendonça, R.A. (DQ-15) . . . . .	68	Mo, L. (VP12-20) . . . . .	132
Menéndez, E. (BC-02) . . . . .	22	Mo, L. (VP12-27) . . . . .	133
Menéndez, E. (VP8-02) . . . . .	126	Mo, L. (VP12-33) . . . . .	133
Meng, J. (CF-06) . . . . .	45	Mo, S. (DF-06) . . . . .	62
Meng, W. (CS-08) . . . . .	53	Mo, W. (VP9-08) . . . . .	127
Mengesha, B.N. (VP17-05) . . . . .	139	Mo, Z. (VP12-44) . . . . .	134
Mengesha, B.N. (VP17-06) . . . . .	139	Mochizuki, I. (AP-03) . . . . .	14
Mengual, T. (GF-08) . . . . .	116	Mohammadi, J.B. (CQ-13) . . . . .	50
Menshaw, M. (BB-06) . . . . .	21	Mohammadi, M. (CP-05) . . . . .	48
Merritt, M.T. (AG-09) . . . . .	13	Mohammadi, M. (DG-07) . . . . .	64
Mertelj, T. (FE-11) . . . . .	97	Mohapatra, J. (CG-10) . . . . .	47
Mesple, F. (DF-02) . . . . .	61	Mohapatra, J. (EF-13) . . . . .	80
Metzger, T.W. (FB-08) . . . . .	91	Mohapatra, J. (VP11-07) . . . . .	129
Mewes, T. (CD-06) . . . . .	41	Mokrousov, Y. (BP-14) . . . . .	31
Mewes, T. (CQ-13) . . . . .	50	Mokrousov, Y. (CE-04) . . . . .	42
Meyer, T. (CA-04) . . . . .	36	Mokrousov, Y. (DD-04) . . . . .	58
Mezzi, A. (FE-04) . . . . .	96	Mola II, P. (ER-05) . . . . .	85
Mhaskar, A. (CG-05) . . . . .	46	Molteni, E. (FE-04) . . . . .	96
Mi, C. (VP11-03) . . . . .	129	Molwani, N.A. (CG-10) . . . . .	47
Mi, W. (AF-04) . . . . .	11	Molwani, N.A. (EF-13) . . . . .	80
Mi, W. (GD-04) . . . . .	113	Mongeon, J. (GA-03) . . . . .	108
Mi, W. (VP15-01) . . . . .	137	Montaigne, F. (BD-06) . . . . .	25
Mi, W. (VP9-01) . . . . .	126	Monteiro, M.G. (GD-08) . . . . .	113
Micaletti, P. (BP-04) . . . . .	30	Montoncello, F. (BP-04) . . . . .	30
Micaletti, P. (BP-05) . . . . .	30	Montoncello, F. (BP-05) . . . . .	30
Michel, J. (DB-09) . . . . .	55	Montoya, E.A. (CE-11) . . . . .	43
Michel, M. (CD-06) . . . . .	41	Montoya, S. (CB-02) . . . . .	37
Micica, M. (DF-02) . . . . .	61	Moodera, J. (EB-09) . . . . .	72
Miki, S. (BR-10) . . . . .	34	Moon, J. (CR-09) . . . . .	51
Miki, S. (CB-01) . . . . .	37	Moon, J. (GD-02) . . . . .	112
Miki, S. (CP-12) . . . . .	48	Moon, K. (AF-05) . . . . .	11
Miller, P. (CR-03) . . . . .	51	Mora-Hernandez, A. (GF-01) . . . . .	115
Mills, S.C. (ER-05) . . . . .	85	Morales, A. (AC-06) . . . . .	5
Mills, S.C. (FE-02) . . . . .	96	Moreno-Ramírez, L.M. (FF-01) . . . . .	98
Mina, M. (VP11-11) . . . . .	130	Moreschini, L. (BA-05) . . . . .	20
Mina, M. (VP12-08) . . . . .	131	Mori, H. (CP-12) . . . . .	48
Minola, M. (AE-12) . . . . .	10	Moriwaki, T. (AR-04) . . . . .	17
Minuti, A.E. (FR-11) . . . . .	106	Moriya, R. (AE-01) . . . . .	8
Mion, T.R. (CC-09) . . . . .	39	Moriyama, T. (BP-10) . . . . .	30
Mion, T.R. (ER-05) . . . . .	85	Morley, N. (EG-02) . . . . .	80
Mion, T.R. (GF-04) . . . . .	116	Morley, N. (FC-03) . . . . .	93
Miotkowski, I. (AP-06) . . . . .	14	Morley, S.A. (CB-02) . . . . .	37
Miranda, R. (CE-01) . . . . .	42	Morley, S.A. (CP-06) . . . . .	48
Misba, W. (BB-07) . . . . .	21	Morley, S.A. (DC-11) . . . . .	57
Misba, W. (BQ-08) . . . . .	32	Morozkin, A.V. (VP11-06) . . . . .	129
Mishra, S. (CR-07) . . . . .	51	Morshed, M. (BB-01) . . . . .	20
Mishra, S. (FB-06) . . . . .	91	Morshed, M. (EB-03) . . . . .	71
Mishra, S. (VP11-07) . . . . .	129	Moustafa, H.A. (AD-06) . . . . .	7
Misra, S. (BB-01) . . . . .	20	Moustafa, H.A. (AG-12) . . . . .	13
Misra, S. (BB-04) . . . . .	21	Msiska, R. (AD-05) . . . . .	6
Misra, S. (DA-05) . . . . .	54	Mu, S. (VP12-43) . . . . .	134
Misra, S. (EP-12) . . . . .	82	Mudiyanselage, N.W. (FG-10) . . . . .	101
Mitani, S. (DG-01) . . . . .	63	Mudryk, Y. (AP-08) . . . . .	15
Mitani, S. (DG-10) . . . . .	64	Mudryk, Y. (AQ-08) . . . . .	16
Mitani, S. (EQ-09) . . . . .	84	Mudryk, Y. (AS-02) . . . . .	18
Mitani, S. (FG-04) . . . . .	100	Mudryk, Y. (EQ-04) . . . . .	84
Mitani, S. (FG-07) . . . . .	101	Muduli, P.K. (AB-10) . . . . .	4
Mitra, A. (BF-03) . . . . .	27	Muduli, P.K. (FB-07) . . . . .	91
Mittal, N. (DQ-01) . . . . .	66	Muduli, P.K. (FB-09) . . . . .	91
Mittal, N. (DQ-03) . . . . .	66	Muhammad, H. (AQ-16) . . . . .	16
Miura, Y. (DG-10) . . . . .	64	Mukherjee, S. (CC-04) . . . . .	39
Miwa, S. (DA-02) . . . . .	53	Mukhopadhyay, A. (BS-06) . . . . .	35

\*Best student presentation award finalist

Mulkers, J. (AD-05)	6
Muller, D. (DF-01)	61
Mullurkara, S.V. (GC-04)	111
Mullurkara, S.V. (GC-08)	112
Mundy, J. (BA-05)	20
Muñiz, B. (CE-01)	42
Munkhsaikhan, G. (DF-05)	62
Munkhsaikhan, G. (VP2-06)	120
Munsch, M. (FG-08)	101
Muralidharan, B. (FP-05)	102
Murayama, T. (DQ-06)	67
Murgulescu, I. (AR-02)	17
Murillo Bracamontes, E.A. (CR-11)	52
Muroga, S. (AR-06)	17
Murphy, K.A. (EQ-15)	85
Murzabekova, A. (BR-07)	34
Muthui, Z.W. (VP2-05)	119
Muthukrishnan, K. (BR-11)	34
Muthuvel, M. (FC-04)	93
Muthuvel, M. (VP7-04)	125
Myrtle, S. (EP-14)	83
Myrtle, S. (EQ-13)	85

- N -

N'Diaye, A. (AE-06)	9
N'Diaye, A. (BQ-10)	32
N'Diaye, A. (FC-05)	93
Na, S. (GF-07)	116
Na, S.M. (AC-03)	5
Nadvornik, L. (FB-11)	92
Nag, J. (DF-04)	61
Nag, J. (GE-03)	114
Naganuma, H. (AP-03)	14
Naganuma, H. (CQ-02)	49
Naganuma, H. (DB-04)	55
Naganuma, H. (FD-04)	94
Nagappan Nair, S.P. (FC-04)	93
Nagata, M. (EG-10)	81
Nakagawa, H. (VP4-04)	122
Nakamura, E. (DQ-08)	67
Nakamura, K. (DE-03)	59
Nakamura, Y. (VP5-05)	123
Nakane, R. (GD-06)	113
Nakane, R. (GD-10)	113
Nakano, M. (VP13-03)	135
Nakano, M. (VP3-08)	121
Nakarmi, P. (CD-06)	41
Nakatsuji, S. (DA-02)	53
Nakatsuji, S. (FB-12)	92
Nallan, S. (FD-05)	94
Nam, D. (DR-10)	69
Nam, D. (VP12-41)	134
Namuduri, S. (AQ-06)	16
Nan, T. (BG-12)	29
Nan, Y. (VP12-34)	133
Narangerel, B. (DF-05)	62
Narangerel, B. (VP2-06)	120
Natale, M.R. (BR-03)	33
Natale, M.R. (BR-06)	33
Navarrete, B. (CG-02)	46
Navarro-Arenas, J. (GF-08)	116
Navio, C. (VP17-02)	138
Nawa, K. (DE-03)	59
Nazirkar, N.P. (CC-06)	39
Neilson, J.R. (FC-08)	93
Nembach, H. (BP-11)	31
Němec, P. (FB-11)	92
Neogi, A. (DQ-16)	68
Nepal, B. (CD-06)	41
Netoff, T. (DQ-09)	67
Neu, V. (AC-01)	4
Newburger, M. (FF-11)	99
Ng, V. (AC-02)	4
Ngouagnia, I. (ED-06)	75
Nguyen, M. (AR-06)	17

Nguyen, M. (CS-07)	53
Nguyen, M. (EE-04)	77
Nguyen, M. (ES-03)	87
Nguyen, M. (FQ-03)	103
Nguyen, M. (FQ-09)	104
Nguyen, M. (FQ-12)	104
Nguyen, M. (FQ-14)	104
Nguyen, R. (FG-02)	100
Nguyen, T. (CQ-02)	49
Nguyen, T. (DB-04)	55
Nguyen, T. (FB-01)	90
Nguyen, T. (FD-04)	94
Nguyen, T. (FE-05)	97
Nguyen, V. (DG-04)	63
Nguyen, V. (DG-05)	63
Nguyen, V. (DG-08)	64
Nicolas, H. (GF-01)	115
Nihal, I. (AE-04)	8
Nihal, I. (BR-03)	33
Nii, K. (AR-04)	17
Nikolaev, S. (EA-04)	71
Ning, Z. (FG-01)	100
Nirmala, R. (VP11-06)	129
Nisar, A. (VP7-01)	124
Nishijima, M. (AP-03)	14
Nishijima, T. (DF-03)	61
Nishikawa, M. (VP5-05)	123
Nishioka, K. (CQ-02)	49
Nishioka, Y. (VP1-01)	118
Nisoli, C. (CF-02)	44
Niu, C. (GD-09)	113
Nlebedim, C.I. (AQ-09)	16
Nlebedim, C.I. (AQ-12)	16
Nlebedim, C.I. (AQ-15)	16
Nlebedim, C.I. (DR-11)	69
Nlebedim, C.I. (EF-06)	79
Nlebedim, C.I. (EF-07)	79
Noga, B. (CG-02)	46
Noh, S. (ES-04)	87
Nolting, F. (AE-09)	9
Nolting, F. (ER-09)	86
Nomura, E. (VP13-02)	135
Nomura, H. (BR-10)	34
Nomura, H. (CB-01)	37
Nomura, H. (CP-12)	48
Nomura, H. (FD-09)	95
Nomura, K. (CP-05)	48
Nordlander, J. (BA-05)	20
Norum, M. (GD-07)	113
Novák, V. (FB-11)	92
Novosad, V. (BP-08)	30
Novosad, V. (CA-05)	36
Novosad, V. (CD-05)	41
Novosad, V. (GA-02)	108
Noyan, M. (GD-02)	112
Nozaki, Y. (EQ-09)	84
Nufer, P. (BP-14)	31
Numazawa, T. (FF-10)	99
Nunn, Z.R. (EP-14)	83
Nunn, Z.R. (EQ-13)	85
Nurdiwijayanto, L. (AE-05)	8

- O -

O'Brien, J. (DG-09)	64
O'Brien, J. (GD-05)	113
O'Donnell, S. (FC-08)	93
O'Mahoney, D.A. (AB-01)	2
Oberdick, S. (AG-01)	12
Oberdick, S. (EE-03)	77
Ochiai, Y. (AP-04)	14
Ochirkhuyag, T. (DF-05)	62
Ochirkhuyag, T. (EF-14)	80
Ochirkhuyag, T. (VP2-06)	120
Odagiri, M. (AS-01)	18
Odagiri, M. (AS-03)	18
Odbadrakh, K. (EF-14)	80

\*Best student presentation award finalist

Odkhuu, D. (DF-05).....	62	Ou, Y. (GD-01).....	112
Odkhuu, D. (VP2-06).....	120	Ouerghi, A. (DF-02).....	61
Oezelt, H. (AD-06).....	7	Ouyang, G. (EF-02).....	78
Oezelt, H. (AG-12).....	13	Ovari, T.A. (AR-03).....	17
Ogawa, D. (EF-08).....	79	Ovari, T.A. (EC-07).....	74
Ogawa, T. (FR-04).....	105	Oyarzabal Epelde, I. (BF-08).....	27
Ognev, A. (BE-04).....	26	Oyarzun, S. (GB-06).....	110
Ogura, K. (DG-06).....	64	Ozaki, K. (VP5-03).....	123
Oh, E. (CR-09).....	51		
Oh, G. (AR-07).....	17	- P -	
Ohkubo, T. (DG-01).....	63	Padgett, A.S. (VP13-05).....	135
Ohkubo, T. (DG-10).....	64	Padrón Alemán, K. (VP11-09).....	130
Ohkubo, T. (EQ-09).....	84	Padrón-Hernández, E. (EC-06).....	74
Ohkubo, T. (FG-04).....	100	Pakala, M. (EB-07).....	72
Ohldag, H. (GB-04).....	110	Pal, A. (AP-10).....	15
Ohno, H. (AB-11).....	4	Pal, A. (BF-07).....	27
Ohno, H. (BB-03).....	21	Pal, A. (FP-07).....	102
Ohno, H. (DB-01).....	54	Pal, P.K. (ED-03).....	75
Ohno, H. (DE-08).....	60	Pal, S. (ED-03).....	75
Ohno, H. (EB-02).....	71	Palacios, P. (CS-03).....	52
Ohno, H. (FB-03).....	90	Palomino Ovando, M.A. (CR-11).....	52
Ohno, H. (FB-04).....	90	Palomino, A. (DG-08).....	64
Ohno, H. (FD-02).....	94	Pamasi, L.N. (BE-03).....	26
Ohodnicki, P. (EC-02).....	73	Pamasi, L.N. (DP-01).....	65
Ohodnicki, P. (GC-04).....	111	Pan, C. (BQ-04).....	31
Ohodnicki, P. (GC-08).....	112	Pan, F. (AP-05).....	14
Ohresser, P. (CD-01).....	40	Pan, F. (CB-04).....	37
Ohsawa, Y. (FD-06).....	94	Pan, F. (DB-03).....	54
Ohshima, R. (CD-02).....	40	Pan, F. (DB-06).....	55
Ohshima, R. (DE-01).....	59	Pan, G.A. (BA-05).....	20
Ohtani, T. (CS-05).....	52	Panchal, G. (AE-09).....	9
Ohya, S. (AE-01).....	8	Pandey, R.R. (FG-06).....	100
Ohya, S. (AE-03).....	8	Pandurangí, A.K. (DQ-03).....	66
Ohya, S. (FD-10).....	95	Pang, D. (VP12-38).....	134
Oishi, Y. (ES-15).....	88	Pant, R. (VP13-15).....	136
Oka, C. (FR-01).....	105	Pantano, G. (AF-07).....	11
Okada, Y. (CR-10).....	51	Pantola, P. (VP12-30).....	133
Okamoto, S. (CS-07).....	53	Papllham, T. (EC-02).....	73
Okamoto, S. (FQ-03).....	103	Paranthaman, M.P. (EF-06).....	79
Okamoto, Y. (VP5-05).....	123	Paranthaman, M.P. (EF-07).....	79
Okano, S. (VP11-10).....	130	Pardeep, P. (VP7-04).....	125
Okita, K. (DQ-06).....	67	Pardo-Almanza, M. (CR-10).....	51
Okuno, H. (DF-02).....	61	Parigi, G. (AG-01).....	12
Olaskoaga, P. (EG-11).....	81	Park, A.M. (BP-02).....	30
Olaya, D. (BB-09).....	22	Park, A.M. (CB-07).....	38
Oleaga, A. (CF-05).....	44	Park, A.M. (ED-08).....	76
Oleaga, A. (FF-04).....	98	Park, B. (EB-07).....	72
Olejník, K. (FB-11).....	92	Park, B. (EB-12).....	73
Olekšáková, D. (AR-08).....	17	Park, B. (EP-01).....	82
Olekšáková, D. (AR-09).....	18	Park, B. (EP-06).....	82
Oliveira, L.L. (VP1-03).....	119	Park, B. (EP-15).....	83
Ollefs, K. (FF-03).....	98	Park, B. (ER-10).....	86
Ollefs, K. (GB-04).....	110	Park, C. (DR-03).....	68
Ollefs, K. (GB-10).....	111	Park, C. (DR-13).....	69
Ollefs, K. (VP17-02).....	138	Park, C. (EB-07).....	72
Olleros-Rodríguez, P. (CE-01).....	42	Park, H. (DR-16).....	69
Omar, G. (CC-07).....	39	Park, H. (VP12-29).....	133
Omelchenko, P. (EP-14).....	83	Park, J. (AQ-03).....	15
Omori, T. (VP4-05).....	122	Park, J. (BS-03).....	35
Omori, Y. (GC-05).....	112	Park, J. (CB-07).....	38
Omori, Y. (GC-06).....	112	Park, J. (EB-07).....	72
Onaka, S. (DP-11).....	66	Park, J. (EP-06).....	82
Ono, K. (EC-05).....	74	Park, J. (ER-10).....	86
Ono, T. (AP-03).....	14	Park, J. (ES-04).....	87
Ono, T. (BP-10).....	30	Park, J. (ES-10).....	88
Onodera, M. (AE-01).....	8	Park, J. (ES-11).....	88
Oogane, M. (CE-08).....	43	Park, J. (FQ-08).....	104
Oogane, M. (EB-09).....	72	Park, J. (FQ-10).....	104
Oogane, M. (EP-03).....	82	Park, J. (VP3-07).....	120
Ophus, C. (BC-01).....	22	Park, J. (VP4-13).....	122
Ophus, C. (BD-04).....	24	Park, S. (DF-06).....	62
Orlova, T. (BR-02).....	33	Park, W. (FP-06).....	102
Osborn, J. (DQ-09).....	67	Park, Y. (ER-10).....	86
Ostler, T. (DD-02).....	58	Parker, W. (CB-08)*.....	38
Ota, R. (BB-03).....	21	Parkin, S. (DE-07).....	60
Ota, R. (EB-02).....	71	Parmar, H.G. (AQ-15).....	16
Otxoa, R. (DD-04).....	58		

\*Best student presentation award finalist

Parmar, H.G. (EF-06).....	79
Parra, J. (GF-08) .....	116
Partridge, J. (VP13-15) .....	136
Pascal, J. (GF-01).....	115
Patel, G.I. (CD-04).....	40
Patel, S.K. (BR-04) .....	33
Patel, S.K. (GF-06) .....	116
Pathak, A. (AS-05).....	19
Pathak, A. (BF-06).....	27
Pathak, A. (CR-07).....	51
Pathak, P. (CC-11).....	40
Pathak, P. (CG-04)* .....	46
Pathak, S. (AD-02).....	6
Pathak, S. (AD-09).....	7
Pathak, S. (CP-09).....	48
Pathak, S. (CQ-08).....	49
Pathak, S. (VP13-15) .....	136
Patnaik, S. (VP2-04) .....	119
Patra, D. (VP2-02).....	119
Paudel, T.R. (DG-02).....	63
Paudyal, D. (EF-12).....	79
Paul, S. (ER-07).....	86
Pearson, J. (CA-05) .....	36
Pearson, J. (GA-02) .....	108
Peda, M. (VP8-02).....	126
Peddis, D. (FF-04) .....	98
Pedersen, K.S. (BF-08) .....	27
Pedroza, A. (BR-04).....	33
Pei, K. (EB-11).....	73
Pei, R. (VP12-15).....	132
Pei, R. (VP12-16).....	132
Pei, R. (VP13-01).....	135
Pei, R. (VP13-10).....	135
Pei, R. (VP13-13).....	136
Pei, X. (CE-11).....	43
Peiro, J. (FG-11).....	101
Peixoto, T. (CF-07) .....	45
Pekarek, T.M. (AP-06).....	14
Pellicer, E. (VP8-02) .....	126
Peng, Y. (EP-13).....	83
Penn, A. (AE-13) .....	10
Perconte, D. (FG-11) .....	101
Peretti, A.S. (VP13-05) .....	135
Perlepe, P. (BF-08).....	27
Perna, P. (CE-01) .....	42
Perumal, H. (VP1-05) .....	119
Peterson, C.L. (DQ-01) .....	66
Peterson, T. (FG-03).....	100
Petford-Long, A. (BD-06) .....	25
Petracic, O. (FR-08).....	106
Petroff, F. (FG-11).....	101
Petrovic, C. (DF-06) .....	62
Pham, V. (DG-05).....	63
Phan, M. (AF-01).....	10
Phan, M. (AF-07).....	11
Phan, M. (BQ-05) .....	32
Phan, M. (BQ-07) .....	32
Phan, M. (DP-05).....	65
Phan, M. (EE-04).....	77
Phan, M. (EQ-02).....	83
Phan, M. (FG-10).....	101
Phan, M. (GE-03).....	114
Phatak, C. (BD-06) .....	25
Phatak, C. (BE-05).....	26
Phung, A. (FQ-12).....	104
Phung, A. (FQ-14).....	104
Pillai, R. (VP4-13).....	122
Pinarbasi, M. (BB-01) .....	20
Pines, D.J. (GF-07).....	116
Pinilla-Cienfuegos, E. (GF-08) .....	116
Pisarev, R.V. (FB-08) .....	91
Pizzini, S. (DG-05).....	63
Pofelski, A. (ED-07) .....	75
Poh, H. (VP17-04).....	139
Polakovic, T. (CA-05).....	36
Polakovic, T. (GA-02).....	108
Pollard, S. (CP-07).....	48

Ponomaryov, A. (FB-08) .....	91
Poorman, M. (AG-01) .....	12
Postiglione, W.M. (DC-01) .....	56
Powalla, L. (GB-01).....	109
Prabhu Gaunkar, N. (VP11-11) .....	130
Prabhu Gaunkar, N. (VP12-08) .....	131
Pradeep, K. (FC-04).....	93
Pramanik, T. (VP7-01).....	124
Prasad, N. (AQ-06) .....	16
Preethi Meher, K. (CC-10).....	39
Prejbeanu, I. (EP-13) .....	83
Prejbeanu, I. (GF-01) .....	115
Prejbeanu, L. (FG-05) .....	100
Prestigiacomo, J. (CF-01) .....	44
Priyanka, B. (VP1-05) .....	119
Provino, A. (FF-04).....	98
Pruegl, K. (BG-13).....	29
Psaroudaki, C. (CB-09).....	38
Puebla Hellmann, G. (AC-06) .....	5
Pufall, M.R. (BB-09) .....	22
Puliafito, V. (BB-06) .....	21
Pylypovskyi, O. (FA-04) .....	89
Pyo, H. (DR-14).....	69

### - Q -

Qian, J. (GA-02) .....	108
Qian, L. (VP10-03) .....	128
Qian, S. (AD-07) .....	7
Qian, S. (FP-08).....	102
Qian, Y. (CD-05) .....	41
Qin, K. (VP12-43).....	134
Qin, T. (VP12-31) .....	133
Qin, Y. (VP3-04).....	120
Qiu, J. (VP10-05).....	128
Qiu, J. (VP4-12).....	122
Qiu, J. (VP4-14).....	122
Qiu, X. (BQ-04).....	31
Qiu, X. (BS-01) .....	34
Qiu, X. (BS-04) .....	35
Qu, Z. (VP3-02).....	120
Quan, L. (VP12-12) .....	131
Quan, L. (VP12-36) .....	133
Quan, L. (VP12-37) .....	133
Quarterman, P. (BC-01).....	22
Quarterman, P. (DC-11).....	57
Quelhas, K.N. (EE-03).....	77
Querlioz, D. (EB-04) .....	72
Quezado, S. (VP11-06) .....	129
Quintana, A. (BC-01).....	22
Quintero-Suárez, Á. (AG-11).....	13

### - R -

Raabe, D. (FC-01) .....	92
Rabinovich, K.S. (AE-12) .....	10
Radhakrishnan, P. (AE-12) .....	10
Radu, C. (GC-08).....	112
Radu, F. (EQ-12) .....	84
Raftrey, D.W. (CB-02).....	37
Raftrey, D.W. (CP-06).....	48
Raftrey, D.W. (GB-03).....	109
Rahaman, M. (VP7-04) .....	125
Rahir, K. (CQ-08) .....	49
Rai, A. (CA-04) .....	36
Rai, B.K. (AF-06) .....	11
Raimondi, F. (BG-06).....	29
Raimondo, E. (BB-05).....	21
Raimondo, E. (CS-06).....	53
Raimondo, E. (FP-01).....	102
Rajib, M. (BC-05).....	23
Rajib, M. (BC-08) .....	23
Raju, M. (FB-12) .....	92
Rakheja, S. (AD-07) .....	7
Rakheja, S. (EB-03).....	71
Rakheja, S. (FP-08) .....	102
Rakshit, R.K. (FE-04).....	96

\*Best student presentation award finalist

Rakshit, R.K. (FE-11)	97
Rallabandi, V. (BG-01)	28
Ralph, D.C. (DF-01)	61
Ramberger, J. (GD-07)	113
Ramdas, A.K. (AP-06)	14
Ramesh, R. (FA-02)	89
Ramesh, R. (FB-13)	92
Ramker, A. (FG-01)	100
Rampur, M. (VP8-04)	126
Ramsteiner, M. (DF-08)	62
Rana, K. (AQ-05)	16
Ranchal, R. (CS-03)	52
Ranchal, R. (FE-10)	97
Ranchal, R. (GF-03)	116
Randall Lee, T. (EE-04)	77
Rao, S. (DG-04)	63
Rao, S. (DG-08)	64
Rao, S. (FD-07)	95
Rao, S. (FG-08)	101
Rao, S. (GD-08)	113
Ravichandran, K. (FC-04)	93
Rawat, R. (AP-12)	15
Raymenants, E. (DG-04)	63
Raymenants, E. (DG-05)	63
Reddinger, J.A. (CB-08)	38
Reddinger, J.A. (DP-09)	65
Reese, B.L. (GG-02)	117
Rehm, L. (BB-01)	20
Rehm, L. (EB-03)	71
Reinhoffer, C. (FB-08)	91
Reisbick, S. (ED-07)	75
Reiser, P. (FA-05)	89
Ren, H. (AB-01)	2
Ren, H. (BR-04)	33
Ren, Y. (DF-01)	61
Ren, Y. (VP12-01)	130
Ren, Y. (VP12-04)	131
Renard, V. (DF-02)	61
Renuka Balakrishna, A. (EC-01)	73
Retterer, S.T. (FA-01)	89
Reynaga Gonzalez, C. (VP10-01)	128
Reyren, N. (ED-06)	75
Reyren, N. (GB-02)	109
Reza, S. (CR-03)	51
Rezende, S. (EC-06)	74
Rhensius, J. (AC-06)	5
Rhie, K. (BS-03)	35
Rhim, S.H. (DE-03)	59
Rhyee, J. (FF-08)	99
Rhyne, J. (EE-05)	77
Riberolles, S. (AP-02)	14
Rickard, M.J. (EB-06)	72
Rickhaus, P.S. (FA-01)	89
Rickhaus, P.S. (FG-08)	101
Rigaut, W. (AD-06)	7
Riminucci, A. (FE-04)	96
Riminucci, A. (FE-11)	97
Rincón Joya, M. (DP-06)	65
Rinke, P. (BC-03)	22
Rippard, W.H. (BB-09)	22
Rivas, M. (EG-05)	81
Robertson, J. (AP-03)	14
Robertson, M. (BC-01)	22
Robinet, L.N. (VP13-05)	135
Rockwell, K. (DD-02)	58
Roddy, M. (DF-01)	61
Rodriguez, L. (CR-01)	50
Rodriguez, L. (CR-02)	50
Rogachev, K. (BE-04)	26
Rogalev, A. (BF-08)	27
Rogalev, A. (GB-10)	111
Rogers, V.C. (DA-05)	54
Rogers, V.C. (FG-02)	100
Rohde, E. (EQ-04)	84
Röhlsberger, R. (ED-09)	76
Rojas-Sanchez, J. (CD-01)	40
Rojas, M. (EP-14)	83

Roop, B. (CR-03)	51
Roos, M. (BR-03)	33
Roos, M. (CF-10)	45
Rosamond, M. (BR-09)	34
Ross, A. (EB-04)	72
Ross, C.A. (AD-03)	6
Ross, C.A. (AE-02)	8
Ross, C.A. (AE-05)	8
Ross, C.A. (AE-13)	10
Ross, C.A. (BA-01)	19
Ross, C.A. (BQ-08)	32
Ross, C.A. (CD-10)	41
Ross, C.A. (CQ-12)	50
Ross, C.A. (FE-05)	97
Ross, J. (CQ-07)	49
Ross, J. (DD-04)	58
Rothschild, A. (DE-11)	60
Rothschild, A. (GB-08)	110
Rougemaille, N. (GB-04)	110
Rouzegar, R. (BQ-06)	32
Rouzieres, M. (BF-08)	27
Rowan-Robinson, R. (EG-02)	80
Roxburgh, A. (EE-06)	77
Roy, G. (CC-03)	39
Roy, S. (CB-02)	37
Roy, S. (CP-06)	48
Roy, S. (CQ-01)	49
Royo, I. (GF-05)	116
Rozenberg, M. (AE-07)	9
Rueangnetr, N. (GG-09)	118
Ruiz, J. (EF-13)	80
Ryan, D. (AP-02)	14
Ryan, D. (BF-02)	27
Ryan, D.H. (EP-14)	83
Ryu, H. (DF-06)	62

- S -

Saccone, M. (BE-06)	26
Saccone, M.D. (CQ-14)	50
Sadashiva, A. (AB-10)	4
Sadilek, J. (GB-04)	110
Safranski, C. (EB-05)	72
Saha, R. (DQ-09)	67
Saha, R. (VP6-01)	123
Saha, S. (CF-03)	44
Saha, S. (EQ-12)	84
Sahoo, A. (BG-04)	29
Saighi, S. (EB-04)	72
Saito, A. (ES-15)	88
Saito, A.T. (FF-10)	99
Saito, K. (VP4-04)	122
Saito, S. (DP-12)	66
Saito, T. (AQ-01)	15
Saito, T. (AQ-02)	15
Saito, T. (EF-01)	78
Saito, Y. (CE-02)	42
Saito, Y. (DB-04)	55
Saitoh, E. (FB-08)	91
Saitoh, E. (VP11-01)	129
Sakai, R. (EG-10)	81
Sakai, T. (VP2-03)	119
Sakamoto, H. (VP4-02)	122
Sakamoto, M. (AR-05)	17
Sakamoto, M. (AS-03)	18
Sakamoto, T. (AR-04)	17
Sakar, B. (GB-02)	109
Sakuraba, Y. (GE-02)	114
Sakurai, J. (FR-01)	105
Sala, G. (EA-05)	71
Salaheldeen, M. (AS-04)	19
Salaheldeen, M. (EQ-05)	84
Salahuddin, S. (BQ-10)	32
Salamon, S. (FF-06)	99
Saleheen, A.U. (CP-06)	48
Salev, P. (AE-07)	9
Salikhov, R. (CD-04)	40

\*Best student presentation award finalist

Salinas, R.I. (AB-07) . . . . .	3	Schulz, N. (AF-07) . . . . .	11
Salomoni, D. (EP-13) . . . . .	83	Schulz, N. (BQ-07) . . . . .	32
Salvador, M. (EG-05) . . . . .	81	Schulz, N. (EQ-02) . . . . .	83
Salvan, G. (VP11-10) . . . . .	130	Schumacher, H. (GB-02) . . . . .	109
Samanta, A. (CQ-01) . . . . .	49	Schuman, C.D. (BB-04) . . . . .	21
Samanta, K. (DG-02) . . . . .	63	Schuman, C.D. (DA-05) . . . . .	54
Samardak, A. (BE-04) . . . . .	26	Schuman, C.D. (EP-12) . . . . .	82
Samardak, V. (BE-04) . . . . .	26	Schütz, G. (GB-01) . . . . .	109
Samarth, N. (GD-01) . . . . .	112	Schwartz, E. (AF-09) . . . . .	11
Samatham, S. (AP-09) . . . . .	15	Scozzaro, M. (BG-06) . . . . .	29
Samatham, S. (BF-06) . . . . .	27	Seetoh, I.P. (EG-06) . . . . .	80
Sanchez, J.L. (VP11-05) . . . . .	129	Seifert, T.S. (BQ-06) . . . . .	32
Sanchez, J.L. (VP11-09) . . . . .	130	Sekino, M. (AG-03) . . . . .	12
Sanchez, R. (GC-01) . . . . .	111	Sekino, M. (AG-06) . . . . .	13
Sanchis, P. (GF-08) . . . . .	116	Sekino, M. (CG-03) . . . . .	46
Santos, A. (CC-03) . . . . .	39	Sekino, M. (CG-06) . . . . .	46
Santos, E.S. (EA-02) . . . . .	70	Sekino, M. (DQ-07) . . . . .	67
Santos, T. (GB-03) . . . . .	109	Sekino, M. (DQ-11) . . . . .	67
Sanz Hernandez, D. (BD-06) . . . . .	25	Sekino, M. (FR-09) . . . . .	106
Sanz Hernandez, D. (EB-04) . . . . .	72	Semisalova, A.S. (DD-03) . . . . .	58
Sapkota, A. (CR-01) . . . . .	50	Seneor, P. (AP-03) . . . . .	14
Sapkota, A. (CR-02) . . . . .	50	Seneor, P. (FG-11) . . . . .	101
Sarfo, T. (GE-04) . . . . .	114	Seo, J. (AF-05) . . . . .	11
Sasaki, D.Y. (AE-04) . . . . .	8	Seo, S. (FR-10) . . . . .	106
Sasaki, D.Y. (AE-06) . . . . .	9	Sepehri-Amin, H. (EF-08) . . . . .	79
Sasaki, D.Y. (AE-07) . . . . .	9	Seppala, J.E. (EQ-08) . . . . .	84
Sasaki, D.Y. (BR-03) . . . . .	33	Seren, H.R. (EG-04) . . . . .	80
Sasaki, D.Y. (FA-01) . . . . .	89	Servet, B. (FG-11) . . . . .	101
Sasaki, S. (VP4-05) . . . . .	122	Setti, G. (AB-08) . . . . .	3
Sasaki, T. (AE-05) . . . . .	8	Sha, Y. (VP11-03) . . . . .	129
Sasaki, Y. (DE-09) . . . . .	60	Shafer, P. (AE-04) . . . . .	8
Sasaki, Y. (VP5-03) . . . . .	123	Shafer, P. (AE-06) . . . . .	9
Sasayama, T. (CS-01) . . . . .	52	Shafer, P. (BA-05) . . . . .	20
Sassi, Y. (ED-06) . . . . .	75	Shah, S. (AC-05) . . . . .	5
Sato, A. (VP4-01) . . . . .	121	Shah, S.A. (FR-02) . . . . .	105
Sato, A. (VP4-02) . . . . .	122	Shallenberger, J. (VP10-01) . . . . .	128
Sato, F. (ES-15) . . . . .	88	Shan, W. (VP12-09) . . . . .	131
Sato, F. (VP4-05) . . . . .	122	Shand, P. (AP-07) . . . . .	14
Sato, N. (VP11-01) . . . . .	129	Shand, P. (FG-01) . . . . .	100
Sato, S. (GD-06) . . . . .	113	Shao, D. (AF-09) . . . . .	11
Sato, S. (GD-10) . . . . .	113	Shao, D. (DG-02) . . . . .	63
Sato, Y. (FB-03) . . . . .	90	Shao, D. (FB-02) . . . . .	90
Sato, Y. (FB-04) . . . . .	90	Shao, Y. (BB-05) . . . . .	21
Sato, Y. (FD-02) . . . . .	94	Shao, Y. (FD-11) . . . . .	95
Satz, A. (BG-13) . . . . .	29	Shao, Y. (FP-01) . . . . .	102
Savostin, E. (CE-06) . . . . .	43	Shao, Z. (VP3-11) . . . . .	121
Sawangarom, V. (GG-06) . . . . .	118	Shapiro, D.A. (GB-04) . . . . .	110
Sawicki, M. (FB-03) . . . . .	90	Sharma, A. (AG-10) . . . . .	13
Sawon, A. (BF-06) . . . . .	27	Sharma, A. (EP-10) . . . . .	82
Sawon, A. (CR-07) . . . . .	51	Sharma, A. (FP-05) . . . . .	102
Saxena, Y.R. (FR-05) . . . . .	105	Sharma, A. (VP11-10) . . . . .	130
Sayed, S. (BQ-10) . . . . .	32	Sharma, M. (VP16-02) . . . . .	138
Sayed, S. (TU-02) . . . . .	1	Sharma, M. (VP6-05) . . . . .	124
Scheibel, F. (FF-12) . . . . .	99	Sharma, P. (BQ-11) . . . . .	32
Scheike, T. (DG-01) . . . . .	63	Sharma, P. (VP3-09) . . . . .	121
Scheike, T. (DG-10) . . . . .	64	Sharma, V. (FF-05) . . . . .	98
Scheike, T. (FG-04) . . . . .	100	Sharma, V. (VP15-05) . . . . .	137
Scheike, T. (FG-07) . . . . .	101	Shaw, J.M. (BP-11) . . . . .	31
Schlueter, C. (CF-07) . . . . .	45	Shaw, S. (AQ-06) . . . . .	16
Schlueter, C. (CR-04) . . . . .	51	Shen, J. (GF-10) . . . . .	117
Schmid, A. (BC-01) . . . . .	22	Shen, K. (VP17-04) . . . . .	139
Schmid, A. (BD-04) . . . . .	24	Shen, R. (ER-11) . . . . .	86
Schmidt, B. (AP-07) . . . . .	14	Sheng, P. (VP11-12) . . . . .	130
Schmidt, B. (FG-01) . . . . .	100	Shi, D. (VP3-10) . . . . .	121
Schmitt, C. (BG-13) . . . . .	29	Shi, X. (VP15-01) . . . . .	137
Schneider, M.L. (BB-09) . . . . .	22	Shi, Y. (VP17-03) . . . . .	138
Scholl, A. (AE-04) . . . . .	8	Shi, Z. (BQ-04) . . . . .	31
Scholl, A. (FA-01) . . . . .	89	Shih, Y. (VP13-07) . . . . .	135
Schönhense, G. (CF-07) . . . . .	45	Shiino, T. (EB-12) . . . . .	73
Schrader, C. (FA-05) . . . . .	89	Shim, S. (BR-07) . . . . .	34
Schrefl, T. (AD-06) . . . . .	7	Shim, W. (BQ-03) . . . . .	31
Schrefl, T. (AG-12) . . . . .	13	Shim, W. (CP-01) . . . . .	47
Schuller, I.K. (AE-07) . . . . .	9	Shimazoe, K. (AG-03) . . . . .	12
Schulman, A. (BB-06) . . . . .	21	Shin, H. (AF-05) . . . . .	11
Schulman, A. (EB-04) . . . . .	72	Shin, H. (DR-15) . . . . .	69
Schulz, F. (EQ-13) . . . . .	85	Shin, H. (ES-02) . . . . .	87
Schulz, F. (GB-01) . . . . .	109	Shin, H. (ES-07) . . . . .	87

\*Best student presentation award finalist

Shin, H. (FQ-07) .....	103	Singleton, J. (BF-09) .....	28
Shin, H. (FQ-12) .....	104	Sinha, J. (VP1-05) .....	119
Shin, H. (FQ-13) .....	104	Sinnecker, J. (EC-06) .....	74
Shin, H. (FQ-14) .....	104	Sinova, J. (AA-02) .....	2
Shin, J. (CP-01) .....	47	Siwach, P.K. (AE-10) .....	9
Shin, J. (DR-09) .....	69	Siwach, P.K. (AE-11) .....	10
Shin, K. (DR-09) .....	69	Siwach, P.K. (FE-09) .....	97
Shin, K. (ES-01) .....	86	Sklenar, J. (BP-13) .....	31
Shin, K. (ES-02) .....	87	Sklenar, J. (CQ-05) .....	49
Shin, K. (ES-03) .....	87	Sklenar, J. (ED-11) .....	76
Shin, K. (ES-04) .....	87	Sklenar, J. (EQ-07) .....	84
Shin, K. (ES-05) .....	87	Sklenar, J. (GA-03) .....	108
Shin, K. (ES-06) .....	87	Skokov, K.P. (DC-02) .....	56
Shin, K. (ES-07) .....	87	Skokov, K.P. (FF-03) .....	98
Shin, K. (ES-08) .....	88	Skokov, K.P. (FF-12) .....	99
Shin, K. (ES-09) .....	88	Skokov, K.P. (GB-10) .....	111
Shin, K. (ES-10) .....	88	Skorvanek, I. (EC-04) .....	74
Shin, K. (ES-11) .....	88	Skotnicova, K. (GE-05) .....	115
Shin, K. (FQ-06) .....	103	Slavin, A.N. (BP-15) .....	31
Shin, K. (FQ-07) .....	103	Smaha, R.W. (DC-09) .....	57
Shin, K. (FQ-08) .....	104	Smaha, R.W. (FC-08) .....	93
Shin, K. (FQ-09) .....	104	Šmejkal, L. (AA-01) .....	1
Shin, K. (FQ-10) .....	104	Smith, D.A. (CD-06) .....	41
Shin, K. (FQ-11) .....	104	Smith, I. (CG-02) .....	46
Shin, K. (FQ-12) .....	104	Smith, J. (BB-01) .....	20
Shin, K. (FQ-13) .....	104	Smith, J. (BB-04) .....	21
Shin, K. (FQ-14) .....	104	Smith, J. (DA-05) .....	54
Shin, K. (FQ-15) .....	105	Smith, J. (EP-12) .....	82
Shin, K. (VP12-42) .....	134	Sobolev, S. (CF-07) .....	45
Shin, M. (FR-14) .....	107	Soler Morala, J. (VP17-02) .....	138
Shinoda, T. (FD-02) .....	94	Someya, H. (GC-06) .....	112
Shinohara, R. (CG-09) .....	47	Son, K. (DF-06) .....	62
Shinya, H. (AP-03) .....	14	Song, C. (AP-05) .....	14
Shinya, H. (FD-10) .....	95	Song, C. (CB-04) .....	37
Shiota, Y. (BP-10) .....	30	Song, C. (CQ-04) .....	49
Shiraishi, M. (CD-02) .....	40	Song, C. (DB-03) .....	54
Shirotori, S. (BG-07) .....	29	Song, C. (DB-05) .....	55
Shotbolt, M. (CG-01) .....	45	Song, C. (DB-06) .....	55
Shotbolt, M. (CG-02) .....	46	Song, H. (VP4-12) .....	122
Shoup, J.E. (BQ-08) .....	32	Song, J. (DG-01) .....	63
Shoup, J.E. (EP-04) .....	82	Song, J. (DG-10) .....	64
Shoup, J.E. (FC-06) .....	93	Song, J. (VP9-08) .....	127
Shoup, J.E. (FG-10) .....	101	Song, L. (EQ-01) .....	83
Shpyrko, O.G. (GF-06) .....	116	Song, L. (FB-05) .....	91
Shukla, A. (AD-07) .....	7	Song, M. (BP-02) .....	30
Shukla, A. (EB-03) .....	71	Song, M. (CA-05) .....	36
Shukla, A.K. (FD-09) .....	95	Song, M. (ED-08) .....	76
Shull, R. (AS-06) .....	19	Song, Q. (BA-05) .....	20
Shumilin, A. (FE-11) .....	97	Song, R. (ED-11) .....	76
Si, P. (VP3-07) .....	120	Song, S. (DR-02) .....	68
Sievers, S. (GB-02) .....	109	Song, Y. (AE-13) .....	10
Silly, F. (CD-01) .....	40	Song, Y. (FE-05) .....	97
Silly, M. (CD-01) .....	40	Sonobe, Y. (BS-02) .....	35
Sim, M. (CR-10) .....	51	Soon, Y. (BP-02) .....	30
Singh, A. (CB-02) .....	37	Soree, B. (DG-05) .....	63
Singh, A. (CP-06) .....	48	Soree, B. (FD-07) .....	95
Singh, A. (FC-02) .....	92	Soree, B. (GD-08) .....	113
Singh, A. (VP13-15) .....	136	Soria, L. (CS-03) .....	52
Singh, A.K. (AE-11) .....	10	Sort, J. (BC-02) .....	22
Singh, A.P. (DR-11) .....	69	Sort, J. (VP8-02) .....	126
Singh, G. (VP11-04) .....	129	Soumah, L. (FG-05) .....	100
Singh, H. (DC-02) .....	56	Soumyanarayanan, A. (BB-08) .....	21
Singh, H.K. (AE-10) .....	9	Soumyanarayanan, A. (CB-06) .....	37
Singh, H.K. (AE-11) .....	10	Soumyanarayanan, A. (CR-10) .....	51
Singh, H.K. (FE-09) .....	97	Sousa, R. (EP-13) .....	83
Singh, M. (FE-04) .....	96	Sousa, R. (FG-05) .....	100
Singh, M. (FE-11) .....	97	Sousa, R. (GF-01) .....	115
Singh, N. (FE-09) .....	97	Sparks, P. (BR-04) .....	33
Singh, S. (BE-06) .....	26	Sparks, T. (DF-01) .....	61
Singh, S. (CQ-10) .....	50	Springholz, G. (DD-06) .....	58
Singh, S. (GA-05) .....	108	Sreeparvathy, P. (DF-04) .....	61
Singh, S. (VP16-02) .....	138	Srikanth, H. (AF-07) .....	11
Singh, S. (VP3-09) .....	121	Srikanth, H. (BQ-05) .....	32
Singh, S. (VP8-04) .....	126	Srikanth, H. (BQ-07) .....	32
Singh, V. (GB-09) .....	110	Srikanth, H. (DP-05) .....	65
Singh, V. (GB-11) .....	111	Srikanth, H. (EE-04) .....	77
Singhal, S. (VP4-15) .....	122	Srikanth, H. (EQ-02) .....	83

\*Best student presentation award finalist

Srikanth, H. (FG-10)	101
Srikanth, H. (GE-03)	114
Srikanth, H. (GF-09)	117
Srinath, S. (VP7-04)	125
Srivastava, T. (ED-06)	75
Stadler, B. (DQ-13)	67
Staggers, T. (CP-07)	48
Stark, A. (FG-08)	101
Staruch, M. (ER-05)	85
Staruch, M. (FE-02)	96
Stavila, C. (FR-11)	106
Stenning, K.D. (DE-02)	59
Stephen, G.M. (CF-01)	44
Stevenson, P. (FA-02)	89
Stienen, S. (CD-04)	40
Stiles, M.D. (CE-09)	43
Stiles, M.D. (DE-05)	59
Stoeckl, P. (AQ-10)	16
Stoian, G. (AR-02)	17
Stoian, G. (AR-03)	17
Stramaglia, F. (AE-09)	9
Stramaglia, F. (ER-09)	86
Strocov, V.N. (ER-09)	86
Sturm, S. (EF-03)	78
Su, Q. (VP10-02)	128
Su, T. (AD-03)	6
Subedi, M. (EQ-07)	84
Subedi, M. (GA-03)	108
Suess, D. (AD-09)	7
Suess, D. (AD-11)	7
Suess, D. (BG-13)	29
Suess, D. (CQ-03)	49
Sugimoto, S. (EG-10)	81
Suh, P. (VP6-04)	124
Suh, P. (VP9-04)	127
Sukegawa, H. (DA-03)	54
Sukegawa, H. (DG-01)	63
Sukegawa, H. (DG-10)	64
Sukegawa, H. (EQ-09)	84
Sukegawa, H. (FG-04)	100
Sukegawa, H. (FG-07)	101
Sullivan, C. (AB-02)	3
Sultana, J. (CR-07)	51
Sultana, R. (DE-02)	59
Sumi, S. (AS-01)	18
Sumi, S. (AS-03)	18
Sumi, S. (CP-05)	48
Sumi, S. (DG-07)	64
Sun, C. (AA-03)	2
Sun, D. (ED-11)	76
Sun, D. (GA-02)	108
Sun, H. (CS-08)	53
Sun, H. (VP10-05)	128
Sun, H. (VP4-12)	122
Sun, H. (VP4-14)	122
Sun, J.Z. (EB-05)	72
Sun, K. (VP10-02)	128
Sun, S. (AC-07)	5
Sun, X. (FR-08)	106
Sun, Y. (VP13-08)	135
Sunaga, Y. (DQ-11)	67
Sung, S. (ES-10)	88
Sung, S. (ES-11)	88
Sung, S. (FQ-08)	104
Sung, S. (FQ-10)	104
Suresh, K. (AP-09)	15
Suresh, K. (DF-04)	61
Suresh, K. (ER-07)	86
Suresh, K. (GE-03)	114
Surynek, M. (FB-11)	92
Suto, H. (GE-02)	114
Suzuki, N. (CP-05)	48
Suzuki, Y. (AB-01)	2
Suzuki, Y. (BR-10)	34
Suzuki, Y. (CB-01)	37
Suzuki, Y. (CP-12)	48
Suzuki, Y. (FD-09)	95

Swatek, P.W. (AQ-10)	16
Syاملal, S. (VP1-05)	119
Syed, M. (CR-03)	51
Sztein, P. (VP4-11)	122
Szurman, I. (GE-05)	115

- T -

Tadano, Y. (FD-10)	95
Tahir, S. (FF-06)	99
Takagi, K. (VP5-03)	123
Takahashi, H. (AG-03)	12
Takahashi, M. (DG-06)	64
Takahashi, M. (DQ-07)	67
Takahashi, Y. (DE-09)	60
Takahashi, Y. (EF-08)	79
Takahashi, Y. (FB-06)	91
Takahashi, Y. (VP5-03)	123
Takamura, Y. (AE-04)	8
Takamura, Y. (AE-06)	9
Takamura, Y. (AE-07)	9
Takamura, Y. (BR-03)	33
Takamura, Y. (FA-01)	89
Takanashi, K. (BS-02)	35
Takano, Y. (FF-10)	99
Takeda, T. (FD-10)	95
Takeuchi, Y. (FB-03)	90
Takeuchi, Y. (FB-04)	90
Takeuchi, Y. (FD-02)	94
Takeya, H. (FF-10)	99
Talaat, A. (EC-08)	74
Talaat, A. (EC-09)	74
Talatchian, P. (FG-05)	100
Talmelli, G. (FD-07)	95
Talmelli, G. (GD-08)	113
Tamai, Y. (AG-03)	12
Tamura, E. (CB-01)	37
Tamura, E. (CP-12)	48
Tan, F. (VP17-04)	139
Tan, F. (VP2-07)	120
Tan, F. (VP7-09)	125
Tan, H. (CB-06)	37
Tan, H. (CR-10)	51
Tan, S. (GC-08)	112
Tan, Z. (BC-02)	22
Tanabe, K. (AS-01)	18
Tanabe, K. (AS-03)	18
Tanabe, K. (CP-05)	48
Tanabe, K. (DG-07)	64
Tanabe, K. (TU-03)	1
Tanaka, H. (BE-03)	26
Tanaka, H. (DP-01)	65
Tanaka, K. (DA-02)	53
Tanaka, M. (AE-01)	8
Tanaka, M. (AE-03)	8
Tanaka, M. (FD-10)	95
Tanaka, M. (GD-06)	113
Tanaka, M. (GD-10)	113
Tanaka, S. (EG-10)	81
Tanaka, T. (DP-11)	66
Tanaka, Y. (FD-09)	95
Tang, B. (VP13-11)	136
Tang, J. (DB-07)	55
Tang, J. (DB-09)	55
Tang, K. (EQ-09)	84
Tang, M. (BS-04)	35
Tang, W. (EF-02)	78
Tang, Y. (EB-01)	71
Tang, Y. (ER-11)	86
Taniguchi, T. (AB-03)	3
Taniguchi, T. (AE-05)	8
Taniguchi, T. (BP-10)	30
Taniyasu, Y. (AE-03)	8
Tanksalvala, M. (BP-11)	31
Tanksalvala, M. (CD-07)	41
Tao, Y. (VP15-06)	137
Tapia, I. (EG-08)	81

\*Best student presentation award finalist



Tarabay, N. (BE-07) . . . . .	26	Tsymbol, E. (AF-09) . . . . .	11
Taris, T. (EB-04) . . . . .	72	Tsymbol, E. (DA-01) . . . . .	53
Tashli, M. (CG-05) . . . . .	46	Tsymbol, E. (DG-02) . . . . .	63
Tashli, M. (FR-05) . . . . .	105	Tsymbol, E. (FB-02) . . . . .	90
Tate, J. (CR-01) . . . . .	50	Tu, R. (VP12-05) . . . . .	131
Tate, J. (CR-02) . . . . .	50	Tulapurkar, A. (FG-06) . . . . .	100
Tate, J. (EF-10) . . . . .	79	Tumbleson, R. (CB-02) . . . . .	37
Tate, J. (EF-11) . . . . .	79	Tumbleson, R. (CP-06) . . . . .	48
Taue, S. (CS-01) . . . . .	52	Turgut, E. (CP-08) . . . . .	48
Tawale, J.S. (FE-09) . . . . .	97	Turnbull, L. (GB-01) . . . . .	109
Tayal, A. (FR-08) . . . . .	106	Tyagi, P. (VP17-05) . . . . .	139
Temst, K. (DG-05) . . . . .	63	Tyagi, P. (VP17-06) . . . . .	139
Temst, K. (DG-08) . . . . .	64	Tyagi, P. (VP6-04) . . . . .	124
Terasaki, I. (AP-04) . . . . .	14	Tyagi, P. (VP9-04) . . . . .	127
Terashima, K. (FF-10) . . . . .	99	Tyberkevych, V. (BP-15) . . . . .	31
Terrones, M. (BQ-05) . . . . .	32	Tyberkevych, V. (ED-10) . . . . .	76
Tew, W.L. (EE-03) . . . . .	77	Tzschaschel, C. (BA-05) . . . . .	20
Tey, M. (BB-08) . . . . .	21		
Tezuka, N. (CE-02) . . . . .	42	- U -	
Thakur, A. (AQ-05) . . . . .	16	Uchida, K. (VP5-03) . . . . .	123
Tham, K. (DP-12) . . . . .	66	Uchimura, T. (FB-03) . . . . .	90
Thapa, R. (BR-11) . . . . .	34	Uchimura, T. (FB-04) . . . . .	90
Thayer, A. (AP-08) . . . . .	15	Uchiyama, T. (VP10-06) . . . . .	128
Theh, W. (VP11-11) . . . . .	130	Uehara, H. (EG-10) . . . . .	81
Theh, W. (VP12-08) . . . . .	131	Ueki, T. (AG-03) . . . . .	12
Thomas, W.C. (CD-06) . . . . .	41	Ueland, B. (AP-02) . . . . .	14
Thompson, P. (GB-02) . . . . .	109	Uemoto, M. (AP-03) . . . . .	14
Thomson, T. (GB-02) . . . . .	109	Uemura, T. (VP1-01) . . . . .	118
Thota, S. (AE-08) . . . . .	9	Umeda, M. (VP11-01) . . . . .	129
Thota, S. (BF-04) . . . . .	27	Upadhyay, C. (AQ-06) . . . . .	16
Tian, B. (VP13-10) . . . . .	135	Us Saleheen, A. (CB-02) . . . . .	37
Tian, C. (BG-05) . . . . .	29	Usui, A. (DQ-05) . . . . .	67
Tian, M. (CD-01) . . . . .	40		
Tiberto, P. (AD-10) . . . . .	7	- V -	
Tiberto, P. (AG-08) . . . . .	13	Vadde, V. (FP-05) . . . . .	102
Tibu, M. (AR-02) . . . . .	17	Vaidya, S. (BF-09) . . . . .	28
Tibu, M. (VP9-06) . . . . .	127	Valbuena, M. (CE-01) . . . . .	42
Timalsina, R. (AC-05) . . . . .	5	Vallejo, F. (EG-11) . . . . .	81
Timalsina, R. (AC-07) . . . . .	5	Vallejos, S. (CS-03) . . . . .	52
Timalsina, R. (ED-05) . . . . .	75	Valvidares, M. (BF-10) . . . . .	28
Tkáč, M. (AR-09) . . . . .	18	Valvidares, M. (CE-01) . . . . .	42
Tkach, O. (CF-07) . . . . .	45	Van Beek, S. (FD-07) . . . . .	95
Toellner, T. (FF-03) . . . . .	98	Van Beek, S. (GD-08) . . . . .	113
Toh, A.K. (AC-02) . . . . .	4	Van den Berg, A. (BE-06) . . . . .	26
Tomar, M. (AQ-05) . . . . .	16	van der Heide, P. (FG-08) . . . . .	101
Tomasello, R. (CS-06) . . . . .	53	van Dijken, S. (BC-03) . . . . .	22
Tomishima, S. (FD-09) . . . . .	95	Van Helden, D. (DQ-09) . . . . .	67
Tomse, T. (EF-03) . . . . .	78	van Kooten, S.C. (DD-06) . . . . .	58
Tong, K. (GD-03) . . . . .	112	van Loosdrecht, P.H. (FB-08) . . . . .	91
Tonini, D. (VP6-01) . . . . .	123	van Riel, F. (EE-02) . . . . .	77
Tonthat, L. (CG-11) . . . . .	47	van Rijn, J. (ER-06) . . . . .	86
Tonthat, L. (DQ-06) . . . . .	67	van Rijn, J. (FP-09) . . . . .	102
Tonthat, L. (FR-04) . . . . .	105	Van Waeyenberge, B. (FP-03) . . . . .	102
Tonyushkin, A. (FR-12) . . . . .	106	Van, P.C. (BP-02) . . . . .	30
Torii, T. (VP4-01) . . . . .	121	Van, P.C. (EB-12) . . . . .	73
Torii, T. (VP4-02) . . . . .	122	Vanstone, A. (DE-02) . . . . .	59
Torres-Cavanillas, R. (GF-08) . . . . .	116	Vantilt, T. (GD-08) . . . . .	113
Toyama, R. (GE-02) . . . . .	114	Varela, M. (CE-01) . . . . .	42
Tozman Karanikolas, P. (EF-08) . . . . .	79	Varga, R. (VP11-05) . . . . .	129
Trampert, A. (DF-08) . . . . .	62	Varma, G.D. (AE-10) . . . . .	9
Tran, B. (GE-01) . . . . .	114	Varma, G.D. (BF-03) . . . . .	27
Trapanese, M. (BG-06) . . . . .	29	Varma, G.D. (FE-09) . . . . .	97
Trastoy, J. (EB-04) . . . . .	72	Vashist, A. (DF-01) . . . . .	61
Tremsina, E.A. (CP-10) . . . . .	48	Vasilyev, D. (CF-07) . . . . .	45
Tremsina, E.A. (EP-13) . . . . .	83	Vaz, C.A. (AE-09) . . . . .	9
Trevillian, C. (ED-10) . . . . .	76	Vaz, C.A. (ER-09) . . . . .	86
Tripathi, N. (FB-06) . . . . .	91	Vecchiola, A. (ED-06) . . . . .	75
Trojánek, F. (FB-11) . . . . .	92	Veeturi, S. (VP2-02) . . . . .	119
Trouilloud, P. (EB-05) . . . . .	72	Vela, I. (AQ-15) . . . . .	16
Tsai, W. (CE-05) . . . . .	43	Velez, C. (BE-07) . . . . .	26
Tschudin, M. (FA-05) . . . . .	89	Velez, S. (BA-04) . . . . .	20
Tseng, Y. (DB-11) . . . . .	55	Venkatesh, R. (DF-04) . . . . .	61
Tseng, Y. (FD-03) . . . . .	94	Venugopal, A. (GG-03) . . . . .	117
Tsou, C. (FR-06) . . . . .	106	Vergara, J. (FE-01) . . . . .	96
Tsuji, T. (VP16-01) . . . . .	138	Vergnaud, C. (DF-02) . . . . .	61
Tsujide, Y. (DE-03) . . . . .	59		
Tsuruoka, S. (FD-10) . . . . .	95		

\*Best student presentation award finalist

Verma, A. (FE-09) . . . . .	97
Vermeulen, B. (DG-04) . . . . .	63
Vermeulen, B. (DG-05) . . . . .	63
Verzhbitskiy, I. (GA-01) . . . . .	107
Veullen, J. (DF-02) . . . . .	61
Vicentini, M. (AG-04) . . . . .	12
Vicentini, M. (CQ-09) . . . . .	49
Vicentini, M. (DQ-10) . . . . .	67
Vicentini, M. (EE-09) . . . . .	78
Vicentini, M. (XA-01) . . . . .	35
Victoria, R. (EB-08) . . . . .	72
Victoria, R. (GG-08) . . . . .	118
Victoria, R.H. (GG-05) . . . . .	117
Vincent, A.F. (EB-04) . . . . .	72
Vishvakarma, S. (VP2-02) . . . . .	119
Vock, S. (TU-01) . . . . .	1
Volvach, I. (AE-07) . . . . .	9
Vourna, X. (AC-04) . . . . .	5
Vu, T. (DB-04) . . . . .	55

- W -

Wager, C. (AG-12) . . . . .	13
Wagle, D. (CA-04) . . . . .	36
Wagner, A. (BC-02) . . . . .	22
Wainai, K. (CP-05) . . . . .	48
Wakabayashi, K. (AR-06) . . . . .	17
Wakabayashi, S. (FB-03) . . . . .	90
Wakabayashi, S. (FB-04) . . . . .	90
Wakabayashi, Y. (AE-03) . . . . .	8
Walker, B. (BR-11) . . . . .	34
Walko, D. (GF-06) . . . . .	116
Wan, C. (FP-02) . . . . .	102
Wan, C. (VP14-01) . . . . .	136
Wan, C. (VP15-02) . . . . .	137
Wan, C. (VP15-08) . . . . .	137
Wan, C. (VP7-07) . . . . .	125
Wan, C. (VP7-08) . . . . .	125
Wan, C. (VP9-12) . . . . .	127
Wan, C. (VP9-15) . . . . .	128
Wan, D. (DG-04) . . . . .	63
Wan, Z. (CS-08) . . . . .	53
Wang, A. (DF-06) . . . . .	62
Wang, A. (VP13-01) . . . . .	135
Wang, C. (AQ-14) . . . . .	16
Wang, C. (VP3-10) . . . . .	121
Wang, C. (VP3-11) . . . . .	121
Wang, F. (VP12-07) . . . . .	131
Wang, F. (VP12-34) . . . . .	133
Wang, F. (VP12-39) . . . . .	134
Wang, F. (VP3-07) . . . . .	120
Wang, G. (VP6-06) . . . . .	124
Wang, G. (VP6-07) . . . . .	124
Wang, H. (ED-05) . . . . .	75
Wang, H. (EE-05) . . . . .	77
Wang, H. (GF-10) . . . . .	117
Wang, H. (VP17-03) . . . . .	138
Wang, J. (AQ-10) . . . . .	16
Wang, J. (BR-02) . . . . .	33
Wang, J. (CP-04) . . . . .	48
Wang, J. (DQ-09) . . . . .	67
Wang, J. (DQ-15) . . . . .	68
Wang, J. (EF-02) . . . . .	78
Wang, J. (EP-04) . . . . .	82
Wang, J. (FC-06) . . . . .	93
Wang, J. (FC-07) . . . . .	93
Wang, J. (FG-03) . . . . .	100
Wang, J. (FG-09) . . . . .	101
Wang, J. (FR-13) . . . . .	106
Wang, J. (GG-01) . . . . .	117
Wang, J. (VP11-12) . . . . .	130
Wang, J. (VP5-03) . . . . .	123
Wang, J. (VP6-01) . . . . .	123
Wang, J. (VP9-14) . . . . .	127
Wang, K. (DB-09) . . . . .	55
Wang, K. (GE-04) . . . . .	114
Wang, K. (VP15-06) . . . . .	137

Wang, L. (GF-02) . . . . .	115
Wang, M. (BQ-04) . . . . .	31
Wang, M. (VP12-10) . . . . .	131
Wang, M. (VP12-11) . . . . .	131
Wang, Q. (DQ-16) . . . . .	68
Wang, S. (CE-05) . . . . .	43
Wang, S. (VP12-27) . . . . .	133
Wang, T. (ED-11) . . . . .	76
Wang, W. (CB-03) . . . . .	37
Wang, W. (DG-09) . . . . .	64
Wang, W. (EE-07) . . . . .	77
Wang, W. (EP-04) . . . . .	82
Wang, W. (FB-05) . . . . .	91
Wang, W. (GD-05) . . . . .	113
Wang, X. (AD-04) . . . . .	6
Wang, X. (AP-02) . . . . .	14
Wang, X. (FC-06) . . . . .	93
Wang, X. (VP4-03) . . . . .	122
Wang, Y. (EP-03) . . . . .	82
Wang, Y. (FP-02) . . . . .	102
Wang, Y. (VP12-01) . . . . .	130
Wang, Y. (VP12-04) . . . . .	131
Wang, Y. (VP12-44) . . . . .	134
Wang, Y. (VP14-01) . . . . .	136
Wang, Y. (VP14-02) . . . . .	136
Wang, Y. (VP7-07) . . . . .	125
Wang, Y. (VP7-08) . . . . .	125
Wang, Z. (DQ-16) . . . . .	68
Wang, Z. (EC-02) . . . . .	73
Wang, Z. (ED-11) . . . . .	76
Wang, Z. (VP10-05) . . . . .	128
Wang, Z. (VP3-01) . . . . .	120
Wang, Z. (VP3-02) . . . . .	120
Wang, Z. (VP3-04) . . . . .	120
Warisam, C. (GG-04) . . . . .	117
Warisam, C. (GG-06) . . . . .	118
Warisam, C. (GG-09) . . . . .	118
Warrilow, K. (DG-09) . . . . .	64
Warrilow, K. (GD-05) . . . . .	113
Watanabe, K. (EG-10) . . . . .	81
Webster, J. (BQ-10) . . . . .	32
Wedeni, A. (AS-04) . . . . .	19
Wee, A. (CD-01) . . . . .	40
Wei, H. (FG-11) . . . . .	101
Wei, J. (VP7-07) . . . . .	125
Weigand, M. (GB-01) . . . . .	109
Weigand, R. (CG-08) . . . . .	47
Weistroffer, G. (CG-05) . . . . .	46
Welp, U. (CA-05) . . . . .	36
Welp, U. (GA-02) . . . . .	108
Wen, H. (GF-06) . . . . .	116
Wen, Z. (DG-01) . . . . .	63
Wen, Z. (DG-10) . . . . .	64
Wen, Z. (EQ-09) . . . . .	84
Wen, Z. (FG-04) . . . . .	100
Wen, Z. (FG-07) . . . . .	101
Wen, Z. (VP5-03) . . . . .	123
Wende, H. (FF-03) . . . . .	98
Wende, H. (GB-10) . . . . .	111
Wereley, N.M. (VP4-11) . . . . .	122
Wereley, N.M. (VP4-13) . . . . .	122
Wickramaratne, D. (GD-02) . . . . .	112
Wilfong, B. (CF-01) . . . . .	44
Wilhelm, F. (BF-08) . . . . .	27
Wilhelm, F. (GB-10) . . . . .	111
Will-Cole, A.R. (TU-04) . . . . .	1
Williams, A. (DC-07) . . . . .	57
Winther, K.D. (EQ-13) . . . . .	85
Wintz, S. (GB-01) . . . . .	109
Wisser, J. (BP-11) . . . . .	31
Witanachchi, S. (FG-10) . . . . .	101
Wong, P. (CD-01) . . . . .	40
Wong, X. (CB-06) . . . . .	37
Woo, J. (DR-09) . . . . .	69
Woo, J. (FQ-06) . . . . .	103
Woo, J. (FQ-14) . . . . .	104
Woo, J. (FQ-15) . . . . .	105

\*Best student presentation award finalist

Woods, S.I. (AG-09) . . . . .	13
Woods, S.I. (EE-03) . . . . .	77
Woods, S.I. (EG-07) . . . . .	81
Wooten, B. (FF-11) . . . . .	99
Wostyn, K. (DG-04) . . . . .	63
Wostyn, K. (DG-05) . . . . .	63
Wostyn, K. (DG-08) . . . . .	64
Wostyn, K. (FD-07) . . . . .	95
Wu, C. (VP10-02) . . . . .	128
Wu, G. (AB-01) . . . . .	2
Wu, H. (VP3-01) . . . . .	120
Wu, J. (AS-06) . . . . .	19
Wu, J. (GD-03) . . . . .	112
Wu, K. (FR-13) . . . . .	106
Wu, K. (VP6-01) . . . . .	123
Wu, M. (BQ-05) . . . . .	32
Wu, M. (VP3-10) . . . . .	121
Wu, Q. (VP3-02) . . . . .	120
Wu, Q. (VP3-07) . . . . .	120
Wu, S. (CD-06) . . . . .	41
Wu, S. (VP17-04) . . . . .	139
Wu, T. (BR-01) . . . . .	33
Wu, T. (BR-05) . . . . .	33
Wu, T. (EB-11) . . . . .	73
Wu, Y. (AQ-11) . . . . .	16
Wu, Y. (BR-05) . . . . .	33
Wu, Y. (DB-11) . . . . .	55
Wu, Y. (EB-11) . . . . .	73
Wu, Y. (FD-03) . . . . .	94
Wulfhekel, W. (BP-14) . . . . .	31

- X -

Xi, X. (CB-03) . . . . .	37
Xi, X. (EE-07) . . . . .	77
Xi, X. (FB-05) . . . . .	91
Xia, J. (VP7-08) . . . . .	125
Xiang, H. (VP8-01) . . . . .	126
Xiang, Z. (VP12-06) . . . . .	131
Xiao, D. (DF-01) . . . . .	61
Xiao, F. (VP12-12) . . . . .	131
Xiao, F. (VP12-13) . . . . .	132
Xiao, F. (VP12-14) . . . . .	132
Xiao, F. (VP12-25) . . . . .	133
Xiao, J. (BP-13) . . . . .	31
Xiao, J. (CA-04) . . . . .	36
Xiao, J. (EB-11) . . . . .	73
Xiao, T.P. (BB-02) . . . . .	20
Xiao, T.P. (DA-05) . . . . .	54
Xiao, T.P. (DG-11) . . . . .	64
Xiao, Y. (EF-04) . . . . .	78
Xiao, Y. (GD-11) . . . . .	114
Xie, N. (BS-01) . . . . .	34
Xie, R. (VP12-17) . . . . .	132
Xie, R. (VP12-18) . . . . .	132
Xie, R. (VP6-03) . . . . .	124
Xiong, J. (VP9-08) . . . . .	127
Xiong, Y. (GA-02) . . . . .	108
Xiong, Y. (GA-03) . . . . .	108
Xu, C. (GG-02) . . . . .	117
Xu, C. (VP8-01) . . . . .	126
Xu, H. (VP7-07) . . . . .	125
Xu, J. (BR-05) . . . . .	33
Xu, Q. (AQ-14) . . . . .	16
Xu, Q. (VP3-11) . . . . .	121
Xu, R. (EA-01) . . . . .	70
Xu, S. (BA-05) . . . . .	20
Xu, S. (VP12-15) . . . . .	132
Xu, S. (VP12-16) . . . . .	132
Xu, W. (VP12-17) . . . . .	132
Xu, X. (ED-05) . . . . .	75
Xu, Y. (EA-01) . . . . .	70
Xu, Z. (DD-07) . . . . .	58
Xue, F. (CE-05) . . . . .	43
Xue, F. (CE-09) . . . . .	43
Xue, K. (EB-08) . . . . .	72
Xue, Z. (FB-10) . . . . .	91

- Y -

Ya, X. (DP-11) . . . . .	66
Yabukami, S. (CG-09) . . . . .	47
Yabukami, S. (CG-11) . . . . .	47
Yabukami, S. (DQ-06) . . . . .	67
Yabukami, S. (DQ-07) . . . . .	67
Yabukami, S. (FR-04) . . . . .	105
Yadav, E. (FB-09) . . . . .	91
Yadav, R.S. (AB-10) . . . . .	4
Yadav, S. (VP6-05) . . . . .	124
Yadav, V.K. (CG-04) . . . . .	46
Yahagi, Y. (GC-05) . . . . .	112
Yakovlev, N. (CB-06) . . . . .	37
Yamaguchi, M. (EG-10) . . . . .	81
Yamaguchi, T. (BG-03) . . . . .	28
Yamaguchi, Y. (VP13-03) . . . . .	135
Yamamoto, H. (AE-03) . . . . .	8
Yamamoto, H. (AQ-01) . . . . .	15
Yamamoto, K. (CG-06) . . . . .	46
Yamamoto, T.D. (FF-10) . . . . .	99
Yamane, Y. (FB-03) . . . . .	90
Yamane, Y. (FB-04) . . . . .	90
Yamanouchi, M. (VP1-01) . . . . .	118
Yamashita, A. (VP13-03) . . . . .	135
Yamashita, A. (VP3-08) . . . . .	121
Yamazaki, Y. (FD-06) . . . . .	94
Yan, D. (VP12-21) . . . . .	132
Yan, D. (VP13-12) . . . . .	136
Yan, P. (VP7-07) . . . . .	125
Yan, Z. (VP7-07) . . . . .	125
Yanai, T. (VP13-03) . . . . .	135
Yanai, T. (VP3-08) . . . . .	121
Yanez, W. (GD-01) . . . . .	112
Yang, F. (DB-09) . . . . .	55
Yang, H. (VP12-05) . . . . .	131
Yang, I. (DR-05) . . . . .	68
Yang, I. (VP12-41) . . . . .	134
Yang, J. (AQ-14) . . . . .	16
Yang, J. (ES-01) . . . . .	86
Yang, J. (ES-03) . . . . .	87
Yang, J. (ES-05) . . . . .	87
Yang, J. (FQ-07) . . . . .	103
Yang, J. (VP12-42) . . . . .	134
Yang, J. (VP3-11) . . . . .	121
Yang, L. (VP15-06) . . . . .	137
Yang, M. (VP12-37) . . . . .	133
Yang, Q. (AR-12) . . . . .	18
Yang, W. (AQ-14) . . . . .	16
Yang, W. (VP3-11) . . . . .	121
Yang, W. (VP7-07) . . . . .	125
Yang, Y. (FG-03) . . . . .	100
Yao, M. (DQ-16) . . . . .	68
Yao, R. (VP10-06) . . . . .	128
Yapaskurt, V.O. (VP11-06) . . . . .	129
Yari, P. (FR-13) . . . . .	106
Yasin, F.S. (GB-01) . . . . .	109
Yasui, Y. (AP-04) . . . . .	14
Yasui, Y. (ER-02) . . . . .	85
Yazawa, K. (DC-09) . . . . .	57
Ye, L. (BR-01) . . . . .	33
Ye, P. (GD-09) . . . . .	113
Ye, X. (DC-02) . . . . .	56
Yenugonda, V. (AP-09) . . . . .	15
Yesilyurt, C. (AP-01) . . . . .	14
Yin, G. (BE-02) . . . . .	25
Yin, G. (EE-08) . . . . .	78
Yin, J. (VP12-43) . . . . .	134
Yingzhe, T. (CB-06) . . . . .	37
Yoda, H. (FD-06) . . . . .	94
Yoda, T. (FD-06) . . . . .	94
Yomogida, K. (VP13-02) . . . . .	135
Yoo, B. (GF-07) . . . . .	116
Yoo, J.H. (AC-03) . . . . .	5
Yoo, J.H. (GF-04) . . . . .	116
Yoo, J.H. (GF-07) . . . . .	116
Yoo, S. (AR-07) . . . . .	17
Yoon, J. (BQ-09) . . . . .	32

\*Best student presentation award finalist

Yoon, J. (CP-01) . . . . .	47	Zhang, B. (VP17-03) . . . . .	138
Yoon, J. (CR-09) . . . . .	51	Zhang, C. (AR-12) . . . . .	18
Yoon, J. (DE-07) . . . . .	60	Zhang, C. (BG-12) . . . . .	29
Yoon, J. (FB-03) . . . . .	90	Zhang, C. (CE-08) . . . . .	43
Yoon, J. (FB-04) . . . . .	90	Zhang, C. (CS-08) . . . . .	53
Yoon, S. (BG-09) . . . . .	29	Zhang, C. (VP12-12) . . . . .	131
Yoon, S. (DE-10) . . . . .	60	Zhang, D. (BF-01) . . . . .	26
Yoon, S. (GE-01) . . . . .	114	Zhang, D. (FG-03) . . . . .	100
Yoon, S. (VP3-06) . . . . .	120	Zhang, D. (FG-09) . . . . .	101
Yoon, Y. (BG-02) . . . . .	28	Zhang, D. (VP11-12) . . . . .	130
Yoosuf, R. (GF-09) . . . . .	117	Zhang, D. (VP3-01) . . . . .	120
Yoshida, S. (CS-07) . . . . .	53	Zhang, D. (VP9-14) . . . . .	127
Yoshida, S. (FQ-03) . . . . .	103	Zhang, E. (CG-01) . . . . .	45
Yoshida, T. (CS-01) . . . . .	52	Zhang, E. (CG-02) . . . . .	46
Yoshii, S. (CD-02) . . . . .	40	Zhang, F. (EA-01) . . . . .	70
Yoshikawa, K. (FD-09) . . . . .	95	Zhang, G. (CC-05) . . . . .	39
Yoshiki, F. (VP4-05) . . . . .	122	Zhang, H. (AQ-16) . . . . .	16
Yoshimura, S. (BE-03) . . . . .	26	Zhang, H. (AR-12) . . . . .	18
Yoshimura, S. (DP-01) . . . . .	65	Zhang, H. (BC-01) . . . . .	22
Yoshioka, H. (AG-06) . . . . .	13	Zhang, H. (DC-02) . . . . .	56
You, B. (CD-01) . . . . .	40	Zhang, H. (DG-03) . . . . .	63
You, M. (ED-08) . . . . .	76	Zhang, H. (FA-02) . . . . .	89
Youn, M. (VP12-41) . . . . .	134	Zhang, H. (FF-12) . . . . .	99
Young, S.W. (AS-06) . . . . .	19	Zhang, J. (BR-13) . . . . .	34
Yu, B. (GD-10) . . . . .	113	Zhang, J. (FR-08) . . . . .	106
Yu, G. (DC-01) . . . . .	56	Zhang, K. (VP12-27) . . . . .	133
Yu, G. (FP-02) . . . . .	102	Zhang, K. (VP12-28) . . . . .	133
Yu, G. (VP1-04) . . . . .	119	Zhang, L. (BP-14) . . . . .	31
Yu, G. (VP14-02) . . . . .	136	Zhang, L. (VP12-06) . . . . .	131
Yu, G. (VP7-07) . . . . .	125	Zhang, M. (VP3-02) . . . . .	120
Yu, G. (VP7-08) . . . . .	125	Zhang, R. (FP-02) . . . . .	102
Yu, G. (VP9-11) . . . . .	127	Zhang, S. (VP10-05) . . . . .	128
Yu, G. (VP9-12) . . . . .	127	Zhang, S. (VP12-07) . . . . .	131
Yu, G. (VP9-13) . . . . .	127	Zhang, S. (VP12-34) . . . . .	133
Yu, J. (CP-01) . . . . .	47	Zhang, S. (VP12-39) . . . . .	134
Yu, K. (ES-09) . . . . .	88	Zhang, S. (VP4-12) . . . . .	122
Yu, K. (ES-10) . . . . .	88	Zhang, S. (VP4-14) . . . . .	122
Yu, K. (ES-11) . . . . .	88	Zhang, T. (VP14-01) . . . . .	136
Yu, K. (FQ-08) . . . . .	104	Zhang, T. (VP15-02) . . . . .	137
Yu, K. (FQ-10) . . . . .	104	Zhang, T. (VP7-06) . . . . .	125
Yu, K. (FQ-11) . . . . .	104	Zhang, W. (CD-01) . . . . .	40
Yu, L. (CE-08) . . . . .	43	Zhang, W. (ED-11) . . . . .	76
Yu, M. (EB-07) . . . . .	72	Zhang, W. (GA-02) . . . . .	108
Yu, S. (BS-03) . . . . .	35	Zhang, W. (GA-03) . . . . .	108
Yu, X. (GB-01) . . . . .	109	Zhang, X. (AB-02) . . . . .	3
Yu, Z. (VP10-02) . . . . .	128	Zhang, X. (BC-01) . . . . .	22
Yuan, J. (VP12-44) . . . . .	134	Zhang, X. (BC-04) . . . . .	23
Yuan, J. (VP13-08) . . . . .	135	Zhang, X. (BE-02) . . . . .	25
Yuan, Y. (VP15-03) . . . . .	137	Zhang, X. (DD-07) . . . . .	58
Yuan, Y. (VP15-04) . . . . .	137	Zhang, X. (DF-01) . . . . .	61
Yuan, Z. (EB-11) . . . . .	73	Zhang, X. (GA-02) . . . . .	108
Yue, M. (AQ-16) . . . . .	16	Zhang, X. (GF-10) . . . . .	117
Yue, M. (VP10-03) . . . . .	128	Zhang, X. (VP12-21) . . . . .	132
Yue, M. (VP3-01) . . . . .	120	Zhang, X. (VP13-12) . . . . .	136
Yue, M. (VP3-02) . . . . .	120	Zhang, X. (VP3-03) . . . . .	120
Yue, M. (VP3-03) . . . . .	120	Zhang, X. (VP4-03) . . . . .	122
Yue, M. (VP3-04) . . . . .	120	Zhang, X. (VP7-02) . . . . .	125
Yue, S. (VP10-04) . . . . .	128	Zhang, Y. (BC-07) . . . . .	23
Yuk, J. (CB-07) . . . . .	38	Zhang, Y. (DB-03) . . . . .	54
Yun, C. (BS-03) . . . . .	35	Zhang, Y. (FP-02) . . . . .	102
Yun, G. (ES-16) . . . . .	88	Zhang, Y. (VP12-17) . . . . .	132
Yun, G. (FQ-05) . . . . .	103	Zhang, Y. (VP12-18) . . . . .	132
Yun, J. (FF-08) . . . . .	99	Zhang, Y. (VP6-03) . . . . .	124
Yunuo, C. (CP-04) . . . . .	48	Zhang, Y. (VP7-07) . . . . .	125
Yutronkie, N. (BF-08) . . . . .	27	Zhang, Z. (BG-05) . . . . .	29
		Zhang, Z. (ER-01) . . . . .	85
		Zhang, Z. (VP12-02) . . . . .	131
		Zhang, Z. (VP12-21) . . . . .	132
		Zhao, C. (EQ-01) . . . . .	83
		Zhao, C. (VP13-01) . . . . .	135
		Zhao, D. (EQ-01) . . . . .	83
		Zhao, H. (FF-05) . . . . .	98
		Zhao, H. (VP12-07) . . . . .	131
		Zhao, J. (CD-06) . . . . .	41
		Zhao, J. (FF-03) . . . . .	98
		Zhao, L. (AF-03) . . . . .	11
		Zhao, M. (FP-02) . . . . .	102

- Z -

\*Best student presentation award finalist

Zhao, M. (VP9-15)	128	Zhu, W. (BS-04)	35
Zhao, R. (VP17-03)	138	Zhu, X. (VP11-03)	129
Zhao, W. (EA-01)	70	Zhu, X. (VP12-06)	131
Zhao, Z. (VP11-12)	130	Zhu, X. (VP12-09)	131
Zhao, Z. (VP12-32)	133	Zhu, X. (VP12-12)	131
Zhaowen, G. (AQ-16)	16	Zhu, X. (VP12-13)	132
Zheng, C. (BR-13)	34	Zhu, X. (VP12-14)	132
Zheng, D. (BC-01)	22	Zhu, X. (VP12-25)	133
Zheng, F. (GF-02)	115	Zhu, X. (VP12-35)	133
Zheng, H. (VP12-05)	131	Zhu, X. (VP12-38)	134
Zheng, P. (VP12-07)	131	Zhu, X. (VP13-14)	136
Zheng, P. (VP12-10)	131	Zhu, Y. (DC-05)	56
Zheng, P. (VP12-11)	131	Zhu, Y. (ED-07)	75
Zheng, P. (VP12-34)	133	Zhu, Y. (GD-03)	112
Zheng, P. (VP12-39)	134	Zhu, Z. (DD-07)	58
Zheng, X. (AB-01)	2	Zhu, Z. (VP17-03)	138
Zheng, Y. (FF-11)	99	Zhuang, W. (VP13-07)	135
Zheng, Y. (VP12-44)	134	Zhuang, Y. (VP12-17)	132
Zheng, Y. (VP6-03)	124	Zhukov, A. (AS-04)	19
Zheng, Z. (DB-08)	55	Zhukov, A. (EC-04)	74
Zhong, H. (FG-08)	101	Zhukov, A. (EC-08)	74
Zhong, K. (VP3-10)	121	Zhukov, A. (EC-09)	74
Zhou, B. (DG-09)	64	Zhukov, A. (EG-11)	81
Zhou, B. (EP-04)	82	Zhukov, A. (EQ-05)	84
Zhou, B. (GD-05)	113	Zhukova, V. (AS-04)	19
Zhou, D. (BQ-05)	32	Zhukova, V. (EC-04)	74
Zhou, E. (GA-03)	108	Zhukova, V. (EC-08)	74
Zhou, F. (FB-05)	91	Zhukova, V. (EC-09)	74
Zhou, H. (DC-01)	56	Zhukova, V. (EG-11)	81
Zhou, H. (VP12-44)	134	Zhukova, V. (EQ-05)	84
Zhou, H. (VP13-08)	135	Zhukovskiy, M. (BR-02)	33
Zhou, J. (VP7-03)	125	Zink, B.L. (BR-03)	33
Zhou, P. (AB-04)	3	Zink, B.L. (BR-06)	33
Zhou, S. (FA-02)	89	Zink, B.L. (CF-10)	45
Zhou, S. (VP17-01)	138	Zink, B.R. (EP-04)	82
Zhou, T. (AQ-03)	15	Zink, B.R. (FG-09)	101
Zhou, W. (DC-07)	57	Zink, B.R. (VP6-01)	123
Zhou, Y. (DB-03)	54	Zink, B.R. (VP9-14)	127
Zhu, J. (FC-07)	93	Zivotsky, O. (GE-05)	115
Zhu, J. (FD-05)	94	Zogbi, N. (DA-05)	54
Zhu, J. (GG-01)	117	Zogbi, N. (DG-11)	64
Zhu, J. (GG-02)	117	Zollitsch, C. (GA-01)	107
Zhu, J. (GG-07)	118	Zou, X. (AB-08)	3
Zhu, J. (VP12-39)	134	Zubáč, J. (FB-11)	92
Zhu, M. (AQ-11)	16	Zulfiqar, K. (AD-02)	6
Zhu, M. (EF-04)	78	Zuo, J. (GA-02)	108
Zhu, T. (AQ-14)	16	Zuo, L. (VP11-03)	129
Zhu, T. (VP3-11)	121	Zuzek, K. (EF-03)	78
Zhu, W. (AP-05)	14	Zviagin, V. (VP11-10)	130