



62ND ANNUAL CONFERENCE ON MAGNETISM AND MAGNETIC MATERIALS

PROGRAM



TABLE OF CONTENTS

General Conference Information.....ii

Exhibitors, Sponsors and Supportersxii

Program-at-a-Glance xxiv

Monday 1

Tuesday 1

Wednesday.....68

Thursday132

Friday 194

Index248

GENERAL CONFERENCE INFORMATION

SCOPE OF THE CONFERENCE

The 62nd Annual Conference on Magnetism and Magnetic Materials (2017 MMM) is sponsored jointly by AIP Publishing and the IEEE Magnetics Society, in cooperation with the American Physical Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend and contribute to the technical sessions. The technical program will include invited and contributed papers in oral and poster sessions, invited symposia, and an evening session, with about 1600 presentations overall. This Conference provides an outstanding opportunity for worldwide participants to meet their colleagues and collaborators and discuss developments in all areas of magnetism research.

PITTSBURGH, PENNSYLVANIA

Pittsburgh. Mighty. Beautiful. Named one of the “Best Places to Travel” by Travel + Leisure Magazine, Pittsburgh is a vibrant city (with over 400 bridges—more than any other city in the world) offering visitors a wide array of opportunities to experience the city’s rich history and culture. From shopping to sporting events, from museums to restaurants (more than 85 restaurants within a 15-minute walk of the Convention Center), Pittsburgh has something for everyone. Spend an afternoon visiting the Andy Warhol Museum which features thousands of pieces by the Pittsburgh-born artist and cultural icon, take a short drive and see Frank Lloyd Wright’s Fallingwater masterpiece, take a tour of one of the city’s many renowned local breweries, or see the city from high above by riding the Duquesne Incline up to Mt. Washington. Go to www.magnetism.org under “Travel Guide/City Information” for more city and tour information.

The Conference will be held at the **David L. Lawrence Convention Center**. A block of discounted hotel rooms has been reserved at the Westin Convention Center Hotel and the Omni William Penn Hotel. Please support our efforts to keep registration fees low by booking your room here. Discounted rates are available until October 16 at www.magnetism.org under “Travel Guide/ Hotel Information”.

SPECIAL CONFERENCE SESSIONS

Symposia

Eight symposia are scheduled during the Conference. These sessions consist entirely of invited talks by experts in the field and will take place daily in the Spirit of Pittsburgh B.

Tuesday	AA	Terahertz Magnonics
	BA	Magnetism and Magnetic Proximity Effects in 2D Materials
Wednesday	CA	What Spintronics Can Bring to Microelectronics
	DA	Cavity Opto-Magnonics
Thursday	EA	Mutual Synchronization of Spintronic Oscillators
	FA	Spintronics-Based Neuromorphic Computing
Friday	GA	Spin-Orbit Torques with Unconventional Symmetries
	HA	Generation and Transport of Skyrmions

Tutorial: Terahertz Magnetism (Session XA)

Monday, November 6 2:30 - 5:00 pm
Spirit of Pittsburgh B

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

Speakers: Di Xiao, Carnegie Mellon University
Fundamental Theory of THz Magnetism

Tobias Kampfrath, Max Planck Society
Probing and Controlling Spin Dynamics by Terahertz Waves

Hyunsoo Yang, National University of Singapore
Advancing Terahertz Technology Using Spin Dynamics

Evening Session: Secrets for Highly Effective Communications (Session YA)

Tuesday, November 7 6:00 - 7:30 pm
Spirit of Pittsburgh B

No skill contributes more consistently, and more meaningfully, to professional achievement than the ability to shape thinking and secure support through communication. The simple truth is, those who communicate clearly, crisply and convincingly outperform and out progress those who don't. In this fast-paced, no-nonsense session, the experts from Ninja Communications, Dan Agan and Joe Schreiber, reveal the secrets professionals use to amp up and ramp up communications success.

Chair: Atsufumi Hirohata, University of York

Speakers: Daniel C. Agan, Ninja Communications
Joseph B. Schreiber, Ninja Communications

Award Ceremony for Best Student Presentations and Magnetism as Art Showcase Winners

Wednesday, November 8 6:00 - 6:15 pm
Spirit of Pittsburgh B

Evening Session: Spintronics: Present and Future (Session ZA)

Wednesday, November 8 6:15 - 7:45 pm
Spirit of Pittsburgh B

These talks will not only review major discoveries since the birth of the "spin" concept approximately 90 years ago, but will also summarize the latest scientific and technological developments and provide a comprehensive perspective on new research directions and future applications of spintronics.

Chair: Liesl Folks, University at Buffalo

Speakers: Chia-Ling Chien, Johns Hopkins University
From Stern-Gerlach Experiment to Spin-orbit Torque, the Unending Saga of Spin

Albert Fert, CNRS-Thales
When SOC and Topology in Low Dimensions Lead to Novel Directions in Spintronics

Hideo Ohno, RIEC Tohoku University
Spin on Integrated Circuits

Meet the Experts Panel Session

Supported by:



Chair: Mingzhong Wu, Colorado State University

Panelists: Dr. Albert Fert
University Paris-Sud, France
2007 Nobel Prize in Physics

Dr. Peter Fischer
Interim Division Director,
Materials Sciences Division
Lawrence Berkeley National Laboratory

Dr. Liesl Folks
Dean, School of Engineering and Applied Sciences
University at Buffalo

Dr. Ron Goldfarb
National Institute of Standards and Technology
Editor-in-Chief, IEEE Magnetics Letters

Dr. Yu Gong
Associate Editor, Springer Nature
Nature Communications

Dr. Jonathan Z. Sun
IBM T. J. Watson Research Center, USA
Research Staff

Students and post-doctoral researchers are encouraged to register for and attend the Meet the Experts Panel which will be held on Thursday, November 9 from 6:00 – 7:30 pm in Lecture Hall 407 on the fourth floor of the Convention Center. The goal of this event is to provide young researchers with an exclusive opportunity to meet with a panel of five experts from different fields for advice on long-term career planning, technical paper writing and publication, job searches, job interviewing, society involvement, and more. Snacks and drinks will be served. **You must register in advance to attend this event as space is limited.**

SPECIAL CONFERENCE EVENTS

Welcome Reception – A Taste of Pittsburgh

Conference attendees are invited to attend a Welcome Reception on Monday, November 6, from 5:00 – 6:30 pm sponsored by the IEEE Magnetics Society. This reception will be held at the David L. Lawrence Convention Center, overlooking the beautiful Allegheny River and the stunning bridges of Pittsburgh that help make the city such a unique place to visit. You'll enjoy an authentic taste of the city of Pittsburgh as you sample local street food specialties and, of course, there will be a great selection of local beers. Who knows, you may even get to meet a surprise Pittsburgh celebrity! Don't miss this fantastic kick-off event—it is a great way to start your week at MMM!

Next Generation Magnetics Inaugural Meeting

It's your future and your Society! Graduate students and post-doctoral researchers are invited to attend the inaugural IEEE Magnetics Society Next Generation Magnetics Group meeting on Monday, November 6, from 6:30 – 8:30 pm, immediately following the Welcome Reception in Room 319/320 of the Convention Center. The Magnetics Society is seeking motivated and enthusiastic Next Generation Magnetics to help shape the future of the Society and the future of magnetism. Join representatives from the Technical Committee to brainstorm on how you would like to shape your future. Dessert and coffee will be served.

Student Networking Reception

The Student Networking Reception will be held on Tuesday, November 7 from 4:30 - 6:00 pm in the West Atrium of the Convention Center. This is an invaluable networking event, open to all current student registrants. Come to mingle with friends, and enjoy snacks and drinks.

Magnetism as Art Showcase

Supported by:



magnetochemistry

an open access journal by 

The 2017 MMM Conference is pleased to announce a new event, the Magnetism as Art Showcase, for exhibiting scientific images that highlight the beauty of magnetism and magnetic materials. Prizes consisting of a \$50 USD cash award will be awarded to the winning entries, as judged by a panel as well as by popular vote.

Women in Magnetism Networking Event

Expand your professional network! Don't miss the Women in Magnetism Networking Event, sponsored by the IEEE Magnetics Society, on Wednesday, November 8 from 4:30 – 6:00 pm in the West Atrium of the Convention Center. This is an opportunity to become acquainted with women in the profession and to discuss a range of topics including leadership, work-life balance, and professional development. All graduate students, researchers and retirees are encouraged to attend. Snacks and drinks will be served.

Young Professionals Networking Event

The Young Professionals Networking Event will be held on Thursday, November 9 from 11:30 am – 1:00 pm in the Westmoreland Room at the Westin Hotel. Dr. Parans Paranthaman, Distinguished Scientist, Oak Ridge National Laboratory and Professor, University of Tennessee, Knoxville, will give a talk on Preparing Successful Research Proposals: A General Guide for Young Professionals. If you have just recently entered the professional workforce, join us for professional development insights, networking and a light lunch.

Bierstuben

Join us Tuesday, Wednesday and Thursday evenings from 4:30 – 6:00 pm for a taste of the best local beers as you network among the poster sessions and exhibits.

Tuesday Bierstube

Supported by:



MATERION

Coffee

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

REGISTRATION

The Registration Desk, located on the third floor of the Convention Center, will be open during the following hours:

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

For registration assistance on Friday go to Room 306.

Onsite Registration Rates:

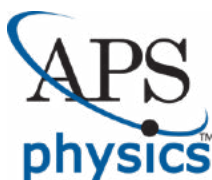
Full	\$645 USD
Student	\$315 USD
Unemployed/Retired	\$265 USD

CAMERA, CELL PHONE AND VIDEO RECORDING POLICIES

By registering for this meeting, all attendees acknowledge that they may be photographed by MMM Conference personnel while at events, and that those photos may be used for promotional purposes, in MMM 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. Attendees are required to wear name badges to enter all Conference events.

WIRELESS INTERNET ACCESS

Supported by:



Wi-Fi for attendees is supported by the American Physical Society and the IEEE Magnetics Society. Select the “**APS_PhysicalReview**” network on your device under the available wireless networks. Open an internet browser and agree to the Terms and Conditions. When prompted, enter the password “**PRMaterials**”.

SESSION CHAIRS

Poster and Oral Session Chairs should attend the Session Chair Breakfast at 7:15 am in the Butler Room on the second floor of the Westin Hotel **on the day of their session**. If you are chairing an oral session, you must bring your laptop computer to your session or arrange to borrow one, as it is the **Session Chair’s laptop that will be used for session timing**. If you cannot bring a laptop computer with you for any reason please notify regina@mmmconference.com.

SPEAKER REHEARSAL ROOM

Speakers may use the Speaker Rehearsal Room in Room 310 on the third floor of the Convention Center to practice their presentations with the provided audiovisual equipment (LCD projector and screen). This room is available from Monday at 1:00 pm until Friday at 1:00 pm.

PUBLICATIONS

Conference papers will be published online in early 2018 as a special issue of *AIP Advances* (aipadvances.aip.org) at no additional cost to the author. *AIP Advances* is a peer-reviewed, fully open access, multidisciplinary journal covering all areas of the physical sciences (experimental, theoretical, and applied). *AIP Advances*' inclusive scope and publication standards make it an excellent outlet for scientists across the physical sciences.

To check the status of their papers, authors should refer to the PXP submission site at <http://mmm.peerx-press.org>. For all other publications questions, visit the Conference Office in Room 306.

ORAL SESSIONS

Oral sessions will be held Tuesday through Friday from 8:30 – 11:30 am and 1:30 - 4:30 pm. **Speakers must bring their presentation on their own laptop computer. If you cannot bring your laptop with you for any reason, presenters should alert their Session Chair and bring their presentation on a flash drive for use on the Session Chair's computer.**

In each session room there will be a multi-port switchbox so that speakers can connect their laptop during the question period of the previous speaker. **Each speaker will be responsible for promptly connecting to the projector and switching to the correct input port. The presentation timer will begin immediately after the introduction by the Session Chair. No extra time will be given in the event of technical difficulties as session timing must be strictly maintained.** Speakers are strongly encouraged to test their laptop connections and screen resolution settings in the Speaker Rehearsal Room prior to the start of the session.

BEST STUDENT PRESENTATION AWARD

Supported by:



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

Finalists:

- AB-07** *Temperature Dependent Néel to Bloch Transformation of Isolated Skyrmions in a Nanodisk: A Micromagnetic Study*
Naveen Sisodia, Indian Institute of Technology
- BB-06** *Understanding the Role of Microstructure in the Formation and Stability of Skyrmion Lattices in B20 Compounds Using Aberration Corrected Electron Microscopy*
Bryan Esser, The Ohio State University

- BE-02** *Enhancement of $L2_1$ Order and Spin-Polarization of Co_2FeSi Thin Film by Substitution of Fe with Ti*
Jiamin Chen, University of Tsukuba
- CB-12** *Spin Hall Effect Switching Detection in $CoFeB-MgO$ Perpendicular MTJs on Ta Using Conductive Atomic Force Microscopy*
Mukund Bapna, Carnegie Mellon University
- CI-01** *Acoustically Actuated Ultra-Compact RF NEMS Magnetolectric Antennas*
Hwaider Lin, Northeastern University

Congratulations to the Best Student Presentation Award Winner at the 2016 MMM Conference:

- AB-09** *Micromagnetic Investigations of Higher Order Anisotropy in Ultra-Thin Films with Fluctuating Perpendicular Anisotropy*
Jamileh Beik Mohammadi, University of Alabama

POSTER SESSIONS

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

Poster presenters should set up their materials at least 30 minutes before their session starts, and must be present at their poster, at a minimum, for the first *and* last hour of each Poster Session. **Presenters must remove all of their materials promptly at the end of their session** (except the push-pins provided by the Conference). Any poster materials not removed will be discarded in order to prepare for the next session.

BEST POSTER PRESENTATION AWARD

Supported by:

The logo for GMW is displayed in a large, bold, red serif font. The letters are closely spaced and have a classic, slightly ornate appearance.

All posters that meet the requirements and guidelines described on the Conference website are eligible for this award. It is required that an author be registered for the Conference and be present at the first and last hour of the poster session to present details and answer questions. Nominations will be made by the Poster Session Chairs, and the Poster Award Committee will review the nominated posters. Selections will be based on the level of the research, quality of the poster, and clarity of the presentation. The award will be given during the last hour of each poster session. The winners will receive a \$50 USD cash award, thanks to the generous support of GMW. A ribbon will also be attached to the winning posters which will be prominently displayed for the remainder of the Conference.

A complete list of the Best Poster Award Winners from the 2016 MMM Conference is available on the Conference website.

STUDENT TRAVEL SUPPORT

Travel grants are offered to a limited number of students who are presenting at the Conference. Students must apply online and the grants are used to offset travel expenses (with the exception of Conference registration). This program is for students who have not previously received a Conference or IEEE Magnetics Society travel grant. Only one application per research group is accepted. Postdoctoral fellows and non-students are not eligible. The recipients for this Conference were informed of their selection in early September. If you are interested in applying for a travel grant to attend future MMM Conferences, go to www.magnetism.org.

CHILD CARE SUPPORT

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

#MMM62

Be sociable—share! #MMM62



Follow us on Twitter
[@MagnetismOrg](https://twitter.com/MagnetismOrg)



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

FUTURE CONFERENCES

2018 Intermag Conference

April 23-27, 2018, Singapore

2018 International Conference on Magnetism

July 16-20, 2018, San Francisco, CA

2019 Joint MMM-Intermag Conference

January 14-18, 2019, Washington, DC

2019 Magnetism and Magnetic Materials Conference

November 4-8, 2019, Las Vegas, NV

2020 Intermag Conference

May 4-8, 2020, Montreal, Canada

2020 Magnetism and Magnetic Materials Conference

November 16-20, 2020, Fort Lauderdale, FL

2021 Intermag Conference

April 26-30, 2021, Lyon, France

2022 Joint MMM-Intermag Conference

January 10-14, 2022, New Orleans, LA

CONFERENCE ORGANIZATION

STEERING COMMITTEE

General Chair	Pallavi Dhagat
Chair Elect	Suzanne G.E. te Velthuis
Past Chair	Kai Liu
Treasurer	Petru Andrei
Program Co-Chairs	Yayoi Takamura Mingzhong Wu

Program Committee Members:

Martina Ahlberg	Steve May
Franca Albertini	David Menard
Thomas Ambrose	Tim Mewes
Kirill Belashchenko	Bingfeng Miao
Julie Borchers	Martina Müller
Kristen Buchanan	Hiroaki Muraoka
Ermanno Cardelli	Sergei Nikitov
Zbigniew Celinski	Vivian Ng
Arout Chelvane	Yan Nie
Ching-tzu Chen	Hendrik Ohldag
Joseph Davies	Satoshi Okamoto
Jose de la Venta	Christos Panagopoulos
Cindi Dennis	Hua-Xin Peng
Satoru Emori	Manh-Huong Phan
Xin Fan	You Qiang
Jürgen Fassbender	Juan Gabriel Ramirez Rojas
Luke Fleet	Dafiné Ravelosona
Erik Folven	William Rice
Dustin Gilbert	Cesar Leonardo Ordonez Romero
Erol Girt	Kathryn Ross
Cristina Gómez Polo	Mark Rzchowski
R. Gopalan	Shin Saito
Simon Granville	Andreas Scholl
Axel Hoffmann	Helmut Schultheiss
Yang-Ki Hong	Andrei Slavin
Yumi Ijiri	Rubem Luis Sommer
Scooter Johnson	Kumar Srinivasan
Gangping Ju	Bethanie Stadler
Roland Kawakami	Robert Stamps
Tae Hee Kim	Alexandru Stancu
Mikhail Kostylev	Dieter Suess
Roopali Kukreja	Nian Sun
Pedro Landeros	Young Sun
Connie Li	Takao Suzuki
Peng Li	Yuri Suzuki
Ko-Wei Lin	Weigang Wang
Minn-Tsong Lin	Zihui Wang
Ping Liu	Yan Zhou
Karen Livesey	Barry Zink
Sara Majetich	

Publications Chair	Victorino Franco
Publications Editors:	Franca Albertini Massimiliano d'Aquino Cindi Dennis Connie Li Hua-Xin Peng Frederic Petroff Alexandru Stancu Kiyonori Suzuki

Exhibits Chair	Barry Zink
Publicity Chair	Philip Pong
Student Awards/Travel Chair	Claudia Mewes
Editor, <i>AIP Advances</i>	Vincent Crespi
Conference Managers	Molly Bartkowski Diane Melton
Abstracts/Publications Manager	Regina Mohr
Exhibits Manager	Jennifer Fiske
Registration Manager	Ashley Cesare

ADVISORY COMMITTEE

Chair	Kai Liu
Chair-Elect	Pallavi Dhagat
Executive Treasurer	Mark Kief
Recording Secretaries	Diane Melton, Regina Mohr

Term expiring December 1, 2017:	Petru Andrei Katayun Barmak Jeff Childress Alina Maria Deac Atsufumi Hirohata Xiaofeng Jin Mark Kief Vivian Ng Tiffany Santos Matt Willard
--	---

Term expiring February 1, 2019:	Cindi Dennis Peter Fischer Chih-Huang Lai June W. Lau Kyung-Jin Lee Laura Lewis Alan MacDonald Stephane Mangin Christopher Marrows
--	--

Term expiring December 1, 2019:	Pallavi Dhagat Victorino Franco Chris Leighton Philip Pong Mark Stiles Yayoi Takamura Maria Varela Manuel Vazquez Randall Victora Mingzhong Wu
--	---

SPONSORING SOCIETY REPRESENTATIVES

AIP Publishing	Bill Burke
IEEE Magnetics Society	Rudolf Schäfer

ADDITIONAL INFORMATION

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

EXHIBITORS (AS OF OCTOBER 1, 2017)

An exhibition of magnetism-related services, equipment, materials, and software will be held Tuesday through Thursday 8:15 am – 12:30 pm and 2:30 – 6:30 pm in the Spirit of Pittsburgh A on the third floor of the Convention Center.

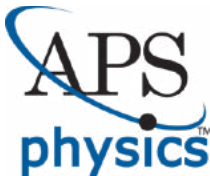


AJA INTERNATIONAL, Inc.

Booth 16

Thin Film Deposition Systems (Sputtering, E-beam, Thermal, Ion Beam, PLD and Multi-Technique). Ion Beam Etch Systems with SIMS (Ion Milling, RIBE). R&D and Pilot Scale Equipment. UHV and HV Magnetron Sputter Sources and Thermal Evaporation Sources. Wide range of Substrate Holders featuring Azimuthal Rotation, RF/DC Biasing, Heating, Water Cooling, LN2 Cooling and Tilting. Sputter Targets and Evaporation Materials. RF/DC Power Supplies. Materion Advanced Materials Group is a global supplier of premier specialty materials and services for the LED, semiconductor, advanced memory, optical coatings, and large area glass markets. Our offerings include precious and non-precious thin film deposition materials, inorganic chemicals, microelectronic packaging products, precision parts cleaning, and precious and valuable metal reclamation. Because of our industry experts and extensive manufacturing capabilities, we are able to meet our customer's specific material requirements today and assist with their innovative Research and Development projects.

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



Booth 13

Founded in 1899, the American Physical Society (APS) is a non-profit membership organization working to advance and diffuse the knowledge of physics. APS publishes the world's most widely read physics research and review journals: Physical Review Letters, Physical Review X, Reviews of Modern Physics, Physical Review A-E, Physical Review Accelerators and Beams, Physical Review Applied, Physical Review Fluids, Physical Review Materials, Physical Review Physics Education Research, and Physics. Please stop by booth #13 to learn more about the prestigious Physical Review journals, including Physical Review Materials, a new broad-scope journal for the multidisciplinary community engaged in materials research.

Contact: Kenneth Newberry
Email: newberry@aps.org
Website: www.journals.aps.org



attocube

WITTENSTEIN Group

Booth 10

attocube is the technology leader for cryogenic measurement instrumentation, including low vibration closed-cycle cryostats, a cryo-optical table and various low temperature & high magnetic field compatible measurement inserts, allowing for research techniques such as AFM, MFM, SHPM, confocal & RAMAN microscopy. In cooperation with SPECS Zurich, attocube now offers a powerful all-in-one solution for transport measurements: The software integration of the dry cryostat attoDRY2100, a 3D sample rotator and a powerful measurement electronic (Nanonis Tramea™) combines generic, yet automatable measurement routines with unprecedented speed and signal quality. Nano-precise piezo positioning stages and laser displacement sensors with picometer resolution complete attocube's portfolio.

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



CAPRES A/S

COPENHAGEN APPLIED RESEARCH

Booth 21

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

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



CAEN Technologies, Inc.

Booth 2

High current, high stability, highly accurate. Less than 1 ppm/K TC and less than 10 ppm ripple on wide current ranges are among some of our specs. CAEN ELS magnet power supplies are designed with a completely digital control and feedback loop, allowing for software-based adjustment of PID parameters, synchronizing fully and behaving nicely with your reactive loads (up to 100 H). Supporting large installations at many synchrotrons and colliders around the world, our offerings include standard and custom products. Home-grown DCCT current sensors are implemented within the supplies for aiding in such performance, or are available separately in various models with a complete digitizing current measurement system for your own setups. CAEN ELS is represented in the U.S. by CAEN Technologies.

Contact: Erik Soiman
Email: erik@caentechnologies.com
Website: www.caenels.com

CRYOMECH

WORLD LEADERS IN CRYOREFRIGERATION FOR MORE THAN 50 YEARS

Booth 7

Cryomech, Inc. is a recognized leader in advanced cryocooler solutions for new and existing applications. Our distinct product line includes over 30 different types of Gifford-McMahon and Pulse Tube Cycle Cryorefrigerators with the largest capacities available anywhere. Cryomech's fast and open design process allows you to remain the expert in your field of research while they manage the interface with the cryorefrigerator seamlessly. For managing liquid cryogens, Cryomech can offer Liquid Nitrogen Plants, Liquid Helium Plants with liquefaction rates of 6, 15, 22, 40 and 60 liters per day, Helium Reliquefiers and Helium Recovery Systems. Cryomech recently introduced Ultra-low Vibration Cryostats for operation below 4.2 K. All Cryomech products include long mean time between maintenance cycles, high reliability and cutting-edge technology.

Contact: Tabitha Sebastino
Email: tSebastino@cryomech.com
Website: www.cryomech.com

GMW Associates

Booth 25

GMW offers One- and Three-component Magnetic Sensors, Transducers and Field Mappers for the development and qualification of permanent magnets, magnetic actuators and electric motors and generators. Current Probes and Transducers in Clip-On, Clamp-On and Fixed Core geometries are available with full-scale current ranges from 10 mA to 10 kA and frequency response from dc to 500 MHz for the development, test and energy efficiency qualification of batteries, fuel cells, power electronics, motor drives, and cable assemblies. Very high accuracy, wide bandwidth Transducers meet the demanding requirements of high current source and sink load simulators. Light weight, small size, low power, Clip-On Current Probes are particularly suitable for in-vehicle current monitoring.

Contact: Diana Vallejo
Email: dvallejo@gmw.com
Website: www.gmw.com

Intlvac Thin Films provides PVD (Physical Vapor Deposition) and IBE (Ion Beam Etch) systems for magnetic materials, metals and oxides. You can create and etch compounds that have never existed in nature with our Nanoquest Ion Beam Etch and Nanochrome magnetron sputtering systems. Research and development plays a major role in our technology's superiority. Our in-house development lab designs, engineers and manufacturers machinery and processes used for PVD and IBE. We provide prototype and production run coating services to customers around the world. Intlvac specializes in customized engineering solutions for universities, government labs and Fortune 100 companies.

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



Kurt J. Lesker[®]
Company

A fully integrated manufacturer of thin film deposition systems, vacuum components and materials. Our new High-Power IMPULSE Magnetron (HiPIM's) power supply and TORUS[®] Mag Keeper magnetron combination delivers films with better adhesion, improved grain structure and fewer defects than conventional sputtering. This advanced cathode is also available in an Ultra-High Vacuum version. Lesker's thin film deposition systems include the improved Pro-Line PVD 75, enhanced for flexibility of layout, deposition, operation and expansion. Our eKlipse control software makes recipe development and execution easy. Materials for research include: Co, Fe, Ir, Ni, Pt; and alloys and oxides such as Permalloy, BiFeO₃, YIG, FeCoMn, MoS₂, Fe₃O₄, and LaSrMnO.

Contact: Bill Zinn
Email: sales@lesker.com
Website: www.lesker.com



A leading innovator in solutions for measuring materials under controlled magnetic field and temperature conditions, Lake Shore offers electromagnet-based VSMs for characterizing magnetic properties over a range of temperatures (4.2 K to 1273 K) and fields to 3.42 T. Among these is the 8600 Series VSM, which combines high sensitivity (33 nemu), measurement speed (10 ms/pt), and simple operation in a system capable of accurately characterizing a broad range of materials with unprecedented ease. Also available: magnetic test and measurement instruments, and cryogenic probe stations with integrated vertical and horizontal field magnets for on-wafer magneto-transport, DC, RF, or microwave measurements.

Contact: Andrew Phillips
Email: general@lakeshore.com
Website: www.lakeshore.com

MANTIS SIGMA, the partnership of MANTIS Deposition and SIGMA Surface Science is dedicated to the development and manufacture of high-quality systems and components for cutting-edge applications in nanotechnology, thin film deposition, and surface analysis. We enable researchers to both create and analyse thin films for advanced materials and device development. MANTIS specializes in MBE, PLD, UHV nanoparticle, e-beam, and sputtering deposition. We offer a range of nanoparticle technology, RF atom and ion sources, sputter cathodes, mini e-beam evaporators, organic evaporators and modular R&D deposition systems. SIGMA specializes in state-of-the-art surface analysis technology with an exciting new range of UHV tools for ESCA and SPM.

Contact: Anthony Graziano

Email: anthony.graziano@mantis-sigma.com

Website: www.mantisdeposition.com



MicroSense

MicroSense is a leading manufacturer of magnetic measurement systems for research and production quality control. MicroSense Vibrating Sample Magnetometers are used at many academic and commercial laboratories world wide and offer the most flexible resistive magnet VSM system with outstanding sensitivity and the largest range of options, including low and high temperature, vector, Torque, AC and DC magneto-resistance, MOKE (Kerr Effect) Magneto Electric and Ferro Magnetic Resonance options. In addition MicroSense offers an automation option (with unattended automatic sample changing for the full VSM line. MicroSense also offers a full range of non-contact, in-line (full wafer or disk) research and production magnetic metrology systems for in-plane and perpendicular MRAM, hard disk and recording head process control. MicroSense was the first to introduce a 300 mm ready non-contact magnetic property measurement tool for MRAM.

Contact: Erik Samwel

Email: esamwel@microsense.net

Website: www.microsense.net



Booth 9

MTI Corporation has been providing a total solution for materials research labs since 1995. MTI supplies ceramic, crystal, metallic substrates from A-Z and Nano-powder. MTI also provides laboratory R&D equipment including alloy melting, casting, annealing, sectioning, polishing, mixing machines, high temperature muffle and tube furnaces, pressing machines, film coaters, high vacuum systems, high pressure furnaces, RTP furnaces, hydrogen furnaces, as well as compact RD/XRF for Metallographic analysis and the Amorphous Metallic Material Research Equipment.

Contact: Andy Huang
Email: andy@mtixtl.com
Website: www.mtixtl.com



Booth 22

North American Nanotech, Inc. (NANI) represents *Solution Partners* Futek Furnace (www.futekfurnace.com), Hprobe (www.hprobe.com) and Spin-Ion Technologies (http://nanosaclay.fr/Phoce/Vie_des_labos/Ast/ast.php?t=Projets_valo&id_ast=131) within the spintronics markets of North America. From the magnetic vacuum anneal process to wafer level magnetic test to ion-beam surface enhancement for both magnetic thin films R&D and production applications NANI's *Solution Partners* deliver unique process & test capabilities to meet spintronics customer's evolving process and test requirements.

Contact: Daniel Montag
Email: northamericananotech@icloud.com
Website: www.northamericananotech.com



**NANOMAGNETICS
INSTRUMENTS**

Booth 12

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

Contact: Oral Ahmet
Email: sales@nanomagnetics-inst.com
Website: www.nanomagnetics-inst.com



Booth 17

NanoScan is a member of the IONTOF group of companies. We are specialized in high-vacuum Scanning Probe Microscopes and our flagship microscope, the VLS-80, offers a high-end standalone solution for high-vacuum SPM. It runs all dynamic modes of imaging and is equipped with two phase-locked loops to enable dual modes. Magnetic imaging is a key strength of the VLS-80, with 10 nm lateral resolution guaranteed as well as an in-plane and an out-of-plane magnetic field option; an industry best. The large sample stage offers excellent positioning repeatability over the complete range of 100 mm x 100 mm.

Contact: Marco Corbetta
Email: m.corbetta@nanoscan.ch
Website: www.nanoscan.ch



Quantum Design
International

Booths 4 & 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: VSM magnetometry, magneto resistance, sample rotator, thermal expansion and Raman spectroscopy. Instruments include the Physical Property Measurement System (PPMS®), SQUID-based Magnetic Property Measurement System (MPMS®3), VersaLab, and PPMS® DynaCool. All systems have cryogen-free options. Quantum Design also manufactures advanced helium liquefiers (ATL80, ATL160) and helium recovery systems. Quantum Design International distributes direct write and 3D thermal scanning probe lithography systems, NanoMOKE, FMR spectrometers, single crystal furnaces, SPM, and a single photon source/detector.

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



RHK Technology
Imaging the Future of Nanoscience

Booth 24

RHK Technology is the leader in cryogen-free low-temperature SPM and universal SPM controllers. We are proud to offer our award winning PanScan Freedom, the world's first cryogen-free UHV LT-SPM system with proven performance and exceptional results in a surprisingly compact package. For magnetic applications we offer the PanScan Freedom Tesla, enabling cryogen-free low-temperature SPM measurements in magnetic fields up to 5 T. Our revolutionary R9plus SPM Controller is engineered for the most advanced applications yet easily operated by new users. Along with our flexible Beetle VT-SPMs and QuadraProbe SPM, RHK products aim to help keep your laboratory first in nanoscale science.

Contact: Craig Wall
Email: wall@RHK-tech.com
Website: www.rhk-tech.com

SINGULUS TECHNOLOGIES is a renowned manufacturer of advanced thin-film deposition equipment for Sensor, MEMS, MRAM, Voltage regulators, thin-film head, and other semiconductor applications. The systems offer a reliable deposition of ultra-thin metallic and insulating films down to a thickness of one nanometer and below and stacks of such films with very precise material thickness and high uniformity specifications. SINGULUS TECHNOLOGIES is the trusted partner in the respective industry and extends its leadership in the thin-film deposition technology for semiconductor applications.

Contact: Bernhard Krause
Email: sales@singulus.de
Website: www.singulus.de



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

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



TANMS (Center for Translational Applications of Nanoscale Multi-ferroic Systems) is a NSF funded, multi-institutional Engineering Research Center (headed by UCLA) focusing on research, technology translation, and education associated with magnetism on the small scale. TANMS's vision is to develop a fundamentally new approach coupling electricity to magnetism using engineered nanoscale multi-ferroic elements to enable increased energy efficiency, reduced physical size, and increased power output in various electronics. TANMS is transitioning the unique discoveries it has made on nanoscale multiferroic materials (i.e., control of magnetic spin structures with electric fields) into three applications: memory devices, miniaturized antenna systems, and nanoscale motors.

Contact: Tom Normand
Email: tnormand@TANMS.UCLA.edu
Website: www.tanms-erc.org



Tohoku Steel Co., Ltd.

Sendai, Japan

Tohoku Instrumentation Technologies

Booth 1

Tohoku Steel was established in 1937 and has developed and commercialized numerous electromagnetic materials and technologies for just 80 years through close academic and cooperative partnership with Tohoku University. In this exhibit, you can obtain detailed information on Tohoku's unique line of magnetic measurement systems, which includes Hc meter and MR head / MRAM wafer probing systems, and also fully automatic initializing system for MRAM. Tohoku's high-field MR-Probers, capable of applying over 15(kOe) by using electromagnets made of Iron-Cobalt alloy produced in our factory, will be a cutting edge tool for your most advanced research and production line inspection needs.

Contact: Kazuhiko Okita

Email: soushi@sm.rim.or.jp

Website: www.tohokusteel.com/en



Ube Material Industries, Ltd.

Booth 8

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

Contact: Mishima Takuya

Email: takuya.mishima@ubematerials.co.jp

Website: www.ubematerial.com



**Zurich
Instruments**

Booth 14

Zurich Instruments is a test and measurement company based in Zurich, Switzerland, developing and selling measurement instruments and delivering customer support in key markets around the world, either directly or with carefully selected partners. We are a growing, independent and founder-led company. Zurich Instruments makes cutting-edge instrumentation for scientists and technologists in advanced labs who are passionate about phenomena that are often notoriously difficult to measure. Our core offering includes lock-in amplifiers, phase-locked loops, arbitrary waveform generator, impedance analyzers, digitizers and boxcar averagers.

Contact: Eva Rojcek and Marjorie Quere

Email: eva.rojcek@zhinst.com

Website: www.zhinst.com



AIP Publishing is a wholly owned not-for-profit subsidiary of the American Institute of Physics (AIP). AIP Publishing's mission is to support the charitable, scientific and educational purposes of AIP through scholarly publishing activities in the fields of the physical and related sciences on its own behalf, on behalf of Member Societies of AIP, and on behalf of other publishing partners to help them proactively advance their missions.

Invited and contributed papers presented at the 2017 MMM Conference will be published in the fully open access journal *AIP Advances*. *AIP Advances* is a peer reviewed journal covering all the areas of the physical sciences (experimental, theoretical, and applied), making it a good fit for the range of research on magnetism and magnetic materials now being presented at the MMM Conference.



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

CONFERENCE SUPPORTERS

AWARDS SUPPORT



The American Physical Society (APS) Topical Group on Magnetism and its Applications, or GMAG, represents one of the fastest-growing scientific sectors of the APS. Membership in GMAG—an annual investment of only \$10 for APS members—not only helps you keep up with the fast-paced field of Magnetism but also provides the following features:

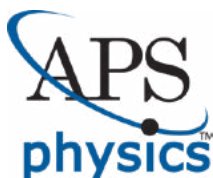
- A convenient way to connect with other members of the magnetism community
- The GMAG Newsletter, distributed biannually
- The opportunity to shape the GMAG-sponsored sessions and symposia at the March Meeting, 80 sessions in all for 2016. The Magnetism sorting category received 921 abstracts, which is ~10% of all abstracts submitted.
- Access to GMAG-sponsored graduate student awards and sponsorships
- Potential to increase the number of invited talks on magnetism at the March Meeting
- Potential to increase the number of APS Fellows sponsored by GMAG
- The opportunity to help shape the future of Physics in the US by participating in GMAG-sponsored student outreach activities and Congressional visitations.

MEET THE EXPERTS SUPPORT



The evico magnetics GmbH was founded in 2006 as a spin-off of the Leibniz Institute for Solid State and Materials Research (IFW) Dresden. The main products are: (i) Magneto-optical Kerr microscope systems. By making use of the Kerr effect in optical wide-field polarization microscopes, the magnetic domains and magnetization processes of magnetic materials are visualized with digital contrast enhancement. At the same time the Kerr microscope serves as magneto-optical magnetometer for the sensitive measurement of hysteresis loops (MOKE magnetometry). (ii) High Pressure Milling Vials with a gas temperature monitoring system for the synthesis of magnetic powders and hydrogen storage materials.

LANYARD AND WIFI SUPPORT






MATERION

Materion Advanced Materials Group is a global supplier of premier specialty materials and services for the LED, semiconductor, advanced memory, optical coatings, and large area glass markets. Our offerings include precious and non-precious thin film deposition materials, inorganic chemicals, microelectronic packaging products, precision parts cleaning, and precious and valuable metal reclamation. Because of our industry experts and extensive manufacturing capabilities, we are able to meet our customers' specific material requirements today and assist with their innovative Research and Development projects.

MAGNETISM AS ART SHOWCASE SUPPORT



magnetochemistry

an open access journal by 

Magnetochemistry (ISSN 2312-7481) is a scientific, peer-reviewed, open access journal on molecular magnetism, the relationship between chemical structure and magnetism and magnetic materials published quarterly online by MDPI. Magnetochemistry has been indexed by the Emerging Sources Citation Index (ESCI - Web of Science). According to median values for papers published in this journal in 2016, first decision provided to authors is approximately 17 days after submission; acceptance to publication is undertaken in 8 days. Submit your paper to <http://susy.mdpi.com/user/manuscripts/upload/journal>

CONFERENCE PROGRAM-AT-A-GLANCE

MONDAY, NOVEMBER 6, 2017

2:30 pm - 5:00 pm

XA Tutorial: Terahertz Magnetism *Spirit of Pittsburgh B*

TUESDAY, NOVEMBER 7, 2017

8:30 am - 11:30 am • Oral Sessions

AA Symposium: Terahertz Magnonics *Spirit of Pittsburgh B*

AB Skyrmions in Bulk Materials
and Single Ferromagnetic Layers *Room 301-303*

AC Spin Caloritronics and Thermal Spin Injection *Room 403-405*

AD Spin Waves I *Room 408-410*

AE MRAM, Magnetic Logic, and Related Devices *Room 315-316*

AF Rare Earth-Based Hard Magnetic Materials I *Room 317-318*

AG Biomagnetic Applications I *Room 304-305*

AH Strain-Mediated Multiferroic Heterostructures *Room 401-402*

AI Transformers and Inductors I *Room 411-412*

9:30 am - 12:30 pm • Poster Sessions *Spirit of Pittsburgh A*

AP Ferrites and Garnets I

AQ Amorphous and Nanocrystalline Materials I

AR Nanoparticles and Nanowires (not in arrays) I

AS Structured Materials

AT Domain Wall and Vortex Dynamics I

AU Magnetics for Power Electronics and Control I

AV Multiferroics, Correlated Systems, and Molecular Magnets

1:30 pm - 4:30 pm • Oral Sessions

BA Symposium: Magnetism and Magnetic
Proximity Effects in 2D Materials *Spirit of Pittsburgh B*

BB Skyrmions in Magnetic Multilayers *Room 301-303*

BC Spin-Orbit Torques *Room 403-405*

BD Spin Waves II *Room 408-410*

BE GMR and MRAM *Room 315-316*

BF Rare Earth-Based Hard Magnetic Materials II *Room 317-318*

BG Magnetic Fluids and Particles for Biosensing *Room 304-305*

BH Nanoparticle and Nanowire Arrays
and Self-Assembly *Room 401-402*

BI Magnetoresistance, Magnetoimpedance,
and Hall Effect *Room 411-412*

2:30 pm - 5:30 pm • Poster Sessions *Spirit of Pittsburgh A*

BP Domains and Voltage Controlled Magnetism

BQ Magnetic Recording

BR Ferrites and Garnets II

BS Transformers and Inductors II

BT Energy Harvesting, Power, Propulsion, and Levitation

BU Magnetics for Power Electronics and Control II

BV Magnetoelectric and Multiferroic Films and Heterostructures I

6:00 pm - 7:30 pm

YA Secrets for Highly Effective
Communications *Spirit of Pittsburgh B*

8:30 am - 11:30 am • Oral Sessions

CA	Symposium: What Spintronics Can Bring to Microelectronics	<i>Spirit of Pittsburgh B</i>
CB	Spin Currents: Ultrafast, Detection, and Dynamics	<i>Room 301-303</i>
CC	Spin Transfer Torques and Spin Hall Oscillators	<i>Room 403-405</i>
CD	Spin Waves III	<i>Room 408-410</i>
CE	Magnetic Recording I: MAMR and PMR Extension	<i>Room 315-316</i>
CF	Hard Magnets: Thin Films and Nanostructures	<i>Room 317-318</i>
CG	Spintronics with 2D Materials and Topological Insulators I	<i>Room 304-305</i>
CH	Nanoparticles and Nanowires (not in arrays) II	<i>Room 401-402</i>
CI	High Frequency, Microwave, and Millimeter Wave Devices	<i>Room 411-412</i>

9:30 am - 12:30 pm • Poster Sessions

Spirit of Pittsburgh A

CP	Crystalline Soft Magnetic Materials
CQ	Magneto-Caloric Materials I
CR	Particles, Composites, and Manufacturing
CS	New Magnetic Materials
CT	Magnetic Fluids and Biomedical Applications
CU	Magnetic Instrumentation and Characterization I

1:30 pm - 4:30 pm • Oral Sessions

DA	Symposium: Cavity Opto-Magnonics	<i>Spirit of Pittsburgh B</i>
DB	Spin Currents: Insulators and Interfaces	<i>Room 301-303</i>
DC	Domains, Domain Walls, and Vortices I	<i>Room 403-405</i>
DD	Magnetization Dynamics I	<i>Room 408-410</i>
DE	Tunnel Magnetoresistance	<i>Room 315-316</i>
DF	Rare Earth-Free Hard Magnetic Materials I	<i>Room 317-318</i>
DG	Spintronics with 2D Materials and Topological Insulators II	<i>Room 304-305</i>
DH	Nanoparticles, Nanowires, and 3D Structures I	<i>Room 401-402</i>
DI	Magnetic Imaging and Measurement Techniques	<i>Room 411-412</i>

2:30 pm - 5:30 pm • Poster Sessions

Spirit of Pittsburgh A

DP	Magneto-Caloric Materials II
DQ	Fundamental Properties and Cooperative Phenomena
DR	Complex Oxides
DS	Magnetic Instrumentation and Characterization II
DT	Magnetic Sensors (non-recording) I
DU	Biomagnetic Applications II

6:00 pm

ZA	Evening Session: Spintronics—Present and Future	<i>Spirit of Pittsburgh B</i>
----	---	-------------------------------

8:30 am - 11:30 am • Oral Sessions

EA	Symposium: Mutual Synchronization of Spintronic Oscillators	<i>Spirit of Pittsburgh B</i>
EB	Spin Currents: Metals and New Materials	<i>Room 301-303</i>
EC	Domains, Domain Walls, and Vortices II	<i>Room 403-405</i>
ED	Magnetization Dynamics II	<i>Room 408-410</i>
EE	Magnetic Recording II: HAMR, All-Optical Recording, and Others	<i>Room 315-316</i>
EF	Rare Earth-Based Hard Magnetic Materials III	<i>Room 317-318</i>
EG	Electronic Structures and Spins	<i>Room 304-305</i>
EH	Complex Oxide Films and Heterostructures	<i>Room 401-402</i>
EI	Magneto-Optical and Magneto-Caloric Materials and Devices	<i>Room 411-412</i>

9:30 am - 12:30 pm • Poster Sessions

Spirit of Pittsburgh A

EP	Microwave Materials and Devices
EQ	Topological Insulators, 2D Materials, and Voltage Controlled Magnetism
ER	Magnetic Skyrmions and Interfacial Chiral Exchange Interactions
ES	Magnetic Semiconductors and Magnetoelastic Materials I
ET	Nanoparticles, Nanowires, and 3D Structures II
EU	Thin Films and Surface Effects I

1:30 pm - 4:30 pm • Oral Sessions

FA	Symposium: Spintronics-Based Neuromorphic Computing	<i>Spirit of Pittsburgh B</i>
FB	Spin-Orbit Torques and Interfacial Chiral Exchange Interactions	<i>Room 301-303</i>
FC	Domain Wall and Vortex Dynamics II	<i>Room 403-405</i>
FD	Magnetization Dynamics III	<i>Room 408-410</i>
FE	Exchange Bias	<i>Room 315-316</i>
FF	Voltage Controlled Magnetism	<i>Room 317-318</i>
FG	Magnetic Transitions and Correlations	<i>Room 304-305</i>
FH	Molecular Magnets and Bulk Oxides	<i>Room 401-402</i>
FI	Magneto-Caloric Materials III	<i>Room 411-412</i>

2:30 pm - 5:30 pm • Poster Sessions

Spirit of Pittsburgh A

FP	Spintronics—Fundamentals and Devices
FQ	Spin and Charge Transport Effects in Metals
FR	Spin Transfer Torques and Spin-Orbit Effect-Related Magneto Transport
FS	Spin-Orbit Torques, Interfacial Chiral Exchange Interactions, and Antiferromagnetic Spintronics
FT	Rare Earth-Based Hard Magnetic Materials IV
FU	Rare Earth-Based Hard Magnetic Materials V

8:30 am - 11:30 am • Oral Sessions

GA	Symposium: Spin-Orbit Torques with Unconventional Symmetries	<i>Spirit of Pittsburgh B</i>
GB	Ultrafast Switching	<i>Room 301-303</i>
GC	Thin Films and Surface Effects II	<i>Room 403-405</i>
GD	Micromagnetic Modelling I	<i>Room 408-410</i>
GE	Power Electronics and Magnetic Multilayers	<i>Room 315-316</i>
GF	Superconductivity and Bulk Multiferroics	<i>Room 317-318</i>
GG	Spin Freezing and Frustration	<i>Room 304-305</i>
GH	Soft Magnetic Materials	<i>Room 401-402</i>
GI	Magnetic Semiconductors and Magneto Elastic Materials II	<i>Room 411-412</i>

9:30 am - 12:30 pm • Poster Sessions*Spirit of Pittsburgh A*

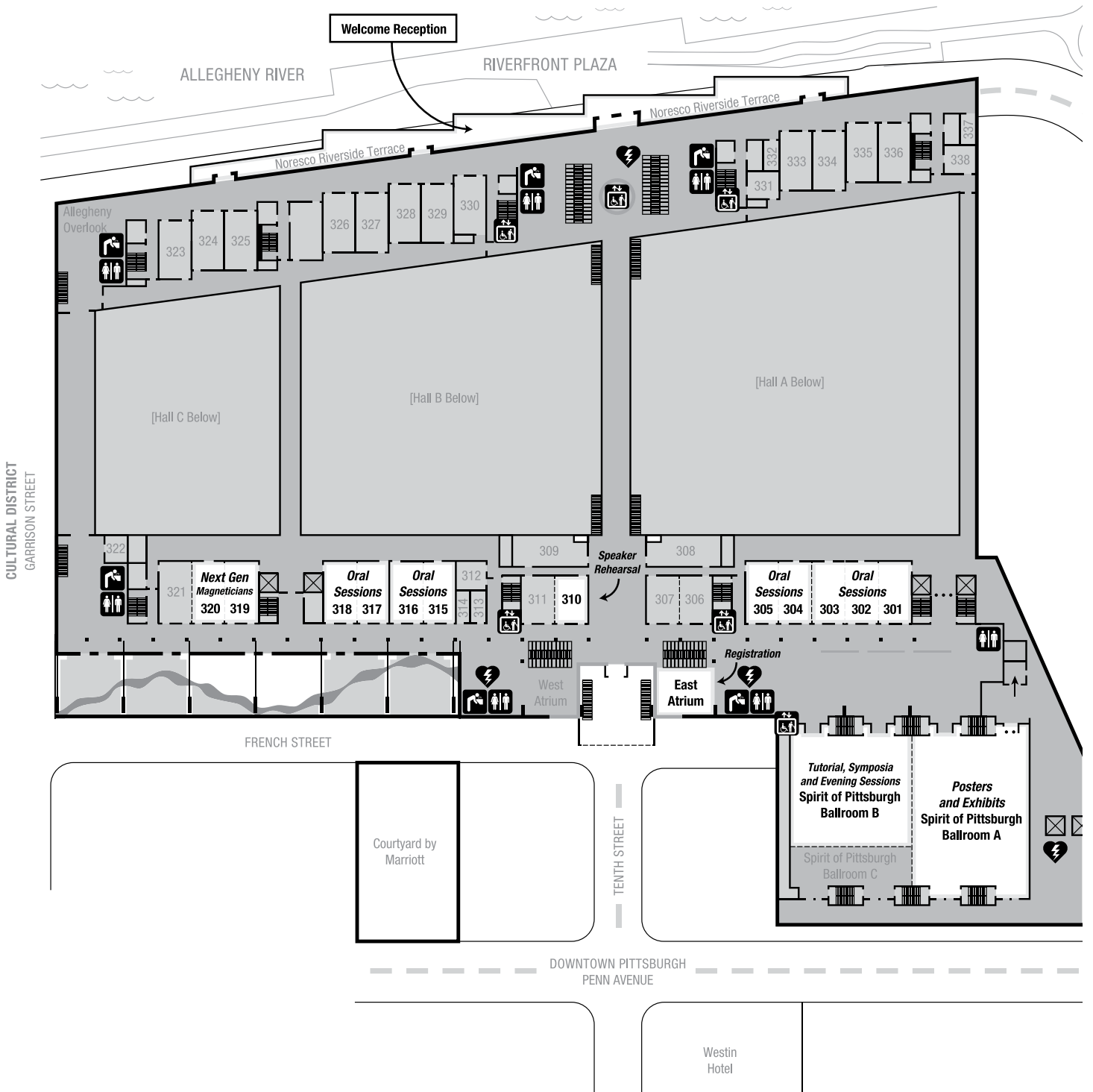
GP	Spin Waves IV
GQ	Micromagnetic Modelling II
GR	Magnetization Dynamics and Damping
GS	Half Metals, Magnetoresistance, Magnetoimpedance, and Hall Effect
GT	Rare Earth-Free Hard Magnetic Materials II
GU	Rare Earth-Based Hard Magnetic Materials VI
GV	Magneto-Optic and Hard Magnetic Materials

1:30 pm - 4:30 pm • Oral Sessions

HA	Symposium: Generation and Transport of Skyrmions	<i>Spirit of Pittsburgh B</i>
HB	Antiferromagnetic Spintronics	<i>Room 301-303</i>
HC	Artificial Spin Systems	<i>Room 403-405</i>
HD	Half Metallic Materials	<i>Room 408-410</i>
HE	Spin Hall Effect: Dynamics and Spin Waves	<i>Room 315-316</i>
HF	Magnetoelectric and Multiferroic Films and Heterostructures II	<i>Room 317-318</i>
HG	Microwave and New Magnetic Materials	<i>Room 304-305</i>
HH	Amorphous and Nanocrystalline Materials II	<i>Room 401-402</i>
HI	Magnetic Sensors (non-recording) II	<i>Room 411-412</i>

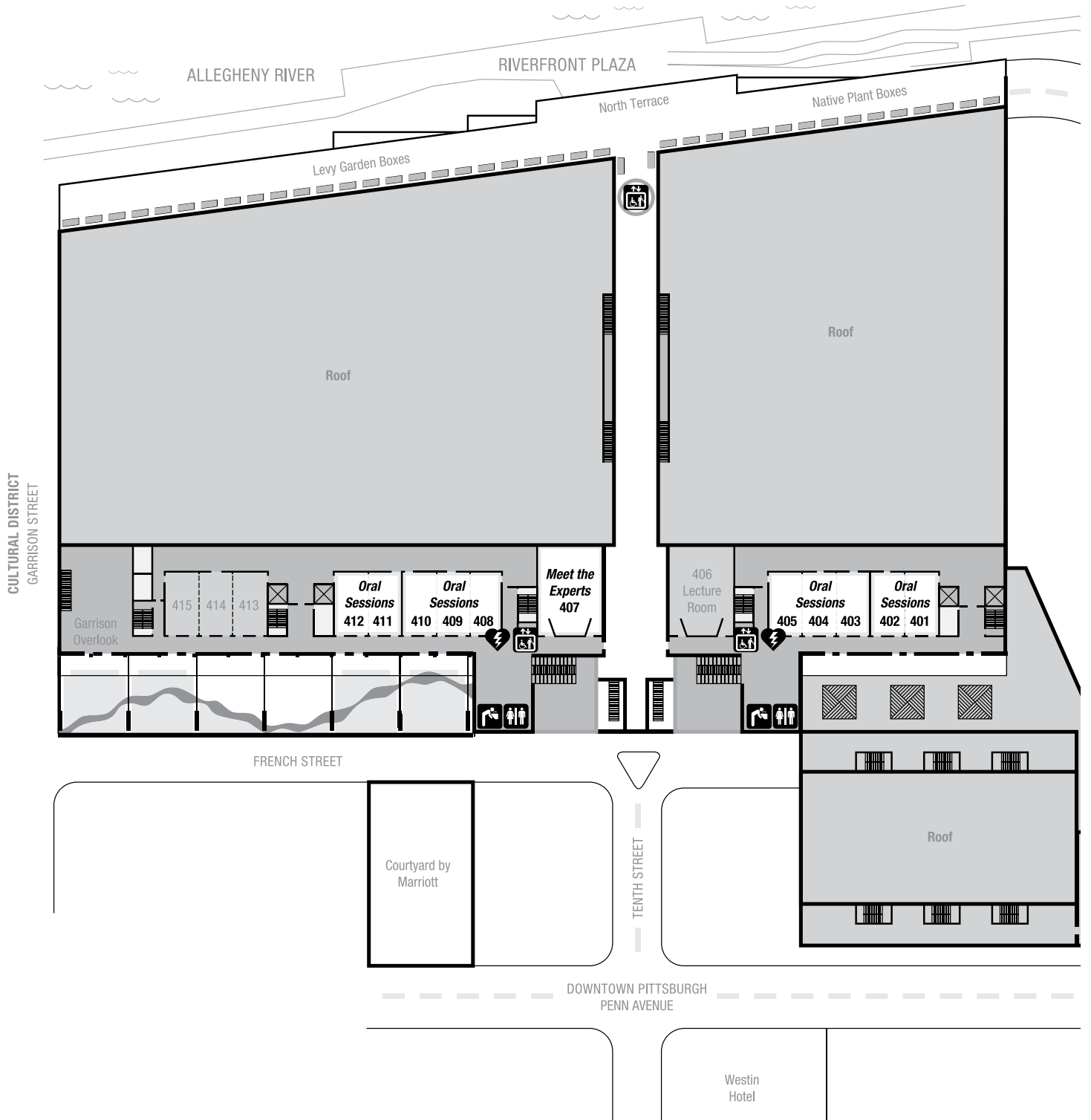
DAVID L. LAWRENCE CONVENTION CENTER

THIRD FLOOR



DAVID L. LAWRENCE CONVENTION CENTER

FOURTH FLOOR



MONDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM B

Session XA
TUTORIAL: TERAHERTZ MAGNETISM

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

2:30

- XA-01. Fundamental theory of THz magnetism. (Invited) D. Xiao¹**
1. Carnegie Mellon University, Pittsburgh, PA

3:20

- XA-02. Probing and controlling spin dynamics by terahertz waves. (Invited) T. Kampfrath^{1,2}**
1. Fritz Haber Institute, Max Planck Society, Berlin, Germany; 2. Department of Physics, Freie Universität Berlin, Berlin, Germany

4:10

- XA-03. Advancing terahertz technology using spin dynamics. (Invited) H. Yang¹**
1. National University of Singapore, Singapore, Singapore

TUESDAY
MORNING
8:30

SPIRIT OF PITTSBURGH BALLROOM B

Session AA
TERAHERTZ MAGNONICS

Rostislav Mikhaylovskiy, Chair
Radboud University Nijmegen, Nijmegen, Netherlands

8:30

- AA-01. Theoretical issues of THz and GHz magnons in magnetic insulators. (Invited) G. Bauer^{1,2}**
1. IMR, Tohoku University, Sendai, Japan; 2. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands

9:06

- AA-02. Femtosecond generation of spin waves and spin structures. (Invited) M. Münzenberg¹**
1. Institute of Physics, Ernst-Moritz-Arndt University, Greifswald, Germany

9:42

- AA-03. Nonlinear terahertz magnonics, 2D magnon resonance spectroscopy, and terahertz magnon-polaritonics. (Invited) K.A. Nelson¹**
1. Chemistry, Massachusetts Institute of Technology, Cambridge, MA

10:18

- AA-04. Low energy electrodynamics of correlated spin systems.**
*(Invited) N. Armitage¹ 1. Dept. of Physics and Astronomy,
Johns Hopkins University, Baltimore, MD*

10:54

- AA-05. Moving Atoms on Ultrafast Timescales to Control Magnetism.** *(Invited) U. Staub¹ 1. Swiss Light Source,
Paul Scherrer Institut, Villigen PSI, Switzerland*

TUESDAY
MORNING
8:30

ROOM 301-303

Session AB

**SKYRMIONS IN BULK MATERIALS AND SINGLE
FERROMAGNETIC LAYERS**

Hyunsoo Yang, Chair
National University of Singapore, Singapore

8:30

- AB-01. Magnonics in skyrmion-hosting chiral magnetic materials.**
(Invited) M. Garst¹ 1. TU Dresden, Köln, Germany

9:06

- AB-02. Formation of Skyrmion Lattice without Inversion Symmetry Breaking.** *S. Zhang^{1,2}, C. Phatak¹, A. Petford-Long^{1,3} and
O. Heinonen^{1,4} 1. Materials Science Division, Argonne National
Laboratory, Lemont, IL; 2. Department of Physics and
Astronomy, University of Missouri, Columbia, MO;
3. Department of Materials Science and Engineering,
Northwestern University, Evanston, IL; 4. Northwestern-
Argonne Institute of Science and Engineering, Evanston, IL*

9:18

- AB-03. Topological spin dynamics in cubic FeGe near room temperature.** *E. Turgut¹, M. Stolt², S. Jin² and G. Fuchs³
1. Applied and Engineering Physics, Cornell University,
Ithaca, NY; 2. Chemistry, University of Wisconsin-Madison,
Madison, WI; 3. Cornell University, Ithaca, NY*

9:30

- AB-04. Topological Hall effect in B20 Fe_{1-y}Co_yGe epilayers with changing helix wavelength.** *C.S. Spencer¹, J. Gayles^{2,3},
F. Freimuth⁴, S. Chadov³, J. Sinova^{3,5}, S. Blügel⁴,
Y. Mokrousov⁴ and C.H. Marrows¹ 1. School of Physics and
Astronomy, University of Leeds, Leeds, United Kingdom;
2. Max Planck Institute for Chemical Physics of Solids,
Dresden, Germany; 3. Institut für Physik, Mainz, Germany;
4. Peter Grünberg Institut and Institute for Advanced
Simulation, Forschungszentrum Jülich, Jülich, Germany;
5. Institute of Physics ASCR, Prague, Czech Republic*

AB-05. Critical Nature of Skyrmion Phase in FeGd Thin Film.

S. Roy¹, A. Singh², J.C. Lee¹, C. Yuan¹, S.A. Montoya³,
E.E. Fullerton³, P. Fischer¹, M. Sanyal² and S. Kevan¹
1. Lawrence Berkeley National Laboratory, Berkeley, CA;
2. Saha Institute of Nuclear Physics, Kolkata, India; 3. Center
for Magnetic Recording Research, University of California San
Diego, La Jolla, CA

AB-06. Temperature and field dependence of skyrmion size in

circular nanodots. R. Tomasello¹, K. Gusliyenkov², M. Ricci³,
A. Giordano⁴, J. Barker⁵, M. Carpentieri⁶, O. Chubykalo-Fesenko⁷
and G. Finocchio⁸ 1. Department of Engineering, Polo
Scientifico e Didattico di Terni, University of Perugia,
Terni, Italy; 2. Department of Física de Materiales, Universidad
del País Vasco, San Sebastián, Spain; 3. Department of
Computer Science, Modeling, Electronics and System Science,
University of Calabria, Rende, Italy; 4. Department of
Mathematical and Computer Sciences, Physical Sciences and
Earth Sciences, University Of Messina, Messina, Italy; 5. WPI
Advanced Institute for Materials Research, Tohoku University,
Sendai, Japan; 6. Department of Electrical and Information
Engineering, Politecnico of Bari, Bari, Italy; 7. Instituto de
Ciencia de Materiales de Madrid, Madrid, Spain;
8. Department of Mathematical and Computer Sciences,
Physical Sciences and Earth Sciences, University of Messina,
Messina, Italy

AB-07. Temperature Dependent Néel to Bloch Transformation of Isolated Skyrmions in a Nanodisk: A Micromagnetic Study.

N. Sisodia^{1*} and P. Muduli¹ 1. Department of Physics, Indian
Institute of Technology Delhi, New Delhi, India

AB-08. Magnetic Skyrmion-based Spiking Neuromorphic Computing Systems.

S. Li¹, W. Kang¹, Y. Huang¹, X. Zhang²,
Y. Zhou² and W. Zhao¹ 1. Beihang University, Beijing, China;
2. Chinese University of Hong Kong, Shenzhen,
Shenzhen, China

AB-09. Current-driven skyrmion dynamics in disordered ultrathin films.

J. Kim¹ and M. Yoo^{2,3} 1. Centre for Nanoscience and
Nanotechnology (C2N), Université Paris-Saclay,
Orsay, France; 2. Centre for Nanoscience and Nanotechnology
(C2N), CNRS, Univ. Paris-Sud, Université Paris-Saclay,
Orsay, France; 3. Unité Mixte de Physique CNRS/Thales,
Université Paris-Saclay, Palaiseau, France

- AB-10. Room temperature control of skyrmionic bubble reservoirs by oxidation and electric field in Ta/FeCoB/TaOx structures.** *T. Srivastava*¹, M. Schott², A.B. Mantel², V. Krizakova², S. Pizzini², M. Belmeguenai³, A. Hallal², M. Chshiev¹, S. Auffret¹, C. Baraduc¹ and H. Bea¹ *1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC, SPINTEC, Grenoble, France; 2. Univ. Grenoble Alpes, CNRS, Grenoble INP, Institut NEEL, Grenoble, France; 3. Laboratoire des Sciences des Procédés et des Matériaux, Univ. Paris 13 Nord, Villetaneuse, Paris, France*

- AB-11. Room-temperature skyrmion creation and manipulation for device application. (Invited)** *G. Yu*¹, P. Upadhyaya², A. Jenkins³, X. Ma⁴, S. Razavi¹, Q. Shao¹, W. Jiang^{5,6}, X. Han⁷, X. Li⁴, A. Jayich³, Y. Tserkovnyak², P. Khalili¹ and K.L. Wang¹ *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 3. Department of Physics, University of California, Santa Barbara, Santa Barbara, CA; 4. University of Texas at Austin, Austin, TX; 5. State Key Laboratory of Low-Dimensional Quantum Physics and Department of Physics, Tsinghua University, Beijing, China; 6. Collaborative Innovation Center of Quantum Matter, Beijing, China; 7. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

TUESDAY
MORNING
8:30

ROOM 403-405

Session AC

SPIN CALORITRONICS AND THERMAL SPIN INJECTION

Can Onur Avci, Chair

Massachusetts Institute of Technology, Cambridge, MA

8:30

- AC-01. Giant Longitudinal Spin Seebeck Effect in YIG/C₆₀/Pt Heterostructures.** *V. Kalappattil*¹, R. Geng², R. Das¹, H. Luong², M. Pham², T. Nguyen², H. Srikanth¹ and M. Phan¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. Physics and Astronomy, The University of Georgia, Athens, GA*

8:42

- AC-02. Thermally injected spin current in a bismuth layer.** *D. Yue*^{1,2}, W. Lin¹, X. Jin² and C. Chien¹ *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Department of Physics, Fudan University, Shanghai, China*

8:54

- AC-03. Spin Seebeck voltage enhancement by using Ta₅₀W₅₀ alloy and YIG/Ru interface.** H. Yuasa^{1,2}, F. Nakata¹, R. Nakamura¹, S. Inami¹ and Y. Kurokawa¹ 1. Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan; 2. JST-PRESTO, Wako, Japan

9:06

- AC-04. Enhancing Spin Detection in Metallic Nonlocal Spin Valves Using Thermal Conductances and Anomalous Nernst Effects.** A. Hojem^{1,2}, R. Bennet², D. Wesenberg² and B. Zink² 1. Physics, University of California, San Diego, La Jolla, CA; 2. Physics and Astronomy, University of Denver, Denver, CO

9:18

- AC-05. Transverse spin Nernst magnetoresistance induced by thermal spin current.** D. Kim¹, C. Jeon¹, J. Choi¹, J. Lee¹, S. Surabhi², M. Kang¹, J. Jeong², K. Lee^{3,4} and B. Park¹ 1. Department of Materials Science and Engineering, KI for the Nanocentury, KAIST, Daejeon, The Republic of Korea; 2. Department of Materials Science & Engineering, Chungnam National University, Daejeon, The Republic of Korea; 3. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 4. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea

9:30

- AC-06. Spin Seebeck voltage improvement of Y₃Fe₅O₁₂/ ultra-thin magnetic layer/Pt and XMCD and XAS investigation for Pt.** H. Yuasa^{1,2}, R. Nakamura¹, M. Suzuki³, F. Nakata¹, G. Nagashima¹, Y. Hirayama¹, S. Inami¹ and Y. Kurokawa¹ 1. Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan; 2. JST-PRESTO, Fukuoka, Japan; 3. JASRI/SPring-8, Sayo, Hyogo, Japan

9:42

- AC-07. Separation of the thermal Hall, spin Seebeck, and anomalous Nernst effects. (Invited)** S. Huang¹ 1. Department of Physics, National Taiwan University, Taipei, Taiwan

10:18

- AC-08. Investigating spin-transfer torques induced by thermal gradients on magnetic tunnel junctions using micro-cavity ferromagnetic resonance.** H. Cansever^{1,2}, C. Fowley¹, R. Narkovic¹, K. Lenz¹, E. Kowalska^{1,2}, O. Yildirim¹, Y. Aleksandrov^{1,2}, J. Lindner¹, J. Fassbender^{1,2} and A.M. Deac¹ 1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Institute of Solid State Physics, TU Dresden, Dresden, Germany

10:30

- AC-09. Probing Short-ranged Magnetic Order in a Geometrically Frustrated Magnet by Spin Seebeck Effect.** C. Liu¹, S.M. Wu^{2,1}, J.E. Pearson¹, S. Jiang¹ and A. Bhattacharya¹
1. *Materials Science Division, Argonne National Laboratory, Lemont, IL;* 2. *Department of Electrical and Computer Engineering, University of Rochester, Rochester, NY*

10:42

- AC-10. Role of Damping in Spin Seebeck Effect in Yttrium Iron Garnet Thin Films.** H. Chang¹, P. Janantha¹, J. Ding¹, T. Liu¹, K. Cline¹, J. Gelfand¹, W. Li², M. Marconi² and M. Wu¹
1. *Physics, Colorado State University, Fort Collins, CO;* 2. *Engineering Research Center for Extreme Ultraviolet Science and Technology and Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO*

10:54

- AC-11. Generation of Coherent Phonons by Spin Current.** S.S. Bhuktare¹, H. Singh¹, A. Bose¹ and A.A. Tulapurkar¹
1. *Electrical Engineering, IIT Bombay, Mumbai, India*

11:06

- AC-12. Investigation of magnon-phonon coupling in yttrium iron garnet by spin Seebeck effect and inelastic neutron scattering.** H. Man¹, Z. Shi^{2,3}, G. Xu⁴, Y. Xu², X. Chen⁵, S. Sullivan⁵, J. Zhou⁵, K. Xia⁶, J. Shi² and P. Dai^{1,6}
1. *Department of Physics and Astronomy, Rice University, Houston, TX;* 2. *Department of Physics and Astronomy, University of California Riverside, Riverside, CA;* 3. *School of Physics and Engineering, Tongji University, Shanghai, China;* 4. *NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD;* 5. *Materials Science and Engineering Program, Texas Materials Institute, The University of Texas at Austin, Austin, TX;* 6. *Center for Advanced Quantum Studies and Department of Physics, Beijing Normal University, Beijing, China*

11:18

- AC-13. Interface-dependent magnon mode coupling in insulating ferrimagnets.** J. Cramer^{1,2}, E. Guo^{3,1}, A. Kehlberger¹, S. Geprägs⁴, S.T. Goennenwein^{4,5} and M. Kläui^{1,2} 1. *Institute of Physics, Johannes Gutenberg-Universität Mainz, Mainz, Germany;* 2. *Graduate School of Materials Science in Mainz, Mainz, Germany;* 3. *Quantum Condensed Materials Division, Oak Ridge National Laboratory, Oak Ridge, TN;* 4. *Bayerische Akademie der Wissenschaften, Walther-Meißner-Institut, Garching, Germany;* 5. *Institute of Solid State Physics, Technische Universität Dresden, Dresden, Germany*

Session AD
SPIN WAVES I

Kristen Buchanan, Chair
Colorado State University, Fort Collins, CO

8:30

- AD-01. Spin-wave Amplification in YIG/Pt System: Frequency and Bias Magnetic Field Dependencies.** *A. Navabi*¹, *Y. Liu*¹, *P. Upadhyaya*², *G. Yu*¹, *M. Yazdani*¹, *K. Murata*¹, *M. Montazeri*¹, *F. Ebrahimi*^{1,3}, *P. Khalili*^{4,1}, *Y. Tserkovnyak*² and *K.L. Wang*¹ *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Physics and Astronomy, UCLA, Los Angeles, CA; 3. Inston Inc., Los Angeles, CA; 4. Electrical Engineering, Northwestern University, Chicago, IL*

8:42

- AD-02. Electric-field-driven parametric resonance of spin waves in perpendicular magnetic tunnel junctions.** *H. Lee*¹, *Y. Chen*¹, *E. Yang*², *H. Tseng*², *P.M. Braganca*² and *I. Krivorotov*¹
1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Western Digital, San Jose, CA

8:54

- AD-03. Withdrawn**

9:06

- AD-04. X-Ray Microscopic Observation of Spin Waves in Magnonic Nanostructures. (Invited)** *J. Gräfe*¹, *A. Gangwar*², *M. Decker*², *M. Noske*¹, *K. Keskinbora*¹, *M. Zelent*³, *H. Stoll*¹, *M. Krawczyk*³, *P. Gawronski*⁴, *C. Back*², *E.J. Goering*¹ and *G.A. Schuetz*¹ *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Department of Physics, University of Regensburg, Regensburg, Germany; 3. Faculty of Physics, Adam Mickiewicz Univeristy in Poznan, Poznan, Poland; 4. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland*

9:42

- AD-05. Spinwave Propagation in a Thin YIG Film for an in-Plane Magnetic Field: Angular Dependence and Double Reversal.** *J.S. Trossman*¹, *J. Lim*¹, *W. Bang*¹, *J. Sklenar*^{1,2}, *C. Tsai*³, *S. Lee*⁴ and *J. Ketterson*^{1,5} *1. Department of Physics and Astronomy, Northwestern University, Evanston, IL; 2. Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL; 3. Department of Engineering & Management of Advanced Technology, Chang Jung Christian University, Tainan City, Taiwan; 4. Department of Physics, Hanyang University, Seoul, The Republic of Korea; 5. Department of Electrical and Computer Engineering, Northwestern Univeristy, Evanston, IL*

9:54

- AD-06. Surface-acoustic-wave-pumped parametric amplification of forward volume spin waves.** *I. Lisenkov*^{1,2}, *J. Davies*³, *A. Jander*¹ and *P. Dhagat*¹ *1. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 2. Kotel'nikov Institute for Radioengineering and Electronics, Moscow, Russian Federation; 3. Advanced Technology, NVE Corporation, Bloomington, MN*

10:06

- AD-07. Artificial spin ices as reconfigurable magnonic crystals.** *O. Heinonen*^{1,2}, *S. Gliga*³ and *E. Iacocca*^{4,5} *1. Argonne National Laboratory, Lemont, IL; 2. Northwestern-Argonne Institute of Science and Engineering, Evanston, IL; 3. University of Glasgow, Glasgow, United Kingdom; 4. Applied Mathematics, University of Colorado at Boulder, Boulder, CO; 5. University of Gothenburg, Gothenburg, Sweden*

10:18

- AD-08. Spin-wave fractals in a quasi-one-dimensional magnonic crystal.** *D. Richardson*¹, *B. Kalinikos*², *L. Carr*³ and *M. Wu*¹ *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Saint Petersburg Electrotechnical University, Saint Petersburg, Russian Federation; 3. Department of Physics, Colorado School of Mines, Golden, CO*

10:30

- AD-09. Broadband emission of propagating spin waves in patterned magnetic structures.** *F. Mushenok*¹, *R. Dost*², *C.S. Davies*³, *D.A. Allwood*², *B.J. Inkson*² and *V.V. Kruglyak*¹ *1. CEMPS, University of Exeter, Exeter, United Kingdom; 2. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 3. Radboud University, Nijmegen, Netherlands*

10:42

- AD-10. Measuring thermal field noise from magnetic nanostructures using NV centers in diamond.** *R.D. McMichael*¹, *K. Ambal*^{1,2} and *J. Liu*¹ *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD*

10:54

- AD-11. All-optical Study of Exchange Coupling in Fe/Pt(x nm)/FePt Trilayers.** *C. Berk*¹, *F. Ganss*², *M. Albrecht*^{3,2} and *H. Schmidt*¹ *1. UC Santa Cruz, Santa Cruz, CA; 2. Chemnitz University of Technology, Chemnitz, Germany; 3. Institute of Physics, University of Augsburg, Augsburg, Germany*

11:06

- AD-12. Antiferromagnetic Spin Wave Generation via THz Electrically Controlled Spin Orbit Torque Oscillation.** *X. Li*¹, *Y. Semenov*¹ and *K. Kim*¹ *1. Electrical and Computer Engineering, North Carolina State University, Raleigh, NC*

- AD-13. Time-resolved measurements of spin waves into a thermal gradient.** *G.A. Riley¹, K.E. Nygren¹, C.L. Ordóñez-Romero² and K. Buchanan¹* *1. Physics, Colorado State University, Fort Collins, CO; 2. Solid State, Physics Institute, UNAM., Mexico City, Mexico*

TUESDAY
MORNING
8:30

ROOM 315-316

Session AE

MRAM, MAGNETIC LOGIC, AND RELATED DEVICES

Jean Anne Incorvia, Chair
University of Texas at Austin, Austin, TX

8:30

- AE-01. Composite storage layers with different magnetic and non-magnetic insertion.** *J. Chatterjee¹, R.C. Sousa¹, S. Auffret¹, C. Ducruet² and B. Diény¹* *1. Univ. Grenoble Alpes, CEA, CNRS, INAC-SPINTEC, Grenoble, France; 2. Crocus Technology, Grenoble, France*

8:42

- AE-02. Ferromagnetic Resonance Linewidth in Nanoscale Magnetic Tunnel Junctions.** *C. Sha¹ and I. Krivorotov¹* *1. Physics and Astronomy, University of California, Irvine, Irvine, CA*

8:54

- AE-03. Micromagnetic study of magnetization switching in double magnetic tunnel junctions.** *M. Carpentieri¹, R. Tomasello² and G. Finocchio³* *1. Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 2. Department of Engineering, Polo Scientifico Didattico di Terni, University of Perugia, Terni, Italy; 3. Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy*

9:06

- AE-04. Correction of phase errors in spin wave signals by nonadiabatic parametric pumping.** *R.V. Verba¹, M. Carpentieri², Y. Chen³, V. Tyberkevych⁴, G. Finocchio⁵, I. Krivorotov³ and A.N. Slavin⁴* *1. Institute of Magnetism, Kyiv, Ukraine; 2. Politecnico of Bari, Bari, Italy; 3. University of California, Irvine, Irvine, CA; 4. Oakland University, Rochester, MI; 5. University of Messina, Messina, Italy*

9:18

- AE-05. Interconnected MTJs driven by STT for spin-logic applications.** *M. Manfrini¹, A. Vaysset¹, D. Wan¹, E. Raymenants^{1,2}, J. Swerts¹, S. Rao, V.N.¹, L. Souriau¹, K. Babaei Gavan¹, N. Rassoul¹, D. Radisic¹, M. Cupak¹, M. Dehan¹, S. Sayan³, D.E. Nikonov³, S. Manipatruni³, I.A. Young³, D. Mocuta¹ and L.P. Radu¹* *1. Logic Technologies, Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. Intel Corporation, Portland, OR*

AE-06. Instant MTJ Switching for Logic Applications.

O. Bultynck^{1,2}, *M. Manfrini*¹, *T. Devolder*³, *A. Vaysset*¹,
*J. Swerts*¹, *C. Wilson*¹, *B. Sorée*^{1,2}, *M. Heyns*^{1,2}, *D. Mocuta*¹ and
*L.P. Radu*¹ *1. Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. Institut D'électronique Fondamentale, Orsay, France*

9:42

AE-07. Radical improvement of write efficiency in Voltage Control Spintronics Memory (VoCSM) by development of TaB spin-Hall electrode.

*Y. Kato*¹, *Y. Saito*¹, *H. Yoda*¹,
*N. Shimomura*¹, *S. Shirotori*¹, *S. Oikawa*¹, *M. Ishikawa*¹,
*T. Inokuchi*¹, *M. Shimizu*¹, *B. Altansargai*¹, *H. Sugiyama*¹,
*K. Koi*¹, *Y. Ohsawa*¹, *K. Ikegami*¹, *Y. Kamiguchi*¹, *A. Tiwari*¹
 and *A. Kurobe*¹ *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

9:54

AE-08. Wide operating window spin-torque majority gate towards large-scale integration of logic circuits.

*A. Vaysset*¹,
O. Zografos^{1,2}, *M. Manfrini*¹, *D. Mocuta*¹ and *L.P. Radu*¹
1. Logic Technologies, Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium

10:06

AE-09. Effect of capping layer material on interfacial anisotropy in MgO/CoFeB/Ta/CoFeB/MgO/capping layer structure.

*M. Bersweiler*¹, *H. Sato*¹, *E.I. Enobio*¹ and *H. Ohno*¹ *1. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

10:18

AE-10. Spin-wave dynamics in yttrium iron garnet nano-structures.

(Invited) *A. Chumak*¹, *Q. Wang*¹, *B. Heinz*¹, *M. Kewenig*¹,
*M. Schneider*¹, *T. Fischer*^{1,2}, *T. Meyer*¹, *B. Laegel*¹, *T. Löber*¹,
*P. Pirro*¹, *C. Dubs*³, *R.V. Verba*⁴ and *T. Brächer*¹ *1. University of Kaiserslautern, Kaiserslautern, Germany; 2. Graduate School Materials Science in Mainz, Mainz, Germany; 3. INNOVENT e.V., Jena, Germany; 4. Institute of Magnetism, Kyiv, Ukraine*

10:54

AE-11. Low Current, Fast and Reliable Spin-orbit Torque Switching of Tungsten-based Three-terminal Magnetic Tunnel Junctions with Hf Atomic Insertion Layers.

*S. Shi*¹,
*Y. Ou*¹, *S.V. Aradhya*², *D. Ralph*¹ and *R.A. Buhrman*²
1. Physics, Cornell University, Ithaca, NY; 2. Applied and Engineering Physics, Cornell University, Ithaca, NY

11:06

AE-12. A Deeply Scalable Spin-Orbit Magnetic Tunnel Junction with Sub-Nanosecond Switching Time.

*M. Kazemi*¹ and
M. Bocko^{1,2} *1. Electrical and Computer Engineering, University of Rochester, Rochester, NY; 2. Physics and Astronomy, University of Rochester, Rochester, NY*

- AE-13. Current-induced Switching in Cryogenic Spin-transfer Memory Elements for Superconducting Electronics.** *V. Sluka*¹, *L. Rehm*¹, *C. Hahn*¹, *G. Rowlands*², *T.A. Ohki*² and *A.D. Kent*¹ *1. Department of Physics, New York University, New York, NY; 2. Quantum Information Processing, BBN Technologies, Cambridge, MA*

TUESDAY
MORNING
8:30

ROOM 317-318

Session AF
RARE-EARTH BASED HARD MAGNETIC MATERIALS I

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

8:30

- AF-01. Characterization of the magnetic properties of NdFeB thick films exposed to elevated temperatures.** *R. Fujiwara*¹, *T. Devillers*¹, *D. Givord*¹ and *N. Dempsey*¹ *1. Institut Néel/ CNRS Grenoble, Université Grenoble Alpes, Grenoble, France*

8:42

- AF-02. Huge Magnetostrictive Properties of SmFe and SmFeB Thin Films at Low Fields.** *X. Liang*¹ and *C. Dong*¹ *1. Department of Electrical & Computer Engineering, Northeastern University, Boston, MA*

8:54

- AF-03. Site specific magnetic anisotropy in rare earth and transition metal based permanent magnetic materials.** *D. Paudyal*¹ *1. Ames Laboratory, Iowa State University, Ames, IA*

9:06

- AF-04. The Temperature Dependence of Magnetic Anisotropy of NdFeB Thin Films.** *T. Sato*^{1,2}, *R. Hashimoto*², *Y. Tanaka*², *S. Kenichi*², *Y. Enokido*², *K. Choi*² and *T. Suzuki*^{1,3} *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Materials Development Center, Technology & IP HQ, TDK Corporation, Ichikawa, Japan; 3. Departments of Electrical and Computer Engineering and Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL*

9:18

- AF-05. Thermally activated magnetization reversal in grain boundary diffused permanent magnets.** *T. Schrefl*¹, *J. Fischbacher*¹, *H. Sepehri-Amin*², *T. Ohkubo*² and *K. Hono*² *1. Danube University Krems, Wiener Neustadt, Austria; 2. Research Center for Magnetic and Spintronic Materials, NIMS, Tsukuba, Japan*

9:30

- AF-06. Anisotropic local hardening in hot-deformed Nd-Fe-B permanent magnets.** *S. Sawatzki*¹, *T. Schneider*¹, *M. Yi*¹, *E. Bruder*¹, *S. Ener*¹, *M. Schönfeld*², *K. Güth*² and *O. Gutfleisch*^{1,2} *1. TU Darmstadt, Darmstadt, Germany; 2. IWKS Fraunhofer-Projektgruppe für Wertstoffkreisläufe und Ressourcenstrategie, Hanau, Germany*

9:42

- AF-07. The variation of magnetic domains of hot-deformed Nd-Fe-B magnets by grain boundary diffusion Pr-Cu alloys.** *X. Tang*¹, *R. Chen*¹, *C. Jin*¹, *W. Yin*¹, *D. Lee*¹ and *A. Yan*¹ *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China*

9:54

- AF-08. First-principles study on the role of Nd₆Fe₁₃Ga in Nd-Fe-B magnets.** *Y. Tatetsu*¹, *S. Tsuneyuki*^{2,3} and *Y. Gohda*⁴ *1. Materials Science and Engineering, Tokyo Institute of Technology, Yokohama, Japan; 2. Physics, The University of Tokyo, Tokyo, Japan; 3. Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan; 4. Tokyo Tech, Yokohama, Japan*

10:06

- AF-09. High performance Ce-substituted Nd-Fe-B hot-deformed magnets.** *X. Tang*^{1,2}, *H. Sepehri-Amin*¹, *T. Ohkubo*¹ and *K. Hono*^{1,2} *1. National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*

10:18

- AF-10. Influence of Alignment Dependent Grain Boundary Composition Changes on Coercivity and Magnetic Reversal of Nd₂Fe₁₄B Magnets.** *J. Fischbacher*¹, *T. Schrefl*¹, *H. Sepehri-Amin*², *T. Ohkubo*² and *K. Hono*² *1. Danube University Krems, Wiener Neustadt, Austria; 2. Research Center for Magnetic and Spintronic Materials, NIMS, Tsukuba, Japan*

10:30

- AF-11. Magnetic properties of Pr-Fe-B based permanent magnets without critical elements.** *A. Pathak*¹ and *V.K. Pecharsky*^{1,2} *1. Ames Laboratory, USDOE, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

10:42

- AF-12. Coercivity enhancement of hot-pressed magnet prepared with HDDR Nd-Fe-B powders by diffusion of Pr-Cu eutectic alloys.** *T. Song*¹, *X. Tang*¹, *C. Jin*¹, *H. Wang*¹, *W. Yin*¹, *R. Chen*¹ and *A. Yan*¹ *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China*

10:54

- AF-13. Improved thermal stability of Nd-Ce-Fe-B sintered magnets by Y substitution.** *B. Peng*¹, *J. Jin*¹, *Y. Zhang*¹, *Y. Liu*¹, *T. Ma*¹ and *M. Yan*¹ *1. Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China*

11:06

- AF-14. The local coercivity of Nd-Fe-B sintered magnets from scanning soft x-ray magnetic circular dichroism microscopy measurements.** *D. Billington*¹, *K. Toyoki*¹, *H. Okazaki*¹, *Y. Kotani*¹, *S. Hirose*² and *T. Nakamura*^{1,2} *1. Research and Utilization Division, Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan; 2. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan*

11:18

- AF-15. Magnetic Domain Study Grain Boundary Diffusion Treated Nd-Fe-B Sintered Magnet with Ultrahigh Performance.** *D. Wu*¹, *M. Yue*¹, *W. Liu*², *Q. Wu*², *D. Zhang*² and *Q. Lu*² *1. Beijing University of Technology, Beijing, China; 2. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

TUESDAY
MORNING
8:30

ROOM 304-305

Session AG

BIOMAGNETIC APPLICATIONS I

Bethanie Stadler, Chair
University of Minnesota, Minneapolis, MN

8:30

- AG-01. Towards Quantitative Magnetic Particle Imaging: A Comparison with Magnetic Particle Spectroscopy.** *H. Paysen*¹, *J. Wells*¹, *O. Kosch*¹, *N. Loewa*¹, *U. Steinhoff*¹, *L. Trahms*², *T. Schäffter*² and *F. Wiekhorst*¹ *1. Metrology for Magnetic Nanoparticles, Physikalisch-Technische Bundesanstalt, Berlin, Germany; 2. Physikalisch-Technische Bundesanstalt, Berlin, Germany*

8:42

- AG-02. Magnetic Particle Imaging: Improvements offered by a separate receive coil for signal detection.** *J. Wells*¹, *H. Paysen*¹, *O. Kosch*¹, *J. Franke*², *L. Trahms*¹ and *F. Wiekhorst*¹ *1. Metrology for Magnetic Nanoparticles, Physikalisch-Technische Bundesanstalt, Berlin, Germany; 2. Preclinical Imaging Division, Bruker BioSpin MRI GmbH, Ettlingen, Germany*

8:54

- AG-03. Nano-size Ferrite Particles for Magnetic Resonance Imaging Thermometry.** *J.H. Hankiewicz*¹, *J.A. Stoll*², *J. Stroud*¹, *J. Davidson*¹, *K. Tvrdy*², *A. Roshko*³, *S. Russek*³, *K. Stupic*³ and *Z. Celinski*¹ *1. BioFrontiers, University Colorado Colorado Springs, Colorado Springs, CO; 2. Chemistry, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. National Institute of Standards and Technology, Boulder, CO*

9:06

- AG-04. Contrast enhancement with superparamagnetic nanoparticles in ultra-low field magnetic resonance imaging.** X. Yin^{1,2}, S.E. Russek¹, S. Liou² and J. Moreland¹ *1. NIST, Boulder, CO; 2. NCMN, University of Nebraska-Lincoln, Lincoln, NE*

9:18

- AG-05. Magnetically Targeted Delivery through Cartilage.** S. Jafari¹, L. Mair¹, S. Chowdhury¹, A. Nacev¹, R. Hilaman¹, P. Stepanov¹, J. Baker-McKee¹, S. Ijanaten¹ and I. Weinberg¹ *1. Weinberg Medical Physics, Inc, North Bethesda, MD*

9:30

- AG-06. Suppressing Turbulence and Reducing Blood Viscosity to Prevent Heart Attacks and Strokes.** K.M. Tawhid-Al-Islam¹, R. Tao^{1,2}, E. Du¹, H. Tang¹, X. Xu¹ and M.V. Autieri² *1. Department of Physics, Temple University, Philadelphia, PA; 2. Independence Blue Cross Cardiovascular Research Center, Lewis Katz School of Medicine, Temple University, Philadelphia, PA*

9:42

- AG-07. Development of magnet configurations for magnetic immunostaining.** M. Kaneko¹, S. Matsuda², M. Namita¹, S. Chikaki¹, A. Kuwahata¹, I. Saito³, S. Sakamoto⁴, M. Kusakabe^{1,5} and M. Sekino¹ *1. The University of Tokyo, Tokyo, Japan; 2. Keio University, Tokyo, Japan; 3. iMed Japan Inc., Tokyo, Japan; 4. Tokyo Institute of Technology, Tokyo, Japan; 5. Matrix Cell Research Institute Inc., Ibaraki, Japan*

9:54

- AG-08. Development of a device for quantifying magnetic nanoparticle tracers accumulating in sentinel lymph nodes.** A. Kuwahata¹, M. Kaneko¹, S. Chikaki¹, M. Kusakabe^{1,2} and M. Sekino¹ *1. The University of Tokyo, Tokyo, Japan; 2. Matrix Cell Research Institute Inc., Ibaraki, Japan*

10:06

- AG-09. Magnetic nanoparticles under AC fields for heat generation: how to estimate the local (individual-particle level) dissipated energy?** C. Munoz-Menendez^{1,2}, D. Serantes^{1,2}, S. Ruta², O. Hovorka³, K. Livesey⁴, O. Chubykalo-Fesenko⁵, D. Baldomir¹ and R. Chantrell² *1. Instituto de Investigaciones Tecnológicas and Departamento de Física Aplicada, Universidade de Santiago de Compostela, Santiago de Compostela, Spain; 2. Department of Physics, University of York, York, United Kingdom; 3. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 4. Department of Physics and UCCS Biofrontiers Center, University of Colorado at Colorado Springs, Colorado Springs, CO; 5. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*

10:18

- AG-10. Highly Dense Arrays of 1D-Magnetic Flux Micro-concentrators in PDMS Membranes for Lab on Chip.** S. Mekkaoui¹, D. Le Roy², V. Dupuis², J. Degouttes¹ and A. Deman¹ 1. *Institut des Nanotechnologies de Lyon, Lyon, France*; 2. *Institut Lumière Matière, Villeurbanne, France*

10:30

- AG-11. Fine-tuning the manipulation of micro-to-nano biomedical flows by thin film microelectromagnet traps.** V. Silverio¹, M. Amaral², J. Gaspar², S. Cardoso^{1,3} and P. P. Freitas^{1,2} 1. *INESC Microsystems and Nanotechnologies, Lisboa, Portugal*; 2. *International Iberian Nanotechnology Laboratory, Braga, Portugal*; 3. *Department of Physics, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal*

10:42

- AG-12. Effect of Transcranial Magnetic Stimulation on Parkinsonian Neurons.** F. Syeda¹, A. El-Gendy^{1,2}, A. Pandurangi³, K. Holloway⁴, D. Kumbhare^{4,6}, M. Baron^{7,5} and R.L. Hadimani¹ 1. *Mechanical and Nuclear Engineering, Virginia Commonwealth University, Glen Allen, VA*; 2. *Physics Department, University of Texas at El Paso, El Paso, TX*; 3. *Department of Psychiatry, Virginia Commonwealth University, Richmond, VA*; 4. *Department of Neurosurgery, Virginia Commonwealth University, Richmond, VA*; 5. *Department of Neurology, Virginia Commonwealth University, Richmond, VA*; 6. *McGuire Research Institute, Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA*; 7. *Southeast PD Research, Education and Clinical Center (PADRECC), Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA*

10:54

- AG-13. Flexible Coil for Transcranial Magnetic Stimulation.** P. Tuovinen^{1,2}, Y. Kawasaki¹ and M. Sekino¹ 1. *The University of Tokyo, Tokyo, Japan*; 2. *Aalto University, Espoo, Finland*

TUESDAY
MORNING
8:30

ROOM 401-402

Session AH
STRAIN-MEDIATED MULTIFERROIC
HETEROSTRUCTURES

Hao Zeng, Chair
University at Buffalo, SUNY, Buffalo, NY

8:30

- AH-01. Strain-induced magnetic properties of micro-scale artificial magnets on ferroelectric LiNbO₃ substrate.** A. Yamaguchi¹, K. Ueda¹, T. Nakazima¹, Y. Utsumi¹, T. Ohkochi², A. Yasui², T. Kinoshita² and K. Yamada³ 1. *Laboratory of Advanced Science and Technology for Industry, University of Hyogo, Ako-gun, Japan*; 2. *JASRI/SPring-8, Sayo, Japan*; 3. *Gifu University, Gifu, Japan*

8:42

- AH-02. Exchange-mediated Rotation Coherence in Magnetostrictive / Non-magnetostrictive Strain-coupled Multiferroics.** M.E. Jamer¹, C.R. Rementer², A. Barra³, D.B. Gopman⁴, A. Grutter¹, B.J. Kirby¹, G. Carman³, J. Borchers¹ and J.P. Chang² 1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Chemical and Biomolecular Engineering, UCLA, Los Angeles, CA; 3. Mechanical Engineering, University of California, Los Angeles, Los Angeles, CA; 4. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD

8:54

- AH-03. Modeling of Strain-Mediated Magnetoelectric Coupling in Multiferroic Composite Films Enhanced by Patterned Interfaces.** Y. Alvandi-Tabrizi^{1,2} and J. Schwartz² 1. Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC; 2. Materials Science and Engineering, North Carolina State University, Raleigh, NC

9:06

- AH-04. Polarized Neutron Reflectometry Study of Strain Induced Magnetization Variation along the Thickness of Co Thin Films on a PMN-PT Substrate.** M. Al-Rashid^{1,2}, B.J. Kirby³ and J. Atulasimha^{2,1} 1. Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. NIST Center for Neutron Research, Gaithersburg, MD

9:18

- AH-05. Enhancement of coupling efficiency of ferroelectric to magnetoelastic thin film via interposing thin film polymer.** Z. Xiao¹, M.K. Panduranga², R. Lo Conte³, H. Sohn¹, J. Bokor³, G. Carman² and R.N. Candler^{1,4} 1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Mechanical & Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA; 4. California NanoSystems Institute, Los Angeles, CA

9:30

- AH-06. Reversible Modulation of Magnetic Anisotropy in $\text{Pb}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3 / \text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3$ Multiferroic Heterostructures.** A.K. Rajapitamahuni¹, L. Tao¹, E.Y. Tsymbal¹ and X. Hong¹ 1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE

9:42

- AH-07. Voltage Control of Monopoles in an Artificial Spin Ice.** A.C. Chavez¹, A. Barra¹ and G. Carman¹ 1. Mechanical Engineering, University of California, Los Angeles, Los Angeles, CA

- AH-08. Microscale multi-level characterization of a composite multiferroic system.** *R. Lo Conte*¹, *Z. Xiao*², *C. Stan*³, *M.E. Nowakowski*¹, *H. Sohn*², *J. Gorchon*^{1,4}, *A. El-Ghazaly*¹, *A. Scholl*³, *N. Tamura*³, *G. Carman*⁵, *R.N. Candler*² and *J. Bokor*¹ *1. EECS, University of California, Berkeley, Berkeley, CA; 2. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. ALS, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Lawrence Berkeley National Lab, Berkeley, CA; 5. Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

10:06

- AH-09. Epitaxial growth of magnetostrictive/piezoelectric heterostructures.** *K. Dumesnil*^{1,2}, *V. Polewczyk*^{1,2}, *A. Hillion*^{1,2} and *M. Hehn*^{1,2} *1. Institut Jean Lamour, Nancy, France; 2. CNRS, Université de Lorraine, Nancy, France*

10:18

- AH-10. Magnetoelectric coupling properties of Ni/ BiFeMnO₃ thin film structures.** *B. Negulescu*¹, *C. Daumont*¹, *C. Autret*¹ and *J. Wolfman*¹ *1. GREMAN, University of Tours, Tours, France*

10:30

- AH-11. Multiferroic oxide nanocomposites with rhombohedral and tetragonal bismuth ferrite.** *S. Ojha*¹, *S. Ning*¹ and *C. Ross*¹ *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

10:42

- AH-12. Texture-induced Anisotropy in the Magneto-electric Coupling Response of Multiferroic Composites.** *S. Bourn*¹, *T. Mercer*^{1,2}, *P. Bissell*¹, *S. Lepadatu*¹ and *M. Vopson*³ *1. Jeremiah Horrocks Institute for Mathematics, Physics & Astronomy, University of Central Lancashire, Preston, United Kingdom; 2. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 3. Faculty of Science, University of Portsmouth, Portsmouth, United Kingdom*

10:54

- AH-13. Dielectric, Magnetic and Magnetoelectric Properties of Lead-free Multiferroic (0.94Na_{0.5}Bi_{0.5}TiO₃-0.06BaTiO₃)/ NiFe₂O₄ Composites.** *N. Simhachalam*¹ *1. Physics, Osmania University, Hyderabad, India*

11:06

- AH-14. Large strain control of magnetization in heterostructural composites with PIN-PMN-PT.** *M. Staruch*¹, *K. Bussmann*² and *P. Finkel*² *1. Materials Science and Technology, Naval Research Laboratory, Washington, DC; 2. Naval Research Laboratory, Washington, DC*

11:18

- AH-15. Single Input Straintronics for Micro / Nanoscale Antennas and Motors.** *J.P. Domann*¹ *1. Biomedical Engineering and Mechanics, Virginia Tech, Blacksburg, VA*

Session AI
TRANSFORMERS AND INDUCTORS I

Julien Dugay, Chair
University of Valencia (ICMOL, Institute of Molecular Science),
Paterna, Spain

8:30

- AI-01. **Bubble Inductors: Pneumatic Tuning of a Stretchable Inductor.** *N. Lazarus¹ and S. Bedair¹ 1. Sensors and Electron Devices Directorate, US Army Research Laboratory, Adelphi, MD*

8:42

- AI-02. **Effectiveness Optimization of DCSFCL Combining Different Magnetic Materials and Topologies.** *J. Yuan¹, H. Zhou¹, Y. Zhong¹, P. Gan¹, Y. Gao², K. Muramatsu² and B. Chen¹ 1. Electrical and Engineering, Wuhan University, Wuhan, China; 2. Electrical and Electronic Engineering, Saga University, Saga, Japan*

8:54

- AI-03. **Soft magnetic characteristics of laminated magnetic block cores assembled with a high Bs Fe-based nanocrystalline alloy.** *A. Yao¹, K. Tsukada¹, M. Inoue² and K. Fujisaki¹ 1. Toyota Technological Institute, Nagoya-city, Japan; 2. Hitachi Metals, Ltd., Tottori, Japan*

9:06

- AI-04. **Integrated Voltage Tunable RF Magnetolectric Inductors.** *H. Chen¹, X. Wang¹, Y. Gao², X. Shi² and N.X. Sun^{1,2} 1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Winchester Technologies, LLC., Burlington, MA*

9:18

- AI-05. **Metal Amorphous Nanocomposite Alloy Cores with Spatially Tuned Permeability for Advanced Power Magnetics Applications.** *K. Byerly^{1,2}, P. Ohodnicki¹, M.E. McHenry³, S. Simizu³, A. Leary⁴, V. Keylin⁴, R. Noebe⁴ and R. Bowman⁴ 1. National Energy Technology Laboratory, Pittsburgh, PA; 2. AECOM, Pittsburgh, PA; 3. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 4. NASA Glenn Research Center, Cleveland, OH*

9:30

- AI-06. **A double-helix and cross-patterned solenoid used in wirelessly powered receiver for implants.** *S. Mao¹, H. Wang¹, Z. Mao¹ and M. Sun^{1,2} 1. Department of Electrical & Computer Engineering, University of Pittsburgh, Pittsburgh, PA; 2. Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA*

- AI-07. Modeling of High Voltage and High Frequency 3 Phase Transformer for Solid State Transformer Application Studied by Finite Element Analysis.** *M. Nazmunnahar¹, S. Simizu¹, P. Ohodnicki², S. Bhattacharya³ and M.E. McHenry¹*
1. Materials Science and Engineering Department, Carnegie Mellon University, Pittsburgh, PA; 2. National Energy Technology Laboratory, Pittsburgh, PA; 3. Electrical Engineering, North Carolina State University, Raleigh, NC

- AI-08. Power Inductor Design Based on Tunable Low Permeability Anisotropic Core Materials.** *S. Simizu¹, A. Leary², V. Keylin², P. Ohodnicki³ and M.E. McHenry¹*
1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Glenn Research Center, NASA, Cleveland, OH; 3. National Energy Technology Laboratory, Pittsburgh, PA

- AI-09. Physics of Leakage Flux and Induced Eddy Currents in Power Magnetics Components.** *R.B. Beddingfield¹, S. Bhattacharya¹ and P. Ohodnicki²*
1. Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC; 2. National Energy Technology Laboratory, Pittsburgh, PA

- AI-10. A Novel Three-phase Saturated-core Fault Current Limiter.** *J. Yuan¹, P. Gan¹, H. Zhou¹, Y. Zhong¹, Y. Gao², K. Muramatsu² and B. Chen¹*
1. Electrical and Engineering, Wuhan University, Wuhan, China; 2. Electrical and Electronic Engineering, Saga University, Saga, Japan

- AI-11. A miniature implantable coil that can be wrapped around a tubular organ within the human body.** *S. Mao¹, H. Wang¹, Z. Mao¹ and M. Sun^{1,2}*
1. Department of Electrical & Computer Engineering, University of Pittsburgh, Pittsburgh, PA; 2. Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA

- AI-12. Magnetic Measurement and Modelling of Silicon Steel under 3D SVPWM Excitation.** *C. Zhang¹, Y. Li¹, R. Qu¹, T. Ben¹ and Q. Yang²*
1. Hebei University of Technology, TIANJIN, China; 2. Tianjin Polytechnic University, Tianjin, China

- AI-13. Modeling of Grain Oriented Si-steel and Amorphous Alloy Iron Core under Ferroresonance Using Jiles-Atherton Hysteresis Method.** *M. Zou¹, W. Sima¹, M. Yang¹, Q. Yang¹ and D. Peng¹*
1. School of Electrical Engineering, Chongqing University, Chongqing, China

Session AP
FERRITES AND GARNETS I
(Poster Session)

Tianxiang Nan, Chair
University of Wisconsin-Madison, Madison, WI

- AP-01. Properties of Dynamic Magnetic Loss of Ferrite.**
H. Saotome¹, K. Azuma¹, H. Kizuka¹ and T. Tanaka¹ 1. Chiba University, Chiba, Japan
- AP-02. Effect of Substrate Temperature on Magnetic Properties of Highly c-axis Oriented Ni_{0.65}Zn_{0.35}Fe₂O₄ Thin Films.**
D.K. Pradhan^{1,2}, S. Kumari², R. Katiyar² and R. Cohen¹ 1. Geophysical Laboratory, Washington, VA; 2. Physics, University of Puerto Rico, San Juan, PR
- AP-03. An easy way to increase the resonance frequency of CoFe₂O₄ nanocubics.** *N. Song¹, S.Z. Gu¹, J. Zhou², W. Wang¹, Q. Wu³, Y. Ming³, H. Yang² and Z.H. Cheng² 1. College of Science, Beijing University of Chemical Technology, Beijing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*
- AP-04. Mössbauer studies of Zn doped NiFe₂O₄ nanoparticles with bio-plasma treatment as hyperthermia application.** *H. Choi¹, H. Kim² and C. Kim¹ 1. Department of Physics, Kookmin University, Seoul, The Republic of Korea; 2. Basic Materials & Chemicals R&D Center, LG Chem Research Park, Daejeon, The Republic of Korea*
- AP-05. Tuning magnetic properties of MgCuZn ferrites via CoO doping.** *J. Liu¹, W. Liu¹, Z. Zhang¹, H. Jia¹, Y. Nie¹, X. Wang¹ and R. Gong¹ 1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- AP-06. Patterning and Substrate Effects on Coercivity for Cobalt Ferrite and Nickel Ferrite.** *A. Cruz¹ and J. Schwartz¹ 1. Materials Science, North Carolina State University, Raleigh, NC*
- AP-07. New effective parameter synthetically evaluate the high permeability, broad frequency band of low loss NiCuZn ferrite.** *W. Liu¹, Z. Zhang¹, F. Chen¹, H. Luo¹, Z. Feng¹, X. Wang¹, R. Gong¹ and Y. Nie¹ 1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- AP-08. Investigation of spin reorientation in Ga substituted Ba₂Co_{1.5}Mg_{0.5}Fe_{11.88}Ga_{0.12}O₂₂ Y-type hexaferrite based on Mössbauer spectroscopy.** *J. Lim¹ and C. Kim¹ 1. Kookmin University, Seoul, The Republic of Korea*

- AP-09. Effect of Substrate Temperature on Magnetic Properties of MnFe_2O_4 Thin Films.** P. Rajagiri¹, B. Sahu¹, N. Venkataramani², S. Prasad¹ and R. Krishnan³ 1. *Physics, IIT Bombay, Mumbai, India*; 2. *Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai, India*; 3. *Retired Scientist, CNRS/Universite de Versailles-St-Quentin, Versailles Cedex, France*
- AP-10. Effect of Temperature and Pressure on the Magnetic Properties of Soft Magnetic Materials.** L. Xiao¹ 1. *Harbin Institute of Technology, Harbin, China*
- AP-11. Tunable Magnetic and Dielectric Properties of Z-type Barium Hexaferrites with Nano-sized ZnAl_2O_4 Additions.** Z. Zheng¹, Q. Feng¹ and V.G. Harris² 1. *School of Information Science and Technology, Southwest Jiaotong University, Chengdu, China*; 2. *Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*
- AP-12. Withdrawn**
- AP-13. Hysteresis-free Highly Magnetostrictive Ceramics.** A. Lisfi¹, S. Pokharel¹, O. Akioya¹ and M. Wuttig² 1. *Physics, Morgan State University, Baltimore, MD*; 2. *Materials Science and Engineering, University of Maryland, College Park, MD*
- AP-14. Effect of different capping layer on the Gilbert damping of polycrystalline YIG thin film.** S. Pati¹ and Y. Endo^{1,2} 1. *Department of Electrical Engineering, Tohoku University, Sendai, Japan*; 2. *Center for Spintronics Research Network, Tohoku University, Sendai, Japan*
- AP-15. Hyperthermia and magnetic properties of $\text{CoFe}_2\text{O}_4/\text{MgFe}_2\text{O}_4$ core/shell structure nanoparticles.** J. Park¹, S. Kim¹ and C. Kim¹ 1. *Kookmin University, Seoul, The Republic of Korea*
- AP-16. Modeling of Rotational Magnetic Properties of Soft Magnetic Composite Materials.** W. Xu¹, N. Duan², Y. Li³, S. Wang², Y. Guo⁴ and J. Zhu⁴ 1. *State Grid Shaanxi Electric Power Company Economic Research Institute, Xi'an, China*; 2. *Xi'an Jiaotong University, Xi'an, China*; 3. *Hebei University of Technology, Tianjin, China*; 4. *School of Electrical Engineering, University of Technology Sydney, Sydney, NSW, Australia*

Session AQ
AMORPHOUS AND NANOCRYSTALLINE
MATERIALS I
(Poster Session)

Peng Li, Chair
Huazhong University of Science & Technology, Wuhan, China

- AQ-01. Refined nanograin structures in constrained small-sized cylindrical geometry magnetic nanowires.** H. Chiriac¹, N. Lupu¹, G. Stoian¹, G. Ababei¹, S. Corodeanu¹ and T.A. Ovari¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- AQ-02. Two-dimensional Magnetic Properties of Nanocrystalline Soft Magnetic Materials.** L. Chen¹, Y. Wang¹, C. Liu¹ and H. Zhao¹ *1. Hebei University of Technology, Tianjin, China*
- AQ-03. The evolution of in-plane magnetic anisotropy in CoFeB/GaAs(001) films annealed at different temperatures.** H. Tu^{1,2}, J. Wang¹, L. Wei¹, Y. Yuan¹, W. Zhang¹, B. You¹ and J. Du¹ *1. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China; 2. Department of Mathematics and Physics, Nanjing Institute of Technology, Nanjing, China*
- AQ-04. Ferromagnetic Alloy Material CoFeC with High Thermal Tolerance and Perpendicular Magnetic Anisotropy in MgO/CoFeC/Pt Structure.** S. Chen¹, J. Zhou¹, W. Lin¹, J. Yu¹, R. Guo¹, F. Poh², D. Shum² and J. Chen¹ *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Globalfoundries(Woodland), Singapore, Singapore*
- AQ-05. Synthesis of superparamagnetic Ni/C hybrid nanoparticles for waste water treatment.** T. Kim¹, H. Song¹, H. Lee¹, H. Shim¹ and D. Kim¹ *1. School of Civil, Environmental and Architectural Engineering, Korea University, Seoul, The Republic of Korea*
- AQ-06. Improving magnetic properties of amorphous metallic composites with various particle sizes for high-frequency applications.** J. Yeo¹, S. An², J. Kim², S. Lee¹, D. Kim¹, H. Kim¹ and B. Lee¹ *1. Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies, Yongin-si, The Republic of Korea; 2. Samsung Electronics, Suwon-si, The Republic of Korea*
- AQ-07. Improving power inductor performance using Fe-powder-added amorphous soft magnetic composites.** J. Yeo¹, S. An², J. Kim², S. Lee¹, D. Kim¹, H. Kim¹ and B. Lee¹ *1. Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies, Yongin-si, The Republic of Korea; 2. Samsung Electro-Mechanics, Gyeonggi-do, The Republic of Korea*

- AQ-08. Torque Influence on Domain Wall Velocity in Magnetic Glass Coated Microwires.** S. Corodeanu¹, H. Chiriac¹, A. Damian¹, N. Lupu¹ and T.A. Ovari¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- AQ-09. High Anisotropy, Low Coercivity Variants of Ultrathin BCC and FCC Fe Films on Si (111).** M. Loving¹ and T. Ambrose² *1. Advanced Concepts & Technologies, Northrop Grumman Corporation, Linthicum, MD; 2. Northrop Grumman Corporation, Linthicum, MD*
- AQ-10. Effect of Ti addition on structure and soft magnetic properties of Si-rich Fe-based nanocrystalline alloys.** Y. Jia¹, Z. Wang¹, F. Wang², L. Zhang¹ and H. Duan¹ *1. School of Science, Tianjin University, Tianjin, China; 2. School of Materials Science and Engineering, Tianjin University, Tianjin, China*
- AQ-11. Investigation on high-temperature magnetic properties of nanocrystalline $\text{Fe}_{72.7-x}\text{Co}_x\text{Al}_{0.8}\text{Si}_{17.5}\text{B}_5\text{Cu}_1\text{Nb}_{3-y}\text{Ge}_y$ alloys ($x = 4, 8, y = 0, 0.4$).** H. Duan¹, Z. Wang¹, Z. Xie¹ and Y. Jia¹ *1. School of Science, Tianjin University, Tianjin, China*
- AQ-12. Broadband Strip-line Ferromagnetic Resonance Spectroscopy of Soft Magnetic CoFeZrTa Patterned Thin Films in the Frequency Domain.** S. Gupta¹, T. Jin¹, S. Bhatti¹, W. Law¹, W. Lew¹ and S.N. Piramanayagam¹ *1. Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*
- AQ-13. Interstitial Atomic Effect on Layered Compounds $\text{RMn}_{1.7}\text{Cr}_{0.3}\text{Si}_2$ (R=Nd, Sm, Dy).** Y. Lai^{1,2}, K. Li^{1,2}, G. Qiao^{1,2}, H. Zhao^{1,2}, W. Yang^{1,2}, J. Yang^{1,2} and H. Du^{1,2} *1. State Key Laboratory for Mesoscopic Physics, School of Physics, Peking University, Beijing, China; 2. Beijing Key Laboratory for Magnetolectric Materials and Devices, Peking University, Beijing, China*
- AQ-14. Electroplated Fe-Ni-Co Films Prepared in Ammonium-Chloride-Based Plating Baths.** K. Koda¹, J. Kaji¹, H. Aramaki¹, K. Eguchi¹, K. Takashima¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ *1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan*
- AQ-15. Magnetoimpedance studies of NiFe films electrodeposited on Cu, Ag and Ni microwires.** V. Srinivas¹ and K. Roy¹ *1. Department of Physics, Indian Institute of Technology Madras, Chennai, India*
- AQ-16. Dynamic magnetization-related properties of uniform Magnetite nanorods.** H. Yang¹, S. He², J. Zhou¹ and Z.H. Cheng¹ *1. Institute of Physics, Beijing, China; 2. Capital Normal University, Beijing, China*

Session AR
NANOPARTICLES AND NANOWIRES
(NOT IN ARRAYS) I
(Poster Session)

Zoe Boekelheide, Chair
Lafayette College, Easton, PA

- AR-01. Phenomenology of magnetic nucleation in rapidly solidified cylindrical amorphous nanowires.** *T.A. Ovari*¹, C. Rotarescu¹, N. Lupu¹ and H. Chiriac¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- AR-02. Application of Radical Pair Model to Drug Release Controlling of Liposomal Nanoparticles under Exposure to Magnetic Fields.** *H. Nakagawa*¹ and M. Ohuchi¹ *1. Department of Electrical and Electronic Engineering, Tokyo Denki University, Tokyo, Japan*
- AR-03. Magnetic Anisotropy Manipulation In Iron Nitride Nanoflakes.** *Q. Wu*¹, N. Song², Y. Li¹, Z. Qu¹, M. Xu¹ and M. Yue¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. College of Science, Beijing University of Chemical Technology, Beijing, China*
- AR-04. CoFe₂O₄ Nanoparticles: Magnetocrystalline and Surface Component of Anisotropy.** A. Omelyanchik¹, M. Salvador², C. Cannas³, D. Fiorani^{1,4}, A. Musinu³, M. Rivas², V. Rodionova¹, G. Varvaro⁴ and D. Peddis⁴ *1. Innovation Park & Physical-Technical Institute, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation; 2. Physics Department, Universidad de Oviedo, Gijón, Spain; 3. Università di Cagliari, Cagliari, Italy; 4. ISM-CNR, Monterotondo, Italy*
- AR-05. Structure and magnetic properties of Mn₃Ga₂ nanoparticles prepared by direct reaction between Mn nanoparticles and Ga.** P. Si^{1,2}, H. Qian¹, C. Choi¹, H. Ge², J. Park¹ and K.P. Shinde¹ *1. Functional Nanopowder Material Department Powder&Ceramic Division, Korea Institute of Materials Science, Changwon, The Republic of Korea; 2. College of Materials Science and Engineering, China Jiliang University, Hangzhou, China*
- AR-06. Magnetic Properties of Nickel Carbide Nanoparticles with Enhanced Coercivity.** *M. Xing*¹, J. Mohapatra¹ and P. Liu¹ *1. Physics, University of Texas at Arlington, Arlington, TX*
- AR-07. Structural and magnetic properties of Cobalt ferrite nanoparticles synthesized by co-precipitation at increasing temperatures.** *C.R. Stein*^{1,2}, G.H. Holanda¹, M.T. Bezerra¹, D.D. Ferreira¹, J.A. Filho² and P.C. Morais^{2,3} *1. Physical, Federal Institute of Rondônia, Porto Velho, Brazil; 2. Institute of Physics, University of Brasília, Brasilia, Brazil; 3. School of Chemistry and Chemical Engineering, Anhui University, Hefei, China*

- AR-08. Extrinsic pinning of domain walls in CoFeB nanowires.** X. Zhang^{1,2}, N. Vernier², W. Zhao¹, L. Vila³ and D. Ravelosona⁴
1. Beihang University, Beijing, China; 2. Université Paris-Sud, Orsay, France; 3. Spintec, Institut Nanosciences et Cryogenie, Grenoble, France; 4. Institut d'Electronique Fondamentale, Orsay, France
- AR-09. Electromagnetic characteristics of silver/iron nanowire composite absorbers at X-band frequencies.** R. Yang¹, W. Liang¹, C. Chen², L. Ho¹, Y. Huang³, H. Lin³ and C. Lin⁴
1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Ph.D. Program of Mechanical and Aeronautical Engineering, Feng Chia University, Taichung, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 4. School of Dental Technology, Taipei Medical University, Taipei, Taiwan
- AR-10. Influence of Anisotropy on the Magnetic Properties of Nanoparticles that are Frozen or Free to Rotate.** G. Sitbon¹ and W. Schwarzacher¹
1. School of Physics, University of Bristol, Bristol, United Kingdom
- AR-11. Micromagnetic model of the anisotropy energy of nanoparticles composed of parallelepiped-shaped grains.** J. Miller¹ and Z. Boekelheide¹
1. Lafayette College, Easton, PA
- AR-12. Synthesis and Properties of FeCo-Based Anisotropic Magnetic Nanocomposites.** Y. Zhang¹, A.M. Aragon¹, M. Ahmed¹, Y. Xie¹, J. Wang², M. Puga¹ and K. Gao¹
1. Energy Systems Division, Argonne National Laboratory, Lemont, IL; 2. Nanoscience & Technology Division, Argonne National Laboratory, Lemont, IL
- AR-13. Fitting Magnetization Versus Temperature Curves to Characterize Magnetic Nanoparticles: A New Method.** K. Livesey¹, S. Ruta², N.R. Anderson¹, D. Baldomir³, R. Chantrell² and D. Serantes^{3,2}
1. Physics & Biofrontiers Center, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Physics, The University of York, York, United Kingdom; 3. Fisica Aplicada, Universidade de Santiago de Compostela, Santiago de Compostela, Spain
- AR-14. Magnetization reversal mechanism for Co nanoparticles revealed by a magnetic hysteresis scaling technique.** S. Kobayashi¹, T. Sato¹, Z. Li², Z. Dong² and T. Murakami¹
1. Iwate University, Morioka, Japan; 2. Dalian University of Technology, Dalian, China
- AR-15. Study of magnetic behavior of Fe doped HfO₂.** R. Singhal¹, A. Omidwar¹, N. Kumar², P.K. Lemaire¹ and R. Katiyar²
1. Physics and Engineering Physics, Central Connecticut State University, New Britain, CT; 2. Physics, University of Puerto Rico, San Juan, PR
- AR-16. Magnetization properties study in nanoparticles of Cu_{1-x}Ni_xCr₂O₄ normal spinel.** T.T. Gurgel^{1,2}, N.O. Salazar¹, J.M. Soares³ and M.M. Torres⁴
1. Physics, UFS, São Cristovão, Brazil; 2. Physics, UFMA, São Bernardo, Brazil; 3. Physics, UERN, Mossoró, Brazil; 4. Physics, UFRN, Natal, Brazil

Session AS
STRUCTURED MATERIALS
(Poster Session)

Peter Fischer, Co-Chair

Lawrence Berkeley National Laboratory, Berkeley, CA

Sujoy Roy, Co-Chair

Lawrence Berkeley National Laboratory, Berkeley, CA

- AS-01. Magneto-transport effect in amorphous CoSiB multilayer films.** *H. Lee*¹ *1. Sejong University, Seoul, The Republic of Korea*
- AS-02. Magnetization and domain configuration on patterned arrays of Co/Pd nanowires.** *J.C. Denardin*¹, *Y. Vega*¹, *B. Zuñiga*¹, *J. Escrig*¹, *S. Oyarzún*¹ and *J.L. Palma*²
1. Departamento de Física, Universidad de Santiago Chile, Santiago, Chile; 2. Universidad Central, Santiago, Chile
- AS-03. Tuning the GMR in pseudo spin valves by using nanomodulated substrates.** *J.C. Denardin*¹, *S. Michea*¹, *S. Oyarzún*¹ and *F. Aranedá*¹ *1. Departamento de Física, Universidad de Santiago, Santiago, Chile*
- AS-04. Magnetic properties of Mn-Ga multilayered thin films.** *H. Makuta*¹, *T. Shima*¹ and *M. Doi*¹ *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*
- AS-05. Speeding Up Nanomagnetic Logic By DMI Enhanced Co/Ir/Pt Films.** *G. Ziemys*¹, *V. Ahrens*¹, *G. Csaba*² and *M. Becherer*³
1. Chair of Technical Electronics, Technical University of Munich, Munich, Germany; 2. Faculty of Information Technology and Bionics, Pazmany Peter Catholic University, Budapest, Hungary; 3. Chair of Nanoelectronics, Technical University of Munich, Munich, Germany
- AS-06. Effect of Annealing on Magnetic Properties of Co/Ni Multilayers Grown on a Cu Seed Layer.** *C. Coutts*¹, *M. Arora*¹, *T. McKinnon*¹, *B. Heinrich*¹ and *E. Girt*¹ *1. Physics, Simon Fraser University, Burnaby, BC, Canada*
- AS-07. Novel RKKY coupling layer for thermally robust and ultra-thin perpendicular magnetic tunnel junction stack.** *J. Chatterjee*¹, *R.C. Sousa*¹, *S. Auffret*¹ and *B. Diény*¹ *1. Univ. Grenoble Alpes, CEA, CNRS, INAC-SPINTEC, Grenoble, France*
- AS-08. Spin Wave Dynamics in Two-Dimensional Nanoscale Bi-component Magnonic Crystal.** *S. Choudhury*¹, *S. Pan*¹, *S. Mondal*¹, *J. Sinha*¹, *Y. Otani*^{2,3} and *A. Barman*¹ *1. Condensed Matter Physics and Material Sciences, S. N Bose National Centre for Basic Sciences, Kolkata, India; 2. Institute for Solid State Physics, Kashiwa, Japan; 3. Riken-CEMS, Wako, Japan*
- AS-09. Stress-induced anisotropy in Ni nanorings.** *D.A. Allwood*¹, *J. Pitcairn*¹, *J.D. Wheelwright*¹, *C. Bilbao Blanco*¹ and *P.W. Fry*¹
1. University of Sheffield, Sheffield, United Kingdom

- AS-10. Micromagnetic Modeling of Domain Switching in Magnetic Thin Films with Periodic Surface Features.** *Y. Alvandi-Tabrizi*^{1,2} and *J. Schwartz*² *1. Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC; 2. Materials Science and Engineering, North Carolina State University, Raleigh, NC*
- AS-11. Stress manipulation of exchange bias in FeCo/IrMn multilayers system grown on flexible substrate.** *Z. Zhang*¹, *Z. Xu*¹, *X. Li*¹, *E. Liu*¹ and *F. Xu*¹ *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China*
- AS-12. Perpendicular Magnetic Anisotropy and Room Temperature Perpendicular Exchange Bias in CoNi/(Co,Ni)O Multilayer Films.** *H. Gao*¹, *T. Harumoto*¹, *Y. Nakamura*¹ and *J. Shi*¹ *1. School of Materials and Chemical Engineering, Tokyo Institute of Technology, Tokyo, Japan*
- AS-13. Structural and magnetic properties of Mn₃GaN_{1-x} thin films and bilayers.** *T. Hajiri*¹, *H. Gotoh*¹, *S. Ishino*¹, *J. So*¹ and *H. Asano*¹ *1. Department of Material Physics, Nagoya University, Nagoya, Japan*
- AS-14. Giant Perpendicular Exchange Bias with Antiferromagnetic MnN.** *P. Zilske*¹ and *M. Meinert*¹ *1. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*
- AS-15. Unexpected new insights to the nature of exchange bias in Co/FeMn using detailed XMCD.** *P. Audehm*¹, *M. Schmidt*¹, *G.A. Schuetz*¹ and *E.J. Goering*¹ *1. Modern Magnetic Systems, Max-Planck-Institut for Intelligent Systems, Stuttgart, Germany*
- AS-16. Study of Temperature Dependence of Exchange Bias in (NiFe/IrMn)_n Multilayer Films through Static and Dynamic Techniques.** *D.J. Adams*¹, *M. Khan*¹, *S. Khanal*¹, *A. Maksymov*² and *L. Spinu*¹ *1. AMRI/Physics, University of New Orleans, New Orleans, LA; 2. AMRI, University of New Orleans, New Orleans, LA*

TUESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session AT
DOMAIN WALL AND VORTEX DYNAMICS I
(Poster Session)

Valentyn Novosad, Chair
Argonne National Laboratory, Argonne, IL

- AT-01. Efficient and controlled current-driven domain wall jumps along ratchet strips.** *L. Sánchez-Tejerina*¹, *E. Martinez*², *V. Raposo*² and *O. Alejos*¹ *1. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain; 2. Física Aplicada, Universidad de Salamanca, Salamanca, Spain*

- AT-02. Domain Wall Dynamics in a Curved Magnetic Nanowire.** R. Moreno¹, V. Carvalho-Santos², A. Espejo³, D. Laroze⁴, O. Chubykalo-Fesenko¹ and D. Altbir³ 1. *Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*; 2. *Instituto Federal de Educação, Ciência e Tecnologia Baiano, Senhor do Bonfim, Brazil*; 3. *Departamento de Física, CEDENNA, Universidad de Santiago de Chile, Santiago, Chile*; 4. *Instituto de Alta Investigación, CEDENNA, Universidad de Tarapacá, Arica, Chile*
- AT-03. Effect of Thermal Fluctuations on Hysteretic Synchronization of Magnetic Vortex Spin-torque Nanoo oscillators.** M. d'Aquino¹, S. Perna², A. Quercia² and V. Scalera² 1. *Dipartimento di Ingegneria, Università degli Studi di Napoli "Parthenope", Napoli, Italy*; 2. *DIETI, Università di Napoli Federico II, Napoli, Italy*
- AT-04. Magnetic vortex core reversal by single pulse of rotating field in ferromagnetic disk with central defect.** J. Shim¹, H. Piao², S. Lee³, D. Kim³ and D. Kim¹ 1. *Max Planck POSTECH/KOREA Research Initiative, Max Planck Center for Attosecond Science, Pohang, The Republic of Korea*; 2. *College of Science, China Three Gorges University, Yichang, China*; 3. *Physics, Chungbuk National University, Cheongju, The Republic of Korea*
- AT-05. Observation of Quantized Resonance Modes in Coupled Ferromagnetic Disks with Controlled Interface.** J. Ding¹, S. Lendinez¹, P.N. Lapa¹, J.E. Pearson¹, A. Hoffmann¹ and V. Novosad¹ 1. *Materials Science Division, Argonne National Laboratory, Argonne, IL*
- AT-06. Excitations of interface pinned domain walls in constrained geometries.** S.M. Martins Jr.¹, A.L. Dantas², L.L. Oliveira² and A.S. Carriço¹ 1. *Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil*; 2. *Department of Science and Technology, University of State of Rio Grande do Norte, Natal, Brazil*
- AT-07. Stable magnetic singularity in helimagnetic nanostructures containing boundary between grains with different chirality.** M. Beg^{1,2}, D.I. Cortes¹, R. Pepper¹, T. Kluyver¹, O. Hovorka¹ and H. Fangohr^{1,2} 1. *Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom*; 2. *European XFEL GmbH, Schenefeld, Germany*
- AT-08. Studying Thermal Behavior of a Single Magnetic Vortex using Magnetotransport.** S. Lendinez², J. Ding², P.N. Lapa², J.E. Pearson², A. Hoffmann² and V. Novosad² 2. *Materials Science Department, Argonne National Laboratory, Argonne, IL*
- AT-09. Effect of dipolar coupling on the magnetic domain structure of epitaxial nanostrip arrays.** A.G. Kozlov¹, E.V. Pustovalov¹, A.S. Samardak¹, A.G. Kolesnikov¹ and L.A. Chebotkevich¹ 1. *School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation*

- AT-10. Suppression of Walker breakdown in gapped magnetic nanowires.** *X. Ma*¹, *S. Kim*¹, *H. Piao*² and *D. Kim*¹
1. Department of Physics, Chungbuk National University, Cheongju, The Republic of Korea; 2. College of Science, China Three Gorges University, Yichang, China
- AT-11. Theoretical study of current-induced domain wall dynamics in U-shaped nanowires with perpendicular magnetic anisotropy.** *N. Umetsu*¹ and *T. Kondo*¹ *1. Toshiba Corporation, Kawasaki, Japan*
- AT-12. Polarization-dependent Antiferromagnetic Domain Wall Motion.** *J. Lan*¹, *W. Yu*¹ and *J. Xiao*¹ *1. Department of Physics, Fudan University, Shanghai, China*
- AT-13. Spontaneous domain wall fluctuation in artificial square spin ice studied with soft x-ray photon correlation spectroscopy.** *X.M. Chen*^{1,2}, *B.W. Farmer*³, *J.S. Woods*³, *J.C. Lee*², *L.E. De Long*³, *S. Roy*² and *J.T. Hastings*¹
1. Electrical and Computer Engineering, University of Kentucky, Lexington, KY; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Physics and Astronomy, University of Kentucky, Lexington, KY
- AT-14. Excitation of novel 3D dynamic modes of a magnetic vortex in a thick circular ferromagnetic nanodisk.** *H. Han*¹, *S. Lee*¹, *D. Jung*¹, *N. Kim*¹ and *K. Lee*¹ *1. School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, The Republic of Korea*
- AT-15. Dynamics of Helical Waves and Topological Solitons in Antiferromagnetic Guide.** *Y. Semenov*¹, *X. Li*¹ and *K. Kim*^{1,2}
1. Electrical and Computer Engineering, NCSU, Raleigh, NC; 2. Department of Physics, NCSU, Raleigh, NC
- AT-16. Non-collinear Current-induced Domain Wall Motion in Pt/Co/Pt Trilayers.** *M. Nsibi*¹, *J. Nath*¹, *I. Joumard*¹, *S. Auffret*¹, *I. Miron*¹ and *G. Gaudin*¹ *1. SPINTEC-CNRS/CEA-INAC/Université Grenoble Alpes, Grenoble, France*

TUESDAY
 MORNING
 9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session AU
MAGNETICS FOR POWER ELECTRONICS AND CONTROL I
(Poster Session)

Wei Zhang, Chair
 Oakland University, Rochester, MI

- AU-01. Analysis of Interlocking Performances on Non-oriented Electrical Steels.** *L. Liu*¹ and *L. Liu*² *1. Micro/Meso Mechanical Manufacturing R&D Department, Metal Industries Research & Development Centre, Kaohsiung, Taiwan; 2. Iron and Steel Research and Development Department, China Steel Corporation, Kaohsiung, Taiwan*

- AU-02. Freeze-cast Soft Magnetic Composites for High Frequency Power Conversion.** *B.A. Reese*¹, *C.R. Sullivan*¹ and *U. Wegst*¹
1. Dartmouth College, Lebanon, NH
- AU-03. Performance Investigation on DCSFCL Considering Different Magnetic Materials.** *J. Yuan*¹, *H. Zhou*¹, *Y. Zhong*¹, *P. Gan*¹, *Y. Gao*², *K. Muramatsu*² and *B. Chen*¹ *1. Electrical and Engineering, Wuhan University, Wuhan, China; 2. Electrical and Electronic Engineering, Saga University, Saga, Japan*
- AU-04. Decoupling Control of Five-phase Fault-tolerant Permanent Magnet Motor by Radial Basis Function Neural Network Inverse.** *Q. Chen*¹, *Z. Lin*¹ and *J. Wang*¹ *1. School of Electrical and Information Engineering, Jiangsu university, Zhenjiang, China*
- AU-05. Including Frequency Dependent Complex Permeability Into SPICE Models to Improve EMI Filters Design.** *F. Sixdenier*¹, *O. Yade*², *C. Martin*¹ and *C. Vollaire*² *1. Univ Lyon, UCB Lyon 1, CNRS, AMPERE, Villeurbanne, France; 2. Univ Lyon, ECL, CNRS, AMPERE, Ecully, France*
- AU-06. Core Loss Analysis of Soft Magnetic Ring Core under SPWM and SVPWM Excitation.** *H. Gao*¹, *Y. Li*¹, *J. Zhu*², *Q. Yang*³ and *C. Zhang*¹ *1. Hebei University of Technology, Tianjin, China; 2. School of Electrical Engineering, University of Technology Sydney, Sydney, NSW, Australia; 3. Tianjin Polytechnic University, Tianjin, China*
- AU-07. A Variable-mode Stator Consequent Pole Memory Machine.** *H. Yang*¹, *S. Lyu*¹, *H. Lin*¹ and *Z. Zhu*² *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*
- AU-08. Optimization and Performance Improvement of Stator-partitioned Hybrid-magnet Flux-switching Machine for Electric Vehicles.** *Y. Chen*¹, *Y. Ding*¹ and *L. Yang*² *1. Yangzhou University, Yangzhou, China; 2. Jiangsu University, Zhenjiang, China*
- AU-09. Research on Direct-driver Wave Energy Conversion with Halbach Array Permanent Magnet Linear Generator.** *C. Liu*¹ and *S. Qian*¹ *1. College of Mechanical and Electrical Engineering, Jiaxing University, Nan Jing, China*
- AU-10. A Non-uniform Planar Coil Design for Position-free Wireless Power Transfer.** *H. Wang*¹, *Z. Mao*^{1,2}, *S. Mao*^{1,2}, *Y. Cong*³ and *M. Sun*^{1,2} *1. Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA; 2. Bioengineering Department, University of Pittsburgh, Pittsburgh, PA; 3. Department of Computer Science and Technology, Ocean University of China, Qingdao, China*
- AU-11. Finite element analysis of displacement actuator based on giant magnetostrictive thin film.** *S. Yu*¹ and *B. Wang*² *1. Hebei University of Technology, Tianjin, China; 2. Electrical Engineering, Hebei University of Technology, Tianjin, China*

- AU-12. Minimization of Torque Ripple in Ferrite-assisted Synchronous Reluctance Motors by Using Asymmetric Stator.** *M. Xu¹ and G. Liu¹ 1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- AU-13. Influence of PM Eddy Current on Magnetization Characteristics of Variable Flux Memory Machine.** *H. Yang^{1,2}, H. Lin^{1,2}, Z. Zhu³ and J. Yan⁴ 1. Institute of Electrical Machines and Apparatus Technologies (EMAT), Southeast University, Nanjing, China; 2. School of Electrical Engineering, Southeast University, Nanjing, China; 3. Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom; 4. School of Automation, Nanjing University of Science and Technology, Nanjing, China*
- AU-14. Achievement Method of Variable Magnetic-flux-density for Low Iron Loss.** *S. Odawara¹, K. Fujisaki², T. Yamada³ and T. Sasaya³ 1. Kitami Institute of Technology, Kitami, Japan; 2. Toyota Technological Institute, Nagoya-city, Japan; 3. DENSO Corporation, Nisshin, Japan*
- AU-15. A Novel Concept of High Voltage DC Transmission System Fault Current Limiter Based on Saturable Core.** *J. Yuan¹, H. Zhou¹, Y. Zhong¹, P. Gan¹, Y. Gao², K. Muramatsu² and B. Chen¹ 1. Electrical and Engineering, Wuhan University, Wuhan, China; 2. Electrical and Electronic Engineering, Saga University, Saga, Japan*
- AU-16. Optimization of Power and Efficiency of Magnetically Coupled Resonant Wireless Power transfer System.** *R. Yan¹ and X. Guo¹ 1. Hebei University of Technology, Tianjin, China*

TUESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session AV
MULTIFERROICS, CORRELATED SYSTEMS, AND
MOLECULAR MAGNETS
(Poster Session)

Parashu Kharel, Chair
South Dakota State University, Brookings, SD

- AV-01. Converse Magnetolectric Effect Search in Quadruple Perovskite Manganites.** *V. Pascotto Gastaldo^{1,2}, A. Gualdi^{1,2}, A. Gauzzi² and A.J. de Oliveira¹ 1. Departamento de Física, Universidade Federal de São Carlos, São Carlos, Brazil; 2. Institut de Minéralogie, de Physique des Matériaux et de Cosmochimie, Université Pierre et Marie Curie, Paris, France*

- AV-02. Investigation of electronic structure and magnetic properties in $Y_{0.95}Yb_{0.05}Mn_{1-x}Fe_xO_3$ by soft X-ray absorption spectroscopy.** Q. Li¹, W. Yang¹, J. Shen¹, A. Kumar¹, X. Ge¹, J. Wang², K. Ibrahim², Q. Xu¹ and J. Du³ 1. Department of Physics, Southeast University, Nanjing, China; 2. Beijing Synchrotron Radiation Facility, Institute of High Energy Physics, Beijing, China; 3. Department of Physics, Nanjing University, Nanjing, China
- AV-03. Study of the magnetism and electronic hybridized orbits in La and Mn doped $BiFeO_3$ by soft X-ray absorption spectroscopy.** Q. Li¹, X. Ge¹, W. Yang¹, J. Shen¹, A. Kumar¹, J. Du² and Q. Xu¹ 1. Department of Physics, Southeast University, Nanjing, China; 2. Department of Physics, Nanjing University, Nanjing, China
- AV-04. Parasitic phases at the origin of magnetic moment in $BiFeO_3$ thin films grown by low deposition rate RF sputtering.** T.J. Mori¹, C. Mouls¹, F.F. Morgado¹, P. Schio¹ and J.C. Cezar¹ 1. Brazilian Synchrotron Light Laboratory, Brazilian Center for Research in Energy and Materials, Campinas, Brazil
- AV-05. Magnetic and Electrical Properties in Co-doped $KNbO_3$ Bulk Samples.** J.A. Astudillo¹, S. Dionizio¹, J. Izquierdo², O. Moran² and G. Bolaños¹ 1. Physic, Universidad del Cauca, Popayán, Colombia; 2. Physic, Universidad Nacional sede Medellin, Medellin, Colombia
- AV-06. Lattice dimension tailored microwave resonance-type magnetodielectric effect in ytterbium doped $Y_3Fe_5O_{12}$ ferrites.** F. Chen¹, H. Luo¹, X. Wang¹, Y. Nie¹, Z. Feng¹, R. Gong¹, Y. Chen² and V.G. Harris² 1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China; 2. Northeastern University, Boston, MA
- AV-07. Modulation of magnetization induced by electric polarization reversal at $Fe_4N/BaTiO_3$ interface.** S. Kumata¹, M. Tsujikawa^{1,2} and M. Shirai^{1,2} 1. RIEC, Tohoku University, Miyagi, Japan; 2. CSRN, Tohoku University, Miyagi, Japan
- AV-08. Magnetic and Magnetoelectric Properties of Composite Thin Films of Barium Titanate and Bismuth Ferrite: An ab initio Study.** S.K. Jain¹ and A. Kashyap² 1. Department of Basic Sciences, Indian Institute of Technology, Mandi, Mandi, India; 2. Physics, School of Basic Sciences, Indian Institute of Technology Mandi, HP, Mandi, India
- AV-09. Magnetic Modulation on Orbital Selective Mott Phase and Metal-insulator Transitions in Correlated Multiorbital Systems.** Y. Quan¹, D. Liu¹, H. Lin² and L. Zou^{1,3} 1. Research Laboratory of Computational Materials Sciences, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China; 2. Beijing Computational Science Research Center, Beijing, China; 3. University of Science and Technology of China, Hefei, China
- AV-10. Unconventional Critical Behavior in Double Perovskite La_2CoMnO_6 .** Y.D. Pham¹, T. Thanh^{1,2}, M.V. Tien^{1,3}, D. Yang¹, D. Kim¹ and S. Yu¹ 1. Physics, Chungbuk National University, Cheongju, The Republic of Korea; 2. VAST, Hanoi, Vietnam; 3. HUST, Hanoi, Vietnam

AV-11. Withdrawn

- AV-12. Investigation of the Hybridization Effects between 4f and Conduction Electrons in the Kondo Lattice Antiferromagnet Ce₂RhIn₈.** *K.R. Pakuszewski¹, C. Adriano¹, A.F. Santander-Syro², W. Simões e Silva³ and P. Pagliuso⁴*
1. Physics, University of Campinas, Campinas, Brazil; 2. Centre de Sciences Nucléaires et de Sciences de la Matière, Orsay, France; 3. Laboratório Nacional da Luz Síncrotron, Campinas, Brazil; 4. DEQ, Instituto de Física Gleb Wataghin - Unicamp, Campinas, Brazil
- AV-13. Metal Organic Framework Cu₉Cl₂(cpa)₆ as a Tunable Molecular Magnet.** *H. Hamilton¹, W. Farmer¹, S.F. Skinner¹ and L.W. ter Haar¹*
1. Chemistry, University of West Florida, Pensacola, FL
- AV-14. On the nature of the spin-crossover transition in a series of molecular magnets.** *A. Rodríguez¹, Y. Plasencia¹, A. Lemus¹ and E. Reguera¹*
1. CICATA-Legaria, Instituto Politécnico Nacional, CDMX, Mexico
- AV-15. Magnetic and Magneto-optical Properties of Novel Erbium(III)-based Multifunctional Complexes.**
J.A. Rybusinski¹, A.K. Gardias¹, M. Ramos Silva², M. Susano², P. Martin-Ramos^{3,2}, J. Martin-Gil⁴, A. Twardowski¹ and J. Szczytko¹
1. Institute of Experimental Physics, Faculty of Physics, University of Warsaw, Warsaw, Poland; 2. CFisUC, Department of Physics, University of Coimbra, Coimbra, Portugal; 3. EPSH, University of Zaragoza, Huesca, Spain; 4. ETSIIAA, University of Valladolid, Palencia, Spain
- AV-16. Dependence of Exchange Interactions on the Structure of the N(1) Substituent in Benzo[e][1,2,4]Triazinyl Derivatives.**
A.K. Gardias¹, S. Domagala², E. Obijalska³, D. Trzybinski², J.A. Rybusinski¹, K. Wozniak², P. Kaszynski^{3,4} and J. Szczytko¹
1. Institute of Experimental Physics, Faculty of Physics, University of Warsaw, Warsaw, Poland; 2. Faculty of Chemistry, University of Warsaw, Warsaw, Poland; 3. Faculty of Chemistry, University of Lodz, Lodz, Poland; 4. Centre of Molecular and Macromolecular Studies, Polish Academy of Science, Lodz, Poland

TUESDAY
AFTERNOON
1:30

SPIRIT OF PITTSBURGH BALLROOM B

Session BA
MAGNETISM AND MAGNETIC PROXIMITY
EFFECTS IN 2D MATERIALS

P. Chris Hammel, Chair
Ohio State University, Columbus, OH

1:30

- BA-01. Magnetism in Atomically Thin 2D van der Waals Crystals.**
(Invited) S.G. Louie¹
1. Physics Department, University of California, Berkeley, and Lawrence Berkeley National Laboratory, Berkeley, CA

2:06

- BA-02. Layer-dependent Ferromagnetism in a van der Waals Crystal Down to the Monolayer Limit. (Invited) X. Xu¹**
1. Physics, University of Washington, Seattle, WA

2:42

- BA-03. Ferromagnetic ground state of Dirac electrons and other new quasiparticles in low dimensional heterostructures. (Invited) P. Wei¹, J. Moodera² and C. Chen³** *1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA; 2. Physics, MIT, Cambridge, MA; 3. IBM TJ Watson Research Center, Yorktown Heights, NY*

3:18

- BA-04. Enhanced Valley Splitting in TMDC/EuS Heterostructures. (Invited) C. Zhao¹, P. Zhang¹, T. Norden¹, Y. Yang², R. Sabirianov³, G. Miao², G. Kioseoglou⁴, A. Petrou¹ and H. Zeng¹** *1. Department of Physics, University at Buffalo, SUNY, Buffalo, NY; 2. Institute of Quantum Computing, University of Waterloo, Waterloo, ON, Canada; 3. Department of Physics, University of Nebraska-Omaha, Omaha, NE; 4. Department of Materials Science and Technology, University of Crete, Heraklion, Greece*

3:54

- BA-05. Strong Modulation of Spin Currents in Bilayer Graphene by Static and Fluctuating Proximity Exchange Fields. (Invited) S. Singh¹** *1. Department of Physics, The Ohio State University, Columbus, OH*

TUESDAY
AFTERNOON
1:30

ROOM 301-303

Session BB

SKYRMIONS IN MAGNETIC MULTILAYERS

Christopher Marrows, Chair
University of Leeds, Leeds, United Kingdom

1:30

- BB-01. Topological manipulation of magnetic skyrmions revealed by soft X-ray transmission microscopy. (Invited) S. Woo¹**
1. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea

2:06

- BB-02. Current Driven Skyrmions in Pt/Co/Os/Pt Thin Films. R.D. Tolley¹, S.A. Montoya¹ and E.E. Fullerton¹** *1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA*

- BB-03. Current-driven dynamics of ferrimagnetic skyrmions in metallic Pt/GdFeCo/MgO multilayers observed by scanning X-ray transmission microscopy.** *K. Song*^{1,2}, *S. Woo*¹, *X. Zhang*³, *Y. Zhou*³, *M. Ezawa*⁴, *S. Finizio*⁵, *J. Raabe*⁵, *J. Choi*^{1,6}, *B. Min*^{1,6}, *H. Koo*^{1,7} and *J. Chang*^{1,6} *1. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea; 2. Department of Physics, Sookmyung Women's University, Seoul, The Republic of Korea; 3. School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, China; 4. Department of Applied Physics, The University of Tokyo, Tokyo, Japan; 5. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland; 6. Department of Nanomaterials Science and Engineering, Korea University of Science and Technology, Daejeon, The Republic of Korea; 7. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea*

- BB-04. Stabilization and current-induced motion of antiskyrmion in the presence of anisotropic Dzyaloshinskii-Moriya interaction.** *S. Huang*¹, *C. Zhou*¹, *G. Chen*², *H. Shen*¹, *A.K. Schmid*³, *K. Liu*² and *Y. Wu*¹ *1. Physics Department, Fudan University, Shanghai, China; 2. Physics Department, University of California, Davis, Davis, CA; 3. MSD, Lawrence Berkeley National Laboratory, Berkeley, CA*

- BB-05. Electric field control of magnetic skyrmion via the tuning of Dzyaloshinsky-Moria interaction.** *A. Bernard-Mantel*^{1,2}, *J. Vogel*^{1,2}, *S. Pizzini*^{1,2}, *M. Schott*^{1,2}, *L. Ranno*^{1,2}, *H. Bea*^{3,2} and *D. Givord*^{1,2} *1. Institut Neel-CNRS, Grenoble, France; 2. Université Grenoble Alpes, Grenoble, France; 3. CEA-SPINTEC, Grenoble, France*

- BB-06. Understanding the Role of Microstructure in the Formation and Stability of Skyrmion Lattices in B20 Compounds Using Aberration Corrected Electron Microscopy.** *B.D. Esser*^{1*}, *A. Ahmed*², *R. Kawakami*² and *D.W. McComb*¹ *1. Center for Electron Microscopy and Analysis, The Ohio State University, Columbus, OH; 2. Physics, The Ohio State University, Columbus, OH*

- BB-07. Full phase diagram of isolated skyrmions in a ferromagnet.** *F. Buettner*¹, *I. Lemesch*¹ and *G. Beach*¹ *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

- BB-08. Engineering Multilayer Stacks for Stabilizing Low Pinning Sub-100nm Skyrmions at Room-Temperature.** *W. Legrand*¹, *J. Chauleau*^{1,2}, *D. Maccariello*¹, *N. Reyren*¹, *S. Collin*¹, *K. Bouzehouane*¹, *N. Jaouen*², *V. Cros*¹ and *A. Fert*¹ *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Experimental Division, Synchrotron SOLEIL, Gif sur Yvette, France*

- BB-09. Observation of room temperature magnetic skyrmions in platinum/cobalt/tungsten multilayers.** T. Lin¹, N. Lei¹, H. Liu², Y. Zhang³, S. Poellath⁴, T. Xing¹, Z. Wang¹, Y. Liu¹, L. Sun², Y. Wu², J. Shen², C. Back⁴, Y. Zhang¹ and W. Zhao¹
1. Beihang University, Beijing, China; 2. Fudan University, Shanghai, China; 3. Chinese Academy of Science, Institute of Physics, Beijing, China; 4. Regensburg University, Regensburg, Germany

- BB-10. Single Skyrmion Detection Using Electrical Transport in Pt/Co/Ir Multilayer Disc.** K. Zeissler¹, K. Shahbazi¹, J. Massey¹, S. Finizio², J. Raabe², F. Al Ma'Mari³, M. Rosamond⁴, E. Linfield⁴, T. Moore³, G. Burnell³ and C.H. Marrows¹
1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. SYN, Paul Scherrer Institut, Villigen PSI, Switzerland; 3. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 4. School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom

- BB-11. Electrical signature of individual magnetic skyrmions in metallic multilayer systems.** D. Maccariello¹, W. Legrand¹, N. Reyren¹, K. Garcia¹, K. Bouzehouane¹, S. Collin¹, V. Cros¹ and A. Fert¹
1. Unité Mixte de Physique CNRS-Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France

- BB-12. Skyrmion racetrack memory with moveable gap protecting pinning sites.** D. Suess¹, C. Vogler¹, F. Bruckner¹ and C. Abert¹
1. Christian Doppler Laboratory - Advanced Magnetic Sensing and Materials, University of Vienna, Vienna, Austria

- BB-13. Thickness Tuning of Topological Hall Effect in SrIrO₃/SrRuO₃ Perovskite Epitaxial Bilayer.** K. Meng¹, B. Esser¹, D.W. McComb¹ and F. Yang²
1. The Ohio State University, Columbus, OH; 2. Physics, The Ohio State University, Columbus, OH

Session BC
SPIN-ORBIT TORQUES

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

1:30

- BC-01. Spin-orbit torque from a magnetic heterostructure of high-entropy alloy.** C. Pai¹, T. Chen¹, T. Chuang², S. Huang² and H. Yen¹ *1. Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan*

1:42

- BC-02. Room temperature spin-orbit torque switching induced by a topological insulator.** J. Han¹, A. Richardella², S.A. Siddiqui¹, J.T. Finley¹, N. Samarth² and L. Liu¹ *1. Department of Electrical Engineering and Computer Science MIT, Cambridge, MA; 2. The Pennsylvania State University, University Park, PA*

1:54

- BC-03. Spin-Orbit torque in Pt/Co system with naturally oxidized Co layer.** Y. Hibino¹, T. Hirai¹, K. Hasegawa¹, T. Koyama¹ and D. Chiba¹ *1. Department of Applied Physics, The University of Tokyo, Faculty of Engineering, Tokyo, Japan*

2:06

- BC-04. Influence of the Magnetic Proximity Effect on Spin-orbit Torque Efficiencies in Heusler/Platinum Bilayers.** T.A. Peterson¹, A.P. McFadden², C.J. Palmström^{2,3} and P.A. Crowell¹ *1. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Electrical and Computer Engineering, UCSB, Santa Barbara, CA; 3. Materials, UCSB, Santa Barbara, CA*

2:18

- BC-05. Magnetic layer thickness dependence of spin-orbit torques in tungsten/thulium iron garnet bilayers.** Q. Shao¹, T. Chi², G. Yu¹, A. Navabi¹, C. He¹, J. Li², P. Upadhyaya³, S. Razavi¹, Q. He¹, Y. Tserkovnyak³, J. Shi² and K.L. Wang^{1,3} *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Physics and Astronomy, UCR, Riverside, CA; 3. Physics and Astronomy, UCLA, Los Angeles, CA*

2:30

- BC-06. Spin-Orbit Torque Switching of Ultra Large Thickness Ferrimagnetic GdFeCo.** N. Roschewsky¹, C. Lambert² and S. Salahuddin² *1. Physics, University of California, Berkeley, Berkeley, CA; 2. Electrical Engineering, University of California, Berkeley, Berkeley, CA*

- BC-07. Enhanced Spin-Orbit Torque by Ru capping.** *L. Huang*¹, *S. He*¹, *Q. Yap*¹ and *S. Lim*¹ *1. Data Storage Institute (A*STAR), Singapore, Singapore*

- BC-08. Giant spin-orbit torques in ferrimagnets.** *J. Yu*¹, *R. Mishra*¹, *D. Bang*², *X. Qiu*³, *Y. Jeong*⁴, *G. Go*⁵, *S. Lee*⁵, *H. Awano*², *K. Lee*^{4,5} and *H. Yang*⁵ *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Toyota Technological Institute, Nagoya, Japan; 3. School of Physics Science and Engineering, Tongji University, Shanghai, China; 4. Department of Semiconductor Systems Engineering, Korea University, Seoul, The Republic of Korea; 5. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea*

- BC-09. Fast switching and signature of efficient domain wall motion driven by spin-orbit torques in a perpendicular anisotropy magnetic insulator/Pt bilayer.** *C. Avci*¹, *E.R. Rosenberg*¹, *M. Baumgartner*², *L. Beran*¹, *A. Quindeau*¹, *P. Gambardella*², *C. Ross*¹ and *G. Beach*¹ *1. Materials Science and Engineering, MIT, Cambridge, MA; 2. ETH Zurich, Zurich, Switzerland*

- BC-10. Oxygen induced increase in spin orbit torques.** *J. Nath*^{1,2}, *A. Trifu*^{1,2}, *T. Brächer*³, *S. Auffret*¹, *G. Gaudin*^{1,2} and *I. Miron*^{1,2} *1. SPINTEC (CEA/CNRS), Grenoble, France; 2. Université Grenoble Alpes, Grenoble, France; 3. TU Kaiserslautern, Kaiserslautern, Germany*

- BC-11. Spin transfer torque ferromagnetic resonance in the Fe/Pd system: interface transparency and spin memory loss.** *A. Kumar*¹, *S. Akansel*¹, *H. Stopfel*², *M. Fazlali*³, *R. Brucas*¹ and *P. Svedlindh*¹ *1. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

- BC-12. Tailoring the spin-orbit torques in PtPd/FeCoB bilayers by composition.** *L. Zhu*¹, *D.C. Ralph*^{1,2} and *R.A. Buhrman*¹ *1. Cornell University, Ithaca, NY; 2. Kavli Institute at Cornell, Ithaca, NY*

- BC-13. Current-induced switching of perpendicularly magnetized CoGa / L1₀ MnGa / MgO structures.** *M. Takikawa*^{1,2}, *K.Z. Suzuki*¹, *R. Ranjbar*¹ and *S. Mizukami*¹ *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

4:06

- BC-14. Virtual domain wall depinning assisted by spin accumulation.** *H. Corte-León*¹, A. Fernandez-Scarioni², P. Freitas^{3,4}, H.W. Schumacher² and O. Kazakova¹ *1. National Physical Laboratory, Teddington, United Kingdom; 2. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 3. INESC-MN, Lisboa, Portugal; 4. INL, Braga, Portugal*

4:18

- BC-15. Spin-Orbit Torques at Disordered Interfaces.** *D. Prychynenko*¹, V. Amin^{2,3}, J. Sinova¹ and M. Stiles⁴ *1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 3. Maryland NanoCenter, University of Maryland, College Park, MD; 4. National Institute of Standards and Technology, Gaithersburg, MD*

TUESDAY
AFTERNOON
1:30

ROOM 408-410

Session BD
SPIN WAVES II

H. J. Jason Liu, Chair
Georgia Southern University, Statesboro, GA

1:30

- BD-01. From Kinetic Instability to Bose-Einstein Condensation and to Magnon Supercurrents.** D.A. Bozhko¹, A.J. Kreil¹, H.Y. Musiienko-Shmarova¹, V.S. L'vov², A. Pomyalov², B. Hillebrands¹ and A.A. Serga¹ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Department of Chemical Physics, Weizmann Institute of Science, Rehovot, Israel*

1:42

- BD-02. Frequency Non-reciprocities in CoFeB/ Permalloy Bilayers.** *D. Louis*¹, Y. Henry², M. Mohseni³, T. Meyer³, M. Hehn⁴, P. Pirro⁵ and M. Bailleul¹ *1. IPCMS, Strasbourg, France; 2. IPCMS, Nordheim, France; 3. AG Magnetismus, TU Kaiserslautern, Kaiserslautern, Germany; 4. Institut Jean Lamour, Vandoeuvre les Nancy, France; 5. Physics, TU Kaiserslautern, Kaiserslautern, Germany*

1:54

- BD-03. Role of Magnetic Field Inhomogeneities in Spin Wave Modes of NiFe Micro Stripes.** D.E. González-Chávez¹, R. Dutra¹ and R.L. Sommer¹ *1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*

- BD-04. Tunable Short-Wavelength Spin Wave Emission and Confinement in Anisotropy-Modulated Multiferroic Heterostructures.** *S.J. Hämäläinen*¹, F. Brandl², K.J. Franke¹, D. Grundler^{2,3} and S. van Dijken¹ *1. Department of Applied Physics, Aalto University, Espoo, Finland; 2. Physik Department, Technische Universität München, Garching, Germany; 3. Institute of Materials, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*

- BD-05. Spin wave propagation in crystalline-anisotropy-induced yttrium iron garnet film grown on various substrates.** *T. Goto*^{1,2}, T. Yoshimoto¹, H. Takagi¹, Y. Nakamura¹, H. Uchida¹, C. Ross³ and M. Inoue¹ *1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Japan; 2. JST PRESTO, Kawaguchi, Japan; 3. Massachusetts Institute of Technology, Cambridge, MA*

- BD-06. Nonreciprocal magneto-elastic waves in magnetic/non-magnetic bilayers with interfacial Dzyaloshinskii-Moriya interaction.** *R.V. Verba*¹, I. Lisenkov^{2,3}, R. Khymyn⁴, V. Tyberkevych⁵ and A.N. Slavin⁵ *1. Institute of Magnetism, Kyiv, Ukraine; 2. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 3. Kotel'nikov Institute of Radioengineering and Electronics, Moscow, Russian Federation; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 5. Department of Physics, Oakland University, Rochester, MI*

- BD-07. Enhanced spin wave propagation in magnonic rings by bias field modulation.** G. Venkat¹, D. Venkateswarlu², P. Kumar² and A. Prabhakar¹ *1. Electrical Engineering, Indian Institute of Technology Madras, Chennai, India; 2. Physics, Indian Institute of Science, Bangalore, India*

- BD-08. Direct Probing of the Antisymmetric Dzyaloshinskii-Moriya Exchange Interaction in Ultrathin Magnets.** *K. Zakeri*^{1,2} *1. Heisenberg Spin-dynamics Group, Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. Max Planck Institute of Microstructure Physics, Halle, Germany*

- BD-09. Magnonic Crystals at Millikelvin Temperatures.** *S. Kosen*¹, R. Morris¹, A. van Loo¹ and A.D. Karenowska¹ *1. Physics, University of Oxford, Oxford, United Kingdom*

- BD-10. Spin textures as local and tunable spin-wave emitters.** *(Invited)* S. Wintz^{1,2}, V. Sluka², G. Dieterle³, M. Weigand³, V. Tyberkevych⁴, T. Schneider², R.A. Gallardo⁵, S. Finizio¹, A. Erbe², J. Lindner², G.A. Schuetz³, A.N. Slavin⁴, J. Raabe¹ and J. Fassbender² *1. Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 4. Oakland University, Rochester, MI; 5. Universidad Técnica Federico Santa María, Valparaíso, Chile*

3:54

- BD-11. Excitation and propagation of spin wave pulses in a magnonic crystal.** C.L. Ordóñez-Romero¹, Z. Lazcano-Ortiz², G. Pirruccio¹, M.O. Viguera-Zuñiga³, A. Drozdovskii⁴, B. Kalinikos⁴, N. Qureshi⁵, O. Kolokoltsev⁵ and G. Monsivais¹ *1. Solid State, Physics Institute, UNAM., Mexico City, Mexico; 2. IF, BUAP, Puebla, Mexico; 3. FI, Universidad de Veracruz, Boca del Rio, Mexico; 4. St. Petersburg Electrotechnical University, Saint Petersburg, Russian Federation; 5. CCADET, Universidad Nacional Autónoma de México, Mexico City, Mexico*

4:06

- BD-12. Atomic Quantum Phase Control with a Transient Magnon.** L. Bocklage^{1,2}, J. Gollwitzer³, C.F. Adolff^{2,3}, K. Schlage¹, C. Strohm¹, I. Sergeev¹, H. Wille¹, G. Meier^{4,2} and R. Röhlberger^{1,2} *1. Photon Science, DESY, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany; 3. University of Hamburg, Hamburg, Germany; 4. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany*

4:18

- BD-13. Sideband Suppression in a Resonant Magnonic Crystal Cavity.** G. Venkat¹, N. Kumar¹, M. Arnold² and A. Prabhakar¹ *1. Electrical Engineering, Indian Institute of Technology Madras, Chennai, India; 2. Applied Physics, University of Technology Sydney, Sydney, NSW, Australia*

TUESDAY
AFTERNOON
1:30

ROOM 315-316

Session BE
GMR AND MRAM
Hans Nembach, Chair
NIST, Boulder, CO

1:30

- BE-01. Dual-spacer nanojunctions exhibiting large current-perpendicular-to-plane giant magnetoresistance for ultrahigh density magnetic recording.** Z. Wen^{1,2}, T. Kubota^{1,2}, Y. Ina¹ and K. Takahashi^{1,2} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*

- BE-02. Enhancement of L21 order and spin-polarization of Co₂FeSi thin film by substitution of Fe with Ti.** *J. Chen*^{2,1*}, *Y. Sakuraba*¹, *K. Masuda*¹, *Y. Miura*³, *S. Li*¹, *S. Kasai*¹, *T. Furubayashi*¹ and *K. Hono*^{1,2} *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 3. Electrical Engineering and Electronics, Kyoto Institute of Technology, Matsugasaki, Japan*

- BE-03. Giant magnetoresistance in perpendicularly magnetized synthetic antiferromagnetic coupling with iridium spacer.** *A. Fukushima*¹, *A. Sugihara*¹, *K. Yakushiji*¹, *H. Kubota*¹ and *S. Yuasa*¹ *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

- BE-04. New low damage dry etching gas chemistry for MRAM device fabrication.** *S. Kang*¹, *T. Kubo*¹ and *T. Endoh*² *1. Tokyo Electron Ltd., Sendai, Miyagi, Japan; 2. Center for Innovative Integrated Electronic Systems (CIES), Tohoku University, Sendai, Japan*

- BE-05. Ultra-high Speed STT-MRAM with Incorporating Antiferromagnetic Layer.** *A. Shadman*¹, *R. Cheng*³, *D. Xiao*³ and *J. Zhu*^{2,1} *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 3. Physics, Carnegie Mellon University, Pittsburgh, PA*

- BE-06. Buffer layer dependence of magnetoresistance effect in Co₂Fe_{0.4}Mn_{0.6}Si/MgO/Co₅₀Fe₅₀ tunnel junctions.** *M. Sun*¹, *T. Kubota*¹, *S. Takahashi*², *Y. Kawato*², *Y. Sonobe*² and *K. Takanashi*¹ *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Samsung R&D Institute Japan, Yokohama, Japan*

- BE-07. Three-dimensional Integration of Perpendicular-type Magnetic Tunnel Junctions for STT-MRAM Application.** *K. Yakushiji*¹, *H. Takagi*¹, *C. Kamata*², *N. Watanabe*¹, *A. Fukushima*¹, *K. Kikuchi*¹, *Y. Kurashima*¹, *A. Sugihara*¹, *H. Kubota*¹, *M. Amano*³, *J. Ito*², *H. Yoda*² and *S. Yuasa*¹ *1. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan; 3. Toshiba Memory Corporation, Tokyo, Japan*

- BE-08. Dependence of Write-Error-Rate on External Magnetic Field for Individual MRAM Devices.** *J.J. Nowak¹, G. Hu¹, M.G. Gottwald¹, R. Robertazzi¹, P.L. Trouilloud¹, Y. Kim¹, E. O'Sullivan¹, R. Kothandaraman¹, B. Doris¹ and J. Sun¹* *1. T.J. Watson Research Center, IBM-Samsung MRAM Alliance, Yorktown Heights, NY*

- BE-09. High TMR Dual-MTJ STT-MRAM Design with Perpendicular Magnetic Anisotropy.** *Z. Duan¹, S. Schäfer¹, V. Voznyuk¹, X. Tang¹, G. Feng¹, D. Lee¹, L. Zheng¹, D. Apalkov¹, R. Beach¹ and V. Nikitin¹* *1. New Memory Technology Lab, Semiconductor R&D Center, Samsung Semiconductor, San Jose, CA*

- BE-10. ST-FMR Determination of Exchange Coupling in PMA-MRAM bits with Broken Circular Symmetry.** *R. Beach¹, S. Wang¹, D. Apalkov¹, V. Voznyuk¹, C. Sha², I. Krivorotov² and V. Nikitin¹* *1. New Memory Technology, Samsung Semiconductor, San Jose, CA; 2. Physics and Astronomy, University of California, Irvine, Irvine, CA*

- BE-11. Impact of Temperature on the Switching Behavior of Scaled Perpendicular Magnetic Tunnel Junctions.** *Y. Wu¹, W. Kim¹, S. Rao¹, K. Garello¹, S. Van Beek¹, S. Couet¹, E. Liu¹, J. Swerts¹, S. Kundu¹, L. Souriau¹, F. Yasin¹, D. Crotti¹, G.S. Kar¹, A. Furnemont¹, J.K. Jochum², M.J. Van Bael², J. Van Houdt^{1,3} and G. Groeseneken^{1,3}* *1. Imec, Heverlee, Belgium; 2. Laboratory of Solid State Physics and Magnetism, KU Leuven, Leuven, Belgium; 3. Department of Electrical Engineering, KU Leuven, Leuven, Belgium*

- BE-12. Easy-Cone Magnetic State in Double-MgO Free Layers for Perpendicular Magnetic Tunnel Junctions.** *B. Teixeira¹, A. Timopheev^{2,3}, Y. Li⁴, U. Kaiser⁴, G.N. Kakazei⁵, S. Bunyayev⁵, S. Auffret^{2,3}, R.C. Sousa^{2,3}, B. Diény^{2,3} and N.A. Sobolev^{1,6}* *1. Physics Department & i3N, University of Aveiro, Aveiro, Portugal; 2. INAC-SPINTEC, Université Grenoble Alpes, Grenoble, France; 3. CEA, INAC-SPINTEC and CNRS SPINTEC, SPINTEC, Grenoble, France; 4. Central Facility of Electron Microscopy, University of Ulm, Ulm, Germany; 5. IFIMUP-IN / Departamento de Física e Astronomia, Universidade do Porto, Porto, Portugal; 6. National University of Science and Technology, "MISiS", Moscow, Russian Federation*

- BE-13. Thermal stability analysis and modelling of advanced perpendicular magnetic tunnel junctions.** *S. Van Beek^{1,2}, K.M. Martens^{1,2}, P. Rousset², Y. Wu², W. Kim², S. Rao², J. Swerts², D. Crotti², D. Linten², G.S. Kar² and G. Groeseneken^{1,2}* *1. ESAT, KU Leuven, Leuven, Belgium; 2. Imec, Leuven, Belgium*

4:06

- BE-14. Improved perpendicular top pinned reference layer for STT or SOT-MRAM cells.** *J. Chatterjee*¹, *P. Coelho*¹, *R.C. Sousa*¹, *S. Auffret*¹ and *B. Diény*¹ *I. Univ. Grenoble Alpes, CEA, CNRS, INAC-SPINTEC, Grenoble, France, Grenoble, France*

4:18

- BE-15. Novel approach for nano-patterning magnetic tunnel junctions stacks: A route towards high density STT-MRAM application.** *V. Nguyen*¹, *P. Sabon*¹, *J. Chatterjee*¹, *S. Auffret*¹, *L. Prejbeanu*¹, *E. Gautier*¹, *L. Vila*¹, *R.C. Sousa*¹ and *B. Diény*¹ *I. Univ. Grenoble Alpes, CEA, CNRS, INAC-SPINTEC, Grenoble, France, Grenoble, France*

TUESDAY
AFTERNOON
1:30

ROOM 317-318

Session BF
RARE EARTH-BASED HARD MAGNETIC
MATERIALS II

George Hadjipanayis, Chair
University of Delaware, Newark, DE

1:30

- BF-01. Strategy of TbCu₇ Structure in Sm₂Co₁₇ Type Magnets and its Influence on High Coercivity.** *R. Gopalan*¹ *I. Centre for Automotive Energy Materials, International Advanced Research Centre for Powder Metallurgy and Materials, Chennai, India*

1:42

- BF-02. 2:17 type SmCo magnets with low temperature coefficients of remanence and coercivity.** *L. Liu*¹, *Z. Liu*¹, *X. Zhang*¹, *C. Zhang*¹, *T. Li*¹, *D. Lee*¹ and *A. Yan*¹ *I. Ningbo Institute of Material Technology and Engineering, CAS, Ningbo, China*

1:54

- BF-03. 3D atomic-scale insights into the coercivity enhancement of Sm(CoFeCuZr)_z permanent magnets with Cu powder doping.** *H. Chen*¹, *Y. Wang*², *M. Yue*², *F. Yun*¹, *J. Qu*¹, *S. Ringer*¹ and *R. Zheng*¹ *I. The University of Sydney, Sydney, NSW, Australia; 2. Beijing University of Technology, Beijing, China*

2:06

- BF-04. First principles study on magnetic properties of Sm(Fe_{1-x}Co_x)₁₂.** *T. Yoshioka*^{1,2}, *D. Suzuki*¹ and *H. Tsuchiura*^{1,2} *I. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Elements Strategy of Initiative Center for Magnetic Materials (ESICMM), National Institute for Materials Science, Tsukuba, Japan*

- BF-05. Phase stability and optimization of RFe₁₂ (R=Nd, Sm) via symmetry breaking of the crystal structure.** *G. Hrkac*^{1,2}, *T.A. Ostler*^{3,4}, *S.C. Westmoreland*⁵, *R.F. Evans*⁵, *R. Chantrell*⁵, *M. Yano*⁶, *A. Manabe*⁶, *T. Shoji*⁶, *A. Kato*⁶, *J. Fischbacher*⁷, *M. Winkelhofer*⁸, *G. Zimanyi*⁹ and *T. Schrefl*¹⁰ *1. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 2. TU Vienna, Vienna, Austria; 3. College of Engineering, Mathematics and Physical Sciences, The University of Exeter, Sheffield, United Kingdom; 4. Sheffield Hallam University, Sheffield, United Kingdom; 5. Department of Physics, University of York, York, United Kingdom; 6. MagHEM, Susotno, Japan; 7. Center for Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria; 8. University of Oldenburg, Oldenburg, Germany; 9. Physics, UC Davis, Davis, CA; 10. Danube University Krems, Wiener Neustadt, Austria*

2:30

- BF-06. First principle study of Sm₂Fe₁₇X₃-type phases for new potential permanent magnetic compounds with lower critical rare earth content.** *T. Pandey*¹ and *D. Parker*¹
1. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN

2:42

- BF-07. Improved Modeling of Surface Degraded Sintered NdFeB Magnets with Large SA/V Ratios.** *K.C. Kurtz*^{1,2}, *J.F. Naber*¹ and *M.S. Guthrie*² *1. Electrical and Computer Engineering, University of Louisville, Prospect, KY; 2. Engineering, Quadrant Solutions, Inc., Prospect, KY*

2:54

- BF-08. Microwave synthesis of Nd₂(Fe,Co,Al)₁₄B based exchange coupled magnets.** *H.G. Parmar*^{1,2}, *X. Tan*², *V. Chaudhary*^{1,2}, *Y. Zhong*² and *R.V. Ramanujan*² *1. Rolls-Royce@NTU Corporate Lab, Nanyang Technological University, Singapore, Singapore; 2. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

3:06

- BF-09. Multiscale simulations of interfacial effects in Nd₂Fe₁₄B/Fe nanocomposites.** *M. Yi*¹, *H. Zhang*¹, *O. Gutfleisch*¹ and *B. Xu*¹
1. Institute of Materials Science, Technical University of Darmstadt, Darmstadt, Germany

3:18

- BF-10. Theoretical study on magnetic properties of NdFe₁₂ and Pr(Fe_{1-x}V_x)₁₂.** *H. Tsuchiura*¹, *T. Yoshioka*¹ and *T. Schrefl*²
1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Danube University Krems, Wiener Neustadt, Austria

- BF-11. Low Temperature Texture Development in Nd₂Fe₁₄B/ α -Fe Nanocomposite Magnets via Equal Channel Angular Pressing.** *L. Besley*¹, *A. Molotnikov*¹, *H. Kishimoto*², *A. Kato*², *C. Davies*¹ and *K. Suzuki*¹ *1. Department of Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 2. Toyota Motor Corporation, Susono, Japan*

- BF-12. Thermo-magnetic Stability of Exchange Coupled MnAlC/SmFeN Composites.** *J. Park*¹, *H. Qian*², *P. Si*² and *C. Choi*² *1. Functional Nanopowder Material Department Powder&Ceramic Division, Korea Institute of Materials Science, Changwon, The Republic of Korea; 2. Korea Institute of Materials Science, Changwon, The Republic of Korea*

- BF-13. Systematic study of RE lean REFe_{12-y}Ti_yN_z phases by first principles methods.** *H.C. Herper*¹, *O. Vekilova*¹ and *O. Eriksson*¹ *1. Dept. of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

- BF-14. Unusual magnetic anisotropy and magnetocaloric effect in ferromagnetic rare-earth elements Tb and Dy treated with the help of cold rolling technique.** *S.V. Taskaev*^{1,2}, *K.P. Skokov*³, *V. Khovaylo*⁴, *D. Bataev*¹, *M.N. Ulyanov*¹ and *O. Gutfleisch*³ *1. Physics Department, Chelyabinsk State University, Chelyabinsk, Russian Federation; 2. South Ural State University, Chelyabinsk, Russian Federation; 3. FM, TU Darmstadt, Darmstadt, Germany; 4. National University of Science and Technology "MIS&S", Moscow, Russian Federation*

- BF-15. Magnetocaloric effect in the rapidly solidified rare earth intermetallic compound ErNi.** *A. Sankar*¹, *J. Chelvane*², *A. Morozkin*³, *A.K. Nigam*⁴, *S. Quezado*⁵, *S.K. Malik*⁵ and *R. Nirmla*¹ *1. Physics, IIT Madras, Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. Lomonosov Moscow State University, Moscow, Russian Federation; 4. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, Mumbai, India; 5. DTFE, Universidade Federal do Rio Grande do Norte, Natal, Brazil*

Session BG
MAGNETIC FLUIDS AND PARTICLES FOR
BIOSENSING

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

1:30

- BG-01. Liquid Metal Extraction Recycling of Rare Earth Elements in Nd-Fe-B Magnets.** *C.I. Nlebedim*¹, H. Kim¹, F. Schmidt¹, I.E. Anderson², S. Zhou^{1,2} and R.T. Ott^{1,2} *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Division of Materials Sciences and Engineering, Ames Lab (USDOE), Ames, IA*

1:42

- BG-02. Modeling the Agglomeration and Magnetic Response of Realistic Nanoparticle Clumps in Fluids.** *N.R. Anderson*¹, D. Louie², D. Serantes^{3,4} and K. Livesey^{1,2} *1. BioFrontiers Institute, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. Universidade de Santiago de Compostela, La Coruna, Spain; 4. Department of Physics, University of York, York, United Kingdom*

1:54

- BG-03. Thermal influence on magnetic nanoparticle dynamics.** *J. Wells*¹, D. Eberbeck¹, H. Paysen¹, L. Trahms¹ and F. Wiekhorst¹ *1. Metrology for Magnetic Nanoparticles, Physikalisch-Technische Bundesanstalt, Berlin, Germany*

2:06

- BG-04. Flexible Mechanism of Magnetic Microbeads Chains in an Oscillating Field.** *Y. Li*¹ and C. Yen¹ *1. Mechanical and Aerospace, National Defense University, Taoyuan, Taiwan*

2:18

- BG-05. PEG-coated Fe and CoFe Nanowires for MRI Contrast and Magnetic Hyperthermia.** *D. Shore*¹, A. Ghemes², O. Dragos-Pinzaru², S. Pailloux³, J. Zhang⁴, T.E. Gage¹, D. Flannigan¹, M. Garwood⁴, V. Pierre³, I. Tabakovic⁵ and B. Stadler⁵ *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. MDM, National Institute of Research and Development for Technical Physics, Iasi, Romania; 3. Chemistry, University of Minnesota, Minneapolis, MN; 4. Radiology, University of Minnesota, Minneapolis, MN; 5. University of Minnesota, Minneapolis, MN*

2:30

- BG-06. Synthesis of Magnetic Janus Particles by Droplet Micro-Magnetofluidics.** *R.V. Ramanujan*¹, V.B. Varma¹, R. Wu² and Z.P. Wang² *1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore; 2. Singapore Institute of Manufacturing Technology, Singapore, Singapore*

2:42

BG-07. Magnetism for Biomedical Applications – Beyond Superparamagnetic Iron Oxide Nanoparticles. (Invited)

*R. Cowburn*¹ 1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom

3:18

BG-08. The role of faceting and shape on the effective magnetic anisotropy of magnetite nanocrystals.

*S. Poyser*¹, *A. Meo*¹, *G. Vallejo-Fernandez*¹, *S. Majetich*², *V. Lazarov*¹ and *R.F. Evans*¹ 1. Department of Physics, University of York, York, United Kingdom; 2. Carnegie Mellon University, Pittsburgh, PA

3:30

BG-09. Magneto-photothermal effects of pegylated superparamagnetic iron-oxide nanoparticles for multimodal cancer therapy.

S.A. Shah^{1,2}, *M. Khan*², *M. Hashmi*³ and *N. Ahmad*⁴ 1. Materials Science & Engineering, University of Washington, Seattle, WA; 2. Forman Christian College, Lahore, Pakistan; 3. Superior University, Pakistan, Pakistan; 4. Department of Physics, International Islamic University, Islamabad, Pakistan

3:42

BG-10. Ferromagnetic Swimmers – Devices and Applications.

*J.K. Hamilton*¹, *P.G. Petrov*¹, *C.P. Winlove*¹, *A.D. Gilbert*² and *F.Y. Ogrin*¹ 1. Department of Physics, University of Exeter, Exeter, United Kingdom; 2. Department of Mathematics, University of Exeter, Exeter, United Kingdom

3:54

BG-11. Magnetically assembled micro/mesopixels utilizing light intensity enhancement in (012) planes of fish guanine crystal.

*T. Chikashige*¹ and *M. Iwasaka*² 1. Hiroshima University, Higashihiroshima-shi, Japan; 2. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan

4:06

BG-12. Co-polymer layered magnetic nanoparticles for hyperthermia treatment of cancer and precise drug delivery.

*M. Hashmi*¹ 1. Applied Sciences, Superior University Lahore, Lahore, Pakistan

Session BH
**NANOPARTICLE AND NANOWIRE ARRAYS AND
SELF-ASSEMBLY**

Amalio Fernandez-Pacheco, Chair
University of Cambridge, Cambridge, United Kingdom

1:30

- BH-01. Deciphering Chemical Order/Disorder and Magnetic Properties of FePt Nanoparticle at the Single-Atom Level. (Invited)** Y. Yang¹, C. Chen^{1,2}, M.C. Scott^{1,3}, C. Ophus³, R. Xu¹, A. Pryor Jr.¹, L. Wu¹, F. Sun⁴, W. Theis⁵, J. Zhou¹, M. Eisenbach⁶, P. Kent^{7,8}, R. Sabirianov⁹, H. Zeng⁴, P. Ercius³ and J. Miao¹ *1. Physics & Astronomy, UCLA, Los Angeles, CA; 2. Physics, National Sun Yat-sen University, Kaohsiung, Taiwan; 3. NCEM, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Physics, University at Buffalo, SUNY, Buffalo, NY; 5. School of Physics and Astronomy, University of Birmingham, Birmingham, United Kingdom; 6. National Center for Computational Sciences, Oak Ridge National Laboratory, Oak Ridge, TN; 7. Computer Science and Mathematics Division, Oak Ridge National Laboratory, Oak Ridge, TN; 8. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN; 9. Physics, University of Nebraska at Omaha, Omaha, NE*

2:06

- BH-02. Revealing Long-Range Magnetic Order in High-Density Nanowire Arrays.** A. Grutter¹, K.L. Krycka¹, E. Tartakovskaya², J. Borchers¹, K. Reddy³, E. Ortega⁴, A. Ponce⁴ and B. Stadler³ *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Institute of Magnetism NAS Ukraine, Kiev, Ukraine; 3. University of Minnesota, Minneapolis, MN; 4. Physics and Astronomy, University of Texas at San Antonio, San Antonio, TX*

2:18

- BH-03. Magnetic Field-Directed Self-Assembly and Chaining in Multiferroic Janus Nanofibers.** B. Chavez^{1,2}, K. Sosnowski^{1,2}, M.J. Bauer³, M. Budi³, J.S. Andrew³ and T.M. Crawford^{1,2} *1. Smart State Center for Experimental Nanoscale Physics, University of South Carolina, Columbia, SC; 2. Physics and Astronomy, University of South Carolina, Columbia, SC; 3. Materials Science and Engineering, University of Florida, Gainesville, FL*

2:30

- BH-04. Magnetic Interactions In Arrays Of Bisegmented Nanowires.** E.M. Palmero^{1,2}, C. Bran¹, M. Vázquez¹, M. Méndez³, S. González³, V. Vega³ and V.M. Prida³ *1. Institute of Materials Science of Madrid (ICMM-CSIC), Madrid, Spain; 2. Division of Permanent Magnets and Applications, IMDEA Nanoscience, Madrid, Spain; 3. Department of Physics, University of Oviedo, Oviedo, Spain*

- BH-05. Passive Magnetic Field Sensors Using Magnetoelectric Janus Nanowires.** *M.J. Bauer*¹, *X. Wen*², *J.S. Andrew*¹ and *D.P. Arnold*² *1. Materials Science and Engineering, University of Florida, Gainesville, FL; 2. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

- BH-06. DFT calculations and effect of voltage variation for synthesis of full Heusler alloy Fe₂CoSn nanowires using AC-electrodeposition in Alumina templates.** *N. Ahmad*^{1,2}, *S. Khan*¹ and *X. Han*² *1. Spintronics Laboratory, Department of Physics, International Islamic University, Islamabad, Pakistan; 2. Institute of Physics, University of Chinese Academy of Sciences, Beijing, China*

- BH-07. Multiferroic and Magnetoelectric Control of Magnetism in Nanocrystal Arrays.** *S. Tolbert*¹ *1. Chemistry & Biochemistry and Materials Science & Engineering, UCLA, Los Angeles, CA*

- BH-08. Strain Control in the Self-Assembled Growth of Nano structures.** *S. Tyagi*¹, *G. Sharma*¹ and *V. Sathe*¹ *1. Raman Lab, Consortium for Scientific Research, Indore, Indore, India*

- BH-09. Dynamics of extended arrays of nanoscale Py discs with different lattice symmetries.** *S. Sloetjes*^{1,2}, *E. Digernes*³, *C. Klewe*⁴, *P. Shafer*⁵, *Q. Li*⁶, *M. Yang*⁶, *Z. Qiu*⁶, *E. Arenholz*², *J.K. Grepstad*¹ and *E. Folven*³ *1. Electronics and Telecommunications, NTNU, Trondheim, Norway; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Department of Electronic Systems, Norwegian University of Science and Technology, Trondheim, Norway; 4. Bielefeld University, Bielefeld, Germany; 5. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 6. Physics, University of California, Berkeley, Berkeley, CA*

- BH-10. Low Temperature Electron Diffraction and Magnetic Studies of The Verwey Transition of Self-assembled Magnetite Nanoparticles.** *P. Anand*¹, *M.E. McHenry*², *T. Nuhfer*¹ and *D.E. Laughlin*¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Carnegie Mellon University, Pittsburgh, PA*

- BH-11. Field-Induced Phase Transitions in an Artificial Spin Ice System.** *J. Sklenar*¹, *Y. Lao*¹, *J.D. Watts*², *C. Nisoli*³, *G. Chern*⁴, *C. Leighton*⁵ and *P. Schiffer*¹ *1. Physics, University of Illinois, Urbana-Champaign, Urbana, IL; 2. Physics, University of Minnesota, Minneapolis, MN; 3. Theoretical Division, LANL, Los Alamos, NM; 4. Department of Physics, University of Virginia, Charlottesville, VA; 5. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

- BH-12. In situ magnetization/heating electron holography to study the magnetic behavior in metallic nanowires.** *E. Ortega*¹, *A. Ponce*¹, *K. Reddy*², *C. Monton*¹, *S. Roughani*³ and *B. Stadler*³
 1. *Physics and Astronomy, University of Texas at San Antonio, San Antonio, TX*; 2. *Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*;
 3. *Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

4:18

- BH-13. Visualized effects of oxidation and temperature on pseudo-single-domain Fe₃O₄ particles examined by environmental TEM and off-axis electron holography.** *T.P. Almeida*¹, *A.R. Muxworthy*², *W. Williams*³, *T. Kasama*⁴, *T.W. Hansen*⁴, *P.D. Brown*⁵, *A. Kovacs*⁶ and *R.E. Dunin-Borkowski*⁶
 1. *School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*; 2. *Department of Earth Science and Engineering, Imperial College London, London, United Kingdom*; 3. *School of GeoSciences, University of Edinburgh, Edinburgh, United Kingdom*; 4. *Center for Electron Nanoscopy, Technical University of Denmark, Lyngby, Denmark*; 5. *Department of Mechanical, Materials & Manufacturing Engineering, University of Nottingham, Nottingham, United Kingdom*; 6. *Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich, Jülich, Germany*

TUESDAY
 AFTERNOON
 1:30

ROOM 411-412

Session BI

MAGNETORESISTANCE, MAGNETOIMPEDANCE, AND HALL EFFECT

Tae Hee Kim, Chair

Ewha Womans University, Seoul, The Republic of Korea

1:30

- BI-01. Direct evidence of ferromagnetism in a quantum anomalous Hall system.** *W. Wang*¹, *Y. Ou*², *C. Liu*², *Y. Wang*^{2,3}, *K. He*^{2,3}, *Q. Xue*^{2,3} and *W. Wu*¹
 1. *Department of Physics and Astronomy, Rutgers University, Piscataway, NJ*; 2. *Department of Physics, State Key Laboratory of Low Dimensional Quantum Physics, Beijing, China*; 3. *Collaborative Innovation Center of Quantum Matter, Beijing, China*

1:42

- BI-02. Optimization of Graphene Field-Sensor Operation near the Charge Neutrality Point.** *G. Song*¹, *M. Ranjbar*¹, *Z. Huang*² and *R. Kiehl*¹
 1. *School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ*;
 2. *Department of Physics, Arizona State University, Tempe, AZ*

- BI-03. Inverse Tunnel Magnetocapacitance in Fe/Al-oxide/Fe₃O₄.** H. Kaiju¹, T. Nagahama², S. Sasaki², T. Shimada², O. Kitakami³, T. Misawa¹, M. Fujioka¹, J. Nishii¹ and G. Xiao⁴ 1. *Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*; 2. *Graduate School of Engineering, Hokkaido University, Sapporo, Japan*; 3. *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*; 4. *Department of Physics, Brown University, Providence, RI*

- BI-04. Anomalous Hall Effect in Wide Range of Conductivity in Co₂FeSi Heusler Alloy Thin Films.** B.K. Hazra¹, M. Raja², R. Rawat³, A. Lakhani³, S.N. Kaul¹ and S. Srinath¹ 1. *School of Physics, University of Hyderabad, Hyderabad-500046, India*; 2. *Defence Metallurgical Research Laboratory, Hyderabad-500058, India*; 3. *UGC-DAE Consortium for Scientific Research, Indore-452001, India*

- BI-05. Landauer-Büttiker approach for hyperfine-mediated spin transport in the integer quantum Hall regime.** A. Singha¹, M. Fauzi², Y. Hirayama² and B. Muralidharan¹ 1. *Electrical Engineering, Indian Institute of Technology, Maharashtra, India*; 2. *Graduate School of Science, Tohoku University, Sendai, Japan*

- BI-06. Theory of the Anomalous Tunnel Hall Effect at Ferromagnet-Semiconductor Junctions.** H. Jaffres¹, D. To², H. Drouhin², H. Dang³, E. Erina², H. Nguyen⁴ and V. Safarov⁵ 1. *CNRS-Thales, Palaiseau, France*; 2. *Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France*; 3. *Unité Mixte de Physique CNRS/Thales, Palaiseau, France*; 4. *Institute of Physics, VAST, Hanoi, Vietnam*; 5. *PMC, Ecole Polytechnique, Palaiseau, France*

- BI-07. Improvement of thermal stability of nano-granular TMR films by using Mg-Al-O insulator matrix.** S. Kanie¹ and S. Koyama¹ 1. *R&D Center, Daido Steel Co., Ltd., Nagoya, Japan*

- BI-08. Oxygen impurities link bistability and magnetoresistance in organic spin valves.** I. Bergenti¹, F. Borgatti², A. Riminucci², P. Graziosi², L. Pasquali³, M. Calbucci⁴, D. MacLaren⁵, J. Rueff⁶, D. Céolin⁶, A. Giglia⁷, R. Cecchini⁸ and V.A. Dediu² 1. *ISMN-CNR, Bologna, Italy*; 2. *CNR-ISMN, Bologna, Italy*; 3. *University of Modena e Reggio Emilia, Modena, Italy*; 4. *ICMol, Paterna, Spain*; 5. *University of Glasgow, Glasgow, United Kingdom*; 6. *Synchrotron SOLEIL, Gif sur Yvette, France*; 7. *CNR-IOM, Basovizza, Italy*; 8. *CNR-IMM, Agrate Brianza, Italy*

3:06

- BI-09. Angular Dependent Magnetoresistance in Single Crystalline Co/Pt(111) System.** *M. Jia*¹, *C. Zhou*¹ and *Y. Wu*¹
1. Department of Physics, State Key Laboratory of Surface Physics, Fudan University, Shanghai, China

3:18

- BI-10. Building an Organic/Inorganic Hybrid Hall Bar Device for the Detection of Spin States in Organometallic Complex.**
J. Park^{1,2}, *N. Lee*², *T. Pham*² and *T. Kim*^{1,2} *1. Center for Quantum Nanoscience, Institute for Basic Science, Seoul, The Republic of Korea; 2. Department of Physics, Ewha Womans University, Seoul, The Republic of Korea*

3:30

- BI-11. Transport measurements of antiferromagnetic chromium confined in two dimensions.** *S.K. Patel*^{1,2} and *E.E. Fullerton*¹
1. Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA; 2. Physics Department, University of California, San Diego, La Jolla, CA

3:42

- BI-12. Magnetoresistance and Transport Mechanism in Solgel Prepared $\text{Nd}_{0.7}\text{Sr}_{0.3-x}\text{Ba}_x\text{MnO}_3$ ($0 \leq x \leq 0.3$) Nanomanganite.**
*L.N. Singh*¹ and *U.L. Shinde*² *1. Physics, Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad, India; 2. Basic Sciences & Humanities, K. J. Somaiya Institute of Engineering & Information Technology, Mumbai, India*

3:54

- BI-13. Ferromagnetism and Spin-dependent Transport at a Complex Oxide Interface.** *Y. Ayino*¹, *P. Xu*², *J. Tigre-Lazo*¹, *J. Yue*², *B. Jalan*² and *V. Pribiag*¹ *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

Session BP
DOMAINS AND VOLTAGE CONTROLLED
MAGNETISM
(Poster Session)

Dafiné Ravelosona, Chair
Institut d'Electronique Fondamentale, Orsay, France

- BP-01. Field-controllable injection of virtual domain wall in magnetic quantum cellular automata system.** X. Ma^{1,2}, S. Kim¹, L. Huang¹, H. Piao³, D. Kim⁴ and S. Yu⁴
1. Department of Physics, Chungbuk National University, Cheongju, The Republic of Korea; 2. Department of Physics, China Three Gorges University, YiChang, China; 3. College of Science, China Three Gorges University, Yichang, China; 4. Physics, Chungbuk National University, Cheongju, The Republic of Korea
- BP-02. Magnetoresistance effect in Permalloy nanowires with various types of notches.** Y. Gao¹, J. Wang¹, Y. Yuan¹, L. Wei¹, H. Tu¹, B. You¹, W. Zhang¹ and J. Du¹ *1. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China*
- BP-03. Instabilities of topological and nontopological bion stripes.** M. Ruth¹, E. Iacocca^{1,2} and M. Hoefler¹ *1. Applied Mathematics, University of Colorado Boulder, Boulder, CO; 2. Physics, Chalmers University of Technology, Gothenburg, Sweden*
- BP-04. Distinct domain-wall dynamics between depinning and flow regimes near the angular momentum compensation temperature of ferrimagnets.** Y. Hirata¹, D. Kim¹, T. Okuno¹, W. Ham¹, S. Kim¹, T. Moriyama¹, A. Tsukamoto², K. Kim³ and T. Ono¹ *1. Institute for Chemical Research, Kyoto University, Uji, Japan; 2. Electronic Engineering, College of Science and Technology Nihon University, Funabashi, Japan; 3. KAIST, Daejeon, The Republic of Korea*
- BP-05. Stress Induced Domain Wall Motion in CoFe.** S. Bhatti¹, C. Ma², T. Ikeda², X. Liu² and S.N. Piramanayagam¹ *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Department of Electrical and Computer Engineering, Shinshu University, Nagano, Japan*
- BP-06. Controlled domain evolution in magnetic heterostructures with perpendicular magnetic anisotropy and interfacial DMI.** K. Nanayakkara¹, M. Hanberry¹, S. Urazhdin² and A. Kozhanov^{1,3} *1. Georgia State University, Atlanta, GA; 2. Emory University, Atlanta, GA; 3. National Research Nuclear University MEPhI, Moscow, Russian Federation*

- BP-07. Pinning Effect of Vortex Domain Wall on Magnetic Wire Using a MOKE Microscopy.** D. Shiu¹, Y. Hong¹, C. Lin², K. Lai¹, K. Chen³, J. Wu⁴ and L. Horng⁴ 1. *Physics, National Changhua University of Education, Changhua, Taiwan*; 2. *Graduate Institute Of Photonics, National Changhua University of Education, Changhua, Taiwan*; 3. *Physics, National Chung Hsing University, Taichung, Taiwan*; 4. *Physics, National Changhua University of Education, Changhua, Taiwan*
- BP-08. Depinning of domain wall from different geometric notches in planar NiFe nanowires.** Y. Wang¹, L. Chen², J. Wang³, X. Lu¹, H. Ling³, J. Wu¹ and Y. Xu^{3,4} 1. *Physics, University of York, York, United Kingdom*; 2. *Electronic and Electrical Engineering, Institute of Microwaves and Photonics, University of Leeds, Leeds, United Kingdom*; 3. *Electronics, University of York, York, United Kingdom*; 4. *York-Nanjing International Joint Center in Spintronics, York, United Kingdom*
- BP-09. Magnetic Domain-Wall Tilting Induced by the Asymmetric Chiral Domain-Wall Speed.** D. Kim¹, M. Park¹, Y. Park², J. Kim¹, Y. Nam¹, D. Kim³, S. Je⁴, B. Min⁵ and S. Choe⁶ 1. *Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea*; 2. *Physics, Seoul National University, Gwanak, The Republic of Korea*; 3. *Kyoto University, Kyoto, Japan*; 4. *SPINTEC, Grenoble, France*; 5. *Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea*; 6. *Seoul National University, Seoul, The Republic of Korea*
- BP-10. High Voltage-Controlled Magnetic Anisotropy by Tuning Seed Layers of Magnetic Tunnel Junctions.** X. Li¹, C. Grezes¹, D. Wu^{1,2}, T. Sasaki³, T. Ohkubo³, K. Fitzell⁴, J.P. Chang⁴, K. Hono³, Z. Zhang², P. Khalili^{1,5} and K.L. Wang¹ 1. *Electrical Engineering, UCLA, Los Angeles, CA*; 2. *Optical Science and Engineering, Fudan University, Shanghai, China*; 3. *Magnetic Materials Unit, National Institute for Materials Science, Tsukuba, Japan*; 4. *Chemical & Biomolecular Engineering, UCLA, Los Angeles, CA*; 5. *Inston Inc., Los Angeles, CA*
- BP-11. Design of High Speed, High Throughput and Low Power Orthogonally Magnetized Voltage Controlled Magnetic Tunnel Junction (VC-MTJ) based Random Number Generator.** F. Ebrahimi^{1,2}, H. Lee^{2,1}, P. Khalili^{1,2} and K.L. Wang² 1. *Inston Inc., Los Angeles, CA*; 2. *Electrical Engineering, University of California, Los Angeles, Los Angeles, CA*
- BP-12. A Spintronic Voltage-Controlled Stochastic Oscillator for Event-Driven Random Sampling.** H. Lee^{1,2}, C. Grezes¹, A. Lee^{1,2}, F. Ebrahimi², P.K. Amiri^{1,2} and K.L. Wang¹ 1. *Electrical Engineering, University of California, Los Angeles, Los Angeles, CA*; 2. *Inston Inc., Los Angeles, CA*
- BP-13. Electrical Control of Magnetization in Thicker Multilayered CoPd Films.** A. Siddque¹, C.A. Nwokoye², E. Della Torre¹ and L.H. Bennett¹ 1. *Institute for Magnetism Research, Department of Electrical and Computer Engineering, The George Washington University, Washington, DC*; 2. *Naval Surface Warfare Center, Carderock Division, West Bethesda, MD*

- BP-14. Voltage control of magnetic switching field for magnetic tunnel junctions with low resistance and perpendicular magnetic anisotropy.** *N. Tezuka*¹, *S. Oikawa*¹, *M. Matsuura*¹, *S. Sugimoto*¹, *K. Nishimura*², *T. Irisawa*², *Y. Nagamine*² and *K. Tsunekawa*² *1. Tohoku Univ, Sendai, Japan; 2. Canon ANELVA Corporation, Kawasaki, Japan*
- BP-15. Theory of ferromagnetic resonance driven by the combined action of spin-transfer torque and voltage-controlled magnetic anisotropy.** *C.A. Gonzalez-Fuentes*¹, *C. Garcia*¹, *P. Landeros*¹ and *R. Gallardo*¹ *1. Physics, UTFSM-Universidad Técnica Federico Santa María, Valparaiso, Chile*
- BP-16. Voltage Control of Superfluid Spin Transport in Magnetic Josephson Junction.** *Y. Liu*¹, *P. Upadhyaya*², *S. Kim*², *E.A. Montoya*³, *C.J. Safranski*³, *I. Barsukov*⁴, *A.H. MacDonald*⁵, *I. Krivorotov*³, *Y. Tserkovnyak*² and *K.L. Wang*¹ *1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 3. Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Physics and Astronomy, University of California, Riverside, Los Angeles, CA; 5. Physics, University of Texas at Austin, Austin, TX*

TUESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session BQ
MAGNETIC RECORDING
(Poster Session)

Tao Liu, Chair
Colorado State University, Fort Collins, CO

- BQ-01. A novel detection technique for electromagnetic interference induced playback signal distortion in CPP-GMR read heads.** *P. Khunkitti*¹, *A. Kruesubthaworn*², *A. Kaewrawang*³ and *A. Siritaratiwat*³ *1. KKU-Seagate Cooperation Research Laboratory, Department of Electrical Engineering, Faculty of Engineering, Khon Kaen University, Muang Khon Kaen, Thailand; 2. Faculty of Applied Science and Engineering, Khon Kaen University, Nong Khai Campus, Muang, Thailand; 3. Department of Electrical Engineering, Khon Kaen University, Khon Kaen, Thailand*
- BQ-02. A challenge to reduction of intergranular exchange coupling and grain size for CoPt-based granular media: metal-oxide buffer layer and multiple oxides boundary materials.** *K. Tham*¹, *R. Kushibiki*^{1,2}, *T. Kamada*¹, *S. Hinata*² and *S. Saito*² *1. Tanaka Kikinzoku Kogyo K.K., Tsukuba, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

- BQ-03. Hybrid design for advanced magnetic recording media: Combining exchange coupled composite media with coupled granular continuous media.** P. Chureemart¹, R.F. Evans², R. Chantrell², P. Huang³, K. Wang³, G. Ju³ and J. Chureemart¹
1. Department of Physics, Mahasarakham University, Mahasarakham, Thailand; 2. Department of Physics, University of York, York, United Kingdom; 3. Seagate Technology, Fremont, CA
- BQ-04. Tailoring the Structural and Magnetic Properties of Masked CoPt Thin Films Using Ion Implantation.** D. Kumar¹, S. Gupta¹, T. Jin¹, R. Nongjai², A. Kandasami² and S.N. Piramanayagam¹
1. Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Materials Science Division, Inter-University Accelerator Centre, Delhi, India
- BQ-05. Iterative Decoding of SOVA and LDPC Product Code for Bit Patterned Media Recording.** S. Jeong¹ and J. Lee¹
1. Soongsil University, Seoul, The Republic of Korea
- BQ-06. Microwave-assisted magnetic recording using a planar write head.** S. Greaves¹, Y. Kanai² and H. Muraoka¹
1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan
- BQ-07. Effects of head-field and AC-field on magnetization reversal for microwave assisted magnetic recording.** A. Kase¹, F. Akagi¹ and K. Yoshida²
1. Electrical Engineering and Electronics, Kogakuin University, Tokyo, Japan; 2. Kogakuin University, Shinjuku-ku, Japan
- BQ-08. Micromagnetic Model Analysis of Spin Torque Oscillators Integrated into Write Head Gap vs. Head Field Response.** Y. Kanai², R. Itagaki², S. Greaves¹ and H. Muraoka¹
1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan
- BQ-09. Envelope Demodulation Using Temporal Magnetization Dynamics of Resonantly Interacting Spin-Torque Oscillator for Three-Dimensional Magnetic Recording.** Y. Nakamura¹, M. Nishikawa¹, H. Osawa¹, Y. Okamoto¹, T. Kanao² and R. Sato²
1. Department of Electrical and Electronic Engineering and Computer Science, Ehime University, Matsuyama, Japan; 2. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan
- BQ-10. Read/write simulation on microwave-assisted magnetic recording for exchange-coupled composite granular media.** T. Tanaka¹, Y. Kanai² and K. Matsuyama³
1. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan; 3. Dept. of Electronics, Kyushu Univ., Fukuoka, Japan
- BQ-11. Study of interlayer exchange coupling and damping in hard/soft bi-layered systems.** D. Richardson¹, K. Srinivasan², A. Ajan² and M. Wu¹
1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Western Digital, San Jose, CA

BQ-12. Improvement of Perpendicular Anisotropy of Columnar FePt-ZrO₂-C Films with FePt Insert Layer. K. Dong¹, F. Jin¹, W. Cheng² and H. Wang³ 1. Automation, China University of Geosciences, Wuhan, China; 2. School of Optical and Electronic Information, Huazhong University of Science & Technology, Wuhan, China; 3. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China

BQ-13. Effective All-Optical Polarization Switching Range of L10-FePtAg Nanoparticle Restricted by Intrinsic Opto-Magnetic Response. T. Huang¹, H. Wang¹, Y. Zou¹, W. Cheng² and C. Xie¹ 1. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China; 2. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China

BQ-14. Impact of Radius and Skew on Areal Density in HAMR Hard Disk Drives. M. Cordle^{1,3}, C. Rea², J. Jury¹, T. Rausch¹, C. Hardie¹, E. Gage¹ and R.H. Victora³ 1. Storage Research Group, Seagate Technology, Shakopee, MN; 2. Recording Head Operations, Seagate Technology, Bloomington, MN; 3. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN

BQ-15. Withdrawn

BQ-16. Withdrawn

TUESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session BR
FERRITES AND GARNETS II
(Poster Session)

Yunpeng Chen, Co-Chair
Winchester Technologies, LLC, Winchester, MA
Ivan Lisenkov, Co-Chair
Oregon State University, Corvallis, OR

BR-01. Modeling of Stress-Dependent Hysteresis based on Elemental Operator for Ferromagnetic Material. N. Duan¹, W. Xu², Y. Li³, S. Wang¹, Y. Guo⁴ and J. Zhu⁴ 1. Xi'an Jiaotong University, Xi'an, China; 2. State Grid Shaanxi Electric Power Company Economic Research Institute, Xi'an, China; 3. Hebei University of Technology, Tianjin, China; 4. School of Electrical Engineering, University of Technology Sydney, Sydney, NSW, Australia

BR-02. Temperatures and Field Dependent Magnetization Study on Nano-crystalline ZnFe₂O₄ Thin Films. B. Sahu¹, K. Suresh¹, N. Venkataramani², S. Prasad¹ and R. Krishnan³ 1. Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Metallurgical Engineering & Materials Science, IIT Bombay, Mumbai, India; 3. Groupe d'Etude de la Matière Condensée, CNRS/Université de Versailles-St-Quentin, Versailles Cedex, France

- BR-03. Integrating Yttrium Iron Garnet with Si Substrates.** *H.O. Aquino¹, K. Pourang¹, W. Porod¹ and G.H. Bernstein¹*
1. Electrical Engineering, University of Notre Dame, Notre Dame, IN
- BR-04. Ruthenium Doping of Solution-Processed Yttrium Iron Garnet Thin Films for Increased Magnetostriction.** *C.T. Karaba¹ and S. Tolbert²*
1. Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA;
2. Chemistry & Biochemistry and Materials Science & Engineering, UCLA, Los Angeles, CA
- BR-05. Magnetic Behavior of Spin Spray Deposited NiZn Ferrite/Muscoive Flexile Substrate.** *X. Wang¹, H. Chen¹, Y. Wei¹ and N.X. Sun²*
1. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA
- BR-06. Highly efficient induction heating effect of low dosage core/shell structure magnetic nanocomposite for hyperthermia therapy application.** *M. Barati^{1,2}*
1. The Medical Device Research Institute, Flinders University, Adelaide, SA, Australia;
2. School of Chemical and Physical Sciences, Centre for Nanoscale Science and Technology, Adelaide, SA, Australia
- BR-07. Bolometric detection of ferromagnetic resonance in YIG slab.** *S. Tu^{1,2}, M. Bialek², Y. Zhang¹, W. Zhao¹, H. Yu¹ and J. Ansermet²*
1. Fert Beijing Research Institute, School of Electronic and Information Engineering, BDBC, Beihang University, Beijing, China; 2. Institute of Physics, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
- BR-08. Anomalous Hall Effect and Magnetic Proximity Effect in Pt/Y₃Fe_{5-x}Al_xO₁₂ Heterostructures.** *X. Liang^{1,2}, C. Wang^{1,2}, Y. Zhu^{1,2}, L. Deng^{1,2} and L. Bi^{1,2}*
1. State Key Laboratory of Electronic Thin-Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China;
2. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, China
- BR-09. Interfacial spin transport in YIG/Pt bilayers with variable Pt resistivity.** *M.H. Aldosary¹, B. Arkook¹, J. Li¹, V. Ortiz¹, Z. Shi¹, I. Barsukov¹ and J. Shi¹*
1. Department of Physics and Astronomy, University of California Riverside, Riverside, CA
- BR-10. The Ferromagnetic Resonance in WMo/YIG Heterostructures.** *L. Ma¹, L.L. Lang², H. Fu¹, C. You¹, N. Tian¹, S. Zhou², H. Zhou³ and X. Fan³*
1. School of Materials Science and Engineering, Xi'an University of Technology, Xi'an, China; 2. Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology and Pohl Institute of Solid State Physics and School of Physics Science and Engineering, Tongji University, Shanghai, China; 3. Physical Science and Technology, Lanzhou University, Lanzhou, China

- BR-11. Frequency and Magnetic Field Mapping of Magnetoelastic Spin Pumping in High Overtone Bulk Acoustic Wave Resonator.** *N. Polzikova*¹, *S. Alekseev*¹, *I. Pyataikin*¹, *V. Luzanov*¹, *A. Raevskiy*¹ and *V. Kotov*¹ *I. Kotel'nikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation*
- BR-12. Simultaneous spin pumping and spin Seebeck experiments in bilayers of YIG/Pt and YIG/IrMn: Thermal control of the magnetic damping.** *J. Holanda*¹, *O. Alves-Santos*¹, *R. Rodriguez*², *A. Azevedo*¹ and *S.M. Rezende*¹
1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil; 2. Physics, Pontificia Universidad Católica de Chile, Santiago, Chile
- BR-13. Optimal Design of High Frequency 2-D Excitation Structure with Nanocrystalline Material Considering Stress Effects.** *A. Li*¹, *Y. Li*¹, *L. Wang*¹, *C. Zhang*¹ and *J. Zhu*² *1. Hebei University of Technology, Tianjin, China; 2. School of Electrical Engineering, University of Technology Sydney, Sydney, NSW, Australia*
- BR-14. Microstructure, Soft Magnetic Properties and Applications of Amorphous Fe-Co-Si-B-Mo-P Alloy.** *M. Hasiak*¹, *M. Miglierini*^{2,3}, *M. Lukiewski*⁴ and *A. Laszcz*¹ *1. Department of Mechanics and Materials Science Engineering, Wrocław University of Science and Technology, Wrocław, Poland; 2. Institute of Nuclear and Physical Engineering, Slovak University of Technology in Bratislava, Bratislava, Slovakia; 3. Department of Nuclear Reactors, Czech Technical University in Prague, Prague, Czech Republic; 4. FluxCom JEE, Koszecin, Poland*
- BR-15. Core Loss Calculation for Magnetic Materials Employed in SMPS under Rectangular Voltage Excitations.** *S. Yue*¹, *Y. Li*¹, *Q. Yang*² and *C. Zhang*¹ *1. Hebei University of Technology, Tianjin, China; 2. Tianjin Polytechnic University, Tianjin, China*

TUESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session BS
TRANSFORMERS AND INDUCTORS II
(Poster Session)

Kevin Byerly, Chair
National Energy Technology Laboratory, Pittsburgh, PA

- BS-01. Current Distribution Analysis for a Multilayer High-Tc Superconducting Cable Considering Magnetic Hysteresis.** *N. Duan*¹, *W. Xu*², *S. Wang*¹ and *J. Zhu*³ *1. State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 2. State Grid Shaanxi Electric Power Company Economic Research Institute, Xi'an, China; 3. School of Electrical Engineering, University of Technology Sydney, Sydney, NSW, Australia*

- BS-02. Design optimization of high frequency transformer with controlled leakage inductance for current fed dual active bridge converter.** *J. Yoo*¹, *W. Ham*² and *T. Jung*¹ 1. *Electrical Engineering, Kyungnam University, Chang-won, The Republic of Korea*; 2. *LG electronics, Gumi, The Republic of Korea*
- BS-03. Analysis and Optimization of a New Structure for Wireless Charging System of Electric Vehicles.** *Z. Li*¹, *J. Yi*¹ and *M. Chen*² 1. *College of Traffic Engineering, Hunan University of Technology, Zhuzhou, China*; 2. *College of Electrical and Information Engineering, Hunan University, Changsha, China*
- BS-04. A Polygonal Double-Layer Coil Design for High-Efficiency Wireless Power Transfer System via Coupled Magnetic Resonances.** *S. Mao*¹, *H. Wang*¹, *Z. Mao*¹ and *M. Sun*^{1,2} 1. *Department of Electrical & Computer Engineering, University of Pittsburgh, Pittsburgh, PA*; 2. *Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA*
- BS-05. Vibration and Acoustic Noise Emitted by Dry-Type Air-Core Reactors Under PWM Voltage Excitation.** *J. Li*¹, *S. Wang*¹, *J. Hong*¹, *Z. Yang*¹ and *S. Jiang*¹ 1. *State Key Laboratory of Control and Simulation of Power System and Generation Equipments, Department of Electrical Engineering, Tsinghua University, Beijing, China*
- BS-06. An Ultra-Thin Vibration-Based Electromagnetic Power Generator.** *Y. Liu*¹, *H. Wang*², *S. Mao*² and *M. Sun*^{2,3} 1. *College of Information Science and Engineering, Huaqiao University, Xiamen, China*; 2. *Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA*; 3. *Neurological Surgery, University of Pittsburgh, Pittsburgh, PA*
- BS-07. New Method for Improving Current and Magnetic Field Measurements for RF and Microwave Frequency Circuits with Parasitic Elements.** *L. Bauer*¹, *N. Prabhu Gaunkar*¹, *M. Mina*¹, *J. Selvaraj*² and *R. Weber*³ 1. *Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*; 2. *Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*; 3. *Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*
- BS-08. Design and Analysis of a Flux Intensifying Permanent Magnet Embedded Salient Pole Wind Generator.** *Y. Guo*¹, *P. Jin*¹ and *H. Yang*² 1. *College of Energy and Electrical Engineering, Hohai University, Nanjing, China*; 2. *School of Electrical Engineering, Southeast University, Nanjing, China*
- BS-09. Cooling Performance in Conventional Vegetable Oil-Based Magnetic Nanofluid with Different Volume Fractions of Nanoparticles due to Magnetoconvection Effect.** *H. Lee*¹ and *S. Lee*² 1. *Changshin University, Changwon-si, The Republic of Korea*; 2. *Kyungpook National Univ., Daegu, The Republic of Korea*

- BS-10. An Integrated Multi-source Energy Harvester Based on Vibration And Magnetic Field Energy.** Z. Hu¹, J. Qiu¹, X. Liu¹, Q. Chang¹, X. He¹ and Y. Long¹ *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- BS-11. Study on Power Loss in Superconducting Windings of Stator Field-excited HTS Machine.** Y.W. Tang³, T.W. Ching^{3,1}, W. Li¹ and C. Lee² *1. The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 3. Electromechanical Engineering, University of Macau, Taipa, Macao*
- BS-12. Improved Performance of Spiral Inductor Fabricated by 3D Additive Manufacturing.** A.B. Menicanin¹, N. Blaz², D. Movrin², L. Zivanov² and M. Lukovic¹ *1. Institute for Multidisciplinary Research University of Belgrade, Belgrade, Serbia; 2. Faculty of Technical Science University of Novi Sad, Novi Sad, Serbia*
- BS-13. Electromagnetic, Mechanical and Thermal Coupled Analysis of a Saturable Magnetically Controlled Reactor.** B. Jiang¹, Y. Li¹, C. Zhang¹ and Q. Yang² *1. Hebei University of Technology, Tianjin, China; 2. Tianjin Polytechnic University, Tianjin, China*
- BS-14. A Dynamic Multi-level Optimal Design Method with Embedded Finite-element Modeling for Power Transformers.** Y. Zhang¹, S. Ho¹ and W. Fu¹ *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, Hong Kong*

TUESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session BT
ENERGY HARVESTING, POWER, PROPULSION,
AND LEVITATION
(Poster Session)

Chris Olson, Chair
NVE Corporation, Eden Prairie, MN

- BT-01. Design methodology of toroidal core for magnetic energy harvesting based on magnetic field dependence of permeability near power line.** B. Park¹, D. Kim¹, J. Park¹, J. Koo³, H. Park² and S. Ahn¹ *1. CCS Graduate School for Green Transportation, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 2. Electronic Engineering, The University of Suwon, Hwaseong-si, The Republic of Korea; 3. Ferrarispower, Seongnam-si, The Republic of Korea*
- BT-02. Modeling and Analysis of Galfenol Cantilever Vibration Energy Harvester with Nonlinear Magnetic Force.** S. Cao¹, S. Sun¹, J. Zheng¹, B. Wang¹, L. Wan¹ and R. Pan¹ *1. Electrical Engineering, Hebei University of Technology, Tianjin, China*

- BT-03. Magnetostrictive energy generator for harvesting the rotation of human knee joint.** B. Yan¹, C. Zhang² and L. Li²
1. School of Automation, Guangdong University of Technology, Guangzhou, China; 2. Harbin Institute of Technology, Harbin, China
- BT-04. Characterizing Energy Conversion Efficiency of Ferrofluid-Based Vibration Energy Harvesters and Comparative Analysis with Other Vibration Energy Harvesting Devices.** N. Anand¹ and R. Gould¹ 1. Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC
- BT-05. Modeling and Analysis of a Voice Coil Actuator for Multi Degrees of Freedom Precision Positioning System.** Y. Zhou¹, B. Kou¹, F. Xing¹ and X. Yang¹ 1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China
- BT-06. Prediction of Temperature Distribution in Transformers with Oil-based Nanofluids Using Finite Volume Method.** X. Yang^{1,2}, S. Ho¹, W. Fu¹, G. Xu² and S. Niu¹ 1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hung Hom, Hong Kong; 2. Department of Electrical Engineering, Hebei University of Technology, Tianjin, China
- BT-07. Band gap engineering of Gd and Co doped BiFeO₃ and their application in hydrogen production through photoelectrochemical route.** A.K. Vishwakarma¹ and A. Srivastava² 1. Department of Physics, Banaras Hindu University, Varanasi, India; 2. Physics, TDPG College, Jaipur, India
- BT-08. Simultaneous magnetic investigations of Cu precipitation and recovery in thermally aged Fe-Cu alloy by first-order reversal curves.** S. Kobayashi¹ 1. Iwate University, Morioka, Japan
- BT-09. Numerical calculation for power losses for MgB₂/Monel wires.** K. Dong¹ 1. School of Electrical Engineering, Southeast University, Nanjing, China
- BT-10. Self-Positioning Ability of a Sphericon-Shaped Magnetic Millirobot Rolling on an Inclined Surface.** S. Jeon¹, D. Lee¹, J. Oh¹ and H. Lee¹ 1. Mechanical and Automotive Engineering, Kongju National University, Cheonan, The Republic of Korea
- BT-11. A Magnetic Braking and Sensing Technique for Deceleration and Recovery of Moving Non-magnetic Metallic Particles.** D. Cheng¹ and A. Yoshinaka¹ 1. Defence Research and Development Canada - Suffield Research Centre, Medicine Hat, AB, Canada
- BT-12. Force Characteristic Analysis of a Magnetic Gravity Compensator with Annular Magnet Array for Magnetic Levitation Positioning System.** Y. Zhou¹, B. Kou¹, X. Yang¹ and F. Xing¹ 1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China
- BT-13. Physics of Propulsion and Levitation of Self-Driven Electrodynamic Wheels.** C. Barazandeh¹ 1. Northern Virginia Community College, Arlington, VA

BT-14. Heat Transfer Comparison of Nanofluid Filled Transformer and Traditional Oil-immersed Transformer. *Y. Zhang*¹, S. Ho¹ and W. Fu¹ *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, Hong Kong*

BT-15. Experimental Study of Forces Created by Different Electrodynamic Wheels on Conducting Tracks. *J. Del Carpio Arispe*¹, V. Cordrey², S. Samei² and W. Majewski² *1. Engineering, Northern Virginia Community College, Annandale, VA; 2. Physics, Northern Virginia Community College, Annandale, VA*

BT-16. Magnetic field concentration using ferromagnetic material for propulsion of wireless power transfer based micro-robot. *D. Kim*¹, B. Park¹, J. Park¹, H. Park² and S. Ahn¹ *1. CCS Graduate School for Green Transportation, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 2. Electronic Engineering, The University of Suwon, Hwaseong-si, The Republic of Korea*

TUESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session BU
MAGNETICS FOR POWER ELECTRONICS AND
CONTROL II
(Poster Session)

Elio Alberto Perigo, Chair
ABB, Raleigh, NC

BU-01. Seismic circuit breaker with electromagnetic contactor. *T. Mifune*¹ and K. Nishimura¹ *1. National Institute of Technology, Suzuka College, Suzuka, Japan*

BU-02. Analysis of Hysteretic Systems Adaptive to Noisy Environments for Smart-Sensor Applications. *M. Dimian*^{1,2}, P. Andrei³, S. Vlad¹, A. Cailean¹ and A. Done¹ *1. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania; 2. Electrical Engineering and Computer Science, Howard University, DC, WA; 3. Electrical and Computer Engineering, Florida State University, Tallahassee, FL*

BU-03. Efficient multiscale magnetic-domain analysis of iron-core material under mechanical stress. *A. Nishikubo*¹, S. Ito¹, T. Mifune¹, T. Matsuo¹, C. Kaido², Y. Takahashi³ and K. Fujiwara³ *1. Dept. Electrical Engineering, Kyoto University, Kyoto, Japan; 2. Kitakushu National College of Technology, Kitakushu, Japan; 3. Doshisha University, Kyotanabe, Japan*

BU-04. Methodology of Incorporating Mechanical and Electromagnetic Characteristics Analysis for Ferrite Magnet Motor. *S. Lee*¹ and *W. Kim*² *1. Dept. of Intelligent Information Technology Fusion, Busan University of Foreign Studies, Busan, The Republic of Korea; 2. Dept. of Energy IT, Gachon University, Seongnam-Si, The Republic of Korea*

- BU-05. Development of computational and mathematical resonance frequency prediction model of linear oscillating actuators considering nonlinearity of permanent-magnetic material.** *J. Kim^{1,2}, Y. So³, E. Hong³, D. Kang³ and W. Kim²* 1. *Research Institute, JINN, M105 RnDB center Bldg. Kyungil Univ., 50, Gamasil-gil, Hayang-eup, Gyeongsan-si, The Republic of Korea;* 2. *Mechanical and Automotive Engineering, Keimyung University, Daegu, The Republic of Korea;* 3. *Electrical Energy Engineering, Keimyung University, Daegu, The Republic of Korea*
- BU-06. Design and Analysis of New Interior Permanent Magnet Motor With Surface Mounted PM.** *A. Nazir¹, G. Liu¹ and Q. Chen¹* 1. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- BU-07. A Study on the Improvement of Power Density and the Estimation of Performance for HEV Traction Motor.** *C. Jin¹ and W. Kim²* 1. *Hanwha Techwin, Seong-Nam, The Republic of Korea;* 2. *Dept. of Energy IT, Gachon University, Seongnam-Si, The Republic of Korea*
- BU-08. A Study of Flux Control for High-Efficiency Speed Control of Variable Flux Permanent Magnet Motor.** *Y. Lee¹, S. Shin¹, J. Lee¹ and Y. Kim¹* 1. *Electrical Engineering Department, Hanbat National University, Daejeon, The Republic of Korea*
- BU-09. Analysis of Magnetization Characteristic Based B-H Curve Fitting According to the Thermal and Operation Conditions.** *S. Lee¹, M. Lim¹, J. Lee² and Y. Kim²* 1. *Department of Electrical Engineering, Hanbat National University, Dongseo-daero, The Republic of Korea;* 2. *Hanbat National University, Daejeon, The Republic of Korea*
- BU-10. Design of Spoke Type Motor and Magnetizer for Improving Efficiency Based Rare-Earth-Free Permanent-Magnet Motor.** *B.C. Cheon¹, H. Jeong¹, Y. Qian¹, J. Lee¹ and Y. Kim¹* 1. *Department of Electrical Engineering, Hanbat National University, Daejeon, The Republic of Korea*
- BU-11. Analytical Modeling of Halbach Linear Generator Incorporating Pole Shifting and Piece-wise Spring.** *Y. Tan¹, K. Lin¹ and J. Zu^{1,2}* 1. *Mechanical and Industrial Engineering, University of Toronto, Toronto, ON, Canada;* 2. *Stevens Institute of Technology, Hoboken, NJ*
- BU-12. The analysis of iron-loss for two-stage saturable MCR in High field strength.** *M. Liu¹, Y. Li¹ and C. Zhang¹* 1. *Hebei University of Technology, Tianjin, China*
- BU-13. Analytical Torque Calculations and Experimental Verification of Synchronous Permanent Magnet Coupling with Halbach Arrays.** *S. Seo¹, Y. Kim², J. Lee² and J. Choi¹* 1. *Chungnam National University, Daejeon, Korea, The Republic of Korea;* 2. *Hanbat National University, Daejeon, The Republic of Korea*
- BU-14. A Wave Shaping Approach of Ferrite Inductors Exhibiting Hysteresis Using Orthogonal Field Bias.** *A. Adly¹ and S. Abd-El-Hafiz²* 1. *Elect. Power Eng. Dept., Cairo University, Giza, Egypt;* 2. *Engineering Mathematics Dept., Cairo University, Giza, Egypt*

BU-15. Evaluation of magnetostriction in magnetoelectric gyrators.
X. Zhuang¹, D. Viehland¹ and J. Li¹ 1. Materials Science and Engineering, Virginia Tech, Blacksburg, VA

BU-16. Investigation of a Less Rare-Earth Permanent-Magnet Machine with the Consequent Pole Rotor. *J. Bai¹ and P. Zheng¹ 1. Harbin Institute of Technology, Harbin, China*

TUESDAY SPIRIT OF PITTSBURGH BALLROOM A
AFTERNOON
2:30

Session BV

MAGNETOELECTRIC AND MULTIFERROIC FILMS AND HETEROSTRUCTURES I (Poster Session)

Christoph Klewe, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA

BV-01. Polarized Neutron Reflectivity Studies on Epitaxial BiFeO₃/La_{0.7}Sr_{0.3}MnO₃ Integrated with Si (100). *S. Singamaneni¹, J.T. Prater², H. Ambaye³, A.G. Glavic⁴, V. Lauter³ and J. Narayan⁵ 1. Department of Physics, The University of Texas at El Paso, El Paso, TX; 2. Materials Science Division, Army Research Office, RTP, NC; 3. NSSD, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, Villigen PSI, Switzerland; 5. Materials Science and Engineering, North Carolina State University, Raleigh, NC*

BV-02. Magnetoelectric Coupling in Pulse Laser Deposited [Ba(Zr_{0.2}Ti_{0.8})O₃-0.5(Ba_{0.7}Ca_{0.3})TiO₃]/CoFe₂O₄ Multiferroic Heterostructure. *J. Rani^{1,2}, V.K. Kushwaha² and C.V. Tomy² 1. Physics, Vardhaman College, Bijnor, Bijnor, India; 2. Physics, IIT Bombay, Mumbai, India*

BV-03. Mechanisms of anisotropy control by strain in FePt/BaTiO₃.
A. Román^{1,2}, A. Lopez Pedroso^{1,2}, A. Lo Giudice¹, L. Neñer³, M.H. Aguirre^{4,5}, J. Gomez³, A. Butera³, M. Sirena³ and L.B. Steren^{1,2} 1. Gerencia de Investigación y Aplicaciones No Nucleares, Instituto de Nanociencia y Nanotecnología, Buenos Aires, Argentina; 2. Departamento de Materia Condensada, Comisión Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina; 3. Centro Atómico Bariloche, Bariloche, Argentina; 4. Universidad de Zaragoza, Instituto de Nanociencia de Aragón, Zaragoza, Spain; 5. Universidad de Zaragoza, Laboratorio de Microscopías Avanzadas, Departamento de Física de la Materia Condensada, Zaragoza, Spain

BV-04. Perpendicular magnetic anisotropy of Cu/Ni multilayers on in-plane polarized ferroelectric epitaxial BaTiO₃ thin films.
K. Komatsu¹, I. Suzuki¹, T. Aoki², Y. Hamasaki¹, S. Yasui¹, M. Itoh¹ and T. Taniyama¹ 1. Laboratory for Materials and Structures, Tokyo Institute of Technology, Yokohama, Japan; 2. Advanced Technology Development Center, TDK Corporation, Ichikawa, Japan

- BV-05. Strain mediated magnetic response in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3/\text{SrTiO}_3/\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3/\text{BaTiO}_3$ structures.** A. Swain¹, K. Komatsu², M. Itoh², T. Taniyama² and V. Gorjge¹ 1. School of Physics, University of Hyderabad, Hyderabad, India; 2. Laboratory for Materials and Structures, Tokyo Institute of Technology, Midori-ku, Japan
- BV-06. Electric field control of magnetic properties in FeRh/PMN-PT heterostructures.** Y. Xie¹, Q. Zhan¹, H. Yang², B. Wang¹ and R. Li¹ 1. Ningbo Institute of Industrial Technology, Chinese Academy of Sciences., Ningbo, China; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering (NIMTE), Ningbo, China
- BV-07. Magnetic field dependence of threshold electric field for magnetoelectric switching of perpendicular exchange bias.** Y. Shiratsuchi¹, T. Nguyen¹, A. Kobane¹ and R. Nakatani¹ 1. Osaka University, Osaka, Japan
- BV-08. Multiferroic properties of heterostructures using antiferromagnetic insulator SmFeO_3 .** M. Kuroda¹, T. Hajiri¹, N. Tanahashi¹, K. Ueda¹ and H. Asano¹ 1. Materials Physics, Nagoya University, Nagoya, Japan
- BV-09. Single Crystal Epitaxial $\text{Fe}_{1-x}\text{Ga}_x$ on Piezoelectrics for Multiferroic Applications.** R. Steinhardt¹, J. Heron² and D. Schlom¹ 1. Materials Science and Engineering, Cornell University, Ithaca, NY; 2. Materials Science and Engineering, University of Michigan, Ann Arbor, MI
- BV-10. Martensitic phase transition in $\text{Ni}_2\text{Mn}_{1.5}\text{In}_{0.5}$ thin films on ferroelectric substrate.** N. Al-Aqtash^{3,1}, A. Sokolov² and R. Sabirianov¹ 1. Physics, University of Nebraska at Omaha, Omaha, NE; 2. University of Nebraska-Lincoln, Lincoln, NE; 3. Physics Department, Hashemite University, Al zarqa, Jordan
- BV-11. Multiferroic Properties of RF Magnetron Sputtering Grown Self-assembled Epitaxial $\text{BiFeO}_3\text{-CoFe}_2\text{O}_4$ Nanocomposite Thin Films.** T. Kim¹, S. Lee¹, C. Ross² and D. Kim¹ 1. Myongji University, Yongin, The Republic of Korea; 2. Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA
- BV-12. Carbon combustion synthesis of magnetoelectric cobalt ferrite-barium titanate composites.** C. Dannangoda¹, F. Patlan¹, M. Hobosyan¹, L. Chang², M. Khodadady², D. Litvinov² and K. Martirosyan¹ 1. Physics, University of Texas Rio Grande Valley, Brownsville, TX; 2. Department of Electrical and Computer Engineering, University of Houston, Houston, TX
- BV-13. Study of structure, dielectric and magnetic properties of Mn-Zn ferrite- BaTiO_3 composites.** A. Farheen¹ and R. Singh¹ 1. School of Physics, University of Hyderabad, Hyderabad, India

BV-14. Magnetic and dielectric properties of cobalt ferrite/barium calcium zirconate titanate core/shell nanostructures.

V. Mosali¹, V.M. Reddy¹, M. Qasim¹, P. Praveen¹,
T.V. Jayaraman² and D. Das¹ 1. School of Engineering Science
and Technology, University of Hyderabad, Hyderabad, India;
2. Department of Mechanical Engineering, University of
Michigan, Dearborn, MI

BV-15. 360 Degree Deterministic Magnetization Rotation in a Three-Ellipse Magnetolectric Heterostructure. A. Kundu¹,

A.C. Chavez¹, S. Keller¹, G. Carman¹ and C. Lynch¹
1. Mechanical and Aerospace Engineering, University of
California, Los Angeles, San Fernando, CA

BV-16. Enhanced Tunability of Magneto-impedance and Magneto-capacitance in Annealed Metgals/PZT Magnetolectric Gytrators. C. Leung¹, X. Zhuang¹, J. Xu¹, J. Li¹, G. Srinivasan²

and D. Viehland¹ 1. Materials Science and Engineering,
Virginia Tech, Blacksburg, VA; 2. Physics, Oakland University,
Rochester, MI

WEDNESDAY
MORNING
8:30

SPIRIT OF PITTSBURGH BALLROOM B

Session CA

**WHAT SPINTRONICS CAN BRING TO
MICROELECTRONICS**

Bernard Dieny, Chair
SPINTEC, Grenoble, France

8:30

CA-01. MRAM: Emerging Applications and System Differentiations. (Invited) S.H. Kang¹ 1. Corporate Research and Development, Qualcomm Technologies, Inc., San Diego, CA

9:06

CA-02. NV-Working Memory and its Logic Applications with Spintronics and Vertical BC-MOSFET Technology. (Invited) T. Endoh¹ 1. Tohoku University, Sendai, Japan

9:42

CA-03. Benefits and Challenges of a Non-Volatile Digital Platform. (Invited) V. Javerliac¹ 1. eVaderis, Montbonnot, France

10:18

CA-04. What Spinelectronics Can Bring to RF Communication. (Invited) U. Ebels¹ 1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP*, INAC, SPINTEC, F-38000 Grenoble, France; * Institute of Engineering Univ. Grenoble Alpes, SPINTEC, Grenoble, France

- CA-05. Demanding Applications For Magnetoresistive Sensors.**
(Invited) R. Lehdorff¹, J. Paul¹ and M. Doms¹ 1. Sensitec GmbH, Mainz, Germany

WEDNESDAY
 MORNING
 8:30

ROOM 301-303

Session CB
SPIN CURRENTS: ULTRAFAST, DETECTION, AND DYNAMICS

Antonio Azevedo, Chair
 UFPE, Recife, Brazil

8:30

- CB-01. Compensated ferrimagnet based terahertz emitters.**
M. Chen¹, R. Mishra², Y. Wu¹ and H. Yang¹ 1. National University of Singapore, Singapore, Singapore; 2. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore

8:42

- CB-02. Sub-picosecond Spin-to-charge Conversion by Inverse Rashba-Edelstein Effect in Bi/Ag/Fe Systems.** *C. Zhou¹, Y. Liu^{1,2}, S. Ma¹, M. Jia¹, L. Zhou¹, W. Zhang³, J. Qi² and Y. Wu¹ 1. Department of Physics, State Key Laboratory of Surface Physics and Collaborative Innovation Center of Advanced Microstructure, Fudan University, Shanghai, China; 2. School of Microelectronics and Solid-State electronics, University of Electronic Science and Technology of China, Chengdu, China; 3. Department of Physics, Oakland University, Rochester, MI*

8:54

- CB-03. Coherent THz transient spin currents by spin pumping.**
L. Bocklage^{1,2} 1. Photon Science, DESY, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany

9:06

- CB-04. Direct detection of pure AC spin-current by x-ray pump-probe measurements. (Invited) J. Li¹ 1. School of Physics, International Center for Quantum Materials (ICQM), Beijing, China**

9:42

- CB-05. Efficient Spintronic Terahertz Emitters Based on Epitaxial Grown Fe/Pt Layer Structures.** *S. Keller¹, G. Torosyan², L. Scheuer¹, E.T. Papaioannou¹ and R. Beigang^{1,2} 1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany; 2. Photonic Center Kaiserslautern, Kaiserslautern, Germany*

- CB-06. Chemical Potential of Quasi-Equilibrium Magnon Gas Driven by Pure Spin Current.** V.E. Demidov¹, S. Urazhdin², B. Divinskiy¹ and S. Demokritov¹ *1. Institute for Applied Physics, University of Muenster, Muenster, Germany;*
2. Physics, Emory University, Atlanta, GA

10:06

- CB-07. H_z Biased Field Modulation of the Harmonic Measurement in the Determination of the Effective Fields in MgO/CoFeB/W.** Q. Wong¹, G.J. Lim¹, W. Gan¹ and W. Lew¹
1. Physics & Applied Physics, Nanyang Technological University, Singapore, Singapore

10:18

- CB-08. 3D MOKE Magnetometry of Spin-Orbit Torques.** H. Celik¹, H. Kannan¹, T. Wang¹, A.R. Mellnik⁴, X. Fan², V.O. Lorenz³, D.C. Ralph⁵ and J. Xiao¹ *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Denver, Denver, CO;*
3. University of Illinois at Urbana-Champaign, Champaign, IL;
4. Intel Corporation, Portland, OR; 5. Cornell University, Ithaca, NY

10:30

- CB-09. Magneto-Optical Detection of the Spin Hall Effect in Pt and W Thin Films.** C. Stamm¹, C. Murer¹, M. Berritta², J. Feng¹, M. Gabureac¹, P. Oppeneer² and P. Gambardella¹ *1. Department of Materials, ETH Zurich, Zürich, Switzerland; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

10:42

- CB-10. Ellipsometric Analysis of Spin Hall Effect Induced Magneto-optical Signals in Metals.** P. Riego^{1,2}, S. Velez¹, J. Gomez-Perez¹, J. Arregi¹, L.E. Hueso^{1,3}, F. Casanova^{1,3} and A. Berger¹ *1. CIC nanoGUNE, Donostia - San Sebastian, Spain;*
2. University of the Basque Country, Leioa, Spain;
3. Ikerbasque, Bilbao, Spain

10:54

- CB-11. Scanning tunneling microscopy measurements of spin hall effect in tungsten films by using iron coated tungsten tips.** T. Xie¹, M. Dreyer², D. Bowen³, D. Hinkel³, R. Butera³, C. Krafft³ and I. Mayergoyz¹ *1. Department of ECE, University of Maryland, College Park, MD; 2. Department of Physics, University of Maryland, College Park, MD; 3. Laboratory for Physical Sciences, College Park, MD*

11:06

- CB-12. Spin Hall Effect Switching Detection in CoFeB-MgO Perpendicular MTJs on Ta Using Conductive Atomic Force Microscopy.** M. Bapna^{1*}, B. Parks¹, S. Oberdick¹, H. Almasi², W. Wang² and S. Majetich¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Physics, University of Arizona, Tucson, AZ*

- CB-13. Vortex-antivortex proliferation from an obstacle in thin film ferromagnets.** *E. Iacocca*^{1,2} and *M. Hoefer*¹ *1. Applied Mathematics, University of Colorado, Boulder, Boulder, CO;*
2. Physics, Chalmers University of Technology, Gothenburg, Sweden

WEDNESDAY
MORNING
8:30

ROOM 403-405

Session CC

SPIN TRANSFER TORQUES AND SPIN HALL OSCILLATORS

Xin Fan, Co-Chair

University of Denver, Denver, CO

Kab-Jin Kim, Co-Chair

Korea Advanced Institute of Science and Technology (KAIST), Daejeon,
The Republic of Korea

8:30

- CC-01. Investigation of transient time from asynchronous to synchronous states in a spin torque oscillator.** *S. Tsunegi*¹,
*K. Yakushiji*¹, *A. Fukushima*¹, *S. Yuasa*¹ and *H. Kubota*¹
1. Spintronics Research Center, AIST, Tsukuba, Japan

8:42

- CC-02. Microwave energy harvester based on a spin-torque diode with perpendicular magnetic anisotropy of the free layer.** *O. Prokopenko*¹,
*V. Tyberkevych*² and *A.N. Slavin*² *1. Faculty of Radio Physics, Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine;*
2. Department of Physics, Oakland University, Rochester, MI

8:54

- CC-03. Learning pattern classification with coupled spin-torque nano-oscillators.** *P. Talatchian*¹, *M. Romera*¹, *F. Abreu Araujo*¹,
*S. Tsunegi*², *H. Kubota*², *K. Yakushiji*², *A. Fukushima*², *S. Yuasa*²,
*P. Bortolotti*¹, *V. Cros*¹, *D. Vodenicarevic*³, *N. Locatelli*³,
*D. Querlioz*³ and *J. Grollier*¹ *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France;*
2. Spintronics Research Center, AIST, Tsukuba, Japan;
3. Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Sud, Orsay, France

9:06

- CC-04. High Power Oscillation in Spin-Torque Oscillator with Synthetic Ferrimagnet Free Layer under a Perpendicular Magnetic Field.** *T. Nagasawa*¹, *T. Kanao*¹, *H. Suto*¹,
*M. Yamagishi*¹ and *K. Mizushima*¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

- CC-05. Engineering the magnetic droplet nucleation boundary using $\text{Co}_x(\text{NiFe})_{1-x}$ fixed layers in spin torque nano-oscillators.** S. Jiang^{1,2}, S. Chung^{1,3}, T.Q. Le^{1,4}, A. Houshang⁴ and J. Åkerman^{1,4} 1. *Applied Physics, KTH Royal Institute Technology, Stockholm, Sweden*; 2. *NanOsc AB, Kista, Sweden*; 3. *Department of Physics and Astronomy, Uppsala University, Stockholm, Sweden*; 4. *Physics Department, University of Gothenburg, Gothenburg, Sweden*

- CC-06. Towards Digital Communication Using Spin Torque Oscillators.** A. Ruiz-Calaforra¹, A. Purbawati¹, T. Bracher¹, C. Murapaka¹, J. Hem¹, E. Jimenez-Romero¹, M. Daniele², A. Zeltser², K. Jordan², M. Cyrille³, L.D. Buda-Prejbeanu¹ and U. Ebels¹ 1. *Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC, SPINTEC, Grenoble, France*; 2. *Western Digital, 5600 Great Oaks Parkway, San Jose, CA*; 3. *Univ. Grenoble Alpes, CEA-LETI MINATEC, Grenoble, France*

- CC-07. Spin transfer torque in perpendicular double barrier magnetic junctions with top references based on Co/Pd and Co/Pt multilayers.** P. Coelho¹, J. Chatterjee¹, L. Cuchet¹, J. Guelfucci¹, L. Vila¹, R.C. Sousa¹, M. Chshiev¹ and C. Baraduc¹ 1. *Univ. Grenoble Alpes, CEA, CNRS, INAC-SPINTEC, Grenoble, France*

- CC-08. Resistance-area-product and size dependence of spin-torque switching efficiency in CoFeB-MgO based magnetic tunnel junctions.** J. Sun¹ 1. *IBM Research, Yorktown Heights, NY*

- CC-09. Spin Orbit Torque Oscillators by Dipole Field-Localized Spin Wave Modes.** C. Zhang¹, I. Lee¹, Y. Pu¹, S.A. Manuilov¹, D.V. Pelekhov¹ and P. Hammel¹ 1. *Department of Physics, The Ohio State University, Columbus, OH*

- CC-10. Spin torque driven spin wave bullets and propagating spin waves in extended magnetic tunnel junctions.** A. Houshang^{1,2}, R. Khymyn¹, M. Haidar¹, M. Dvornik¹, R. Ferreira³, P. Freitas³, R.K. Dumas¹ and J. Åkerman¹ 1. *Physics, University of Gothenburg, Gothenburg, Sweden*; 2. *NanOsc AB, Stockholm, Sweden*; 3. *International Iberian Nanotechnology Laboratory, Braga, Portugal*

- CC-11. Spin transfer torque dynamics in CoFeB/MgO magnetic tunnel junctions.** A. Meo¹, P. Chureemart², S. Wang³, R. Chepulskey³, D. Apalkov³, R. Chantrell¹ and R.F. Evans¹ 1. *Department of Physics, University of York, York, United Kingdom*; 2. *Maharakham University, Kantarawichai, Thailand*; 3. *Samsung Semiconductor, Milpitas, CA*

10:42

- CC-12. Enhanced Spin Polarization of Amorphous Fe_{0.65}Si_{0.35} Thin Films Revealed by Andreev Reflection Spectroscopy.**
J. Karel¹, J. Martinez², Y. Zhang^{3,4}, J. Gifford², J. Zhang², G. Zhao², D. Kim², B. Li², R. Wu³, T. Chen² and F. Hellman^{5,6}
1. Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 2. Department of Physics, Arizona State University, Tempe, AZ; 3. Department of Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. School of Energy Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China; 5. Department of Physics, University of California, Berkeley, Berkeley, CA; 6. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA

10:54

- CC-13. Influence of resistance and spin-torque bias dependence on the output power of MgO-based nano oscillators.**
E. Kowalska^{1,2}, A. Fukushima³, V. Sluka¹, C. Fowley¹, A. Kákay¹, Y. Aleksandrov^{1,2}, J. Lindner¹, J. Fassbender^{1,2}, S. Yuasa³ and A.M. Deac¹
1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Institute of Solid State Physics, TU Dresden, Dresden, Germany; 3. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

11:06

- CC-14. Manufactured Easy-Plane Spin Hall Nano-Oscillator.**
E.A. Montoya¹, C.J. Safranski¹, A. Smith¹, J. Chen¹ and I. Krivorotov¹
1. Physics and Astronomy, University of California, Irvine, Irvine, CA

11:18

- CC-15. Non-Adlerian Synchronization of a Three-Terminal Spin Torque Oscillator.**
E. Jué¹, M. Pufall¹ and W.H. Rippard¹
1. National Institute of Standard and Technology, Boulder, CO

WEDNESDAY
MORNING
8:30

ROOM 408-410

Session CD

SPIN WAVES III

Sebastian Wintz, Chair

Paul Scherrer Institut, Villigen PSI, Switzerland

8:30

- CD-01. Nonreciprocal Spin Wave Power Flow and Caustics in Ultrathin Ferromagnets. (Invited)**
J. Kim¹, R. Stamps² and R.E. Camley³
1. Centre for Nanoscience and Nanotechnology (C2N), Université Paris-Saclay, Orsay, France; 2. University of Glasgow, Glasgow, United Kingdom; 3. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO

- CD-02. Nano-patterned magnonic crystals based on ultrathin YIG films: spin wave propagation and filtering.** M. Collet¹, M. Evelt², H. Merbouche¹, V.E. Demidov³, J.L. Prieto⁴, M. Muñoz⁵, J. Ben Youssef⁶, G. de Loubens⁷, O. Klein⁸, P. Bortolotti¹, V. Cros¹, A. Anane¹ and S. Demokritov³ *1. Unité Mixte de Physique CNRS, Thales, Univ. Paris Sud, Université Paris-Saclay, Palaiseau, France; 2. University of Münster, Münster, Germany; 3. Institute for Applied Physics, University of Muenster, Muenster, Germany; 4. Física Aplicada, Universidad Politécnica de Madrid, Madrid, Spain; 5. IMM-Instituto de Microelectrónica de Madrid, Madrid, Spain; 6. Laboratoire de Magnétisme de Bretagne CNRS, Brest, France; 7. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France; 8. Service de Physique de l'État Condensé, Gif-Sur-Yvette, France*

- CD-03. Influence of periodic Dzyaloshinskii-Moriya interactions on thin films and magnonic crystals.** P. Landeros¹, R.A. Gallardo¹, D. Cortés-Ortuño², F. Ma³, A. Roldán-Molina⁴, R. Troncoso¹ and H. Fangohr⁵ *1. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 3. Magneto-electronic Lab, School of Physics and Technology, Nanjing Normal University, Nanjing, China; 4. Universidad de Aysen, Coyhaique, Chile; 5. University of Southampton, Southampton, United Kingdom*

- CD-04. Spin-waves dynamics in exchange-coupled ferromagnetic bilayers: Analysis of the non-reciprocal properties.** R. Gallardo¹, T. Schneider², A. Roldán-Molina³, A. Nuñez⁴, J. Lindner² and P. Landeros¹ *1. Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Universidad de Aysén, Coyhaique, Chile; 4. Universidad de Chile, Santiago, Chile*

- CD-05. Surface Acoustic Wave Induced Spin Waves Below FMR.** J.D. Schneider¹, Q. Wang¹, C. Chen¹, A. Sepulveda¹ and G. Carman¹ *1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

- CD-06. Micromagnetic simulations of the effect of Dzyaloshinskii-Moriya interactions on dynamics of patterned structures.** B. Johnson¹, C. Ard¹ and K. Buchanan¹ *1. Colorado State University, Fort Collins, CO*

10:06

- CD-07. Excitation of Spin Waves in Yttrium Iron Garnet Using Wavelength-Specific Multi-Element Antennas.** *W. Bang*^{1,2}, *M. Jungfleisch*², *J. Lim*¹, *J.S. Trossman*¹, *C. Tsai*³, *A. Hoffmann*² and *J. Ketterson*^{1,4} *1. Physics and Astronomy, Northwestern University, Evanston, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Engineering and Management of Advanced Technology, Chang Jung Christian University, Tainan City, Taiwan; 4. Electrical and Computer Engineering, Northwestern University, Evanston, IL*

10:18

- CD-08. Spin Wave Sources for Magnonic Devices.** *G. Csaba*¹, *A. Papp*¹, *H.S. Dey*², *G. Carlotti*³, *M. Madami*³ and *W. Porod*² *1. Faculty for Information Technology and Bionics, Pazmany Peter Catholic University, Budapest, Hungary; 2. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN; 3. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy*

10:30

- CD-09. Developing magnonic circuit architectures for quantum measurements.** *A.D. Karenowska*¹, *A. van Loo*¹, *R. Morris*¹ and *S. Kosen*¹ *1. Physics, University of Oxford, Oxford, United Kingdom*

10:42

- CD-10. Wavelength-Dependent Transformation of Dipole-Exchange Magnon Modes in Obliquely Magnetized YIG Films.** *D.A. Bozhko*¹, *H.Y. Musiienko-Shmarova*¹, *V. Tyberkevych*², *A.N. Slavin*², *I.I. Syvorotka*³, *B. Hillebrands*¹ and *A.A. Serga*¹ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Department of Physics, Oakland University, Rochester, MI; 3. Department of Crystal Physics and Technology, Scientific Research Company "Carat", Lviv, Ukraine*

10:54

- CD-11. Curvilinear magnonics. (Invited)** *J.A. Otalora Arias*¹, *J. Lindner*², *H. Schultheiss*^{2,3}, *R. Hertel*⁴, *A. Thomas*¹, *K. Nielsch*^{1,3} and *A. Kákay*² *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 2. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Institute of Materials Science, Technische Universität Dresden, Dresden, Germany; 4. Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France*

Session CE
MAGNETIC RECORDING I: MAMR AND PMR
EXTENSION

Simon Greaves, Chair
RIEC, Tohoku University, Sendai, Japan

8:30

- CE-01. Layer-selective switching in a dot of double AFC layers under the assistance of rf fields.** Y. Lu¹, S. Okamoto^{1,2}, N. Kikuchi^{1,2}, O. Kitakami^{1,2} and T. Shimatsu^{3,4} *1. IMRAM, Tohoku University, Sendai, Japan; 2. CSRN, Tohoku University, Sendai, Japan; 3. FRIS, Tohoku University, Sendai, Japan; 4. RIEC, Tohoku University, Sendai, Japan*

8:42

- CE-02. Micromagnetic Simulation of Selective Resonance Readout from Double-Layer Antiferromagnetically-Coupled Recording Magnetization Using a Spin-Torque Oscillator.** T. Kanao¹, H. Suto¹, T. Nagasawa¹, K. Mizushima¹ and R. Sato¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

8:54

- CE-03. Segmented Media and Medium Damping in Microwave Assisted Magnetic Recording.** X. Bai¹ and J. Zhu¹ *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

9:06

- CE-04. Zero-Dc-Field Rotation-Direction-Dependent Magnetization Switching Induced by a Circularly Polarized Microwave Field. (Invited)** H. Suto¹, T. Kanao¹, T. Nagasawa¹, K. Mizushima¹ and R. Sato¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

9:42

- CE-05. Critical Thickness for Spin Wave-Assisted Switching of Magnetization in a Perpendicularly Magnetized Nanomagnet.** T. Yamaji¹ and H. Imamura¹ *1. Spintronics Research Center, AIST, Tsukuba, Japan*

9:54

- CE-06. A Comparative Study of Embedded and Direct Deposited Bit-Patterned Media By Magnetic Force Microscopy.** K. Zhong¹ and V. Ng¹ *1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National Univ. Singapore, Singapore, Singapore*

10:06

- CE-07. Effect of Distribution of Easy in Uniaxial Media.** E. Della Torre¹ and A. Jamali¹ *1. Department of Electrical and Computer Engineering, The George Washington University, Falls Church, VA*

10:18

- CE-08. The Performance of Hybrid MLPNN Based VE (MLP-VE) Equalizer for the Nonlinear Perpendicular Magnetic Recording Channels.** R. Wongsathan^{1,2}, W. Phakphisut³ and P. Supnithi³ 1. *Electrical Engineering, King Mongkut's Institute of Technology Ladkrabang (KMITL), Chiangmai, Thailand;* 2. *Electrical Engineering, North-Chiangmai University, Chiangmai, Thailand;* 3. *Electrical Engineering, King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand*

10:30

- CE-09. Soft-information Flipping Approach in Multi-head Multi-track BPMR Systems.** W. Busyatras¹, C. Jettanasen², L. M. M. Myint³ and C. Warisarn¹ 1. *College of Advanced Manufacturing Innovation, KMITL, Bangkok, Thailand;* 2. *Faculty of Engineering, KMITL, Bangkok, Thailand;* 3. *School of Science and Technology, Shinawatra University, Pathumthani, Thailand*

10:42

- CE-10. Media Design to Enable High Areal Density Capability for Perpendicular Magnetic Recording.** K. Gao^{1,2} 1. *International Business and Technology Service, North Oaks, MN;* 2. *Energy Systems Division, Argonne National Laboratory, Argonne, IL*

10:54

- CE-11. Moore's Law Realities for Recording Systems and Memory Storage Components: HDD, TAPE, NAND, and OPTICAL.** R. Fontana¹ and G. Decad¹ 1. *IBM Systems, San Jose, CA*

WEDNESDAY
MORNING
8:30

ROOM 317-318

Session CF
HARD MAGNETS: THIN FILMS AND
NANOSTRUCTURES

Brian Kirby, Chair
NIST, Gaithersburg, MD

8:30

- CF-01. Exchange Spring Magnets Based on Ultra-Hard SmCo₅ Monoliths.** A. Baker¹, M. Worthington¹, S. Baker¹, J. Lee¹, C. Orme¹ and S.K. McCall¹ 1. *Materials Science Division, LLNL, Livermore, CA*

CF-02. Effect of Cu/Co Composition on the Ordered Phase Formation in Sm-Co_{1-x}Cu_x and Er-Co_{1-x}Cu_x Alloy Films Deposited on Cr(100) Single-Crystal Underlayer.

M. Ohtake^{1,2}, *R. Ochiai*², *A. Suzuki*², *M. Futamoto*², *F. Kirino*³ and *N. Inaba*⁴ *1. Faculty of Engineering, Kogakuin University, Tokyo, Japan; 2. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 3. Graduate School of Fine Arts, Tokyo University of the Arts, Tokyo, Japan; 4. Faculty of Engineering, Yamagata University, Yonezawa, Japan*

8:54

CF-03. Tunable magnetic properties of [Co/Sm]_n multilayered films during thermal processing.

D.J. O'Hara^{2,1}, *A. Baker*¹, *J. Lee*¹, *T.W. Barbee*¹ and *S.K. McCall*¹ *1. Lawrence Livermore National Laboratory, Livermore, CA; 2. Materials Science and Engineering, University of California, Riverside, Columbus, OH*

9:06

CF-04. Time Domain Study of Magnetization Dynamics to Evaluate Interlayer Exchange Coupling Constant in Nd₂Fe₁₄B/Ni₈₀Fe₂₀ Films. (Invited)

R. Mandal^{1,2}, *Y. Takahashi*^{1,2}, *K. Ishioka*³, *T. Shima*⁴, *D. Ogawa*^{1,2}, *T. Kato*⁵, *S. Iwata*⁵, *S. Hirose*^{1,2} and *K. Hono*^{1,2} *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan; 3. National Institute for Materials Science (NIMS), Tsukuba, Japan; 4. Faculty of Engineering, Tohoku Gakuin University, Tagajo, 986-8537, Japan; 5. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*

9:42

CF-05. Micromagnetism Simulation on Magnetic Properties and Magnetic Reversal Modes of Nd₂Fe₁₄B/α-Fe Nanocomposite Magnets with Soft Phase Imbedded in Hard Phase.

*Y. Li*¹, *M. Yue*¹ and *Y. Peng*¹ *1. Beijing University of Technology, Beijing, China*

9:54

CF-06. The magnetic and structural properties of L1₀ MnGaAl epitaxially grown thin films.

S. Zhao^{1,2} and *T. Suzuki*^{1,3} *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Department of Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL; 3. Departments of Metallurgical and Materials Engineering, and Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL*

10:06

CF-07. Stress Control in Thick CoPt Magnetic Films through Pulsed Electrodeposition.

*J.J. Ewing*¹, *Y. Wang*¹ and *D.P. Arnold*¹ *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

10:18

- CF-08. Co :FePt films prepared combining mass selected cluster beam and e-beam evaporation techniques as model nanocomposite magnets.** Y. Vallois¹, O. Boisron¹, P. Capiod¹, V. Dupuis¹ and D. Le Roy¹ *1. Univ. Lyon 1, Institut Lumiere Matiere, Villeurbanne, France*

10:30

- CF-09. Synthesis of Hard Magnetic Mn₃Ga Micro-Islands by E-Beam Evaporation.** O. Akdogan^{1,2} *1. Engineering and Natural Sciences, Istanbul Kemerburgaz University, Istanbul, Turkey; 2. Nanotechnology Research and Application Center, Sabanci University, Istanbul, Turkey*

10:42

- CF-10. The effect of seed layers on the perpendicular magnetic anisotropy in tetragonal D0₂₂ Mn₃Ge epitaxial films.** Y. Wei¹, M. Zhu^{1,2}, G.M. Stephen³, M. Liu², W. Ren², D. Heiman³ and N.X. Sun^{1,2} *1. Electrical and Computer Engineering Department, Northeastern University, BOSTON, MA; 2. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an, China; 3. Physics, Northeastern University, Boston, MA*

10:54

- CF-11. Interdiffusion Processes in High-Coercivity RF-Sputtered Alnico Thin Films on Si Substrates.** F. Mohseni^{1,2}, A. Baghizadeh², A. Lourenco¹, M. Pereira¹, V.B. Amaral¹, J. Vieira² and J.S. Amaral¹ *1. Department of Physics and CICECO - Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal; 2. Department of Materials and Ceramic Engineering and CICECO - Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal*

11:06

- CF-12. Preparation of Highly Pure α -MnBi Phase via Melt-Spinning.** A. Gabay¹, G. Hadjipanayis² and J. Cui³ *1. University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Delaware, Newark, DE; 3. Iowa State University, Ames, IA*

11:18

- CF-13. Recycled Sm-Co Bonded Magnet Filaments for 3D Printing of Magnets.** H.A. Khazdozian¹, J.S. Manzano², I.I. Slowing^{2,3} and C.I. Nlebedim¹ *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Chemistry, Iowa State University, Ames, IA; 3. Ames Laboratory, US Department of Energy, Ames, IA*

Session CG
SPINTRONICS WITH 2D MATERIALS AND
TOPOLOGICAL INSULATORS I

Wei Han, Chair
Peking University, Beijing, China

8:30

- CG-01. Creation and control of spin current in van der Waals heterostructures.** A. Dankert¹ and S.P. Dash¹
1. Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Sweden

8:42

- CG-02. Proximity magneto-resistance calculations on graphene induced by magnetic insulators.** D.A. Solis¹, A. Hallal¹, X. Waintal² and M. Chshiev¹ *1. SPINTEC, Univ. Grenoble Alpes, CNRS, CEA-INAC, Grenoble, France; 2. Univ. Grenoble Alpes, INAC-SPSMS/CEA, INAC-SPSMS, Grenoble, France*

8:54

- CG-03. Robust spin generation in graphene layers using spin hall effect.** P. Hammel¹, R. Kawakami¹ and S. Singh¹ *1. Department of Physics, The Ohio State University, Columbus, OH*

9:06

- CG-04. Long Distance SpinTransport in Graphene.** H. Kurt¹, E. Demirci² and M. Dadashbaba³ *1. Engineering Physics, Istanbul Medeniyet University, Istanbul, Turkey; 2. Physics, Gebze Technical University, Kocaeli, Turkey; 3. Physics, Yeditepe University, Istanbul, Turkey*

9:18

- CG-05. Electric Field Control of Spin Polarity in h-BN/Graphene/h-BN Heterostructures with One-Dimensional Ferromagnetic Contacts.** J. Xu¹, S. Singh¹, J. Katoch¹, G. Wu¹ and R. Kawakami¹ *1. Department of Physics, The Ohio State University, Columbus, OH*

9:30

- CG-06. Spin and Valley Hall Effect in Monolayer WSe₂ Transistors at Near-Room Temperature Controlled via Electric Field.** J.C. Inconvia¹, E. Barre², S. Kim³, C. McClellan², E. Pop², H. Wong² and T. Heinz³ *1. Electrical and Computer Engineering, University of Texas at Austin, Austin, TX; 2. Electrical Engineering, Stanford University, Stanford, CA; 3. Applied Physics, Stanford University, Stanford, CA*

- CG-07. Imaging Spin Dynamics in Monolayer WS₂ by Time-Resolved Kerr Rotation Microscopy.** *E.J. McCormick*¹, M. Newburger¹, Y. Luo¹, K.M. McCreary², S. Singh¹, B. Jonker² and R. Kawakami¹ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. Naval Research Laboratory, Washington, DC*

9:54

- CG-08. Opto-Valleytronic Spin Injection in Monolayer MoS₂/Few-Layer Graphene Hybrid Spin Valves.** *Y. Luo*¹, *J. Xu*¹, *T. Zhu*¹, *G. Wu*¹, *E.J. McCormick*¹, *W. Zhan*¹, *M.R. Neupane*² and *R. Kawakami*¹ *1. Physics, The Ohio State University, Columbus, OH; 2. Sensors and Electron Devices Directorate, U.S. Army Research Laboratory, Adelphi, MD*

10:06

- CG-09. Ferroelectricity Tailored Valley Splitting in Monolayer WTe₂ on Top of Multiferroic YMnO₃.** *Y. Song*¹ and *W. Mi*¹ *1. Department of Applied Physics, Tianjin University, Tianjin, China*

10:18

- CG-10. Spin-dependent Photocurrent in Topological Insulator/Magnetic Insulator Heterostructures.** *Y. Pan*¹, *T. Pillsbury*¹, *Y. Luo*², *J.C. Kally*¹, *H. Wang*¹, *A. Richardella*¹, *T. Liu*³, *M. Wu*³, *R. Kawakami*² and *N. Samarth*¹ *1. Department of Physics and Material Research Institute, The Pennsylvania State University, University Park, PA; 2. Physics Department, The Ohio State University, Columbus, OH; 3. Department of Physics, Colorado State University, Fort Collins, CO*

10:30

- CG-11. Emergence of Bi_nTeX (n = 1,2,3; X = Cl, Br, I): From Rashba Spin State to Topological Surface State.** *Y. Luo*¹, *M. Zeng*², *L. Shen*³ and *Y. Feng*^{1,4} *1. Physics, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore; 3. Mechanical Engineering, National University of Singapore, Singapore, Singapore; 4. Centre for Advanced 2D Materials and Graphene Research Centre, National University of Singapore, Singapore, Singapore*

10:42

- CG-12. Spectroscopic perspective on the interplay between electronic and magnetic properties of magnetically doped topological insulators.** *J. Krieger*^{1,2}, *C. Chang*³, *T. Prokscha*¹, *A. Suter*¹, *J. Moodera*⁴, *V.N. Strocov*⁵ and *Z. Salman*¹ *1. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen, Switzerland; 2. Laboratorium für Festkörperphysik, ETH Zurich, Zurich, Switzerland; 3. Francis Bitter Magnet Lab, MIT, Cambridge, MA; 4. Physics, MIT, Cambridge, MA; 5. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland*

10:54

- CG-13. Magnetism and Proximity Effects in Layered Two-dimensional Materials.** *D.P. Gopalan*¹, S. de la Barrera¹, N. Drucker¹, A. Haglund², D. Mandrus² and B. Hunt¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, University of Tennessee, Knoxville, TN*

11:06

- CG-14. Large perpendicular magnetic anisotropy and Dzyaloshinskii–Moriya chiral interaction at room temperature in epitaxial graphene-based nanostructures.** F. Ajejas¹, A. Gudin², R. Guerrero², M. Niño², S. Pizzini³, J. Vogel³, V. Cros⁴, N. Jaouen⁵, R. Miranda¹, J. Camarero¹ and P. Perna² *1. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain; 2. IMDEA NANOSCIENCE, Madrid, Spain; 3. Institut Néel, CNRS, Grenoble, France; 4. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 5. Experimental Division, Synchrotron SOLEIL, Gif sur Yvette, France*

11:18

- CG-15. Effect of Contact Resistance and Channel Length on Oblique Spin Precession Measurement.** T. Zhu¹, D. Wang¹ and R. Kawakami¹ *1. Physics, The Ohio State University, Columbus, OH*

WEDNESDAY
MORNING
8:30

ROOM 401-402

Session CH
NANOPARTICLES AND NANOWIRES
(NOT IN ARRAYS) II

Dustin Gilbert, Chair
NIST, Gaithersburg, MD

8:30

- CH-01. Vortex Chirality Dependent Domain Wall Pinning and Magnetization Switching in Diameter-modulated Cylindrical Nanowires.** J. Fernandez-Roldan¹, C. Bran¹, R. Perez del Real¹, O. Chubykalo-Fesenko¹ and M. Vazquez¹ *1. Institute of Materials Science of Madrid (ICMM-CSIC), Madrid, Spain*

8:42

- CH-02. Synthesis and Characterization of Ternary Intermetallic Fe₂CoAl Inverse Heusler Alloy Nanoparticles.** A. Ahmad¹, P. Das¹ and P. Srivastava¹ *1. Physics, Indian Institute of Technology (IIT) Kharagpur, Midnapore, India*

- CH-03. Probing the Variability in Oxidation States of Magnetite Nanoparticles by Single-particle Spectroscopy.** *A. Fraile Rodríguez¹, C. Moya^{1,2}, A. Romero¹, A. Labarta¹ and X. Batlle¹*
1. Física Matèria Condensada, Universitat de Barcelona, Barcelona, Spain; 2. Department of Physics, Carnegie Mellon University, Pittsburgh, PA

9:06

- CH-04. Magnetic phases for subnanoscopic Co cylinders.** *E.E. Vogel¹, P. Diaz¹ and F. Munoz²*
1. Physics, Universidad de La Frontera, Temuco, Chile; 2. Universidad de Chile, Santiago de Chile, Chile

9:18

- CH-05. Structural and Magnetic Characterization of Hybrid Ferromagnetic and Doped BiFeO₃ Core-shell Nanostructures.** *K. Javed^{1,2}, W. Li², M. Irfan², U. Khan², S.S. Ali², N. Ahmad³ and X. Han²*
1. Department of Physics, Forman Christian College(University), Lahore, Pakistan; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. Department of Physics, FBAS, International Islamic University, Islamabad, Pakistan

9:30

- CH-06. An experimental and theoretical study of the magnetic properties of novel inverted NiO@Ni_xMn_{1-x}O core-shell nanoparticles.** *S. Hasan¹ and R. Mayanovic¹*
1. Physics, Astronomy and Materials Science, Missouri State University, Springfield, MO

9:42

- CH-07. Direct Self-assembly of PVD Synthesized Pure Fe Nanoparticles into Nanowires and Nanotrusses.** *S. Ekeröth¹, R. Boyd¹, P. Mürger¹, N. Brenning^{1,2} and U. Helmersson¹*
1. Department of Physics, Linköping University, Linköping, Sweden; 2. KTH Royal Institute of Technology, Stockholm, Sweden

9:54

- CH-08. Tailoring ferromagnetic order in cobalt ferrite nanoparticles through crystalline nanostructure.** *A. Fraile Rodríguez¹, C. Moya^{1,2}, M. García del Muro¹, X. Batlle¹ and A. Labarta¹*
1. Física Matèria Condensada, Universitat de Barcelona, Barcelona, Spain; 2. Department of Physics, Carnegie Mellon University, Pittsburgh, PA

10:06

- CH-09. Size dependence of the effective magnetic anisotropy in nanoparticles: Validation of the core-shell-surface layer (CSSL) model for Fe, Co and Ni nanoparticles.** *S. Singh¹ and M. Seehra²*
1. Department of Physics and Astronomy, West Virginia University, Morgantown, WV; 2. Department of Physics and Astronomy, West Virginia University, Morgantown, WV

10:18

CH-10. Enhanced magnetic properties in graphene and carbon nanotubes coated with cobalt ferrite nanoparticles.

H. Verma^{1,2}, *D. Seifu*¹, *S.P. Karna*³ and *H. Hong*⁴ *1. Physics & Engineering Physics, Morgan State University, Baltimore, MD; 2. Nicholls State University, Thibodaux, LA; 3. Weapons and Materials Research Directorate, Army Research Laboratory, Aberdeen Proving Ground, MD; 4. Department of Material and Metallurgical Engineering, South Dakota School of Mines and Technology, Rapid City, SD*

10:30

CH-11. Magnetic Properties of Selenium-enriched Doped Bismuth Ferrites Nanoparticles for Flower-like Nanosheets Assembly.

*S. Hussain*¹, *S. Ali*², *M. Umer*¹ and *M. Iqbal*¹
1. Department of Physics, School of Natural Science, National University of Science and Technology, Islamabad, Pakistan; 2. State Key Laboratory for New Ceramics and Fine Processing, School of Materials Sciences and Engineering, Tsinghua University, Beijing, China

10:42

CH-12. Probing Magnetic Anisotropy and Switching in Exchange-Coupled Fe₃O₄/CoFe₂O₄ Core/Shell Nanoparticles.

*R. Das*¹, *J. Robles*¹, *M. Glassell*¹, *V. Kalappattil*¹, *M. Phan*¹ and *H. Srikanth*¹ *1. Department of Physics, University of South Florida, Tampa, FL*

10:54

CH-13. Origin of Reduced Magnetization and Domain Formation in Small Magnetite Nanoparticles.

*V. Lazarov*¹, *Z. Nedelkoski*¹, *D. Kepaptsoglou*², *L. Lari*¹, *T. Wen*^{3,4}, *R.A. Booth*³, *S. Oberdick*³, *P.L. Galindo*⁵, *Q.M. Ramasse*², *R.F. Evans*¹ and *S. Majetich*³ *1. Physics, University of York, York, United Kingdom; 2. SuperSTEM Laboratory, Daresbury, United Kingdom; 3. Physics, Carnegie Mellon University, Pittsburgh, PA; 4. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 5. Department of Computer Science and Engineering, Universidad de Cádiz, Poerto Real, Spain*

WEDNESDAY
MORNING
8:30

ROOM 411-412

Session CI

**HIGH FREQUENCY, MICROWAVE, AND
MILLIMETER WAVE DEVICES**

Bijoy K. Kuanr, Chair
Jawaharlal Nehru University, New Dehli, India

8:30

CI-01. Acoustically Actuated Ultra-Compact NEMS

Magnetolectric Antennas. *H. Lin*^{1*}, *T. Nan*¹ and *N.X. Sun*¹
1. ECE, Northeastern University, Boston, MA

8:42

- CI-02. Broadband Electrically Small Antennas with Strain Powered Multiferroics.** *J. Hu*¹, *Q. Wang*¹, *J.P. Domann*¹, *S. Keller*¹, *G. Carman*¹ and *A. Sepulveda*¹ *1. Mechanical & Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

8:54

- CI-03. High-gain Miniature Axial-mode Helical Antenna with Ferrite Loading.** *W. Lee*¹, *Y. Hong*¹, *H. Won*¹, *M. Choi*¹, *K. Isbell*¹ and *J. Lee*² *1. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Client Research and Development, Intel Corporation, Hillsboro, OR*

9:06

- CI-04. Ultra-fast Spectrum Analysis Using a Mixer Based on a Spin-Torque Nano-oscillator.** *S. Louis*¹, *V. Tyberkevych*², *J. Li*¹, *E. Bankowski*³, *T. Meitzler*³, *I. Krivorotov*⁴ and *A.N. Slavin*² *1. Electrical and Computer Engineering, Oakland University, Rochester, MI; 2. Department of Physics, Oakland University, Rochester, MI; 3. U.S. Army TARDEC, Warren, MI; 4. Physics and Astronomy, University of California, Irvine, Irvine, CA*

9:18

- CI-05. Observation of Over 70 GHz of Spin Torque Diode Effect Using MnGa/Fe Based Spin Torque Oscillator.** *K. Mizunuma*¹, *S. Tsunegi*², *M. Yoshimura*¹, *M. Sato*¹, *K. Suzuki*³, *Y. Kono*¹, *H. Wado*¹, *S. Tamaru*², *H. Kubota*⁴, *A. Fukushima*⁵ and *S. Mizukami*³ *1. Advanced Research and Innovation Center, DENSO Corporation, Nisshin, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. WPI-AIMR, Tohoku University, Sendai, Japan; 4. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan; 5. AIST, Tsukuba, Japan*

9:30

- CI-06. Radio-Frequency Amplification of Electric Signal Controlled by Joule Heating and Spin Transfer Torque in Magnetic Tunnel Junctions.** *M. Goto*^{1,2}, *Y. Wakatake*¹, *U.K. Oji*³, *S. Miwa*^{1,2}, *H. Kubota*⁴, *K. Yakushiji*⁴, *A. Fukushima*⁴, *S. Yuasa*⁴ and *Y. Suzuki*^{1,2} *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan; 3. School of Engineering Science, Osaka University, Toyonaka, Japan; 4. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan*

9:42

- CI-07. Frequency-Division Multiplexing in Magnonic Networks by Spin-Wave Caustics.** *F. Heussner*¹, *T. Fischer*¹, *A.A. Serga*¹, *B. Hillebrands*¹ and *P. Pirro*¹ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

- CI-08. A C-band Integrated Tunable Bandstop Filter Using Self-biased FeGaB/Al₂O₃ Multilayer Thin Film.** Y. He¹, Y. Gao², H. Chen¹, H. Lin¹, Y. Wei¹, X. Yang^{1,3} and N.X. Sun⁴
 1. *Electrical and Computer Engineering, Northeastern University, Boston, MA*; 2. *Winchester Technologies, LLC., Burlington, MA*; 3. *School of Information and Electronics, Beijing Institute of Technology, Beijing, China*; 4. *Northeastern University, Boston, MA*

10:06

- CI-09. Frequency Response of NiFe, CoZrTa and CoZrTaB Films and Patterned Microstructures Studied through Transmission Line Structure.** H. Wu¹ and H. Yu² 1. *Ferric Semiconductor, Inc., New York, NY*; 2. *Arizona State University, Tempe, AZ*

10:18

- CI-10. A Non-Volatile Low-Resistance RF Switch Actuated by an Electro-Permanent Magnet.** J. Pal¹, K. Deshpande¹, M. Pirro¹, L. Chomas¹, S. Santhanam¹, G. Piazza¹ and J.A. Bain¹ 1. *ECE, Carnegie Mellon University, Pittsburgh, PA*

10:30

- CI-11. The Advantage of Two-phase Microstructure in Joule Annealed Co-rich Microwires for High Frequency Low Field Sensing Applications.** T. Eggers¹, S. Jiang², O. Thiabgoh¹, H. Shen², J. Sun², H. Srikanth¹ and M. Phan¹
 1. *Department of Physics, University of South Florida, Tampa, FL*; 2. *School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China*

10:42

- CI-12. On-chip Electromagnetic Noise Suppression up to 30 GHz By Composite Spinel Ferrite Thick Film.** R. Sai¹, M. Yamaguchi^{1,2}, N. Bhat³ and S.A. Shivashankar³ 1. *New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*; 2. *Department of Electrical Engineering, Tohoku University, Sendai, Japan*; 3. *Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, India*

10:54

- CI-13. Tunable Microwave Absorption Frequency of Ce_{2-x}Sm_xFe₁₇N₃ Nanosheet/paraffin Composite.** G. Qiao¹, W. Yang¹, Y. Lai¹, Q. Hu¹, C. Wang¹, H. Du¹, J. Han¹, S. Liu¹ and J. Yang^{2,3}
 1. *School of Physics, Peking University, Beijing, China*; 2. *Beijing Key Laboratory for Magnetolectric Materials and Devices, Beijing, China*; 3. *Collaborative Innovation Center of Quantum Matter, Beijing, China*

11:06

- CI-14. Crosstalk Analysis of On-chip Magnetic Film-type Noise Suppressor.** M. Jingyan¹, S. Muroga², Y. Endo³, S. Hashi¹, Y. Hayashi¹ and K. Ishiyama¹ 1. *Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*; 2. *National Institute of Technology, Toyota College, Toyota, Japan*; 3. *Graduate School of Engineering, Tohoku University, Sendai, Japan*

- CI-15. Co/rGO Composites Fillers Developed for Lightweight and High-efficiency Electromagnetic Absorption Materials.** Z. Guan^{1,2}, J. Jiang^{1,2}, C. Xu^{1,2} and L. Zhen³ *1. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China; 2. MOE Key Laboratory of Micro-System and Micro-Structures Manufacturing, Harbin Institute of Technology, Harbin, China; 3. Materials Science, Harbin Institute of Technology, Harbin, China*

WEDNESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session CP
CRYSTALLINE SOFT MAGNETIC MATERIALS
(Poster Session)

Ziyao Zhou, Chair
Xi'an Jiaotong University, Xi'an, China

- CP-01. Multiple Magnetic and Structural Transformations in Ni-Mn-Ga-Co-Cu Microwire.** Z. Ding¹, D. Liu¹ and J. Zhu¹
1. State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing, China
- CP-02. Effect of ammonium sulfamate on magnetic properties of Fe-Ni films electroplated in a DES-based plating bath.** T. Akiyoshi¹, T. Yamaguchi¹, K. Takashima¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ *1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan*
- CP-03. Relationship between magnetic anisotropy and magnetostriction behavior in Ni_{100-x}Fe_x and Ni_{100-y}Co_y alloy single-crystal films of fcc(110) orientation.** K. Serizawa¹, T. Kawai¹, M. Ohtake^{1,2}, F. Kirino³ and N. Inaba⁴ *1. Faculty of Science and Engineering, Chuo University, Bunkyo-ku, Japan; 2. Faculty of Engineering, Kogakuin University, Hachioji, Japan; 3. Graduate School of Fine Arts, Tokyo University of the Arts, Taito-ku, Japan; 4. Faculty of Engineering, Yamagata University, Yonezawa, Japan*
- CP-04. Anisotropy Model for Modern Grain Oriented Electrical Steel Based on Orientation Distribution Function.** F. Jiang¹, M. Rossi¹ and G. Parent¹ *1. Univ. Artois, EA 4025, Laboratoire Systèmes Electrotechniques et Environnement (LSEE), Bethune, France*
- CP-05. Magnetic and Transport Properties Of Half-Metallic Ferromagnetic CoFeMnGe Epitaxial Thin Film.** V.K. Kushwaha¹, J. Rani^{2,1}, A.A. Tulapurkar³ and C.V. Tomy¹
1. Physics, IIT Bombay, Mumbai, India; 2. Physics, Vardhaman College, Bijnor, Bijnor, India; 3. Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India
- CP-06. Magnetic charges suppress effects of anisotropy in polycrystalline, soft, ferromagnetic materials.** A.S. Arrott¹, C.M. Williams¹ and E. Negusse¹ *1. Physics, Morgan State University, Baltimore, MD*

- CP-07. Study of sub-ambient temperature magnetic properties of a recently developed low-cobalt content Fe-Co based alloy—CarTech® Hypocore™ Alloy.** V. Meka¹, T.V. Jayaraman¹ and E. Fitterling² *1. Department of Mechanical Engineering, University of Michigan, Dearborn, MI; 2. Carpenter Technology Corporation, Reading, PA*
- CP-08. The power efficiency enhancement of soft magnetic composites based on Fe-Si alloys in high frequency range.** D. Kim¹, J. Yeo¹, S. An², J. Kim², S. Lee¹, T. Phan¹ and B. Lee¹ *1. Department of Physics & Oxide Research Center, Hankuk University of Foreign Studies, Yongin-si, The Republic of Korea; 2. Samsung Electro-Mechanics, Su-won, The Republic of Korea*
- CP-09. Investigation of the magnetic properties of Si-gradient steel sheet by comparison with 6.5%Si steel sheet.** T. Hiratani¹, Y. Zaizen¹ and Y. Oda¹ *1. JFE Steel Corporation, Kurashiki, Japan*
- CP-10. Investigation of Coercivity for Electroplated Fe-Ni Thick Films.** K. Eguchi¹, K. Koda¹, J. Kaji¹, H. Aramaki¹, K. Takashima¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ *1. Nagasaki University, Nagasaki, Japan*
- CP-11. Minnealloy: A New Magnetic Material with High Saturation Flux Density and Low Magnetic Anisotropy.** M. Mehed¹, Y. Jiang², B. Ma³, P. Suri¹, D. Flannigan¹ and J. Wang³ *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. MINT Center, Minneapolis, MN; 3. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN*
- CP-12. Core Shape, Ribbon Shearing and Ribbon Width Influence on Magnetic Properties of Nanocrystalline Tape Wound Cores.** A. Fouineau^{1,2}, F. Sixdenier², B. Lefebvre¹, M. Raulet² and N. Burais² *1. SuperGrid Institute, Villeurbanne, France; 2. Univ Lyon, UCB Lyon 1, CNRS, AMPERE, Villeurbanne, France*
- CP-13. Preparation of permalloy nanowires by electrodeposition method based on porous anodic alumina template.** Y. Zhao¹, H. Sun², M. Liu¹, H. Piao³ and L. Pan³ *1. Physics, China Three Gorges University, Yichang, China; 2. Department of Micro- and Nanotechnology, Technical University of Denmark, Anker Engelunds Vej 1, Denmark; 3. College of Science, China Three Gorges University, Yichang, China*
- CP-14. Evolution of magnetic properties in MnZn ferrite-silica composites.** S. Malle¹ and S. Veeturi¹ *1. Physics, Indian Institute of Technology, Madras, Chennai, India*
- CP-15. Influence of Bi-Co co-doping on the microstructural and magnetic properties of NiMgCuZn ferrites.** J. Pei¹, Z. Wang¹ and B. Yang¹ *1. School of Science, Tianjin University, TianJin, China*
- CP-16. Selection of soft magnetic microwires for high frequency applications.** X. Zheng¹, F. Qin¹, H. Wang¹ and H. Peng¹ *1. Institute for Composites Science Innovation (InCSI), Zhejiang University, Hangzhou, China*

Session CQ
MAGNETO-CALORIC MATERIALS I
(Poster Session)

Durga Paudyal, Chair
The Ames Laboratory, Ames, IA

- CQ-01. Magnetic and Magnetocaloric Properties of Ni-Mn-Cr-Sn Heusler alloys Under the Effect of Hydrostatic Pressure.** S. Pandey¹, A. Us Saleheen², J. Chen², A. Quetz¹, A. Aryal¹, I. Dubenko¹, S. Stadler² and N. Ali¹ *1. Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Physics and Astronomy, Louisiana State University, Baton Rouge, LA*
- CQ-02. Magnetic, Transport and Magnetocaloric Properties in Ni₅₀Mn₃₅In_{1-x}Bi_x Heusler Alloys.** A. Aryal¹, S. Pandey¹, A. Quetz¹, I. Dubenko¹, S. Stadler² and N. Ali¹ *1. Physics, Southern Illinois University, Carbondale, USA, Carbondale, IL; 2. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA*
- CQ-03. The magnetic property and magnetocaloric effect of HoCo₃B₂ compound.** X. Zheng¹, Z. Xu², J. Xu¹, Y. Zhang³, L. Wang⁴, H. Zhang¹, S. Wang¹ and B. Shen³ *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. National Institute of Metrology, Beijing, China; 3. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 4. Department of Physics, Capital Normal University, Beijing, China*
- CQ-04. Hydrostatic Pressure Modulated Spin-Reorientation Transition and Magnetocaloric Effect in PrGa Compound.** J. Hao^{1,2}, F. Liang^{1,3}, Y. Liu^{1,3}, J. Li^{1,3}, K. Qiao^{1,3}, J. Wang^{1,3}, F. Hu^{1,3}, J. He², J. Sun^{1,3} and B. Shen^{1,3} *1. Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Division of Functional Material Research, Central Iron and Steel Research Institute, Beijing, China; 3. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China*
- CQ-05. Comparative phase transformation and magnetocaloric effect study of Co and Mn substitution by Cu in MnCoGe.** S.K. Pal¹, C. Frommen¹, S. Kumar², G. Helgesen¹, T.G. Woodcock³, B.C. Hauback¹ and H. Fjellvåg² *1. Department of Physics, Institute for Energy Technology, Kjeller, Norway; 2. Department of Chemistry, Nanostructures and Functional Materials (NAFUMA), Center for Materials Science and Nanotechnology (SMN), University of Oslo, Oslo, Norway; 3. IFW Dresden, Dresden, Germany*

- CQ-06. Field, Temperature, and Size Effect on Critical Points, Magnetic, and Structural Properties of Nanoparticles.**
*A. Aslani*¹, *M. Ghahremani*^{2,1}, *M. Zhang*³, *L.H. Bennett*¹ and *E. Della Torre*¹ 1. *Electrical and Computer Engineering, The George Washington University, Washington, DC*; 2. *Computer Science, Mathematics, and Engineering, Shepherd University, Shepherdstown, WV*; 3. *Chemistry, The George Washington University, Washington, DC*
- CQ-07. Evaluation of the magnetocaloric response of nano-sized $\text{La}_{0.7}\text{Ca}_{0.3}\text{Mn}_{1-x}\text{Ni}_x\text{O}_3$ manganites synthesized by auto-combustion method.** *O. Morán*^{1,2}, *A. Gomez*³, *A. Chavarriaga*³, *I. Supelano*² and *C. Parra*² 1. *Physics, National University of Colombia, Medellín, Colombia*; 2. *Física, Universidad Pedagógica y tecnológica de Colombia, Tunja, Colombia*; 3. *Materiales, Universidad Nacional de Colombia, Medellín, Colombia*
- CQ-08. Anisotropic magnetocaloric effect in HoAlGa polycrystalline compound.** *Y. Zhang*^{1,2}, *X. Zheng*³, *J. Xiong*^{1,2}, *S. Zuo*^{1,2}, *D. Liu*^{1,2}, *Q. Dong*⁴, *T. Zhao*^{1,2} and *B. Shen*^{1,2} 1. *State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*; 2. *University of Chinese Academy of Sciences, Beijing, China*; 3. *School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*; 4. *Center for Condensed Matter & Beijing Key Laboratory of Metamaterials and Devices, Department of Physics, Capital Normal University., Beijing, China*
- CQ-09. Magnetocaloric Effect of Micro- and Nanoparticles of Gd_5Si_4 .** *S.M. Harstad*¹, *A. El-Gendy*^{1,2}, *S. Gupta*³, *V.K. Pecharsky*^{3,4} and *R.L. Hadimani*¹ 1. *Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA*; 2. *Department of Physics, University of Texas at El Paso, El Paso, TX*; 3. *Division of Materials Science and Engineering, Ames Laboratory, US Department of Energy, Ames, IA*; 4. *Department of Materials Science and Engineering, Iowa State University, Ames, IA*
- CQ-10. A multiscale approach for the modeling of thermo-magneto-elastic phase transition in polycrystalline Mn-Fe-P-Si.**
*A. Bartok*¹, *O. Hubert*², *A. Pasko*¹, *F. Mazaleyrat*¹, *L. Daniel*³ and *M. LoBue*¹ 1. *SATIE, ENS Cachan, Cachan, France*; 2. *LMT, ENS Cachan, Cachan, France*; 3. *GeePs, CentraleSupélec, Gif-sur-Yvette, France*
- CQ-11. Interstitial effects of B and Li on the magnetic phase transition and magnetocaloric effects in Gd_2In alloy.**
*N. Zhao*¹, *X. Zhou*¹, *H. Zhong*¹, *Q. Jiang*², *W. Cui*¹ and *Q. Wang*¹ 1. *Northeastern University, Shenyang, China*; 2. *Jiangxi Key Laboratory for Rare Earth Magnetic Materials and Devices (IREMMD), Jiangxi University of Science and Technology, Ganzhou, China*
- CQ-12. Structural and magnetic analysis of the martensitic transformation in Ni-Mn-In-Co magnetocaloric alloys.**
*A. Bartok*¹, *G. Pessotto*², *D. Cornejo*², *A. Pasko*¹, *F. Mazaleyrat*¹ and *M. LoBue*¹ 1. *SATIE, ENS Cachan, CNRS, Cachan, France*; 2. *Instituto de Física, Universidade de São Paulo, São Paulo, Brazil*

- CQ-13. Impurity of FeB in AlFe₂B₂ and its effects on magnetocaloric properties.** J. Lee¹, M. Song², K. Cho², C. Nam¹ and B. Cho²
1. Photonics and Sensors, Hannam University, Daejeon, The Republic of Korea; 2. School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, The Republic of Korea
- CQ-14. Magnetic and magnetocaloric properties of HoFe_{1-x}Cr_xO₃ (0 ≤ x ≤ 1) compounds.** G. Kotnana¹ and S. Jammalamadaka¹ 1. Department of Physics, Indian Institute of Technology Hyderabad, Hyderabad, India
- CQ-15. Magnetocaloric effect studies on MnSb, MnSbR_{0.05} (R: Gd, Tb, Dy, Ho and Er) intermetallics.** P. Rajasekhar¹ and G. Markandeyulu¹ 1. Physics, Indian Institute of Technology, Chennai, India
- CQ-16. Influence of particle size on the mechanical and magnetocaloric properties of La_{0.8}Ce_{0.2}(Fe_{0.95}Co_{0.05})_{11.8}Si_{1.2}/Sn composites.** X. Zhong¹, X. Feng¹, J. Huang², Y. Huang³, Z. Liu¹ and R.V. Ramanujan⁴ 1. School of Materials Science and Engineering, South China University of Technology, Guangzhou, China; 2. Baotou Research Institute of Rare Earth, Baotou, China; 3. School of Materials Science and Engineering, Nanchang Hangkong University, Nanchang, China; 4. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore

WEDNESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session CR
PARTICLES, COMPOSITES, AND MANUFACTURING
(Poster Session)

Maria Torija, Chair
NVE Corporation, Eden Prairie, MN

- CR-01. Microwave Absorption through the Martensitic and Curie Transitions in Ni₄₅Cr₅Mn₃₇In₁₃.** S. Pandey¹, S. Vyzulin², A. Quetz¹, A. Aryal¹, I. Dubenko¹, A. Granovsky³, S. Stadler⁴ and N. Ali¹ 1. Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Research and Production Company "MERA", Krasnodar, Russian Federation; 3. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation; 4. Physics and Astronomy, Louisiana State University, Baton Rouge, LA
- CR-02. Magnetic Characterization of Magnesium Zinc Ferrites for MRI Temperature Contrast.** N.A. Alghamdi¹, J.H. Hankiewicz², K. Stupic³, N.R. Anderson², R.E. Camley¹ and Z. Celinski¹ 1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. BioFrontiers Institute, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. National Institute of Standards and Technology, Boulder, CO

- CR-03. Quenching of light flickering in synthetic guanine crystals in aqueous solutions under strong static magnetic fields.**
Y. Takanezawa¹ and M. Iwasaka¹ 1. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan
- CR-04. Controlled Release of Radical Pair-Forming Agent under Exposure to Magnetic Fields: A Model of Liposomal DDS Equipped with Radical Pair Mechanism.** *H. Nakagawa¹ and M. Ohuchi¹ 1. Department of Electrical and Electronic Engineering, Tokyo Denki University, Tokyo, Japan*
- CR-05. Insight of Dual-Modality of Triply Doped Magneto-Luminescent Iron-oxide@NaGdF₄:RE³⁺ (RE = Ce, Tb, Dy) Nanoparticles.** *N. Shrivastava^{1,2}, D. Muraca³, U. Rocha⁴, S. Moreno⁵, C. Jacinto⁴, H. Brito² and S.K. Sharma¹ 1. Department of Physics, Federal University of Maranhão, São Luís, Brazil; 2. Institute of Chemistry, University of Sao Paulo, Sao Paulo, Brazil; 3. LNNano, Centro Nacional de Pesquisa em Energia e Materiais, Campinas, Brazil; 4. Institute of Physics, Universidade Federal de Alagoas, Maceio, Brazil; 5. Material Science Department, Centro Atómico Bariloche, Sao Carlos de Bariloche, Argentina*
- CR-06. Magnetic properties of nanocrystalline rare earth dialuminides prepared by solid-state redox reactions.**
A. Pathak¹ and S. Gupta¹ 1. Ames Laboratory, USDOE, Ames, IA
- CR-07. Opportunities in Additive Manufacturing via 3D Printing of Anisotropic Bonded Magnets.** *C.I. Nlebedim¹, H.A. Khazdozian¹, H. Ucar², S.K. McCall³, M.J. Kramer⁴ and P. Paranthaman⁵ 1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Florida Polytechnic University, Lakeland, FL; 3. Materials Science Division, LLNL, Livermore, CA; 4. Ames Laboratory, Iowa State University, Ames, IA; 5. Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN*
- CR-08. Multifunctional Composite Incorporating Carbon Nanotube / Graphene Ferromagnetic Microwire Hybrid Fibers.**
D.C. Santacruz Estevez¹, F. Qin¹, L. Quan¹, H. Wang¹ and H. Peng¹ 1. Institute for Composite Science Innovation, Zhejiang University, Hangzhou, China
- CR-09. Novel Application of Magnetite Nanospheres as Supercapacitors: Synthesis, Magnetic, and Electrocapactive Study.** *M. Ghimire¹, H. Adhikari¹, B. Sapkota², S. Bhoiyate³, R. Gupta⁴ and S. Mishra⁵ 1. Department of Materials Engineering, University of North Texas, Denton, TX; 2. Department of Physics, Northeastern University, Boston, MA; 3. Department of Chemistry, Pittsburg State University, Pittsburg, KS; 4. Department of Chemistry, Pittsburg State University, Pittsburg, KS; 5. Department of Physics, The University of Memphis, Memphis, TN*

- CR-10. Novel nickel particle assisted synthesis of NiCo₂O₄ ferrimagnetic nanoparticles: Experimental and theoretical study on magnetic and electrocapacitive performance.** M. Ghimire¹, S. Bhojate², X. Shen¹, F. Perez³ and S. Mishra⁴
1. Department of Physics and Materials Science, The University of Memphis, Memphis, TN; 2. Department of Chemistry, Pittsburg State University, Pittsburg, KS; 3. Integrated Microscopy Center, The University of Memphis, Memphis, TN; 4. Department of Physics, The University of Memphis, Memphis, TN
- CR-11. Magnetic and Electromagnetic Properties of Ferrite Nanoparticles in a Polymer Matrix.** Z. Celinski¹, R.E. Camley², S. Goldman², K. Livesey³, T. Robinson⁴, D.E. Meyers⁴ and S. Maat⁴ 1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. Physics & Biofrontiers Center, University of Colorado at Colorado Springs, Colorado Springs, CO; 4. YTC America, Inc, Camarillo, CA
- CR-12. Superparamagnetic Nano-Bead Manipulation Using Voltage Induced Strains.** C. Chen¹, G. Carman¹ and A. Sepulveda¹ 1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA
- CR-13. Electric-field responsive contrast agent based on liquid crystals and magnetic nanoparticles.** L. Mair¹, L. Martinez-Miranda², A. Nacev¹, R. Hilaman¹, S. Chowdhury¹, S. Jafari¹, S. Ijanaten¹, C. da Silva¹, J. Baker-McKee¹, P. Stepanov¹ and I. Weinberg¹ 1. Weinberg Medical Physics, Inc., Baltimore, MD; 2. Materials Science & Engineering, University of Maryland, College Park, MD
- CR-14. Structural and magnetic studies of cobalt doped TiO₂ nanoparticles.** A. Chanda¹, K. Rout¹, V. M², J. Singh¹ and A. Srivastava^{3,4} 1. Department of Physics, Dr.H.S.Gour Central University, Sagar, India; 2. CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Trivandrum, India; 3. Physics, TDPG College, Jaupur, India; 4. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL
- CR-15. Porous Yolk-Shelled SnO₂ Microspheres with Porous Fe₃O₄ Core Through a Solvothermal Method and Its Application for Electromagnetic Wave Absorption.** R. Kuchi¹ and V. Dongquoc¹ 1. Chungnam National University, Daejeon, The Republic of Korea
- CR-16. Investigations on Structural, Optical and Magnetic Properties of Cobalt Doped ZnO Nanorods.** A. Srivastava^{1,2}, A. Chanda³, J. Singh³, S. Gupta⁴ and S. Joshi⁵ 1. Physics, TDPG College, Jaupur, India; 2. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL 32306-4390, FL; 3. Department of Physics, Dr. Harisingh Gour Central University, Sagar, India; 4. School of Materials Science, Indian Institute of Technology (BHU), Varanasi, India; 5. Department of Physics, Institute of Physics, Bhubaneswar, India

Session CS
NEW MAGNETIC MATERIALS
(Poster Session)

Long You, Chair

Huazhong University of Science and Technology, Hubei, China

- CS-01. Irradiation effect on magnetic properties of FeRh thin films with energetic C₆₀ cluster ion beam.** T. Matsui¹, R. Soma², Y. Saitoh³, M. Sakamaki⁴, K. Amemiya⁴ and A. Iwase²
1. Faculty of Arts and Sciences, Osaka Prefecture University, Sakai, Japan; 2. Department of Materials Science, Osaka Prefecture University, Sakai, Japan; 3. Takasaki Advanced Radiation Research Institute, National Institutes for Quantum and Radiological Science and Technology, Takasaki, Japan; 4. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Japan
- CS-02. Rapidly Quenched Fe-Ni-Co-Al-Ta-B Ferrous Superelastic Ribbons and Wires.** F. Borza¹, G. Stoian¹, G. Ababei¹, M. Grigoras¹, L. Bujoreanu², N. Lupu¹ and H. Chiriac¹
1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Materials Science, "Gheorghe Asachi" Technical University, Iasi, Romania
- CS-03. Magnetostructural Transition and Magnetocaloric Effects in Ni₅₀Mn₃₅In_{14.25}B_{0.75} Melt-Spun Ribbons.** S. Pandey¹, A. Quetz¹, P. Ibarra-Gaytan², C. Sánchez Valdés³, A. Aryal¹, I. Dubenko¹, J.L. Sanchez Llamazares², S. Stadler⁴ and N. Ali¹
1. Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Instituto Potosino de Investigación Científica y Tecnológica A.C., Camino a la Presa San Jose, San Luis Potos, Mexico; 3. Centro de Nanociencias y Nanotecnología, Universidad Nacional Autónoma de México, Baja California, Mexico; 4. Physics and Astronomy, Louisiana State University, Baton Rouge, LA
- CS-04. Magnetic Dynamic Properties of Mn₂Au/Co₄₀Fe₄₀B₂₀ Bilayer.** B.B. Singh¹ and S. Bedanta¹
1. Physics, National Institute of Science Education and Research, Bhubaneswar, India
- CS-05. Manipulating the Magnetic Properties of Fe and FeN with RF-Amorphous Carbon Thin Films.** S.M. Alghamdi¹, F. Al Ma'Mari¹, T. Moorsom¹, M. Ali¹, B. Hickey¹ and O. Cespedes¹
1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom
- CS-06. Room-temperature ferromagnetic transitions and the temperature dependence of magnetic behaviors in FeCoNiCr-based high-entropy alloys.** S. Na¹, J. Yoo² and N.J. Jones²
1. Spectrum Technology Group, Inc., Gaithersburg, MD; 2. Physical Metallurgy and Fire Protection Branch, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD

- CS-07. Magnetism and electronic structure of tetragonal Co₂PtGa.** P.R. Kharel^{1,2}, C. Shank², K. Schroeder¹, W. Zhang^{3,2}, S.R. Valloppilly², P. Lukashov⁴, R. Skomski^{3,2} and D.J. Sellmyer^{3,2} 1. *Physics, South Dakota State University, Brookings, SD*; 2. *Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*; 3. *Physics and Astronomy, University of Nebraska, Lincoln, NE*; 4. *Physics, University of Northern Iowa, Cedar Falls, IA*
- CS-08. Electrical transport and magnetic properties of NiTe_x nanostructures.** B.R. Dahal¹, R.P. Dula^{2,1}, N. Bhattarai^{2,1}, A. Forbes^{2,1}, B. Truffet¹, I.L. Pegg^{2,1} and J. Philip^{2,1} 1. *Vitreous State Laboratory, The Catholic University of America, Washington, DC*; 2. *Physics, The Catholic University of America, Washington, DC*
- CS-09. Experimental and theoretical study on magnetic and electrocapacitive performance of inverse spinel Ni_xCo_{3-x}O₄ (0 ≤ x ≤ 1.5) ferrimagnet.** M. Ghimire¹, S. Bhoyate², X. Shen¹, R. Gupta², F. Perez¹ and S. Mishra¹ 1. *Department of Physics and Materials Science, The University of Memphis, Memphis, TN*; 2. *Department of Chemistry, Pittsburg State University, Pittsburg, KS*
- CS-10. Structural and Magnetic Properties of (Co_{1-x}Ni_x)Cr₂O₄ (x = 0.5, 0.25) Nanoparticles.** P. Mohanty¹, C. Sheppard¹, A. Prinsloo¹, B. Doyle¹ and E. Carleschi¹ 1. *Department of Physics, University of Johannesburg, Johannesburg, South Africa*
- CS-11. Structure and magnetic properties of Mn₄C micro-powders prepared by laser ablation.** L. Yao¹, P. Si^{1,2}, C. Choi², H. Ge¹, H. Qian² and J. Park² 1. *College of Materials Science and Engineering, China Jiliang University, Hangzhou, China*; 2. *Functional Nanopowder Material Department Powder&Ceramic Division, Korea Institute of Materials Science, Changwon, The Republic of Korea*
- CS-12. Magnetoresistance of 1T VS₂, a 2D van der Waals Magnet.** H. Xu¹, M. Hsu², H. Fuh³, M.B. Jalil⁴, H. Wu¹ and C. Chang² 1. *Beijing Institute of Technology, Beijing, China*; 2. *Physics Department, National Taiwan University, Taipei City, Taiwan*; 3. *Graduate Institute of Applied Physics, National Taiwan University, Taipei, Taiwan*; 4. *Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*
- CS-13. Magnetic Graphene Fabric for Effective Electromagnetic Shielding.** H. Kim¹, B. Lee², S. Ju³ and S. Park¹ 1. *Advanced Institutes of Convergence Technology, Suwon, The Republic of Korea*; 2. *Physics Department, Hankuk University of Foreign Studies, Yongin-si, The Republic of Korea*; 3. *Department of Physics, Kyonggi University, Suwon, The Republic of Korea*
- CS-14. Magnetic properties of reduced graphene oxide and reduced graphene oxide-ZnO nanocomposite.** N. Kumar¹, A. Srivastava² and G.D. Varma³ 1. *Centre of Nanotechnology, I.I.T. Roorkee, Roorkee, India*; 2. *RRCAT, Indore, India*; 3. *Physics, I.I.T. Roorkee, Roorkee, India*

- CS-15. Crystal field effect and anisotropic magnetic interactions in $RTBi_2$ ($R = Ce, Pr, Nd$; $T = Cu, Au$).** *C.B. Jesus*^{1,2}, C. Adriano², P.F. Rosa^{2,3}, M.M. Piva², D.J. Garcia⁴, Z. Fisk⁵, G. Duque¹ and P. Pagliuso² 1. *Departamento de Física, Universidade Federal de Sergipe, São Cristóvão, Brazil;* 2. *Departamento de Eletrônica Quântica, Universidade Estadual de Campinas, Campinas, Brazil;* 3. *Condensed Matter and Magnet Science, Los Alamos National Laboratory, Los Alamos, NM;* 4. *Instituto Balseiro, Centro Atómico Bariloche, CNEA and CONICET, Bariloche, Argentina;* 5. *University of California, Irvine, CA*
- CS-16. Magnetic transitions in K-doped biphenyl and p-terphenyl.** G. Zhong^{1,2}, C. Zhang³, X. Chen⁴ and H. Lin² 1. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China;* 2. *Beijing Computational Science Research Center, Beijing, China;* 3. *Department of Physics, Yantai University, Yantai, China;* 4. *Center for High Pressure Science and Technology Advanced Research, Shanghai, China*

WEDNESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session CT
MAGNETIC FLUIDS AND BIOMEDICAL
APPLICATIONS
(Poster Session)

James Wells, Chair
Physikalisch-Technische Bundesanstalt, Berlin, Germany

- CT-01. Gripping Characteristics of an Electromagnetically Activated Magnetorheological Fluid-Based Gripper.** Y. Choi¹, C.M. Hartzell¹ and N.M. Wereley¹ 1. *Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- CT-02. Compressive Properties of Isotropic and Anisotropic Magnetorheological Elastomeric Foams.** N.M. Wereley², C. Perez¹, M. Song¹ and Y. Choi¹ 1. *University of Maryland, College Park, MD;* 2. *Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- CT-03. Constant Torque Regulator for a Magnetorheological Rotary Energy Absorber.** M. Wen^{1,2} and N.M. Wereley¹ 1. *Dept. of Aerospace Engineering, University of Maryland, College Park, MD;* 2. *Chongqing University, Chongqing, China*
- CT-04. Study on Vibration Reduction of a Magnetic Fluid Damper with Adjustable Damping.** X. Yang¹, Q. Yang^{1,2} and W. Yang¹ 1. *Hebei University of Technology, Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Tianjin, China;* 2. *Tianjin Polytechnic University, Tianjin, China*
- CT-05. Magneto-viscosity of Ba-Sr Ferrite Ferrofluid in Different Colloids.** N. Gautam¹ and R. Singh¹ 1. *School of Physics, University of Hyderabad, Hyderabad, India*

- CT-06. Development of novel magneto-elastic membranes for microfluidic applications.** *E.L. Martin*¹, M. Bryan¹, C.P. Winlove¹, A.D. Gilbert², P.G. Petrov¹ and F.Y. Ogrin¹
1. Physics, University of Exeter, Exeter, United Kingdom;
2. Mathematics, University of Exeter, Exeter, United Kingdom
- CT-07. Effect of Pulsed Magnetic Field on Red Blood Cell Aggregation: Mobility.** H. Park¹, D. Hwang¹, J. Sim¹ and H. Lee¹ 1. Sangji University, Wonju, The Republic of Korea
- CT-08. Magnetic anisotropies and applied field symmetries for optimized nanoparticle actuation.** R. Mansell^{1,2}, T. Vemulkar³, D.C. Petit³, Y. Cheng⁴, J. Murphy⁵, M. Lesniak⁵ and R. Cowburn² 1. Department of Applied Physics, Aalto University, Espoo, Finland; 2. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 3. Physics, University of Cambridge, Cambridge, United Kingdom; 4. Institute for Biomedical Engineering & Nano Science, Tongji University School of Medicine, Shanghai, China; 5. Northwestern University Feinberg School of Medicine, Chicago, IL
- CT-09. Application of pH-responsive magnetic micelles as drug delivery system.** N. Malhotra¹, C. Huang², M. Lee³, J. Yeh⁴, S. Lou¹, T. Ger¹ and C. Su¹ 1. Biomedical Engineering, Chung Yuan Christian University, Taoyuan City, Taiwan; 2. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Tainan City, Taiwan; 3. Orthopedics & Rehabilitation, University of Wisconsin, Madison, WI; 4. Institute of Urology, University of Southern California, Los Angeles, CA
- CT-10. Development of a magnetic catheter with rotatable multi-magnets to enhance steering and drilling abilities.** S. Lee¹, N. Kim¹, J. Lee¹, W. Lee¹ and G. Jang¹ 1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, The Republic of Korea
- CT-11. Effect of chitosan coating on the structural and magnetic properties of MnFe₂O₄ ferrite.** W.B. Mdlalose¹, S. Dlamini¹, S. Mokhosi², T. Moyo¹ and M. Singh² 1. School of Chemistry and Physics, University of KwaZulu-Natal, Durban, South Africa; 2. School of Life Sciences, University of KwaZulu-Natal, Durban, South Africa
- CT-12. Study of Poly(N-Isopropyl Acrylamide) Nanofibrous Membrane by Electrospinning as a Magnetic Nanoparticle Delivery Approach.** T. Chen¹, N. Malhotra¹ and T. Ger¹
1. Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan
- CT-13. Magnetic Up/Down Converting Fluorescent NaGdF₄:Ln³⁺ and Fe_xO_y@NaGdF₄:Ln³⁺ Nanoparticles.** N. Shrivastava^{1,2}, U. Rocha³, D. Muraca⁴, C. Jacinto³, H. Brito² and S.K. Sharma¹
1. Physics, Universidade Federal do Maranhão, Sao Luis, Brazil; 2. Chemistry, University of São Paulo, Sao Paulo, Brazil; 3. Federal University of Alagoas, Maceió, Brazil; 4. Brazilian Nanotechnology National Laboratory, Campinas, Brazil

CT-14. Brownian Motion of Ferromagnetic Cube Chain Under Magnetic Field. *S. Lee^{1,2}, S. Park², Y. Lee³, G. Yi⁴, S. Sacanna⁵ and D. Kim¹* 1. *Physics, Chungbuk National University, Cheongju, The Republic of Korea;* 2. *Division of Material Science, Korea Basic Science Institute, Daejeon, The Republic of Korea;* 3. *Center for Research Facilities, Chung Nam National University, Daejeon, The Republic of Korea;* 4. *School of Chemical Engineering, Sungkyunkwan University, Suwon, The Republic of Korea;* 5. *Department of Chemistry, New York University, New York, NY*

CT-15. Structural color control in cilia of comb jellies using magnetic fields. *Y. Fukagawa¹, Y. Takanezawa¹ and M. Iwasaka¹* 1. *Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan*

WEDNESDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session CU
MAGNETIC INSTRUMENTATION AND
CHARACTERIZATION I
(Poster Session)

Yaohua Liu, Chair
Oak Ridge National Laboratory, Oak Ridge, TN

CU-01. Zoom, a polarized small angle neutron scattering instrument at Isis target station 2. *D. Alba Venero¹ and J.J. Douch¹* 1. *Isis Neutron and Muon Source, Harwell, United Kingdom*

CU-02. Advancements in the NCNR ³He Neutron Spin Filter Program. *S.M. Watson¹, W. Chen^{1,2}, R. Erwin¹, T. Gentile¹ and M. Hassan^{1,2}* 1. *NIST Center for Neutron Research, Gaithersburg, MD;* 2. *University of Maryland, College Park, MD*

CU-03. Imaging of Magnetic Materials at Sub- μm and Sub-ns Resolutions at the Pollux Endstation of the Swiss Light Source. *S. Finizio¹, S. Wintz¹, B. Watts¹ and J. Raabe¹* 1. *Paul Scherrer Institut, Villigen PSI, Switzerland*

CU-04. Three dimensional magnetic textures studied by angular dependent transmission X-ray magnetic microscopy. *A. Hierro-Rodriguez¹, C. Quiros^{2,3}, A. Sorrentino⁴, L. Alvarez-Prado^{2,3}, J. Diaz^{2,3}, R. Valcarcel⁴, J. Alameda^{2,3}, M. Velez^{2,3}, J. Martin^{2,3}, E. Pereiro⁴ and S. Ferrer⁴* 1. *Universidade do Porto, Porto, Portugal;* 2. *Universidad de Oviedo, Oviedo, Spain;* 3. *CINN (CSIC-Univ. Oviedo), El Entrego, Spain;* 4. *Alba Synchrotron, Cerdanyola del Valles, Spain*

- CU-05. In situ Real-Time Imaging of the Circular Magnetic Domains of DC Bias Current Flowing Giant Magnetoimpedance Microwires.** *S. Jiang*^{1,2}, *T. Eggers*¹, *O. Thiabgoh*¹, *W. Fang*², *J. Sun*² and *M. Phan*¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China*
- CU-06. Probing the spin dynamics in epitaxial micromagnets using scanning transmission x-ray microscopy.** *E. Digernes*¹, *P. Vullum*^{2,3} and *E. Folven*¹ *1. Department of Electronic Systems, Norwegian University of Science and Technology, Trondheim, Norway; 2. Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway; 3. Materials and Chemistry, SINTEF, Trondheim, Norway*
- CU-07. Rectification effect in cavity-based spin pumping measurement.** *W. Li*¹ *1. Astronomy & Physics Department, University of Denver, Denver, CO*
- CU-08. Calibrated magnetic force microscopy with electrostatic compensation.** *R. Puttock*^{1,2}, *C. Barton*¹, *H. Corte-León*^{1,2}, *M. Gerken*³, *A. Manzin*⁴, *E. Simonetto*⁴, *V. Antonov*^{2,5}, *V. Neu*⁶ and *O. Kazakova*¹ *1. TQEM, National Physical Laboratory, Teddington, United Kingdom; 2. Physics Department, Royal Holloway University of London, Egham, United Kingdom; 3. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 4. Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy; 5. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russian Federation; 6. IFW Dresden, Dresden, Germany*
- CU-09. Direct Observation of Temperature-/Magnetic-Field-Induced Magnetic Domain Evolution in PrMnGeSi Alloy.** *S. Zuo*^{1,2}, *B. Zhang*^{1,2}, *Y. Zhang*¹, *L. Peng*^{1,2}, *R. Li*^{1,2}, *J. Xiong*^{1,2}, *Y. Zhang*^{1,2}, *D. Liu*^{1,2}, *T. Zhao*¹, *J. Sun*^{1,2}, *F. Hu*^{1,2}, *B. Shen*^{1,2} and *X. Zhao*^{1,2} *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China*
- CU-10. Magnetic Imaging Drag Tester by Magnetic Domain Scope Method using Contact-scanning of Magnetic Recording Head Probe with HDD Head Preamplifier for Detection of Fast Magnetic Behavior.** *Y. Miyamoto*¹, *M. Okuda*¹ and *M. Kawana*¹ *1. Science & Technology Research Labs, NHK (Japan Broadcasting Corporation), Tokyo, Japan*
- CU-11. Magneto-Optical Characterization of Superparamagnetic Nanoparticles in AC Magnetic Fields Using Multi-Harmonic Analysis.** *C. Patterson*¹, *M. Syed*² and *Y. Takemura*³ *1. Applied Physics, University of Michigan, Ann Arbor, MI; 2. Physics & Optical Eng, Rose-Hulman Institute of Technology, Terre Haute, IN; 3. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan*
- CU-12. Study of Magnetic Nanoparticles' Endocytosis with CCD Image Analysis.** *J. Matahum*¹, *N. Malhotra*¹ and *T. Ger*² *1. Biomedical Engineering, Chung Yuan Christian University, Zhongli District, Taiwan; 2. Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan*

CU-13. Toward characterization of spin switching in a single bistable nano-object at room temperature. *Q. Tran*¹, S. Kamara¹, V. Davesne², L. Salmon², A. Bousseksou², S. Kim³, C. Kim³ and F. Terki¹ *1. Institut Charles Gerhardt Montpellier, Universite de Montpellier, Montpellier, France; 2. Laboratoire de Chimie de Coordination CNRS UPR-8241, Université de Toulouse, Toulouse, France; 3. Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, The Republic of Korea*

CU-14. Empirical Expression for DC Magnetization Curve of Immobilized Magnetic Nanoparticles for Use in Biomedical Applications. *A.L. Elrefai*^{1,2}, T. Sasayama¹, T. Yoshida¹ and K. Enpuku¹ *1. Electrical and Electronic Engineering, Kyushu University, Fukuoka, Japan; 2. Electrical Power and Machines Engineering, Cairo University, Giza, Egypt*

CU-15. Magnetic Analysis of Commercial Hematite, Magnetite and Their Mixtures. *M. Ahmadzadeh*¹ and J. McCloy¹ *1. School of Mechanical and Materials Engineering, Washington State University, Pullman, WA*

WEDNESDAY
AFTERNOON
1:30

SPIRIT OF PITTSBURGH BALLROOM B

Session DA
CAVITY OPTO-MAGNONICS

Tom Silva, Chair
NIST, Boulder, CO

1:30

DA-01. Opto-magnonics with Yttrium Iron Garnet. (Invited) *K. Usami*¹, A. Osada², R. Hisatomi¹, A. Glappe¹, Y. Nakata¹, A. Noguchi¹, R. Yamazaki³, Y. Tabuchi¹ and Y. Nakamura^{1,4} *1. Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan; 2. Institute of Industrial Science, The University of Tokyo, Tokyo, Japan; 3. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 4. Center for Emergent Matter Science, RIKEN, Wako, Japan*

2:06

DA-02. YIG Cavity Optomagnonics. (Invited) *H. Tang*¹ *1. Department of Electrical Engineering, Yale University, New Haven, CT*

2:42

DA-03. Optomagnonics in magnetic solids. (Invited) *M.E. Flatte*¹ and T. Liu¹ *1. Department of Physics and Astronomy, University of Iowa, Iowa City, IA*

3:18

DA-04. From optomechanics to optomagnonics. (Invited) *F. Marquardt*¹ *1. Max Planck Institute for the Science of Light, Erlangen, Germany*

DA-05. Light scattering in cavity optomagnonics. (Invited)

S. Sharma¹, Y.M. Blanter¹ and G. Bauer² 1. *Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands;* 2. *IMR, Tohoku University, Sendai, Japan*

WEDNESDAY

ROOM 301-303

AFTERNOON

1:30

Session DB**SPIN CURRENTS: INSULATORS AND INTERFACES**

Ronghua Liu, Chair
Nanjing University, Nanjing, China

1:30

DB-01. Spintronics in Rare Earth Garnet Films with Perpendicular Anisotropy. (Invited)

C. Ross¹, G. Beach¹, C. Avci¹, E.R. Rosenberg¹, A. Quindeau¹, M. Mann¹, C. Pai^{1,2} and G.F. Dionne¹ 1. *Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA;* 2. *Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*

2:06

DB-02. Thickness Dependence of Inverse Spin Hall Effect in Rare Earth Materials Studied using YIG-based Spin Pumping.

S. Yu¹, J. Brangham¹, A.J. Lee¹, Y. Cheng¹ and F. Yang¹
1. *Physics, The Ohio State University, Columbus, OH*

2:18

DB-03. Sputtering Growth of Y₃Fe₅O₁₂/Pt Bilayers and Spin Transfer at Y₃Fe₅O₁₂/Pt Interfaces.

H. Chang¹, T. Liu¹, D.R. Hickey², P. Janantha¹, A. Mkhoyan² and M. Wu¹
1. *Physics, Colorado State University, Fort Collins, CO;* 2. *Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

2:30

DB-04. High-Quality Single-Crystal Thulium Iron Garnet Films with Tunable Perpendicular Magnetic Anisotropy by Off-Axis Sputtering.

C. Wu¹, C. Tseng¹, S. Yang¹, S. Ye¹, K. Lin², C. Cheng², Y. Fanchiang², M. Hong² and J. Kwo¹ 1. *Department of Physics, National Tsing Hua University, Hsinchu, Taiwan;* 2. *Department of Physics, National Taiwan University, Taipei, Taiwan*

2:42

DB-05. Enhancement of the Spin Pumping Effect by Two-Magnon-Confluence Process in YIG-Pt Bilayers.

T.B. Noack¹, V.I. Vasyuchka¹, D.A. Bozhko¹, B. Hillebrands¹ and A.A. Serga¹ 1. *Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

- DB-06. Long-Distance Spin Transport in a Disordered Magnetic Insulator.** *D. Wesenberg*¹, *A. Hojem*^{1,2}, *R. Bennet*¹, *T. Liu*³, *D. Balzar*¹, *M. Wu*³ and *B. Zink*¹ *1. Physics and Astronomy, University of Denver, Denver, CO; 2. Department of Physics, University of California, San Diego, La Jolla, CA; 3. Department of Physics, Colorado State University, Fort Collins, CO*

3:06

- DB-07. Magnon spin valve effect in insulator spintronics multilayer systems.** *J. Cramer*^{1,2}, *F. Fuhrmann*¹, *U. Ritzmann*^{1,3}, *V. Gall*³, *T. Niizeki*⁴, *R. Ramos*⁴, *Z. Qiu*⁴, *D. Hou*⁴, *T. Kikkawa*^{4,5}, *J. Sinova*¹, *U. Nowak*³, *E. Saitoh*^{5,4} and *M. Kläui*^{1,2} *1. Institute of Physics, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Department of Physics, University of Konstanz, Konstanz, Germany; 4. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 5. Institute for Materials Research, Tohoku University, Sendai, Japan*

3:18

- DB-08. YIG/Permalloy spin torque oscillator.** *B. Arkook*¹, *C.J. Safranski*², *X. Wang*¹, *H. Chang*³, *M. Wu*³, *I. Krivorotov*² and *I. Barsukov*¹ *1. Physics and Astronomy, University of California, Riverside, CA; 2. Physics and Astronomy, University of California, Irvine, CA; 3. Physics, Colorado State University, Fort Collins, CO*

3:30

- DB-09. Low-Damping Spinel Ferrite for Efficient Spin Pumping.** *S. Emori*^{1,2}, *M.T. Gray*³, *U.S. Alaan*¹, *B.A. Gray*⁴, *H. Jeon*^{5,4}, *K. Mahalingam*⁴, *M. McConney*⁴, *P. Shafer*⁶, *A.T. N'Diaye*⁶, *E. Arenholz*⁶, *K. Meng*⁸, *F. Yang*⁹, *G. Haugstad*¹³, *O. van 't Erve*¹⁰, *B. Jonker*¹¹, *S. Kim*¹², *M. Suzuki*⁷, *T. Ono*¹², *B.M. Howe*⁴ and *Y. Suzuki*^{1,14} *1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 2. Physics, Virginia Tech, Blacksburg, VA; 3. Materials Science and Engineering, Stanford University, Stanford, CA; 4. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH; 5. Wright State University, Dayton, OH; 6. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 7. JASRI/SPring-8, Sayo, Hyogo, Japan; 8. The Ohio State University, Columbus, OH; 9. Physics, The Ohio State University, Columbus, OH; 10. Naval Research Laboratory, Washington, DC; 11. Naval Research Laboratory/SSD, Washington, DC; 12. Institute for Chemical Research, Kyoto University, Uji, Japan; 13. University of Minnesota, Minneapolis, MN; 14. Applied Physics, Stanford University, Stanford, CA*

3:42

- DB-10. Geometry Effects in Spin Pumping through Thin Organic Films.** *G. Schmidt*^{1,2}, *T. Richter*¹, *C. Hauser*¹, *F. Heyroth*² and *M.E. Flatte*³ *1. Institut für Physik, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany; 2. Interdisziplinäres Zentrum für Materialwissenschaften, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany; 3. Physics, Univ Iowa, Iowa City, IA*

- DB-11. Anomalous Hall Effect Due to Rashba Spin-Orbit Coupling.** *E. Sagasta*¹, *J. Borge*², *Y. Omori*³, *M. Pardo*¹, *Y. Otani*^{3,4}, *L.E. Hueso*^{1,5} and *F. Casanova*^{1,5} *1. CIC nanoGUNE, Donostia-San Sebastian, Spain; 2. Departamento de Física de materiales, Universidad del País Vasco, Nano-Bio Spectroscopic group, Donostia-San Sebastian, Spain; 3. ISSP, University of Tokyo, Kashiwa, Japan; 4. RIKEN-CEMS, Wako, Japan; 5. Basque Foundation for Science, Ikerbasque, Bilbao, Spain*

4:06

- DB-12. Strong spin-splitting modulation by various non-magnetic metal/Bi₂O₃ interfaces.** *H. Tsai*^{1,2}, *K. Kondou*² and *Y. Otani*^{1,2} *1. ISSP, University of Tokyo, Kashiwa, Japan; 2. RIKEN-CEMS, Wako, Japan*

4:18

- DB-13. Temperature Evolution of the Electromotive Force Generated under the Spin Pumping and Ferromagnetic Resonance in CoFeB.** *S. Dushenko*¹, *G. Kopnov*², *A. Gerber*², *T. Shinjo*¹, *Y. Ando*¹ and *M. Shiraishi*¹ *1. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan; 2. Faculty of Exact Sciences, Tel Aviv University, Tel Aviv, Israel*

WEDNESDAY
AFTERNOON
1:30

ROOM 403-405

Session DC

DOMAINS, DOMAIN WALLS, AND VORTICES I

Chirag Garg, Chair

Max Planck Institute of Microstructure Physics, Halle, Germany

1:30

- DC-01. Analytic Theory of Bloch and Néel Walls in Ferromagnetic Nanowires with and without DMI. (Invited)** *M. DeJong*¹ and *K. Livesey*¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*

2:06

- DC-02. Study on interfacial Dzyaloshinskii-Moriya interaction in ferromagnetic/ nonmagnetic/ ferromagnetic /nonmagnetic layered wires with interlayer antiferromagnetic coupling.** *M. Tanaka*¹, *H. Hamada*¹, *M. Shimazaki*¹, *S. Honda*², *H. Awano*³ and *K. Mibu*¹ *1. Nagoya Institute of Technology, Nagoya, Japan; 2. Kansai University, Suita, Japan; 3. Toyota Technological Institute, Nagoya, Japan*

2:18

- DC-03. Effect of Pt-Ir Intermixing in Co/Ni Thin Film Seedlayers on Interfacial Dzyaloshinskii-Moriya Interaction.** *D.K. Lau*¹, *J.P. Pellegren*¹ and *V.M. Sokalski*¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

- DC-04. Dzyaloshinskii-Moriya Interaction induced by interface disorder in Ta-CoFeB-MgO films with perpendicular anisotropy.** L. Herrera Diez¹, M. Belmeguenai², Y. Roussigné², A. Stashkevich², S.M. Chérif², G. Durin³, M. Voto⁴, L. Lopez-Diaz⁴, J. Langer⁵, B. Ocker⁵ and D. Ravelosona¹
1. CNRS, Univ. Paris-Sud, Université Paris-Saclay, Centre de Nanosciences et de Nanotechnologies, Orsay, France; 2. LSPM, University Paris 13, Villetaneuse, France; 3. Nanoscience and Material, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 4. Applied Physics, University of Salamanca, Salamanca, Spain; 5. Singulus AG, Kahl, Germany

- DC-05. Investigation of non-Symmetric Creep Motion of Chiral Domain Walls in Pt/Co/Ir/Ta Multilayers.** K. Shahbazi¹, J. Kim², V. Jeudy³, T. Moore⁴ and C.H. Marrows¹
1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Centre for Nanoscience and Nanotechnology (C2N), Université Paris-Saclay, Orsay, France; 3. Laboratoire de Physique des Solides (LPS), Université Paris-Sud, Orsay, France; 4. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom

- DC-06. X-ray resonant magnetic diffraction as a tool for investigation of magnetic chirality in Pt/Co multilayers.** J. Chauleau^{1,2}, W. Legrand¹, D. Maccariello¹, N. Reyren¹, S. Collin¹, K. Bouzehouane¹, N. Jaouen², V. Cros¹ and A. Fert¹
1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. SEXTANTS, Synchrotron SOLEIL, Gif sur Yvette, France

- DC-07. Dynamic FORC evidence of domain walls interaction in neighboring microwires.** D. Cimpoesu¹, I. Dumitru¹ and A. Stancu¹
1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania

- DC-08. Electrical switching of the magnetic vortex circulation in artificial multiferroic structure of Co/Cu/PMN-PT(011).** M. Yang¹, Q. Li¹, A. Tan¹, A. Scholl², A.T. Young², C. Hwang³, A.T. N'Diaye², E. Arenholz², J. Li⁴ and Z. Qiu¹
1. Physics, University of California, Berkeley, Berkeley, CA; 2. ALS, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Korea Reserach Institute of Standards and Science, Yuseong-gu, The Republic of Korea; 4. School of Physics, International Center for Quantum Materials (ICQM), Beijing, China

- DC-09. Instantaneous rf detector based on vortex core expulsion in spin transfer nano oscillators.** S. Menshawy^{1,2}, A. Jenkins³, P. Bortolotti², J. Kermorvant¹, U. Ebels⁴, M. Cyrille⁴, L. Vila⁴, R. Ferriera³, P. Freitas³, D. Costa³ and V. Cros²
1. Thales Communications&Security, Gennevilliers, France; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 3. International Iberian Nanotechnology Laboratory, Braga, Portugal; 4. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, Grenoble, France

- DC-10. Control of Vortex State in Cobalt Nanorings with Domain Wall Pinning Centers.** *M. Lal*¹, *S. Sakshath*², *V. Mohanan Parakkat*¹ and *P. Kumar*¹ *1. Department of Physics, Indian Institute of Science, Bangalore, India; 2. Department of Physics, Technical University of Kaiserslautern, Kaiserslautern, Germany*

3:54

- DC-11. Guided Propagation of Vortex - Antivortex Pairs in Permalloy/NdCo/GdCo Trilayers.** *A. Hierro-Rodriguez*¹, *C. Quiros*^{2,3}, *A. Sorrentino*⁴, *R. Valcarcel*⁴, *L. Alvarez-Prado*^{2,3}, *J. Martin*^{2,3}, *J. Alameda*^{2,3}, *E. Pereiro*⁴, *M. Velez*^{2,3} and *S. Ferrer*⁴ *1. Universidade do Porto, Porto, Portugal; 2. Universidad de Oviedo, Oviedo, Spain; 3. CINN (CSIC-Univ. Oviedo), El Entrego, Spain; 4. Alba Synchrotron, Cerdanyola del Vallès, Spain*

4:06

- DC-12. Vortex Dynamic In Dumbbell Shaped Structure Of Ni₈₀Fe₂₀.** *S. Khanal*¹, *P. Sherpa*¹ and *L. Spinu*¹ *1. AMRI/Physics, University of New Orleans, New Orleans, LA*

4:18

- DC-13. High Frequency Modes in Hollow Ferromagnetic Spheres.** *C. McKeever*¹, *M. Aziz*¹ and *F.Y. Ogrin*¹ *1. University of Exeter, Exeter, United Kingdom*

WEDNESDAY
AFTERNOON
1:30

ROOM 408-410

Session DD

MAGNETIZATION DYNAMICS I

Nick Anderson, Chair

University of Colorado at Colorado Springs, Colorado Springs, CO

1:30

- DD-01. Low Gilbert Damping Constant in Perpendicularly Magnetized W/CoFeB/MgO Films with High Thermal Stability.** *D. Zhang*¹, *D. Lattery*², *J. Zhu*², *J. Wang*¹ and *X. Wang*² *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN*

1:42

- DD-02. Gilbert damping and two-magnon scattering in Cr-doped CoFeB thin films.** *C. Lacroix*¹, *K. Oguz*², *M. Coey*² and *D. Menard*¹ *1. Engineering Physics, Polytechnique Montreal, Montreal, QC, Canada; 2. Trinity College, Dublin, Dublin, Ireland*

1:54

- DD-03. Size Dependence of the Thermal Stability of CoFeB/MgO Nanodots.** *A. Meo*¹, *P. Chureemart*², *S. Wang*³, *R. Chepulskyy*³, *D. Apalkov*³, *R. Chantrell*¹ and *R.F. Evans*¹ *1. Department of Physics, University of York, York, United Kingdom; 2. Mahasarakham University, Kantarawichai, Thailand; 3. Samsung Semiconductor, San Jose, CA*

2:06

- DD-04. On the Temperature Dependence of Terahertz Magnetic Excitations. (Invited)** *K. Zakeri*^{1,2} *1. Heisenberg Spin-dynamics Group, Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany*

2:42

- DD-05. Magnetic phase dependent detection of laser-induced THz-emission in FeRh/Pt thin films.** *R. Medapalli*¹, *R. Mikhaylovskiy*², *G. Li*², *S.K. Patel*¹, *A. Kirilyuk*², *T. Rasing*², *A. Kimel*² and *E.E. Fullerton*¹ *1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA; 2. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands*

2:54

- DD-06. Magnetic Dynamic Properties of Extra Low Damping Epitaxial Co₂₅Fe₇₅ Thin Films.** *Y. Cheng*¹, *J. Brangham*¹, *A.J. Lee*¹ and *F. Yang*¹ *1. Physics, The Ohio State University, Columbus, OH*

3:06

- DD-07. Co₂₅Fe₇₅ Thin Films with Ultralow Total Damping.** *E. Edwards*¹, *H. Nembach*¹ and *J. Shaw*¹ *1. NIST, Boulder, CO*

3:18

- DD-08. Non-linear and Ultra-low Magnetic Damping of FM-NM-FM Sandwich Structure.** *X. Wang*¹, *Y. Wei*¹, *X. Liang*¹, *B. Peng*², *Y. Chen*¹ and *N.X. Sun*¹ *1. ECE, Northeastern University, Boston, MA; 2. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an, China*

3:30

- DD-09. Magnetic damping in sputtered Co₂MnGe Heusler compounds: theory and experiment.** *J. Shaw*¹, *E. Edwards*¹, *E. Delczeg-Czirjak*², *Y. Kvashnin*², *D. Thonig*², *M. Schoen*^{1,3}, *M. Pufall*¹, *M. Schneider*¹, *T. Silva*¹, *O. Karis*², *O. Eriksson*² and *H. Nembach*¹ *1. NIST, Boulder, CO; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Universitaet Regensburg, Regensburg, Germany*

- DD-10. Magnetic Damping in $\text{Co}_{25}\text{Fe}_{75}$ Epitaxial Films Lower than 1×10^{-3} .** *A.J. Lee*¹, *J. Brangham*¹, *Y. Cheng*¹, *S.P. White*¹, *W.T. Ruane*¹, *B.D. Esser*², *D.W. McComb*², *P.C. Hammel*¹ and *F. Yang*¹ *1. Physics, The Ohio State University, Columbus, OH; 2. Center for Electron Microscopy and Analysis, The Ohio State University, Columbus, OH*

3:54

- DD-11. Intraband contribution to laser-induced ultrafast magnetization in nickel.** *G. Zhang*¹, *Y. Bai*¹ and *T. George*² *1. Indiana State University, Terre Haute, IN; 2. University of Missouri-St Louis, St. Louis, MO*

4:06

- DD-12. Non-Resonant Broadband Detection of Ferromagnetic and Paramagnetic Resonance Based on Spin-Relaxation of NV Centers in Diamond.** *C.M. Purser*¹, *V.P. Bhallamudi*¹, *F. Guo*², *M.R. Page*¹, *B. McCullian*¹, *H. Yusuf*¹, *Q. Guo*¹, *C. Jayaprakash*¹, *M.E. Flatté*³, *C.S. Wolfe*¹, *G. Fuchs*² and *P. Hammel*¹ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY; 3. Department of Physics and Astronomy, The University of Iowa, Iowa City, IA*

4:18

- DD-13. Magnetic properties and microwave absorption of electroplated CoNiFe thin films deposited directly on Si (100) substrates.** *B.G. Silva*¹, *D.E. González-Chávez*¹, *J. Gomes Filho*¹ and *R.L. Sommer*¹ *1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*

WEDNESDAY
AFTERNOON
1:30

ROOM 315-316

Session DE
TUNNEL MAGNETORESISTANCE

Cheng Song, Chair
Tsinghua University, Beijing, China

1:30

- DE-01. MnGa-based fully perpendicular magnetic tunnel junctions with ultrathin Co_2MnSi interlayers.** *S. Mao*¹, *J. Lu*¹, *X. Zhao*¹, *X. Wang*¹, *D. Wei*¹, *J. Liu*¹, *J. Xia*¹ and *J. Zhao*¹ *1. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

1:42

- DE-02. Utilizing Superparamagnetic Freelayers for Magnetoresistive Sensors.** *J.E. Davies*¹, *P. Eames*², *M.A. Torija*¹ and *C. Nordman*¹ *1. Advanced Technology, NVE Corporation, Eden Prairie, MN; 2. NVE, Minneapolis, MN*

- DE-03. Fabrication of fully epitaxial magnetic tunnel junctions on 8 – 12 inch Si wafers.** *A. Sugihara*¹, *K. Yakushiji*¹ and *S. Yuasa*¹
1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

- DE-04. Mg-X-O (X=Fe, Co, Ni, Cr and Mn) Barriers for Magnetic Tunnel Junctions.** *K. Yakushiji*¹, *E. Kitagawa*², *T. Ochiai*², *H. Kubota*¹, *N. Shimomura*², *J. Ito*², *H. Yoda*² and *S. Yuasa*¹
1. Spintronics Research Center, AIST, Tsukuba, Japan;
2. Corporate Research & Development Center, TOSHIBA Corporation, Kawasaki, Japan

- DE-05. Effect of Ionizing Radiation on CoFeB/MgO/CoFeB Nanoscale Magnetic Tunnel Junctions.** *J. Chen*¹, *E.A. Montoya*¹, *H. Lee*¹, *R. Ngelale*², *B. Adolf*³, *C. Sha*¹, *H. Tseng*⁴, *L. Wan*⁴, *E. Yang*⁴, *S. Mohammadi*⁵, *P. Sadri-Moshkenani*⁵, *O. Boyraz*⁵, *N. Bagherzadeh*⁵, *M. Nilsson*^{2,6} and *I. Krivorotov*¹ *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Chemical Engineering and Materials Science, University of California, Irvine, Irvine, CA; 3. Nuclear Engineering, University of Wisconsin-Madison, Madison, WI; 4. Western Digital, San Jose, CA; 5. Electrical Engineering and Computer Science, University of California, Irvine, Irvine, CA; 6. Chemistry, University of California, Irvine, Irvine, CA*

- DE-06. A compositional study of CoPd alloys for magnetic tunnel junctions.** *B.D. Clark*¹, *J. Abugri*¹, *P. Visscher*¹ and *S. Gupta*¹
1. MINT Center, University of Alabama, Tuscaloosa, AL

- DE-07. Bias voltage effects on tunneling magnetoresistance: a comparative theoretical study for Fe/MgAl₂O₄/Fe(001) and Fe/MgO/Fe(001) junctions.** *K. Masuda*¹ and *Y. Miura*^{2,1}
1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan

- DE-08. High performance spin transfer torque nano-oscillators based on double barrier tunneling.** *A. Sharma*¹, *A.A. Tulapurkar*¹ and *B. Muralidharan*¹ *1. Electrical Engineering, Indian Institute of Technology, India, India*

- DE-09. Enhancement of tunnel magnetoresistance and perpendicular magnetic anisotropy in magnetic tunnel junctions with Mn-modified MnGa electrodes.** *K. Suzuki*¹, *R. Ranjbar*¹, *L. Bainsla*¹, *A. Ono*¹, *Y. Sasaki*¹, *J. Okabayashi*², *Y. Miura*³ and *S. Mizukami*¹ *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Research Center for Spectrochemistry, University of Tokyo, Tokyo, Japan; 3. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan*

- DE-10. Spin-transport Properties of Perpendicular Magnetic Tunnel Junctions with Low Resistance-Area Products.** *H. Tomita*^{1,2}, *Y. Tanaka*^{1,2}, *K. Nagasaka*^{1,2}, *K. Nakamura*¹, *K. Imakita*¹, *K. Ando*³, *S. Furukawa*¹, *A. Gomi*¹, *H. Kubota*², *A. Fukushima*², *K. Yakushiji*², *S. Yuasa*², *H. Maehara*³ and *N. Watanabe*¹ *1. Tokyo Electron Yamanashi Limited, Nirasaki, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. Tokyo Electron Limited, Nirasaki, Japan*

3:30

- DE-11. In-situ high temperature FMR measurements of pMTJ with various diffusion barrier cap.** *W. Law*^{1,2}, *T. Tahmasebi*², *F. Tan*^{1,2}, *W. Gan*¹, *G.J. Lim*¹, *C. Seet*², *A. See*² and *W. Lew*¹ *1. Physics and Applied Physics, Nanyang Technological University, Singapore, Singapore; 2. Globalfoundries, Singapore, Singapore*

3:42

- DE-12. Temperature Dependence of Interlayer Magnetic Coupling in Magnetic Tunnel Junctions with GdO_x Tunneling Barriers.** *T. Newhouse-Illige*¹, *Y. Xu*¹, *Y. Liu*², *C. Bi*¹, *M. Xu*¹ and *W. Wang*¹ *1. Physics, University of Arizona, Tucson, AZ; 2. Oak Ridge National Laboratory, Oak Ridge, TN*

3:54

- DE-13. Large room temperature tunneling anisotropic magnetoresistance across ferromagnet/Nb doped SrTiO₃ interfaces.** *A.M. Kamerbeek*¹, *A. Das*¹ and *T. Banerjee*¹ *1. University of Groningen, Groningen, Netherlands*

4:06

- DE-14. Magnetoelectrically Coupled Memristor Based on All-oxide Multiferroic Tunnel Junction.** *W. Huang*¹, *Y. Fang*², *Y. Yin*¹, *C. Duan*^{2,3}, *Q. Li*⁴ and *X. Li*^{1,5} *1. Hefei National Laboratory for Physical Sciences at Microscale, Department of Physics, University of Science and Technology of China, Hefei, China; 2. Key Laboratory of Polar Materials and Devices, Ministry of Education, Department of Electronic Engineering, East China Normal University, Shanghai, China; 3. Collaborative Innovation Center of Extreme Optics, Shanxi University, Shanxi, China; 4. Department of Physics, Pennsylvania State University, University Park, PA; 5. Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing, China*

4:18

- DE-15. Development of fully perpendicular magnetic tunnel junctions with L1₀-phase FePd synthetic antiferromagnetic layer.** *D. Zhang*¹, *C. Sun*², *Y. Lv*¹, *K. Schliep*¹, *Z. Zhao*¹, *J. Chen*¹, *P. Voyles*² and *J. Wang*¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Materials Science and Engineering, University of Wisconsin Madison, Madison, WI*

Session DF
RARE EARTH-FREE HARD MAGNETIC
MATERIALS I

Takao Suzuki, Chair
University of Alabama, Tuscaloosa, AL

1:30

- DF-01. Assessment of Off-Stoichiometric $Zr_{33-x}Fe_{52+x}Si_{15}$ C14 Laves Phase Compounds as Permanent Magnet Materials.**
A. Gabay¹ and G. Hadjipanayis² 1. University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Delaware, Newark, DE

1:42

- DF-02. Electronic Structures of Ferromagnetic MnBi and MnBi-C Intermetallic Compounds.** M. Choi^{1,2}, Y. Hong^{1,2}, W. Lee^{1,2}, H. Won^{1,2}, S. Kim³ and C. Yeo⁴ 1. Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 2. MINT, The University of Alabama, Tuscaloosa, AL; 3. Physics and Astronomy, Mississippi State University, Starkville, MS; 4. Mechanical Engineering, Texas Tech University, Lubbock, TX

1:54

- DF-03. Anisotropy of the Ferromagnetic $L1_0$ Phase in the Mn-Al-C Alloys Induced by High-pressure Spark Plasma Sintering.** M. Tyrman^{1,2}, S. Quetel-Weben³, S. Ahmim¹, A. Pasko¹, L. Perrière³, I. Guillot³, V. Etgens² and F. Mazaleyrat¹ 1. SATIE, ENS Paris-Saclay, CNRS, Cachan, France; 2. LISV - UVSQ, Vélizy, France; 3. ICMPE - CNRS, UPEC, Thiais, France

2:06

- DF-04. Phase transformation and magnetic properties of MnAl prepared by elemental-doping and salt-assisted ball milling.** H. Qian¹, P. Si¹, C. Choi¹, J. Park¹ and K. Cho² 1. Functional Nanopowder Material Department Powder & Ceramic Division, Korea Institute of Materials Science, Changwon, The Republic of Korea; 2. School of Materials Science and Engineering, Pusan National University, Pusan, The Republic of Korea

2:18

- DF-05. Influence of La-Mn substitutions on magnetic properties of M-type strontium hexaferrites.** Z. Zi^{1,2} and X. Ma² 1. Key Laboratory of Materials Physics, Institute of Solid State of Physics, Hefei, China; 2. Department of Physics and Electronic Engineering, Hefei Normal University, Hefei, China

- DF-06. Spark Plasma Sintered MnGa-alloys for Permanent Magnet Applications.** *S. Perween*^{1,2}, *B. Gahtori*^{1,2}, *A. Rathi*^{1,2}, *R. P Singh*³, *B. Amrita*¹, *B. Sivaih*^{1,2}, *P. Rout*¹, *R. Pant*^{1,2}, *A. Dhar*^{1,2} and *G. Basheed*^{1,2} *1. CSIR-National Physical Laboratory, New Delhi, India; 2. AcSIR, NPL Campus, New Delhi, India; 3. IISER Bhopal, Bhopal, India*

- DF-07. Theoretical design of Mn-based ordered alloys with high magnetization by lattice expansion.** *Y. Mitsuhashi*¹, *M. Tsujikawa*^{1,2} and *M. Shirai*^{1,2} *1. RIEC, Tohoku University, Miyagi, Japan; 2. CSRN, Tohoku University, Miyagi, Japan*

- DF-08. Chemical Synthesis of L1₀ Fe-Pt-Ni Ternary Alloy Nanoparticles.** *V. Deepchand*¹, *F.M. Abel*¹, *V. Tzitzios*² and *G. Hadjipanayis*¹ *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Department of Chemical Engineering, Khalifa University of Science and Technology, Petroleum Institute, Abu Dhabi, United Arab Emirates*

- DF-09. Studies on Fabrication of Fe₁₆N₂ Powders by Low Temperature Nitridation of α -Fe with Different Sizes.** *K.P. Shinde*¹, *M. Ranot*², *J.W. Kim*¹, *C. Choi*¹ and *K. Chung*¹ *1. Nano Functional Materials Department, Korea Institute of Materials Science (KIMS), Changwon, Changwon, The Republic of Korea; 2. Materials Deformation Department, Korea Institute of Material Science (KIMS), Changwon, The Republic of Korea*

- DF-10. Magnetocrystalline Anisotropy in Fe₃Sn Alloys from First Principles.** *O. Vekilova*¹, *O. Eriksson*¹ and *H.C. Herper*¹ *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

- DF-11. Effect of grain boundary phase on the magnetization reversal process of nanocrystalline magnet using large scale micromagnetics simulation.** *H. Tsukahara*¹, *K. Iwano*¹, *C. Mitsumata*², *T. Ishikawa*¹ and *K. Ono*¹ *1. KEK, Tsukuba, Japan; 2. NIMS, Tsukuba, Japan*

- DF-12. Texture and coercivity development in cast alnico magnets.** *W. Zhang*^{1,2}, *S.R. Valloppilly*², *L. Yue*², *R. Skomski*^{1,2}, *J. Shield*^{2,3} and *D.J. Sellmyer*^{1,2} *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE*

3:54

- DF-13. Effect of magnetic solutionizing and annealing on microstructure and magnetic properties of alnico magnets.** *W. Tang¹, L. Zhou¹, K. Dennis¹, M.J. Kramer¹ and I.E. Anderson¹* *1. Ames Lab (USDOE), Iowa State University, Ames, IA*

4:06

- DF-14. Magnetic properties and microstructure of hard magnetic nanostructure prepared by chemical method.** *Y. Yu¹*
1. School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin, China

4:18

- DF-15. Mg-doped CeCo₃: transformation of a Pauli paramagnet into a strong permanent magnet.** *T.N. Lamichhane^{1,2}, V. Taufour^{3,1}, A. Palasyuk¹, Q. Lin¹, T. Pandey⁴, D. Parker⁴, S. Bud'ko^{1,2} and P.C. Canfield^{1,2}* *1. Ames Laboratory, Ames, IA; 2. Physics, Iowa State University, Ames, IA; 3. Physics, UC Davis, Davis, CA; 4. ORNL, Oak Ridge, TN*

WEDNESDAY
AFTERNOON
1:30

ROOM 304-305

Session DG

SPINTRONICS WITH 2D MATERIALS AND TOPOLOGICAL INSULATORS II

Saroj Dash, Chair

Chalmers University of Technology, Gothenburg, Sweden

1:30

- DG-01. Room Temperature Topological Insulator Spintronics: Demonstration of Perpendicular Magnetization Switching and Unidirectional Spin Hall Magnetoresistance. (Invited)** *J. Wang¹, T. Low¹, D. Mahendra², R. Grassi¹, N. Samarth³, Y. Lv¹, J. Chen¹, M. Jamali¹, J.C. Kally³, D.R. Hickey⁴, D. Zhang¹, Z. Zhao¹, H. Li¹, P. Quarterman¹, J. Lee³, L. Mo¹, A. Manchon⁵ and A. Mkhoyan⁴* *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, University of Minnesota, Minneapolis, MN; 3. Department of Physics, The Pennsylvania State University, Science Park, PA; 4. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 5. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

- DG-02. Room temperature perpendicular magnetization switching through giant spin-orbit torque from sputtered $\text{Bi}_x\text{Se}_{(1-x)}$ film.** *D. Mahendra*¹, J. Chen², M. Jamali², D.R. Hickey³, D. Zhang², Z. Zhao², H. Li⁴, P. Quarterman², Y. Lv², L. Mo², A. Mkhoyan³ and J. Wang² *1. School of Physics and Astronomy, University of Minnesota, Saint Paul, MN; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 3. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 4. University of Minnesota, Minneapolis, MN*

- DG-03. Strongly Exchange-coupled and Surface-state-modulated Magnetization Dynamics in $\text{Bi}_2\text{Se}_3/\text{YIG}$ Heterostructures.** *Y. Fanchiang*¹, K. Chen², C. Tseng², C. Chen², Z. Cheng¹, C. Wu², S. Lee³, M. Hong¹ and J. Kwo² *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Department of Physics, National Tsing Hua University, Hsinchu, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

- DG-04. Room temperature magnetization switching by spin-orbit torques in topological insulator-ferromagnet heterostructures.** *Y. Wang*¹, D. Zhu¹, Y. Wu¹, Y. Yang¹, J. Yu¹, R. Ramaswamy¹, R. Mishra¹, S. Shi¹, M. Elyasi¹, K. Teo¹, Y. Wu¹ and H. Yang^{1,2} *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Centre for Advanced 2D Materials, National University of Singapore, Singapore, Singapore*

- DG-05. Spin and Charge Conversion due to Spin-Momentum Locking. (Invited)** *W. Han*¹ *1. International Center for Quantum Materials, Peking University, Beijing, China*

- DG-06. Nontrivial Topological Surface States in SmB_6 Thin Films.** *T. Liu*¹, Y. Li², L. Gu³, J. Ding⁴, H. Chang¹, P. Janantha¹, B.A. Kalinikos^{1,5}, V. Novosad⁴, A. Hoffmann⁴, R. Wu³, C. Chien² and M. Wu¹ *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 3. Department of Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Materials Science Division, Argonne National Laboratory, Argonne, IL; 5. Physical Electronics and Technology, St.Petersburg Electrotechnical University, St.Petersburg, Russian Federation*

- DG-07. Direct electrical detection of spin-to-charge and charge-to-spin conversion in TI surface states and Rashba 2DEG states.** *C.H. Li*¹, O. van 't Erve¹, S. Rajput², L. Li² and B. Jonker¹ *1. Naval Research Laboratory, Washington, DC; 2. Physics and Astronomy, West Virginia University, Morgantown, WV*

DG-08. Towards more Efficient Spin/Charge Conversion at the α -Sn Topological Insulator Surface. *Q. Barbedienne*¹, J. George¹, H. Jaffres¹, N. Reyren¹, A. Fert¹, P. Noel², A. Marty², C. Vergnaud², L. Vila², M. Jamet², A. Taleb Ibrahim³, P. Le Fevre³, F. Bertran³ and A. Lemaitre⁴ *1. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France; 2. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC, SPINTEC, Grenoble, France; 3. URI CNRS/Synchrotron SOLEIL, Gif sur Yvette, France; 4. Centre de Nanosciences et de Nanotechnologies, CNRS, Marcoussis, France*

DG-09. Highly-ordered wide bandgap materials for quantized anomalous Hall and magnetoelectric effects. *M.M. Otrakov*^{1,2}, T.V. Menshchikova², M.G. Vergniory^{3,4}, I.P. Rusinov², A.Y. Vyazovskaya², Y.M. Koroteev⁵, G. Bihlmayer⁶, A. Ernst^{7,8}, P.M. Echenique^{3,1}, A. Arnau^{1,3} and E.V. Chulkov^{3,9} *1. Centro de Física de Materiales (CSIC-UPV/EHU), San Sebastian, Spain; 2. Tomsk State University, Tomsk, Russian Federation; 3. Donostia International Physics Center (DIPC), San Sebastian, Spain; 4. Department of Applied Physics II, Faculty of Science and Technology, University of the Basque Country UPV/EHU, Bilbao, Spain; 5. Institute of Strength Physics and Materials Science, Tomsk, Russian Federation; 6. Institut für Festkörperforschung and Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany; 7. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 8. Institut für Theoretische Physik, Johannes Kepler Universität, Linz, Austria; 9. Saint Petersburg State University, Saint Petersburg, Russian Federation*

DG-10. Skyrmion-induced anomalous Hall conductivity on topological insulator surfaces. *Y. Araki*^{1,2} and K. Nomura¹ *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan*

Session DH
NANOPARTICLES, NANOWIRES, AND 3D
STRUCTURES I

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

1:30

- DH-01. Magneto-optical response of slanted columnar heterostructured thin films.** C. Briley¹, D. Sekora¹, A. Mock¹, R. Skomski³, E. Franke-Schubert¹ and M. Schubert^{1,2}
1. Electrical and Computer Engineering, University of Nebraska-Lincoln, Lincoln, NE; 2. Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 3. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE

1:42

- DH-02. Understanding Curvature Effects on Magnetic Domains in Nanostructures.** B. Cody¹, J. Emery¹, A. Martinson², A. Petford-Long³ and C. Phatak²
1. Northwestern University, Evanston, IL; 2. Materials Science Division, Argonne National Laboratory, Lemont, IL; 3. Argonne National Laboratory, Argonne, IL

1:54

- DH-03. Constructing 3D magnetic nanostructures on an arbitrarily shaped surface.** F. Chen¹, R. Peng¹ and M. Wang¹
1. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China

2:06

- DH-04. Investigation of three-dimensional magnetic nanostructures for applications in spintronics. (Invited)** A. Fernandez-Pacheco¹
1. University of Cambridge, Cambridge, United Kingdom

2:42

- DH-05. The Self-Assembled Magnetic Mesocrystals with Tilted Magnetic Anisotropy.** S. Guo¹, B. Wang¹ and R. Li¹
1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China

2:54

- DH-06. Synthesis of Magnetic Metal Nanoparticles Coated with Spinel Iron Oxide by Aqueous Process.** K. Yatsugi¹, T. Ishizaki¹, S. Utsuno¹, J. Hwang¹ and K. Akedo¹
1. Toyota Central R&D Labs., Inc., Nagakute, Aichi, Japan

DH-07. Magnetic and Structural Properties of Co₂Ge Nanoparticles.

*O. Tosun*¹, *F.M. Abel*¹, *B. Balasubramanian*², *R. Skomski*²,
*D.J. Sellmyer*² and *G. Hadjipanayis*¹ 1. *Physics & Astronomy,*
University of Delaware, Newark, DE; 2. *Physics and*
Astronomy, University of Nebraska, Lincoln, NE

DH-08. Size-Dependent Magnetism of MnSi Nanoclusters.

*B. Das*¹,
*B. Balasubramanian*¹, *R. Skomski*¹, *G. Hadjipanayis*² and
*D.J. Sellmyer*¹ 1. *Nebraska Center for Materials and*
Nanoscience and Physics and Astronomy, University of
Nebraska-Lincoln, Lincoln, NE; 2. *Physics and Astronomy,*
University of Delaware, Newark, DE

DH-09. Effective Exchange Stiffness within Spinel Nanoparticles.

*K.L. Krycka*¹, *J.J. Rhyne*², *D.B. Gopman*³, *J. Borchers*¹,
*S. Oberdick*⁴, *A.M. Abdelgawad*⁵, *Y. Ijiri*⁶ and *S. Majetich*⁵
 1. *NIST Center for Neutron Research, National Institute of*
Standards and Technology, Gaithersburg, MD; 2. *Office of*
Basic Energy Sciences, U.S. Department of Energy,
Washington, D.C., MD; 3. *Materials Science & Engineering*
Division, National Institute of Standards and Technology,
Gaithersburg, MD; 4. *Applied Physics, NIST, Boulder, CO;*
 5. *Materials Science and Engineering, Carnegie Mellon*
University, Pittsburgh, PA; 6. *Department of Physics and*
Astronomy, Oberlin College, Oberlin, OH

DH-10. Structure and Magnetic Interactions in Fe₃O₄/Mn_xFe_{3-x}O₄ Core/Shell Nanoparticles.

A.M. Abdelgawad^{1,2}, *C. Moya*¹,
S. Oberdick^{1,3}, *D. Kepaptsoglou*⁴, *V. Lazarov*⁵, *E. Skoropata*⁶,
*J. van Lierop*⁶ and *S. Majetich*¹ 1. *Physics, Carnegie Mellon*
University, Pittsburgh, PA; 2. *Materials Science and*
Engineering, Carnegie Mellon University, Pittsburgh, PA;
 3. *Applied Physics Division, Physical Measurement Laboratory,*
National Institute of Standards and Technology, Boulder, CO;
 4. *SuperSTEM, Sci-Tech, Daresbury Campus, Daresbury,*
United Kingdom; 5. *Department of Physics, University of York,*
York, United Kingdom; 6. *Physics and Astronomy, University of*
Manitoba, Winnipeg, MB, Canada

DH-11. Orientation of localized moments at the two nonequivalent sites in Gd₂O₃ and Er₂O₃ nanoparticles as measured by magnetic hyperfine interactions.

*E.L. Correa*¹,
*B. Bosch-Santos*², *G.A. Cabrera-Pasca*³, *R.N. Saxena*⁴,
*M. Potiens*¹ and *A.W. Carbonari*⁴ 1. *Instituto de Pesquisas*
Energéticas e Nucleares, Universidade de São Paulo, Sao
Paulo, Brazil; 2. *CRPq, IPEN/USP, Sao Paulo, Brazil;*
 3. *University of Para, Abaetetuba, Brazil;* 4. *CRPq,*
IPEN-CNEN/SP, Sao Paulo, Brazil

Session DI
MAGNETIC IMAGING AND MEASUREMENT
TECHNIQUES

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

1:30

- DI-01. Time-resolved magneto-thermal microscopy: dynamic imaging of magnetic metals and magnetic insulators in devices. (Invited)** G. Fuchs¹ 1. *Applied and Engineering Physics, Cornell University, Ithaca, NY*

2:06

- DI-02. Nanoscale Imaging of Magnetization Using Time-resolved Plasmonic Heating.** J.M. Bartell¹, J. Karsch¹, C.L. Jermain², J. Brangham³, F. Yang³, D.C. Ralph² and G. Fuchs¹ 1. *School of Applied and Engineering Physics, Cornell University, Ithaca, NY*; 2. *Department of Physics, Cornell University, Ithaca, NY*; 3. *Physics, The Ohio State University, Columbus, OH*

2:18

- DI-03. Imaging of magnetic excitations in nanostructures with near-field microwave microscopy.** R. Tyrrell-Ead¹, S. Berweger¹, T.M. Wallis¹, P. Kabos¹, N. Zhu², H. Tang², H. Chang³, T. Liu³ and M. Wu³ 1. *Applied Physics, NIST, Boulder, CO*; 2. *Department of Electrical Engineering, Yale University, New Haven, CT*; 3. *Department of Physics, Colorado State University, Fort Collins, CO*

2:30

- DI-04. Direct observation of nontrivially distorted vortex cores and their dynamic behavior.** M. Im¹, H. Han², M. Jung³, Y. Yu⁴, P. Fischer⁴, J. Hong³ and K. Lee⁵ 1. *CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA*; 2. *UNIST, Ulsan, The Republic of Korea*; 3. *Emerging Materials Science, Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea*; 4. *Lawrence Berkeley National Laboratory, Berkeley, CA*; 5. *School of Mechanical & Advanced Material Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea*

2:42

- DI-05. Nanoscale Magnetic Imaging using Circularly Polarized High-Harmonic Radiation. (Invited)** O. Kfir^{1,2}, S. Zayko¹, C. Nolte³, M. Sivilis¹, M. Möller¹, B. Hebler⁴, S.K. Arekapudi⁴, D. Steil³, S. Schäfer¹, M. Albrecht⁴, O. Cohen², S. Mathias³ and C. Ropers¹ 1. *4th Physical Institute, University of Goettingen, Göttingen, Germany*; 2. *Solid State Institute and Physics Department, Technion - Israel Institute of Technology, Haifa, Israel*; 3. *1st Physical Institute, University of Goettingen, Göttingen, Germany*; 4. *Institute of Physics, University of Augsburg, Augsburg, Germany*

- DI-06. Revealing buried magnetic configurations with hard X-ray magnetic nanotomography. (Invited)** C. Donnelly¹, M. Guizar-Sicairos², V. Scagnoli¹, S. Gliga³, M. Holler², J. Raabe² and L. Heyderman⁴ *1. Laboratory for Mesoscopic Systems, ETH Zurich/ Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Paul Scherrer Institut, Villigen PSI, Switzerland; 3. University of Glasgow, Glasgow, United Kingdom; 4. ETH Zurich - Paul Scherrer Institute, Villigen-PSI, Switzerland*

- DI-07. Depth Dependent Modeling of Magnetism in Thin Film $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ using Neutron and X-ray Techniques.** R. Trappen¹, N. Mottaghi¹, S. Kumari¹, C. Huang², W. Ibarra-Hernandez¹, V. Tra³, J. Fitch⁴, M.B. Johnson¹, J.W. Freeland⁵, A.T. N'Diaye⁶, S. Dong⁷, Y. Chu³, J.M. LeBeau⁴, A. Grutter⁸, A. Romero¹ and M. Holcomb¹ *1. Physics, West Virginia University, Morgantown, WV; 2. Mechanical & Aerospace Engineering, West Virginia University, Morgantown, WV; 3. Institute of Physics, National Chiao Tung University, HsinChu, Taiwan; 4. Department of Materials Science & Engineering, North Carolina State University, Raleigh, NC; 5. Argonne National Laboratory, Argonne, IL; 6. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 7. Department of Physics, Southeast University, Nanjing, China; 8. NIST Center for Neutron Research, NIST, Gaithersburg, MD*

- DI-08. Scanning electron microscopy with polarization analysis for multilayered chiral spin textures.** J. Lucassen¹, F. Kloodt-Twesten², R. Frömter², H. Oepen², R. Duine^{1,3}, H. Swagten¹, B. Koopmans¹ and R. Lavrijsen¹ *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. Institut für Nanostruktur- und Festkörperphysik, Universität Hamburg, Hamburg, Germany; 3. Institute for Theoretical Physics, Utrecht University, Utrecht, Netherlands*

- DI-09. Chemical and Structural Analysis on Magnetic Tunnel Junctions Using a Decelerated Scanning Electron Beam.** E. Jackson¹, M. Sun², T. Kubota^{2,3}, K. Takanashi^{2,3} and A. Hirohata¹ *1. University of York, York, United Kingdom; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*

Session DP
MAGNETO-CALORIC MATERIALS II
(Poster Session)

Faxiang Qin, Chair
Zhejiang University, Hangzhou, China

- DP-01. Tuning the magnetic phase transition and the magnetocaloric properties of $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ compounds through Sm-doping.** T. Thanh^{1,2}, T. Nguyen², C. Dinh², Y.D. Pham¹, X. Kieu¹, M.V. Tien³, H. Piao⁴, D. Kim¹ and S. Yu¹ 1. Department of Physics, Chungbuk National University, Cheongju, The Republic of Korea; 2. Institute of Materials Science, VAST, Hanoi, Vietnam; 3. Hanoi University of Science and Technology, Hanoi, Vietnam; 4. China Three Gorges University, Yichang, China
- DP-02. Magnetic properties of Heusler-type glass-coated microwires.** V. Zhukova^{1,2}, M. Ipatov^{1,2}, J. del Val¹ and A.P. Zhukov^{1,3} 1. Phys. Mater., UPV/EHU, San Sebastián, Spain; 2. Dpto. Física Aplicada, University of Basque Country, EUPDS, San Sebastian, Spain; 3. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain
- DP-03. The Mechanical Stability of La-Fe-Si Plate Over Magnetic Cycling.** E. Kim^{1,2}, X. Xu³, R. Ihnfeldt³, R. Chen², S. Jin² and C. Yoon¹ 1. Materials Science & Engineering, Hanyang University, Seoul, The Republic of Korea; 2. Mechanical Aerospace Engineering, University of California, San Diego, San Diego, CA; 3. General Engineering & Research, San Diego, CA
- DP-04. Low Cost High Performance Magnetocaloric Materials for Hydrogen Liquefaction Applications.** R. Ihnfeldt¹, R. Chen², E. Kim², X. Xu¹ and S. Jin^{1,2} 1. General Engineering & Research, San Diego, CA; 2. Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA
- DP-05. Hydrostatic Pressure-tuned Magnetostructural Transition And Magnetocaloric Effect In Mn-Co-Ge-In Compounds.** F. Liang^{1,2}, F. Shen^{1,2}, Y. Liu^{1,2}, J. Li^{1,2}, K. Qiao^{1,2}, J. Wang^{1,2}, F. Hu^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} 1. Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China
- DP-06. Magnetic properties and magnetocaloric effects of RNiSi_2 (R= Gd, Dy, Ho, Er, Tm) compounds.** B. Zhang^{1,2}, X. Zheng³, Y. Zhang^{1,2}, X. Zhao^{1,2}, J. Xiong^{1,2}, S. Zuo^{1,2}, D. Liu^{1,2}, T. Zhao^{1,2}, F. Hu^{1,2} and B. Shen^{1,2} 1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China

DP-07. Magnetic and magnetocaloric properties of $\text{Co}_{2-x}\text{Fe}_x\text{VGa}$ Heusler compounds. P.R. Kharel^{1,2}, K. Schroeder¹, J. Waybright¹, W. Zhang^{3,2}, S.R. Valloppilly², P. Lukashov⁴, Y. Huh¹, R. Skomski^{3,2} and D.J. Sellmyer^{3,2} *1. Physics, South Dakota State University, Brookings, SD; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Physics and Astronomy, University of Nebraska, Lincoln, NE; 4. Physics, University of Northern Iowa, Cedar Falls, IA*

DP-08. The role of chemical disorder, induced by cold work, and its influence on magnetic order of Fe and Mn sublattices of the $\gamma\text{-Fe}_2\text{MnGa}$ Heusler alloy. E. Caetano Passamani¹, C. Larica¹, V.P. Nascimento¹, A. Biondo¹ and J. Andrez¹ *1. Física, Universidade Federal do Espírito Santo, Vitória, Brazil*

DP-09. Effect of doping Al on structure and magnetic properties of $\text{MnCoSi}_{1-x}\text{Al}_x$. X. Liu¹, A. Pathak¹, Y. Mudryk¹, V. Balema¹ and V.K. Pecharsky^{1,2} *1. Ames Laboratory of USDOE, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

DP-10. Magnetic properties and magnetocaloric effects in RCoGe ($\text{R}=\text{Tb}, \text{Dy}$) compounds. Y. Zhang^{1,2}, Q. Dong³, X. Zheng⁴, Y. Liu^{1,2}, S. Zuo^{1,2}, J. Xiong^{1,2}, B. Zhang^{1,2}, X. Zhao^{1,2}, R. Li^{1,2}, D. Liu^{1,2}, F. Hu^{1,2}, J. Sun^{1,2}, T. Zhao^{1,2} and B. Shen^{1,2} *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. Center for Condensed Matter & Beijing Key Laboratory of Metamaterials and Devices, Department of Physics, Capital Normal University, Beijing, China; 4. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*

DP-11. Large magnetocaloric effect of NdGa compound based on successive magnetic transitions. J. Xu¹, X. Zheng¹, J. Chen², S. Shao¹, L. Wang³, H. Zhang¹, S. Wang¹ and B. Shen⁴ *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Beijing Institute of Aerospace Testing Technology, China Aerospace Science and Technology Corporation, Beijing, China; 3. Department of Physics, Capital Normal University, Beijing, China; 4. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

DP-12. Modulation of magnetocaloric effect by electric field in $\text{La}_{0.325}\text{Pr}_{0.3}\text{Ca}_{0.375}\text{MnO}_3$ films grown on (011)-PMN-PT substrates. K. Qiao^{1,2}, J. Li^{1,2}, Y. Liu^{1,2}, F. Liang^{1,2}, H. Kuang^{1,2}, F. Hu^{1,2}, J. Wang^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} *1. Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China*

DP-13. Modulation of magnetocaloric effect in Gd-based microwires for active magnetic refrigeration. Y. Wang¹, F. Qin¹, H. Wang¹ and H. Peng¹ *1. Institute for Composites Science Innovation, Zhejiang University, Hangzhou, China*

- DP-14. Enhancement of magnetocaloric effect in mischmetal doped La-Fe-Si alloys.** *G. Wang*¹, *Z. Zhao*², *X. Zhang*², *Q. Ma*¹, *Y. Li*², *Y. Liu*² and *L. Mu*² *1. Key laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, China; 2. School of Science, Inner Mongolia University of Science and Technology, Baotou, China*
- DP-15. Lattice-magnetism connections in Ga- and C-substituted compositional variants of AlFe₂B₂.** *R. Barua*¹, *B. Lejeune*², *B. Jensen*³, *L. Ke*³, *E. Levin*³, *W. McCallum*⁴, *M.J. Kramer*⁵ and *L. Lewis*⁶ *1. Engineering, Northeastern University, Boston, MA; 2. Chemical Engineering, Northeastern University, Boston, MA; 3. Ames Laboratory, Ames, IA; 4. McCallum Consulting LLC, Santa Fe, NM; 5. Ames Laboratory, Iowa State University, Ames, IA; 6. Northeastern University, Boston, MA*
- DP-16. Evolution of microstructure, magnetic and magnetocaloric properties of Ni_{42.9}Co_{6.9}Mn_{38.3}Sn_{11.9} ribbons.** *Q. Ge*¹, *S. Ma*¹, *S. Yang*¹, *X. Han*¹ and *K. Yu*¹ *1. Jiangxi Key Laboratory for Rare Earth Magnetic Materials and Devices, Jiangxi University of Science and Technology, Ganzhou, China*

WEDNESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session DQ
FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA
(Poster Session)

Julie Karel, Chair
Monash University, Clayton, Australia

- DQ-01. String-Valence Bond Solid Phase Of Frustrated J1 - J2 Transverse Field Ising Model On The Square Lattice.** *M. Sadrzadeh*¹, *R. Haghshenas*¹, *S. Jahromi*¹ and *A. Langari*¹ *1. Physics, Sharif University of Technology, Tehran, The Islamic Republic of Iran*
- DQ-02. Electric Field Modulated Superconductivity and Hall Effect in NbN Thin Films.** *H. Sharma*^{1,2}, *Z. Wen*^{1,3}, *K. Takanashi*^{1,3} and *M. Mizuguchi*^{1,2} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. CREST, Japan Science and Technology Agency, Kawaguchi, Japan; 3. Center for Spintronics Research Network (CSRN), Tohoku University, Sendai, Japan*
- DQ-03. Thermodynamic Properties Of Heusler Fe₂VSi.** *M. Ito*¹, *K. Kai*¹, *T. Furuta*¹, *A. Kondo*², *H. Manaka*¹, *N. Terada*¹, *K. Kindo*² and *M. Hiroi*¹ *1. Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan; 2. ISSP, University of Tokyo, Kashiwa, Japan*

- DQ-04. Magnetic And Thermodynamic Properties Of Heusler Alloys $\text{Ni}_{55}\text{Mn}_{26}\text{Al}_{19}$.** K. Onda¹, M. Ito¹, A. Taira¹, K. Sonoda¹, Y. Uwatoko² and M. Hiroi¹ 1. Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan; 2. ISSP, University of Tokyo, Kashiwa, Japan
- DQ-05. Investigating the Metamagnetic Transition in FeRhPd Thin Films Using High-temperature Spin-wave Resonance Techniques.** J. Massey¹, K. Matsumoto^{2,3}, Y. Otani^{3,2} and C.H. Marrows¹ 1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. RIKEN, Tokyo, Japan; 3. ISSP, University of Tokyo, Kashiwa, Japan
- DQ-06. Influence of nonmagnetic rare earth element substitution in Gd_5Ge_4 .** D. Paudyal¹, Y. Mudryk¹ and V.K. Pecharsky^{1,2} 1. The Ames Laboratory, U.S. Department of Energy, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA
- DQ-07. The effect of TM doping on the superconducting properties of $\text{ZrNi}_{2-x}\text{TM}_x\text{Ga}$ (TM = Cu, Co) Heusler compounds.** D. Basaula¹, J.A. Brock¹ and M.U. Khan¹ 1. Physics, Miami University, Oxford, OH
- DQ-08. Effect of magnetic field on the photovoltaic properties of superconductor/metal heterojunction.** F. Yang¹ 1. Henan Normal University, Xinxiang, China
- DQ-09. Large Enhancement of Magneto-Optical Kerr Effect in YIG/Bi Quantum Dots Hybrid System.** H. Caiyun¹, J. Lichan¹, R. Yiheng¹, H. Zhang¹, L. Mingming¹, Z. Zhong² and Q. Yang¹ 1. University of Electronic Science and Technology of China, Chengdu, China; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China
- DQ-10. Electrical resistivity and thermodynamic properties of the ferromagnet $\text{Nd}_2\text{Pt}_2\text{In}$.** M.B. Tchoula Tchokonte¹, J.J. Mboukam¹, B.M. Sondezi², R. Kumar², A.M. Strydom² and D. Kaczorowski³ 1. Physics, University of the Western Cape, Bellville, South Africa; 2. Physics, University of Johannesburg, Johannesburg, South Africa; 3. Magnetic Research Department, Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland
- DQ-11. Perpendicular magnetic anisotropy in Mn_2VIn (001) thin films: *ab initio* study.** Z.W. Muthui^{1,2}, R.J. Musembi¹, J.M. Mwabora¹ and A. Kashyap² 1. Physics, University of Nairobi, Nairobi, Kenya; 2. Physics, School of Basic Sciences, Indian Institute of Technology Mandi, HP, Mandi, India
- DQ-12. Magnetic and Transport Properties of Heusler Alloy $\text{Fe}_{2-x}\text{Ni}_{1+x}\text{Al}$.** K. Sonoda¹, H. Matsuguma¹, K. Onda¹, S. Onoue¹, K. Koyama¹, M. Hiroi¹, Y. Uwatoko², N. Terada¹ and M. Ito¹ 1. Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan; 2. ISSP, University of Tokyo, Kashiwa, Japan

- DQ-13. Low-temperature specific heat of $\text{Yb}_2\text{Ti}_2\text{O}_7$ single crystal.** S. Li¹, H. Che², J. Wu¹, X. Zhao² and X. Sun¹ 1. *University of Science and Technology of China, Hefei, China*; 2. *School of Physical Sciences, University of Science and Technology of China, Hefei, China*
- DQ-14. Communities In Artificial Spin Ices.** F. Barrows^{1,2}, V. Brajuskovic², C. Phatak³ and A. Petford-Long² 1. *Northwestern University, Evanston, IL*; 2. *Argonne National Laboratory, Chicago, IL*; 3. *Materials Science Division, Argonne National Laboratory, Lemont, IL*
- DQ-15. Exploring diffusive-like effects and possible local non-trivial topology on semimetal half-Heusler YPdBi .** J.C. Souza¹, G.G. Lesseux¹, R.R. Urbano¹, C. Rettori^{1,2} and P. Pagliuso³ 1. *IFGW-Unicamp, Campinas, Brazil*; 2. *UFABC, Santo Andre, Brazil*; 3. *DEQ, Instituto de Física Gleb Wataghin - Unicamp, Campinas, Brazil*
- DQ-16. Spin-glass state in $\text{Fe}_{0.5}\text{Cr}_{0.5}\text{Ga}$.** P. Bag¹ 1. *School of Physics, Indian Institute of Science Education and Research Thiruvananthapuram, Thiruvananthapuram, India*

WEDNESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session DR
COMPLEX OXIDES
(Poster Session)

Di Yi, Chair
Stanford University, Stanford, CA

- DR-01. Strain tuned magnetic transition in Ru-doped YMnO_3 thin films.** A. Zhang¹, L. Yang¹ and X. Wu² 1. *College of Science, Hohai University, Nanjing, China*; 2. *Nanjing University, Nanjing, China*
- DR-02. In-plane Reversed Magnetic Anisotropy in (110)-oriented in $\text{LaCoO}_3/\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$ Bilayers.** J. Zhang¹, X. Yan¹, F. Han¹, J. Zhang¹, B. Shen¹ and J. Sun¹ 1. *Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- DR-03. Magnetic anisotropy tuning by the competition between strain and interface octahedral distortion in $\text{La}_{0.7}\text{Sr}_{0.3}\text{CoO}_3$ Films.** J. Li^{1,2}, J. Wang^{1,2}, H. Kuang^{1,2}, K. Qiao^{1,2}, Y. Liu^{1,2}, F. Hu^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} 1. *Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*; 2. *School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China*

- DR-04. Dual-gate modulation of the phase separation in manganite film.** H. Kuang^{1,2}, J. Wang^{1,2}, J. Li^{1,2}, Y. Liu^{1,2}, F. Hu^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} 1. Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China
- DR-05. Lithium-ion modulation of ferromagnetism in spinel materials.** G. Wei¹ and Y. Chen¹ 1. School of Physics, Shandong University, Jinan, China
- DR-06. Magnetism, insulator-metal transition and thermopower of Ru doped charge ordered Bi_{0.5}Ca_{0.5}MnO₃.** M. Kumari¹, A. Chanda¹ and R. Mahendiran¹ 1. Physics Dept, National University of Singapore, Singapore, Singapore
- DR-07. Magnetic and Electron Spin Resonance Studies of W-doped CoFe₂O₄ Polycrystalline Materials.** S. Singamaneni¹, R. Chintalapalle² and L. Martinez¹ 1. Physics, The University of Texas at El Paso, El Paso, TX; 2. Mechanical Engineering, The University of Texas at El Paso, El Paso, TX
- DR-08. Investigation of Magnetization Reversal Behaviour in Gd and Mn-doped Sm_{0.9}Gd_{0.1}Cr_{0.85}Mn_{0.15}O₃ Orthochromites.** S. Kumar¹, J. Joby¹, N. Panwar¹, I. Coondoo², V. M³, N. Kumar⁴ and R. Katiyar⁴ 1. Physics, Central University of Rajasthan, Ajmer, India; 2. Department of Physics & CICECO-Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal; 3. Materials Science and Technology Division, CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum, India; 4. Physics, University of Puerto Rico, USA, San Juan, PR
- DR-09. Temperature Evolution of Magnetic and Structural Properties in Double Perovskite Sr₂FeIrO₆.** K.C. Kharkwal¹ 1. Physics, Jawaharlal Nehru University, Delhi, India
- DR-10. Magnetic properties of quasi-one-dimensional Co_{0.8}Ni_{0.2}Nb₂O₆ compound.** P.W. Sarvezuk¹, M. Gusmão², J.B. da Cunha² and O. Isnard³ 1. DAFIS, Universidade Tecnológica Federal do Paraná, Campo Mourao, Brazil; 2. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; 3. MCMF, Institut Néel, Université J. Fourier, Grenoble, France
- DR-11. Impurity Effects on Magnetic Properties of Rb₂Cu₂Mo₃O₁₂ with CuO₂ Ribbon Chains.** Y. Okubo¹, Y. Yasui¹ and S. Iguchi¹ 1. Physics, Meiji University, Kawasaki, Japan
- DR-12. Magnetic and Crystal Structure of Ba₃Co_{1-x}Ca_xRu₂O₉.** A. Horie¹, Y. Yasui¹, T. Igarashi², T.D. Yamamoto², K. Misawa², I. Terasaki², T. Matsukawa³, A. Hoshikawa³, T. Ishigaki³ and N. Igawa⁴ 1. Physics, Meiji University, Kawasaki, Japan; 2. Physics, Nagoya University, Nagoya, Japan; 3. Frontier Research Center for Applied Atomic Sciences, Ibaraki University, Tokai, Japan; 4. Materials Sciences Research Center, Japan Atomic Energy Agency, Tokai, Japan

- DR-13. Magnetic Ground States of Frustrated Quantum Spin Chain System $(\text{Rb,Cs})_2\text{Cu}_2\text{Mo}_3\text{O}_{12}$.** *S. Iguchi*¹, *Y. Yasui*¹, *S. Kittaka*² and *T. Sakakibara*² *1. Physics, Meiji University, Kawasaki, Japan; 2. ISSP, The University of Tokyo, Kashiwa, Japan*
- DR-14. Weakened Ferromagnetism and Antiferromagnetic Ordering in Quasi-one-dimensional Spin Chain $\text{Ca}_3\text{Co}_{2-x}\text{Fe}_x\text{O}_6$.** *R. Das*¹, *N. Dang*², *D. Kozlenko*³, *S. Kichanov*³, *E. Lukin*³, *B. Savenko*³, *H. Srikanth*¹ and *M. Phan*¹
1. Department of Physics, University of South Florida, Tampa, FL; 2. Institute of Research and Development, Duy Tan University, Da Nang, Vietnam; 3. Frank Laboratory of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russian Federation
- DR-15. Magnetic Properties of RCrTiO_5 ($\text{R}=\text{Pr, Nd, Eu, Sm}$ and Gd).** *Y. Yasui*¹, *T. Miyamoto*¹, *S. Kori*², *I. Terasaki*², *D. Yoshizawa*³, *M. Akaki*³, *M. Hagiwara*³ and *K. Okunishi*⁴
1. Physics, Meiji University, Kawasaki, Japan; 2. Physics, Nagoya University, Nagoya, Japan; 3. Center for Advanced High Magnetic Field Science, Graduate School of Science, Osaka University, Toyonaka, Japan; 4. Physics, Niigata University, Niigata, Japan
- DR-16. Thermal conductivity of $\text{Ca}_3\text{Co}_2\text{O}_6$ single crystal.** *H. Che*¹, *J. Shi*¹, *J. Wu*², *X. Rao*², *X. Liu*², *X. Zhao*¹ and *X. Sun*²
1. School of Physical Sciences, University of Science and Technology of China, Hefei, China; 2. University of Science and Technology of China, Hefei, China

WEDNESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session DS
MAGNETIC INSTRUMENTATION AND
CHARACTERIZATION II
(Poster Session)

Stefano Bonetti, Co-Chair
Stockholm University, Stockholm, Sweden
Rajasekhar Medapalli, Co-Chair
University of California, San Diego, La Jolla, CA

- DS-01. Systematic errors in the determination of the g-factor and saturation magnetization in broadband ferromagnetic resonance: Proposed solutions.** *C.A. Gonzalez-Fuentes*¹, *R.K. Dumas*² and *C. Garcia*¹ *1. Physics, Universidad Técnica Federico Santa María, Valparaiso, Chile; 2. Quantum Design, Inc., San Diego, CA*
- DS-02. FORC+: Invertible Stand-Alone Software for First-Order Reversal Curves.** *P.B. Visscher*¹ *1. Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

- DS-03. Analysis of some limitations embedded in the First Order Curves FORCs transformation.** *J.M. Martínez¹, A. Encinas¹ and L. Piraux²* 1. *Advanced Materials, Instituto Potosino de Investigación Científica y Tecnológica, San Luis Potosí, Mexico;* 2. *Bio and Soft Matter, Institute for Condensed Matter and Nanosciences (IMCN) Université Catholique de Louvain (UCL), Ottignies-Louvain-la-Neuve, Belgium*
- DS-04. Development of sensitive 3D vector VSM on a cryo-free low temperature and high field platform.** *J. Lu¹, C. Guo¹ and B. Shen¹* 1. *Institute of Physics, CAS, Beijing, China*
- DS-05. Design, Modeling, and Construction of an H-Shaped Dipole Electromagnet for the Magnetic Characterization of Materials.** *J. Baena^{1,2} and Alvaro A. Velásquez²* 1. *Innovation Department, CELSIA E.S.P S.A, Medellin, Colombia;* 2. *School of Sciences, Universidad EAFIT, Medellin, Colombia*
- DS-06. Evaluation of Magnetic Field's Uniformity Inside Electromagnetic Coils using Graphene.** *S. Amanatiadis¹, T. Ohtani², Y. Kanai³ and N.V. Kantartzis¹* 1. *Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece;* 2. *Omachi, Asahikawa, Japan;* 3. *IEE, Niigata Institute of Technology, Kashiwazaki, Japan*
- DS-07. Experimental Study of the Bulk and Surface Magnetization of Amorphous Alloy Ribbons $\text{Fe}_{73.5-x}\text{Cr}_x\text{Cu}_1\text{Nb}_3\text{Si}_{13.5}\text{B}_9$.** *A. Rosales Rivera¹, I. Cely-Orjuela¹, N. Salazar-Henao¹, A. Velásquez-Salazar¹ and A. Pulzara-Mora²* 1. *Laboratorio de Magnetismo y Materiales Avanzados, Universidad Nacional de Colombia, Sede Manizales, Manizales, Colombia;* 2. *Laboratorio de Nanoestructuras Semiconductoras, Universidad Nacional de Colombia, Sede Manizales, Manizales, Colombia*
- DS-08. Reliable characterization of the inverse-magnetostrictive behavior of thin films applying Vibrating Sample Magnetometry.** *M. Löffler¹ and R. Lerch¹* 1. *Friedrich-Alexander-Universität Erlangen-Nuremberg, Erlangen, Germany*
- DS-09. Magnetostriction based nanocontacts – Remote control of conductance at room temperature and in tunnel regime.** *S. Jammalamadaka¹* 1. *Department of Physics, Indian Institute of Technology Hyderabad, Hyderabad, India*
- DS-10. Metal-insulator transition in VO_2 : an NMR study.** *Y. Wang¹, E. Liu¹, X. Xi¹ and W. Wang¹* 1. *Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- DS-11. Enhanced magnetic field generation suited for low field unilateral NMR.** *N. Prabhu Gaunkar¹, J. Selvaraj¹, W. Theh¹, R. Weber¹ and M. Mina¹* 1. *Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

DS-12. High sensitivity magnon measurement for characterizing internal magnetic states of a small magnetic tunnel junction. S. Tamaru¹, H. Kubota², K. Yakushiji¹, A. Fukushima² and S. Yuasa¹ *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

DS-13. Rotating Magnetizations in Electrical Machines: Measurements and Modelling. A. Thul¹, S. Steentjes¹, B. Schauerte¹, P. Klimczyk², P. Denke² and K. Hameyer¹ *1. Institute of Electrical Machines, RWTH Aachen University, Aachen, Germany; 2. Brockhaus Measurements, Lüdenscheid, Germany*

WEDNESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session DT
MAGNETIC SENSORS (NON-RECORDING) I
(Poster Session)

Martina Ahlberg, Co-Chair
University of Gothenburg, Gothenburg, Sweden
Eva Jakubisova, Co-Chair
Charles University in Prague, Prague, Czech Republic

DT-01. Tailoring the asymmetric magnetoimpedance response in exchange-biased multilayered FeNi. U. Kilic¹, C. Ross² and C. Garcia³ *1. Electrical Engineering Department, Nebraska University at Lincoln, Lincoln, NE; 2. Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 3. Physics, Universidad Técnica Federico Santa María, Valparaiso, Chile*

DT-02. Research on Eddy Current Testing of Functional Polymer Composite Material. Z. Cai¹, J. Song¹ and C. Liu² *1. East China Jiaotong University, Nanchang, China; 2. College of Electrical Engineering, Hebei University of Technology, Tianjin, China*

DT-03. Giant Magnetoresistance Based Handheld Platform for Rapid Detection of Influenza A Virus. D. Su¹, K. Wu², T. Klein³, V.D. Krishna⁴ and J. Wang⁵ *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Electrical Engineering, University of Minnesota, Minneapolis, MN; 3. University of Minnesota, Wayzata, MN; 4. Department of Veterinary Population Medicine, University of Minnesota, Minneapolis, MN; 5. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN*

- DT-04. A magnetoresistive biosensor using a high-mobility semiconductor channel and magnetic nanoparticles.** S. Kim^{1,2}, S. Lee³, J. Song⁴, Y. Kwon², K. Lee^{2,5} and H. Koo^{1,2}
1. Center for Spintronics, Korea Institute of Science and Technology, Seoul, The Republic of Korea; 2. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea; 3. Department of Fine Chemistry, Seoul National University of Science and Technology, Seoul, The Republic of Korea; 4. Center for Electronic Materials, Korea Institute of Science and Technology, Seoul, The Republic of Korea; 5. Korea University, Seoul, The Republic of Korea
- DT-05. A New Contactless Magneto-LC Resonance Technology for Real-time Respiratory Motion Monitoring.** O. Thiabgoh¹, T. Eggers¹ and M. Phan¹ *1. Department of Physics, University of South Florida, Tampa, FL*
- DT-06. Analysis of asymmetric magnetoimpedance property on thin-film element with dc bias current.** H. Kikuchi¹ and C. Sumida¹ *1. Iwate University, Morioka, Japan*
- DT-07. Structural Design And Output Characteristic Analysis Of Magnetostrictive Tactile Sensor For Robotic Applications.** W. Zheng¹, B. Wang¹, H. Liu², Y. Li¹ and R. Zhao^{1,3} *1. Key Laboratory of Electro-Magnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China; 2. State Key Laboratory of Intelligent Technology and Systems, Department of Computer Science and Technology, Tsinghua University, Beijing, China; 3. Jiangxi Province Key Laboratory of Precision Drive and Control, Nanchang Institute of Technology, Nanchang, China*
- DT-08. Vector MO magnetometry for mapping microwave currents.** S. Visnovsky¹, E.L. Jakubisova¹, I. Harward² and Z. Celinski²
1. Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic; 2. Physics, Univ. of Colorado at Colorado Springs, Colorado Springs, CO
- DT-09. The Output Voltage Model And Experiment Of Magnetostrictive Displacement Sensor Based On Weidemann Effect.** Y. Li¹, B. Wang¹ and X. Xie¹ *1. Key Laboratory of Electro-Magnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China*
- DT-10. Magnetoresistive sensors with orthogonal magnetic easy axis.** T. Ikeda¹, S. Imai¹, K. Okada¹, A. Morisako¹, S.N. Piramanayagam² and X. Liu¹ *1. Department of Electrical and Computer Engineering, Shinshu University, Nagano, Japan; 2. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*
- DT-11. AC susceptometer based biosensor detection schemes with enhanced sensitivity.** W. Qiu^{1,2}, K. Kourentzi³, A. Kaplan⁴, M. Khodadady², B. Vu³, R.C. Willson³ and D. Litvinov^{1,5}
1. Center for Integrated Bio & Nano Systems, University of Houston, Houston, TX; 2. Materials Science & Engineering, University of Houston, Houston, TX; 3. Chemical & Biomolecular Engineering, University of Houston, Houston, TX; 4. Superconducting Systems Inc., Billerica, MA; 5. Electrical & Computer Engineering, University of Houston, Houston, TX

- DT-12. Investigation of the use of uniaxial comb-shaped Galfenol patches for a guided wave-based magnetostrictive phased array sensor.** *B. Yoo*¹ and *D.J. Pines*¹ *1. Aerospace Engineering, University of Maryland, College Park, MD*
- DT-13. Tunneling magnetoresistance sensors using coupled multilayer structures in free layer.** *Y. Liu*¹, *Y. Yang*², *X. Yin*³, *D. Ewing*⁴, *P. J. De Rego*⁴, *S. Lee*¹ and *S. Liou*⁵ *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 3. National Institute of Standards and Technology, Boulder, CO; 4. Department of Energy's National Security Campus, Kansas City, Kansas City, KS; 5. University of Nebraska - Lincoln, Lincoln, NE*
- DT-14. Effect of Element Number In Array Sensors on MR and Detectivity.** *S. Cakir*¹, *M. Oogane*¹, *K. Fujiwara*¹, *J. Jono*² and *Y. Ando*¹ *1. Tohoku University, Sendai, Japan; 2. Konica Minolta, Inc, Tokyo, Japan*
- DT-15. Ultrahigh Anisotropic Magnetolectric Sensor Based on FeCoSiB/AlN Thin Film Composites.** *J. Ouyang*¹, *B. Tong*¹, *C. Zhang*¹, *S. Chen*¹, *B. Zhu*¹, *Y. Zhang*¹, *X. Yang*¹ and *X. Zheng*² *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China; 2. Shenzhen Yateks Optoelectronic Technology Co., Ltd, Shenzhen, China*

WEDNESDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session DU
BIOMAGNETIC APPLICATIONS II
(Poster Session)

John Moreland, Chair
NIST, Boulder, CO

- DU-01. Collagen-wrapped liver cancer cell with magnetic nanoparticles for hyperthermia therapy.** *H. Huang*¹, *B. Chen*², *C. Li*², *W. Tang*² and *Z. Wei*¹ *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*
- DU-02. Magnetic field controlled rotation of Fe-Cr-Nb-B magnetic particles for destruction of cancerous cells.** *H. Chiriac*¹, *E. Radu*^{1,2}, *D. Herea*¹, *M. Tibu*¹, *T.A. Ovari*¹ and *N. Lupu*¹ *1. National Institute of R&D for Technical Physics, Iasi, Romania; 2. Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*
- DU-03. Magnetic and hyperthermia properties of Co_xFe_{3-x}O₄ nanoparticles synthesized via cation exchange.** *J. Mohapatra*¹, *M. Xing*¹ and *P. Liu*² *1. Physics, University of Texas at Arlington, Arlington, TX; 2. University of Texas-Arlington, Arlington, TX*

- DU-04. Particle size dependence of the specific loss power of Gd₅Si₄ micro- and nano-particles for self-regulating magnetic hyperthermia.** Z.A. Hussein¹, Z. Boekelheide¹, S. Hunagund², S.M. Harstad², A. El-Gendy^{2,3} and R.L. Hadimani² *1. Lafayette College, Easton, PA; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. Physics, University of Texas at El Paso, El Paso, TX*
- DU-05. Benefit of Multi-frequency Magnetic Stimulation on K-Ras-Driven Lung Cancer in Mice.** N. Zhang^{1,2}, S. Wang¹, S. Ning³, C. Zhang², S. Wang¹ and P. Hao¹ *1. State Key Laboratory of Electrical Insulation and Power Equipment, Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 2. Johns Hopkins University School of Medicine, Baltimore, MD; 3. College of Electrical and Information Engineering, Shaanxi University of Science and Technology, Xi'an, China*
- DU-06. Advanced control of the temperature field in magnetic hyperthermia.** I. Astefanoaei¹ and A. Stancu¹ *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania*
- DU-07. Magnetic ZnO@Fe₃O₄ core-shell nanostructure for magnetic hyperthermia and bio-imaging applications.** J. Gupta^{1,2}, K. Barick¹, P. Hassan¹ and D. Bahadur² *1. Chemistry Division, Nanotherapeutic and Biosensor Group, Bhabha Atomic Research Centre, Trombay, Mumbai, India, Trombay, Mumbai, India; 2. Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai, India*
- DU-08. Field, frequency and temperature dependence of specific absorption rate of magnetic nanoparticles for MFH.** M. Avolio¹, A. Guerrini², M. Corti¹, C. Innocenti², C. Sangregorio^{2,3}, M. Cobianchi¹, M. Mariani¹, F. Brero⁵, F. Orsini⁴, P. Arosio⁴ and A. Lascialfari⁴ *1. Dipartimento di Fisica, INSTM e INFN, Universita' degli studi di Pavia, Pavia, Italy; 2. Dipartimento di Chimica and INSTM, Universita' degli studi di Firenze, Sesto Fiorentino (FI), Italy; 3. ICCOM-CNR, Sesto Fiorentino (FI), Italy; 4. Dipartimento di Fisica, INFN e INSTM, Universita' degli studi di Milano, Milano, Italy; 5. Dipartimento di Fisica, Universita' degli studi di Pavia, Pavia, Italy*
- DU-09. Exchange-Coupled Fe₃O₄/CoFe₂O₄ Nanoparticles for Advanced Magnetic Hyperthermia.** J. Robles¹, R. Das¹, M. Glassell¹, M. Phan¹ and H. Srikanth¹ *1. Department of Physics, University of South Florida, Tampa, FL*
- DU-10. Transcranial Magnetic Stimulation Promotes the Proliferation of Dopaminergic Neuron Cells.** X. Zhong¹, J. Luo², P. Rastogi¹, A. Kanthasamy² and D.C. Jiles¹ *1. Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Biomedical Sciences, Iowa State University, Ames, IA*
- DU-11. Investigation of Shape, Position, and Permeability of Shielding Material in Quadruple Butterfly Coil for Focused Transcranial Magnetic Stimulation.** P. Rastogi¹, B. Zhang¹, Y. Tang¹, E.G. Lee², R.L. Hadimani^{3,1} and D.C. Jiles¹ *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Charleston, MA; 3. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA*

DU-12. Design of a Small High-Current Pulse Magnetic Field Generator (HCPMFG) for Transcranial Magnetic Stimulation of Small Animals. *J. Selvaraj*¹, *P. Rastogi*¹, *N. Prabhu Gaunkar*¹, *W. Theh*¹, *R.L. Hadimani*^{2,1} and *M. Mina*¹
1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Dept. of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA

DU-13. Development of a Tunnel Magnetoresistive-based Biosensing System for Neuronal Signal Study. *Y. Feng*¹, *Y. Chu*¹, *B. Zink*¹ and *J. Wang*² *1. Electrical Engineering, University of Minnesota, Fargo, ND; 2. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN*

DU-14. The influence of particles magnetic properties on detection signal and sensitivity of GMR biosensor. *Y. Zhang*¹, *J. Xu*¹, *D. Cao*¹, *Q. Li*¹, *G. Zhao*¹, *H. Lin*², *N.X. Sun*² and *S. Li*¹
1. Physics, Qingdao University, Qingdao, China; 2. ECE, Northeastern University, Boston, MA

WEDNESDAY
EVENING
6:00

SPIRIT OF PITTSBURGH BALLROOM B

Session ZA

EVENING SESSION: SPINTRONICS - PRESENT AND FUTURE

Liesl Folks, Chair

SUNY, University at Buffalo, Buffalo, NY

6:00

Introductions & Best Student Presentation

6:15

ZA-01. From Stern-Gerlach experiment to spin-orbit torque, the unending saga of spin. (Invited) *C.L. Chien*¹ *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

6:45

ZA-02. When SOC and Topology in Low Dimensions Lead to Novel Directions in Spintronics. (Invited) *A. Fert*^{1,2} *1. UMR CNRS-Thales, CNRS, Palaiseau, France; 2. Université Paris-Saclay, Palaiseau, France*

7:15

ZA-03. Spin on Integrated Circuits. (Invited) *H. Ohno*^{1,2} *1. RIEC Tohoku University, Sendai, Japan; 2. CSIS, WPI-AIMR, CIES, CSRN Tohoku University, Sendai, Japan*

Session EA

**MUTUAL SYNCHRONIZATION OF SPINTRONIC
OSCILLATORS**

Martina Ahlberg, Chair
University of Gothenburg, Gothenburg, Sweden

8:30

- EA-01. Theory of mutual synchronization of spin-torque and spin-Hall auto-oscillators. (Invited)** A.N. Slavin¹ and V. Tyberkevych¹ *1. Department of Physics, Oakland University, Rochester, MI*

9:06

- EA-02. Long-range mutual synchronization of spin Hall nano-oscillators. (Invited)** A.A. Awad¹, P. Dürrenfeld¹, A. Houshang¹, M. Dvornik¹, E. Iacocca¹, R.K. Dumas¹ and J. Åkerman^{1,2} *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. School of ICT, KTH Royal Institute of Technology, Material Physics, Kista, Sweden*

9:42

- EA-03. Mutual synchronization of spin torque nano-oscillators through a long-range and tunable electrical coupling scheme. (Invited)** R. Lebrun¹, S. Tsunegi^{1,2}, P. Bortolotti³, H. Kubota⁴, A. Jenkins¹, M. Romera¹, P. Talatchian¹, K. Yakushiji², A. Fukushima⁴, J. Grollier¹, S. Yuasa² and V. Cros¹ *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Spintronics Research Center, National Institute of Advanced Industrial Science And Technology (AIST), Tsukuba, Japan; 3. Thales TRT, Palaiseau, France; 4. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan*

10:18

- EA-04. Spin-wave excitations and scalable synchronization of spin-Hall oscillators. (Invited)** G. Finocchio¹, V. Puliafito², A. Giordano¹, R. Zivieri¹, R. Tomasello³, G. Siracusanò¹, M. Carpentieri⁴ and B. Azzerboni² *1. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy; 2. Department of Engineering, University of Messina, Messina, Italy; 3. Department of Engineering, Polo Scientifico Didattico di Terni, University of Perugia, Terni, Italy; 4. Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Bari, Italy*

10:54

- EA-05. Mutual Synchronization of nano-oscillators driven by pure spin current. (Invited)** S. Urazhdin¹, V.E. Demidov³, B. Divinskiy³, V. Tyberkevych², A.N. Slavin² and S. Demokritov³ *1. Physics, Emory University, Atlanta, GA; 2. Department of Physics, Oakland University, Rochester, MI; 3. Institute for Applied Physics, University of Muenster, Muenster, Germany*

Session EB

SPIN CURRENTS: METALS AND NEW MATERIALS

Luqiao Liu, Chair
MIT, Cambridge, MA

8:30

- EB-01. Spin pumping in NiFe/Gd bilayers across a magnetic ordering transition.** B. Khodadadi¹, J. Beik Mohammadi¹, C.K. Mewes¹, T. Mewes¹, M. Manno², C. Leighton² and C.W. Miller³ *1. Physics, MINT, University of Alabama, Tuscaloosa, AL; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Materials Science, Rochester Institute of Technology, Rochester, NY*

8:42

- EB-02. Elliott-Yafet Scaling of Spin Lifetimes in Al and Cu Non-Local Spin Valves.** J.D. Watts^{1,2}, J.T. Batley², J.S. Jeong², A. Mkhoyan², J. Hoch², L. O'Brien^{2,3}, P.A. Crowell¹ and C. Leighton² *1. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Physics, University of Liverpool, Liverpool, United Kingdom*

8:54

- EB-03. Giant Spin Hall Effect of the Thick β -W.** W. Chen¹ and G. Xiao¹ *1. Department of Physics, Brown University, Providence, RI*

9:06

- EB-04. Inverse spin Hall effect in highly oriented bismuth.** M. Matsushima¹, Y. Ando¹, S. Dushenko¹, T. Kawabe², T. Shinjo¹, S. Miwa² and M. Shiraishi¹ *1. Department of Electronic Science and Engineering, Kyoto University, Kyoto-shi, Japan; 2. Graduate School of Engineering Science, Osaka University, Osaka, Japan*

9:18

- EB-05. Strong Spin Hall Effect In $\text{Cr}_x\text{Pt}_{1-x}$ Alloy.** Y. Ou¹, D. Ralph¹ and R.A. Buhrman² *1. Physics, Cornell University, Ithaca, NY; 2. Applied and Engineering Physics, Cornell University, Ithaca, NY*

9:30

- EB-06. Spin Hall angle in W/CoFeB/Pt trilayers.** W. Skowronski¹, S. Zietek¹, J. Checinski¹, J. Kanak¹, M. Cecot¹, T. Stobiecki¹, P. Kuswik², M. Schmidt², J. Aleksiejew² and F. Stobiecki² *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland*

- EB-07. Realization of d-electron spin transport in oxide-based two-dimensional electron gas at room temperature. (Invited)**
R. Ohshima¹ 1. Kyoto University, Kyoto, Japan

10:18

- EB-08. Crystalline symmetry dependence of spin-Hall conductivity in perovskite SrIrO₃.** *T. Nan¹, T.J. Anderson¹, K. Hwang², J. Gibbons³, N. Campbell⁴, H. Zhou⁵, Y. Dong⁵, G. Kim⁶, X. Wang⁷, N.X. Sun⁷, S. Choi⁶, M. Rzechowski⁴, D. Ralph³, Y. Kim² and C. Eom¹ 1. Department of Materials Science and Engineering, University of Wisconsin-Madison, Madison, WI; 2. Department of Physics and Centre for Quantum Materials, University of Toronto, Toronto, ON, Canada; 3. Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, NY; 4. Department of Physics, University of Wisconsin-Madison, Madison, WI; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 6. Department of Materials Modeling and Characterization, Korea Institute of Materials Science, Changwon, The Republic of Korea; 7. Department of Electrical & Computer Engineering, Northeastern University, Boston, MA*

10:30

- EB-09. Strong Temperature Dependence of Spin Hall Effect in Mixed-Valent YbAl₃.** *N. Reynolds¹, S. Chatterjee², A. Seidner³, D. Schlom^{3,4}, K. Shen^{1,4} and D.C. Ralph^{1,4} 1. Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, NY; 2. Electrical and Computer Engineering, University of California, Santa Barbara, Santa Barbara, CA; 3. Materials Science and Engineering, Cornell University, Ithaca, NY; 4. Kavli Institute for Nanoscale Science, Cornell University, Ithaca, NY*

10:42

- EB-10. Field free deterministic current induced magnetic switching by giant spin Hall effect.** *W. Chen¹, L. Qian¹ and G. Xiao¹ 1. Department of Physics, Brown University, Providence, RI*

10:54

- EB-11. Investigation of Giant Spin-Charge Interconversion in Heterostructures of Ag Nanoparticles Randomly Grown in Pt.** *O. Alves-Santos¹, E.F. Silva¹, M. Gamino¹, R.O. Cunha⁴, J.B. Mendes², R. Rodriguez³, S.M. Rezende¹ and A. Azevedo¹ 1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil; 2. Departamento de Física, Universidade Federal de Viçosa, Viçosa, Brazil; 3. Facultad de Física, Pontificia Universidad Católica de Chile, Santiago, Chile; 4. Centro Interdisciplinar de Ciências da Natureza, Universidade Federal da Integração Latino-Americana, Foz do Iguaçu, Brazil*

11:06

- EB-12. Understand interface degradation to spin Hall effect in platinum/ferromagnet.** *M. Furuta¹, Y. Liu² and J. Zhu¹ 1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

- EB-13. An Analysis on the Relationship Between the Spin Hall Effect and Anomalous Hall Effect in Ferromagnetic Metals.** *Y. Omori*¹, *E. Sagasta*², *M. Gradhand*³, *Y. Niimi*^{1,4}, *L.E. Hueso*^{2,5}, *F. Casanova*^{2,5} and *Y. Otani*^{1,6} *1. ISSP, University of Tokyo, Kashiwa, Japan; 2. CIC nanoGUNE, Donostia-San Sebastian, Spain; 3. University of Bristol, Bristol, United Kingdom; 4. Department of Physics, Osaka University, Toyonaka, Japan; 5. IKERBASQUE, Bilbao, Spain; 6. RIKEN-CEMS, Wako, Japan*

THURSDAY
MORNING
8:30

ROOM 403-405

Session EC
DOMAINS, DOMAIN WALLS, AND VORTICES II

Peng Wei, Chair
University of California, Riverside, Riverside, CA

8:30

- EC-01. Action of Current on Ferrimagnetic Domain Wall: Influence of Domain Wall Structure Even in Creep Propagation?** *E. Hantz*¹, *J. Sampaio*¹, *R. Weil*¹, *S. Das*¹, *Y. Dumont*², *V. Jacques*³, *S. Rohart*¹ and *A. Mougin*¹ *1. Université Paris-Sud LPS, Orsay, France; 2. Université de Versailles St-Quentin-en-Yvelines, Versailles, France; 3. Laboratoire Charles Coulomb, CNRS, Montpellier, France*

8:42

- EC-02. Composite topological structure of domain walls in synthetic antiferromagnets.** *A. Ognev*¹, *A.G. Kolesnikov*¹, *M.E. Steblyi*¹, *V. Plotnikov*¹, *E.V. Pustovalov*¹, *L.A. Chebotkevich*¹ and *O. Tretiakov*^{2,1} *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Tohoku University, Sendai, Japan*

8:54

- EC-03. Manipulation of the depinning field by controlling the interface.** *Y. Huang*^{1,2}, *G. Yu*², *X. Li*², *W. Zhao*¹ and *K.L. Wang*² *1. Electronics and Information Engineering, Beihang University, Beijing, China; 2. Electrical Engineering, University of California, Los Angeles, CA*

9:06

- EC-04. Dramatic Effect of Curvature on Velocity of Chiral Domain Walls. (Invited)** *C. Garg*^{1,2}, *S. Yang*², *T. Phung*³, *A. Pushp*² and *S.S. Parkin*^{4,2} *1. Physics, Max Planck Institute of Microstructure Physics, San Jose, CA; 2. IBM Almaden Research Center, San Jose, CA; 3. Magnetoelectronics and Spintronics, IBM Almaden Research Center, San Jose, CA; 4. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany*

- EC-05. Magnetic Chirality in Nanocaps Induced by Curvature.** *N. Nambiar*¹, *A.M. Abdelgawad*¹ and *S. Majetich*¹ *1. Carnegie Mellon University, Pittsburgh, PA*

9:54

- EC-06. Homochiral Néel/heterochiral Bloch domain walls and skyrmion bubbles in Co/Pd multilayers.** *S. Pollard*¹, *J.A. Garlow*², *Y. Zhu*² and *H. Yang*¹ *1. National University of Singapore, Singapore, Singapore; 2. Brookhaven Natl Lab, Upton, NY*

10:06

- EC-07. Selective Multiple Domain Wall Injection Using Spin-orbit Torque.** *Z. Luo*¹, *W. Liao*¹, *C. Zhu*¹ and *Y. Wu*¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

10:18

- EC-08. Precise Control of Current Driven Domain Wall Motion by Diphasic Current Pulses.** *M. Okuda*¹, *M. Kawana*¹, *Y. Miyamoto*¹ and *N. Ishii*¹ *1. Science & Technology Research Laboratories, NHK (Japan Broadcasting Corporation), Tokyo, Japan*

10:30

- EC-09. In situ TEM investigation of the magnetostructural transition in nanoscale FeRh-based thin films.** *T.P. Almeida*¹, *R.C. Temple*², *J. Massey*², *K. Fallon*¹, *D. McGrouther*¹, *T. Moore*², *C.H. Marrows*² and *S. McVitie*¹ *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

10:42

- EC-10. Efficient and controlled domain wall nucleation for magnetic shift-registers.** *O. Alejos*¹, *V. Raposo*², *L. Sánchez-Tejerina*¹ and *E. Martínez*³ *1. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain; 2. Applied Physics, University of Salamanca, Salamanca, Spain; 3. Física Aplicada, Universidad de Salamanca, Salamanca, Spain*

10:54

- EC-11. Electrical switching properties in asymmetric MTJs for logic applications.** *E. Raymenants*^{1,2}, *M. Manfrini*¹, *A. Vaysset*¹, *J. Swerts*¹, *D. Wan*¹, *S. Van Beek*^{1,2}, *M. Heyns*^{1,2}, *D.E. Nikonov*³, *S. Manipatruni*³, *I.A. Young*³, *D. Mocuta*¹ and *L.P. Radu*¹ *1. Logic Technologies, Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. Intel, Hillsboro, OR*

11:06

- EC-12. Threshold Function Generator for Neuromorphic Accelerator.** *S.A. Siddiqui*¹, *S. Dutta*¹, *L. Liu*¹, *C. Ross*² and *M. Baldo*¹ *1. Electrical Engineering & Computer Science, MIT, Cambridge, MA; 2. Department of Materials Science & Engineering, Massachusetts Institute of Technology, Cambridge, MA*

Session ED
MAGNETIZATION DYNAMICS II

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

8:30

- ED-01. Element resolved ultrafast demagnetization in Fe_{1-x}Ni_x alloy using a high harmonic generation source: Magnon driven dynamics at femtosecond time scales.** *S. Jana*¹, R. Knut², R.S. Malik¹, R. Stefanuik¹, R. Chimata¹, S. Akansel², D. Primetzhofer¹, P. Svedlindh³, O. Eriksson¹, J. Soderstrom¹, E. Delczeg-Czirjak¹ and O. Karis¹ *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Uppsala University, Uppsala, Sweden; 3. Engineering Sciences, Uppsala, Sweden*

8:42

- ED-02. XMCD and *ab-initio* investigation of Py_{1-x}Cu_x alloys in relation to ultrafast dynamics.** *R. Knut*¹, E. Delczeg-Czirjak¹, S. Jana¹, Y. Kvashnin¹, J. Shaw², H. Nembach², R.S. Malik¹, R. Stefaniuk¹, P. Grychtol³, D. Zusin³, C. Gentry³, E. Turgut⁴, H. Kapteyn³, M. Murnane³, J. Soderstrom¹, D.A. Arena⁵, O. Eriksson¹, O. Karis¹ and T. Silva² *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. NIST, Boulder, CO; 3. JILA, University of Colorado, Boulder, CO; 4. Applied and Engineering Physics, Cornell University, Ithaca, NY; 5. Physics, University of South Florida, Tampa, FL*

8:54

- ED-03. Effect of Center Mode Precession on Edge Mode Damping in Single Nanomagnet.** *C. Berk*¹, M. Jaris¹, W. Yang¹, S. Dhuey², S. Cabrini² and H. Schmidt¹ *1. UC Santa Cruz, Santa Cruz, CA; 2. Molecular Foundry Berkeley, CA*

9:06

- ED-04. Element-specific resonant magnetization precession with 100% spin polarization at picosecond time scales.** *A. Ney*¹, D. Spoddig², T. Schaffers¹, M. Buchner¹, C. Schöppner², T. Feggeler², S. Bonetti³, H. Ohldag³, H. Wende², M. Farle², K.J. Ollefs² and R. Meckenstock² *1. Solid State Physics Division, Johannes Kepler University Linz, Linz, Austria; 2. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 3. SSRL, SLAC National Accelerator Laboratory, Menlo Park, CA*

- ED-05. Site-Specific Circularly and Linearly Polarized X-ray Ferromagnetic Resonance in a Low-Damping Ferrimagnet.** C. Klewe¹, S. Emori², P. Shafer¹, J.E. Shoup³, C. Kons³, B.A. Gray⁴, H. Jeon^{4,5}, Y. Pogoryelov⁶, R. Knut⁶, O. Karis⁶, D.A. Arena³, B.M. Howe⁴, Y. Suzuki^{2,7} and E. Arenholz¹
1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 3. Physics, University of South Florida, Tampa, FL; 4. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH; 5. Department of Electrical Engineering, Wright State University, Dayton, OH; 6. Department of Physics and Astronomy, Molecular and Condensed Matter Physics, Uppsala University, Uppsala, Sweden; 7. Department of Applied Physics, Stanford University, Stanford, CA

9:30

- ED-06. Time-resolved Lorentz Microscopy Maps the Ultrafast Demagnetization of a Vortex State.** N. Rubiano da Silva¹, M. Möller¹, C. Ropers¹ and S. Schäfer¹
1. 4th Physical Institute, University of Goettingen, Goettingen, Germany

9:42

- ED-07. Femtosecond quantum dynamics of the order parameter in antiferromagnets. (Invited)** D. Bossini¹, S. Dal Conte², O. Gomonay³, J. Mentink⁴, A. Secchi⁴, Y. Hashimoto⁴, R. Pisarev⁵, D. Mihailovic⁶, T. Rasing⁴, G. Cerullo² and A. Kimel⁴
1. The University of Tokyo, Tokyo, Japan; 2. Politecnico di Milano, Milan, Italy; 3. Johannes Gutenberg University, Mainz, Germany; 4. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 5. Ioffe Institute, St. Petersburg, Russian Federation; 6. Jozef Stefan Institute, Ljubljana, Slovenia

10:18

- ED-08. Energy dependent magnetic asymmetry at the M-edge in elemental Fe and Ni during ultrafast demagnetization using high harmonic generation with a T-MOKE setup.** R.S. Malik¹, I.L. Locht^{1,2}, S. Jana¹, Y. Kvashnin¹, R. Knut¹, I. Di Marco¹, R. Chimata¹, M. Ahlberg³, M. Battiato⁴, R. Stefanuik¹, J. Soderstrom¹, T. Silva⁵, J. Åkerman³, H. Nembach⁵, J. Shaw⁵, O. Eriksson¹ and O. Karis¹
1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Technical University Vienna, Vienna, Austria; 5. National Institute of Standards and Technology - Boulder, Boulder, CO

10:30

- ED-09. Time- and spatially resolved hard X-ray MCD with pulsed rf field excitation on a Co/Pt multilayer dot.** N. Kikuchi^{1,2}, T. Yomogita¹, D. Kanahara¹, S. Okamoto^{1,2}, H. Osawa³, M. Suzuki³, O. Kitakami^{1,2} and T. Shimatsu^{4,5}
1. IMRAM, Tohoku University, Sendai, Japan; 2. CSRN, Tohoku Univ., Sendai, Japan; 3. JASRI, Sayo, Japan; 4. FRIS, Tohoku Univ., Sendai, Japan; 5. RIEC, Tohoku University, Sendai, Japan

10:42

- ED-10. Spin torque ferromagnetic resonance for probing magnetic disorder in nanostructures.** *C.J. Safranski¹, E.A. Montoya¹, A. Smith¹, J. Chen¹ and I. Krivorotov¹* *1. Physics and Astronomy, University of California, Irvine, Irvine, CA*

10:54

- ED-11. Localized Optical Detection of Acoustically Driven Ferromagnetic Resonance using Nitrogen-Vacancy Centers in Diamond.** *V.P. Bhallamudi¹, D. Labanowski², Q. Guo¹, C.M. Purser¹, B. McCullian¹, S. Salahuddin² and P. Hammel¹* *1. Physics, Ohio State University, Columbus, OH; 2. Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA*

11:06

- ED-12. Out-of-plane field dependence of switching current in CoFeB/MgO magnetic tunnel junctions with perpendicular easy axis at low temperature.** *J. Igarashi¹, J. Llandro^{1,2}, H. Sato^{2,1}, S. Fukami^{1,2} and H. Ohno^{1,3}* *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 3. Center for Spintronics Integrated Systems, Sendai, Japan*

11:18

- ED-13. Nutation of magnetization in strong foldover dynamics of YIG nanodisc.** *Y. Li¹, V. Naletov^{1,2}, J.L. Prieto³, M. Muñoz⁴, P. Bortolotti⁵, V. Cros⁵, A. Anane⁵, O. Klein⁶ and G. de Loubens¹* *1. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France; 2. Kazan Federal University, Kazan, Russian Federation; 3. Física Aplicada, Universidad Politécnica de Madrid, Madrid, Spain; 4. Instituto de Microelectrónica, Madrid, Spain; 5. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 6. CEA-SPINTEC, Grenoble, France*

THURSDAY
MORNING
8:30

ROOM 315-316

Session EE

MAGNETIC RECORDING II: HAMR, ALL-OPTICAL RECORDING, AND OTHERS

Kumar Srinivasan, Chair
Western Digital, San Jose, CA

8:30

- EE-01. TMR Tape Drive for a 15 TB Cartridge. (Invited)** *R. Biskeborn¹, R. Fontana¹, C. Lo¹, W.S. Czarnecki¹, J. Liang¹, I.E. Iben¹ and G. Decad¹* *1. IBM Systems, IBM Almaden Research Center, San Jose, CA*

9:06

- EE-02. Laser-induced magnetization switching in Co/Pt multilayer systems.** *G. Kichin¹, S. Mangin¹, G. Malinowski¹ and M. Hehn¹*
1. Institut Jean Lamour, Université de Lorraine, Vandoeuvre-lès-Nancy, France

9:18

- EE-03. SNR improvement by variation of recording and media parameters for a HAMR exchange coupled composite media.** *N.A. Natekar¹, Z. Liu¹, S. Hernandez² and R.H. Victora¹*
1. Electrical & Computer Engineering, University of Minnesota, Twin Cities, Minneapolis, MN; 2. Storage Research Group, Seagate Technology, Shakopee, MN

9:30

- EE-04. Effects of Superparamagnetic Switching and Spin Temperature Delay in Heat-Assisted Magnetic Recording.** *Z. Wang¹, J. Hohlfeld², C. Rea² and R.H. Victora^{1,3}*
1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Seagate Technology, Minneapolis, MN; 3. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN

9:42

- EE-05. Magnetization Reversal Mechanism and Curie Temperature Distribution in Cu-doped Granular L1₀ FePt Media.** *S. Jain¹, C. Papusoi¹, H. Yuan¹ and R. Acharya¹*
1. Western Digital, San Jose, CA

9:54

- EE-06. Magnetic Oxide Added to Grain Boundary Material for L1₀ HAMR Media.** *B. Zhou^{1,2}, V. Bollapragada^{1,3}, D. Laughlin^{1,2} and J. Zhu^{1,3}*
1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA

10:06

- EE-07. Nodule- and boundary wall- free MgO layer underlying (002) oriented L1₀ FePt layer for heat assisted magnetic recording media.** *S. Hinata¹, S. Jo¹ and S. Saito¹*
1. Department of Electronic Engineering, Graduate school of Engineering, Tohoku Univ., Sendai, Japan

10:18

- EE-08. TGMR read sensor SNR impact in HAMR sub system.** *V. Venugopal¹, V. Sapozhnikov¹, S. Stokes¹ and M. Patwari¹*
1. Seagate Technology, Bloomington, MN

10:30

- EE-09. Transition Jitter in Heat Assisted Magnetic Recording.** *Y. Qin¹ and J. Zhu¹*
1. Data Storage Systems Center, Carnegie Mellon Univ, Pittsburgh, PA

10:42

- EE-10. **Noise Reduction in Heat-Assisted Magnetic Recording by Optimizing a High/Low Tc Bilayer Structure.** *O. Muthsam¹, C. Vogler¹ and D. Suess¹* *1. Faculty of Physics, University of Vienna, Wien, Austria*

10:54

- EE-11. **Micromagnetic Study of Media Noise Plateau in Heat-Assisted Magnetic Recording.** *W. Hsu¹ and R.H. Victora¹* *1. Electrical and Computer Engineering, University of Minnesota-Twin Cities, Minneapolis, MN*

11:06

- EE-12. **High Temperature Magnetic Properties of Granular FePt-X Media for Heat Assisted Magnetic Recording.** *J.C. De Rojas¹, D. Weller², O. Mosendz² and K. Liu¹* *1. Physics Department, University of California Davis, Davis, CA; 2. HGST Research, San Jose, CA*

THURSDAY
MORNING
8:30

ROOM 317-318

Session EF
RARE EARTH-BASED HARD MAGNETIC
MATERIALS III

Jeotikanta Mohapatra, Chair
University of Texas at Arlington, Arlington, TX

8:30

- EF-01. **Microstructure analysis of a Ga-doped Nd-Fe-B magnet with 2.0 T coercivity.** *X. Xu¹, Z. Dong^{2,1}, T. Kim¹, T. Sasaki¹, T. Ohkubo¹ and K. Hono¹* *1. National Institute for Materials Science (NIMS), Tsukuba City, Japan; 2. Yantai Shougang Magnetic Materials Inc., Yantai, China*

8:42

- EF-02. **The Mechanism of Formation of Nd₂(Fe,Co)₁₄B Hard Magnetic Magnets by Microwave Synthesis.** *X. Tan¹, H.G. Parmar^{2,1}, Y. Zhong¹, V. Chaudhary^{2,1} and R.V. Ramanujan¹* *1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore; 2. Rolls-Royce@NTU Corporate Lab, Nanyang Technological University, Singapore, Singapore*

- EF-03. Migration behavior of high-abundance rare-earth yttrium in the preparation process for sintered magnet.** *X. Fan*^{1,2}, *S. Guo*², *K. Chen*², *G. Ding*³, *R. Chen*³, *D. Lee*², *C. You*⁴ and *A. Yan*² *1. Xi'an University of Technology, Ningbo Institute of Materials Technology and Engineering, Ningbo, China; 2. Ningbo Institute of Industrial Technology, CAS, Ningbo, China; 3. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China; 4. School of Materials Science and Engineering, Xi'an University of Technology, Xi'an, China*

9:06

- EF-04. Tailored Metal Injection Moulding of Isotropic NdFeB Hard Magnets Based on Recycled Powders with and without Nd-Additions.** *B. Podmiljsak*¹, *C. Burkhardt*², *O. Weber*³, *J. Gonzalez-Guiterrez*⁴, *C. Kukla*⁴, *A. Walton*⁵ and *M. Degri*⁵ *1. Jozef Stefan Institute, Ljubljana, Slovenia; 2. Pforzheim University of Applied Sciences, Pforzheim, Germany; 3. Ohnmacht & Baumgaertner GmbH & Co. KG, Ispringen, Germany; 4. Montanuniversitaet Leoben, Leoben, Austria; 5. University of Birmingham, Birmingham, United Kingdom*

9:18

- EF-05. Mechanochemical Synthesis of High Coercivity Cr Alloyed Nd₂(FeCo)₁₄B Magnets and Reduced Spin Reorientation Temperature.** *V. Chaudhary*^{1,2}, *Y. Zhong*², *H.G. Parmar*^{1,2}, *X. Tan*² and *R.V. Ramanujan*² *1. Rolls-Royce@NTU Corporate Lab, Nanyang Technological University, Singapore, Singapore; 2. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

9:30

- EF-06. Major factor of coercivity in hot-deformed permanent magnets clarified by large-scale micromagnetic simulation and data mining. (Invited)** *K. Ono*¹, *H. Tsukahara*¹, *T. Ishikawa*¹, *A. Asahara*² and *H. Morita*² *1. KEK, Tsukuba, Japan; 2. Hitachi, Ltd., Tokyo, Japan*

10:06

- EF-07. Recent advances in nanostructured melt-spun Nd-Fe-B magnetic powders for automotive applications.** *Z. Chen*¹, *T. Yun*¹ and *J. Herchenroeder*¹ *1. Magnequench Technology Center, Singapore, Singapore*

10:18

- EF-08. Effect of Deformation Ratios on Grain Alignment and Magnetic Properties of Hot Pressing/Hot Deformation Nd-Fe-B Magnets.** *Z. Guo*¹, *M. Li*¹, *J. Wang*¹, *Z. Jing*¹, *M. Zhu*¹ and *W. Li*¹ *1. Central Iron & Steel Research Institute, Beijing, China*

10:30

- EF-09. Temperature dependent changes of the crystalline phases in a Nd-Fe-B sintered magnet studied by synchrotron X-ray diffraction.** *H. Okazaki*¹, *N. Tsuji*¹, *W. Ueno*¹, *Y. Gohda*^{2,3}, *Y. Kotani*¹, *D. Billington*⁴, *S. Kawaguchi*¹, *K. Sugimoto*¹, *K. Toyoki*¹, *S. Hirosawa*³ and *T. Nakamura*^{1,3} *1. Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan; 2. Tokyo Tech, Yokohama, Japan; 3. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan; 4. Research and Utilization Division, Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan*

10:42

- EF-10. Coercivity enhancement of hot-deformed Nd-Fe-B magnets by the eutectic grain boundary diffusion process using Nd₆₄Fe₁₂Ga₂₀Cu₄ alloy.** *L. Liu*^{1,2}, *S. Hossein*¹, *T. Sasaki*¹, *T. Ohkubo*¹, *M. Yano*³, *N. Sakuma*³, *A. Kato*³, *T. Shoji*³ and *K. Hono*^{1,2} *1. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Graduate School of Pure and Applied Science, University of Tsukuba, Tsukuba, Japan; 3. Advanced Material Engineering Div., Toyota Motor Corporation, Susono-shi, Japan*

10:54

- EF-11. Barkhausen Noise in Domain Wall Propagation Across Nd₂Fe₁₄B Grain-Boundary Interface.** *S.C. Westmoreland*¹, *G. Hrkac*², *M. Yano*³, *T. Shoji*³, *A. Manabe*³, *T. Schrefl*⁴, *R. Chantrell*¹ and *R.F. Evans*¹ *1. Department of Physics, University of York, York, United Kingdom; 2. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 3. Advanced Materials Engineering Div., Toyota Motor Corporation, Susono, Japan; 4. Center for Integrated Sensor Systems, Danube University Krems, St Poelten, Austria*

11:06

- EF-12. Recycling of Nd-Fe-B Grinding Sludges as Sintered Magnets by Purified Technique.** *X. Yin*¹, *W. Liu*¹, *M. Yue*¹ and *W. Liu*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

11:18

- EF-13. Differences between open-circuit and closed-circuit measurements of NdFeB sintered magnets.** *J. Fliegans*^{1,2}, *N. Dempsey*², *G. Delette*¹ and *D. Givord*² *1. CEA-LITEN, Grenoble, France; 2. Institut Néel CNRS, Grenoble, France*

Session EG
ELECTRONIC STRUCTURES AND SPINS

Eric Fullerton, Co-Chair
UC San Diego, La Jolla, CA
Farzad Mahfouzi, Co-Chair
California State University, Northridge, Northridge, CA

8:30

- EG-01. Enhanced magnetic anisotropy induced by tetragonal symmetry in 3d transition metal substituted Fe₄N.** Z. Li¹, W. Mi¹ and H. Bai¹ *1. Department of Applied Physics, Tianjin University, Tianjin, China*

8:42

- EG-02. Strain dependent magnetic anisotropy at magnetic-phase transition in FePt alloy.** Q. Ain¹, S. Rhim¹ and S. Hong¹ *1. Physic, University of Ulsan, Ulsan, The Republic of Korea*

8:54

- EG-03. XMCD studies of actinide compounds with formally nonmagnetic 5f-electron ground states.** N. Magnani¹, F. Wilhelm², R. Eloirdi¹, E. Colineau¹, J. Griveau¹, A.B. Shick³, G.H. Lander¹, A. Rogalev² and R. Caciuffo¹ *1. Joint Research Centre, European Commission, Karlsruhe, Germany; 2. European Synchrotron Radiation Facility, Grenoble, France; 3. Institute of Physics, ASCR, Prague, Czech Republic*

9:06

- EG-04. Sudden restoration of the band ordering at the onset of ferromagnetic transition and magnetic anisotropy control by the quantum size effect in a ferromagnetic semiconductor. (Invited)** I. Muneta^{1,2}, H. Terada², T. Kanaki², S. Ohya^{2,3} and M. Tanaka^{2,3} *1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Yokohama, Japan; 2. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 3. Center for Spintronics Research Network, The University of Tokyo, Tokyo, Japan*

9:42

- EG-05. A Density Functional Theory Study of Mn in bcc and fcc Co: Insight and Comparison for Experiment.** R.J. Snow¹ and Y.U. Idzerda¹ *1. Physics, Montana State University, Bozeman, MT*

9:54

- EG-06. Ab initio study on electronic structure and magnetic properties of Co₂V(Ga,Ge) Heusler alloys.** R. Kon¹, M. Tsujikawa^{1,2} and M. Shirai^{1,2} *1. RIEC, Tohoku University, Sendai, Japan; 2. CSRN, Tohoku University, Sendai, Japan*

- EG-07. Origin of the spin reorientation transitions in antiferromagnetic MnPt-based alloys.** *P. Chang*¹ and *K. Belashchenko*¹ *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

- EG-08. Switchable spin-orbit gaps in a prototypical ferromagnet.** *L. Plucinski*¹, *E. Mlynczak*¹, *M.E. Eschbach*¹, *S. Borek*³, *J. Minar*³, *J. Braun*³, *I. Aguilera*², *G. Bihlmayer*², *S. Doering*¹, *M.G. Gehlmann*¹, *P. Gospodaric*¹, *S. Suga*⁴, *S. Blügel*², *H. Ebert*³ and *C.M. Schneider*¹ *1. Peter Gruenberg Institute PGI-6, FZ Juelich, Juelich, Germany; 2. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany; 3. Ludwig-Maximilians-Universität München, Munich, Germany; 4. Osaka University, Osaka, Japan*

- EG-09. Non-vanishing exchange splitting in the Heisenberg Ferromagnet EuO.** *T. Gerber*¹, *M.E. Eschbach*¹, *M.G. Gehlmann*¹, *T.H. Heider*¹, *E. Mlynczak*¹, *P. Lömker*¹, *P. Gospodaric*¹, *M. Plötzing*¹, *O. Köksal*², *R. Pentcheva*², *L. Plucinski*¹, *C.M. Schneider*^{3,2} and *M. Müller*^{3,4} *1. Peter-Grünberg-Institut (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 2. University Duisburg-Essen, Duisburg, Germany; 3. Peter Grünberg Institute, Research Center Jülich, Jülich, Germany; 4. Experimental Physics I, Technical University Dortmund, Dortmund, Germany*

- EG-10. Interplay between separate sublattice magnetic ordering in double perovskite Nd₂NiMnO₆.** *S. Pal*¹, *S. Jana*², *S. Mukherjee*¹, *S. Govinda*¹, *B. Pal*¹, *S. Keshavarz*², *R. Mathieu*³, *D. Thonig*², *M. Pereiro*², *Y. Kvashnin*², *J.W. Freeland*⁴, *O. Eriksson*², *O. Karis*² and *D. Das Sarma*¹ *1. Indian Institute of Science, Bangalore, India; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 4. Argonne National Laboratory, Argonne, IL*

- EG-11. Towards Magnetic Materials with High-spin d⁶-d⁷ Square-Planar Sites.** *S. Stoian*^{1,2} *1. University of Idaho, Moscow, ID; 2. National High Magnetic Field Laboratory, Tallahassee, FL*

- EG-12. Structure and magnetism of iron at the Earth's inner core conditions.** *S. Simak*¹ *1. IFM, Linköping University, Linköping, Sweden*

- EG-13. Magnetic Hyperfine Field in Co Allotropes by First Principles Calculations.** *L.F. Pereira*², *J. Mestnik-Filho*², *G.A. Cabrera-Pasca*³ and *A.W. Carbonari*¹ *1. CRPq, IPEN-CNEN/SP, Sao Paulo, Brazil; 2. Research Reactor Center, Nuclear and Energy Research Institute, São Paulo, Brazil; 3. Universidade Federal do Pará, Abaetetuba, Brazil*

Session EH
COMPLEX OXIDE FILMS AND
HETEROSTRUCTURES

Margo Staruch, Chair
Naval Research Laboratory, Washington, DC

8:30

- EH-01. Effect of Annealing and Oxygen Vacancies on the Ferromagnetism of Fe-substituted SrTiO₃ Thin Films.** *A. Tang¹, C. Kim¹, J. Pellicciari², R. Comin², H.L. Tuller¹ and C. Ross¹* *1. Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Physics, Massachusetts Institute of Technology, Cambridge, MA*

8:42

- EH-02. Two-dimensional $J_{\text{eff}} = 1/2$ antiferromagnetic insulator unraveled from interlayer exchange coupling in artificial perovskite iridate superlattices.** *J. Yang¹, L. Hao¹, C. Frederick¹, N. Traynor¹ and J. Liu¹* *1. University of Tennessee, Knoxville, TN*

8:54

- EH-03. Emergent Ferromagnetism at SrIrO₃/La_{1-x}Sr_xMnO₃ Heterointerfaces.** *D. Yi¹, C. Flint¹, P. Balakrishnan¹, K. Mahalingam², B. Urwin², A. Vailionis¹, A.T. N'Diaye³, P. Shafer³, E. Arenholz³, Y. Choi⁴, K.H. Stone⁵, J. Chu^{1,6}, B.M. Howe², J. Liu⁷, I.R. Fisher¹ and Y. Suzuki¹* *1. Stanford University, Stanford, CA; 2. Air Force Research Laboratory, Wright-Patterson, OH; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. X-ray Science Division, Argonne National Laboratory, Argonne, IL; 5. SLAC National Accelerator Laboratory, Menlo Park, CA; 6. University of Washington, Seattle, WA; 7. University of Tennessee, Knoxville, TN*

9:06

- EH-04. In Operando Probes of Tunable Ferromagnetism in Ion-Gel-Gated La_{0.5}Sr_{0.5}CoO_{3-δ} Thin Films.** *J. Walter¹, B. Yu², G. Yu², A. Grutter³, B.J. Kirby³, J. Borchers³, Z. Zhang⁴, H. Zhou⁴, J.W. Freeland⁴, H. Wang¹, T. Charlton⁵, H. Ambaye⁵, M. Fitzsimmons^{5,6}, C. Frisbie¹, M. Greven² and C. Leighton¹* *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 3. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 4. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 5. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN; 6. Department of Physics and Astronomy, University of Tennessee, Knoxville, TN*

9:18

- EH-05. Revealing the hidden magnetic interfaces by polarized neutron reflectometry.** *E. Guo*¹, *M. Fitzsimmons*² and *H. Lee*¹
1. *Oak Ridge National Laboratory, Oak Ridge, TN*; 2. *Quantum Condensed Matter Division, ORNL, Knoxville, TN*

9:30

- EH-06. Thickness dependence of exchange spring interactions in perovskite oxide bilayers.** *A. Kane*¹, *R.V. Chopdekar*², *A.T. N'Diaye*³, *E. Arenholz*³ and *Y. Takamura*⁴
1. *University of California, Davis, Davis, CA*; 2. *Chemical Engineering/Materials Science, University of California, Davis, Davis, CA*; 3. *LBNL, Berkeley, CA*; 4. *Materials Science and Engineering, University of California - Davis, Davis, CA*

9:42

- EH-07. Exchange Bias due to Emergent Magnetism at the LaFeO₃/La_{0.7}Sr_{0.3}MnO₃ Interface.** *F.K. Olsen*¹, *I.G. Hallsteinsen*^{1,2}, *T. Tybell*¹ and *E. Folven*¹
1. *Electronic Systems, Norwegian University of Science and Technology, Trondheim, Norway*; 2. *Lawrence Berkeley National Laboratory, Berkeley, CA*

9:54

- EH-08. Observation of peculiar magnetic anisotropy at the interface of a La_{0.6}Sr_{0.4}MnO₃/LaAlO₃ heterostructure.** *L. Anh*^{1,2}, *N. Okamoto*¹, *M. Seki*^{1,3}, *H. Tabata*^{1,3}, *M. Tanaka*^{1,3} and *S. Ohya*^{1,2}
1. *Dept. of Electrical Engineering and Information Systems, Grad. School of Engineering, The University of Tokyo, Bunkyo, Japan*; 2. *Institute of Engineering Innovation, Grad. School of Engineering, The University of Tokyo, Tokyo, Japan*; 3. *Center for Spintronics Research Network, Grad. School of Engineering, The University of Tokyo, Tokyo, Japan*

10:06

- EH-09. Tunable metal-to-insulator transition in La_{1-x}Nd_xNiO₃ thin films.** *R.D. Desautels*¹, *A. Huon*^{2,3}, *J. Nichols*³, *R. Green*^{4,5}, *S. May*², *G. Sawatzky*^{4,5}, *H. Lee*³ and *M. Fitzsimmons*¹
1. *Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN*; 2. *Materials Science and Engineering, Drexel University, Philadelphia, PA*; 3. *Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN*; 4. *Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada*; 5. *Quantum Materials Institute, Vancouver, BC, Canada*

10:18

- EH-10. Structural and Magnetic Properties of CoV₂O₄ Thin Films.** *C.J. Thompson*^{1,2}, *D. Reig-i-Plessis*³, *B. Zhang*^{1,4}, *L. Kish*³, *A.A. Aczel*⁵, *G.J. MacDougall*³ and *C. Beekman*^{1,4}
1. *National High Magnetic Field Laboratory, Tallahassee, FL*; 2. *Materials Science and Engineering, Florida State University, Tallahassee, FL*; 3. *Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL*; 4. *Department of Physics, Florida State University, Tallahassee, FL*; 5. *Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN*

10:30

- EH-11. Domain Wall Pinning Driven by Nanoscale Phase Coexistence in Ni/V₂O₃ bilayers.** *A. Fraile Rodríguez*¹, I. Valmianski², M. García del Muro¹, J. Ramirez³, F. Kronast⁴, I.K. Schuller², A. Labarta¹ and X. Batlle¹ *1. Física Matèria Condensada, Universitat de Barcelona, Barcelona, Spain; 2. Department of Physics, UCSD, San Diego, CA; 3. Department of Physics, Universidad de los Andes, Bogotá, Colombia; 4. Helmholtz Zentrum Berlin, Berlin, Germany*

10:42

- EH-12. Magnetic and Spintronic Properties of Tb₃Fe₅O₁₂ and Eu₃Fe₅O₁₂ Thin Films.** *E.R. Rosenberg*¹, L. Beran², A. Quindeau³, C. Avci¹, L.M. Caretta¹, D. Bono³, M. Veis², G. Beach¹ and C. Ross¹ *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Institute of Physics, Charles University, Prague, Czech Republic; 3. Massachusetts Institute of Technology, Cambridge, MA*

10:54

- EH-13. Magnetic Proximity Effect in Pt/CoFe₂O₄ Bilayers.** W. Amamou², *I.V. Pinchuk*¹, A. Hanks⁴, R. Williams⁴, N. Antolin¹, A.G. Goad⁵, D.J. O'Hara³, A. Ahmed¹, W. Windl¹, D.W. McComb⁴ and R. Kawakami¹ *1. Physics, The Ohio State University, Columbus, OH; 2. University of California Riverside, Riverside, CA; 3. Materials Science and Engineering, University of California, Riverside, Columbus, OH; 4. Department of Materials Science and Engineering, The Ohio State University, Columbus, OH; 5. Physics, University of Maryland, Baltimore County, Baltimore, MD*

11:06

- EH-14. Magnetocrystalline anisotropy of ε-Fe₂O₃.** I. Ahamed¹, R. Pathak¹, R. Skomski^{2,3} and A. Kashyap¹ *1. School of Basic Sciences, Indian Institute of Technology, Mandi, Himachal Pradesh, Mandi, India; 2. Physics and Astronomy, University of Nebraska, Lincoln, NE; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Nebraska, NE*

11:18

- EH-15. Observation of memory effect in SrRuO₃ epitaxial thin films.** *R. Palai*¹ and H. Huhtinen² *1. Physics, University of Puerto Rico, San Juan, PR; 2. University of Turku, Turku, Finland*

Session EI
MAGNETO-OPTICAL AND MAGNETO-CALORIC
MATERIALS AND DEVICES

Taichi Goto, Chair
Toyoashi University of Technology, Toyoashi, Japan

8:30

- EI-01. Magneto-optical Bi-substituted iron garnet (Bi-YIG) thin films for integrated photonics.** *T. Fakhru¹, L. Beran², M. Veis² and C. Ross¹* 1. *Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA;* 2. *Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic*

8:42

- EI-02. Magneto-optical garnet enables the first monolithically-integrated TE-mode silicon-on-insulator isolator.** P. Dulal¹, C. Zhang³, D. Hutchings³ and B. Stadler^{2,1} 1. *Chemical Engineering & Materials Science/ Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN;* 2. *Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN;* 3. *School of Engineering, University of Glasgow, Glasgow, United Kingdom*

8:54

- EI-03. Novel Garnets on Non-Garnet Substrates: Enabling Integrated Photonics and Future Spintronics.** *K. Srinivasan¹, T.E. Gage², P. Dulal², D. Flannigan² and B. Stadler^{1,2}* 1. *Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN;* 2. *Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

9:06

- EI-04. Nanometers thick Bi substituted YIG films for magnonics and spintronics applications. (Invited)** *L. Soumah¹, C. Carretero¹, E. Jacquet¹, L. Qassym², N. Beaulieu³, J. Ben Youssef³, R. Lebourgeois², P. Bortolotti¹, V. Cros¹ and A. Anane¹* 1. *Unité Mixte de Physique CNRS/Thales and Université Paris Sud, Palaiseau, France;* 2. *Thales Research & Technology, Palaiseau, France;* 3. *LABSTICC, UMR 6285 CNRS, Université de Bretagne Occidentale, Brest, France*

9:42

- EI-05. Faraday rotation in diamagnetic organic liquid crystals.** *T. Verbiest¹ and R. Vleugels¹* 1. *Chemistry, KU Leuven, Leuven, Belgium*

9:54

- EI-06. Enhanced magneto-optical response in Bi-YIG films induced by localized surface plasmons.** *S.D. Pappas¹, E. Wiedemann¹, P. Lang¹, B. Hillebrands¹ and E. Papaioannou¹* 1. *Physics, TU Kaiserslautern, Kaiserslautern, Germany*

10:06

- EI-07. Theoretical study of enhanced magneto-optical Kerr effect at Fe/insulator interfaces.** *B. Gu*¹, *S. Takahashi*² and *S. Maekawa*¹ *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

10:18

- EI-08. *ab-initio* Calculations of Linear and Quadratic MOKE in bcc Fe and Co₂MnSi; Comparison to Experiment.** *O. Stejskal*¹, *R. Silber*^{1,2}, *D. Kral*³, *L. Beran*³, *J. Rodewald*⁴, *T. Kubota*⁵, *Y. Ando*⁵, *J. Pistora*¹, *J. Wollschläger*⁴, *M. Veis*³, *T. Kuschel*² and *J. Hamrle*³ *1. VSB - Technical University of Ostrava, Ostrava, Czech Republic; 2. Bielefeld University, Bielefeld, Germany; 3. Institute of Physics, Charles University, Prague, Czech Republic; 4. Osnabrück University, Osnabrück, Germany; 5. Institute for Materials Research, Tohoku University, Sendai, Japan*

10:30

- EI-09. Electromagnetic Waves Propagation in Asymmetric Hyperbolic Magnetic Media.** *R. Macedo*¹, *T. Dumelow*² and *R. Stamps*³ *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. Departamento de Física, Universidade do Estado do Rio Grande do Norte, Mossoró, Brazil; 3. University of Glasgow, Glasgow, United Kingdom*

10:42

- EI-10. Reduction of hysteresis in martensite phase transition by hydrostatic pressure.** *P. Devi*¹, *L. Caron*¹, *S. Singh*¹ and *C. Felser*¹ *1. Solid State Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

10:54

- EI-11. Magnetocaloric effects and electrical resistivity of Ni₂Mn_{0.55}Co_xCr_{0.45-x}Ga - A Heusler alloy system that exhibits a partially-decoupled first-order phase transition.** *J.A. Brock*¹ and *M.U. Khan*¹ *1. Physics, Miami University, Oxford, OH*

11:06

- EI-12. Evolution of Two-Step Magnetic Transition on Nanogranular Gd₅(Si,Ge)₄ Thin Film along Thermal Cycles.** *J.H. da Silva*^{1,2}, *A. Pires*¹, *R.L. Hadimani*³, *D.C. Jiles*⁴, *A.M. Pereira*¹, *J.B. Sousa*¹ and *J. Araújo*⁵ *1. Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto, IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Porto, Portugal; 2. Departamento de Física and CICECO, Universidade de Aveiro, Aveiro, Portugal; 3. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 4. Iowa State University, Ames, IA; 5. Physics and Astronomy, Institute of Nanotechnology and Faculty of Sciences University of Porto, Porto, Portugal*

- EI-13. High-Performance Iron Based Magnetocaloric Nanomaterials and Cooling Devices.** *R.V. Ramanujan¹, V. Chaudhary¹ and V. Sharma¹ 1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

THURSDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session EP
MICROWAVE MATERIALS AND DEVICES
(Poster Session)

Alexander Serga, Chair
Technische Universitet Kaiserslautern, Kaiserslautern, Germany

- EP-01. The prospects of spin torque diode effect beyond 26 GHz using parametric synchronization.** *D. Tiwari¹, N. Sisodia¹, R. Sharma¹ and P. Muduli¹ 1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India*
- EP-02. Realization of Magnon Transistor for All-Magnon Data Processing.** *M. Balinskiy¹, H. Chiang¹ and A. Khitun¹ 1. Electrical and Computer Engineering, University of California, Riverside, Anaheim Hills, CA*
- EP-03. Magnetostatic Surface Wave Tunable Bandpass Filter with Nonreciprocity.** *H. Lin¹ and N.X. Sun² 1. ECE, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA*
- EP-04. Multiple Magnetic Resonance and Microwave Absorption of Metamaterial Absorbers Composed of Double Split Ring Resonators on Grounded Carbonyl Iron Composites.** *J. Lim¹ and S. Kim¹ 1. Department of Materials Engineering, Chungbuk National University, Cheongju, The Republic of Korea*
- EP-05. An Integrated Tunable Isolator Based on NiZn Film Fabricated by Spin-spray Plating.** *R. Guo^{1,2}, H. Lin¹, W. Shi¹, Y. Gao¹, Z. Wang¹, N.X. Sun¹, Z. Yu² and Z. Lan² 1. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- EP-06. Microwave Monolithic Filter and Phase Shifter using Magnetic Nanostructures.** *S. Aslam¹, M. Khanna², V. Venugopal³ and B.K. Kuanr¹ 1. Special Centre for Nanoscience, Jawaharlal Nehru University, Delhi, India; 2. Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi, India; 3. Seagate Technology, Bloomington, MN*

- EP-07. Co- and Ti-substituted SrM-based Electromagnetic Noise Suppressor Sheets for the Application beyond 6 GHz.** R. Sai¹, M. Sato¹, A. Takahashi^{1,2}, S. Takeda³, S. Yabukami⁴ and M. Yamaguchi^{1,5} *1. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan; 2. NEC Tokin Corporation, Sendai, Japan; 3. Magnontech Ltd., Kumagaya, Japan; 4. Tohoku-Gakuin University, Tagajo, Japan; 5. Department of Electrical Engineering, Tohoku University, Sendai, Japan*
- EP-08. Microwave absorbing properties of Co–Zr codoped barium hexaferrite nanofibers.** Z. Zi^{1,2}, X. Ma² and Y. Sun¹ *1. Key Laboratory of Materials Physics, Institute of Solid State of Physics, Hefei, China; 2. Department of Physics and Electronic Engineering, Hefei Normal University, Hefei, China*
- EP-09. Preparation and microwave absorption properties of honeycomb core structures coated with composite absorber.** H. Luo¹, F. Chen¹, F. Wang¹, X. Wang¹, Y. Nie¹ and R. Gong¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- EP-10. Microwave Absorption of Doped Graphene Prepared by Thermal Annealing.** G. Fu¹, F. Qin¹, L. Quan¹, H. Wang¹ and H. Peng¹ *1. Institute for Composites Science Innovation, Zhejiang University, HangZhou, China*
- EP-11. Influence of the electromagnetic parameters on the surface wave attenuation in thin absorbing layers.** Y. Li¹, D. Li¹, X. Wang¹, Y. Nie¹ and R. Gong¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- EP-12. Preparation and microwave absorbing properties of Co-Ni ferrite fiber and reduced graphene oxide composites.** Y. Li¹, H. Luo¹, F. Chen¹, X. Wang¹, Y. Nie¹ and R. Gong¹ *1. Huazhong University of Science and Technology, Wuhan, China*
- EP-13. Large magnetic anisotropy in the iron fiber composite sheets and the improvement of near-field electromagnetic noise suppression.** X. Wang¹, J. Yang¹, F. Chen¹, H. Luo¹, Y. Nie¹ and R. Gong¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- EP-14. Nonlinear magnonic coupler - side-coupled magnonic stripes.** A. Sadovnikov^{2,1}, S. Odintsov², E.N. Beginin², Y.P. Sharaevskii² and S. Nikitov^{1,2} *1. IRE RAS, Moscow, Russian Federation; 2. Laboratory "Metamaterials", Saratov State University, Saratov, Russian Federation*
- EP-15. Incorporation of FeGa|NiFe Magnetic Multilayers into a Nanoscale Multiferroic Antenna.** C.R. Rementer¹, K. Fitzell¹, D. Labanowski², S. Salahuddin² and J.P. Chang¹ *1. Chemical & Biomolecular Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Electrical Engineering & Computer Sciences, University of California, Berkeley, Berkeley, CA*

Session EQ
TOPOLOGICAL INSULATORS, 2D MATERIALS, AND
VOLTAGE CONTROLLED MAGNETISM
(Poster Session)

Roland Kawakami, Chair
The Ohio State University, Columbus, OH

- EQ-01. Spin-orbit Torques and Charge Pumping at the Surface of Topological Insulators.** *P. Ndiaye*¹, C.A. Akosa², M. Fischer³, A. Vaezi⁴, E. Kim⁵ and A. Manchon¹ *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Center of Emergent Matter Science, RIKEN, Wakoshi, Japan; 3. Institute for Theoretical Physics, Zurich, Switzerland; 4. Physics, Stanford University, Stanford, CA; 5. Cornell University, Ithaca, NY*
- EQ-02. Effect of Magnetic Element Dopant on Topological Insulation of GeTe/Sb₂Te₃ Superlattice Materials.** *Z. Xia*¹, *X. Cheng*² and *X. Miao*² *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China; 2. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China*
- EQ-03. Role of bulk and Rashba states in topological insulator thin film spin accumulation.** *Z. Siu*¹, *T. Ghee*² and *M.B. Jalil*¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*
- EQ-04. An Arbitrary Order Effective Hamiltonian of Hexagonal Warping Effects of Dirac Cone.** *K. Kondo*¹ and *H. Teramoto*² *1. Laboratory of Nanostructure Physics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan; 2. Molecule & Life Nonlinear Sciences Laboratory, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*
- EQ-05. Magnetism in single-layered graphene induced by yttrium iron garnet film.** *W.D. da Rosa*^{1,2}, *R. Dutra*¹, *D.E. González-Chávez*¹, *E. Cardona Romani*³, *F. Lazaro Freire Jr.*³ and *R.L. Sommer*¹ *1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 2. Física Aplicada, Universidad de Granada, Granada, Spain; 3. Pontificia Universidade Católica, Rio de Janeiro, Brazil*
- EQ-06. Structural and Magnetotransport Properties of Bismuth and Bismuth/Cobalt Thin Films.** *C. Christides*^{2,1} and *T. Speliotis*¹ *1. Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Athens, Greece; 2. Patras University, Patras, Greece*

- EQ-07. Topological protected spin-orbit torques in WTe₂/ferromagnet bilayers.** P. Li¹, Y. Wen¹, Z. Dai¹, C. Zhang¹, J. Zhang¹, Y. Zhao¹ and X. Zhang¹ *1. Physical Science and Engineering Division (PSE), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*
- EQ-08. Strain Tunable Magnetic Properties of 3d Transition-Metal Ion Doped Monolayer MoS₂: A first-principles study.** Y. Zhu¹, X. Liang¹, L. Deng¹ and L. Bi¹ *1. University of Electronic Science and Technology of China, ChengDu, China*
- EQ-09. Strain induced enhancement of perpendicular magnetic anisotropy in Co/graphene and Co/BN heterostructures.** B. Yang^{2,1}, J. Zhang³, L. Jiang¹, W. Chen¹, P. Tang¹, Y. Yan² and X. Han¹ *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China; 2. Physics, Jilin University, Changchun, China; 3. School of Physics and Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, China*
- EQ-10. First-principles Investigation of Cr-, Mn-, and Fe-doped Monolayer Graphane.** M.P. Molepo¹, R.E. Mapasha² and E.B. Lombardi¹ *1. College of Graduate Studies, University of South Africa, Pretoria, South Africa; 2. Department of Physics, University of Pretoria, Pretoria, South Africa*
- EQ-11. Plasmonic, electronic and magnetic properties of the quantum-height MnGa islands and atomic chains hetero-epitaxially grown on the Ga-rich N-GaN(000-1) surface.** Z.H. Alhashem¹, J.P. Corbett², A.R. Smith², J.C. Gallagher³, K.Y. Meng³ and F. Yang³ *1. Department of Physics and Astronomy, Ohio University, Nanoscale and Quantum Phenomena Institute-Ohio University, Athens, OH; 2. Physics and Astronomy, Ohio University, Wilder, KY; 3. Department of Physics, The Ohio State University, Columbus, OH*
- EQ-12. Electric field effect on exchange interaction in ultrathin Pt/Co film.** F. Ando¹, K. Yamada¹, T. Koyama², M. Ishibashi¹, Y. Shiota¹, T. Moriyama³, D. Chiba⁴ and T. Ono¹ *1. Institute for Chemical Research, Kyoto University, Uji, Japan; 2. The University of Tokyo, Tokyo, Japan; 3. Kyoto University, Kyoto, Japan; 4. Department of Applied Physics, The University of Tokyo, Tokyo, Japan*
- EQ-13. Polarization-mediated perpendicular magnetic anisotropy in a BiFeO₃/Al₂O₃/Pt/Co/Pt/Ta multiferroic hybrid structure.** P. Liu¹, J. Miao¹, Y. Zhu¹, F. Song¹, L. Wang¹ and Y. Jiang¹ *1. School of Materials Science and Engineering, University of Science & Technology Beijing, Beijing, China*
- EQ-14. Voltage Controlled Magnetic Anisotropy of Strained Mn₃Ga/MgO Bilayers.** M.A. Jackson¹, G. Mattson¹, F. Mahfouzi¹ and N. Kioussis² *1. Physics and Astronomy, California State University, Northridge, Northridge, CA; 2. Physics, California State University Northridge, Northridge, CA*
- EQ-15. Role of interfacial 3d-transition-metal oxide layers in electric-field-induced modification of magnetocrystalline anisotropy at Fe/MgO interface.** T. Nomura¹, T. Akiyama¹, T. Ito¹ and K. Nakamura¹ *1. Mie University, Tsu, Japan*

- EQ-16. Direct Observation of Enhanced Voltage-Controlled Magnetic Anisotropy in Multiferroic PZT|MgO|CoFeB Heterostructures via *In Situ* X-ray Magnetic Circular Dichroism.** *K. Fitzell*¹, X. Li², H. Ohldag³, K.L. Wang² and J.P. Chang¹ *1. Chemical & Biomolecular Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. SLAC National Accelerator Laboratory, Menlo Park, CA*

THURSDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session ER
MAGNETIC SKYRMIONS AND INTERFACIAL
CHIRAL EXCHANGE INTERACTIONS
(Poster Session)

Felix Buettner, Co-Chair
Massachusetts Institute of Technology, Cambridge, MA
Guoqiang Yu, Co-Chair
UCLA, Los Angeles, CA

- ER-01. Topological Hall and spin Hall effects in disordered skyrmionic textures.** *P. Ndiaye*¹, C.A. Akosa² and A. Manchon¹ *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Center of Emergent Matter Science, RIKEN, Wakoshi, Japan*
- ER-02. Skyrmion Racetrack Memory Enables Information Interaction Among Nanotracks.** *W. Kang*¹, D. Zhu¹, S. Li¹, X. Zhang², Y. Zhou² and W. Zhao¹ *1. Beihang University, Beijing, China; 2. The Chinese University of Hong Kong, Shenzhen, China*
- ER-03. Realization of zero field and room temperature skyrmion lattice by scanning local magnetic field.** *S. Zhang*¹, J. Zhang¹ and X. Zhang¹ *1. Physical Science and Engineering Division (PSE), King Abdullah University of Science and Technology (KAUST), Jeddah, Saudi Arabia*
- ER-04. Magnetic Skyrmion Manipulation with a Scanning Tunneling Microscope.** *R. Wieser*¹ *1. ICQM, Peking University, Peking, China*
- ER-05. Topological Hall Effect in Planar Artificial Skyrmion Lattices.** *P. Murray*¹, Z. Chen¹, D. Gilbert², J. Zang³, T. Stuckler⁴, K. Lenz⁵, B.B. Maranville², J. Fassbender⁵, H. Yu⁴, J. Borchers² and K. Liu¹ *1. Physics Department, University of California, Davis, CA; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics, University of New Hampshire, Durham, NH; 4. Fert Beijing Research Institute, Beihang University, Beijing, China; 5. Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany*

- ER-06. Magnetic Skyrmions in Pt/Co/Ir at Zero Field.** *J. Wagner*¹, R. Frömter¹, K. Bagschik², R. Buß¹, A. Philippi-Kobs³, M. Riepp³, L. Müller⁴, M.H. Berntsen⁵, J. Viehhaus², G. Grübel³ and H. Oepen¹. *1. Institut für Nanostruktur- und Festkörperphysik, Universität Hamburg, Hamburg, Germany; 2. XUV-Beamline P04 at PETRA III, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 3. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 4. FS-CXS, DESY, Hamburg, Germany; 5. KTH Royal Institute of Technology, Stockholm, Sweden*
- ER-07. Determination of Dzyaloshinskii-Moriya Interaction Energy Density by the Extended Droplet Model.** *S. Kim*¹, P. Jang², D. Kim¹, M. Ishibashi¹, T. Taniguchi¹, T. Moriyama¹, K. Kim^{1,3}, K. Lee^{2,4} and T. Ono^{1,5}. *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Korea University, Seoul, The Republic of Korea; 3. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 4. KU-KIST Graduate School of Converging Science and Technology, Seoul, The Republic of Korea; 5. Graduate School of Engineering Science, Center for Spintronics Research Network (CSRN) of Osaka University, Osaka, Japan*
- ER-08. Influence of Ferromagnetic and Heavy Metal Layer Thickness on the Interfacial Dzyaloshinskii-Moriya Interaction in Ta/CoFeB/TaO_x Heterostructures.** *A.K. Chaurasiya*¹, *S. Choudhury*¹, *S. Mondal*¹, *J. Sinha*¹ and *A. Barman*¹. *1. Condensed Matter Physics and Materials Sciences, S N Bose National Centre For Basic Sciences, Kolkata, India*
- ER-09. Field-free deterministic ultra fast creation of skyrmions by spin orbit torques.** *F. Buettner*¹, *I. Lemesh*¹, *M. Schneider*², *B. Pfau*², *C. Günther*³, *P. Hessler*², *J. Geilhufe*², *L.M. Caretta*¹, *D. Engel*², *B. Krüger*⁵, *J. Viehhaus*⁴, *S. Eisebitt*^{2,3} and *G. Beach*¹. *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Max Born Institut, Berlin, Germany; 3. TU Berlin, Berlin, Germany; 4. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 5. Institute for Laser Technologies, Ulm, Germany*
- ER-10. Strain-controlled Skyrmion Creation, Annihilation and Propagation in Ferroelectric/Ferromagnetic Hybrid Wires.** *C. Wang*¹, *Z. Li*¹, *Y. Zhang*¹, *Y. Huang*¹, *X. Zhang*², *L. Yan*³, *Y. Zhou*², *W. Kang*¹, *S. Koli*¹, *N. Lei*¹ and *W. Zhao*¹. *1. Beihang University, Beijing, China; 2. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong; 3. Northeastern University, Shenyang, China*
- ER-11. Donut skyrmion – high velocity without Hall effect.** *A.G. Kolesnikov*¹, *M.E. Stebliy*¹, *A.S. Samardak*¹, *A. Ognev*¹ and *L.A. Chebotkevich*¹. *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation*
- ER-12. Nucleation and annihilation of skyrmions in spin gapless semiconductor Mn₂CoAl.** *S. Granville*^{1,2}, *B. Ludbrook*^{3,2}, *G. Dubuis*^{1,2}, *A. Puichaud*^{1,2} and *B. Ruck*^{3,2}. *1. Robinson Research Institute, Victoria University of Wellington, Lower Hutt, New Zealand; 2. MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand; 3. School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand*

- ER-13. Internal structure and stability of skyrmions in ferromagnet/heavy-metal multilayers.** *K. Chichay*^{1,2}, J. Barker³ and O. Tretiakov^{3,4} 1. STP "Fabrika, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation; 2. Center for Functionalized Magnetic Materials (FunMagMa), Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation; 3. Institute for Materials Research, Tohoku University, Sendai, Japan; 4. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation
- ER-14. Imaging magnetic textures in FeRh using magneto-thermal microscopy.** *I. Gray*¹, G.M. Stiehl², J. Heron³, J.M. Bartell¹, D.C. Ralph² and G. Fuchs⁴ 1. Applied and Engineering Physics, Cornell University, Ithaca, NY; 2. Physics, Cornell University, Ithaca, NY; 3. Materials Science and Engineering, University of Michigan, Ann Arbor, MI; 4. Cornell University, Ithaca, NY
- ER-15. Magnetoresistance in nonmagnetic/antiferromagnetic metal bilayers.** *K. Oda*¹, T. Moriyama¹ and T. Ono¹ 1. Institute for Chemical Research, Kyoto University, Uji, Japan

THURSDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session ES
MAGNETIC SEMICONDUCTORS AND MAGNETO
ELASTIC MATERIALS I
(Poster Session)

Thomas Ambrose, Chair
Northrop Grumman Corporation, Linthicum, MD

- ES-01. Growth and Characterization of Diluted Amorphous GeMn Thin Films.** *D. Gastaldo*^{1,2}, G. Conta², M. Coisson², G. Amato², P. Tiberto² and P. Allia¹ 1. Applied Science and Technology Department, Politecnico di Torino, Torino, Italy; 2. Nanoscience and Materials Division, Istituto Nazionale di Ricerca Metrologica, Torino, Italy
- ES-02. Enhancement of Ferromagnetic Properties in (1-x) BaSnO₃ – (x) CoFe₂O₄ Composite.** *M. Manju*¹, N.M. D'Souza^{2,3}, R.L. Hadimani² and *V. Dayal*¹ 1. Department of Physics, Maharaja Institute of Technology-Mysore, Mandya, India; 2. Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. Department of Mechanical and Nuclear Engineering, Pennsylvania State University, State College, PA
- ES-03. Oxygen vacancies mediated ferromagnetism in hydrogenated Zn_{0.9}Co_{0.1}O film.** *H. Zhang*¹, J. Wang^{2,3}, Y. Cao⁴, J. Du^{2,3}, X. Guo⁵, Q. Li¹ and Q. Xu^{1,2} 1. School of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Department of Physics, Nanjing University, Nanjing, China; 4. Department of Materials Science and Engineering, Nanjing University, Nanjing, China; 5. School of Materials Science and Engineering, Southeast University, Nanjing, China

- ES-04. A room temperature spin filter material - Electronic properties of CrVTiAl films.** *G.M. Stephen*¹, M.E. Jamer², G. Buda¹, C. Lane¹, L. Prescott¹, S. Kaprzyk^{1,3}, B. Barbiellini¹, A. Bansil¹, L. Lewis⁴ and D. Heiman¹ *1. Physics, Northeastern University, Boston, MA; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. AGH University of Science and Technology, Krakow, Poland; 4. Northeastern University, Boston, MA*
- ES-05. Coalescence-driven, uncompensated antiferromagnetic order in Co doped ZnO.** V. Ney¹, B. Henne¹, M. Buchner¹, F. Wilhelm², K.J. Ollefs², A. Rogalev² and A. Ney¹ *1. Solid State Physics Division, Johannes Kepler University Linz, Linz, Austria; 2. ESRF, Grenoble, France*
- ES-06. Oxygen vacancies engineering triggered by temperature cycling assisted current effect in catalytic La_{0.7}Sr_{0.3}CoO₃ film.** J. Li^{1,2}, J. Wang^{1,2}, H. Kuang^{1,2}, Y. Zhao^{1,2}, K. Qiao^{1,2}, Y. Liu^{1,2}, F. Hu^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} *1. Beijing National Laboratory for Condensed Matter Physics & State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China*
- ES-07. Preparation Of Ni₂Mn(GaIn) Crystals with Bridgman Method and in Floating Zone.** P. Cejpek¹, V. Holý¹, O. Heczko², M. Dopita¹, M. Vališka¹ and D. Krieger¹ *1. Department of Condensed Matter Physics, Charles University, Praha, Czech Republic; 2. Department of Functional Materials, Institute of Physics ASCR, Prague, Prague, Czech Republic*
- ES-08. Effect of cooling rate on magnetic domain structure and magnetic properties of Tb_{0.27}Dy_{0.73}Fe_{1.95} alloys solidified in high magnetic field.** T. Liu¹, M. Dong¹, P. Gao¹, S. Dong¹, J. Sun¹ and Q. Wang¹ *1. Northeastern University, China, Shenyang, China*
- ES-09. Magnetostriction and Magnetic Anisotropy: Phenomenology and Electron Theory.** J. Inoue¹, T. Yoshioka¹ and H. Tsuchiura¹ *1. Department of Applied Physics, Tohoku University, Sendai, Japan*
- ES-10. Effects of annealing treatment on microstructures and magnetic properties of Fe-Al coatings.** Q. Qi¹, X. Gao¹, J. Li¹ and Y. Liu¹ *1. State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing, China*
- ES-11. Negative volume thermal expansion for magnetocaloric and magnetic-elastic materials Tb_{1-x}Y_xMn₂Ge₂ series-(x = 0, 0.1, 0.2) compounds.** C. Fang¹, J. Wang¹ and Z. Cheng¹ *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

- ES-12. New Methods to Probe and Explore Magnetoelastic Properties of Amorphous Ferromagnetic Alloys.** *L.J. Gray¹, A.T. Clark¹, K. Nowak¹, C. Martin¹ and P. Anderson¹*
1. Engineering Physics, Ramapo College of New Jersey, Dumont, NJ
- ES-13. Antiferromagnetic coupling between martensitic twin variants in epitaxial Ni-Mn-Sn-Co film.** *V. Golub¹, V. Lvov^{1,2}, I. Aseguinolaza³, O. Salyuk¹, D. Popadiuk^{4,1}, Y. Kharlan^{4,1}, G.N. Kakazei⁵, J. Araújo⁵, J. Barandiaran³ and V. Chernenko^{3,6}*
1. Institute of Magnetism NAS of Ukraine, Kyiv, Ukraine; 2. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 3. BCMaterials & University of Basque Country, Bilbao, Spain; 4. National Technical University "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine; 5. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 6. Ikerbasque, Basque Foundation for Science, Bilbao, Spain
- ES-14. Magneto-elastic coupling in Ferromagnetic/NiTi heterostructures driven by structural phase transition.**
D. Torres¹ and D. Cornejo¹
1. Institute of Physics, University of Sao Paulo, Sao Paulo, Brazil

THURSDAY
 MORNING
 9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session ET
NANOPARTICLES, NANOWIRES, AND 3D
STRUCTURES II
(Poster Session)

Yota Takamura, Chair
 Massachusetts Institute of Technology, Cambridge, MA

- ET-01. Growth and Magnetic Characterization of Germanium Manganese Quantum Dots.** *D. Gastaldo^{1,2}, G. Conta², M. Coisson², G. Amato², P. Tiberto² and P. Allia¹*
1. Applied Science and Technology Department, Politecnico di Torino, Torino, Italy; 2. Nanoscience and Materials Division, Istituto Nazionale di Ricerca Metrologica, Torino, Italy
- ET-02. Self-assembled Growth of Hard-soft Magnetic Nanocomposite Thin Films.** *D. Kim¹, T. Kim¹, S. Lee¹ and C. Ross²*
1. Myongji University, Gyeonggi-Do, The Republic of Korea; 2. Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA
- ET-03. Magnetic anisotropy of nanoparticle assemblies.** *Y. Li¹, T. Wen¹, Q. Zhan², Y. Xie², Q. Wen¹, H. Zhang¹ and Z. Zhong¹*
1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, Ningbo, China

- ET-04. Geometry dependence of the magnetization reversal process in bridged dots.** *R.A. Escobar*¹, *E. Lage*², *J. d'Albuquerque e Castro*³, *D. Altbir*¹ and *C. Ross*⁴ *1. Departamento de Fisica, CEDENNA, Universidad de Santiago de Chile, USACH, Santiago, Chile; 2. Institute for Materials Science, Kiel University, Kiel, Germany; 3. Instituto de Fisica, Universidade Federal do Rio de Janeiro Caixa, Rio de Janeiro, Brazil; 4. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Boston, MA*
- ET-05. Additive manufacturing towards functionally graded nanomaterials.** *S.M. Harstad*¹, *K.N. Al Milaji*¹, *S. Hunagund*¹, *A. El-Gendy*^{1,2}, *H. Zhao*¹ and *R.L. Hadimani*¹ *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Department of Physics, University of Texas at El Paso, El Paso, TX*
- ET-06. Nanomodified Composite Magnetic Materials and Their Molding Technologies.** *I. Timoshkov*^{1,2}, *Q. Gao*³, *G. Govor*⁴, *A. Sakova*¹, *V. Timoshkov*¹ and *A. Vetcher*⁴ *1. Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus; 2. LG TCM, LG Electronics, Seoul, The Republic of Korea; 3. Shandong Zhongrui Electronics Co., Ltd, Shandong, China; 4. National Academy of Science of Belarus, Minsk, Belarus*
- ET-07. Structural and magnetic properties of Fe₃Ga alloy nanowires: Effect of post annealing treatment.** *W. Li*¹, *X. Han*¹ and *W. Kong*¹ *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China*
- ET-08. Controllable synthesis of ferromagnetic-antiferromagnetic core-shell nanowires with tunable magnetic properties.** *C. Wan*¹ and *X. Han*¹ *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China*
- ET-09. Comparative magnetic studies on the ordered and disordered magnetic nanowires arrays.** *A.M. Aragon*¹, *Y. Zhang*¹, *M. Jungfleisch*², *M. Ahmed*¹, *Y. Xie*¹, *J. Wang*³, *P. Yang*¹, *M. Puga*¹ and *K. Gao*¹ *1. Energy Systems Division, Argonne National Laboratory, Lemont, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Nanoscience & Technology Division, Argonne National Laboratory, Lemont, IL*
- ET-10. Magnetization reversal in radially distributed nanowire arrays with longitudinal and transverse anisotropy.** *C. Garcia*¹, *W.O. Rosa*², *J. Garcia*³, *V.M. Prida*³, *B. Hernando*³, *J. Lopez*¹, *P. Vargas*¹ and *C. Ross*⁴ *1. Physics, Universidad Técnica Federico Santa María, Valparaiso, Chile; 2. Fisica Aplicada, Universidad de Granada, Granada, Spain; 3. Fisica, Universidad de Oviedo, Oviedo, Spain; 4. Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*
- ET-11. Magnetic Property Characterization of CoFe Nanowire and Nanospring Structures by First-Order-Reversal-Curve Measurements.** *D. Nam*¹, *Y. Jeon*¹, *S. Kim*¹, *A. Samardak*², *A. Davydenko*², *L.A. Chebotkevich*², *A.S. Samardak*² and *Y. Kim*¹ *1. Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 2. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation*

ET-12. Combined X-ray / Neutron Investigation of Magnetic Parameters of Fe/ γ -Fe₂O₃ Core-Shell Nanoparticle Variants. C. Koss¹, Z. Nemati¹, H. Srikanth¹, M. Phan¹, J. Borchers², K.L. Krycka² and D.A. Arena¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*

ET-13. Size-dependent magnetism of large Gd₅Si₄ nanoparticles. S. Hunagund¹, A. El-Gendy¹, S. Gupta², V.K. Pecharsky², S.M. Harstad¹ and R.L. Hadimani¹ *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Ames Laboratory, Iowa State University, Ames, IA*

THURSDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session EU
THIN FILMS AND SURFACE EFFECTS I
(Poster Session)

Ryan Desautels, Co-Chair
Oak Ridge National Laboratory, Oak Ridge, TN
Chi-Feng Pai, Co-Chair
National Taiwan University, Taipei, Taiwan

EU-01. Novel behaviours of Anomalous Hall effect in TbFeCo thin films under high magnetic field. R. Ando¹, T. Komine¹, S. Sato², S. Kaneta² and Y. Hara² *1. Faculty of Engineering, Ibaraki University, Ibaraki, Japan; 2. National Institute of Technology, Ibaraki College, Ibaraki, Japan*

EU-02. Strain effect on the magnetic and transport properties of LaCoO₃ thin films. Y. Li¹, S. Peng¹, D. Wang¹, K. Wu¹ and S. Wang² *1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China; 2. Faculty of Science, Northwestern Polytechnical University, Xian, China*

EU-03. Nitrogen-Enhanced Ordering Transformation of CoPt in CoPt/TiN Bilayer Films. P. Caesario¹, T. Harumoto¹, Y. Nakamura¹ and J. Shi¹ *1. Materials and Chemical Technology, Tokyo Institute of Technology, Ota, Japan*

EU-04. Dependence of magnetic properties on different buffer layers for Mn_xGa thin films. Y. Takahashi¹, K. Sato¹, T. Shima¹ and M. Doi¹ *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*

EU-05. Geometrical contribution to anomalous Nernst effect in TbFeCo thin films. R. Ando¹ and T. Komine¹ *1. Faculty of Engineering, Ibaraki University, Ibaraki, Japan*

EU-06. Altering coercivity via growth rate on domain wall pinning (001) FePd thin film. C. Hsiao¹, H. Chang² and H. Ouyang¹ *1. National Tsing Hua University, HsinChu, Taiwan; 2. Tunghai University, Taichung, Taiwan*

- EU-07. Structural and magnetic properties of $Mn_x(Ge_{1-y}Zn_y)$ thin films.** *T. Suzuki*¹, *T. Shima*¹ and *M. Doi*¹ *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*
- EU-08. Unidirectional Magnetoresistance in Magnetic Thin Film with Non-uniform Thickness.** *M. Jia*¹ and *Y. Wu*¹ *1. Physics Department, Fudan University, Shanghai, China*
- EU-09. Observation of Magnetic Depth Profiles for C Cluster Ion Irradiated FeRh Thin Films with Depth-Resolved X-Ray Magnetic Circular Dichroism.** *R. Soma*¹, *A. Iwase*¹, *K. Amemiya*², *M. Sakamaki*², *Y. Saitoh*³ and *T. Matsui*⁴ *1. Department of Materials Science, Osaka Prefecture University, Sakai, Japan; 2. High Energy Accelerator Research Organization, Tsukuba, Japan; 3. Takasaki Advanced Radiation Research Institute, National Institutes for Quantum and Radiological Science and Technology, Takasaki, Japan; 4. Faculty of Liberal Arts and Sciences, Osaka Prefecture University, Sakai, Japan*
- EU-10. The origin of the uniaxial magnetic anisotropy in Fe-GaAs(100) system.** *Y. Yan*¹, *X. Lu*², *W. Liu*³ and *Y. Xu*¹ *1. The University of York, York, United Kingdom; 2. Physics, University of York, York, United Kingdom; 3. Royal Holloway University of London, Egham, United Kingdom*
- EU-11. An Investigation of Magnetization Dynamics Damping in $Ni_{80}Fe_{20}/Nd-Cu$ Bilayer at Room Temperature.** *W. Fan*¹, *X. Zhou*¹, *Q. Fu*¹, *F. Xu*¹, *H. Yuan*³, *J. Yue*¹, *Z. Huang*¹, *S. Jiang*⁴ and *Y. Zhai*^{1,2} *1. School of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China; 3. School of Physics and Telecommunication Engineering, Zhoukou Normal University, Zhoukou, China; 4. KTH Royal Institute Technology, Stockholm, Sweden*
- EU-12. Electrical Transport and Dynamical Magnetic Properties of Co_2FeGe Heusler Alloy Films.** *P. Midhunlal*¹, *A. Jeyaramane*², *J. Joseph*³, *A. Rajani Kanth*³ and *H. Narayanan*¹ *1. Department of Physics, IIT Madras, Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. School of Physics, University of Hyderabad, Hyderabad, India*
- EU-13. Thickness Induced Uniaxial Anisotropy and Unexpected Four-fold Symmetry in $Co/SiO_2/Si$ Films.** *M. Xue*¹, *S. Ding*¹, *R. Wu*², *L. Zha*¹, *H. Du*¹, *J. Han*¹, *C. Wang*¹ and *J. Yang*^{3,4} *1. School of Physics, Peking University, Beijing, China; 2. Cambridge University, Cambridge, United Kingdom; 3. Beijing Key Laboratory for Magnetolectric Materials and Devices, Beijing, China; 4. Collaborative Innovation Center of Quantum Matter, Beijing, China*
- EU-14. New magnetic phases of thin terbium films.** *F.H. Sales*¹, *A.S. Carriço*² and *A.L. Dantas*³ *1. Department of Physics, Applied Physics Laboratory - IFMA, São Luis, Brazil; 2. Department of Physics, Universidade Federal do Rio Grande do Norte, Natal, Brazil; 3. Department of Physics, University of State of Rio Grande do Norte, Natal, Brazil*

EU-15. Domain Magnetization Reversal in Co₂FeAl Full Heusler Alloy Thin Films on MgO (001) Substrate. S. Husain¹, E. Goyat¹, A. Kumar², N. Sisodia¹, S. Akansel², P. Svedlindh², P. Muduli¹ and S. Chaudhary¹ *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*

EU-16. Role of Al-doping on the multiferroic behavior of epitaxial TbMn_{0.9}Al_{0.1}O₃ thin films grown by dc magnetron sputtering. J. Iquierdo¹, A. Astudillo², J. Martinez², G. Bolanos² and O. Morán^{3,2} *1. Ciencias Basicas, Institucion Universitaria Pascual Bravo, Medellin, Colombia; 2. Fisica, Universidad del Cauca, Popayan, Colombia; 3. Physics, National University of Colombia, Medellín, Colombia*

THURSDAY
AFTERNOON
1:30

SPIRIT OF PITTSBURGH BALLROOM B

Session FA
SPINTRONICS-BASED NEUROMORPHIC
COMPUTING

Yayoi Takamura, Chair
University of California, Davis, Davis, CA

1:30

FA-01. Neuromorphic Computing with Stochastic Spintronic Devices. (Invited) D. Querlioz¹, A. Vincent¹, A. Mizrahi¹, D. Vodenicarevic¹, J. Friedman², N. Locatelli¹ and J. Grollier³ *1. C2N, Université Paris-Sud, Orsay, France; 2. University of Texas at Dallas, Dallas, TX; 3. Unité Mixte CNRS/Thales, Bourg la Reine, France*

2:06

FA-02. Unstable Nanomagnets as p-bits for Stochastic Neuromorphic Circuits. (Invited) K.Y. Camsari¹, R. Faria¹, B. Sutton¹, A. Pervaiz¹ and S. Datta¹ *1. School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN*

2:42

FA-03. Estimating Degree of Match with Arrays of Spin Torque Oscillators. (Invited) M. Pufall¹, W.H. Rippard¹, E. Jué¹, G. Csaba² and K. Roy³ *1. National Institute of Standards and Technology, Boulder, CO; 2. Pazmany Peter Catholic University, Budapest, Hungary; 3. Purdue University, Lafayette, IN*

3:18

FA-04. An analog spin-orbit torque device for edge artificial intelligence. (Invited) S. Fukami^{1,2}, W.A. Borders¹, A. Kurenkov¹, H. Akima¹, S. Moriya¹, S. Kurihara¹, Y. Horio¹, S. Sato¹ and H. Ohno^{1,2} *1. RIEC Tohoku University, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

- FA-05. Potential Implementation of Reservoir Computing Models Based on Magnetic Skyrmions. (Invited)** *G. Bourianoff¹, D. Prychynenko², M. Sitte², K. Litzius², M. Kläui², J. Sinova² and K. Everschor-Sitte²* *1. Intel Labs, Intel Corp, Austin, TX; 2. Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany*

THURSDAY
AFTERNOON
1:30

ROOM 301-303

Session FB

SPIN-ORBIT TORQUES AND INTERFACIAL CHIRAL EXCHANGE INTERACTIONS

Oleg Tretiakov, Chair
Tohoku University, Sendai, Japan

1:30

- FB-01. Interfacial Spin-Orbit Torque without Bulk Spin-Orbit Coupling. (Invited)** *S. Emori^{1,2}, T. Nan^{3,2}, A. Belkessam², X. Wang², A. Matyushov², C. Babroski², Y. Gao^{4,2}, H. Lin² and N.X. Sun²* *1. Virginia Tech, Blacksburg, VA; 2. Northeastern University, Allston, MA; 3. University of Wisconsin-Madison, Madison, WI; 4. Winchester Technologies, LLC., Burlington, MA*

2:06

- FB-02. Spin orbit torque in ferromagnet/heavy metal/ferromagnet sandwiches.** *C. Song¹, G. Shi¹, J. Cai² and F. Pan¹* *1. Tsinghua University, Beijing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

2:18

- FB-03. Gain of spin orbit effects by tungsten modified layer in films Ru/Co/W/Ru.** *A.G. Kolesnikov¹, A.S. Samardak¹, A. Ognev¹, M.E. Steblyi¹, L. Chebotkevich¹, A. Sadovnikov³ and S. Nikitov²* *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. IRE RAS, Moscow, Russian Federation; 3. Nonlinear Physics, Saratov State University, Saratov, Russian Federation*

2:30

- FB-04. Joule Heating Effect on Field-Free Spin-Orbit Torque Magnetization Switching in Exchange Biased Systems.** *S. Razavi¹, G. Yu¹, D. Wu², Y. Lau³, C. Chen⁴, Z. Zhang², M. Coey³, P.S. Stamenov³, P. Khalili^{1,5} and K.L. Wang^{1,5}* *1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Trinity College, Dublin, Dublin, Ireland; 4. IBM Thomas J Watson Research Center, Yorktown Heights, NY; 5. Inston Inc., Los Angeles, CA*

- FB-05. Magnetization switching by combining spin-orbit torque and spin-transfer torque in three-terminal magnetic tunnel junctions.** *C. Zhang*^{1,2}, *S. Duttagupta*^{1,3}, *Y. Takahashi*¹, *H. Sato*^{1,4}, *S. Fukami*^{1,4} and *H. Ohno*^{1,5} *1. Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku Univ., Sendai, Japan; 2. CSIS, Tohoku Univ., Sendai, Japan; 3. CSRN, Tohoku Univ., Sendai, Japan; 4. CIES, Tohoku Univ., Sendai, Japan; 5. WPI-AIMR, Tohoku Univ., Sendai, Japan*

- FB-06. Tuning the interfacial Dzyaloshinskii-Moriya interaction in the Ta/CoFeB/Cu(x)/Pt/MgO system.** *H. Nembach*^{1,2}, *E. Edwards*¹, *A.J. Berger*¹, *T. Silva*¹ and *J. Shaw*¹ *1. NIST, Boulder, CO; 2. JILA, University of Colorado at Boulder, Boulder, CO*

- FB-07. Reversible spin texture and charge-to-spin interconversion in the ferroelectric Rashba semiconductor GeTe.** *C. Rinaldi*¹, *S. Varotto*¹, *M. Asa*¹, *J. Slawinska*², *J. Fujii*³, *G. Vinai*³, *I. Vobornik*³, *G. Panaccione*³, *S. Cecchi*⁴, *R. Calarco*⁴, *S. Picozzi*² and *R. Bertacco*¹ *1. Physics, Politecnico di Milano, Milano, Italy; 2. Consiglio Nazionale delle Ricerche (CNR-SPIN), Chieti, Italy; 3. Istituto Officina dei Materiali CNR Laboratorio TASC, Trieste, Italy; 4. Epitaxy, Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany*

- FB-08. Time- and spatially-resolved magnetization dynamics driven by spin-orbit torques.** *M. Baumgartner*¹, *K. Garello*^{1,2}, *J. Mendil*¹, *E. Grimaldi*¹, *C. Avci*¹, *C. Murer*¹, *J. Feng*¹, *C. Stamm*¹, *M. Gabureac*¹, *Y. Acremann*³, *S. Finizio*⁴, *S. Wintz*⁴, *J. Raabe*⁴ and *P. Gambardella*¹ *1. Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Imec, Leuven, Belgium; 3. Laboratory for Solid State Physics, ETH Zurich, Zurich, Switzerland; 4. Paul Scherrer Institut, Villigen PSI, Switzerland*

- FB-09. Disentangling the factors influencing Dzyaloshinskii domain wall creep.** *V.M. Sokalski*¹, *J.P. Pellegren*¹ and *D.K. Lau*¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

- FB-10. Determination of the Dzyaloshinskii-Moriya interaction in epitaxial asymmetric trilayers.** *F. Ajejas*¹, *A. Gudin*², *R. Guerrero*², *D.D. Chaves*³, *S. Pizzini*³, *J. Vogel*³, *R. Miranda*¹, *J. Camarero*¹ and *P. Perna*² *1. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain; 2. IMDEA Nanoscience, Madrid, Spain; 3. Institut Néel, CNRS, Grenoble, France*

- FB-11. Voltage Induced Interfacial Dzyaloshinskii-Moriya Interaction in Fe/Bi/MgO Multilayers.** *R. Miyakaze*¹, K. Nawaoka¹, M. Goto^{1,2}, Y. Suzuki^{1,2} and S. Miwa^{1,2}
 1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Center for Spintronics Research Network (CSRN), Osaka University, Toyonaka, Japan

4:06

- FB-12. Structural modification of ultrathin films with broken inversion symmetry for enhancement of spin-orbital effects.** *A.S. Samardak*^{1,2}, A. Ognev¹, A.G. Kolesnikov¹, M.E. Steblyi¹, A. Samardak¹, L.A. Chebotkevich¹, A. Sadovnikov³, S. Nikitov^{4,3}, G. Kim², Y. Kim², I. Cha² and Y.K. Kim²
 1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 3. Nonlinear Physics, Saratov State University, Saratov, Russian Federation; 4. IRE RAS, Moscow, Russian Federation

4:18

- FB-13. Average and local Dzyaloshinskii-Moriya interaction (DMI) in thin films with interfacial DMI determined by magnetic force microscopy.** *H.J. Hug*^{1,2}, M. Penedo¹, M. Bacani¹, X. Zhao¹, A.O. Mandru¹ and M.A. Marioni¹ 1. *Empa, Duebendorf, Switzerland*; 2. *Physics, University of Basel, Basel, Switzerland*

THURSDAY
 AFTERNOON
 1:30

ROOM 403-405

Session FC
DOMAIN WALL AND VORTEX DYNAMICS II

Andrei Slavin, Chair
 Oakland University, Rochester Hills, MI

1:30

- FC-01. Vortex Core Motion Driven by Magnon Spin Seebeck Effect.** *M. Vogel*¹, J. Wild¹, T. Mewes², C.K. Mewes³, J. Zweck¹ and C. Back¹ 1. *Physics, University of Regensburg, Regensburg, Germany*; 2. *Physics, University of Alabama, Tuscaloosa, AL*; 3. *Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL*

1:42

- FC-02. Tailoring the Gyrotropic Resonance of Magnetic Vortices by Strain.** *S. Finizio*¹, S. Wintz¹, E. Kirk², A.K. Suszka², S. Gliga¹, P. Wohlhüter², K. Zeissler³ and J. Raabe¹ 1. *Paul Scherrer Institut, Villigen PSI, Switzerland*; 2. *Department of Materials, ETHZ/Paul Scherrer Institute, Villigen, Switzerland*; 3. *School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

1:54

- FC-03. Theory of Dzyaloshinskii domain wall tilt in ferromagnetic nanostrips.** C. Muratov¹, V. Slstikov², A.G. Kolesnikov³ and O. Tretiakov⁴ 1. *Mathematical Sciences, NJIT, Newark, NJ;* 2. *University of Bristol, Bristol, United Kingdom;* 3. *Far Eastern Federal University, Vladivostok, Russian Federation;* 4. *Tohoku University, Sendai, Japan*

2:06

- FC-04. Dzyaloshinskii-Moriya interaction in Pt/Co/oxide trilayers: dependence on the degree of ferromagnet oxidation.** S. Pizzini¹, D. Chaves¹, V. Krizakova¹ and J. Vogel² 1. *Institut Néel, CNRS, Grenoble, France;* 2. *Institut Néel, CNRS, Grenoble, France*

2:18

- FC-05. Manipulation of Magnetic Skyrmions in Ultrathin Pt/Co/MgO Nanostructures by External Magnetic Field and In-plane Current.** R. Juge¹, S. Je¹, D.D. Chaves², S. Pizzini², L.D. Buda-Prejbeanu³, L. Aballe⁴, M. Foerster⁴, A. Locatelli⁵, T.O. Mendes⁵, F. Maccherozzi⁶, S.S. Dhessi⁶, S. Auffret¹, G. Gaudin⁷, J. Vogel² and O. Boulle⁸ 1. *CEA-SPINTEC, Grenoble, France;* 2. *Institut Néel, CNRS, Grenoble, France;* 3. *Univ. Grenoble Alpes, CNRS, CEA, SPINTEC, Grenoble, France;* 4. *ALBA Synchrotron, Barcelona, Spain;* 5. *Elettra Synchrotron, Trieste, Italy;* 6. *Diamond Light Source Ltd, Didcot, United Kingdom;* 7. *SPINTEC (CNRS/CEA), Grenoble, France;* 8. *SPINTEC, Grenoble, France*

2:30

- FC-06. Domain Wall Motion Driven by Mechanical Waves.** R. Yanes¹, M. Voto¹, S. Moretti¹ and L. Lopez-Diaz¹ 1. *Applied Physics, University of Salamanca, Salamanca, Spain*

2:42

- FC-07. Fast current induced magnetic domain wall motion in compensated ferrimagnet.** S.A. Siddiqui¹, J. Han¹, J.T. Finley¹, C. Ross², M. Baldo¹ and L. Liu¹ 1. *Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA;* 2. *Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

2:54

- FC-08. Ultrafast magnetization dynamics probed by Lorentz microscopy.** M. Möller¹, N. Rubiano da Silva¹, A. Feist¹, S. Schäfer¹ and C. Ropers¹ 1. *4th Physical Institute, University of Göttingen, Göttingen, Germany*

3:06

- FC-09. Different logic gates from a single array of magnetic vortex disks with in-plane anisotropy.** A.P. Guimaraes¹ and H. Vigo Cotrina¹ 1. *CBPF, Rio de Janeiro, Brazil*

- FC-10. Time-resolved Kerr imaging of nano-contact spin-torque vortex oscillators. (Invited)** P.S. Keatley¹, S. Redjai Sani^{2,3}, G. Hrkac⁴, S. Mohseni^{2,5}, P. Dürrenfeld⁶, T. Loughran¹, J. Åkerman^{6,2} and R.J. Hicken¹ *1. Department of Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 2. Materials and Nano Physics, KTH Royal Institute of Technology, Kista, Sweden; 3. Materials Science and Engineering, MIT - Massachusetts Institute of Technology, Cambridge, MA; 4. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 5. Department of Physics, Shahid Beheshti University, Tehran, The Islamic Republic of Iran; 6. Department of Physics, University of Gothenburg, Göteborg, Sweden*

- FC-11. On the Discrimination Between Nucleation and Propagation in Nanomagnetic Logic Devices.** G. Ziemys¹, G. Csaba² and M. Becherer³ *1. Chair of Technical Electronics, Technical University of Munich, Munich, Germany; 2. Faculty of Information Technology and Bionics, Pazmany Peter Catholic University, Budapest, Hungary; 3. Chair of Nanoelectronics, Technical University of Munich, Munich, Germany*

- FC-12. Resonant expulsion of vortex core in magnetic tunnel junction with FeB free layer.** S. Tsunegi¹, K. Yakushiji¹, A. Fukushima¹, S. Yuasa¹ and H. Kubota¹ *1. Spintronics Research Center, AIST, Tsukuba, Japan*

- FC-13. Magnetic domain wall creep dynamics in perpendicularly magnetised CoFeB/MgO microstructures.** L. Herrera Diez¹, V. Jeudy², G. Durin³, A. Casiraghi³, Y. Liu¹, G. Agnus¹, M. Voto⁴, L. Lopez-Diaz⁵, J. Langer⁶, B. Ocker⁶ and D. Ravelosona¹ *1. University of Paris Sud, C2N, Orsay, Orsay, France; 2. Laboratoire de Physique des Solides, Orsay, France; 3. Nanoscience and Material, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 4. Universidad de Salamanca, Salamanca, Spain; 5. Applied Physics, University of Salamanca, Salamanca, Spain; 6. Singulus AG, Kahl, Germany*

Session FD

MAGNETIZATION DYNAMICS III

Paul Keatley, Co-Chair
University of Exeter, Exeter, United Kingdom
Andreas Ney, Co-Chair
Johannes Kepler University Linz, Linz, Austria

1:30

- FD-01. Magnonics with chiral magnetic solitons.** *O. Eriksson*^{1,2}
1. Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Natural Science and Technology, Örebro University, Örebro, Sweden

1:42

- FD-02. Merging magnetic droplets by a magnetic field pulse.**
*C. Wang*¹, *D. Xiao*¹ and *Y. Liu*¹ *1. School of Physics and Engineering, Tongji University, Shanghai, China*

1:54

- FD-03. Direct observation of magnetic droplets in all-perpendicular spin torque nano-oscillators.** *S. Chung*^{1,2}, *T.Q. Le*^{2,3}, *M. Ahlberg*³, *M. Weigand*⁴, *I. Bykova*⁴, *A.A. Awad*³, *H. Mazraati*², *A. Houshang*³, *S. Jiang*², *T. Nguyen*⁵, *E.J. Goering*⁴, *G.A. Schuetz*⁴, *J. Gräfe*⁴ and *J. Åkerman*^{2,3}
1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Department of Applied Physics, School of Engineering Sciences, KTH Royal Institute of Technology, Stockholm, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 5. Laboratory of Magnetism and Superconductivity, Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Vietnam

2:06

- FD-04. An intrinsic nano-constriction based spin torque nano-oscillator.** *M. Haidar*¹, *A.A. Awad*¹, *A. Houshang*¹, *M. Dvornik*¹, *R. Khymyn*¹ and *J. Åkerman*¹ *1. Physics Department, Gothenburg University, Gothenburg, Sweden*

2:18

- FD-05. Mutual synchronization of spin Hall nano-oscillators in weak in-plane fields.** *H. Mazraati*^{1,2}, *M. Zahedinejad*³, *A.A. Awad*³, *S. Chung*^{4,2}, *M. Dvornik*³, *A. Houshang*^{3,1}, *S. Banuazizi*² and *J. Åkerman*^{3,2} *1. NanOsc AB, Stockholm, Sweden; 2. Applied Physics, KTH Royal Institute of Technology, Stockholm, Sweden; 3. Physics, University of Gothenburg, Gothenburg, Sweden; 4. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

2:30

- FD-06. Synchronization of Spintronic Feedback Nano Oscillator to Microwave Signal.** *H. Singh*¹, *K. Konishi*², *S.S. Bhuktare*¹, *A. Bose*¹, *S. Miwa*², *A. Fukushima*³, *K. Yakushiji*³, *S. Yuasa*³, *H. Kubota*³, *Y. Suzuki*² and *A.A. Tulapurkar*¹ *1. Electrical Engineering, Indian Institute of Technology, Bombay, Mumbai, India; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:42

- FD-07. Electrical field control of current-induced spin-orbit effects and spin wave in spin current devices.** *R. Liu*^{1,2}, *L. Chen*¹, *S. Urazhdin*² and *Y. Du*¹ *1. School of Physics and Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing, China; 2. Department of Physics, Emory University, Atlanta, GA*

2:54

- FD-08. Spin-orbit torque switching by using an ultrathin film without large spin Hall angle.** *C. Bi*¹ and *W. Wang*¹
1. Department of Physics, University of Arizona, Tucson, AZ

3:06

- FD-09. Magneto-mechanical resonator for heat dissipation measurements in current-driven ferromagnetic resonance system.** *S. Cho*¹, *M. Jo*¹, *S. Park*¹, *J. Lee*¹, *C. Yang*¹, *S. Kang*¹ and *Y. Park*¹ *1. Department of Physics & Astronomy, Seoul National University, Seoul, The Republic of Korea*

3:18

- FD-10. Nonlinear spin-wave interaction in ultrathin ferromagnetic films with interfacial Dzyaloshinskii-Moriya interaction.** *R.V. Verba*¹, *V. Tyberkevych*² and *A.N. Slavin*² *1. Institute of Magnetism, Kyiv, Ukraine; 2. Department of Physics, Oakland University, Rochester, MI*

3:30

- FD-11. Atomistic simulations of exchange coupled composite (ECC) media toward heat assisted magnetic recording (HAMR).** *R.V. Ababei*¹, *R.F. Evans*¹ and *R. Chantrell*¹ *1. Physics, The University of York, York, United Kingdom*

3:42

- FD-12. Ultrafast Spectroscopy of a Single Nanomagnet Magnetoelastically Coupled to Surface Acoustic Waves.** *M. Jaris*¹, *W. Yang*¹, *C. Berk*¹, *D. Hibbard-Lubow*¹ and *H. Schmidt*¹ *1. Electrical Engineering, University of California Santa Cruz, Santa Cruz, CA*

- FD-13. Dynamics of Macrospins: Symmetric and Asymmetric Frustrated Structures.** *W. Bang*^{1,2}, *M. Jungfleisch*², *P.N. Lapa*², *A. Hoffmann*², *F. Montoncello*³, *L. Giovannini*³, *B.W. Farmer*⁴, *L.E. De Long*⁴ and *J. Ketterson*^{1,5} *1. Physics and Astronomy, Northwestern University, Evanston, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Physics, University of Ferrara, Ferrara, Italy; 4. Physics and Astronomy, University of Kentucky, Lexington, KY; 5. Electrical and Computer Engineering, Northwestern University, Evanston, IL*

4:06

- FD-14. Symmetry Breaking and Nonlinear Localization of Spin Excitations in a Double Magnetic Film Structure: Implications for Ferromagnetic Resonance.** *A. Ferona*¹ and *R.E. Camley*¹ *1. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO*

4:18

- FD-15. Magnetic flicker noise in low-N ensembles of magnetic random telegraph noise oscillators.** *B. Costanzi*¹ and *D. Dahlberg*² *1. Physics, Carleton College, Minneapolis, MN; 2. Physics, University of Minnesota, Minneapolis, MN*

THURSDAY
AFTERNOON
1:30

ROOM 315-316

Session FE EXCHANGE BIAS

Alexander Grutter, Chair
NIST Center for Neutron Research, Gaithersburg, MD

1:30

- FE-01. Insight into the formation of exchange bias in bulk nanocomposite FeMn.** *I.J. McDonald*¹, *M.E. Jamer*², *W.D. Ratcliff*², *J. Borchers*² and *L. Lewis*¹ *1. Chemical Engineering, Northeastern University, Boston, MA; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*

1:42

- FE-02. Magnetization Reversal in Strongly Coupled TbFe-based Exchange Spring Media.** *X. Zhao*¹, *J. Schwenk*², *A. Mandru*¹, *M.A. Marioni*¹ and *H.J. Hug*¹ *1. Empa, Duebendorf, Switzerland; 2. NIST, Gaithersburg, MD*

1:54

- FE-03. The origin of the athermal training effect in exchange bias.** *S. Jenkins*¹, *R. Chantrell*¹ and *R.F. Evans*¹ *1. Department of Physics, University of York, York, United Kingdom*

2:06

- FE-04. Exchange bias properties of A2-Mn₂VAl/Fe bilayers.** T. Tsuchiya¹, R. Kobayashi¹, T. Kubota¹, K. Saito², K. Ono², T. Ohhara³, A. Nakao⁴ and K. Takanashi¹ 1. *Institute for Materials Research, Tohoku University, Sendai, Japan;* 2. *Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Japan;* 3. *J-PARC Center, Japan Atomic Energy Agency, Tokai, Japan;* 4. *Cross Tokai, Tokai, Japan*

2:18

- FE-05. Magnetic and Structural Properties of Antiferromagnetic Mn₂VSi and Mn₃Ga Alloy Films.** H. Wu¹, I. Sudoh², J. Kim¹, G. Vallejo-Fernandez¹ and A. Hirohata¹ 1. *Physics, University of York, York, United Kingdom;* 2. *Nagaoka Univ. of Tech., Niigata, Japan*

2:30

- FE-06. Parametric study on CoFe/IrMn exchange bias layers using the realistic micromagnetic model.** W. Daeng-am¹, P. Chureemart¹, L.J. Atkinson², R. Chantrell² and J. Chureemart¹ 1. *Maharakham University, Kantarawichai, Thailand;* 2. *Physics, The University of York, York, United Kingdom*

2:42

- FE-07. Large Increase of Exchange Bias in MnN/CoFe Bilayers after High-Temperature Annealing.** M. Dunz¹ and M. Meinert¹ 1. *Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

2:54

- FE-08. Properties of the Vertical Exchange Bias-like Effect in Co:ZnO.** M. Buchner¹, B. Henne¹, A. Ney¹ and V. Ney¹ 1. *Solid State Physics Division, Johannes Kepler University Linz, Linz, Austria*

3:06

- FE-09. Parallel Existence of a Positive and Negative Exchange Bias Shift in a Ferrimagnetic Bilayer System.** B. Hebler¹, P. Reinhardt², G. Katona³, O. Hellwig^{2,4} and M. Albrecht¹ 1. *Institute of Physics, University of Augsburg, Augsburg, Germany;* 2. *Institute of Physics, Technische Universität Chemnitz, Chemnitz, Germany;* 3. *Solid State Physics, University Debrecen, Debrecen, Hungary;* 4. *Ion Beam Physics & Materials Research, Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany*

3:18

- FE-10. Temperature-Dependent Spin Alignment in Nanostructured Ferromagnetic/Antiferromagnetic Oxide Thin Film Bilayers.** A.D. Bang¹, S. Sloetjes^{1,2}, F.K. Olsen¹, I. Hallsteinsen^{1,2}, T. Tybell¹, E. Arenholz², E. Folven¹ and J.K. Grepstad¹ 1. *Department of Electronic Systems, Norwegian University of Science and Technology, Trondheim, Norway;* 2. *Advanced Light Source, Berkeley, CA*

3:30

- FE-11. Design and fabrication of synthetic ferrimagnets: bringing atomistic simulation into the lab.** J.N. Scott¹, W.G. Hendren¹, R.F. Evans² and R. Bowman¹ 1. *Queen's University Belfast, Belfast, United Kingdom*; 2. *Department of Physics, University of York, York, United Kingdom*

3:42

- FE-12. Nanometer Scale Exchange Strength Modulation in Continuously Graded Ferromagnets.** B.J. Kirby¹, L. Fallarino², P. Riego², M. Pancaldi², B.B. Maranville¹, C.W. Miller³ and A. Berger² 1. *NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*; 2. *CIC nanoGUNE, San Sebastian - Donostia, Spain*; 3. *Materials Science, Rochester Institute of Technology, Rochester, NY*

3:54

- FE-13. Observing exchange bias effect by reactive F ion implantation in BCC Fe thin film.** R. Gupta¹, S. Sen², V.R. Reddy³, A. Gupta⁴ and D. Avasthi⁴ 1. *School of Instrumentation, Devi Ahilya University, Indore, India*; 2. *School of Instrumentation DAVV Indore, School of Instrumentation, Indore, India*; 3. *Indore Center, UGC DAE CSR, Indore, India*; 4. *Center for Spintronics, Amity University, Noida, India*

4:06

- FE-14. Control of Spin Textures in Coupled Ferromagnetic-Antiferromagnetic Microstructures.** M.S. Lee¹, R.V. Chopdekar¹, J.P. Brown¹, A. Kane¹, S. Retterer², A. Scholl³ and Y. Takamura¹ 1. *Materials Science & Engineering, University of California, Davis, Davis, CA*; 2. *Oak Ridge National Laboratory, Oak Ridge, TN*; 3. *ALS, Lawrence Berkeley National Laboratory, Berkeley, CA*

THURSDAY
AFTERNOON
1:30

ROOM 317-318

Session FF

VOLTAGE CONTROLLED MAGNETISM

Arti Kashyap, Co-Chair
Indian Institute of Technology, Mandi, HP, Mandi, India
Ralph Skomski, Co-Chair
University of Nebraska, Lincoln, NE

1:30

- FF-01. Role of CoFeB Thickness in Electric Field Controlled Sub-100 nm Sized Magnetic Tunnel Junctions.** J. Lourembam¹, J. Huang¹, S. Lim¹ and E.F. Gerard¹ 1. *Non-Volatile Memory, Data Storage Institute (A*STAR), Singapore, Singapore*

- FF-02. Giant voltage-control-magnetic-anisotropy (VCMA) effect in a crystallographically strained CoFe system.** *Y. Kato*¹, *Y. Saito*¹, *H. Yoda*¹, *H. Sugiyama*¹, *K. Koi*¹, *S. Oikawa*¹, *M. Ishikawa*¹, *T. Inokuchi*¹, *N. Shimomura*¹, *M. Shimizu*¹, *S. Shirotori*¹, *B. Altansargai*¹, *Y. Ohsawa*¹, *K. Ikegami*¹, *Y. Kamiguchi*¹, *A. Tiwari*¹ and *A. Kurobe*¹ *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

- FF-03. Voltage controlled exchange stiffness and magnetic anisotropy in CoFeB characterized by spin waves excitation in magnetic tunnel junction.** *J. Cho*¹, *S. Miwa*², *K. Yakushiji*³, *H. Kubota*³, *A. Fukushima*³, *C. You*^{4,5}, *S. Yuasa*³ and *Y. Suzuki*^{2,3} *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. Graduate School of Engineering Science, Osaka University & Center for Spintronics Research Network, Osaka, Japan; 3. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 4. Department of Emerging Materials Science, DGIST, Daegu, The Republic of Korea; 5. Global Center for Bio-Convergence Spin System, DGIST, Daegu, The Republic of Korea*

- FF-04. Influence of post-annealing on voltage-controlled magnetic anisotropy in Fe/Pd/MgO multilayer.** *J. Suwardy*¹, *K. Nawaoka*¹, *M. Goto*^{1,2}, *Y. Suzuki*^{1,2} and *S. Miwa*^{1,2} *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan*

- FF-05. Effect of Fluorine Addition to the Ferromagnetic Interface on the PMA and its Voltage Control.** *M. Pankieiev*¹ and *K. Kita*¹ *1. Materials Engineering, The University of Tokyo, Tokyo, Japan*

- FF-06. Influence of W doping on perpendicular magnetic anisotropy at the Fe/MgO interface and its control by voltage applications.** *T. Nozaki*¹, *T. Yamamoto*¹, *S. Tamaru*¹, *H. Kubota*¹, *A. Fukushima*¹, *Y. Suzuki*^{1,2} and *S. Yuasa*¹ *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

- FF-07. Electric field induced variation of perpendicular magnetic anisotropy due to O-migration at Fe/MgO Interface.** *F. Ibrahim*^{2,1}, *A. Hallal*^{1,2}, *B. Dieny*^{2,1} and *M. Chshiev*^{2,1} *1. INAC-SPINTEC, CEA, Grenoble, France; 2. INAC-SPINTEC, Université Grenoble Alpes, Grenoble, France*

- FF-08. Withdrawn**

- FF-09. Control ferromagnets at room temperature without external magnetic field.** *K. Wang*¹ *1. Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

- FF-10. Electric field controlled orbital moment: A correlation to magnetic anisotropy modulation.** *H. Mizuno*¹, *T. Moriyama*¹, *K. Tanaka*¹, *M. Kawaguchi*², *T. Koyama*², *D. Chiba*² and *T. Ono*¹ *1. Kyoto University, Uji, Japan; 2. The University of Tokyo, Tokyo, Japan*

- FF-11. Stability diagram of magnetization switching in perpendicular magnetic tunnel junctions.** *W. Skowronski*¹, *M. Czapkiewicz*¹, *S. Zietek*¹, *J. Checinski*¹, *P. Rzeszut*¹, *M. Frankowski*¹, *J. Wrona*² and *T. Stobiecki*¹ *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Singulus Technologies AG, Kahl am Main, Germany*

- FF-12. Voltage-Controlled Magnetic Tunnel Junctions for Probabilistic Computing.** *B. Parks*¹, *S. Oberdick*², *M. Bapna*¹ and *S. Majetich*¹ *1. Carnegie Mellon University, Pittsburgh, PA; 2. NIST, Boulder, CO*

- FF-13. Room temperature VCMA in Co/Pt bilayers deposited on ALD-grown SrTiO₃.** *B.F. Vermeulen*^{1,2}, *J. Swerts*², *S. Couet*², *M. Popovici*², *L.P. Radu*², *W. Devulder*³, *C. Detavernier*³, *K. Temst*¹, *G. Groeseneken*^{4,2} and *K.M. Martens*^{1,2} *1. Instituut voor Kern- en Stralingsfysica, KULeuven/imec, Leuven, Belgium; 2. imec, Leuven, Belgium; 3. Solid State Physics, Ghent University, Ghent, Belgium; 4. Department of Electrical Engineering, KULeuven, Leuven, Belgium*

- FF-14. Saturation of VCMA in Out-of-Plane Magnetized CoFeB/MgO/CoFeB Magnetic Tunnel Junctions.** *M.C. Williamson*¹, *M. de Rozieres*¹, *H. Almasi*², *X. Chao*³, *W. Wang*², *J. Wang*³ and *M. Tsoi*¹ *1. Physics, University of Texas at Austin, Austin, TX; 2. Physics, University of Arizona, Tucson, AZ; 3. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN*

- FF-15. Electric Field Control on Perpendicular Magnetic Anisotropy in Tetragonal Fe₄N/BiFeO₃ Heterostructures.** *L. Yin*¹ and *W. Mi*¹ *1. Department of Applied Physics, Tianjin University, Tianjin, China*

Session FG

MAGNETIC TRANSITIONS AND CORRELATIONS

Shulei Zhang, Co-Chair
Argonne National Laboratory, Lemont, IL

Barry Zink, Co-Chair
University of Denver, Denver, CO

1:30

- FG-01. Skyrmion Crystals Generated by Dzyaloshinskii-Moriya Interaction: Dynamics and Phase Transition.** H. Diep¹, S. El Hog¹ and A. Bailly-Reyre¹ *1. Physics, University of Cergy-Pontoise, Cergy-Pontoise, France*

1:42

- FG-02. Nonlinear Magnetic Response and Relaxation Phenomena of the Chiral Soliton Lattice in $\text{Cr}_{1/3}\text{NbS}_2$.** E. Clements¹, R. Das¹, M. Phan¹, L. Li², V. Keppens², D. Mandrus², M. Osofsky³ and H. Srikanth¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN; 3. Naval Research Laboratory, DC, WA*

1:54

- FG-03. Spin-Waves in Thin Films with Non-Collinear Spin Configurations Generated by Dzyaloshinskii-Moriya Interaction: Spectrum and Low-Temperature Magnetization.** H. Diep¹, S. El Hog² and H. Puzskarski³ *1. Physics, University of Cergy-Pontoise, Cergy-Pontoise, France; 2. Physics, University of Cergy-Pontoise, Cergy-Pontoise, France; 3. Surface Physics, University Adam Mickiewicz, Poznan, Poland*

2:06

- FG-04. Role of magnetic correlations on the antiferromagnetic-to-ferromagnetic phase transition in FeRh. (Invited)** V. Uhlir¹, S.K. Patel², J. Arregi¹ and E.E. Fullerton² *1. Brno University of Technology, Brno, Czech Republic; 2. UC San Diego, La Jolla, CA*

2:42

- FG-05. Relaxation of the Superheated State in the FeRh First Order Magnetic Phase Transition.** R.C. Temple¹, J. Massey¹ and C.H. Marrows¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

2:54

- FG-06. Quantum ferromagnet in the proximity of the tricritical point.** P. Opletal¹, J. Prokleska¹, J. Valenta¹, P. Proschek¹, V. Tkac¹, R. Tarasenko¹, M. Běhounková¹, Šárka Matoušková², M.M. Abd-Elmeguid^{1,3} and V. Sechovský¹ *1. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 2. Institute of Geology, Czech Academy of Science v.v.i, Prague, Czech Republic; 3. Physikalisches Institut, Universität zu Köln, Köln, Germany*

3:06

- FG-07. Unusual Critical Region Behavior of the Magnetic Susceptibility in EuSe.** *N. Bykovetz*¹, *J. Klein*² and *C. Lin*¹
1. *Department of Physics, Temple University, Philadelphia, PA;*
2. *Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA*

3:18

- FG-08. Withdrawn**

3:30

- FG-09. Magnetically driven insulating behavior in bulk Ni-Mn-In Heusler alloys.** *H. Yang*^{1,2}, *B. Wang*^{1,2}, *D. Sun*^{1,2} and *R. Li*^{1,2}
1. *Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China;* 2. *Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*

3:42

- FG-10. Anomalous behavior of the magnetic hyperfine field at ¹⁴⁰Ce impurities at La sites in LaMnSi₂.** *C. Domienikan*¹, *B. Bosch-Santos*¹, *G.A. Cabrera-Pasca*², *R.N. Saxena*¹ and *A.W. Carbonari*³
1. *CRPq, IPEN/USP, Sao Paulo, Brazil;*
2. *FACET, Universidade Federal do Pará, Abaetetuba, Brazil;*
3. *CRPq, IPEN-CNEN/SP, Sao Paulo, Brazil*

3:54

- FG-11. Evolution of Griffiths phase and critical exponents by site dilution of Ga³⁺ in SrRuO₃.** *R. Gupta*¹ and *A.K. Pramanik*¹
1. *School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India*

4:06

- FG-12. Critical behavior of the ferromagnetic transition in intermetallic alloys NdScSi, NdScGe.** *A. Oleaga*¹, *V. Liubachko*^{1,2}, *P. Manfrinetti*^{3,4}, *A. Provino*^{3,4}, *Y. Vysochanskii*² and *A. Salazar*¹
1. *Fisica Aplicada I, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain;*
2. *Institute for Solid State Physics and Chemistry, Uzhgorod University, Uzhgorod, Ukraine;* 3. *Department of Chemistry, University of Genova, Genova, Italy;* 4. *Institute SPIN-CNR, Genova, Italy*

4:18

- FG-13. Single crystal growth and anisotropic magnetic properties of HoAl₂Ge₂.** *S.K. Dhar*¹, *M. Matin*¹, *R. Mondal*¹, *A. Provino*², *P. Manfrinetti*³ and *A. Thamizhavel*¹
1. *Condensed Matter Physics & Materials Science, Tata Institute of Fundamental Research, Mumbai, India;* 2. *Department of Chemistry, University of Genova, Genova, Italy;* 3. *Department of Chemistry, University of Genova, Genova, Italy*

Session FH
MOLECULAR MAGNETS AND BULK OXIDES

Srinivasa Rao Singamaneni, Chair
The University of Texas at El Paso, El Paso, TX

1:30

- FH-01. Finite Size Effect on the Spin Dynamics of the Quasi-One-Dimensional Spin Chains System SrCuO₂.** *D. Bounoua*¹, R. Saint-Martin¹, S. Petit², Y. Sidis², F. Bourdarot³ and L. Pinsard-Gaudart¹ *1. Equipe Synthèse Propriétés et Modélisation des Matériaux, Institut de Chimie Moléculaire et des Matériaux d'Orsay, Orsay, France; 2. Laboratoire Léon Brillouin- CEA Saclay, Gif sur Yvette, France; 3. Institut Laue Langevin, Grenoble, France*

1:42

- FH-02. Magnetic Critical Fluctuations of Ising-like Antiferromagnet DyScO₃.** *L. Wu*¹, A. Podlesnyak¹ and M. Lumsden¹ *1. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN*

1:54

- FH-03. Magnetization Reversal and Magnetic Anomalies in Disordered Double Perovskite Oxide Sm₂FeCoO₆.** *G. Haripriya*¹, S. Kanikrishnan¹ and V. Sankaranarayanan¹ *1. Physics, IIT Madras, Chennai, India*

2:06

- FH-04. From Molecular Magnetism to Molecular Spintronics and Quantum Computing. (Invited)** *E. Coronado*¹, A. Gaita Ariño¹, A. Forment Aliaga¹ and H. Prima Garcia¹ *1. Molecular Science Institute (ICMol), Universitat de Valencia, Paterna, Spain*

2:42

- FH-05. Merging Spin and Light in Organic Devices. (Invited)** *L.E. Hueso*^{1,2} *1. CIC nanoGUNE, San Sebastian, Spain; 2. Ikerbasque, Basque Foundation for Science, Bilbao, Spain*

3:18

- FH-06. Coherent quantum control and magnetism on atoms on surfaces. (Invited)** *T. Choi*^{1,2}, C. Lutz³ and A. Heinrich^{1,2} *1. Quantum Nanoscience Center, IBS, Seoul, The Republic of Korea; 2. Physics, Ewha Womans University, Seoul, The Republic of Korea; 3. IBM Almaden Research Center, San Jose, CA*

- FH-07. Singlet ground state in the spin-1/2 weakly coupled dimer compound $\text{NH}_4[(\text{V}_2\text{O}_3)_2(4,4'\text{-bpy})_2(\text{H}_2\text{PO}_4)(\text{PO}_4)_2] \cdot 0.5\text{H}_2\text{O}$.** A. Unnikrishnan¹, R.C. Nath¹, V. Kumar², A.V. Mahajan², P. Anjana³, A. Thirumurugan³ and J. Sichelschmidt⁴
 1. *Physics, Indian Institute of Science Education and Research Thiruvananthapuram, Trivandrum, India;* 2. *Physics, Indian Institute of Technology Bombay, Mumbai, India;*
 3. *Chemistry, Indian Institute of Science Education and Research Thiruvananthapuram, Thiruvananthapuram, India;*
 4. *Physics, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

4:06

- FH-08. Wide Magnetic Bistability in an All-organic Molecular Material.** A. Andrasi¹, X. Li¹, C. Pak¹, Y. Hu¹ and M. Shatruk¹
 1. *Florida State University, Tallahassee, FL*

4:18

- FH-09. Polarized neutron reflectivity analysis of room-temperature ferromagnetism across a molecular/transition metal interface.** J.E. Shoup¹, F. Al Ma'Mari², M.D. Rogers³, O. Cespedes², C. Kinane⁴, A. Caruana⁴, S. Langridge⁴, J. Borchers⁵, B.J. Kirby⁵ and D.A. Arena¹
 1. *Physics, University of South Florida, Tampa, FL;* 2. *School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom;*
 3. *Condensed Matter, University of Leeds, Leeds, United Kingdom;* 4. *Rutherford Appleton Laboratory, Chilton, United Kingdom;* 5. *NIST Center for Neutron Research, NIST, Gaithersburg, MD*

THURSDAY
 AFTERNOON
 1:30

ROOM 411-412

Session FI

MAGNETO-CALORIC MATERIALS III

R. Nirmala, Co-Chair

Indian Institute of Technology Madras, Chennai, India

Raju Ramanujan, Co-Chair

Nanyang Technological University, Singapore, Singapore

1:30

- FI-01. Thermal Conductivity of Magnetocaloric Materials: Impact of its Temperature Dependency on Magnetic Refrigeration.** A. Davarpanah¹, D.J. Silva¹, A. Lopes¹, J.H. da Silva¹, X. Miao², L. Caron^{2,3}, E. Brück², V.B. Amaral¹ and J.S. Amaral¹
 1. *Department of Physics / CICECO - Aveiro Institute of Materials, Aveiro, Portugal;* 2. *Delft University of Technology, Delft, Netherlands;* 3. *Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

- FI-02. How low is the temperature that we need to reach in calorimetric measurements to accurately obtain the magnetocaloric effect? The Gd and Gd₅Si₂Ge₂ cases.** L.M. Moreno-Ramírez¹, V. Franco¹, A. Conde¹, H. Neves Bez², Y. Mudryk² and V.K. Pecharsky^{2,3} *1. Sevilla University, Sevilla, Spain; 2. Ames Laboratory, Iowa State University, Ames, IA; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

- FI-03. Characterization of Magnetic High Entropy Alloys for Magnetocaloric Applications.** A.E. Perrin¹, M. Sorescu², M. Burton¹, D. Laughlin¹ and M.E. McHenry¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Physics, Duquesne University, Pittsburgh, PA*

- FI-04. A new procedure for the determination of the order of thermomagnetic phase transitions. (Invited)** J. Law¹, V. Franco¹, A. Conde¹, V. Brabander², D.Y. Karpenkov², I.A. Radulov², K.P. Skokov² and O. Gutfleisch² *1. Universidad de Sevilla, Sevilla, Spain; 2. FM, TU Darmstadt, Darmstadt, Germany*

- FI-05. Tailoring magnetostructural transition by thermal vacancies in magnetocaloric compounds MnCo_{1-x}Fe_xGe.** Y. Li¹, E. Liu¹, Z. Wei¹, X. Xi¹, W. Wang¹ and G. Wu¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

- FI-06. Direct and Indirect Measurement of the Magnetocaloric Effect in Bulk and Nanostructured Ni-Mn-In Heusler Alloy.** M. Ghahremani^{1,2}, A. Aslani², M. Hosseinnia³, L.H. Bennett² and E. Della Torre² *1. Computer Science, Mathematics, and Engineering, Shepherd University, Shepherdstown, WV; 2. Electrical and Computer Engineering, The George Washington University, Washington, DC; 3. University of Glasgow, Glasgow, United Kingdom*

- FI-07. Neutron Diffraction Studies of the Boron Substituted Heusler Alloy Ni₅₀Mn₃₅In_{14.25}B_{0.75}.** S. Pandey¹, A. Al-Wahish², J. Chen³, A. Quetz¹, A. Aryal¹, I. Dubenko¹, D. Mazumdar¹, H. Kaiser², S. Stadler³ and N. Ali¹ *1. Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. University of Missouri Research Reactor (MURR), Columbia, MO; 3. Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

- FI-08. Enhanced room-temperature magnetocaloric effect and tunable magnetic response in Ga-substituted AlFe₂B₂ alloys.** R. Barua¹, B. Lejeune¹, B. Jensen², E. Levin², L. Ke², W. McCallum³, M.J. Kramer^{2,4} and L. Lewis¹ *1. Northeastern University, Boston, MA; 2. Ames Laboratory, Ames, IA; 3. McCallum Consulting LLC, Santa Fe, NM; 4. Iowa State University, Ames, IA*

- FI-09. Texture-induced Anisotropy in the Magnetocaloric effect of polycrystalline Dy₅Si₃Ge.** R. Nirmala¹, Y. Mudryk², D. Paudyal² and V.K. Pecharsky^{2,3} 1. *Department of Physics, Indian Institute of Technology Madras, Chennai, India;* 2. *The Ames Laboratory, U. S. Department of Energy, Iowa State University, Ames, IA;* 3. *Department of Materials Science and Engineering, Iowa State University, Ames, IA*

- FI-10. A combined first-principles and Monte Carlo approach to the magnetocaloric effect of magnetovolume-coupled materials.** N.M. Fortunato¹, J.S. Amaral¹, Z. Gercsi², J. Gonçalves¹, V.B. Amaral¹, V.K. Pecharsky³, K. Sandeman⁴ and L. Cohen⁵ 1. *CICECO & Physics Dept., Universidade de Aveiro, Aveiro, Portugal;* 2. *Physics, Trinity College Dublin, Dublin, Ireland;* 3. *Ames Laboratory, U.S. Department of Energy, and Department of Materials Science and Engineering, Iowa State University, Ames, IA;* 4. *Department of Physics, Imperial College London, London, United Kingdom;* 5. *Blackett Laboratory, Department of Physics, Imperial College London, London, United Kingdom*

- FI-11. Enhancement in magnetocaloric effect of pure ErCrO₃ with Gd doping.** J. Shi¹, S. Yin² and M. Jain^{2,3} 1. *Department of Materials Science and Engineering, University of Connecticut, Storrs, CT;* 2. *Department of Physics, University of Connecticut, Storrs, CT;* 3. *Institute of Materials Science, University of Connecticut, Storrs, CT*

- FI-12. Magnetocaloric Effects in Ni-Mn-Al Type Alloys.** R. Shull¹, D. Lepkowski², C. Dennis¹, A. Creuziger¹ and A. Giri³ 1. *National Institute of Standards and Technology, Gaithersburg, MD;* 2. *Electrical Engineering, Louisiana State University, Baton Rouge, LA;* 3. *Weapons and Materials Research Directorate, US Army Research Laboratory, Aberdeen Proving Ground, MD*

- FI-13. Magnetocaloric Effect in In-Substituted Gd-Co-Al Amorphous Alloys.** J.E. Douglas¹, E. Lass¹ and R. Shull² 1. *Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD;* 2. *National Institute of Standards and Technology, Gaithersburg, MD*

Session FP

**SPINTRONICS - FUNDAMENTALS AND DEVICES
(Poster Session)**

Eric Edwards, Chair
NIST, Boulder, CO

- FP-01. Spin field-effect transistor based on spin-orbit torque.** S.C. Baek¹, M. Kang¹, K. Park¹, K. Lee² and B. Park¹ *1. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 2. Korea University, Seoul, The Republic of Korea*
- FP-02. An Electrically Reconfigurable Logic Gate Intrinsically Enabled by Spin-Orbit Materials.** M. Kazemi¹ *1. Electrical and Computer Engineering, University of Rochester, Rochester, NY*
- FP-03. Ion Bombardment-Induced Easy-Cone Anisotropy in Double-MgO Free Layers for Perpendicular Magnetic Tunnel Junctions.** B. Teixeira¹, A. Timopheev^{2,3}, N. Caçoilo¹, S. Auffret^{2,3}, R.C. Sousa^{2,3}, B. Diény^{2,3}, E. Alves⁴ and N.A. Sobolev^{1,5} *1. Physics Department & i3N, University of Aveiro, Aveiro, Portugal; 2. INAC-SPINTEC, Université Grenoble Alpes, Grenoble, France; 3. CEA, INAC-SPINTEC and CNRS, SPINTEC, SPINTEC, Grenoble, France; 4. IPFN, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal; 5. National University of Science and Technology, MISiS, Moscow, Russian Federation*
- FP-04. Dielectric MgO as an Encapsulating Layer for Magnetic Tunnel Junctions in TMR or STTRAM.** T. Henry¹, K. Rook¹, S. Gee², T. Nguyen³, V. Ip¹, P. Turner¹, T. Boonstra², E.W. Singleton² and F. Cerio¹ *1. Advanced Deposition and Etch, Veeco Instruments Inc., Plainview, NY; 2. Recording Head Operations, Seagate Technology, Bloomington, MN; 3. Aerotek, Melville, NY*
- FP-05. Thermally Activated Magnetization Backhopping Based True Random Number Generator in Nano-ring MTJs.** J. Qin¹, X. Wang¹, T. Qu², B. Tao¹, C. Wan¹, L. Huang¹, T. Yu³, H. Wei¹, R. Victora⁴ and X. Han¹ *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China; 2. School of Physics and Astronomy, University of Minnesota-Twin Cities, Minneapolis, MN; 3. Department of Physics, Sichuan University, Chengdu, China; 4. Department of Electrical and Computer Engineering, University of Minnesota-Twin Cities, Minneapolis, MN*
- FP-06. Design of Self-Reference Sensing Circuit Utilizing Voltage-Controlled Magnetic Anisotropy.** H. Lee^{1,2}, A. Lee^{1,2}, F. Ebrahimi², P.K. Amiri^{1,2} and K.L. Wang¹ *1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Inston Inc., Los Angeles, CA*

- FP-07. Valley polarization in Weyl semimetals induced by tilted energy dispersion.** C. Yesilyurt¹, Z. Siu¹, T. Ghee², L. Gengchiao¹ and M.B. Jalil¹ 1. *Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*; 2. *Data Storage Institute, A Star, Singapore, Singapore*
- FP-08. Tunable magnetoresistance in topological insulator thin films.** Z. Siu¹, T. Ghee² and M.B. Jalil¹ 1. *Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*; 2. *Data Storage Institute, Singapore, Singapore*
- FP-09. Spin Polarizations in the FeNi/Graphene/Fe System for Magnetic Tunnel Junctions.** R. Choudhary¹, R. Skomski² and A. Kashyap¹ 1. *School of Basic Sciences, Physics, Indian Institute of Technology Mandi, HP, Mandi, India*; 2. *Physics and Astronomy, University of Nebraska, Lincoln, NE*
- FP-10. Methods to induce perpendicular magnetic anisotropy for full Heusler Co₂FeSi thin layers in p-MTJ structure.** S. Nakagawa¹, K. Shinohara¹ and Y. Takamura¹ 1. *School of Engineering, Tokyo Institute of Technology, Cambridge, MA*
- FP-11. First-principles study of MnAl for its application in MgO-based perpendicular magnetic tunnel junctions.** X. Zhang¹, L. Tao¹, J. Zhang², S. Liang¹, L. Jiang¹ and X. Han¹ 1. *State Key Lab of Magnetism, Institute of Physics, Beijing, China*; 2. *School of Physics and Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, China*
- FP-12. Barrier Breakdown Mechanism in Nano-scale Perpendicular Magnetic Tunnel Junctions with Ultrathin MgO Barrier.** H. Lv^{1,2}, D.C. Leita^{1,2}, Z. Hou¹, P. Freitas¹, S. Cardoso^{1,2}, T. Kämpfe³, J. Müller³, J. Langer⁴ and J. Wrona⁴ 1. *INESC - Microsistemas e Nanotecnologias and IN - Institute of Nanoscience and Nanotechnology, Lisbon, Portugal*; 2. *Instituto Superior Tecnico (IST), Universidade de Lisboa, Lisbon, Portugal*; 3. *Fraunhofer Institute for Photonic Microsystems IPMS, Dresden, Germany*; 4. *Singulus Technologies AG, Kahl am Main, Germany*
- FP-13. Fabrication of epitaxial CuN thin films for giant magnetoresistance devices exhibiting enhanced thermal stability.** Z. Wen^{1,2}, T. Kubota^{1,2} and K. Takanashi^{1,2} 1. *Institute for Materials Research, Tohoku University, Sendai, Japan*; 2. *Center for Spintronics Research Network, Tohoku University, Sendai, Japan*
- FP-14. A Framework for Simulating Giant and Tunnel Magnetoresistance in Granular Systems.** D. Kappe^{1,2}, C.H. Schroeder² and A. Hütten¹ 1. *Center for Spinelectronic Materials and Devices, Physics Department, Bielefeld University, Bielefeld, Germany*; 2. *Bielefeld Institute for Applied Materials Research, Bielefeld University of Applied Sciences, Bielefeld, Germany*

- FP-15. Magnetoresistance Properties and Application of Dual-type GMR-Spin Valve Device with Multi Turn μ -coils and Single Channel.** J. Choi¹, S. Kim¹, J. Rhee² and S. Lee¹ 1. *Oriental Biomedical Engineering, Sangji University, Wonju, The Republic of Korea*; 2. *Nanophysics, Sookmyung Women's University, Seoul, The Republic of Korea*
- FP-16. Characteristic features of the magnetoresistance in the ferromagnetic ($\text{Sr}_2\text{FeMoO}_{6-\delta}$) – dielectric (Sr_2MoO_4) nanocomposite.** S.E. Demyanov¹, N.A. Kalanda¹, M.V. Yarmolich¹, A.V. Petrov¹, S. Lee², D. Kim², S. Yu² and S. Oh² 1. *Cryogenic Research Division, Scientific-Practical Materials Research Center of the NAS of Belarus, Minsk, Belarus*; 2. *Physics, Chungbuk National University, Cheongju, The Republic of Korea*

THURSDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session FQ
SPIN AND CHARGE TRANSPORT EFFECTS IN METALS
(Poster Session)

Steven Bennett, Chair
U.S. Naval Research Laboratory, Washington, DC

- FQ-01. Sign Inversion of Anomalous Hall Effect in Heavy Metal/NiFe Bilayer Structures.** M. Kang¹, S.C. Baek¹, K. Kim¹ and B. Park¹ 1. *Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea*
- FQ-02. Self-induced inverse spin-Hall effect in an iron and a cobalt single-layer films themselves under the ferromagnetic resonance.** K. Kanagawa¹, Y. Teki² and E. Shikoh¹
1. *Engineering, Osaka City University, Osaka, Japan*;
2. *Science, Osaka City University, Osaka, Japan*
- FQ-03. Tunable spin Hall effect from a Ta alloy system.** T. Chen¹ and C. Pai¹ 1. *Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*
- FQ-04. Investigation of the inverse spin Hall effect in Cu_xO electrodes by using electrical spin injection and detection.** A. Yamada¹, T. Ariki², K. Ohnishi², Y. Ando¹, T. Kimura² and M. Shiraishi¹ 1. *Kyoto Univ., Kyoto, Japan*; 2. *Kyushu Univ., Fukuoka, Japan*
- FQ-05. Enhanced spin-orbit coupling in Cu with Pt impurity measured by H-Pattern.** J. Shen¹, C. Chen¹ and X. Jin¹
1. *Fudan University, Shanghai, China*
- FQ-06. Withdrawn**
- FQ-07. Anomalous Hall Effect of Iron Films by Bismuth δ -doping.** J. Li¹, J. Xu¹ and X. Jin¹ 1. *Physics Department, Fudan University, Shanghai, China*

- FQ-08. Temperature and Thickness Dependences of Electron Diffusion Coefficient in Platinum Layers.** *L. Lang*¹, *W. Fan*¹ and *S. Zhou*¹ *1. School of Physics Science and Engineering, Tongji University, Shanghai, China*
- FQ-09. Spin-Hall effect induced damping control in ultra-thin Ta/FeCoB/MgO spin-wave waveguides.** *M. Fabre*¹, *T. Brächer*², *A. Timopheev*¹, *A. Ruiz-Calafora*¹, *S. Auffret*¹, *O. Klein*¹, *G. Gaudin*¹, *O. Boulle*¹ and *U. Ebels*¹ *1. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, Grenoble, France; 2. Fachbereich Physik, Universität Kaiserslautern, Kaiserslautern, Germany*
- FQ-10. Spin Hall Angle and Spin Diffusion Length in Pt/Co Bilayers Evaluated from Spin Hall Magnetoresistance.** *Y. Du*¹, *J. Ryu*¹, *H. Gamou*¹, *S. Karube*¹, *M. Kohda*^{1,2} and *J. Nitta*^{1,2} *1. Department of Materials Science, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*
- FQ-11. Giant Enhancement of Intrinsic Spin Hall Conductivity in b Tungsten via Substitutional Doping.** *N. Kioussis*¹, *X. Xu*^{1,2}, *C. Wang*², *J. Kim*¹, *W. Duan*² and *S. Rhim*³ *1. Physics, California State University Northridge, Northridge, CA; 2. Physics, Tsinghua University, Beijing, China; 3. Physics, University of Ulsan, Ulsan, The Republic of Korea*
- FQ-12. Spin Torque Efficiency and Spin Transport in Beta-W and Beta-W(O_x) Thin Films.** *R.C. Tapping*¹, *Y. Ou*¹, *S. Shi*¹, *D. Ralph*² and *R.A. Buhrman*¹ *1. Applied & Engineering Physics, Cornell University, Ithaca, NY; 2. Physics, Cornell University, Ithaca, NY*
- FQ-13. Thickness dependence of unidirectional spin-Hall magnetoresistance in metallic bilayers.** *Y. Yin*¹, *D. Han*^{2,1}, *M. de Jong*¹, *R. Lavrijsen*¹, *R. Duine*^{1,3}, *H. Swagten*¹ and *B. Koopmans*¹ *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. Institute of Physics, University of Mainz, Mainz, Germany; 3. Institute for Theoretical Physics and Center for Extreme Matter and Emergent Phenomena, Utrecht University, Utrecht, Netherlands*
- FQ-14. Femtosecond Control of Electric Currents at Interfaces of Spintronic Heterostructures.** *G. Li*¹, *R. Mikhaylovskiy*¹, *T. Huisman*¹, *K. Grishunin*², *J.D. Costa*³, *R. Medapalli*⁴, *E.E. Fullerton*⁵, *T. Rasing*⁶ and *A. Kimel*⁷ *1. Spectroscopy of Solids and Interfaces, Radboud University Nijmegen, Nijmegen, Netherlands; 2. Moscow Technological University (MIREA), Moscow, Russian Federation; 3. Multifunctional Magnetic Materials and Nanostructures, University of Porto, Porto, Portugal; 4. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA; 5. UC San Diego, La Jolla, CA; 6. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 7. Radboud University, Nijmegen, Netherlands*

FQ-15. Photonic Crystal Enhanced Conversion Efficiency in Optically Pumped Spintronic THz Emitter. Z. Feng¹, W. Tan¹, H. Ding², H. Lu³, H. Deng⁴, Z. Zhai⁵, B. Miao², R. Yu², Q. Liu⁴ and L. Zhu⁵ *1. Microsystem & Terahertz Research Center, China Academy of Engineering Physics, Chengdu, China; 2. Department of Physics, Nanjing University, Nanjing, China; 3. Engineering Laboratory for Optoelectronic Technology and Advanced Manufacturing, Henan Normal University, Xinxiang, China; 4. School of Information Engineering, Southwest University of Science and Technology, Mianyang, China; 5. Institute of Fluid Physics, China Academy of Engineering Physics, Mianyang, China*

FQ-16. Withdrawn

THURSDAY SPIRIT OF PITTSBURGH BALLROOM A
AFTERNOON
2:30

Session FR
SPIN TRANSFER TORQUES AND SPIN-ORBIT
EFFECT-RELATED MAGNETO TRANSPORT
(Poster Session)

Vivek Amin, Chair
NIST, Gaithersburg, MD

FR-01. Second Harmonic Measurement Determining Spin Relaxation Time in Ta and Pt. X. Han^{1,2}, C. Fang^{1,2}, C. Wan^{1,2}, A. Hoffmann³ and Z. Jin⁴ *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China; 2. Chinese Academy of Sciences, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. Materials Science Department, Argonne National Laboratory, Argonne, IL; 4. Department of Physics, Shanghai University, Shanghai, China*

FR-02. Hanle magnetoresistance in YIG/Pt and CoFe₂O₄/Pt heterostructures. H. Wu¹, L. Huang¹, C. Wan¹ and X. Han¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

FR-03. Magnetoresistance originated from charge-spin conversion in ferromagnet. T. Taniguchi¹ *1. Spintronics Research Center, AIST, Tsukuba, Japan*

FR-04. Photo-spin voltaic effect and photo-magnetoresistance in proximized platinum. D. Li^{1,2} and A. Ruotolo^{1,2} *1. City University of Hong Kong, Kowloon, Hong Kong; 2. Shenzhen Research Institute, City University of Hong Kong, Shenzhen, China*

FR-05. Unidirectional spin Hall magnetoresistance in topological insulator/ferromagnetic layer heterostructures. Y. Lv¹, J.C. Kally², D. Zhang¹, J. Lee², M. Jamali¹, N. Samarth² and J. Wang¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, The Pennsylvania State University, University Park, PA*

- FR-06. Theory of Unidirectional Magnetoresistance in Various Layered Systems: Towards a Unified Picture.** *G. Vignale*², *S. Zhang*^{1,2} and *O. Heinonen*^{1,3} 1. *Materials Science Division, Argonne National Laboratory, Lemont, IL*; 2. *Department of Physics and Astronomy, University of Missouri, Columbia, MO*; 3. *Northwestern-Argonne Institute of Science and Engineering, Evanston, IL*
- FR-07. A multi-state memory device based on the unidirectional spin Hall magnetoresistance.** *C. Avci*¹, *M. Mann*¹, *A. Tan*¹, *P. Gambardella*² and *G. Beach*¹ 1. *Materials Science and Engineering, MIT, Cambridge, MA*; 2. *ETH Zurich, Zurich, Switzerland*
- FR-08. Optical investigations of the photo-spin-voltaic effect in metal/magnetic insulator heterostructures.** *S. Kattel*¹, *J.R. Murphy*¹, *D. Ellsworth*², *P. Li*², *M. Wu*² and *W. Rice*¹ 1. *Physics and Astronomy, University of Wyoming, Laramie, WY*; 2. *Physics, Colorado State University, Fort Collins, CO*
- FR-09. Current induced magnetization switching of Co/Pd-based multilayers with low Curie temperature.** *T. Kimura*¹, *X. Dong*¹, *D. Oshima*², *T. Kato*¹, *Y. Sonobe*³, *Y. Kawato*³ and *S. Iwata*² 1. *Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan*; 2. *Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*; 3. *Samsung R&D Institute Japan, Yokohama, Japan*
- FR-10. Antisymmetric contribution to the Hall voltage in Co/Pt bilayer depending on Pt crystal structure.** *J. Ryu*¹, *C. Avci*², *M. Kohda*^{1,3}, *G. Beach*² and *J. Nitta*^{1,3} 1. *Materials Science, Tohoku University, Sendai, Japan*; 2. *Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*; 3. *Spintronics Research Network, Tohoku University, Sendai, Japan*
- FR-11. Injection of spin-polarized current in a Ge-based magnetic device with coplanar contacts.** *E. Fourneau*¹, *J.I. Avila*¹, *A.V. Silhanek*¹ and *N. Nguyen*¹ 1. *Département de Physique, CESAM, Université de Liège, Liège, Belgium*
- FR-12. Free Layer Thickness Dependence of Spin Seebeck Effect-driven Spin Galvanic Effect with Spin Rotation Symmetry.** *W. Aljuaid*¹ and *X. Fan*² 1. *Department of Mechanical and Materials Engineering, University of Denver, Denver, CO*; 2. *Physics and Astronomy, University of Denver, Denver, CO*
- FR-13. Spin-Wave and Synchronization of Spin-Torque Nano-Oscillators Arrays.** *X. She*¹, *M. Kabir*¹, *M. Stan*¹ and *L. Luo*¹ 1. *University of Virginia, Charlottesville, VA*
- FR-14. Enhancement of spin signal in pillar-based lateral spin valve consisting of constrain channel.** *S. Hu*^{3,1} and *T. Kimura*² 1. *School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an, China*; 2. *Department of Physics, Kyushu University, Fukuoka, Japan*; 3. *Center for Spintronics and Quantum System, Xi'an Jiaotong University, Xi'an, China*

FR-15. Realization of MTJ Based Uniform Spin Torque Oscillators for PLL and FSK System Operation.

*C. Murapaka*¹, *A. Ruiz-Calaforra*¹, *B. Rimmner*¹, *J. Hem*¹, *A. Purbawati*¹, *L. Vila*¹, *E. Gautier*¹, *K. Merazzo-Jaimes*¹, *E. Jimenez-Romero*¹, *M. Cyrille*², *R. Ferriera*³, *M. Kreissig*⁴, *R. Ma*⁴, *F. Ellinger*⁴, *S. Wittrock*⁶, *V. Cros*⁶, *P. Bortolotti*⁵ and *U. Ebels*¹ *1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC, SPINTEC, Grenoble, France; 2. Univ. Grenoble Alpes, CEA-LETI MINATEC, Grenoble, France; 3. International Iberian Nanotechnology Laboratory, Braga, Portugal; 4. Technische Universität, Dresden, Germany; 5. THALES TRT, Palaiseau, France; 6. Unité Mixte de Physique CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Paris, France*

FR-16. Manipulation of the spin wave spectrum in a magnetic bilayer by an applied temperature gradient.

*M. Vogel*¹, *B. Zimmermann*¹, *C.K. Mewes*², *T. Mewes*³, *G. Bauer*^{4,5} and *C. Back*¹ *1. Physics, University of Regensburg, Regensburg, Germany; 2. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL; 3. Physics, University of Alabama, Tuscaloosa, AL; 4. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands; 5. Institute for Materials Research, Tohoku University, Sendai, Japan*

THURSDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session FS

SPIN-ORBIT TORQUES, INTERFACIAL CHIRAL EXCHANGE INTERACTIONS, AND ANTIFERROMAGNETIC SPINTRONICS (Poster Session)

Chiara Ciccarelli, Chair
University of Cambridge, Cambridge, United Kingdom

FS-01. Magnetization switching in antiferromagnetic/ferromagnetic structure without external field via spin orbit torque.

*X. Han*¹, *C. Wan*² and *W. Kong*² *1. State Key Lab of Magnetism, Institute of Physics, Beijing, China; 2. Chinese Academy of Sciences, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

FS-02. Spin-Orbit Torque Induced Magnetization Switching in Heavy Metal/ Ferromagnet Multilayer with Bilayer of Heavy Metals.

*A. Zelalem*¹, *K. Meng*¹, *B. Zhao*¹, *Y. Wu*¹, *J. Miao*¹, *X. Xu*¹ and *Y. Jiang*¹ *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*

FS-03. Examining internal domains wall transitions in perpendicular Co/Ni multi-layers using Lorentz TEM.

*M.P. Li*¹, *M. De Graef*¹ and *V.M. Sokalski*¹ *1. Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA*

FS-04. Spin-Torque Generation from Cu Induced by Oxidation.

*Y. Kageyama*¹ and *K. Ando*¹ *1. Department of Applied Physics and Physico-Informatics, Keio University, Hiyoshi, Japan*

- FS-05. Spin-Torque Ferromagnetic Resonance of Electrochemically-Etched Metallic Heterostructure.** S. Haku¹, H. Nakayama¹ and K. Ando¹ *1. Department of Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan*
- FS-06. Compositional dependence of spin orbit torques in amorphous GdFeCo films.** K. Kawakami¹, D. Oshima², T. Kato¹ and S. Iwata² *1. Department of Electronics, Nagoya University, Nagoya, Japan; 2. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*
- FS-07. Experimental Equivalence of Spin-Orbit Torque within Domain-Wall Motion and Harmonic Measurements.** J. Kim¹, Y. Nam¹, D. Kim¹, Y. Park^{2,3}, M. Park¹ and S. Choe⁴ *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Physics, Seoul National University, Gwanak, The Republic of Korea; 3. Center for Spintronics, Korea Institute of Science and Technology, Seoul, The Republic of Korea; 4. Seoul National University, Seoul, The Republic of Korea*
- FS-08. Influence of Heavy Metal Materials on Magnetic Properties of Heavy Metal/[CoNi/Pt]₂/SiO₂ Multilayers with Perpendicular Magnetic Anisotropy.** C. Ma¹, Y. Yamada¹, J. Xia², X. Zhang², Y. Zhou², M. Ezawa³, A. Morisako¹ and X. Liu¹ *1. Department of Electrical and Computer Engineering, Shinshu University, Nagano, Japan; 2. The Chinese University of Hong Kong, Shenzhen, Shenzhen, China; 3. Department of Applied Physics, The University of Tokyo, Tokyo, Japan*
- FS-09. Control of the antiferromagnetic resonance frequency by spin-current.** I. Lisenkov^{1,2}, V. Tyberkevych³ and A.N. Slavin³ *1. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 2. Kotel'nikov Institute of Radio-engineering and Electronics, Moscow, Russian Federation; 3. Department of Physics, Oakland University, Auburn Hills, MI*
- FS-10. Electrical Measurement of Antiferromagnetic Moments in Fully Epitaxial Heusler-type Ferromagnet/Antiferromagnet Bilayers.** T. Hajiri¹, M. Matsushita¹, Y. Ni¹ and H. Asano¹ *1. Department of Material Physics, Nagoya University, Nagoya, Japan*
- FS-11. The Effect of Atomic Defects on Skyrmion Breathing Mode.** N. Kim¹, H. Han¹, D. Jung¹ and K. Lee¹ *1. Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, The Republic of Korea*
- FS-12. Time-resolved Imaging of the Gyration Dynamics of Magnetic Bubbles and Magnetic Skyrmioniums.** S. Finizio¹, S. Wintz¹, E. Kirk¹, M. Weigand² and J. Raabe¹ *1. Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*
- FS-13. GPU accelerated atomistic spin dynamics in the VAMPIRE code.** O.D. Arbeláez¹, M.O. Ellis², S. Morris¹ and R.F. Evans¹ *1. Department of Physics, University of York, York, United Kingdom; 2. School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland*

- FS-14. Vortex dynamics in disks with tailored magnetisations.** *L. Ramasubramanian*^{1,2}, C. Fowley¹, A. Kákay¹, O. Yildirim¹, P. Matthes³, R. Böttger¹, J. Lindner⁴, J. Fassbender⁴, S. Gemming^{1,2}, S.E. Schulz^{2,3} and A.M. Deac¹ *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Chemnitz, Chemnitz, Germany; 3. Fraunhofer Institute for Electronic Nano Systems, Chemnitz, Germany; 4. Institute for Physics of Solids, TU Dresden, Dresden, Germany*

THURSDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session FT
RARE EARTH-BASED HARD MAGNETIC
MATERIALS IV
(Poster Session)

Jinbo Yang, Chair
Peking University, Beijing, China

- FT-01. The mechanism of coercivity enhancement for the as-sintered (Pr/Nd, Ce)-Fe-B magnet prepared by dual main phase method.** *R. Han*¹, W. Li², H. Chen¹, M. Zheng¹, L. Song², S. Dong³, M. Zhu² and D. Zhou¹ *1. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China; 2. Central Iron & Steel Research Institute, Beijing, China; 3. China Iron & Steel Research Institute, Beijing, China*
- FT-02. Angular Dependence of Coercivity in Isotropically Aligned Nd-Fe-B Sintered Magnets.** *Y. Matsuura*¹, T. Nakamura², K. Sumitani², K. Kajiwara², R. Tamura³ and K. Osamura¹ *1. Research Institute for Applied Sciences, Kyoto, Japan; 2. Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan; 3. Materials Science and Technology, Tokyo University of Science, Tokyo, Japan*
- FT-03. Microstructures And Magnetic Properties Of Co Substituted Ce-Fe-B Amorphous Ribbons.** *D. Liu*^{2,1}, M. Zhang^{2,1}, S. Zuo^{2,1}, X. Zhao^{2,1}, J. Xiong^{2,1}, T. Zhao^{2,1}, F. Hu^{2,1}, J. Sun^{2,1} and B. Shen^{2,1} *1. University of Chinese Academy of Sciences, Beijing, China; 2. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- FT-04. Microstructure Modification and Coercivity Enhancement of Nd-Ce-Fe-B Sintered Magnets by Grain Boundary Diffusing Nd-Dy-Al Alloy.** *M. Tang*¹, K. Lu¹, X. Mu¹, X. Bao¹, J. Li¹, X. Gao¹ and Y. Zhao¹ *1. State Key Laboratory for Advanced Metals and Materials, Beijing, China*
- FT-05. Novel hydrogen decrepitation behaviors of (La, Ce)-Fe-B strips.** *J. Jin*¹, Y. Zhang¹, G. Bai¹, B. Peng¹, Y. Liu¹, T. Ma¹ and M. Yan¹ *1. Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China*

- FT-06. Visualization of relationship between magnetic domain and grain boundary in Nd-Fe-B sintered magnet by using soft X-ray magnetic circular dichroism microscope.** *T. Maki*¹, *D. Furusawa*¹, *T. Nishiuchi*¹ and *M. Takezawa*² *1. Magnetic Materials Research Laboratory, Hitachi Metals, Ltd., Mishima-gun, Japan; 2. Faculty of Engineering, Kyusyu Institute of Technology, Kitakyushu, Japan*
- FT-07. The magnetic properties of (La,Ce)Co₅ ((La,Ce)=La_{0.35}Ce_{0.65},La-Ce mischmetal) nanoflakes prepared by surfactant-assisted ball milling.** *X. Zhao*^{1,2}, *W. Zuo*¹, *J. Xiong*^{1,2}, *D. Liu*^{1,2}, *Y. Zhang*^{1,2}, *S. Zuo*^{1,2}, *T. Zhao*^{1,2}, *X. Zheng*³, *F. Hu*^{1,2} and *B. Shen*^{1,2} *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*
- FT-08. Coercivity enhancement of Nd-Fe-B sintered magnet by two-step grain boundary diffusion process with Pr-Tb-Cu-Al alloys.** *K. Lu*¹, *X. Bao*¹, *M. Tang*¹, *X. Mu*¹, *J. Li*¹ and *X. Gao*¹ *1. State Key Laboratory for Advanced Metals and Materials, University of Science and Technology, Beijing, China*
- FT-09. Feasibility study of electrophoresis deposition of DyF₃ on Nd-Fe-B particles for coercivity enhancement.** *K. Kim*¹, *H. Kwon*¹, *J. Lee*² and *J. Yu*² *1. Pukyong National University, Pusan, The Republic of Korea; 2. Korea Institute of Materials Science, Changwon, The Republic of Korea*
- FT-10. Corrosion Resistance and Magnetic Properties of Zinc-aluminum Coating on NdFeB Magnets.** *Y. Zhou*¹, *Y.Q. Zhou*¹, *A. Yan*¹ and *D. Lee*¹ *1. Magnetic Materials and Mechanical Equipment Department, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo City, China*
- FT-11. Ceramics-bonded Nd-Fe-B-Type Magnet with High Electrical Resistivity.** *M. Kang*¹, *H. Kwon*¹, *D. Kim*², *J. Lee*³ and *J. Yu*³ *1. Pukyong National University, Busan, The Republic of Korea; 2. Star-group Ind. Co., Daegu, The Republic of Korea; 3. Korea Institute of Materials Science, Changwon, The Republic of Korea*
- FT-12. Improved Thermal Stability of TbF₃-Coated Sintered Nd-Fe-B Magnets by Electrophoretic Deposition.** *X. Cao*¹, *L. Chen*¹, *S. Guo*¹, *J. Di*¹, *R. Chen*¹ and *A. Yan*¹ *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- FT-13. Magnetic and Mossbauer study of co-doped Sr_{1-x}RE_xFe_{12-x}Cu_xO₁₉ (RE=La and Pr) and SrFe_{12-x}Cu_xO₁₉ hexaferrites.** *M. Ghimire*¹, *S. Yoon*¹ and *S. Mishra*¹ *1. Department of Physics and Materials Science, The University of Memphis, Memphis, TN*

- FT-14. Magnetic properties of rare-earth doped $\text{Sr}_{0.7}\text{RE}_{0.3}\text{Fe}_{12-x}(\text{CoAl})_x\text{O}_{19}$ (RE: La, Pr, Nd, Sm and Gd ; $0 \leq x \leq 1$) hexaferrites.** *M. Ghimire*¹ and *S. Mishra*² *1. Department of Physics and Materials Science, The University of Memphis, Memphis, TN; 2. Department of Physics, The University of Memphis, Memphis, TN*
- FT-15. Enhancement in Hard Magnetic Properties of (Nd, Pr)-Fe-B Melt-spun Ribbons.** *K. Gandha*¹, *W. Tang*² and *C.I. Nlebedim*¹ *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Division of Materials Science and Engineering, Ames Laboratory, US Department of Energy, Ames, IA*
- FT-16. Taking the benefit of RE element segregation in the RE-rich melt-spun Nd-Ce-Fe-B alloys.** *L. Zhao*¹, *Z. Liu*¹, *J. Greneche*² and *H. Yu*¹ *1. South China University of Technology, Guangzhou, China; 2. Institut des Molécules et Matériaux du Mans CNRS UMR-6283, Université du Maine, Le Mans, France*

THURSDAY
AFTERNOON
2:30

SPIRIT OF PITTSBURGH BALLROOM A

Session FU
RARE EARTH-BASED HARD MAGNETIC
MATERIALS V
(Poster Session)

Sergey Taskaev, Chair
Chelyabinsk State University, Chelyabinsk, Russian Federation

- FU-01. $\text{Sm}_5(\text{Fe,Ti})_{17}$ melt-spun ribbons with high coercivity.** *T. Horita*¹ and *T. Saito*¹ *1. Chiba Institute of Technology, Chiba, Japan*
- FU-02. Effects of titanium and zirconium additions on magnetic properties of $\text{Sm}_2\text{Fe}_{17}$ melt-spun ribbons.** *T. Saito*¹ and *D. Nishio-Hamane*² *1. Chiba Institute of Technology, Chiba, Japan; 2. The University of Tokyo, Kashiwa, Japan*
- FU-03. Preparation of Nd-Fe-B/ α -Fe nano-composite thick-film magnets on various substrates using PLD with high laser energy density above 10 J/cm².** *H. Kondo*¹, *A. Yamashita*¹, *T. Yanai*¹, *M. Nakano*¹, *M. Itakura*² and *H. Fukunaga*¹ *1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan; 2. Graduate School of Engineering, Kyushu University, Fukuoka, Japan*
- FU-04. Effects of Ce substitution for Dy on the magnetic properties of Nd-Fe-B alloys with low Nd content.** *J. Zhang*², *M. Zhong*¹, *L. Zhao*², *H. Zeng*², *X. Zhong*², *Z. Zhong*¹ and *Z. Liu*² *1. Institute of Rare Earth Magnetic Materials and Devices, Jiangxi University of Science and Technology, Ganzhou, China; 2. School of Materials Science and Engineering, South China University of Technology, Guangzhou, China*

- FU-05. Magnetization reversal process of hot-deformed permanent magnet revealed by large-scale micromagnetic simulation.** *H. Tsukahara*¹, *K. Iwano*¹, *C. Mitsumata*², *T. Ishikawa*¹ and *K. Ono*¹ *1. KEK, Tsukuba, Japan; 2. NIMS, Tsukuba, Japan*
- FU-06. The Corrosion Mechanism of the Sintered (Ce, Nd)-Fe-B Magnets Prepared by Double Main Phase and Single Main Phase Approaches.** *X. Shi*¹, *M. Zhu*¹, *D. Zhou*¹, *L. Song*¹, *W. Li*¹ and *Y. Sun*¹ *1. Central Iron & Steel Research Institute, Division of Functional Materials, Beijing, China*
- FU-07. Development of “GAP MAGNET” in Ce – Co – Cu system.** *A. Palasyuk*¹, *T.N. Lamichhane*^{2,1}, *O. Palasyuk*^{3,1}, *M. Onyszczak*², *D. Gates*², *V. Taufour*⁴, *V. Antropov*^{1,3}, *S. Bud’ko*^{2,1} and *P.C. Canfield*^{2,1} *1. Ames Laboratory, US Department of Energy, Ames, IA; 2. Physics, Iowa State University, Ames, IA; 3. DMSE, Iowa State University, Ames, IA; 4. Department of Physics, University of California, Davis, Davis, CA*
- FU-08. The phase composition and magnetic properties of Pr-Nd-MM-Fe-B nanocrystalline magnets prepared by single-alloy and double-alloy methods.** *X. Wang*¹, *Z. Zhao*¹, *F. Liu*¹, *G. Wang*², *Y. Liu*¹, *M. Zhu*³ and *X. Zhang*¹ *1. School of Science, Inner Mongolia University of Science and Technology, Baotou, China; 2. Key Laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, China; 3. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*
- FU-09. The partitioning of Cu in SmCo₅/α-Fe nanocomposite magnets.** *X. Liu*^{1,2}, *A. Pathak*¹, *D. Paudyal*¹, *Z. Altounian*² and *P. Liu*³ *1. Ames Laboratory of USDOE, Iowa State University, Ames, IA; 2. Department of Physics, McGill University, Montreal, QC, Canada; 3. Department of Physics, University of Texas-Arlington, Arlington, TX*
- FU-10. Effects of Anisotropy Field Dispersion and Grain Boundary on Coercivity and Squareness Ratio for HDDR-Processed NdFeB Powders.** *F. Akagi*¹ *1. Kogakuin University, Shinjuku-ku, Japan*
- FU-11. Microstructure evolution and coercivity enhancement in Nd-Fe-B particulate films diffusion-processed by R-Al alloys (R=Nd, Pr).** *Z. Xie*¹, *T. Zhang*¹, *Y. Fu*¹, *S. Ma*², *W. Cui*¹ and *Q. Wang*¹ *1. Northeastern University, Shenyang, China; 2. JiangXi University of Science and Technology, Ganzhou, China*
- FU-12. Microstructure and Magnetic Properties of Hot Deformed PrCo₅ Magnets Doped by PrCu Alloy.** *W. Jiang*¹, *D. Zhang*¹, *D. Zhou*¹, *Q. Lu*¹, *W. Liu*¹ and *M. Yue*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*
- FU-13. Improvement of magnetic properties of SmCo₅/α-Fe nanocomposite permanent magnets by magnetic field heat treatment.** *Y. Wei*¹, *M. Yue*¹, *Y. Li*¹ and *W. Liu*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

- FU-14. Effect of the Magnetic Layer Thickness and Annealing on the Anisotropic Hard Magnetic Properties of Multilayered Nd-Fe-B/Mo Thick Films.** M. Urse¹, M. Grigoras¹, F. Borza¹, G. Stoian¹, G. Ababei¹, N. Lupu¹ and H. Chiriac¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
- FU-15. Microstructure and Magnetism of $(La_xPr_{1-x})_3Fe_{14}B$ ($x=0, 0.3, 0.6$).** Y. Li¹, S. Peng¹, K. Wu¹ and S. Wang² *1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China; 2. Faculty of Science, Northwestern Polytechnical University, Xian, China*
- FU-16. Development of Nd-Fe-based Magnetic Films by Electrodeposition from Ionic Liquids as an Alternative Reprocessing Route for Recycled Nd-Fe-B Permanent Magnets.** K. Zuzek Rozman^{1,2}, X. Xu^{1,2}, S. Kobe^{1,2} and S. Sturm^{1,2} *1. Departement for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia; 2. Jozef Stefan International Postgraduate School, Ljubljana, Slovenia*

FRIDAY
MORNING
8:30

SPIRIT OF PITTSBURGH BALLROOM B

Session GA

SPIN-ORBIT TORQUES WITH UNCONVENTIONAL SYMMETRIES

Barry Zink, Chair
University of Denver, Denver, CO

8:30

- GA-01. Spin-orbit effects with spin rotation symmetry. (Invited)** A.M. Humphries¹, T. Wang², E. Edwards³, S.R. Allen¹, J. Shaw³, H. Nembach³, J. Xiao², T. Silva³ and X. Fan¹
1. Physics and Astronomy, University of Denver, Denver, CO; 2. University of Delaware, Newark, DE; 3. NIST, Boulder, CO

9:06

- GA-02. A new spin-orbit torque from interface-generated spin currents. (Invited)** V. Amin^{1,2} and M. Stiles¹ *1. National Institute of Standards and Technology - Gaithersburg, Gaithersburg, MD; 2. Maryland NanoCenter, University of Maryland, College Park, MD*

9:42

- GA-03. Control of spin-orbit torques through crystal symmetry. (Invited)** G.M. Stiehl¹, D. MacNeill¹, M.H. Guimaraes¹, N. Reynolds¹, R.A. Buhrman², J. Park³ and D. Ralph¹
1. Physics, Cornell University, Ithaca, NY; 2. Applied and Engineering Physics, Cornell University, Ithaca, NY; 3. Chemistry and Molecular Engineering, University of Chicago, Chicago, IL

10:18

- GA-04. Tuning the Torques in Magnetic Heuslers. (Invited)**
*C. Ciccarelli*¹ *1. Physics, University of Cambridge, Cambridge, United Kingdom*

10:54

- GA-05. Room temperature spin-orbit torque induced ferrimagnet dynamics with topological insulator. (Invited)** *L. Liu*¹
1. EECS, MIT, Cambridge, MA

FRIDAY
MORNING
8:30

ROOM 301-303

Session GB
ULTRAFAST SWITCHING

Weiwei Lin, Chair
Johns Hopkins University, Baltimore, MD

8:30

- GB-01. Terahertz induced demagnetization in CoPt Films: a route towards ultrafast ballistic magnetization reversal.** *D. Polley*¹, *M. Pancaldi*², *M. Hudl*¹, *S. Urazhdin*³ and *S. Bonetti*¹
1. Department of Physics, Stockholm University, Stockholm, Sweden; 2. CIC nanoGUNE, San Sebastian, Spain; 3. Emory University, Atlanta, GA

8:42

- GB-02. Femtosecond Laser Induced THz And GHz Oscillations in Rare Earth Iron Garnet.** *P. Khan*¹, *M. Kanamaru*¹ and *T. Satoh*¹ *1. Physics, Kyushu University, Fukuoka, Japan*

8:54

- GB-03. Heat-Assisted Magnetization Reversal via Precession in a Magnetic Dielectric.** *K.H. Prabhakara*¹, *C.S. Davies*¹, *M.D. Davydova*², *K.A. Zvezdin*^{2,3}, *T.B. Shapaeva*⁴, *S. Wang*⁵, *A.K. Zvezdin*^{3,6}, *A. Kirilyuk*¹, *T. Rasing*¹ and *A. Kimel*^{1,6}
1. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 2. Moscow Institute of Physics and Technology (State University), Moscow, Russian Federation; 3. A. M. Prokhorov General Physics Institute, Moscow, Russian Federation; 4. Lomonosov Moscow State University, Moscow, Russian Federation; 5. Jinan University, Guangzhou, China; 6. Moscow Technological University (MIREA), Moscow, Russian Federation

9:06

- GB-04. Control of spin precession motion in ferromagnetic thin films by double-pump experiments.** *H. Shibata*¹, *M. Okano*¹ and *S. Watanabe*¹ *1. Department of Physics, Faculty of Science and Technology, Keio University, Yokohama, Japan*

9:18

- GB-05. Ultrafast switching and emergent electromagnetism due to topological defects in cylindrical nanowires.** *M. Charilaou*¹, *H. Braun*² and *J.F. Löffler*¹ *1. Department of Materials, ETH Zurich, Zurich, Switzerland; 2. University College Dublin, Dublin, Ireland*

9:30

- GB-06. Ultrafast domain wall dynamics in billion atom simulations of ultrafast switching of GdFeCo.** *Z. Fu*¹, *S. Ruta*¹, *T.A. Ostler*², *T. Liu*³, *E. Iacocca*^{4,5}, *M. Hofer*⁴, *T. Silva*⁶, *T. Rasing*⁷, *H. Durr*³, *R.F. Evans*¹ and *R. Chantrell*¹ *1. Department of Physics, University of York, York, United Kingdom; 2. Department of Engineering and Mathematics, Sheffield Hallam University, Sheffield, United Kingdom; 3. SIMES/Physics, SLAC/Stanford University, Stanford, CA; 4. Applied Mathematics, University of Colorado, Boulder, Boulder, CO; 5. Department of Physics, Chalmers University of Technology, Gothenburg, Sweden; 6. National Institute of Standards and Technology - Boulder, Boulder, CO; 7. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands*

9:42

- GB-07. The indispensable role of the local mechanism in laser induced demagnetization of a ferromagnet with nanoscale magnetic domains.** *W. Zhang*^{1,2}, *W. He*¹, *J. Cai*^{1,2}, *Y. Zhang*¹, *X. Zhang*¹, *Z.H. Cheng*^{1,2} and *R.F. Evans*³ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, School of Physical Sciences, Beijing, China; 3. Department of Physics, University of York, York, United Kingdom*

9:54

- GB-08. Modeling of All-Optical Domain Wall Displacement in Ferromagnets Using a Three-levels Landau-Lifshitz Dynamics.** *M. Menarini*^{1,2}, *P. Scheid*³, *S. Mangin*³ and *V. Lomakin*^{1,2} *1. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 2. Center of Memory and Magnetic Recording, San Diego, CA; 3. Institut Jean Lamour, Université de Lorraine, Vandoeuvre-lès-Nancy, France*

10:06

- GB-09. FePt-Tb alloy thin films designed for ultrafast spin dynamics.** *N. Safonova*¹, *M. Stiehl*², *B. Stadtmueller*², *D. Weller*¹, *M. Aeschlimann*² and *M. Albrecht*¹ *1. Institute of Physics, University of Augsburg, Augsburg, Germany; 2. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

10:18

- GB-10. Ultrafast Charge Current Induced Magnetization Reversal in Only 10 psec. (Invited)** *J. Bokor*^{1,2}, *Y. Yang*¹, *R. Wilson*³, *J. Gorchon*², *C.A. Lambert*¹ and *S. Salahuddin*^{1,2} *1. EECS Department, University of California, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Mechanical Engineering, University of California Riverside, Riverside, CA*

10:54

- GB-11. Single shot ultrafast all optical magnetization switching of ferromagnetic Co/Pt multilayers.** *C.A. Lambert*¹, *J. Gorchon*^{1,2}, *Y. Yang*³, *A. Pattabi*¹, *R. Wilson*⁴, *S. Salahuddin*^{1,2} and *J. Bokor*^{2,1} *1. Department of Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA; 2. Lawrence Berkeley National Lab, Berkeley, CA; 3. UC Berkeley, Berkeley, CA; 4. Mechanical Engineering, University of California Riverside, Riverside, CA*

11:06

- GB-12. Role of Demagnetizing Fields in All-optical Switching.** *F. Hoveyda*¹, *E. Hohenstein*¹, *R. Judge*¹ and *S. Smadici*¹ *1. Physics and Astronomy, University of Louisville, Louisville, KY*

11:18

- GB-13. Helicity-dependent All-optical Domain Wall Motion in Co/Pt Thin Films.** *Y. Quessab*^{1,2}, *R. Medapalli*², *M. El Hadri*^{1,2}, *M. Hehn*¹, *G. Malinowski*¹, *E.E. Fullerton*² and *S. Mangin*¹ *1. Institut Jean-Lamour, University of Lorraine, Nancy, France; 2. Center for Memory & Recording Research, University of California, San Diego, San Diego, CA*

FRIDAY
MORNING
8:30

ROOM 403-405

Session GC

THIN FILMS AND SURFACE EFFECTS II

Masaaki Futamoto, Co-Chair
Chuo University, Tokyo, Japan

Juan Gabriel Ramirez, Co-Chair
Universidad de los Andes, Bogotá, Colombia

8:30

- GC-01. Preparation of *c*-axis Perpendicularly Oriented Ultra-Thin $L1_0$ -FePt Films on MgO and VN Underlayers.** *M. Futamoto*¹, *T. Shimizu*¹ and *M. Ohtake*¹ *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan*

8:42

- GC-02. High perpendicular magnetic anisotropy in $D0_{22}$ MnGa-based Heusler ultrathin films.** *S. Ouardi*¹, *K. Suzuki*² and *S. Mizukami*² *1. Advanced Institute for Materials Research (AIMR), Tohoku University, Sendai, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan*

- GC-03. Exploring the thin film limits of FeRh grown on MgO (001) substrates.** C.W. Barton¹, T.A. Ostler², D. Huskisson^{1,3}, C. Kinane⁴, S.J. Haigh³, G. Hrkac⁵ and T. Thomson¹ *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. College of Engineering, Mathematics and Physical Sciences, The University of Exeter, Sheffield, United Kingdom; 3. School of Materials, University of Manchester, Manchester, United Kingdom; 4. Rutherford Appleton Laboratory, STFC, Didcot, United Kingdom; 5. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom*

- GC-04. Magnetic anisotropy induced by antiferromagnetic NiO in Py/NiO/Co_{0.5}Ni_{0.5}O systems.** Q. Li¹, M. Yang¹, Q. Dong¹, A.T. N'Diaye², N. Gao¹, C. Klewe², P. Shafer², E. Arenholz², C. Hwang³, J. Li⁴ and Z. Qiu¹ *1. Physics, University of California, Berkeley, Berkeley, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Korea Reserach Institute of Standards and Science, Yuseong-gu, The Republic of Korea; 4. School of Physics, International Center for Quantum Materials (ICQM), Beijing, China*

- GC-05. Tailoring Magnetic Domains in Gd-Fe Thin Films.** A. Talapatra¹, A. Jeyaramane² and J.R. Mohanty³ *1. Physics, Indian Institute of Technology Hyderabad, Hyderabad, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. Physics, Indian Institute of Technology Hyderabad, Hyderabad, India*

- GC-06. Interplay between Interface Structure and Magnetism in NiFe/Cu/Ni-Based Pseudo-Spin Valves.** M. Loving¹, T. Ambrose², E. Jones¹, H. Ermer¹, D. Miller² and O. Naaman² *1. Advanced Concepts & Technologies, Northrop Grumman Corporation, Linthicum, MD; 2. Northrop Grumman Corporation, Linthicum, MD*

- GC-07. Atomic structure governed diversity of exchange-driven spin helices in Fe nanoislands by spin polarized STM. (Invited)** J.A. Fischer¹, L.M. Sandratskii¹, D. Sander¹ and S. Parkin¹ *1. Max Planck Institute of Microstructure Physics, Halle, Germany*

- GC-08. Investigation of the spin reorientation in Pd/Co/Pd films using the first-order reversal curve.** Y. Li^{1,2}, W. He¹, R. Sun^{1,2}, Z. Gong^{1,2}, N. Li^{1,2}, X. Zhang¹ and Z.H. Cheng^{1,2} *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Physical Sciences, University of Chinese Academy of Sciences, Beijing, China*

10:30

- GC-09. Spin-polarized Current Induced by a Magnetic Insulator.** B. Li¹, H. Chang², G. Zhao¹, D. Kim¹, J. Zhang¹, M. Wu² and T. Chen¹ *1. Physics, Arizona State University, Tempe, AZ; 2. Physics, Colorado State University, Fort Collins, CO*

10:42

- GC-10. Tuning Magnetic Anisotropy and Electrical Property of CoZrTaB Thin Films through Oblique Angle Deposition.** S. Tummalapalli¹ and H. Yu¹ *1. Arizona State University, Tempe, AZ*

10:54

- GC-11. Study on Structural and Magnetic Properties of Fe₂Cr_{1-x}Co_xSi.** Y. Liu¹, Y. Zheng¹, L. Ren¹, P. Yang², Y. Liu¹, H. Yang¹ and K. Teo¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Singapore Synchrotron Light Source, National University of Singapore, Singapore, Singapore*

11:06

- GC-12. Insights into magnetic dead layer in La_{0.7}Sr_{0.3}MnO₃ thin films from temperature, magnetic field and thickness dependence of their magnetization.** N. Mottaghi¹, R. Trappen¹, S. Kumari¹, W. Ibarra-Hernandez¹, G. Cabrera¹, C. Huang², S. Yousefi Sarraf¹, M. Aziziha¹, M.B. Johnson¹, A. Romero¹, M.S. Seehra¹ and M. Holcomb¹ *1. Physics, West Virginia University, Morgantown, WV; 2. Mechanical & Aerospace Engineering, West Virginia University, Morgantown, WV*

11:18

- GC-13. Ionic Tuning of Cobaltites at the Nanoscale.** D.A. Gilbert¹, A. Grutter¹, P. Murray², R.V. Chopdekar³, A. Kane³, A.L. Ionin³, M.S. Lee³, S.R. Spurgeon⁴, B.J. Kirby¹, B.B. Maranville¹, A.T. N'Diaye⁵, A. Mehta⁶, E. Arenholz⁵, K. Liu², Y. Takamura³ and J. Borchers¹ *1. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 2. Physics Department, University of California, Davis, CA; 3. Materials Science and Engineering, University of California, Davis, CA; 4. Physical and Computational Sciences Directorate, Pacific Northwest National Laboratory, Richland, WA; 5. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 6. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA*

Session GD
MICROMAGNETIC MODELLING I

Ki-Suk Lee, Chair
Ulsan National Institute of Science Technology, Ulsan,
The Republic of Korea

8:30

- GD-01. Strain Assisted Field-Free Deterministic Switching of Perpendicular Magnetization by Spin-Orbit Torque.** *Q. Wang*¹, J.P. Domann¹, G. Yu², K.L. Wang² and G. Carman³
1. Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 2. Electrical Engineering, UCLA, Los Angeles, CA; 3. UCLA, Los Angeles, CA

8:42

- GD-02. Magnetic domain structure extracted from magnetic force microscopy via reverse modeling.** *J. Jiang*^{1,2}, *Q. Zou*³, *Z. Gai*³ and *X. Zhang*^{1,2} *1. Department of Physics and Quantum Theory Project, University of Florida, Gainesville, FL; 2. Informatics Institute, University of Florida, Gainesville, FL; 3. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN*

8:54

- GD-03. P-MTJ Device Shape Design for Exchange Stiffness Measurement through ST-FMR.** *S. Wang*¹, *D. Apalkov*¹, *R. Beach*¹ and *M. Krounbi*¹ *1. Samsung Semiconductor, San Jose, CA*

9:06

- GD-04. A class of quasi-symplectic integrators for Landau-Lifshitz-type dynamics.** *M. d'Aquino*¹, *F. Capuano*², *G. Coppola*², *C. Serpico*³ and *I. Mayergoyz*⁴ *1. Dipartimento di Ingegneria, Università degli Studi di Napoli "Parthenope", Napoli, Italy; 2. Department of Industrial Engineering, University of Naples Federico II, Naples, Italy; 3. DIETI, University of Naples, Napoli, Italy; 4. ECE Department, University of Maryland, College Park, MD*

9:18

- GD-05. Hybrid Fine/Coarse Stray Field Computation for Micromagnetics.** *M.J. Donahue*¹ *1. Applied and Computational Mathematics Division, National Institute of Standards and Technology, Gaithersburg, MD*

9:30

- GD-06. Micromagnetic Modeling of Substrate Induced Strain and Crystallographic Texturing Effect on the Hysteresis Behavior of NiFe₂O₄ and CoFe₂O₄ Films.** *Y. Alvandi-Tabrizi*^{1,2} and *J. Schwartz*² *1. Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC; 2. Materials Science and Engineering, North Carolina State University, Raleigh, NC*

- GD-07. Micromagnetic Simulation Study of the Effect of Interfacial Dzyaloshinskii-Moriya Interactions on Magnetic Skyrmions in Multilayers.** *A.T. Clark*¹, *L. Yu*¹, *X. Wang*¹, *A. Kong*¹, *K. Buchanan*², *A. Hoffmann*³, *S. te Velthuis*³ and *X. Cheng*¹
1. Department of Physics, Bryn Mawr College, Bryn Mawr, PA; 2. Colorado State University, Fort Collins, CO; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL

9:54

- GD-08. Effects of grain boundary configuration and characteristics on the demagnetization process and coercivity of anisotropic NdFeB magnets.** *W. Li*¹, *L. Zhao*¹, *Q. Zhou*¹ and *Z. Liu*¹
1. South China University of Technology, Guangzhou, China

10:06

- GD-09. Transformation Strain of Magnetic Shape Memory Alloys: Digital Image Correlation Field Measurement and Micromagnetic Modeling.** *O. Sevestre*¹, *M.D. Fall*¹ and *O. Hubert*¹ *1. LMT (ENS Paris-Saclay, CNRS, Université Paris-Saclay), Cachan, France*

10:18

- GD-10. Circuit-Integrated Micromagnetic Modeling of MRAM Devices.** *I. Volvach*¹, *M. Kuteifan*², *M.V. Lubarda*³ and *V. Lomakin*² *1. Materials Science and Engineering, University of California, San Diego, San Diego, CA; 2. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 3. Faculty of Polytechnics, Univeristy of Donja Gorica, San Diego, CA*

10:30

- GD-11. Disentangling and quantifying temperature-driven symmetry-breaking effects in magnetic nanostructures.** *J. Fernández Cuñado*^{1,2}, *P. Perna*³, *A. Bollero*³, *R. Miranda*^{1,3} and *J. Camarero*^{3,4} *1. Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 2. Magnetism, IMDEA Nanociencia, Madrid, Spain; 3. IMDEA Nanoscience, Madrid, Spain; 4. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain*

10:42

- GD-12. Integral Equation and Finite Element Approaches for the Solution of the Dynamic Maxwell Equations to Account for Eddy Currents in Micromagnetic Simulations.** *S. Couture*¹, *A. Goncharov*² and *V. Lomakin*¹ *1. Electrical Engineering, University of California, San Diego, San Diego, CA; 2. Western Digital, San Jose, CA*

10:54

- GD-13. Forward Flux Sampling Method with Spin Transfer Torque for the Calculation of Thermal Relaxation Times of Free Layers.** *M. Kuteifan*¹, *I. Volvach*² and *V. Lomakin*¹ *1. ECE, UCSD, San Diego, CA; 2. Materials Science and Engineering, University of California, San Diego, San Diego, CA*

11:06

- GD-14. Numerical Modeling of Patterned Magneto-dielectric Structures.** *C.A. Nwokoye¹ and B. Good¹ 1. Naval Surface Warfare Center, Carderock Division, West Bethesda, MD*

11:18

- GD-15. Atomistic spin dynamics and finite size effects of magnetite nanocrystals.** *D. Meilak¹, V. Lazarov¹, S. Majetich² and R.F. Evans¹ 1. Department of Physics, University of York, York, United Kingdom; 2. Carnegie Mellon University, Pittsburgh, PA*

FRIDAY
MORNING
8:30

ROOM 315-316

Session GE
POWER ELECTRONICS AND MAGNETIC
MULTILAYERS

Vivian Ng, Co-Chair
National University of Singapore, Singapore
Hongbin Yu, Co-Chair
Arizona State University, Tempe, AZ

8:30

- GE-01. Optimal Time Domain Technique for Pulse Width Modulation in Power Electronics.** *I. Mayergoyz¹ and S. Tyagi¹ 1. ECE Department, University of Maryland, College Park, MD*

8:42

- GE-02. Effects of Magnetic Properties on Performance of Interior Permanent Magnet Synchronous Motor (IPMSM) for Electric Vehicles.** *H. Won^{1,2}, Y. Hong^{1,2}, W. Lee^{1,2} and M. Choi^{1,2} 1. Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 2. MINT, The University of Alabama, Tuscaloosa, AL*

8:54

- GE-03. Core losses of a permanent magnet synchronous motor with an amorphous stator core under inverter and sinusoidal excitations.** *A. Yao¹, T. Sugimoto¹, S. Odawara² and K. Fujisaki¹ 1. Toyota Technological Institute, Nagoya-city, Japan; 2. Kitami Institute of Technology, Kitami, Japan*

9:06

- GE-04. Design and Experiments of Compact Explosively Driven Ferromagnetic Pulsed Source.** *P. Liu¹, H. Zhang¹, S. Ma¹ and Y. Shi¹ 1. School of Mechanical Engineering, Nanjing University of Science and Technology, Nanjing, China*

9:18

- GE-05. On Spintronics Based Power Electronics.** *I. Mayergoyz¹ 1. ECE Department, University of Maryland, College Park, MD*

9:30

- GE-06. Metal Amorphous Nanocomposite (MANC) Soft Magnetic Material (SMM) Enabled High Power Density, Rare Earth Free Rotational Machines.** *S. Simizu*¹, *P. Ohodnicki*² and *M.E. McHenry*¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. National Energy Technology Laboratory, Pittsburgh, PA*

9:42

- GE-07. Magnetic amplifiers for ac susceptibility measurements devices.** *M. Pérez*¹, *P. Cobos*¹, *C. Aroca*¹, *M. Rivero*², *J. Mesa*³, *J. de Frutos*³ and *M. Diaz Michelena*³ *1. ISOM-UPM, Madrid, Spain; 2. ISDEFE - INTA External Consultant, Madrid, Spain; 3. Dept of Payloads and Space Sciences, INTA, Torrejón de Ardoz, Spain*

9:54

- GE-08. Accurate Current Measurements of a High Frequency GaN Inverter for Magnetic Characteristic Evaluation.** *W. Martinez*¹ *1. Toyota Technological Institute, Nagoya, Japan*

10:06

- GE-09. Construction of a Magnetostrictive Hysteresis Operator using a Tripod-like Primitive Hopfield Neural Network.** *A. Adly*¹ and *S. Abd-El-Hafiz*² *1. Elect. Power Engineering Dept., Cairo University, Giza, Egypt; 2. Engineering Mathematics Dept., Cairo University, Giza, Egypt*

10:18

Break

10:30

- GE-10. Large Perpendicular Magnetic Anisotropy of $[\text{Fe}_2\text{CoSi/Pt}]_n$ Structures on Oxidized Si.** *Y. Liu*¹, *L. Ren*¹, *Y. Zheng*¹, *P. Yang*², *H. Yang*¹ and *K. Teo*¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Singapore Synchrotron Light Source, National University of Singapore, Singapore, Singapore*

10:42

- GE-11. Adsorption Induced in-Plane Magnetic Anisotropy in Epitaxial bcc Co/Fe Films.** *M. Slezak*¹, *T. Slezak*¹, *P. Drozd*¹, *K. Matlak*¹ and *J. Korecki*^{1,2} *1. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland; 2. Jerzy Haber Institute of Catalysis and Surface Chemistry PAS, Krakow, Poland*

10:54

- GE-12. Magnetic properties of CoFeSiB-Pd multilayers and alloys with perpendicular magnetic anisotropy.** *Y. Kim*¹, *I. Cha*¹, *J. Cho*² and *Y. Kim*¹ *1. Department of Materials Science & Engineering, Korea University, Seoul, The Republic of Korea; 2. Western Seoul Center, Korea Basic Science Institute, Seoul, The Republic of Korea*

- GE-13. Microstructure and Magnetoplasmonic Properties of Nanoscale Co/Au Multilayers.** C. Rizal^{1,2}, E.E. Fullerton³, S. Pisana² and I. Hrvoic¹ *1. Research & Development, GEM Systems Inc, Markham, ON, Canada; 2. Department of Electrical Engineering & Computer Science, York University, Toronto, ON, Canada; 3. UC San Diego, La Jolla, CA*

FRIDAY
MORNING
8:30

ROOM 317-318

Session GF

SUPERCONDUCTIVITY AND BULK MULTIFERROICS

Jostein Grepstad, Chair

Norwegian University of Science and Technology, Trondheim, Norway

8:30

- GF-01. Withdrawn**

8:42

- GF-02. Superconducting Spin Switching Effect in GdN/NbN/GdN Ultrathin Film Trilayers.** Y. Takamura^{1,2}, J. Cascales¹, R. Gonçalves^{1,3}, G.M. Stephen⁴, D. Heiman⁴, A. Altinkok^{1,5}, C. Levartoski de Araujo³, B. Satpati⁶, V. Lauter⁷ and J. Moodera^{1,8} *1. Francis Bitter Magnet Laboratory, Plasma Science and Fusion Center, MIT, Cambridge, MA; 2. School of Engineering, Tokyo Institute of Technology, Tokyo, Japan; 3. Federal Univ. of Viçosa, Viçosa, Brazil; 4. Physics Department, Northeastern University, Boston, MA; 5. Department of Electrical and Electronics, Giresun University, Giresun, Turkey; 6. Surface Physics & Material Science Division, Saha Institute of Nuclear Physics, Kolkata, India; 7. NSSD, Oak Ridge National Laboratory, Oak Ridge, TN; 8. Physics Department, MIT, Cambridge, MA*

8:54

- GF-03. Coexistence of Superconductivity and Ferromagnetism in Zn-ion Implanted and Buffer-free InN Films.** W. Xie¹, Q. Xie¹, F. Duan¹, K. Wang¹, H. Tian¹ and X. Wu¹ *1. School of Physics, Nanjing University, Nanjing, China*

9:06

- GF-04. Observations of Ising superconductivity in 2H-TaS₂ in the monolayer limit.** M.R. Sinko¹, S. de la Barrera¹, D.P. Gopalan¹, O. Lanes², G. Liu², M. Hatridge² and B. Hunt¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Physics, University of Pittsburgh, Pittsburgh, PA*

9:18

- GF-05. Coexistence of Superconductivity and Ferromagnetism in YBa_{1.85}Eu_{0.15}Cu₃O_{7-δ}/La_{0.67}Ca_{0.33}MnO₃ Films Grown on SrTiO₃ Substrate.** S. Huang¹, B. Qian², W. Xie¹ and X. Wu¹ *1. School of Physics, Nanjing University, Nanjing, China; 2. Physics Department, Changshu Institute of Technology, Changshu, China*

- GF-06. Superconducting, magnetic and magnetotransport properties of $\text{FeTe}_{1-x}\text{Se}_x$ single crystals.** S. Bhalothia¹, R. Kumar² and G.D. Varma² 1. Jawaharlal Nehru University, New Delhi, India; 2. Physics, I. I. T. Roorkee, Roorkee, India

- GF-07. Controlling the superconducting transition by spin-orbit coupling.** N. Banerjee¹, J.A. Ouassou², Y. Zhu³, N. Stelmashenko³, J. Linder² and M. Blamire³ 1. Physics, Loughborough University, Loughborough, United Kingdom; 2. Physics, Norwegian University of Science and Technology, Trondheim, Norway; 3. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom

- GF-08. Bias Current Dependence of Angular Magneto-Resistance in Superconductor/Spin-Valve Nanowires.** A.A. Jara¹ and I. Krivorotov¹ 1. Physics and Astronomy, University of California, Irvine, Irvine, CA

- GF-09. $\text{LaZn}_{2-x}\text{Sn}_2$: unusual superconductivity in a new 1:2:2 crystallographically disordered compound.** A. Provino^{1,2}, A. Pathak³, V. Smetana^{3,4}, A. Mudring^{3,4}, M. Putti^{2,5}, C. Ferdeghini², V.K. Pecharsky^{3,6} and P. Manfrinetti^{1,2} 1. Department of Chemistry, University of Genova, Genova, Italy; 2. Institute SPIN-CNR, Genova, Italy; 3. Ames Laboratory, USDOE, Ames, IA; 4. Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, Sweden; 5. Department of Physics, University of Genova, Genova, Italy; 6. Department of Materials Science and Engineering, Iowa State University, Ames, IA

- GF-10. Andreev Reflection Spectroscopy of a Single Layer NbSe_2 .** G. Zhao¹, B. Trumpf², D. Kim¹, J. Zhang¹, B. Li¹, T. McQueen² and T. Chen^{1,2} 1. Physics, Arizona State University, Tempe, AZ; 2. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD

- GF-11. Enhanced MagnetoElectric Effect in M-type Hexaferrites by Co substitution into Trigonal Bi-pyramidal Sites.** J. Beevers^{1,2}, C. Love¹, S.A. Cavill¹, H. Izadkhah³, C. Vittoria³, R. Fan⁴, G. van der Laan² and S.S. Dhese² 1. Physics, University of York, York, United Kingdom; 2. Diamond Light Source Ltd, Didcot, United Kingdom; 3. Electrical Engineering, Northeastern University, Boston, MA; 4. ISIS, Space Science Department, Didcot, United Kingdom

- GF-12. Effect of Ga^{3+} doping on the magnetoelectric properties in the semiconductor $\text{CuCr}_{1-x}\text{Ga}_x\text{O}_2$ ($0 \leq x \leq 0.15$): a Monte Carlo approach.** A. Al Baalbaky¹, D. Ledue¹ and R. Patte¹ 1. Normandie Université, UNIROUEN, INSA Rouen, CNRS, GPM, 76800 Rouen, France

10:54

- GF-13. Structural, Magnetic and Magnetocaloric Studies on the $\text{NdCr}_{0.5}\text{Fe}_{0.5}\text{TiO}_5$.** *K. Gautam*¹, D.K. Shukla¹, A. Ahad², S.S. Majid², R.J. Choudhary¹, S. Francoual³ and J. Stempfer³
1. *Material Science, UGC-DAE, CSR, Indore, India;* 2. *Physics, Aligarh Muslim University, Aligarh, ALIGARH, India;*
3. *Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany*

11:06

- GF-14. Nitrogen doped BiFeO_3 nanoparticles with enhanced magnetic properties.** *Y. Jia*¹ and C. Liu¹ 1. *Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies, Yongin, The Republic of Korea*

11:18

- GF-15. Control of multiferroic order in BiFeO_3 nanoparticles.**
A. Cardona R.¹, D. Carranza¹, I. Valmianski², J. del Valle Granda², I.K. Schuller², A. Reiber³ and J. Ramirez^{1,2}
1. *Department of Physics, Universidad de los Andes, Bogotá, Colombia;* 2. *Physics, UC San Diego, San Diego, CA;*
3. *Department of Chemistry, Universidad de los Andes, Bogota, Colombia*

FRIDAY
MORNING
8:30

ROOM 304-305

Session GG
SPIN FREEZING AND FRUSTRATION

Rair Macedo, Chair
University of Glasgow, Glasgow, United Kingdom

8:30

- GG-01. Influence of the magnetic interaction on the dynamics on thermally activated artificial spin Ices.** J. Porro¹, S.A. Morley², D. Alba Venero¹, M. Rosamond³, R. Macedo⁴, R. Stamps⁴, C.H. Marrows² and S. Langridge¹ 1. *ISIS Neutron and Muon Source, Harwell, United Kingdom;* 2. *School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom;* 3. *School of Electronics and Electrical Engineering, University of Leeds, Leeds, United Kingdom;* 4. *School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

8:42

- GG-02. Magnetization Processes in Artificial ‘Pinwheel’ Spin Ice.**
*Y. Li*¹, G. Paterson¹, C. Ferguson¹, R. Macedo¹, G. Macauley¹, D. MacLaren¹, S. McVitie¹ and R. Stamps¹ 1. *School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

- GG-03. Magnetic Dynamics in Square Artificial Spin Ice with 3 nm Thick Nanomagnets.** *J.C. Lee*^{1,2}, *B.W. Farmer*³, *P. Fischer*², *S. Kevan*¹, *L.E. De Long*³ and *S. Roy*¹ *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Physics and Astronomy, University of Kentucky, Lexington, KY*

9:06

- GG-04. Magnetic-Monopole Transport Dynamics in the Frustrated Pyrochlores $\text{Dy}_2\text{Ti}_2\text{O}_7$ and $\text{Ho}_2\text{Ti}_2\text{O}_7$. (Invited)** *A. Eyvazov*¹, *R. Dusad*¹, *T.J. Munsie*², *H.A. Dabkowska*², *G.M. Luke*², *E.R. Kassner*³, *J.S. Davis*^{1,4} and *A. Eyal*¹ *1. Cornell University, Ithaca, NY; 2. McMaster University, Hamilton, ON, Canada; 3. Honeywell International Inc., Golden Valley, MN; 4. University of St. Andrews, Fife, United Kingdom*

9:42

- GG-05. Magnetic structures and correlated physical properties of antiperovskite $\text{Mn}_{3+x}\text{Ni}_{1-x}\text{N}$ and Mn_3GaC compounds.** *S. Deng*^{1,2}, *C. Wang*², *Q. Huang*³ and *C. Suergers*¹ *1. Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. Dept. of Physics, Beihang University, Beijing, China; 3. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*

9:54

- GG-06. Magnetic Correlations In Mixed Valent Single Layered $\text{La}_{1.2}\text{Sr}_{0.8}\text{CoO}_4$.** *A. Ahad*¹, *D.K. Shukla*², *K. Gautam*², *F. Rahman*¹, *R.J. Choudhary*² and *D.M. Phase*² *1. Physics, Aligarh Muslim University, Aligarh, India; 2. Material Science, UGC-DAE, CSR, Indore, India*

10:06

- GG-07. The effect of the composition of an FePd alloy on the dynamics of artificial spin ice.** *S.A. Morley*¹, *S.T. Riley*¹, *M. Rosamond*¹ and *C.H. Marrows*¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

10:18

- GG-08. Search for the non-canonical Ising spin glass on rewired regular lattices.** *T. Surungan*¹ *1. Physics, Hasanuddin University, Makassar, Indonesia*

10:30

- GG-09. Can temperature drive macro-ferromagnetism in artificial spin ice?** *R. Macedo*¹, *G. Macauley*¹, *F. Nascimento*² and *R. Stamps*³ *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. Departamento de Física, Universidade Federal de Viçosa, Viçosa, Brazil; 3. University of Glasgow, Glasgow, United Kingdom*

10:42

- GG-10. Effects of Disorder in Artificial Kagome Spin Ice.** *N. Greenberg*¹ and *A. Kunz*¹ *1. Physics, Marquette University, Milwaukee, WI*

10:54

GG-11. **Withdrawn**

11:06

GG-12. **Coexistence of Ferromagnetism and Unconventional Spin Glass Freezing in the Site-Disordered Kagome Ferrite $\text{SrSn}_2\text{Fe}_4\text{O}_{11}$.** L. Shlyk¹, L.E. De Long², S. Strobel¹ and R. Niewa¹ *1. Institute for Inorganic Chemistry, University of Stuttgart, Stuttgart, Germany; 2. Physics and Astronomy, University of Kentucky, Lexington, KY*

11:18

GG-13. **Complex magnetic behavior and spin glass effect observed in Cu doped MnCoGe compounds.** S.K. Pal¹, C. Frommen¹, S. Kumar², G. Helgesen¹, B.C. Hauback¹ and H. Fjellvåg² *1. Physics, Institute for Energy Technology, Kjeller, Norway; 2. Department of Chemistry, Nanostructures and Functional Materials (NAFUMA), Center for Materials Science and Nanotechnology (SMN), University of Oslo, Oslo, Norway*

FRIDAY
MORNING
8:30

ROOM 401-402

Session GH
SOFT MAGNETIC MATERIALS

Bin Peng, Co-Chair
Xi'an Jiaotong University, Xi'an, China
Nian Sun, Co-Chair
Northeastern University, Boston, MA

8:30

GH-01. **A Low Temperature Study of the $\text{Ni}_x\text{Fe}_{1-x}$ Alloy Series.** T. Ambrose¹, M. Loving¹ and H. Ermer¹ *1. Advanced Concepts & Technologies, Northrop Grumman Corporation, Linthicum, MD*

8:42

GH-02. **Magneto Acoustic Emission and Raman Spectroscopy of Magneto-Optic Bismuth Modified Yttrium Iron Garnet (Bi-YIG) Waveguides.** M. McGlashan-Powell¹ *1. Integrated Optics and Photonics Research Laboratory, University of Technology, Jamaica, Kingston, Jamaica*

8:54

GH-03. **Development of Iron-Rich $(\text{Fe}_{1-x-y}\text{Ni}_x\text{Co}_y)_{88}\text{Zr}_7\text{B}_4\text{Cu}_1$ Nanocrystalline Magnetic Materials to Minimize Magnetostriction.** A. Martone¹, B. Dong¹, S. Lan¹ and M.A. Willard¹ *1. Materials Science and Engineering, Case Western Reserve University, Cleveland, OH*

- GH-04. Minor-(Co, Cu) Alloyed Fe-based FeBCSi Soft Magnetic Amorphous Alloys with High Saturation Magnetization.** Y. Li¹, Z. Wang¹ and W. Zhang¹ 1. *School of Materials Science and Engineering, Dalian University of Technology, Dalian, China*

- GH-05. Effect of wheel speed on the magnetic and mechanical properties of melt spun Fe-6.5 wt.% electric steel.** G. Ouyang^{1,2}, B. Jensen², W. Tang², L. Zhou², K. Dennis², C. Macziewski¹, C. Pan¹, M. Kenney¹, Y. Liang^{1,2} and J. Cui^{1,2} 1. *Material Science and Engineering, Iowa State University, Ames, IA*; 2. *Ames Laboratory, US Department of Energy, Ames, IA*

- GH-06. Microstructure and magnetic properties of Fe-Si-B-Cu nanocrystalline alloys with high Cu concentrations.** W. Zhang¹, X. Jia¹, X. Ren¹, Y. Li¹, Y. Xu¹ and G. Xie² 1. *School of Materials Science and Engineering, Dalian University of Technology, Dalian, China*; 2. *Institute for Materials Research, Tohoku University, Sendai, Japan*

- GH-07. Multiscale modeling of a low magnetostrictive 0.5wt%Cr-27wt%Co-Fe alloy.** M. Savary^{1,2}, O. Hubert¹, A. Helbert², T. Baudin² and T. Waeckerlé³ 1. *LMT, ENS Paris-Saclay, UMR CNRS 8535, Université Paris-Saclay, Cachan, France*; 2. *ICMMO, SP2M, Univ. Paris-Sud, Université Paris-Saclay, UMR CNRS 8182, Orsay, France*; 3. *Aperam Alloys Imphy, Imphy, France*

- GH-08. Ferromagnetic resonance studies of nitrogen incorporated nickel ferrite thin films.** G. Markandeyulu¹, K. Anoop Baby¹ and A. Subrahmanyam¹ 1. *Physics, Indian Institute of Technology, Chennai, India*

- GH-09. Maximizing Effective Permeability in Magnetodielectric Composites by Particle Size Distribution Modified Effective Medium Theory.** Q. Li¹, Y. Chen² and V.G. Harris¹ 1. *Electrical and Computer Engineering, Northeastern University, Boston, MA*; 2. *Rogers Innovation Center, Burlington, MA*

- GH-10. An insight into the cationic ordering and magnetic properties of rare-earth doped NiFe₂O₄ probed by Mössbauer and x-ray spectroscopy.** U. Kodam^{1,2}, H. Vasili³, V. Raghavendra Reddy⁴ and G. Markandeyulu¹ 1. *Physics, Indian Institute of Technology, Chennai, India*; 2. *Geethanjali College of Engineering and Technology, Hyderabad, India*; 3. *Alba Synchrotron Light Source, Barcelona, Spain*; 4. *UGC-DAE Consortium for Scientific Research, Indore, India*

10:30

- GH-11. Stoichiometry, Phase, and Texture Evolution in PLD-Grown Hexagonal Ferrite Films as a Function of Laser Process Parameters.** C. Yu¹, A.S. Sokolov¹, H. Xia², C. Wu³ and V.G. Harris¹ 1. *Electrical and Computer Engineering, Northeastern University, Boston, MA*; 2. *Lanzhou University, Boston, MA*; 3. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

10:42

- GH-12. Withdrawn**

10:54

- GH-13. Revisiting the far end of the Herzer diagram: Extremely thin, large-grain Fe-Co.** Z. Turgut¹, Y. Shen^{1,2}, J. Shin^{1,3}, L. Audrey^{1,3}, J. Horwath¹ and G. Kozlowski^{1,4} 1. *RQQM, AFRL, Wright-Patterson AFB, OH*; 2. *University of Dayton, Dayton, OH*; 3. *University of Illinois at Urbana-Champaign, Urbana-Champaign, IL*; 4. *Wright State University, Dayton, OH*

11:06

- GH-14. Analysis of Cooling Rates of Rapidly Solidifying Fe-6.5(wt.%)Si During Melt-Spinning Using Thermal Imaging.** C. Macziewski¹, G. Ouyang¹ and J. Cui¹ 1. *Material Science and Engineering, Iowa State University, Ames, IA*

11:18

- GH-15. Strain-driven changes in magnetic anisotropy in high-quality single crystal NiZnAl-Ferrite epitaxial layers.** S. Emori¹, B. Gray², H. Jeon³, P. Dhagat⁴, A. Jander⁵, N.X. Sun⁶, R. Budhani², Y. Suzuki⁷ and B.M. Howe² 1. *Applied Physics, Stanford University, Stanford, CA*; 2. *Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH*; 3. *Wright State University, Dayton, OH*; 4. *Oregon State University, Corvallis, OR*; 5. *EECS, Oregon State University, Corvallis, OR*; 6. *Northeastern University, Boston, MA*; 7. *Stanford University, Stanford, CA*

FRIDAY
MORNING
8:30

ROOM 411-412

Session GI
MAGNETIC SEMICONDUCTORS AND
MAGNETOELASTIC MATERIALS II

Daniel Gopman, Chair
NIST, Gaithersburg, MD

8:30

- GI-01. Perpendicular Interfacial Exchange Coupling in GaMnAsP/ GaMnAs Bilayers.** X. Li¹, S. Dong¹, X. Liu¹, M. Dobrowolska¹ and J. Furdyna¹ 1. *Department of Physics, University of Notre Dame, Notre Dame, IN*

- GI-02. Anomalous Hall Effect in the Ferromagnetic Semiconductor SmN.** *W.F. Holmes-Hewett*^{1,2}, *F. Ullstad*^{1,2}, *B. Ruck*^{1,2}, *F. Natali*^{1,2} and *J. Trodahl*^{1,2} *1. Victoria University, Wellington, New Zealand; 2. MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand*

- GI-03. Heat-Treatment-Induced Magnetic State Transition in Diluted Magnetic Semiconductor GeFeTe without Phase Change.** *J. Liu*¹, *D. Shi*¹, *C. Kan*¹ and *H. Yang*¹ *1. College of Science, Nanjing University of Aeronautics and Astronautics, Nanjing, China*

- GI-04. Ferromagnetic Resonance and Spin-Wave Resonances in GaMnAsP films.** *X. Liu*¹, *X. Li*¹, *X. Zhang*¹, *S. Dong*¹, *M. Dobrowolska*¹ and *J. Furdyna*¹ *1. Department of Physics, University of Notre Dame, Notre Dame, IN*

- GI-05. Direct Measurements of Exciton Magnetic Polarons in Cd_{1-x}Mn_xSe Nanocrystals using Resonant Photoluminescence.** *W. Rice*^{1,2}, *W. Liu*², *V. Pinchetti*³, *D. Yakovlev*⁴, *V. Klimov*² and *S. Crooker*² *1. University of Wyoming, Laramie, WY; 2. Los Alamos National Laboratory, Los Alamos, NM; 3. Università degli Studi di Milano-Bicocca, Milano, Italy; 4. Technical University Dortmund, Dortmund, Germany*

- GI-06. Magnetoelastic effects in doubly clamped, free standing beam resonators.** *M. Staruch*¹, *S.P. Bennett*¹, *B. Matis*², *J. Baldwin*², *K. Bussmann*¹, *D.B. Gopman*³, *Y. Kabanov*³, *J.W. Lau*⁴, *R. Shull*⁴, *E. Langlois*⁵, *J. Pillars*⁵, *C. Arrington*⁵ and *P. Finkel*¹ *1. Materials Science and Technology, U.S. Naval Research Laboratory, Washington, DC; 2. Acoustics Division, U.S. Naval Research Laboratory, Washington, DC; 3. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD; 4. NIST, Gaithersburg, MD; 5. Sandia National Laboratory, Albuquerque, NM*

- GI-07. Determination of magnetoelastic constants in ferrite films using strain-dependent FMR measurements and a linear perturbation theory.** *K. Masood*¹, *I. Lisenkov*^{1,2}, *B.M. Howe*³, *B. Gray*³, *H. Jeon*⁴, *A. Jander*¹ and *P. Dhagat*¹ *1. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 2. Kotel'nikov Institute of Radio-engineering and Electronics, Moscow, Russian Federation; 3. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH; 4. Wright State University, Dayton, OH*

9:54

- GI-08. Abnormal thermal expansion induced by “lattice-spin” coupling in antiperovskite structured $Mn_3XN(C)$ compounds.** C. Wang¹, Y. Sun¹, L. Wang¹, K. Shi¹, S. Deng¹ and Q. Huang² 1. Dept. of Physics, Beihang University, Beijing, China; 2. NIST Center for Neutron Research, Gaithersburg, MD

10:06

- GI-09. Modeling magneto-elastic effects in hydrogels filled with ferromagnetic nanoparticles.** O. Savchak¹, T. Morrison², K. Kornev¹ and O. Kuksenok¹ 1. Materials Sciences and Engineering, Clemson University, Clemson, SC; 2. The Ohio State University, Columbus, OH

10:18

- GI-10. Highly Thermal-stable Ferromagnetism By A Natural Composite.** J. Gou¹, T. Ma¹ and X. Ren² 1. Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China; 2. Xi'an Jiaotong University, Xi'an, China

10:30

- GI-11. Magnetovolume Effect Induced Zero Thermal Expansion in $Er_2Fe_{16.5}Cr_{0.5}$.** S. Dan¹, S. Mukherjee¹, C. Mazumdar² and R. Ranganathan² 1. Department of Physics, The University Of Burdwan, Burdwan, India; 2. Condensed Matter Physics, Saha Institute of Nuclear Physics, Kolkata, India

10:42

- GI-12. Impact of Au interlayer on magnetoelasticity of Fe/Au/Fe trilayer.** K. Novakoski Fischer¹, D. Sander¹ and S. Parkin² 1. Max-Planck-Institut für Mikrostrukturphysik, Halle Saale, Germany; 2. NISE, Max Planck Institute for Microstructure Physics, Halle (Saale), Germany

10:54

- GI-13. Magnetostrictive Performance of Additively Manufactured CoFe-based Rods using the LENS System.** N.J. Jones¹, J. Yoo¹, T. Sano², R.T. Ott³, D. Schlagel³ and T.A. Lograsso^{3,4} 1. Physical Metallurgy and Fire Protection, Naval Surface Warfare Center, Carderock Division, Bethesda, MD; 2. Materials and Manufacturing Science Division, U. S. Army Research Laboratory, Aberdeen Proving Ground, MD; 3. Division of Materials Science & Engineering, Ames Laboratory, US Department of Energy, Ames, IA; 4. Department of Materials Science and Engineering, Iowa State University, Ames, IA

11:06

- GI-14. Polycrystalline Terfenol-D Thin Films Grown at CMOS Compatible Temperature.** M.K. Panduranga¹, T. Lee² and G. Carman^{1,2} 1. Mechanical & Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Materials Science & Engineering, University of California, Los Angeles, Los Angeles, CA

Session GP
SPIN WAVES IV
(Poster Session)

Pavel Kabos, Co-Chair
NIST, Boulder, CO

Haiming Yu, Co-Chair
Beihang University, Beijing, China

- GP-01. Effect of the Magnetostatic Interaction between the Ferromagnetic Layers of a Spin-Valve on the Normal Modes.** D. Mancilla-Almonacid¹, R. Arias², S. Oyarzún², D. Altbir² and S. Allende² *1. CEDENNA, Universidad de Santiago, Santiago, Chile; 2. Departamento de Física, Universidad de Santiago, Santiago, Chile*
- GP-02. Brillouin-Mandelstam Spectroscopy of Standing Spin Waves in a Ferrite Waveguide.** M. Balinskiy¹, F. Kargar¹, H. Chiang¹, A.A. Balandin¹ and A. Khitun¹ *1. Electrical and Computer Engineering, University of California, Riverside, Anaheim Hills, CA*
- GP-03. Forward volume magnetostatic spin waves in patterned ferromagnetic films with perpendicular magnetic anisotropy.** C. Kellogg¹, K. Nanayakkara¹, M. Hanberry¹ and A. Kozhanov^{1,2} *1. Georgia State University, Atlanta, GA; 2. National Research Nuclear University MEPHI, Moscow, Russian Federation*
- GP-04. Strong confined spin wave in three dimensional permalloy film under zero external magnetic field.** M. Kao¹, L. Chang¹, L. Tsai¹, J. Liang² and S. Lee¹ *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Physics, Fu Jen Catholic University, Taipei, Taiwan*
- GP-05. The general Boltzmann equation for magnon transport in FI/NM structure.** T. Liu¹, Y. Li¹ and J. Zhang¹ *1. School of Physics, Tongji University, Shanghai, China*
- GP-06. Effect of Spin Transport through Ultrathin Antiferromagnetic IrMn on Spin Wave Damping in CoFeB/IrMn/CoFeB Trilayers.** D. Jhahria¹, D. Pandya¹ and S. Chaudhary¹ *1. Thin Film Laboratory, Physics Department, Indian Institute of Technology Delhi, New Delhi, India*
- GP-07. Mapping the Spatial Profile of a Standing Spin Wave using Nuclear Resonant Scattering of Synchrotron Radiation.** J. Gollwitzer¹, L. Bocklage^{2,3}, K. Schlage², C.F. Adolff^{2,3}, H. Wille², R. Röhlberger^{2,3} and G. Meier^{3,4} *1. University of Hamburg, Hamburg, Germany; 2. Photon Science, DESY, Hamburg, Germany; 3. Hamburg Center for Ultrafast Imaging, Hamburg, Germany; 4. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany*

- GP-08. Design of a 40-nm CMOS Integrated On-Chip Oscilloscope for 5-50 GHz Spin Wave Characterization.** *E. Egel*¹, *G. Csaba*², *S. Breitzkreutz-v. Gamm*¹, *J. Russer*³, *P. Russer*³, *F. Kreupl*¹ and *M. Becherer*³ *1. Chair of Technical Electronics, Technical University of Munich, Munich, Germany; 2. Faculty of Information Technology and Bionics, Pázmány Péter Catholic University, Budapest, Hungary; 3. Chair of Nanoelectronics, Technical University of Munich, Munich, Germany*
- GP-09. Spin wave propagation over long distance in nanometer-thick Co₂MnSi-Heusler alloy.** *T. Stückler*¹, *S. Tu*¹, *C. Liu*^{1,2}, *F. Heimbach*¹, *A. Md. Shah*¹, *Y. Zhang*¹, *H. Yu*¹, *B.M. Ludbrook*³, *S. Granville*³, *Y. Dapeng*^{2,4} and *W. Zhao*¹ *1. Beihang University, Beijing, China; 2. Peking University, Beijing, China; 3. Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand; 4. Southern University of Science and Technology, Shenzhen, China*
- GP-10. Forward-volume and Surface Magneto-static Modes in an YIG Film For Out-of-plane Magnetic Fields: Theory And Experiment[†].** *J. Lim*¹, *W. Bang*¹, *J.S. Trossman*¹, *C. Tsai*² and *J. Ketterson*^{1,3} *1. Department of Physics and Astronomy, Northwestern University, Evanston, IL; 2. Department of Engineering & Management of Advanced Technology, Chang Jung Christian University, Tainan, Taiwan; 3. Department of Electrical and Computer Engineering, Northwestern University, Evanston, IL*
- GP-11. Withdrawn**
- GP-12. Antiferromagnetic Domain Wall as Spin Wave Polarizer and Retarder.** *J. Lan*¹, *W. Yu*¹ and *J. Xiao*^{1,2} *1. Department of Physics, Fudan University, Shanghai, China; 2. Collaborative Innovation Center of Advanced Microstructures, Nanjing, China*
- GP-13. Brillouin Light Scattering Study of Ultrathin Pt/Co Nanowire Arrays with Interfacial Dzyaloshinskii-Moriya Interaction.** *H. Bouloussa*¹, *J. Yu*², *Y. Roussigné*¹, *M. Belmeguenai*¹, *A. Stashkevich*¹, *H. Yang*² and *S.M. Chérif*¹ *1. LSPM (CNRS-UPR 3407), Université Paris 13, Villetaneuse, France; 2. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*
- GP-14. Combined Molecular and Spin Dynamics Simulation of Vacancy Induced Spin Wave Modes in BCC Iron.** *M. Mudrick*¹, *M. Eisenbach*², *D. Perera*³ and *D.P. Landau*¹ *1. Center for Simulational Physics, The University of Georgia, Athens, GA; 2. National Center for Computational Sciences, Oak Ridge National Lab, Oak Ridge, TN; 3. Physics & Astronomy, Mississippi State University, Mississippi State, MS*
- GP-15. Spin-Orbit-Torque-Induced Magnetic Domain Wall Motion in Ta/CoFe Nanowires With Sloped Perpendicular Magnetic Anisotropy.** *Y. Zhang*¹, *C. Yang*², *S. Luo*¹, *J. Ouyang*¹, *X. Yang*¹ and *S. Chen*¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China; 2. Department of Mathematic, Harbin Institute of Technology, Harbin, China*

- GP-16. Magnetic logic device based on magnetic domain wall valve-like behaviors.** H. Piao^{1,2}, Y. Zhao¹, X. Ma^{1,2}, D. Kim², L. Pan¹ and S. Yu² *1. School of Science, China Three Gorges University, Yichang, China; 2. Physics, Chungbuk National University, Cheongju, The Republic of Korea*

FRIDAY
MORNING
9:30

SPIRIT OF PITTSBURGH BALLROOM A

Session GQ
MICROMAGNETIC MODELLING II
(Poster Session)

Hatem ElBidweihy, Chair
United States Naval Academy, Annapolis, MD

- GQ-01. Study of the Bloch magnetic skyrmion configuration in magnetic dots.** S. Allende¹ and M. Castro¹ *1. Universidad de Santiago de Chile, Santiago, Chile*
- GQ-02. Micromagnetic Simulation of the Ground States of Ce-Fe-B Amorphous Nanodisks.** D. Liu^{1,2}, G. Li^{1,2}, X. Zhao^{1,2}, J. Xiong^{1,2}, R. Li^{1,2}, W. Zuo^{1,2}, T. Zhao^{1,2}, F. Hu^{1,2}, J. Sun^{1,2} and B. Shen^{1,2} *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China*
- GQ-03. Characteristic Real- and Reciprocal Space Dependence Found for an Magnetic Correlation Function in a Two-dimensional Ginzburg-Landau Type Model with Dipole-Dipole Interaction.** K. Iwano¹, C. Mitsumata² and K. Ono¹ *1. IMSS, KEK, Tsukuba, Japan; 2. NIMS, Tsukuba, Japan*
- GQ-04. Micromagnetic Simulations for Magnetic Friction.** I.J. Rissanen¹ and L. Laurson¹ *1. Department of Applied Physics, Aalto-university, Espoo, Finland*
- GQ-05. Solving the Inverse Magnetostatic Problem Using Fictitious Magnetic Charges.** G. Wautischer¹, F. Bruckner¹, C. Abert¹ and D. Suess¹ *1. Faculty of Physics, University Vienna, Vienna, Austria*
- GQ-06. Helical patterns of magnetization and magnetic charge density in iron whiskers.** T.L. Templeton¹, S.D. Hanham¹ and A.S. Arrott¹ *1. Physics, Simon Fraser University, Burnaby, BC, Canada*
- GQ-07. Size and temperature dependence of M-H loop for Pt/CoFe/IrMn heterojunction.** Z. Zhao¹ and D. Wei¹ *1. School of Materials Science and Engineering, Tsinghua University, Beijing, China*

- GQ-08. Influence of anisotropy distributions and exchange interactions on the magnetization dynamics of amorphous Co-based alloy systems.** *D. Jordan*¹, *S. Kulkarni*¹, *P. McCloskey*¹, *A. Masood*¹ and *C. O'Mathuna*^{1,2}
1. Microelectronics, Tyndall National Institute, Cork, Ireland;
2. Electrical Engineering, University College Cork, Cork, Ireland
- GQ-09. Shape of Energy Potentials of the Magnetic Skyrmion in Confined Geometries.** *D. Jeong*¹, *H. Han*¹, *N. Kim*¹ and *K. Lee*¹ *1. School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, The Republic of Korea*
- GQ-10. 3D FDTD-LLG modelling of magnetisation dynamics in thin film ferromagnetic structures.** *F.Y. Ogrin*¹ *1. University of Exeter, Exeter, United Kingdom*
- GQ-11. Proposal for a micromagnetic standard problem for materials with Dzyaloshinskii-Moriya interaction.** *M. Beg*^{1,2}, *L. Breth*¹, *D.I. Cortes*¹, *R. Pepper*¹, *T. Kluyver*¹, *G. Downing*¹, *T. Hesjedal*³, *P. Hatton*⁴, *T. Lancaster*⁴, *G. Balakrishnan*⁵, *O. Hovorka*¹ and *H. Fangohr*^{1,2} *1. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 2. European XFEL GmbH, Schenefeld, Germany; 3. Department of Physics, University of Oxford, Oxford, United Kingdom; 4. Department of Physics, Durham University, Durham, United Kingdom; 5. Department of Physics, University of Warwick, Coventry, United Kingdom*
- GQ-12. Efficient micromagnetic modelling of spin-transfer torque and spin-orbit torque.** *C. Abert*¹, *F. Bruckner*¹, *C. Vogler*² and *D. Suess*¹ *1. Christian Doppler Laboratory - Advanced Sensing and Materials, University of Vienna, Vienna, Austria; 2. Faculty of Physics, University of Vienna, Vienna, Austria*
- GQ-13. Convergence of Highly Parallel Stray-Field Calculation using the Fast Multipole Method on Irregular Meshes.** *P. Palmesi*¹, *C. Abert*¹, *F. Bruckner*¹ and *D. Suess*¹ *1. Faculty of Physics, University of Vienna, Vienna, Austria*
- GQ-14. Switching probability of all-perpendicular spin valve nanopillars.** *M. Tzoufras*¹ *1. Spin Transfer Technologies, Fremont, CA*
- GQ-15. Exchange bias revisited: unusual field-dependent effects.** *J. Fernández Cuñado*^{1,2}, *P. Perna*³, *A. Bollero*³, *N.S. Sokolov*⁴, *S. Gastev*⁴, *S. Sutturin*⁴, *A. Banskikof*⁴, *V. Fedorov*⁴, *D. Baranov*⁴, *K. Koshmak*⁴, *L. Pasquali*⁵, *J. Nogues*⁶, *R. Miranda*^{3,2} and *J. Camarero*^{2,7} *1. Magnetism, IMDEA Nanociencia, Madrid, Spain; 2. Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 3. IMDEA Nanoscience, Madrid, Spain; 4. Solid State, IOFFE Institute, St. Petersburg, Russian Federation; 5. Dipartimento di Ingegneria 'Enzo Ferrari', Università di Modena e Reggio Emilia, Modena, Italy; 6. ICN2- Institut Catala de Nanociencia i Nanotecnologia, Bellaterra, Spain; 7. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain*

Session GR
MAGNETIZATION DYNAMICS AND DAMPING
(Poster Session)

Roopali Kukreja, Chair
University of California, Davis, Davis, CA

- GR-01. Gilbert Damping Enhancement in Ion-Beam Sputtered Co₂FeAl/Mo Bilayer thin films.** S. Husain¹, A. Kumar², V. Barwal¹, P. Kumar¹, S. Akansel², P. Svedlindh² and S. Chaudhary¹ *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*
- GR-02. Magnetization Reversal and FMR Studies on Co-sputtered Co₂MnAl Full Heusler Alloy Thin Films.** V. Barwal¹, S. Husain¹, N. Behera¹, A. Kumar², P. Svedlindh² and S. Chaudhary¹ *1. Physics Department, Indian Institute of Technology Delhi, New Delhi, India; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*
- GR-03. Annealing influence on the structure, magnetic properties and Gilbert damping constant of Co₂FeSi Heusler alloy thin films.** Z. Xu¹, Z. Zhang¹, F. Hu¹, X. Li¹, E. Liu¹ and F. Xu¹ *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China*
- GR-04. Spin-torque ferromagnetic resonance measurements utilizing spin Hall magnetoresistance in W/CoFeB/MgO structures.** C. He¹, A. Navabi¹, Q. Shao¹, G. Yu¹, P.K. Amiri¹ and K.L. Wang¹ *1. Electrical Engineering, UCLA, Los Angeles, CA*
- GR-05. Resonance Mode Hybridization in Arrays of Nanopatterned Co/Ru/Co Synthetic Antiferromagnets.** I. Nekrashevich¹, L. Chang² and D. Litvinov^{2,1} *1. Materials Engineering, University of Houston, Houston, TX; 2. Electrical and Computer Engineering, University of Houston, Houston, TX*
- GR-06. Broadband ferromagnetic resonance investigation of phase transition in Fe₃O₄ thin films.** J. Beik Mohammadi^{1,2}, A.V. Singh³, A. Srivastava³, C.K. Mewes², A. Gupta³ and T. Mewes³ *1. Physics, MINT, University of Alabama, Tuscaloosa, AL; 2. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL; 3. MINT, The University of Alabama, Tuscaloosa, AL*
- GR-07. Magnetization Dynamics and Damping Behavior of Exchange Coupled CoFeB and CoPt Layers.** M. Jaris¹, J.P. Pellegren², V.M. Sokalski² and H. Schmidt¹ *1. Electrical Engineering, University of California Santa Cruz, Santa Cruz, CA; 2. Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA*

- GR-08. All-Optical Non-Local Magneto-Elastic Excitation of Single Nanomagnet at GHz Frequencies.** *W. Yang*¹, *C. Berk*¹, *M. Jaris*¹, *D. Hibbard-Lubow*¹ and *H. Schmidt*¹ *1. Electrical Engineering, University of California Santa Cruz, Santa Cruz, CA*
- GR-09. Unidirectional Effects in Magnetization Dynamics Driven by Field- and Damping-like Torques.** *J. Sklenar*^{1,2}, *W. Zhang*^{3,4}, *M. Jungfleisch*⁴, *H. Saglam*⁴, *S. Grudichak*², *W. Jiang*^{4,5}, *J.E. Pearson*⁴, *J. Ketterson*² and *A. Hoffmann*⁴ *1. Physics, University of Illinois Urbana-Champaign, Urbana, IL; 2. Physics, Northwestern University, Evanston, IL; 3. Oakland University, Rochester, MI; 4. Materials Science Division, Argonne National Laboratory, Argonne, IL; 5. Department of Physics, Tsinghua University, Beijing, China*
- GR-10. Role of Pump Fluence on the Gilbert Damping in Ni₈₀Fe₂₀ Thin Film.** *S. Mondal*¹, *S. Choudhury*¹, *J. Sinha*¹ and *A. Barman*¹ *1. Condensed Matter Physics and Material Sciences, S N Bose National Centre For Basic Sciences, Kolkata, India*
- GR-11. Time-resolved x-ray detected ferromagnetic resonance with spatial resolution using scanning x-ray transmission microscopy.** *T. Schaffers*¹, *R. Meckenstock*², *D. Spoddig*², *K.J. Ollefs*², *S. Bonetti*³, *H. Ohldag*³, *H. Wende*², *M. Farle*² and *A. Ney*¹ *1. Institute of Semiconductor and Solid State Physics, Johannes Kepler University Linz, Linz, Austria; 2. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 3. SSRL, SLAC National Accelerator Laboratory, Menlo Park, CA*
- GR-12. First principle calculation for Gilbert damping constants in ferromagnetic/non-magnetic junctions.** *R. Hiramatsu*¹, *D. Miura*¹ and *A. Sakuma*¹ *1. Applied Physics, Tohoku University, Sendai, Japan*
- GR-13. Thickness dependence of acoustically-driven ferromagnetic resonance.** *D. Labanowski*¹, *P. Gowtham*¹, *A. Jung*¹ and *S. Salahuddin*¹ *1. University of California, Berkeley, Berkeley, CA*
- GR-14. Spin-wave Modes in Ferromagnetic Nanodisks, Their Excitation and Auto-oscillations.** *D. Mancilla-Almonacid*¹ and *R. Arias*² *1. CEDENNA, Universidad de Santiago, Santiago, Chile; 2. Departamento de Física, Universidad de Chile, Santiago, Chile*
- GR-15. Controlling the Effective Saturation Magnetization in YIG Films Using Ion Irradiation.** *W.T. Ruane*¹, *S.P. White*¹, *J. Brangham*¹, *K. Meng*¹, *D.V. Pelekhov*¹, *F. Yang*¹ and *P. Hammel*¹ *1. Physics, The Ohio State University, Columbus, OH*
- GR-16. Terahertz Nonlinear Spin Control in Canted Antiferromagnets.** *R. Mikhaylovskiy*¹, *S. Baierl*², *T. Ebnet*¹, *A.K. Zvezdin*³, *A. Kimel*⁴ and *R. Huber*² *1. Spectroscopy of Solids and Interfaces, Radboud University Nijmegen, Nijmegen, Netherlands; 2. University of Regensburg, Regensburg, Germany; 3. Prokhorov General Physics Institute, Moscow, Russian Federation; 4. Radboud University, Nijmegen, Netherlands*

Session GS
**HALF METALS, MAGNETORESISTANCE,
MAGNETOIMPEDANCE, AND HALL EFFECT**
(Poster Session)

Melissa Loving, Chair
Northrop Grumman Corporation, Linthicum, MD

- GS-01. Temperature Dependent Magneto-transport Properties of MnAl Binary Alloy Thin Films.** V. Barwal¹, S. Husain¹, N. Behera¹, A. Kumar², P. Svedlindh² and S. Chaudhary¹
1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden
- GS-02. Experimental and Theoretical Investigations on the Potential Half Metallicity in CoRhMnGe Heusler Alloy.** D. Rani¹, E. Enamullah¹, K. Suresh¹, A. Yadav², S. Jha², D. Bhattacharya², M. Raama Varma³ and A. Alam¹
1. Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Atomic and Molecular Physics Division, Bhabha Atomic Research Centre, Mumbai, India; 3. National Institute for interdisciplinary sciences and technology (CSIR), Thiruvananthapuram, India
- GS-03. Perpendicular Anisotropy and Electron Transport in Epitaxial Co₂TiSi Films.** Y. Jin¹, R. Pathak², S.R. Valloppilly¹, P.R. Kharel³, G. Zhao⁴, D. Kim⁴, A. Kashyap², T. Chen⁴, R. Skomski¹ and D.J. Sellmyer⁵
1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Physics, School of Basic Sciences, Indian Institute of Technology Mandi, HP, Mandi, India; 3. Physics, South Dakota State University, Brookings, SD; 4. Physics, Arizona State University, Tempe, AZ; 5. University of Nebraska - Lincoln, Lincoln, NE
- GS-04. Atomic configuration and magnetic properties of CoVMnAl alloy.** R.Y. Umetsu¹, K. Saito², K. Ono² and T. Ishigaki³
1. Tohoku University, Sendai, Japan; 2. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Japan; 3. Ibaraki University, Ibaraki, Japan
- GS-05. Ab Initio Understanding of Magnetic Properties in Zn_xFe_{3-x}O₄ Ultra-thin Film With Dilute Zn Substitution.** Z. Huang¹, Q. Chen¹, S. Jiang², Y. Zhai^{1,3} and S. Dong¹
1. School of Physics, Southeast University, Nanjing, China; 2. KTH Royal Institute Technology, Stockholm, Sweden; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China
- GS-06. Magnetic Ordering and Magneto-caloric and Magneto-transport Effects in Mn₅₀Ni_{41-x}Fe_xSn₉ Heusler Alloys.** A. Rosales Rivera¹, N. Salazar-Henao¹, A. Velásquez-Salazar¹, J. López-Tabares¹, R. González-Sánchez¹ and F. Saccone²
1. Laboratorio de Magnetismo y Materiales Avanzados, Universidad Nacional de Colombia, Sede Manizales, Manizales, Colombia; 2. Departamento de Física, Facultad de Ingeniería, Universidad de Buenos Aires, Buenos Aires, Argentina

- GS-07. Study Of Granular-in-Gap Device With nm Gap Length.**
A. Toh¹ and V. Ng¹ 1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National Univ Singapore, Singapore, Singapore
- GS-08. Effects of Residual Strain on Magnetoresistance in Heterostructures of $\text{La}_{0.9}\text{Ca}_{0.1}\text{MnO}_3/0.7\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3-0.3\text{PbTiO}_3$.** *Y. Qi¹ and J. Gao¹ 1. Physics, The University of Hong Kong, Hong Kong, Hong Kong*
- GS-09. Interfacial scattering effect on anisotropic magnetoresistance and anomalous Hall effect in Ta/Fe multilayers.** *Q. Zhang¹, P. Li¹, Y. Wen¹, Y. Zhao¹ and X. Zhang¹ 1. Physical Science and Engineering Division (PSE), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*
- GS-10. Theoretical study on the perpendicular anisotropic magnetoresistance using Rashba-type ferromagnetic model.**
Y. Yahagi¹, D. Miura¹ and A. Sakuma¹ 1. Applied Physics, Tohoku University, Sendai, Japan
- GS-11. The Enhancement of Anomalous Hall Effect by Inserting MgO Layer in Perpendicular Anisotropic Pd/Co₂MnSi/MgO/Pd Films.** *H. Fu¹, C. You¹, K. Wang², N. Tian¹ and L. Ma¹ 1. School of Materials Science and Engineering, Xi'an University of Technology, Xi'an, China; 2. Huaqiao University, Xiamen, China*
- GS-12. Stress-induced Uniaxial Magnetic Anisotropic Constants in CoFeB Amorphous Film Probed by Anisotropic Magnetoresistance.** *X. Wen^{1,2}, B. Wang^{2,3}, P. Sheng^{2,3}, S. Hu^{2,3}, H. Yang^{2,3}, K. Pei³, Q. Zhan^{2,3}, W. Xia^{2,3}, H. Xu¹ and R. Li^{2,3} 1. Institute of Materials Science, School of Materials Science and Engineering, Shanghai University, Shanghai, China; 2. CAS Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 3. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- GS-13. The anomalous Hall effect in epitaxial Ni(001) film with δ -doped Bi.** *J. Qin¹ 1. Physics, Fudan University, Shanghai, China*
- GS-14. Anisotropic Magnetoresistance of a Quantum Hall System with Internal Anisotropy.** *O. Ciftja¹ 1. Department of Physics, Prairie View A&M University, Prairie View, TX*
- GS-15. Magneto Optic Study of Fe/ Bi₂Te₃/ Fe.** *F. Alottebi¹ and D. Seifu¹ 1. Physics, Morgan State University, Baltimore, MD*
- GS-16. Structure and anisotropic magnetoresistance of Ta/NiFe/Ta thin films.** *H.W. Chang¹, H. Ouyang² and W. Chang-Ren³ 1. Department of Physics, National Chung Cheng University, Chia-Yi, 621 Taiwan, Chia-Yi, Taiwan; 2. National Tsing Hua University, HsinChu, Taiwan; 3. Department of Applied Physics, Tunghai University, Taichung, Taiwan*

Session GT
RARE EARTH-FREE HARD MAGNETIC
MATERIALS II
(Poster Session)

Ruma Mandal, Chair

National Institute for Materials Science (NIMS), Tsukuba, Japan

- GT-01. New structures of Fe₃S for rare-earth-free permanent magnets.** S. Yu^{1,2}, X. Zhao¹, S. Wu^{1,2}, M. Nguyen¹, Z. Zhu², C. Wang¹ and K. Ho¹ *1. Ames Laboratory, Ames, IA; 2. Xiamen University, Xiamen, China*
- GT-02. Magnetic stability of sintered and bonded permanent magnets.** E. Perigo¹ and D. Tremelling¹ *1. ABB, Raleigh, NC*
- GT-03. Tailoring Magnetic Properties of Self-Biased Hexaferrites Using an Alternative Copolymer of Isobutylene and Maleic Anhydride.** C. Wu^{1,2}, Z. Yu², A.S. Sokolov¹, K. Sun², X. Jiang^{1,2}, Z. Lan² and V.G. Harris¹ *1. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- GT-04. High Throughput Experimental Technologies for Novel Hard Magnetic Alloy Research.** X. Jiang^{1,2}, P. Liu¹, H. Song¹, C. Zhao² and S. Li² *1. MTI Corporation, Richmond, CA; 2. Shenyang Kejing Auto-instrument Co., Ltd, Shenyang, China*
- GT-05. Harvesting the Flux and Thermomagnetic Characteristics of Ferrite Magnets in Wind Power Generation.** H.A. Khazdozian¹, R.L. Hadimani^{2,3}, D.C. Jiles³ and C.I. Nlebedim¹ *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. Electrical and Computer Engineering, Iowa State University, Ames, IA*
- GT-06. Characteristic signatures for detection of the chemically-ordered L1₀ phase.** I.J. McDonald¹, S. Keshavarz¹ and L. Lewis¹ *1. Chemical Engineering, Northeastern University, Boston, MA*
- GT-07. Electronic Structures of Ferromagnetic MnAl-C Intermetallic Compound.** M. Choi^{1,2}, Y. Hong^{2,3}, W. Lee^{1,2}, H. Won^{1,2}, S. Kim⁴ and C. Yeo⁵ *1. Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 2. MINT, The University of Alabama, Tuscaloosa, AL; 3. University of Alabama, Tuscaloosa, AL; 4. Physics and Astronomy, Mississippi State University, Starkville, MS; 5. Mechanical Engineering, Texas Tech University, Lubbock, TX*

- GT-08. Improved structural, magnetic and spectroscopic properties of M-type strontium hexaferrite synthesized by citrate precursor method.** K. Rana¹, P. Thakur¹ and A. Thakur¹
1. Basic Sciences, Shoolini University, Solan, India
- GT-09. High-Performance Alnico Magnets with Near-Final Shape.** L. Hu¹, I.E. Anderson^{1,2}, A.G. Kassen^{1,2}, E.M. White¹, W. Tang¹, L. Zhou¹, M.J. Kramer¹, D. DeVoto³, J. Major³, K. Bennion³, S. Narumanchi³ and G. Ouyang²
1. Ames Laboratory, US Department of Energy, Ames, IA; 2. Iowa State University, Ames, IA; 3. National Renewable Energy Laboratory, U.S. Department of Energy, Golden, CO
- GT-10. Rare earth doped M-type Hexaferrites: Ferromagnetic Resonance (FMR) and Magnetization dynamics.** V. Sharma¹, S. Kumari¹ and B.K. Kuanr¹
1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India
- GT-11. Effect of Cobalt Substitution on Magnetic Properties of Ba₄Ni_{2-x}Co_xFe₃₆O₆₀ U-type Hexaferrite.** X. Jiang¹, S. Li¹, Z. Yu¹, V.G. Harris², Z. Su², K. Sun¹, C. Wu¹, R. Guo¹ and Z. Lan¹
1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA
- GT-12. Surfactant-free synthesis of SrFe₁₂O₁₉ nanoparticles with high saturation magnetization and coercivity.** F. Sun¹ and D. Chen¹
1. South China Normal University, Guangzhou, China
- GT-13. Novel Mechanisms for Solid-State Processing and Textured Alignment in Alnico-8 Based Permanent Magnets.** A.G. Kassen^{1,2}, E.M. White¹, L. Hu³, W. Tang³, L. Zhou³, M.J. Kramer⁴ and I.E. Anderson¹
1. Division of Materials Sciences and Engineering, Ames Lab (USDOE), Ames, IA; 2. MSE, Iowa State University, Ames, IA; 3. Ames Laboratory, US Department of Energy, AMES, IA; 4. Ames Laboratory, Iowa State University, Ames, IA
- GT-14. Field-Dependence of Micromagnetic Energy Barriers.** R. Skomski¹
1. Physics and Astronomy, University of Nebraska, Lincoln, NE
- GT-15. Non-isothermal crystallization kinetics and magnetic properties of Hf_{1.5}Zr_{0.5}Co₁₀FeB melt-spun ribbons.** N. Christopher¹, K. Anand¹, A.K. Srivastava¹, N. Singh¹ and A. Dhar¹
1. Advanced Material and Devices Division, CSIR-National Physical Laboratory, Delhi, India
- GT-16. Synthesis of phase-pure τ-MnAlC using mechanical alloying and a one-step annealing route.** V. Øygarden¹, J. Rial², A. Bollero² and S. Deledda¹
1. Institute for Energy Technology, Kjeller, Norway; 2. IMDEA Nanoscience, Madrid, Spain

Session GU
RARE EARTH-BASED HARD MAGNETIC
MATERIALS VI
(Poster Session)

Masaki Nakano, Chair
Nagasaki University, Nagasaki, Japan

- GU-01. Influence of Sintering Temperature on Structural and Magnetic Properties of $\text{Sm}(\text{CoFeCuZr})_z$ Permanent Magnets.** *Y. Wang¹, D. Wu¹, M. Yue¹ and D. Zhang¹ 1. College of Materials Science and Engineering, Beijing University Of Technology, Beijing, China*
- GU-02. Grain boundary chemistry of dual main phase Nd-Ce-Fe-B as-sintered magnets.** *H. Chen¹, S. Dong², F. Yun¹, J. Qu¹, S. Ringer¹ and R. Zheng¹ 1. The University of Sydney, Sydney, NSW, Australia; 2. China Iron & Steel Research Institute, Beijing, China*
- GU-03. Effect of sintering temperature on coercivity of $\text{Sm}_2\text{Fe}_{17}\text{N}_3$ bulk magnets.** *Y. Shen^{1,2}, S. Leontsev^{1,2}, M. McLeod^{1,2}, J. Horwath² and Z. Turgut² 1. University of Dayton, Dayton, OH; 2. AFRL, Wright-Patterson Air Force Base, OH*
- GU-04. Boundary structure modification and magnetic properties of sintered Nd-Fe-B magnets by doping TbCu alloys.** *J. Song¹, S. Guo¹, G. Ding², K. Chen¹, R. Chen¹ and A. Yan¹ 1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology; Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 2. Ningbo Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China*
- GU-05. Distinctive Diffusion Behaviors Observed In Dy-Fe-Ga Intergranular Added Sintered Nd-Fe-B.** *J. Zeng¹, S. Guo¹, X. Yang¹, L. Chen¹, G. Ding¹, J. Di¹ and A. Yan¹ 1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology; Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- GU-06. Effects of TiC Addition on the Microstructure and Magnetic Properties of Cast Strips and Corresponding Sintered Nd-Fe-B Magnets.** *K. Lim¹, S. Park¹ and J. Kim² 1. Korea Institute of Rare Metal, Korea Institute of Industrial Technology, Incheon, The Republic of Korea; 2. Daechang Co. Ltd., Siheung-si, The Republic of Korea*
- GU-07. Magnetic Properties Of Pr-Fe-B Thick-Film Magnets Deposited On Si Substrates With Glass Buffer Layer.** *M. Nakano¹, A. Kurosaki¹, H. Kondo¹, D. Shimizu¹, Y. Yamaguchi¹, A. Yamashita¹, T. Yanai¹ and H. Fukunaga¹ 1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan*

- GU-08. Effect of Phase Composition on Crystal Texture Formation in Hot Deformed Nanocrystalline SmCo₅ Permanent Magnets.** Q. Ma^{1,2}, M. Yue¹, X. Xu¹, H. Zhang¹, D. Zhang¹, X. Zhang² and J. Zhang¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Key Laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, China*
- GU-09. The effect of CuAl addition on the magnetic property, thermal stability and corrosion resistance of the sintered NdFeB magnets.** Y. Liu¹, J. Liang¹, Y. He¹, Y. Li¹, G. Wang², Q. Ma², F. Liu¹ and X. Zhang³ *1. School of Science, Inner Mongolia University of Science & Technology, Baotou, China; 2. Key Laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, China; 3. School of Mathematics, Physics and Biological Engineering, Inner Mongolia University of Science and Technology, Baotou, China*
- GU-10. Interstitial Nitrogen Atomic Effect on the Magnetic Properties of Nd₂Fe₁₄B Compound.** L. Zha¹, W. Yang¹, M. Xue¹, Y. Lai¹, G. Qiao¹, Y. Yang¹, C. Ji¹ and J. Yang^{1,2} *1. State Key Laboratory for Mesoscopic Physics, School of Physics, Peking University, Beijing, China; 2. Beijing Key Laboratory for Magnetoelectric Materials and Devices, Beijing, China*
- GU-11. Coercivity enhancement of sintered Nd-Fe-B magnet by chemical bath deposition.** Q. Zhang¹, X. Yang¹, J. Zeng¹, X. Cao¹, S. Guo¹, R. Chen¹ and A. Yan¹ *1. Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- GU-12. Ab initio calculation of electronic structure and magnetic properties of R₂Fe₁₄BN_x (R=Y,Pr,Nd).** G. Tian¹ and J. Yang¹ *1. School of Physics, Peking University, Beijing, China*
- GU-13. Improved Magnetic Properties and Thermal Stabilities of Pr-Nd-Fe-B Sintered Magnets by Hf Addition.** Z. Zhong¹, Q. Jiang¹, W. Lei¹, Q. Zeng¹, Q. Quan¹, L. Zhang¹, R. Liu¹, X. Hu¹, Z. Qi², Z. Ju², M. Zhong¹ and S. Ma¹ *1. Jiangxi Key Laboratory for Rare Earth Magnetic Materials and Devices (IREMMD), Jiangxi University of Science and Technology, Ganzhou, China; 2. Ganzhou Fortune Electronics Co. Ltd., Ganzhou, China*
- GU-14. Mechanical properties and microstructure of perpendicular hot deformed magnet.** C. Jin¹, R. Chen¹, X. Tang¹, A. Yan¹, L. Liu¹ and X. Cao¹ *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- GU-15. Effects of La Substitution on The Structure and Intrinsic Magnetic Properties of Ce-Fe-B Alloy.** Z. Li¹, Z. Zhang¹, W. Liu¹, M. Yue¹ and D. Zhang¹ *1. College of Material Science and Engineering, Beijing University of Technology, Beijing, China*
- GU-16. Spin wave dispersion in RE₂Fe₁₄B (RE=Y, Nd, Nd-Dy).** K. Ono¹, K. Saito¹, M. Yano², T. Shoji², T. Yokoo¹ and S. Itoh¹ *1. KEK, Tsukuba, Japan; 2. Toyota Motor Corporation, Aichi, Japan*

Session GV
MAGNETO-OPTIC AND HARD MAGNETIC
MATERIALS
(Poster Session)

Paolo Bortolotti, Co-Chair
Thales TRT, Palaiseau, France

Damien Le Roy, Co-Chair
Institut Lumière Matière, Villeurbanne, France

- GV-01. Preparation and characterization of SiO₂-coated submicron-sized L1₀ Fe-Pt particles.** *Y. Hayashi*¹ and *K. Ishiyama*¹
1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan
- GV-02. The magnetic anisotropy mechanism of L1₀ MnGa epitaxially grown thin films.** *S. Zhao*^{1,2} and *T. Suzuki*^{1,2}
1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Department of Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL
- GV-03. Magnetization Reversal and Thermal Switching in L1₀ FePt Thin Films.** *A. Lisfi*¹, *S. Pokharel*¹, *O. Akiyo*¹ and *M. Wuttig*²
1. Physics, Morgan State University, Baltimore, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD
- GV-04. Improvement in Surface Conditions of Electroplated Fe-Pt Thick Films.** *J. Honda*¹, *R. Hamamura*¹, *T. Myoji*¹, *Y. Omagari*¹, *H. Yamada*², *N. Fujita*², *K. Takashima*¹, *T. Yanai*¹, *M. Nakano*¹ and *H. Fukunaga*¹ *1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan; 2. Nara College of Technology, Nara, Japan*
- GV-05. Magnetic Relaxation Process in Perpendicular Anisotropy Heterostructures.** *A. Lisfi*¹, *S. Pokharel*¹, *O. Akiyo*¹, *W. Morgan*¹ and *M. Wuttig*² *1. Physics, Morgan State University, Baltimore, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD*
- GV-06. Ni-Fe-Co-Mn-Sn Heusler alloy ribbons.** *T.P. Yadav*^{1,2} and *S. Mishra*² *1. Department of Materials Science and NanoEngineering, Rice University, Houston, TX; 2. Department of Physics, Banaras Hindu University, Varanasi, India*
- GV-07. Effect of Size Distribution on Magnetic Properties in Cobalt Nanowires.** *H. Xu*¹, *Q. Wu*¹, *M. Yue*¹, *C. Li*¹ and *H. Li*¹
1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China

- GV-08. 3D Printing Magnetic Alloys: From Soft to Hard Magnetism.** B. Lee¹, J. Sung², S. Ju³ and S. Park⁴ 1. *Physics Department, Hankuk University of Foreign Studies, Yongin-si, The Republic of Korea*; 2. *Korea Institute of Industrial Technology, Daegu, The Republic of Korea*; 3. *Department of Physics, Keonggi University, Suwon, The Republic of Korea*; 4. *Advanced Institutes of Convergence Technology, Suwon, The Republic of Korea*
- GV-09. Stress Induced Modulation of Magnetic Domain Diffraction of Single Crystalline Yttrium Iron Garnet.** S. Mito^{1,2}, Y. Yoshihara³, H. Takagi² and M. Inoue² 1. *Electronic Engineering, National Institute of Technology, Tokyo college, Hachioji, Japan*; 2. *Toyohashi University of Technology, Toyohashi, Japan*; 3. *Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Japan*
- GV-10. Magnetically tunable oil droplet lens of deep-sea shrimp.** M. Iwasaka¹ 1. *Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan*
- GV-11. Measurement of diffraction from magnetic domains of iron garnets for magneto-optical Q-switch lasers.** R. Morimoto¹, T. Goto^{1,2}, H. Takagi¹, Y. Nakamura¹, P. Lim¹, H. Uchida¹ and M. Inoue¹ 1. *Toyohashi University of Technology, Toyohashi, Japan*; 2. *JST-PRESTO, Kawaguchi, Japan*
- GV-12. Linear and Non-linear Optical Properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ Thin Films.** S. Yousefi Sarraf¹, G. Cabrera¹, R. Trappen¹, N. Mottaghi¹, S. Kumari¹, C. Huang², M.B. Johnson¹, A.D. Bristow¹ and M. Holcomb¹ 1. *Physics and Astronomy, West Virginia University, Morgantown, WV*; 2. *Mechanical & Aerospace Engineering, West Virginia University, Morgantown, WV*
- GV-13. A Novel Broadband Terahertz Left-handed Metamaterial based on Mie Resonance coupling effects.** J. Gao¹, K. Zhang² and Q. Wu¹ 1. *Harbin Institute of Technology, Harbin, China*; 2. *Dept. of Electronic & Communications Engineering, Harbin Institute of Technology, Harbin, China*
- GV-14. Optical and magnetic properties of Co-doped ZnO nanoparticles and the onset of ferromagnetic order.** T.D. Castro^{1,2}, P.A. Rodrigues¹, A.C. Oliveira¹, F. Nakagomi³, J. Mantilla¹, J.A. Coaquira¹, A. Franco Jr.⁴, H.V. Pessoni⁴, P.C. Morais¹ and S.W. da Silva¹ 1. *Instituto de Física, Universidade de Brasília, Brasília, Brazil*; 2. *Instituto Federal de Educação, Ciência e Tecnologia de Brasília, Brasília, Brazil*; 3. *Universidade Federal de Itajubá, Itabira, Brazil*; 4. *Instituto de Física, Universidade Federal de Goiás, Goiânia, Brazil*
- GV-15. Controlling the propagation loss of silicon photonic waveguides with deposited Ce:YIG thin film claddings.** Y. Zhang¹, C. Wang¹, L. Nie¹, C. Ross² and L. Bi¹ 1. *University of Electronic Science and Technology of China, Chengdu, China*; 2. *Dept. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

- GV-16. Near infrared magneto-optical properties for antiferromagnetically exchange coupled Co/Ru multilayer film.**
S. Saito¹, H. Sato¹, K. Ooki¹, K. Akahane¹ and H. Uchida²
1. Graduate School of Engineering, Electronic Engineering, Tohoku Univ., Sendai, Japan; 2. Electrical and Electronic Information Engineering, Toyohashi Univ. Tech., Toyohashi, Japan

FRIDAY
AFTERNOON
1:30

SPIRIT OF PITTSBURGH BALLROOM B

Session HA
GENERATION AND TRANSPORT OF SKYRMIONS

Mingzhong Wu, Chair
Colorado State University, Fort Collins, CO

1:30

- HA-01. Skyrmion dynamics, nucleation, and stability in ultrathin metallic heterostructures. (Invited)** G. Beach¹ 1. Materials Science and Engineering, MIT, Cambridge, MA

2:06

- HA-02. Robust metastable skyrmions in high-temperature chiral magnets. (Invited)** K. Karube¹, J. White², N. Reynolds^{2,3}, J. Gavilano², M. Bartkowiak⁴, D. Morikawa¹, X. Yu¹, H. Oike¹, A. Kikkawa¹, F. Kagawa¹, Y. Tokunaga⁵, T. Arima^{1,5}, H.M. Rønnow³, Y. Tokura^{1,6} and Y. Taguchi¹ 1. RIKEN Center for Emergent Matter Science, Wako, Japan; 2. Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institute, Villigen, Swaziland; 3. Laboratory for Quantum Magnetism, Institute of Physics, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 4. Laboratory for Scientific Developments and Novel Materials, Paul Scherrer Institute, Villigen, Switzerland; 5. Department of Advanced Materials Science, University of Tokyo, Kashiwa, Japan; 6. Department of Applied Physics, University of Tokyo, Bunkyo-ku, Japan

2:42

- HA-03. Robust Zero-Field Skyrmion Formation in FeGe Epitaxial Thin Films. (Invited)** F. Yang¹ 1. Physics, The Ohio State University, Columbus, OH

3:18

- HA-04. Skyrmions and Hall Transport. (Invited)** B. Kim¹ and A. Shapere² 1. Physics, University of Kentucky, Lexington, KY; 2. University of Kentucky, Lexington, KY

3:54

- HA-05. Electric-Field-Driven Switching of Individual Magnetic Skyrmions. (Invited)** R. Wiesendanger¹ 1. Department of Physics, University of Hamburg, Hamburg, Germany

Session HB
ANTIFERROMAGNETIC SPINTRONICS

Alex Hojem, Chair
University of Denver, Denver, CO

1:30

- HB-01. Compensated magnetic state in tetragonal thin films for antiferromagnetic spintronics.** R. Sahoo¹, A.K. Nayak^{1,3}, L. Wollmann¹, S.S. Parkin³ and C. Felser² *1. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 2. Solid State Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 3. Max Planck Institute for Microstructure Physics, Halle, Germany*

1:42

- HB-02. Characterization of spin-orbit torque and Dzyaloshinskii-Moriya interaction in an antiferromagnet/ferromagnet structure.** S. Dutttagupta^{1,2}, T. Kanemura¹, A. Kurenkov¹, C. Zhang^{1,3}, S. Fukami^{1,2} and H. Ohno^{1,4} *1. RIEC Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 3. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 4. WPI-AIMR Tohoku University, Sendai, Japan*

1:54

- HB-03. Unidirectional spin Hall magnetoresistance in Y₃Fe₅O₁₂/NiO/Pt structures.** D. Roy¹, E. Cogulu¹, H. Chang², M. Wu², H. Ohldag³ and A.D. Kent¹ *1. Department of Physics, New York University, New York, NY; 2. Physics, Colorado State University, Fort Collins, CO; 3. SSRL, SLAC National Accelerator Laboratory, Menlo Park, CA*

2:06

- HB-04. Sign change of spin Hall magnetoresistance in Pt/NiO/YIG structures.** D. Hou¹ *1. AIMR, Tohoku University, Sendai, Japan*

2:18

- HB-05. Spin Seebeck Effect in Antiferromagnetic Nickel Oxide at Room Temperature: Experiments and Theory.** J. Holanda¹, D. Maior¹, O. Alves-Santos¹, L. Vilela-Leao², J.B. Mendes³, A. Azevedo¹, R. Rodriguez⁴ and S.M. Rezende¹ *1. Departamento de Física, UFPE, Recife, Brazil; 2. Núcleo Interdisciplinar de Ciências Exatas e Inovação Tecnológica, Universidade Federal de Pernambuco, Recife, Brazil; 3. Departamento de Física, Universidade Federal de Viçosa, Viçosa, Brazil; 4. Physics, Pontificia Universidad Católica de Chile, Santiago, Chile*

- HB-06. Temperature Dependent Ferromagnetic Resonance Spin Pumping in Antiferromagnet/YIG Heterostructures.** *J. Brangham*¹, *A.J. Lee*¹, *Y. Cheng*¹, *S. Yu*¹, *S.P. White*¹, *M.R. Page*¹, *S.R. Dunsiger*¹, *P. Hammel*¹ and *F. Yang*¹
1. Physics, The Ohio State University, Columbus, OH

- HB-07. Key role of thermal activation in electrical Néel-order switching of antiferromagnets.** *T. Matalla-Wagner*¹, *D. Graulich*¹, *G. Reiss*¹ and *M. Meinert*¹ *1. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

- HB-08. Spin-current driven antiferromagnetic oscillator as a detector of terahertz pulses.** *O. Gomonay*¹ and *J. Sinova*¹
1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany

- HB-09. Mutually Coupled Antiferromagnetic Comb-Like Oscillators for Neuromorphic Signal Processing.** *R. Khymyn*¹, *O. Sulymenko*², *V. Tyberkevych*³, *A.N. Slavin*³ and *J. Åkerman*^{1,4} *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Faculty of Radio Physics, Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 3. Department of Physics, Oakland University, Rochester, MI; 4. Department of Materials and Nano Physics, School of Information and Communication Technology, KTH Royal Institute of Technology, Stockholm, Sweden*

- HB-10. Antiferromagnetic skyrmion stability at finite temperature.** *O. Tretiakov*¹, *P. Bessarab*², *D. Gulevich*³, *D. Yudin*³ and *M. Titov*^{4,3} *1. Tohoku University, Sendai, Japan; 2. Science Institute of the University of Iceland, Reykjavik, Iceland; 3. ITMO University, Saint Petersburg, Russian Federation; 4. Radboud University, Nijmegen, Netherlands*

- HB-11. Theory of Topological Spin Hall Effect in Antiferromagnetic Skyrmions.** *C.A. Akosa*¹, *G. Tatara*¹ and *A. Manchon*² *1. RIKEN CEMS, Wako, Japan; 2. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

- HB-12. Dzyaloshinskii-Moriya Interaction across an Antiferromagnet-Ferromagnet Interface.** *X. Ma*¹, *G. Yu*², *S. Razavi*², *S.S. Sasaki*³, *X. Li*², *K. Hao*¹, *S. Tolbert*^{3,4}, *K.L. Wang*^{2,5} and *X. Li*¹ *1. Physics, University of Texas at Austin, Austin, TX; 2. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA; 4. Material Science and Engineering, University of California, Los Angeles, Los Angeles, CA; 5. Physics, University of California, Los Angeles, Los Angeles, CA*

- HB-13. Towards Cr-based Antiferromagnet Spintronics: Magnetic Anisotropy of Chromium Thin Films on MgO.** *C. Rinaldi*¹, M. Asa¹, D. Chrastina¹, I. Pallecchi², R. Bertacco¹ and M. Cantoni¹ *1. Physics, Politecnico di Milano, Milano, Italy; 2. Physics, CNR-SPIN, Genova, Italy*

4:06

- HB-14. Tunneling Anisotropic Magnetoresistance Driven By Magnetic Phase Transition.** *X. Chen*¹, C. Song¹, J. Feng², X. Zhong¹ and F. Pan¹ *1. Tsinghua University, Beijing, China; 2. Chinese Academy of Sciences, Beijing, China*

4:18

- HB-15. He-Ion Irradiation Induced Magnetic Order Multi-layering in FeRh Thin Films.** *S.P. Bennett*¹, A. Herklotz², C.D. Cress³, A. Ievlev⁴, C. Rouleau⁴, I. Mazin¹, V. Lauter⁵ and T.Z. Ward² *1. Materials Science and Technology Division, U.S. Naval Research Laboratory, Washington, DC; 2. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Electronics Science and Technology Division, U.S. Naval Research Laboratory, Washington, DC; 4. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN; 5. NNSD, Oak Ridge National Laboratory, Oak Ridge, TN*

FRIDAY
AFTERNOON
1:30

ROOM 403-405

Session HC
ARTIFICIAL SPIN SYSTEMS
Rajesh Chopdekar, Chair
University of California, Davis, Davis, CA

1:30

- HC-01. Frustration and thermalisation in an artificial magnetic quasicrystal. (Invited)** *D. Shi*¹, Z. Budrikis², A. Stein³, S.A. Morley¹, P. Olmsted⁴, G. Burnell¹ and *C.H. Marrows*¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Institute for Scientific Interchange Foundation, Turin, Italy; 3. Brookhaven National Laboratory, Upton, NY; 4. Georgetown University, Washington, DC*

2:06

- HC-02. The Effects of Thermal Annealing on Magnetization in Quasicrystal Artificial Spin Ice lattices.** *V. Brajuskovic*^{1,2}, F. Barrows^{1,3}, C. Phatak¹ and A. Petford-Long^{1,2} *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Materials Science and Engineering, Northwestern University, Evanston, IL; 3. Applied Physics Program, Northwestern University, Evanston, IL*

- HC-03. The importance of the weak: Interaction modifiers in artificial spin ices.** *E. Östman*¹, *H. Stopfel*¹, *I. Chioar*¹, *U. Arnalds*², *A. Stein*³, *V. Kapaklis*¹ and *B. Hjörvarsson*¹
 1. *Physics and Astronomy, Uppsala University, Uppsala, Sweden*; 2. *Science Institute, University of Iceland, Reykjavik, Iceland*; 3. *Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY*

- HC-04. Thermally Achieved Low Energy States in Complex Oxide-Based Artificial Spin Ice Structures.** *R.V. Chopdekar*¹, *M.S. Lee*¹, *A. Kane*¹, *S. Retterer*², *A. Scholl*³ and *Y. Takamura*¹
 1. *Materials Science and Engineering, University of California, Davis, Davis, CA*; 2. *Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN*; 3. *Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

- HC-05. Emergent Behaviour in Interconnected Nanoring Arrays.** *R.W. Dawidek*¹, *T.J. Hayward*¹, *T.J. Broomhall*¹, *M. Negoita*¹, *M. Mamoori*¹, *P.W. Fry*¹, *J. Cooper*², *N. Steinke*² and *D.A. Allwood*¹
 1. *University of Sheffield, Sheffield, United Kingdom*; 2. *Large Scale Structures, ISIS Neutron Source, Didcot, United Kingdom*

- HC-06. Vortex circulation patterns in planar microdisk arrays.** *S. Velten*¹, *R. Streubel*², *A. Farhan*³, *N. Kent*², *M. Im*^{4,5}, *A. Scholl*³, *S. Dhuey*², *C. Behncke*¹, *G. Meier*⁶ and *P. Fischer*^{2,7}
 1. *Institute of Applied Physics, University of Hamburg, Hamburg, Germany*; 2. *Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*; 3. *ALS, Lawrence Berkeley National Laboratory, Berkeley, CA*; 4. *CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA*; 5. *Department of Emerging Materials Science, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, The Republic of Korea*; 6. *Max-Planck Institute for Structure and Dynamics of Matter, Hamburg, Germany*; 7. *Physics Department, University of California, Santa Cruz, Santa Cruz, CA*

- HC-07. Induced short-range ordering in topological frustrated artificial spin systems.** *H. Stopfel*¹, *E. Östman*¹, *I. Chioar*¹, *D. Greving*², *U. Arnalds*³, *A. Stein*⁴, *B. Hjörvarsson*¹ and *V. Kapaklis*¹
 1. *Materials Physics, Uppsala University, Uppsala, Sweden*; 2. *Department of Physics, University of Warwick, Coventry, United Kingdom*; 3. *Science Institute, University of Iceland, Reykjavik, Iceland*; 4. *CFN, Brookhaven National Laboratory, Upton, NY*

- HC-08. Novel Magnetic Nanostructure Matrices Created by Stepwise Nanosphere Lithography.** *B. Myint*¹ and *V. Ng*¹
 1. *Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore*

- HC-09. Patterned growth of crystalline $Y_3Fe_5O_{12}$ nanostructures with engineered magnetic shape anisotropy.** *N. Zhu*³, H. Chang¹, A. Franson², T. Liu¹, X. Zhang³, E. Johnston-Halperin², M. Wu¹ and H. Tang³ *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Physics, Ohio State University, Columbus, OH; 3. Department of Electrical Engineering, Yale University, New Haven, CT*

- HC-10. Investigation of the magnetic properties of supercrystals of γ - Fe_2O_3 nanoparticles using miniaturized quantum well hall sensor.** *C. Raepsaet*¹, R. Tourbot¹, C. Wiertel-Gasquet¹, A. Ngo², I. Lisiecki², M. Konczykowski³, V. Mosser⁴ and S. Nakamae¹ *1. DRF/IRAMIS/SPEC, CEA, GIF SUR YVETTE CEDEX, France; 2. MONARIS, UMR 8233 CNRS and UPMC 4, PARIS, France; 3. DRF/IRAMIS/LSI, CEA, Palaiseau, France; 4. ITRON, Issy-les-Moulineaux, France*

- HC-11. Enhanced magneto-optical effect and sensing performance of metal-insulator-metal magnetoplasmonic sensors using low loss magnetic oxide thin films.** *J. Qin*¹, T. Kang¹, Y. Zhang¹, B. Peng¹ and L. Bi¹ *1. University of Electronic Science and Technology of China, Chengdu, China*

- HC-12. Laser direct writing (LDW) of magnetic structures.** *A. Alasadi*^{1,2}, F. Claeysens¹ and D.A. Allwood¹ *1. Department of Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom; 2. Technical institute of Karbala, Alfurat Alawsat Technical University, Karbala, Iraq*

- HC-13. Vortex ground state of thin ferromagnetic disks with sub-100 nm diameters.** *R.V. Verba*¹, D. Navas², A. Hierro-Rodriguez², B. Ivanov¹, K. Guslienko^{3,4} and *G.N. Kakazei*² *1. Institute of Magnetism NAS of Ukraine, Kyiv, Ukraine; 2. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 3. Departamento de Física de Materiales, Universidad del País Vasco, San Sebastian, Spain; 4. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*

Session HD
HALF METALLIC MATERIALS

Simon Granville, Chair
Victoria University of Wellington, Lower Hutt, New Zealand

1:30

- HD-01. Topology, non-collinear spin structures and Skyrmions in Heusler compounds. (Invited)** C. Felser¹, S.S. Parkin² and A.K. Nayak³ *1. Solid State Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 2. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany; 3. Max Planck Institute of Microstructure Physics, Halle, Germany*

2:06

- HD-02. Computational and Experimental Investigation of Inverse-Heusler Compounds for Spintronic Applications.** J. Ma², J. He³, D. Mazumdar⁴, C. Wolverton³, A. Ghosh² and W.H. Butler¹ *1. Physics/MINT, University of Alabama, Denver, CO; 2. Department of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA; 3. Department of Materials Science and Engineering, Northwestern University, Evanston, IL; 4. Department of Physics, Southern Illinois University, Carbondale, IL*

2:18

- HD-03. Atomic Structure and Magnetic Properties of Co₂FeAl_{0.5}Si_{0.5} Thin Films on Ge(111) as a Function of Annealing Temperature.** B. Kuerbanjiang¹, C. Love^{1,2}, D. Kepaptsoglou³, A. Ghasemi¹, S. Yamada⁴, Q.M. Ramasse³, K. Hamaya⁴, S.A. Cavill^{1,2} and V. Lazarov¹ *1. Physics, University of York, York, United Kingdom; 2. Diamond Light Source Ltd, Didcot, United Kingdom; 3. SuperSTEM Laboratory, Daresbury, United Kingdom; 4. Department of Systems Innovation, Osaka University, Toyonaka, Japan*

2:30

- HD-04. Dominant switchable magnetoresistance in half-metallic La_{0.7}Sr_{0.3}MnO₃ epitaxial films at room temperature.** P. Perna¹, F. Ajejas^{1,2}, D. Maccariello^{3,1}, R. Guerrero¹, L. Méchin⁴, S. Flament⁴, J. Santamaria⁵, J. Camarero⁶ and R. Miranda⁶ *1. IMDEA NANOSCIENCE, Madrid, Spain; 2. DFMC, Universidad Autónoma de Madrid, Madrid, Spain; 3. CNRS-THALES, Paris, France; 4. GREYC (UMR6072) CNRS-ENSICAEN & Université de Caen Normandie, Caen, France; 5. U. Complutense Madrid, Madrid, Spain; 6. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain*

2:42

- HD-05. Ultrahigh Anisotropy Heusler Alloys for THz Spin-torque Oscillators. (Invited)** A.M. Deac¹ *1. Institute for Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

- HD-06. Significant reduction in crystallisation energy in $\text{Co}_2\text{FeAl}_{0.5}\text{Si}_{0.5}$ with perpendicular anisotropy for CPP-GMR.**
W.J. Frost¹ and A. Hirohata¹ *1. Department of Electronic Engineering, University of York, York, United Kingdom*

- HD-07. Spectrally Dependent Optical and Magentooptical Properties of $\text{Co}_2\text{FeAl}_{0.5}\text{Si}_{0.5}$.** R. Jesko¹, R. Silber^{1,2}, O. Stejskal¹, D. Legut¹, L. Beran³, D. Kral³, M. Veis³, A. Omar⁴, S. Wurmehl⁴ and J. Hamrle³ *1. VSB - Technical University of Ostrava, Ostrava, Czech Republic; 2. Bielefeld University, Bielefeld, Germany; 3. Institute of Physics, Charles University, Prague, Czech Republic; 4. IFW Dresden, Dresden, Germany*

- HD-08. Tetragonal $\text{Mn}_2(\text{Cr,Pt})\text{Ga}$ with high spin polarization.**
W. Zhang^{1,2}, S.R. Valloppilly², X. Li², R. Skomski^{1,2} and D.J. Sellmyer^{1,2} *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

- HD-09. The Role of Antiphase Boundaries on Magnetic Domains Formation in Fe_3O_4 Thin Films.** B. Kuerbanjiang¹, C. Love^{1,2}, I. Azaceta¹, K. Matsuzaki³, S.S. Dhesi², G. van der Laan², T. Susaki³, R.F. Evans¹, S.A. Cavill¹ and V. Lazarov¹ *1. Physics, University of York, York, United Kingdom; 2. Diamond Light Source Ltd, Didcot, United Kingdom; 3. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

- HD-10. Influence of Fe and Co on magnetic properties of Ni_2MnAl based Heusler alloys.** M. Lyange¹, S. Shevyrtanov², M. Gorshenkov¹, R. Chatterjee³, L.K. Varga⁴, R. Varga⁵, V. Rodionova⁶ and V. Khovaylo¹ *1. National University of Science and Technology MIS&S, Moscow, Russian Federation; 2. Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation; 3. Indian Institute of Technology Delhi, New Delhi, India; 4. Research Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary; 5. Faculty of Science, University of Pavol Jozef Safarik, Kosice, Slovakia; 6. Innovation Park & Physical-Technical Institute, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*

- HD-11. Volume dependence of magnetic properties in $\text{Co}_2\text{Cr}_{1-x}\text{Y}_x\text{Ga}$ ($\text{Y}=\text{Ti-Ni}$) Heusler alloys: a first-principles study.**
J. Gonçaves¹, N.M. Fortunato¹, J.S. Amaral¹ and V.B. Amaral¹ *1. CICECO & Physics Dept., Universidade de Aveiro, Aveiro, Portugal*

Session HE

SPIN HALL EFFECT: DYNAMICS AND SPIN WAVES

Paulo Freitas, Chair

International Iberian Nanotechnology Laboratory, Braga, Portugal

1:30

- HE-01. Symmetry-broken spin superfluid-like states in thin film ferromagnets with in-plane anisotropy.** *E. Iacocca*^{1,2}, *T. Silva*³ and *M. Hofer*¹ *1. Applied Mathematics, University of Colorado, Boulder, Boulder, CO; 2. Physics, Chalmers University of Technology, Gothenburg, Sweden; 3. National Institute of Standards and Technology - Boulder, Boulder, CO*

1:42

- HE-02. Tunable Spin Pumping in Exchange Coupled Magnetic Trilayers.** *M. Ahlberg*¹, *M. Fazlali*¹, *M. Dvornik*¹ and *J. Åkerman*^{1,2} *1. Department of Physics, University of Gothenburg, Göteborg, Sweden; 2. Department of Applied Physics, School of Engineering Sciences, KTH Royal Institute of Technology, Stockholm, Sweden*

1:54

- HE-03. Spin-Hall induced damping, negative domain wall resistance, and dynamic feedback.** *R. Cheng*^{2,1}, *J. Zhu*^{1,2} and *D. Xiao*² *1. Data Storage Systems Center, Carnegie Mellon Univ, Pittsburgh, PA; 2. Physics, Carnegie Mellon University, Pittsburgh, PA*

2:06

- HE-04. Spin Hall Driven Domain Wall Motion in Magnetic Bilayers Coupled by a Magnetic Oxide Interlayer.** *Y. Liu*^{1,3}, *M. Furuta*² and *J. Zhu*^{2,3} *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

2:18

- HE-05. The Spin Hall Effect is Memristive.** *F.Z. Wang*^{1,2} and *L.O. Chua*³ *1. School of Computing, University of Kent, Canterbury, United Kingdom; 2. Brain-like Research Center/ Institute of Micro-electronics, Tsinghua University, Beijing, China; 3. Depart. of Electrical Engineering & Computer Science, University of California, Berkeley, Berkeley, CA*

- HE-06. Circuit theory with spin-non-conserving interfaces and first-principles calculations of spin memory loss at magnetic and non-magnetic interfaces.** *G.G. Baez Flores*¹, *A. Kovalev*², *M. van Schilfgaarde*³ and *K. Belashchenko*⁴ *1. Physics, University of Nebraska-Lincoln, Lincoln, NE; 2. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 3. Physics, King's College London, London, United Kingdom; 4. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

- HE-07. Irreversible Thermodynamics of Uniform Ferromagnets with Spin Accumulation: Bulk and Interface Dynamics.** *W. Saslow*¹ *1. Physics, Texas A&M University, College Station, TX*

- HE-08. Magnetization-dynamics-driven superconducting spin currents.** *K. Jeon*^{2,1}, *C. Ciccarelli*², *A. Ferguson*², *H. Kurebayashi*⁴, *L. Cohen*³, *X. Montiel*⁵, *M. Eschrig*⁵, *J. Robinson*¹ and *M. Blamire*¹ *1. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. Physics, University of Cambridge, Cambridge, United Kingdom; 3. The Blackett Laboratory, Imperial College London, London, United Kingdom; 4. London Centre for Nanotechnology and Department of Electronic and Electrical Engineering, University of College London, London, United Kingdom; 5. Physics, Royal Holloway, University of London, London, United Kingdom*

- HE-09. Spin-wave generation by radio-frequency spin-orbit torques.** *G. Talmelli*^{1,2}, *F. Ciubotaru*¹, *C. Adelman*¹, *D. Mocuta*¹, *L.P. Radu*¹ and *T. Devolder*³ *1. Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. Centre de Nanosciences et de Nanotechnologies, CNRS, University of Paris-Sud, Orsay, France*

- HE-10. Electric field controlled domain wall dynamics and magnetic easy axis switching in liquid gated CoFeB/MgO films.** *Y. Liu*¹, *S. Oho*², *J. Adam*¹, *D. Ravelosona*¹ and *L. Herrera-Diez*¹ *1. University of Paris Saclay, C2N, Orsay, Orsay, France; 2. CRIEPI, Tokyo, Japan*

- HE-11. Ionic-Liquid-Gating Control of Spin Reorientation Transition and Switching of Perpendicular Magnetic Anisotropy.** S. Zhao¹, Z. Zhou¹, G. Dong¹, B. Peng¹, Z. Hu¹, J. Ma², W. Ren¹, Z. Ye^{3,1}, W. Chen^{4,5}, P. Yu⁶, C. Nan² and M. Liu¹ 1. School of Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an, China; 2. State Key Laboratory of New Ceramics and Fine Processing and School of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada; 4. Materials Science Division, Argonne National Laboratory, Lemont, IL; 5. Institute for Molecular Engineering, The University of Chicago, Chicago, IL; 6. State Key Laboratory of Low Dimensional Quantum Physics and Department of Physics, Tsinghua University, Beijing, China

- HE-12. Time Dynamics Study of Reversible Oxidation on Pt/Co Nanowire Using Gate Polymer.** F. Tan^{1,2}, W. Law¹, G.J. Lim¹, F. Luo¹, H. Liu², F. Poh², D. Shum² and W. Lew¹ 1. Physics and Applied Physics, Nanyang Technological University, Singapore, Singapore; 2. GlobalFoundries, Singapore, Singapore

- HE-13. Magnetoelastic spin wave excitation: the role of the demagnetizing field.** R. Duflou^{1,2}, F. Ciubotaru¹, A. Vaysset¹, B. Sorée^{1,3}, L.P. Radu¹ and C. Adelman¹ 1. Imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. Departement Fysica, Universiteit Antwerpen, Antwerpen, Belgium

- HE-14. Observation of Magnon-mediated Current Drag in Pt/Yttrium Iron Garnet/Pt(Ta) Trilayers.** J. Li¹, Y. Xu¹, M. Aldosary¹, C. Tang¹, Z. Lin¹, S. Zhang², R. Lake³ and J. Shi¹ 1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA; 2. Department of Physics, University of Arizona, Tucson, AZ; 3. Department of Electrical and Computer Engineering, University of California, Riverside, Riverside, CA

- HE-15. Temperature Dependence of Spin Orbit Torque Induced Magnetization Switching in Co/Pt Multilayers.** G.J. Lim¹ and W. Lew¹ 1. Physics and Applied Physics, Nanyang Technological University, Singapore, Singapore

Session HF
**MAGNETOELECTRIC AND MULTIFERROIC FILMS
AND HETEROSTRUCTURES II**

Xia Hong, Chair
University of Nebraska–Lincoln, Lincoln, NE

1:30

- HF-01. Purely Antiferromagnetic Magnetoelectric Random Access Memory (AF-MERAM). (Invited) T. Kosub¹** *1. Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany*

2:06

- HF-02. Dynamical magnetoelectric switching of perpendicular exchange bias in Pt/Co/Au/Cr₂O₃/Pt thin film using pulse voltage.** *Y. Shiratsuchi¹, T. Nguyen¹ and R. Nakatani¹* *1. Osaka University, Osaka, Japan*

2:18

- HF-03. Near THz Voltage Control of Antiferromagnetic Phases.** *A. Barra¹, J.P. Domann², K. Kim³ and G. Carman⁴*
1. Mechanical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Electrical and Computer Engineering, North Carolina State University, Raleigh, NC; 4. UCLA, Los Angeles, CA

2:30

- HF-04. Magneto Optical Properties of BaTiO₃/La_{0.67}Sr_{0.33}MnO₃/SrTiO₃ Heterostructures.** *S. Singamaneni¹, M. Moog², J.T. Prater³, M.D. Biegalski⁴ and F. Tsui²* *1. Department of Physics, The University of Texas at El Paso, El Paso, TX; 2. Physics, University of North Carolina, Chapel Hill, NC; 3. Materials Science Division, Army Research Office, RTP, NC; 4. Center for Nanophase Materials Sciences, ORNL, Oak Ridge, TN*

2:42

- HF-05. Photoresistance, opto-response and magnetoresistance in La_{0.9}Hf_{0.1}MnO₃/0.05%Nb-doped SrTiO₃ heterostructures.** *Y. Qi¹ and J. Gao¹* *1. Physics, The University of Hong Kong, Hong Kong, Hong Kong*

2:54

- HF-06. Multiferroic proximity magnetoresistance in graphene.** *F. Ibrahim^{1,2}, D.A. Solis^{1,2}, A. Hallal^{1,2}, X. Waintal³ and M. Chshiev^{1,2}* *1. INAC-SPINTEC, Université Grenoble Alpes, Grenoble, France; 2. INAC-SPINTEC, CEA, Grenoble, France; 3. INAC/PHELIQS/GT, CEA, Grenoble, France*

- HF-07. Electric Field Control of Giant Ferromagnetic Resonance Shift in YIG via Ionic Liquid Gating.** M. Guan¹, Z. Zhou¹, G. Dong¹, W. Su¹, W. Ren¹, Z. Ye² and M. Liu¹ *1. Xi'an Jiaotong University, Xi'an, China; 2. Simon Fraser University, Burnaby, BC, Canada*

- HF-08. Experimental Demonstration of a Novel Type of Magnetoelectric Coupling Based on Interparticle-Exchange Interactions.** S.S. Sasaki³, O.G. Udalov¹, S. Robbennolt³, I.S. Beloborodov¹ and S. Tolbert² *1. Physics and Astronomy, California State University, Northridge, Reseda, CA; 2. Chemistry & Biochemistry and Materials Science & Engineering, UCLA, Los Angeles, CA; 3. Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA*

- HF-09. The Coulomb based magneto-electric coupling in multiferroic tunnel junctions and granular multiferroics.** O.G. Udalov^{1,2} and I.S. Beloborodov¹ *1. Physics and Astronomy, California State University, Northridge, Reseda, CA; 2. Magnetic Nanostructures, Institute for Physics of Microstructures RAS, Nizhny Novgorod, Russian Federation*

- HF-10. Magnetoelectric Figures of Merit.** R. Skomski^{3,1}, A. Kashyap², P.A. Dowben³ and C. Binek¹ *1. NCMN, University of Nebraska, Lincoln, Lincoln, NE; 2. Physics, School of Basic Sciences, Indian Institute of Technology Mandi, HP, Mandi, India; 3. Physics and Astronomy, University of Nebraska, Lincoln, Lincoln, NE*

- HF-11. Epitaxial thin films of the potentially multiferroic $\epsilon\text{-Al}_x\text{Fe}_{2-x}\text{O}_3$.** L. Corbellini¹, C. Lacroix², D. Menard² and A. Pignolet¹ *1. Centre EMT, Institut National de la Recherche Scientifique, Varennes, QC, Canada; 2. Engineering Physics, Polytechnique Montreal, Montreal, QC, Canada*

- HF-12. Room temperature magnetodielectric effects in multiferroic M-type hexaferrite thin film.** R. Tang¹, H. Zhou¹ and H. Yang² *1. Physics, Soochow University, Suzhou, China; 2. School of Science, Nanjing University of Aeronautics and Astronautics, Nanjing, China*

- HF-13. Weak ferromagnetism and short range polar order in NaMnF_3 thin films.** A. KC^{1,2}, P. Borisov² and D. Lederman^{1,2} *1. Department of Physics, University of California, Santa Cruz, Santa Cruz, CA; 2. Physics and Astronomy, West Virginia University, Morgantown, WV*

Session HG

MICROWAVE AND NEW MAGNETIC MATERIALS

Marek Przybylski, Chair

Academic Centre for Materials and Nanotechnology, Krakow, Poland

1:30

- HG-01. Connecting Composition, Structure and Magnetic Transitions in AlT_2B_2 Compounds.** *B. Lejeune*¹, *R. Barua*¹, *E. Stonkevitch*¹ and *L. Lewis*¹ *1. Chemical Engineering, Northeastern University, Boston, MA*

1:42

- HG-02. Graded index waveguides for spin waves.** *P. Gruszecki*¹ and *M. Krawczyk*¹ *1. Faculty of Physics, Adam Mickiewicz University in Poznan, Poznan, Poland*

1:54

- HG-03. From Substitution to SP^3 Functionalization - Various Avenues Toward Magnetic Ordering in Graphene.** *P.S. Blonski*¹, *J. Tucek*¹, *Z. Sofer*², *M. Pumera*³, *M. Otyepka*¹ and *R. Zboril*¹ *1. Department of Physical Chemistry, Regional Centre of Advanced Technologies and Materials, Palacky University Olomouc, Olomouc, Czech Republic; 2. Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Prague, Czech Republic; 3. Division of Chemistry & Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

2:06

- HG-04. Discovery of New Metastable Magnetic Compounds with Interactive Computational and Experimental Methods.** *B. Balasubramanian*^{1,2}, *X. Zhao*³, *S.R. Valloppilly*¹, *S. Beniwal*², *R. Skomski*^{1,2}, *A. Sarella*¹, *X. Xu*^{1,2}, *A. Enders*⁴, *C. Wang*³, *K. Ho*³ and *D.J. Sellmyer*^{1,2} *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 3. Ames Laboratory and Department of Physics, Iowa State University, Ames, IA; 4. Physikalisches Institut, Universität Bayreuth, Bayreuth, Germany*

2:18

- HG-05. Structural and Magnetic Depth Profiling of Fe_4N Thin Films.** *N. Pandey*¹, *S. Ahlawat*¹, *P. Kumar*¹, *S.M. Amir*², *S. Pütter*², *H. Wille*³, *J. Stahn*⁴, *A. Gupta*⁵ and *M. Gupta*¹ *1. UGC-DAE Consortium for Scientific Research, Indore, India; 2. Forschungszentrum Julich, Garching, Germany; 3. FS-PE, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 4. Paul Scherrer Institut, Villigen, Switzerland; 5. Amity Center for Spintronic Materials, Amity University, Noida, India*

- HG-06. Epitaxial Magnetite Nanorods with Enhanced Room Temperature Magnetic Anisotropy and Magneto-resistance.** S. Chandra^{1,2}, R. Das¹, V. Kalappattil¹, T. Eggers¹, C. Harnagea², R. Nechache³, M. Phan¹, F. Rosei² and H. Srikanth¹ 1. Department of Physics, University of South Florida, Tampa, FL; 2. Centre Énergie, Matériaux et Télécommunications, INRS, Varennes, QC, Canada; 3. Département de Génie Électrique, Ecole de Technologie Supérieure, Montréal, QC, Canada

2:42

- HG-07. Itinerant ferromagnetism in strongly correlated $\text{EuTi}_{(1-x)}\text{Nb}_x\text{O}_3$ single crystal.** S. Roy¹, N. Khan¹ and P. Mandal² 1. Condensed Matter Physics, Saha Institute of Nuclear Physics, Saltlake, India; 2. Experimental Condensed Matter Physics, Saha Institute of Nuclear Physics, Calcutta, India

2:54

- HG-08. Large negative magnetoresistance in paramagnetic ferroelectric: Nb -substituted $\text{Eu}_{0.3}\text{Ba}_{0.7}\text{TiO}_3$.** R. Mahendiran¹ and K. Rubi² 1. Physics Dept, National University of Singapore, Singapore; 2. Physics, National University of Singapore, Singapore

3:06

- HG-09. Thermodynamic Properties of CeOsGa_4 Compound.** B.M. Sondezi¹ and A.M. Strydom¹ 1. Physics, University of Johannesburg, Johannesburg, South Africa

3:18

- HG-10. Tunable ferromagnetic resonance in La-Co substituted barium hexaferrites at millimeter wave frequencies.** K.A. Korolev¹, C. Wu^{2,3}, Z. Yu³, K. Sun³, M. Afsar¹ and V.G. Harris² 1. Department of Electrical and Computer Engineering, Tufts University, Medford, MA; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China

3:30

- HG-11. Tuning of microwave and magnetic properties of barium hexagonal ferrite films modified by La-Zn co-substitutional doping.** H. Xia^{1,3}, A.S. Sokolov¹, C. Yu¹, C. Wu^{1,2}, J. Wang³ and V.G. Harris¹ 1. Center for Microwave Magnetic Materials and Integrated Circuits and Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 3. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, China

3:42

- HG-12. Investigation of Physical Properties in Ruthenium Doped Pyrochlore Iridate $\text{Y}_2\text{Ir}_2\text{O}_7$.** H. Kumar¹ and A.K. Pramanik¹ 1. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India

- HG-13. Ferromagnetic resonance of Ni wires fabricated on ferroelectric LiNbO₃ substrate for studying strain-induced magnetic properties.** *A. Yamaguchi*¹, *K. Ueda*¹, *T. Nakazima*¹, *Y. Utsumi*¹ and *K. Yamada*¹ *1. Laboratory of Advanced Science and Technology for Industry, University of Hyogo, Ako-gun, Japan*

FRIDAY
AFTERNOON
1:30

ROOM 401-402

Session HH
AMORPHOUS AND NANOCRYSTALLINE
MATERIALS II

Yuan Gao, Co-Chair
Winchester Technologies, LLC, Winchester, MA
Ming Liu, Co-Chair
Xi'an Jiaotong University, Xi'an, China

1:30

- HH-01. The Growth Temperature and Measurement Temperature Dependences of Soft Magnetic Properties and Effective Damping Parameter of (FeCo)-Al Alloy Thin Films.** *Y. Ariake*^{1,2}, *S. Wu*^{1,3}, *I. Kanada*^{1,2}, *T. Mewes*^{1,3}, *Y. Tanaka*², *G. Mankey*^{1,3}, *C.K. Mewes*^{1,3} and *T. Suzuki*^{1,4} *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Materials Development Center, TDK corporation, Narita, Japan; 3. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL; 4. Departments of Electrical and Computer Engineering and Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL*

1:42

- HH-02. Nanostructure evolution of co-evaporated FeNi-SiO₂ magnetic granular film prepared under high magnetic field.** *G. Li*¹ *1. Northeastern University, Shenyang, China*

1:54

- HH-03. Microstructure and Soft Magnetic Properties of Fe-Si-B-P-Cu-M (M = Mn and Mo) Nanocrystalline Alloys.** *X. Jia*¹, *L. Wu*¹, *Y. Li*¹ and *W. Zhang*¹ *1. School of Materials Science and Engineering, Dalian University of Technology, Dalian, China*

2:06

- HH-04. Double negative metamaterials in microwave waveguides.** *Y. Luo*¹, *F. Qin*¹, *H. Wang*¹, *X. Zheng*¹ and *H. Peng*¹ *1. Materials Sci. Eng., Zhejiang University, Hangzhou, China*

- HH-05. Nanostructural formation process in an amorphous Fe₈₆B₁₄ alloy investigated by *in-situ* resistivity measurements with rapid heating rates of up to 6000 K/min.** R.R. Parsons¹, B. Zang¹, K. Onodera², H. Kishimoto², T. Shoji², A. Kato² and K. Suzuki¹ 1. *Department of Materials Science and Engineering, Monash University, Clayton, VIC, Australia;* 2. *Toyota Motor Corporation, Shizuoka, Japan*

- HH-06. Effect of Buffer Layers on the Magnetic Behaviour and Thermal Stability of CoFeB Film.** J. Dwivedi¹, M. Gupta², V.R. Reddy², A. Mishra¹, V. Srihari³, K.K. Pandey³ and A. Gupta⁴ 1. *School of Physics, Devi Ahilya University, Indore, India;* 2. *UGC-DAE Consortium for Scientific Research, UGC-DAE Consortium for Scientific Research, Indore, India;* 3. *High Pressure & Synchrotron Radiation Physics Division, Bhabha Atomic Research Centre, Mumbai, India;* 4. *Amity Center for Spintronic Materials, Amity University, Noida, India*

- HH-07. Giant Magnetostriction and Delta-E Effect of Soft Magnetic Thin Films.** C. Dong¹, M. Li², H. Zhou², X. Liang¹, X. Wang², Y. Gao³ and N.X. Sun⁴ 1. *Department of Electrical & Computer Engineering, Northeastern University, Boston, MA;* 2. *ECE, Northeastern University, Boston, MA;* 3. *Winchester Technologies, LLC., Burlington, MA;* 4. *Northeastern University, Boston, MA*

- HH-08. Characterization and magnetic properties of Co nanotubes.** Y. Jeon¹, S. Kim¹, B. Park¹, D. Nam¹ and Y. Kim¹ 1. *Department of Materials Science & Engineering, Korea University, Seoul, The Republic of Korea*

- HH-09. Evolution of magnetic and magnetoelastic characteristics in Co-substituted Fe-Cu-Nb-Si-B nearly-zero magnetostrictive nanocrystalline alloys.** G. Manginas¹, A. Damian¹, M. Tibu¹, G. Ababei¹, M. Grigoras¹ and N. Lupu¹ 1. *National Institute of Research and Development for Technical Physics, Iasi, Romania*

- HH-10. Computational alloy design of (Co_{1-x}Ni_x)₈₈Zr₇B₄Cu₁ nanocomposite soft magnets.** B. Dong¹, J. Healy¹, S. Lan¹, B. Hornbuckle², G. Thompson³, D. Maria⁴ and M.A. Willard¹ 1. *Materials Science and Engineering, Case Western Reserve University, Cleveland, OH;* 2. *Weapons and Materials Research Directorate, Army Research Laboratory, Belcamp, MD;* 3. *Metallurgical & Materials Engineering, University of Alabama, Tuscaloosa, AL;* 4. *Physics, Bard Early College High School, Cleveland, OH*

- HH-11. Tailoring of magnetic softness and GMI effect in Fe-rich thin magnetic wires.** V. Zhukova^{1,2}, M. Ipatov^{1,2}, A. Talaat^{1,2}, J. Blanco², M. Churyukanova³ and A.P. Zhukov^{1,4} 1. *Phys. Mater., UPV/EHU, San Sebastián, Spain*; 2. *Dpto. de Física Aplicada, University of Basque Country, EUPDS, San Sebastian, Spain*; 3. *Composite Materials, National University of Science and Technology «MISIS», Moscow, Russian Federation*; 4. *IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*

- HH-12. Effect of Magnetic Field Annealing on Magnetic Properties of $\text{Co}_{71}\text{Fe}_2\text{Si}_{14-x}\text{B}_{9+x}\text{Mn}_4$ Amorphous Alloys with Low Permeability.** B. Shen¹ and X. Fan¹ 1. *School of Materials Sciences and Engineering, Southeast University, Nanjing, China*

- HH-13. Co-based metallic glassy thin films on silicon with ultra-soft magnetic properties.** A. Masood¹, P. McCloskey¹, C. O'Mathuna¹ and S. Kulkarni¹ 1. *Microsystems Centre, Tyndall National Institute, Cork, Ireland*

- HH-14. High-Performance Melt-Spun CoFeBSi-based Soft-Magnetic Alloys.** K. Ackland², A. Masood¹, S. Kulkarni¹ and P.S. Stamenov² 1. *Microsystems Center, Tyndall National Institute, Cork, Ireland*; 2. *School of Physics, Dublin, Ireland*

- HH-15. Step-like hysteresis behaviour of Co-based amorphous microwires array.** V. Rodionova¹ and N. Perov² 1. *Center for Functionalized Magnetic Materials (FunMagMa), Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*; 2. *Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation*

Session HI

MAGNETIC SENSORS (NON-RECORDING) II

Hiroaki Kikuchi, Co-Chair
Iwate University, Morioka, Japan

Nathan Lazarus, Co-Chair
US Army Research Laboratory, Adelphi, MD

1:30

- HI-01. Phase Transitions in Spin-Crossover Thin Films Probed by Graphene Transport Measurements.** *J. Dugay*¹, *M. Aarts*², *M. Giménez-Marqués*^{1,3}, *T. Kozlova*², *H. Zandbergen*², *E. Coronado*¹ and *H. van der Zant*² *1. Molecular Materials, University of Valencia (ICMOL, Institute of Molecular Science), Paterna, Spain; 2. Department of Quantum Nanoscience, Delft University of Technology, Delft, Netherlands; 3. Institut Lavoisier, UMR CNRS 8180, Université de Versailles Saint-Quentin-en-Yvelines, Versailles cedex, France*

1:42

- HI-02. Highly Sensitive Spintronic Strain-Gauge Sensor Based on MgO Magnetic Tunnel Junction with Amorphous CoFeB Sensing Layer.** *Y. Fuji*¹, *S. Kaji*¹, *M. Hara*¹, *Y. Higashi*¹, *A. Hori*¹, *K. Okamoto*¹, *T. Nagata*¹, *A. Yuzawa*¹, *S. Baba*¹, *K. Otsu*¹, *K. Masunishi*², *T. Ono*¹ and *H. Fukuzawa*¹
1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan; 2. Corporate Manufacturing Engineering Center, Toshiba Corporation, Kawasaki, Japan

1:54

- HI-03. Magnetoelectric Composite Based Dual Sensor System for Tissue Iron Detection, Overlying Tissue Thickness Correction and Iron Content Mapping.** *M. Lu*¹, *H. Xi*¹, *Q. Yang*² and *Q. Zhang*^{1,3} *1. Electrical Engineering and Computer Science, The Pennsylvania State University, University Park, PA; 2. Departments of Radiology and Neurosurgery, Penn State College of Medicine, Hershey, PA; 3. The Material Research Institute, The Pennsylvania State University, University Park, PA*

2:06

- HI-04. Reading magnetic ink patterns with magnetoresistive sensors.** *K.J. Merazzo*¹, *T. Costa*^{1,2}, *F. Franco*^{1,2}, *M. Zander*³, *M. Türr*³, *T. Becker*³ and *S. Cardoso*^{1,2} *1. INESC-MN - Microsistemas e Nanotecnologias, Lisbon, Portugal; 2. Técnico Universidade de Lisboa, Lisboa, Portugal; 3. BOGEN Electronic GmbH, Berlin, Germany*

2:18

- HI-05. Innovative compact design for ultra-low field detection based on magnetoresistive sensors.** *M.D. Silva*^{1,2}, *D.C. Leitao*^{1,2}, *S. Cardoso*^{1,2} and *P. P Freitas*¹ *1. INESC-MN, Lisbon, Portugal; 2. Physics, Instituto Superior Técnico, Lisbon, Portugal*

- HI-06. Low frequency picotesla magnetic field detection using magnetoelectric composite based on delta-E effect.** *M. Li*¹, *C. Dong*¹, *H. Zhou*², *Z. Wang*¹ and *N.X. Sun*¹ *1. ECE, Northeastern University, Boston, MA; 2. ECE, China Jiliang University, Hangzhou, China*

- HI-07. Small Angle Fluctuations Model of Magnetic Noise in Magnetoresistive Sensors.** *J. Chęcinski*^{1,2}, *P. Wisniowski*¹, *M. Frankowski*¹ and *T. Stobiecki*^{1,2} *1. AGH University of Science and Technology, Department of Electronics, Krakow, Poland; 2. AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Krakow, Poland*

- HI-08. Magnetoelastic Sensor for Cross Section Evaluation in Cylindrical Elements through Giant Stress Impedance (GSI) Effect.** *J. Beato-López*^{1,2}, *G. Vargas*³, *J. Perez-Landazabal*^{1,2} and *C. Gomez-Polo*^{1,2} *1. Departamento de Física, Universidad Pública de Navarra, Pamplona, Spain; 2. Institute for Advanced Materials (INAMAT), Universidad Pública de Navarra, Pamplona, Spain; 3. Materials + Technologies Group, Department of Mechanical Engineering, Politechnic School, Universidad del País Vasco/ Euskal Herriko Unibertsitatea, Donostia-San Sebastian, Spain*

- HI-09. Magnetic Nanowires Corrosion Sensor.** *S. Amara*¹, *Z. Albu*¹, *Y. Mashraei*¹ and *J. Kosel*¹ *1. Sensing, Magnetism and Microsystems Lab, Computer Electrical and Mathematical Science and Engineering Division, King Abdullah University of Science and Technology, Saudi Arabia, Saudi Arabia*

- HI-10. Underwater animal monitoring magnetic sensor system.** *A. Kaidarova*¹, *S. Amara*¹, *N. Geraldi*², *C.M. Duarte*² and *J. Kosel*¹ *1. Sensing, Magnetism and Microsystems Lab, King Abdullah University of Science and Technology, Saudi Arabia, Saudi Arabia; 2. RSRC, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

- HI-11. Ultra-sensitive NEMS Magnetoelectric Sensor for Picotesla DC Magnetic Field Detection.** *A. Matyushov*¹, *M. Li*², *C. Dong*³, *H. Chen*³, *H. Lin*², *T. Nan*^{2,4}, *Z. Qian*³, *M. Rinaldi*³ and *N.X. Sun*¹ *1. Northeastern University, Allston, MA; 2. ECE, Northeastern University, Boston, MA; 3. Department of Electrical & Computer Engineering, Northeastern University, Boston, MA; 4. University of Wisconsin-Madison, Madison, WI*

- HI-12. High field unipolar and bipolar sensors based on Surface Acoustic Wave resonators.** *K. Dumesnil^{1,2}, V. Polewczyk^{1,2}, D. Lacour^{1,2}, M. Moutaouekki^{1,2}, H. Mjhed^{1,2}, N. Tiercelin³, S. Petit-Watelot^{1,2}, H. Mishra^{1,2}, Y. Dusch³, S. Hage-Ali^{1,2}, O. Elmazria^{1,2}, F. Montaigne^{1,2}, A. Talbi³, O. Bou Matar³ and M. Hehn^{1,2}* 1. *Institut Jean Lamour, Nancy, France*; 2. *CNRS, Université de Lorraine, Nancy, France*; 3. *IEMN UMR CNRS 8520, Villeneuve d'Ascq, France*

- HI-13. Effects of the Magnetic Field Variation on the Spin Wave Interference in the Magnetic Cross Junctions.** *M. Balinskiy¹, H. Chiang², A. Kozhevnikov³, G. Dudko³, Y. Filimonov^{3,4}, A.A. Balandin² and A. Khitun¹* 1. *University of California Riverside, Riverside, CA*; 2. *Electrical and Computer Engineering, University of California, Riverside, Anaheim Hills, CA*; 3. *Kotelnikov Institute of Radio-Engineering and Electronics of the Russian Academy of Sciences, Saratov, 410019, Russian Federation*; 4. *Saratov State University, Saratov, 410012, Russian Federation*

- HI-14. Micromagnetic Measurement for Characterization of Ferromagnetic Materials' Microstructural Properties.** *S. Zhang¹, X. Shi¹, L. Udpa¹ and Y. Deng¹* 1. *Electrical and Computer Engineering, Michigan State University, East Lansing, MI*

- HI-15. Considering non-uniform current distributions in magnetoresistive sensor designs and their implications for the resistance transfer function.** *A. Bachleitner-Hofmann¹, H. Brueckl², A. Satz³, T. Wurft⁴, H. Weitensfelder⁵, W. Raberg⁶, K. Prügl⁶ and D. Suess⁵* 1. *Physics of Functional Materials, Universität Wien, Wien, Austria*; 2. *Institute of Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria*; 3. *Infineon Technologies Austria AG, Villach, Austria*; 4. *Infineon Technologies AG / University Bielefeld, Neubiberg, Germany*; 5. *Vienna University of Technology, Vienna, Austria*; 6. *Infineon Technologies AG, Munich, Austria*

Aarts, M. (HI-01)	245	Akedo, K. (DH-06)	115
Ababei, G. (AQ-01)	22	Åkerman, J. (CC-05)	72
Ababei, G. (CS-02)	94	Åkerman, J. (CC-10)	72
Ababei, G. (FU-14)	194	Åkerman, J. (EA-02)	132
Ababei, G. (HH-09)	243	Åkerman, J. (ED-08)	138
Ababei, R.V. (FD-11)	170	Åkerman, J. (FC-10)	168
Aballe, L. (FC-05)	167	Åkerman, J. (FD-03)	169
Abd-El-Hafiz, S. (BU-14)	65	Åkerman, J. (FD-04)	169
Abd-El-Hafiz, S. (GE-09)	203	Åkerman, J. (FD-05)	169
Abd-Elmeguid, M.M. (FG-06)	176	Åkerman, J. (HB-09)	229
Abdelgawad, A.M. (DH-09)	116	Åkerman, J. (HE-02)	235
Abdelgawad, A.M. (DH-10)	116	Akima, H. (FA-04)	163
Abdelgawad, A.M. (EC-05)	136	Akiyoa, O. (AP-13)	21
Abel, F.M. (DF-08)	111	Akiyoa, O. (GV-03)	225
Abel, F.M. (DH-07)	116	Akiyoa, O. (GV-05)	225
Abert, C. (BB-12)	36	Akiyama, T. (EQ-15)	154
Abert, C. (GQ-05)	215	Akiyoshi, T. (CP-02)	87
Abert, C. (GQ-12)	216	Akosa, C.A. (EQ-01)	153
Abert, C. (GQ-13)	216	Akosa, C.A. (ER-01)	155
Abreu Araujo, F. (CC-03)	71	Akosa, C.A. (HB-11)	229
Abugri, J. (DE-06)	108	Al Baalbaky, A. (GF-12)	205
Acharya, R. (EE-05)	140	Al Ma`Mari, F. (BB-10)	36
Ackland, K. (HH-14)	244	Al Ma`Mari, F. (CS-05)	94
Acremann, Y. (FB-08)	165	Al Ma`Mari, F. (FH-09)	179
Aczel, A.A. (EH-10)	147	Al Milaji, K.N. (ET-05)	160
Adam, J. (HE-10)	236	Al-Aqtash, N. (BV-10)	67
Adams, D.J. (AS-16)	27	Al-Rashid, M. (AH-04)	16
Adelmann, C. (HE-09)	236	Al-Wahish, A. (FI-07)	180
Adelmann, C. (HE-13)	237	Alaan, U.S. (DB-09)	102
Adhikari, H. (CR-09)	92	Alam, A. (GS-02)	219
Adly, A. (BU-14)	65	Alameda, J. (CU-04)	98
Adly, A. (GE-09)	203	Alameda, J. (DC-11)	105
Adolf, B. (DE-05)	108	Alasadi, A. (HC-12)	232
Adolff, C.F. (BD-12)	41	Alba Venero, D. (CU-01)	98
Adolff, C.F. (GP-07)	213	Alba Venero, D. (GG-01)	206
Adriano, C. (AV-12)	33	Albrecht, M. (AD-11)	8
Adriano, C. (CS-15)	96	Albrecht, M. (DI-05)	117
Aeschlimann, M. (GB-09)	196	Albrecht, M. (FE-09)	172
Afsar, M. (HG-10)	241	Albrecht, M. (GB-09)	196
Agnus, G. (FC-13)	168	Albu, Z. (HI-09)	246
Aguilera, I. (EG-08)	145	Aldosary, M. (HE-14)	237
Aguirre, M.H. (BV-03)	66	Aldosary, M.H. (BR-09)	59
Ahad, A. (GF-13)	206	Alejos, O. (AT-01)	27
Ahad, A. (GG-06)	207	Alejos, O. (EC-10)	136
Ahamed, I. (EH-14)	148	Aleksandrov, Y. (AC-08)	5
Ahlawat, S. (HG-05)	240	Aleksandrov, Y. (CC-13)	73
Ahlberg, M. (ED-08)	138	Alekseev, S. (BR-11)	60
Ahlberg, M. (FD-03)	169	Aleksiejew, J. (EB-06)	133
Ahlberg, M. (HE-02)	235	Alghamdi, N.A. (CR-02)	91
Ahmad, A. (CH-02)	82	Alghamdi, S.M. (CS-05)	94
Ahmad, N. (BG-09)	48	Alhashem, Z.H. (EQ-11)	154
Ahmad, N. (BH-06)	50	Ali, M. (CS-05)	94
Ahmad, N. (CH-05)	83	Ali, N. (CQ-01)	89
Ahmadzadeh, M. (CU-15)	100	Ali, N. (CQ-02)	89
Ahmed, A. (BB-06)	35	Ali, N. (CR-01)	91
Ahmed, A. (EH-13)	148	Ali, N. (CS-03)	94
Ahmed, M. (AR-12)	25	Ali, N. (FI-07)	180
Ahmed, M. (ET-09)	160	Ali, S. (CH-11)	84
Ahmim, S. (DF-03)	110	Ali, S.S. (CH-05)	83
Ahn, S. (BT-01)	62	Aljuaid, W. (FR-12)	187
Ahn, S. (BT-16)	64	Allen, S.R. (GA-01)	194
Ahrens, V. (AS-05)	26	Allende, S. (GP-01)	213
Ain, Q. (EG-02)	144	Allende, S. (GQ-01)	215
Ajan, A. (BQ-11)	57	Allia, P. (ES-01)	157
Ajejas, F. (CG-14)	82	Allia, P. (ET-01)	159
Ajejas, F. (FB-10)	165	Allwood, D.A. (AD-09)	8
Ajejas, F. (HD-04)	233	Allwood, D.A. (AS-09)	26
Akagi, F. (BQ-07)	57	Allwood, D.A. (HC-05)	231
Akagi, F. (FU-10)	193	Allwood, D.A. (HC-12)	232
Akahane, K. (GV-16)	227	Almasi, H. (CB-12)	70
Akaki, M. (DR-15)	125	Almasi, H. (FF-14)	175
Akansel, S. (BC-11)	38	Almeida, T.P. (BH-13)	51
Akansel, S. (ED-01)	137	Almeida, T.P. (EC-09)	136
Akansel, S. (EU-15)	163	Alottebi, F. (GS-15)	220
Akansel, S. (GR-01)	217	Altansargai, B. (AE-07)	10
Akdogan, O. (CF-09)	79	Altansargai, B. (FF-02)	174
		Altbir, D. (AT-02)	28

*Best student presentation award finalist

Altbir, D. (ET-04)	160	Andrez, J. (DP-08)	120
Altbir, D. (GP-01)	213	Anh, L. (EH-08)	147
Altinkok, A. (GF-02)	204	Anjana, P. (FH-07)	179
Altounian, Z. (FU-09)	193	Anoop Baby, K. (GH-08)	209
Alvandi-Tabrizi, Y. (AH-03)	16	Ansermet, J. (BR-07)	59
Alvandi-Tabrizi, Y. (AS-10)	27	Antolin, N. (EH-13)	148
Alvandi-Tabrizi, Y. (GD-06)	200	Antonov, V. (CU-08)	99
Alvarez-Prado, L. (CU-04)	98	Antropov, V. (FU-07)	193
Alvarez-Prado, L. (DC-11)	105	Aoki, T. (BV-04)	66
Alves-Santos, O. (BR-12)	60	Apalkov, D. (BE-09)	43
Alves-Santos, O. (EB-11)	134	Apalkov, D. (BE-10)	43
Alves-Santos, O. (HB-05)	228	Apalkov, D. (CC-11)	72
Alves, E. (FP-03)	182	Apalkov, D. (DD-03)	106
Amamou, W. (EH-13)	148	Apalkov, D. (GD-03)	200
Amanatiadis, S. (DS-06)	126	Aquino, H.O. (BR-03)	59
Amano, M. (BE-07)	42	Aradhya, S.V. (AE-11)	10
Amara, S. (HI-09)	246	Aragon, A.M. (AR-12)	25
Amara, S. (HI-10)	246	Aragon, A.M. (ET-09)	160
Amaral, J.S. (CF-11)	79	Araki, Y. (DG-10)	114
Amaral, J.S. (FI-01)	179	Aramaki, H. (AQ-14)	23
Amaral, J.S. (FI-10)	181	Aramaki, H. (CP-10)	88
Amaral, J.S. (HD-11)	234	Araneda, F. (AS-03)	26
Amaral, M. (AG-11)	15	Araújo, J. (EI-12)	150
Amaral, V.B. (CF-11)	79	Araújo, J. (ES-13)	159
Amaral, V.B. (FI-01)	179	Arbeláez, O.D. (FS-13)	189
Amaral, V.B. (FI-10)	181	Ard, C. (CD-06)	74
Amaral, V.B. (HD-11)	234	Arekapudi, S.K. (DI-05)	117
Amato, G. (ES-01)	157	Arena, D.A. (ED-02)	137
Amato, G. (ET-01)	159	Arena, D.A. (ED-05)	138
Ambal, K. (AD-10)	8	Arena, D.A. (ET-12)	161
Ambaye, H. (BV-01)	66	Arena, D.A. (FH-09)	179
Ambaye, H. (EH-04)	146	Arenholz, E. (BH-09)	50
Ambrose, T. (AQ-09)	23	Arenholz, E. (DB-09)	102
Ambrose, T. (GC-06)	198	Arenholz, E. (DC-08)	104
Ambrose, T. (GH-01)	208	Arenholz, E. (ED-05)	138
Amemiya, K. (CS-01)	94	Arenholz, E. (EH-03)	146
Amemiya, K. (EU-09)	162	Arenholz, E. (EH-06)	147
Amin, V. (BC-15)	39	Arenholz, E. (FE-10)	172
Amin, V. (GA-02)	194	Arenholz, E. (GC-04)	198
Amir, S.M. (HG-05)	240	Arenholz, E. (GC-13)	199
Amiri, P.K. (BP-12)	55	Ariake, Y. (HH-01)	242
Amiri, P.K. (FP-06)	182	Arias, R. (GP-01)	213
Amiri, P.K. (GR-04)	217	Arias, R. (GR-14)	218
Amrita, B. (DF-06)	111	Ariki, T. (FQ-04)	184
An, S. (AQ-06)	22	Arima, T. (HA-02)	227
An, S. (AQ-07)	22	Arkook, B. (BR-09)	59
An, S. (CP-08)	88	Arkook, B. (DB-08)	102
Anand, K. (GT-15)	222	Armitage, N. (AA-04)	2
Anand, N. (BT-04)	63	Arnalds, U. (HC-03)	231
Anand, P. (BH-10)	50	Arnalds, U. (HC-07)	231
Anane, A. (CD-02)	74	Arnau, A. (DG-09)	114
Anane, A. (ED-13)	139	Arnold, D.P. (BH-05)	50
Anane, A. (EI-04)	149	Arnold, D.P. (CF-07)	78
Anderson, I.E. (BG-01)	47	Arnold, M. (BD-13)	41
Anderson, I.E. (DF-13)	112	Aroca, C. (GE-07)	203
Anderson, I.E. (GT-09)	222	Arora, M. (AS-06)	26
Anderson, I.E. (GT-13)	222	Arosio, P. (DU-08)	130
Anderson, N.R. (AR-13)	25	Arregi, J. (CB-10)	70
Anderson, N.R. (BG-02)	47	Arregi, J. (FG-04)	176
Anderson, N.R. (CR-02)	91	Arrington, C. (GI-06)	211
Anderson, P. (ES-12)	159	Arrott, A.S. (CP-06)	87
Anderson, T.J. (EB-08)	134	Arrott, A.S. (GQ-06)	215
Ando, F. (EQ-12)	154	Aryal, A. (CQ-01)	89
Ando, K. (DE-10)	109	Aryal, A. (CQ-02)	89
Ando, K. (FS-04)	188	Aryal, A. (CR-01)	91
Ando, K. (FS-05)	189	Aryal, A. (CS-03)	94
Ando, R. (EU-01)	161	Aryal, A. (FI-07)	180
Ando, R. (EU-05)	161	Asa, M. (FB-07)	165
Ando, Y. (DB-13)	103	Asa, M. (HB-13)	230
Ando, Y. (DT-14)	129	Asahara, A. (EF-06)	142
Ando, Y. (EB-04)	133	Asano, H. (AS-13)	27
Ando, Y. (EI-08)	150	Asano, H. (BV-08)	67
Ando, Y. (FQ-04)	184	Asano, H. (FS-10)	189
Andrasi, A. (FH-08)	179	Aseguinolaza, I. (ES-13)	159
Andrei, P. (BU-02)	64	Aslam, S. (EP-06)	151
Andrew, J.S. (BH-03)	49	Aslani, A. (CQ-06)	90
Andrew, J.S. (BH-05)	50	Aslani, A. (FI-06)	180

*Best student presentation award finalist

Astefanoaei, I. (DU-06)	130
Astudillo, A. (EU-16)	163
Astudillo, J.A. (AV-05)	32
Atkinson, L.J. (FE-06)	172
Atulasimha, J. (AH-04)	16
Audehm, P. (AS-15)	27
Audrey, L. (GH-13)	210
Auffret, S. (AB-10)	4
Auffret, S. (AE-01)	9
Auffret, S. (AS-07)	26
Auffret, S. (AT-16)	29
Auffret, S. (BC-10)	38
Auffret, S. (BE-12)	43
Auffret, S. (BE-14)	44
Auffret, S. (BE-15)	44
Auffret, S. (FC-05)	167
Auffret, S. (FP-03)	182
Auffret, S. (FQ-09)	185
Autieri, M.V. (AG-06)	14
Autret, C. (AH-10)	17
Avasthi, D. (FE-13)	173
Avci, C. (BC-09)	38
Avci, C. (DB-01)	101
Avci, C. (EH-12)	148
Avci, C. (FB-08)	165
Avci, C. (FR-07)	187
Avci, C. (FR-10)	187
Avila, J.I. (FR-11)	187
Avolio, M. (DU-08)	130
Awad, A.A. (EA-02)	132
Awad, A.A. (FD-03)	169
Awad, A.A. (FD-04)	169
Awad, A.A. (FD-05)	169
Awano, H. (BC-08)	38
Awano, H. (DC-02)	103
Ayino, Y. (BI-13)	53
Azaceta, I. (HD-09)	234
Azevedo, A. (BR-12)	60
Azevedo, A. (EB-11)	134
Azevedo, A. (HB-05)	228
Aziz, M. (DC-13)	105
Aziziha, M. (GC-12)	199
Azuma, K. (AP-01)	20
Azzerboni, B. (EA-04)	132

- B -

Baba, S. (HI-02)	245
Babaei Gavan, K. (AE-05)	9
Babroski, C. (FB-01)	164
Bacani, M. (FB-13)	166
Bachleitner-Hofmann, A. (HI-15)	247
Back, C. (AD-04)	7
Back, C. (BB-09)	36
Back, C. (FC-01)	166
Back, C. (FR-16)	188
Baek, S.C. (FP-01)	182
Baek, S.C. (FQ-01)	184
Baena, J. (DS-05)	126
Baez Flores, G.G. (HE-06)	236
Bag, P. (DQ-16)	123
Bagherzadeh, N. (DE-05)	108
Baghizadeh, A. (CF-11)	79
Bagschik, K. (ER-06)	156
Bahadur, D. (DU-07)	130
Bai, G. (FT-05)	190
Bai, H. (EG-01)	144
Bai, J. (BU-16)	66
Bai, X. (CE-03)	76
Bai, Y. (DD-11)	107
Baierl, S. (GR-16)	218
Bailleul, M. (BD-02)	39
Bailly-Reyre, A. (FG-01)	176
Bain, J.A. (CI-10)	86
Bainsla, L. (DE-09)	108
Baker-McKee, J. (AG-05)	14
Baker-McKee, J. (CR-13)	93

Baker, A. (CF-01)	77
Baker, A. (CF-03)	78
Baker, S. (CF-01)	77
Balakrishnan, G. (GQ-11)	216
Balakrishnan, P. (EH-03)	146
Balandin, A.A. (GP-02)	213
Balandin, A.A. (HI-13)	247
Balasubramanian, B. (DH-07)	116
Balasubramanian, B. (DH-08)	116
Balasubramanian, B. (HG-04)	240
Baldo, M. (EC-12)	136
Baldo, M. (FC-07)	167
Baldomir, D. (AG-09)	14
Baldomir, D. (AR-13)	25
Baldwin, J. (GI-06)	211
Balema, V. (DP-09)	120
Balinskiy, M. (EP-02)	151
Balinskiy, M. (GP-02)	213
Balinskiy, M. (HI-13)	247
Balzar, D. (DB-06)	102
Banerjee, N. (GF-07)	205
Banerjee, T. (DE-13)	109
Bang, A.D. (FE-10)	172
Bang, D. (BC-08)	38
Bang, W. (AD-05)	7
Bang, W. (CD-07)	75
Bang, W. (FD-13)	171
Bang, W. (GP-10)	214
Bankowski, E. (CI-04)	85
Banshikof, A. (GQ-15)	216
Bansil, A. (ES-04)	158
Banuazizi, S. (FD-05)	169
Bao, X. (FT-04)	190
Bao, X. (FT-08)	191
Bapna, M. (CB-12)*	70
Bapna, M. (FF-12)	175
Baraduc, C. (AB-10)	4
Baraduc, C. (CC-07)	72
Barandiaran, J. (ES-13)	159
Baranov, D. (GQ-15)	216
Barati, M. (BR-06)	59
Barazandeh, C. (BT-13)	63
Barbedienne, Q. (DG-08)	114
Barbee, T.W. (CF-03)	78
Barbiellini, B. (ES-04)	158
Barick, K. (DU-07)	130
Barker, J. (AB-06)	3
Barker, J. (ER-13)	157
Barman, A. (AS-08)	26
Barman, A. (ER-08)	156
Barman, A. (GR-10)	218
Baron, M. (AG-12)	15
Barra, A. (AH-02)	16
Barra, A. (AH-07)	16
Barra, A. (HF-03)	238
Barre, E. (CG-06)	80
Barrows, F. (DQ-14)	123
Barrows, F. (HC-02)	230
Barsukov, I. (BP-16)	56
Barsukov, I. (BR-09)	59
Barsukov, I. (DB-08)	102
Bartell, J.M. (DI-02)	117
Bartell, J.M. (ER-14)	157
Bartkowiak, M. (HA-02)	227
Bartok, A. (CQ-10)	90
Bartok, A. (CQ-12)	90
Barton, C. (CU-08)	99
Barton, C.W. (GC-03)	198
Barua, R. (DP-15)	121
Barua, R. (FI-08)	180
Barua, R. (HG-01)	240
Barwal, V. (GR-01)	217
Barwal, V. (GR-02)	217
Barwal, V. (GS-01)	219
Basaula, D. (DQ-07)	122
Basheed, G. (DF-06)	111
Bataev, D. (BF-14)	46

*Best student presentation award finalist

Batley, J.T. (EB-02)	133	Berk, C. (AD-11)	8
Battle, X. (CH-03)	83	Berk, C. (ED-03)	137
Battle, X. (CH-08)	83	Berk, C. (FD-12)	170
Battle, X. (EH-11)	148	Berk, C. (GR-08)	218
Battiato, M. (ED-08)	138	Bernand-Mantel, A. (BB-05)	35
Baudin, T. (GH-07)	209	Bernstein, G.H. (BR-03)	59
Bauer, G. (AA-01)	1	Berntsen, M.H. (ER-06)	156
Bauer, G. (DA-05)	101	Berrietta, M. (CB-09)	70
Bauer, G. (FR-16)	188	Bersweiler, M. (AE-09)	10
Bauer, L. (BS-07)	61	Bertacco, R. (FB-07)	165
Bauer, M.J. (BH-03)	49	Bertacco, R. (HB-13)	230
Bauer, M.J. (BH-05)	50	Bertran, F. (DG-08)	114
Baumgartner, M. (BC-09)	38	Berweger, S. (DI-03)	117
Baumgartner, M. (FB-08)	165	Besley, L. (BF-11)	46
Bea, H. (AB-10)	4	Bessarab, P. (HB-10)	229
Bea, H. (BB-05)	35	Bezerra, M.T. (AR-07)	24
Beach, G. (BB-07)	35	Bhallamudi, V.P. (DD-12)	107
Beach, G. (BC-09)	38	Bhallamudi, V.P. (ED-11)	139
Beach, G. (DB-01)	101	Bhalothia, S. (GF-06)	205
Beach, G. (EH-12)	148	Bhat, N. (CI-12)	86
Beach, G. (ER-09)	156	Bhattacharya, A. (AC-09)	6
Beach, G. (FR-07)	187	Bhattacharya, D. (GS-02)	219
Beach, G. (FR-10)	187	Bhattacharya, S. (AI-07)	19
Beach, G. (HA-01)	227	Bhattacharya, S. (AI-09)	19
Beach, R. (BE-09)	43	Bhattacharya, S. (AI-09)	19
Beach, R. (BE-10)	43	Bhattarai, N. (CS-08)	95
Beach, R. (GD-03)	200	Bhatti, S. (AQ-12)	23
Beato-López, J. (HI-08)	246	Bhatti, S. (BP-05)	54
Beaulieu, N. (EI-04)	149	Bhoyate, S. (CR-09)	92
Becherer, M. (AS-05)	26	Bhoyate, S. (CR-10)	93
Becherer, M. (FC-11)	168	Bhoyate, S. (CS-09)	95
Becherer, M. (GP-08)	214	Bhuktare, S.S. (AC-11)	6
Becker, T. (HI-04)	245	Bhuktare, S.S. (FD-06)	170
Bedair, S. (AI-01)	18	Bi, C. (DE-12)	109
Bedanta, S. (CS-04)	94	Bi, C. (FD-08)	170
Beddingfield, R.B. (AI-09)	19	Bi, L. (BR-08)	59
Beekman, C. (EH-10)	147	Bi, L. (EQ-08)	154
Beevers, J. (GF-11)	205	Bi, L. (GV-15)	226
Beg, M. (AT-07)	28	Bi, L. (HC-11)	232
Beg, M. (GQ-11)	216	Bialek, M. (BR-07)	59
Beginin, E.N. (EP-14)	152	Biegalski, M.D. (HF-04)	238
Behera, N. (GR-02)	217	Bihlmayer, G. (DG-09)	114
Behera, N. (GS-01)	219	Bihlmayer, G. (EG-08)	145
Behncke, C. (HC-06)	231	Bilbao Blanco, C. (AS-09)	26
Běhounková, M. (FG-06)	176	Billington, D. (AF-14)	13
Beigang, R. (CB-05)	69	Billington, D. (EF-09)	143
Beik Mohammadi, J. (EB-01)	133	Binek, C. (HF-10)	239
Beik Mohammadi, J. (GR-06)	217	Biondo, A. (DP-08)	120
Belashchenko, K. (EG-07)	145	Biskeborn, R. (EE-01)	139
Belashchenko, K. (HE-06)	236	Bissell, P. (AH-12)	17
Belkessam, A. (FB-01)	164	Blamire, M. (GF-07)	205
Belmeguenai, M. (AB-10)	4	Blamire, M. (HE-08)	236
Belmeguenai, M. (DC-04)	104	Blanco, J. (HH-11)	244
Belmeguenai, M. (GP-13)	214	Blanter, Y.M. (DA-05)	101
Beloborodov, I.S. (HF-08)	239	Blaz, N. (BS-12)	62
Beloborodov, I.S. (HF-09)	239	Blonski, P.S. (HG-03)	240
Ben Youssef, J. (CD-02)	74	Blügel, S. (AB-04)	2
Ben Youssef, J. (EI-04)	149	Blügel, S. (EG-08)	145
Ben, T. (AI-12)	19	Bocklage, L. (BD-12)	41
Beniwal, S. (HG-04)	240	Bocklage, L. (CB-03)	69
Bennet, R. (AC-04)	5	Bocklage, L. (GP-07)	213
Bennet, R. (DB-06)	102	Bocko, M. (AE-12)	10
Bennett, L.H. (BP-13)	55	Boekelheide, Z. (AR-11)	25
Bennett, L.H. (CQ-06)	90	Boekelheide, Z. (DU-04)	130
Bennett, L.H. (FI-06)	180	Boisron, O. (CF-08)	79
Bennett, S.P. (GI-06)	211	Bokor, J. (AH-05)	16
Bennett, S.P. (HB-15)	230	Bokor, J. (AH-08)	17
Bennion, K. (GT-09)	222	Bokor, J. (GB-10)	196
Beran, L. (BC-09)	38	Bokor, J. (GB-11)	197
Beran, L. (EH-12)	148	Bolaños, G. (AV-05)	32
Beran, L. (EI-01)	149	Bolanos, G. (EU-16)	163
Beran, L. (EI-08)	150	Bollapragada, V. (EE-06)	140
Beran, L. (HD-07)	234	Bollero, A. (GD-11)	201
Bergenti, I. (BI-08)	52	Bollero, A. (GQ-15)	216
Berger, A. (CB-10)	70	Bollero, A. (GT-16)	222
Berger, A. (FE-12)	173	Bonetti, S. (ED-04)	137
Berger, A.J. (FB-06)	165	Bonetti, S. (GB-01)	195
		Bonetti, S. (GR-11)	218

*Best student presentation award finalist

Camarero, J. (FB-10)	165	Celinski, Z. (AG-03)	13
Camarero, J. (GD-11)	201	Celinski, Z. (CR-02)	91
Camarero, J. (GQ-15)	216	Celinski, Z. (CR-11)	93
Camarero, J. (HD-04)	233	Celinski, Z. (DT-08)	128
Camley, R.E. (CD-01)	73	Cely-Orjuela, I. (DS-07)	126
Camley, R.E. (CR-02)	91	Céolin, D. (BI-08)	52
Camley, R.E. (CR-11)	93	Cerio, F. (FP-04)	182
Camley, R.E. (FD-14)	171	Cerullo, G. (ED-07)	138
Campbell, N. (EB-08)	134	Cespedes, O. (CS-05)	94
Camsari, K.Y. (FA-02)	163	Cespedes, O. (FH-09)	179
Candler, R.N. (AH-05)	16	Cezar, J.C. (AV-04)	32
Candler, R.N. (AH-08)	17	Cha, I. (FB-12)	166
Canfield, P.C. (DF-15)	112	Cha, I. (GE-12)	203
Canfield, P.C. (FU-07)	193	Chadov, S. (AB-04)	2
Cannas, C. (AR-04)	24	Chanda, A. (CR-14)	93
Cansever, H. (AC-08)	5	Chanda, A. (CR-16)	93
Cantoni, M. (HB-13)	230	Chanda, A. (DR-06)	124
Cao, D. (DU-14)	131	Chandra, S. (HG-06)	241
Cao, S. (BT-02)	62	Chang-Ren, W. (GS-16)	220
Cao, X. (FT-12)	191	Chang, C. (CG-12)	81
Cao, X. (GU-11)	224	Chang, C. (CS-12)	95
Cao, X. (GU-14)	224	Chang, H. (AC-10)	6
Cao, Y. (ES-03)	157	Chang, H. (DB-03)	101
Capiod, P. (CF-08)	79	Chang, H. (DB-08)	102
Capuano, F. (GD-04)	200	Chang, H. (DG-06)	113
Carbonari, A.W. (DH-11)	116	Chang, H. (DI-03)	117
Carbonari, A.W. (EG-13)	145	Chang, H. (EU-06)	161
Carbonari, A.W. (FG-10)	177	Chang, H. (GC-09)	199
Cardona R., A. (GF-15)	206	Chang, H. (HB-03)	228
Cardona Romani, E. (EQ-05)	153	Chang, H. (HC-09)	232
Cardoso, S. (AG-11)	15	Chang, H.W. (GS-16)	220
Cardoso, S. (FP-12)	183	Chang, J. (BB-03)	35
Cardoso, S. (HI-04)	245	Chang, J.P. (AH-02)	16
Cardoso, S. (HI-05)	245	Chang, J.P. (BP-10)	55
Caretta, L.M. (EH-12)	148	Chang, J.P. (EP-15)	152
Caretta, L.M. (ER-09)	156	Chang, J.P. (EQ-16)	155
Carleschi, E. (CS-10)	95	Chang, L. (BV-12)	67
Carlotti, G. (CD-08)	75	Chang, L. (GP-04)	213
Carman, G. (AH-02)	16	Chang, L. (GR-05)	217
Carman, G. (AH-05)	16	Chang, P. (EG-07)	145
Carman, G. (AH-07)	16	Chang, Q. (BS-10)	62
Carman, G. (AH-08)	17	Chantrell, R. (AG-09)	14
Carman, G. (BV-15)	68	Chantrell, R. (AR-13)	25
Carman, G. (CD-05)	74	Chantrell, R. (BF-05)	45
Carman, G. (CI-02)	85	Chantrell, R. (BQ-03)	57
Carman, G. (CR-12)	93	Chantrell, R. (CC-11)	72
Carman, G. (GD-01)	200	Chantrell, R. (DD-03)	106
Carman, G. (GI-14)	212	Chantrell, R. (EF-11)	143
Carman, G. (HF-03)	238	Chantrell, R. (FD-11)	170
Caron, L. (EI-10)	150	Chantrell, R. (FE-03)	171
Caron, L. (FI-01)	179	Chantrell, R. (FE-06)	172
Carpentieri, M. (AB-06)	3	Chantrell, R. (GB-06)	196
Carpentieri, M. (AE-03)	9	Chao, X. (FF-14)	175
Carpentieri, M. (AE-04)	9	Charilaou, M. (GB-05)	196
Carpentieri, M. (EA-04)	132	Charlton, T. (EH-04)	146
Carr, L. (AD-08)	8	Chatterjee, J. (AE-01)	9
Carranza, D. (GF-15)	206	Chatterjee, J. (AS-07)	26
Carretero, C. (EI-04)	149	Chatterjee, J. (BE-14)	44
Carriço, A.S. (AT-06)	28	Chatterjee, J. (BE-15)	44
Carriço, A.S. (EU-14)	162	Chatterjee, J. (CC-07)	72
Caruana, A. (FH-09)	179	Chatterjee, R. (HD-10)	234
Carvalho-Santos, V. (AT-02)	28	Chatterjee, S. (EB-09)	134
Casanova, F. (CB-10)	70	Chaudhary, S. (EU-15)	163
Casanova, F. (DB-11)	103	Chaudhary, S. (GP-06)	213
Casanova, F. (EB-13)	135	Chaudhary, S. (GR-01)	217
Cascales, J. (GF-02)	204	Chaudhary, S. (GR-02)	217
Casiraghi, A. (FC-13)	168	Chaudhary, S. (GS-01)	219
Castro, M. (GQ-01)	215	Chaudhary, V. (BF-08)	45
Castro, T.D. (GV-14)	226	Chaudhary, V. (EF-02)	141
Cavill, S.A. (GF-11)	205	Chaudhary, V. (EF-05)	142
Cavill, S.A. (HD-03)	233	Chaudhary, V. (EI-13)	151
Cavill, S.A. (HD-09)	234	Chauleau, J. (BB-08)	35
Cecchi, S. (FB-07)	165	Chauleau, J. (DC-06)	104
Cecchini, R. (BI-08)	52	Chaurasiya, A.K. (ER-08)	156
Cecot, M. (EB-06)	133	Chavarriga, A. (CQ-07)	90
Cejpek, P. (ES-07)	158	Chaves, D. (FC-04)	167
Celik, H. (CB-08)	70	Chaves, D.D. (FB-10)	165

*Best student presentation award finalist

Chaves, D.D. (FC-05)	167	Chen, R. (GU-14).	224
Chavez, A.C. (AH-07)	16	Chen, S. (AQ-04)	22
Chavez, A.C. (BV-15)	68	Chen, S. (DT-15)	129
Chavez, B. (BH-03)	49	Chen, S. (GP-15)	214
Che, H. (DQ-13)	123	Chen, T. (BC-01)	37
Che, H. (DR-16)	125	Chen, T. (CC-12)	73
Chebotkevich, L. (FB-03)	164	Chen, T. (CT-12)	97
Chebotkevich, L.A. (AT-09)	28	Chen, T. (FQ-03)	184
Chebotkevich, L.A. (EC-02)	135	Chen, T. (GC-09)	199
Chebotkevich, L.A. (ER-11)	156	Chen, T. (GF-10)	205
Chebotkevich, L.A. (ET-11)	160	Chen, T. (GS-03)	219
Chebotkevich, L.A. (FB-12)	166	Chen, W. (CU-02)	98
Checinski, J. (EB-06)	133	Chen, W. (EB-03)	133
Checinski, J. (FF-11)	175	Chen, W. (EB-10)	134
Checinski, J. (HI-07)	246	Chen, W. (EQ-09)	154
Chelvane, J. (BF-15)	46	Chen, W. (HE-11)	237
Chen, B. (AI-02)	18	Chen, X. (AC-12)	6
Chen, B. (AI-10)	19	Chen, X. (CS-16)	96
Chen, B. (AU-03)	30	Chen, X. (HB-14)	230
Chen, B. (AU-15)	31	Chen, X.M. (AT-13)	29
Chen, B. (DU-01)	129	Chen, Y. (AD-02)	7
Chen, C. (AR-09)	25	Chen, Y. (AE-04)	9
Chen, C. (BA-03)	34	Chen, Y. (AU-08)	30
Chen, C. (BH-01)	49	Chen, Y. (AV-06)	32
Chen, C. (CD-05)	74	Chen, Y. (DD-08)	106
Chen, C. (CR-12)	93	Chen, Y. (DR-05)	124
Chen, C. (DG-03)	113	Chen, Y. (GH-09)	209
Chen, C. (FB-04)	164	Chen, Z. (EF-07)	142
Chen, C. (FQ-05)	184	Chen, Z. (ER-05)	155
Chen, D. (GT-12)	222	Cheng, C. (DB-04)	101
Chen, F. (AP-07)	20	Cheng, D. (BT-11)	63
Chen, F. (AV-06)	32	Cheng, R. (BE-05)	42
Chen, F. (DH-03)	115	Cheng, R. (HE-03)	235
Chen, F. (EP-09)	152	Cheng, W. (BQ-12)	58
Chen, F. (EP-12)	152	Cheng, W. (BQ-13)	58
Chen, F. (EP-13)	152	Cheng, X. (EQ-02)	153
Chen, G. (BB-04)	35	Cheng, X. (GD-07)	201
Chen, H. (AI-04)	18	Cheng, Y. (CT-08)	97
Chen, H. (BF-03)	44	Cheng, Y. (DB-02)	101
Chen, H. (BR-05)	59	Cheng, Y. (DD-06)	106
Chen, H. (CI-08)	86	Cheng, Y. (DD-10)	107
Chen, H. (FT-01)	190	Cheng, Y. (HB-06)	229
Chen, H. (GU-02)	223	Cheng, Z. (DG-03)	113
Chen, H. (HI-11)	246	Cheng, Z. (ES-11)	158
Chen, J. (AQ-04)	22	Cheng, Z.H. (AP-03)	20
Chen, J. (BE-02)*	42	Cheng, Z.H. (AQ-16)	23
Chen, J. (CC-14)	73	Cheng, Z.H. (GB-07)	196
Chen, J. (CQ-01)	89	Cheng, Z.H. (GC-08)	198
Chen, J. (DE-05)	108	Cheon, B.C. (BU-10)	65
Chen, J. (DE-15)	109	Chepulskeyy, R. (CC-11)	72
Chen, J. (DG-01)	112	Chepulskeyy, R. (DD-03)	106
Chen, J. (DG-02)	113	Chérif, S.M. (DC-04)	104
Chen, J. (DP-11)	120	Chérif, S.M. (GP-13)	214
Chen, J. (ED-10)	139	Chern, G. (BH-11)	50
Chen, J. (FI-07)	180	Chernenko, V. (ES-13)	159
Chen, K. (BP-07)	55	Chi, T. (BC-05)	37
Chen, K. (DG-03)	113	Chiang, H. (EP-02)	151
Chen, K. (EF-03)	142	Chiang, H. (GP-02)	213
Chen, K. (GU-04)	223	Chiang, H. (HI-13)	247
Chen, L. (AQ-02)	22	Chiba, D. (BC-03)	37
Chen, L. (BP-08)	55	Chiba, D. (EQ-12)	154
Chen, L. (FD-07)	170	Chiba, D. (FF-10)	175
Chen, L. (FT-12)	191	Chichay, K. (ER-13)	157
Chen, L. (GU-05)	223	Chien, C. (AC-02)	4
Chen, M. (BS-03)	61	Chien, C. (DG-06)	113
Chen, M. (CB-01)	69	Chien, C.L. (ZA-01)	131
Chen, Q. (AU-04)	30	Chikaki, S. (AG-07)	14
Chen, Q. (BU-06)	65	Chikaki, S. (AG-08)	14
Chen, Q. (GS-05)	219	Chikashige, T. (BG-11)	48
Chen, R. (AF-07)	12	Chimata, R. (ED-01)	137
Chen, R. (AF-12)	12	Chimata, R. (ED-08)	138
Chen, R. (DP-03)	119	Ching, T.W. (BS-11)	62
Chen, R. (DP-04)	119	Chintalapalle, R. (DR-07)	124
Chen, R. (EF-03)	142	Chioar, I. (HC-03)	231
Chen, R. (FT-12)	191	Chioar, I. (HC-07)	231
Chen, R. (GU-04)	223	Chiriari, H. (AQ-01)	22
Chen, R. (GU-11)	224	Chiriari, H. (AQ-08)	23

*Best student presentation award finalist

Chiriac, H. (AR-01)	24	Ciftja, O. (GS-14)	220
Chiriac, H. (CS-02)	94	Cimpoesu, D. (DC-07)	104
Chiriac, H. (DU-02)	129	Ciubotaru, F. (HE-09)	236
Chiriac, H. (FU-14)	194	Ciubotaru, F. (HE-13)	237
Cho, B. (CQ-13)	91	Claeysens, F. (HC-12)	232
Cho, J. (FF-03)	174	Clark, A.T. (ES-12)	159
Cho, J. (GE-12)	203	Clark, A.T. (GD-07)	201
Cho, K. (CQ-13)	91	Clark, B.D. (DE-06)	108
Cho, K. (DF-04)	110	Clements, E. (FG-02)	176
Cho, S. (FD-09)	170	Cline, K. (AC-10)	6
Choe, S. (BP-09)	55	Coaquira, J.A. (GV-14)	226
Choe, S. (FS-07)	189	Cobianchi, M. (DU-08)	130
Choi, C. (AR-05)	24	Cobos, P. (GE-07)	203
Choi, C. (BF-12)	46	Cody, B. (DH-02)	115
Choi, C. (CS-11)	95	Coelho, P. (BE-14)	44
Choi, C. (DF-04)	110	Coelho, P. (CC-07)	72
Choi, C. (DF-09)	111	Coe, M. (DD-02)	105
Choi, H. (AP-04)	20	Coe, M. (FB-04)	164
Choi, J. (AC-05)	5	Cogulu, E. (HB-03)	228
Choi, J. (BB-03)	35	Cohen, L. (FI-10)	181
Choi, J. (BU-13)	65	Cohen, L. (HE-08)	236
Choi, J. (FP-15)	184	Cohen, O. (DI-05)	117
Choi, K. (AF-04)	11	Cohen, R. (AP-02)	20
Choi, M. (CI-03)	85	Coisson, M. (ES-01)	157
Choi, M. (DF-02)	110	Coisson, M. (ET-01)	159
Choi, M. (GE-02)	202	Colineau, E. (EG-03)	144
Choi, M. (GT-07)	221	Collet, M. (CD-02)	74
Choi, S. (EB-08)	134	Collin, S. (BB-08)	35
Choi, T. (FH-06)	178	Collin, S. (BB-11)	36
Choi, Y. (CT-01)	96	Collin, S. (DC-06)	104
Choi, Y. (CT-02)	96	Comin, R. (EH-01)	146
Choi, Y. (EH-03)	146	Conde, A. (FI-02)	180
Chomas, L. (CI-10)	86	Conde, A. (FI-04)	180
Chopdekar, R.V. (EH-06)	147	Cong, Y. (AU-10)	30
Chopdekar, R.V. (FE-14)	173	Conta, G. (ES-01)	157
Chopdekar, R.V. (GC-13)	199	Conta, G. (ET-01)	159
Chopdekar, R.V. (HC-04)	231	Coondoo, I. (DR-08)	124
Choudhary, R. (FP-09)	183	Cooper, J. (HC-05)	231
Choudhary, R.J. (GF-13)	206	Coppola, G. (GD-04)	200
Choudhary, R.J. (GG-06)	207	Corbellini, L. (HF-11)	239
Choudhury, S. (AS-08)	26	Corbett, J.P. (EQ-11)	154
Choudhury, S. (ER-08)	156	Cordle, M. (BQ-14)	58
Choudhury, S. (GR-10)	218	Cordrey, V. (BT-15)	64
Chowdhury, S. (AG-05)	14	Cornejo, D. (CQ-12)	90
Chowdhury, S. (CR-13)	93	Cornejo, D. (ES-14)	159
Chrastina, D. (HB-13)	230	Corodeanu, S. (AQ-01)	22
Christides, C. (EQ-06)	153	Corodeanu, S. (AQ-08)	23
Christopher, N. (GT-15)	222	Coronado, E. (FH-04)	178
Chshiev, M. (AB-10)	4	Coronado, E. (HI-01)	245
Chshiev, M. (CC-07)	72	Correa, E.L. (DH-11)	116
Chshiev, M. (CG-02)	80	Corte-León, H. (BC-14)	39
Chshiev, M. (FF-07)	174	Corte-León, H. (CU-08)	99
Chshiev, M. (HF-06)	238	Cortés-Ortuño, D. (CD-03)	74
Chu, J. (EH-03)	146	Cortes, D.I. (AT-07)	28
Chu, Y. (DI-07)	118	Cortes, D.I. (GQ-11)	216
Chu, Y. (DU-13)	131	Corti, M. (DU-08)	130
Chua, L.O. (HE-05)	235	Costa, D. (DC-09)	104
Chuang, T. (BC-01)	37	Costa, J.D. (FQ-14)	185
Chubykalo-Fesenko, O. (AB-06)	3	Costa, T. (HI-04)	245
Chubykalo-Fesenko, O. (AG-09)	14	Costanzi, B. (FD-15)	171
Chubykalo-Fesenko, O. (AT-02)	28	Couet, S. (BE-11)	43
Chubykalo-Fesenko, O. (CH-01)	82	Couet, S. (FF-13)	175
Chulkov, E.V. (DG-09)	114	Coutts, C. (AS-06)	26
Chumak, A. (AE-10)	10	Couture, S. (GD-12)	201
Chung, K. (DF-09)	111	Cowburn, R. (BG-07)	48
Chung, S. (CC-05)	72	Cowburn, R. (CT-08)	97
Chung, S. (FD-03)	169	Cramer, J. (AC-13)	6
Chung, S. (FD-05)	169	Cramer, J. (DB-07)	102
Churemart, J. (BQ-03)	57	Crawford, T.M. (BH-03)	49
Churemart, J. (FE-06)	172	Cress, C.D. (HB-15)	230
Churemart, P. (BQ-03)	57	Creuziger, A. (FI-12)	181
Churemart, P. (CC-11)	72	Crooker, S. (GI-05)	211
Churemart, P. (DD-03)	106	Cros, V. (BB-08)	35
Churemart, P. (FE-06)	172	Cros, V. (BB-11)	36
Churyukanova, M. (HH-11)	244	Cros, V. (CC-03)	71
Ciccarelli, C. (GA-04)	195	Cros, V. (CD-02)	74
Ciccarelli, C. (HE-08)	236	Cros, V. (CG-14)	82

*Best student presentation award finalist

Cros, V. (DC-06)	104
Cros, V. (DC-09)	104
Cros, V. (EA-03)	132
Cros, V. (ED-13)	139
Cros, V. (EI-04)	149
Cros, V. (FR-15)	188
Crotti, D. (BE-11)	43
Crotti, D. (BE-13)	43
Crowell, P.A. (BC-04)	37
Crowell, P.A. (EB-02)	133
Cruz, A. (AP-06)	20
Csaba, G. (AS-05)	26
Csaba, G. (CD-08)	75
Csaba, G. (FA-03)	163
Csaba, G. (FC-11)	168
Csaba, G. (GP-08)	214
Cuchet, L. (CC-07)	72
Cui, J. (CF-12)	79
Cui, J. (GH-05)	209
Cui, J. (GH-14)	210
Cui, W. (CQ-11)	90
Cui, W. (FU-11)	193
Cunha, R.O. (EB-11)	134
Cupak, M. (AE-05)	9
Cyrille, M. (CC-06)	72
Cyrille, M. (DC-09)	104
Cyrille, M. (FR-15)	188
Czapkiewicz, M. (FF-11)	175
Czarnecki, W.S. (EE-01)	139

- D -

d'Albuquerque e Castro, J. (ET-04)	160
d'Aquino, M. (AT-03)	28
d'Aquino, M. (GD-04)	200
D'Souza, N.M. (ES-02)	157
da Cunha, J.B. (DR-10)	124
da Rosa, W.D. (EQ-05)	153
da Silva, C. (CR-13)	93
da Silva, J.H. (EI-12)	150
da Silva, J.H. (FI-01)	179
da Silva, S.W. (GV-14)	226
Dabkowska, H.A. (GG-04)	207
Dadashbaba, M. (CG-04)	80
Daeng-am, W. (FE-06)	172
Dahal, B.R. (CS-08)	95
Dahlberg, D. (FD-15)	171
Dai, P. (AC-12)	6
Dai, Z. (EQ-07)	154
Dal Conte, S. (ED-07)	138
Damian, A. (AQ-08)	23
Damian, A. (HH-09)	243
Dan, S. (GI-11)	212
Dang, H. (BI-06)	52
Dang, N. (DR-14)	125
Daniel, L. (CQ-10)	90
Daniele, M. (CC-06)	72
Dankert, A. (CG-01)	80
Dannangoda, C. (BV-12)	67
Dantas, A.L. (AT-06)	28
Dantas, A.L. (EU-14)	162
Dapeng, Y. (GP-09)	214
Das Sarma, D. (EG-10)	145
Das, A. (DE-13)	109
Das, B. (DH-08)	116
Das, D. (BV-14)	68
Das, P. (CH-02)	82
Das, R. (AC-01)	4
Das, R. (CH-12)	84
Das, R. (DR-14)	125
Das, R. (DU-09)	130
Das, R. (FG-02)	176
Das, R. (HG-06)	241
Das, S. (EC-01)	135
Dash, S.P. (CG-01)	80
Datta, S. (FA-02)	163

Daumont, C. (AH-10)	17
Davarpanah, A. (FI-01)	179
Davesne, V. (CU-13)	100
Davidson, J. (AG-03)	13
Davies, C. (BF-11)	46
Davies, C.S. (AD-09)	8
Davies, C.S. (GB-03)	195
Davies, J. (AD-06)	8
Davies, J.E. (DE-02)	107
Davis, J.S. (GG-04)	207
Davydenko, A. (ET-11)	160
Davydova, M.D. (GB-03)	195
Dawidek, R.W. (HC-05)	231
Dayal, V. (ES-02)	157
de Frutos, J. (GE-07)	203
De Graef, M. (FS-03)	188
de Jong, M. (FQ-13)	185
de la Barrera, S. (CG-13)	82
de la Barrera, S. (GF-04)	204
De Long, L.E. (AT-13)	29
De Long, L.E. (FD-13)	171
De Long, L.E. (GG-03)	207
De Long, L.E. (GG-12)	208
de Loubens, G. (CD-02)	74
de Loubens, G. (ED-13)	139
de Oliveira, A.J. (AV-01)	31
De Rojas, J.C. (EE-12)	141
de Rozieres, M. (FF-14)	175
Deac, A.M. (AC-08)	5
Deac, A.M. (CC-13)	73
Deac, A.M. (FS-14)	190
Deac, A.M. (HD-05)	233
Decad, G. (CE-11)	77
Decad, G. (EE-01)	139
Decker, M. (AD-04)	7
Dediu, V.A. (BI-08)	52
Deepchand, V. (DF-08)	111
Degouttes, J. (AG-10)	15
Degri, M. (EF-04)	142
Dehan, M. (AE-05)	9
DeJong, M. (DC-01)	103
Del Carpio Arispe, J. (BT-15)	64
del Val, J. (DP-02)	119
del Valle Granda, J. (GF-15)	206
Delczeg-Czirjak, E. (DD-09)	106
Delczeg-Czirjak, E. (ED-01)	137
Delczeg-Czirjak, E. (ED-02)	137
Deledda, S. (GT-16)	222
Delette, G. (EF-13)	143
Della Torre, E. (BP-13)	55
Della Torre, E. (CE-07)	76
Della Torre, E. (CQ-06)	90
Della Torre, E. (FI-06)	180
Deman, A. (AG-10)	15
Demidov, V.E. (CB-06)	70
Demidov, V.E. (CD-02)	74
Demidov, V.E. (EA-05)	132
Demirci, E. (CG-04)	80
Demokritov, S. (CB-06)	70
Demokritov, S. (CD-02)	74
Demokritov, S. (EA-05)	132
Dempsey, N. (AF-01)	11
Dempsey, N. (EF-13)	143
Demyanov, S.E. (FP-16)	184
Denardin, J.C. (AS-02)	26
Denardin, J.C. (AS-03)	26
Deng, H. (FQ-15)	186
Deng, L. (BR-08)	59
Deng, L. (EQ-08)	154
Deng, S. (GG-05)	207
Deng, S. (GI-08)	212
Deng, Y. (HI-14)	247
Denke, P. (DS-13)	127
Dennis, C. (FI-12)	181
Dennis, K. (DF-13)	112
Dennis, K. (GH-05)	209
Desautels, R.D. (EH-09)	147

*Best student presentation award finalist

Deshpande, K. (CI-10)	86	Dong, G. (HE-11)	237
Detavernier, C. (FF-13)	175	Dong, G. (HF-07)	239
Devi, P. (EI-10)	150	Dong, K. (BQ-12)	58
Devillers, T. (AF-01)	11	Dong, K. (BT-09)	63
Devolder, T. (AE-06)	10	Dong, M. (ES-08)	158
Devolder, T. (HE-09)	236	Dong, Q. (CQ-08)	90
DeVoto, D. (GT-09)	222	Dong, Q. (DP-10)	120
Devulder, W. (FF-13)	175	Dong, Q. (GC-04)	198
Dey, H.S. (CD-08)	75	Dong, S. (DI-07)	118
Dhagat, P. (AD-06)	8	Dong, S. (ES-08)	158
Dhagat, P. (GH-15)	210	Dong, S. (FT-01)	190
Dhagat, P. (GI-07)	211	Dong, S. (GI-01)	210
Dhar, A. (DF-06)	111	Dong, S. (GI-04)	211
Dhar, A. (GT-15)	222	Dong, S. (GS-05)	219
Dhar, S.K. (FG-13)	177	Dong, S. (GU-02)	223
Dhesi, S.S. (FC-05)	167	Dong, X. (FR-09)	187
Dhesi, S.S. (GF-11)	205	Dong, Y. (EB-08)	134
Dhesi, S.S. (HD-09)	234	Dong, Z. (AR-14)	25
Dhuey, S. (ED-03)	137	Dong, Z. (EF-01)	141
Dhuey, S. (HC-06)	231	Dongquoc, V. (CR-15)	93
Di Marco, I. (ED-08)	138	Donnelly, C. (DI-06)	118
Di, J. (FT-12)	191	Dopita, M. (ES-07)	158
Di, J. (GU-05)	223	Doris, B. (BE-08)	43
Diaz Michelena, M. (GE-07)	203	Dost, R. (AD-09)	8
Diaz, J. (CU-04)	98	Douglas, J.E. (FI-13)	181
Diaz, P. (CH-04)	83	Doutch, J.J. (CU-01)	98
Diény, B. (AE-01)	9	Dowben, P.A. (HF-10)	239
Diény, B. (AS-07)	26	Downing, G. (GQ-11)	216
Diény, B. (BE-12)	43	Doyle, B. (CS-10)	95
Diény, B. (BE-14)	44	Dragos-Pinzaru, O. (BG-05)	47
Diény, B. (BE-15)	44	Dreyer, M. (CB-11)	70
Diény, B. (FF-07)	174	Drouhin, H. (BI-06)	52
Diény, B. (FP-03)	182	Drozdzovskii, A. (BD-11)	41
Diep, H. (FG-01)	176	Drozd, P. (GE-11)	203
Diep, H. (FG-03)	176	Drucker, N. (CG-13)	82
Dieterle, G. (BD-10)	41	Du, E. (AG-06)	14
Digernes, E. (BH-09)	50	Du, H. (AQ-13)	23
Digernes, E. (CU-06)	99	Du, H. (CI-13)	86
Dimian, M. (BU-02)	64	Du, H. (EU-13)	162
Ding, G. (EF-03)	142	Du, J. (AQ-03)	22
Ding, G. (GU-04)	223	Du, J. (AV-02)	32
Ding, G. (GU-05)	223	Du, J. (AV-03)	32
Ding, H. (FQ-15)	186	Du, J. (BP-02)	54
Ding, J. (AC-10)	6	Du, J. (ES-03)	157
Ding, J. (AT-05)	28	Du, Y. (FD-07)	170
Ding, J. (AT-08)	28	Du, Y. (FQ-10)	185
Ding, J. (DG-06)	113	Duan, C. (DE-14)	109
Ding, S. (EU-13)	162	Duan, F. (GF-03)	204
Ding, Y. (AU-08)	30	Duan, H. (AQ-10)	23
Ding, Z. (CP-01)	87	Duan, H. (AQ-11)	23
Dinh, C. (DP-01)	119	Duan, N. (AP-16)	21
Dionizio, S. (AV-05)	32	Duan, N. (BR-01)	58
Dionne, G.F. (DB-01)	101	Duan, N. (BS-01)	60
Divinskiy, B. (CB-06)	70	Duan, W. (FQ-11)	185
Divinskiy, B. (EA-05)	132	Duan, Z. (BE-09)	43
Dlamini, S. (CT-11)	97	Duarte, C.M. (HI-10)	246
Dobrowolska, M. (GI-01)	210	Dubenko, I. (CQ-01)	89
Dobrowolska, M. (GI-04)	211	Dubenko, I. (CQ-02)	89
Doering, S. (EG-08)	145	Dubenko, I. (CR-01)	91
Doi, M. (AS-04)	26	Dubenko, I. (CS-03)	94
Doi, M. (EU-04)	161	Dubenko, I. (FI-07)	180
Doi, M. (EU-07)	162	Dubs, C. (AE-10)	10
Domagala, S. (AV-16)	33	Dubuis, G. (ER-12)	156
Domann, J.P. (AH-15)	17	Ducruet, C. (AE-01)	9
Domann, J.P. (CI-02)	85	Dudko, G. (HI-13)	247
Domann, J.P. (GD-01)	200	Dufrou, R. (HE-13)	237
Domann, J.P. (HF-03)	238	Dugay, J. (HI-01)	245
Domienikan, C. (FG-10)	177	Duine, R. (DI-08)	118
Doms, M. (CA-05)	69	Duine, R. (FQ-13)	185
Donahue, M.J. (GD-05)	200	Dulal, P. (EI-02)	149
Done, A. (BU-02)	64	Dulal, P. (EI-03)	149
Dong, B. (GH-03)	208	Dulal, R.P. (CS-08)	95
Dong, B. (HH-10)	243	Dumas, R.K. (CC-10)	72
Dong, C. (AF-02)	11	Dumas, R.K. (DS-01)	125
Dong, C. (HH-07)	243	Dumas, R.K. (EA-02)	132
Dong, C. (HI-06)	246	Dumelow, T. (EI-09)	150
Dong, C. (HI-11)	246	Dumesnil, K. (AH-09)	17

*Best student presentation award finalist

Dumesnil, K. (HI-12)	247
Dumitru, I. (DC-07)	104
Dumont, Y. (EC-01)	135
Dunin-Borkowski, R.E. (BH-13)	51
Dunsiger, S.R. (HB-06)	229
Dunz, M. (FE-07)	172
Dupuis, V. (AG-10)	15
Dupuis, V. (CF-08)	79
Duque, G. (CS-15)	96
Durin, G. (DC-04)	104
Durin, G. (FC-13)	168
Durr, H. (GB-06)	196
Dürrenfeld, P. (EA-02)	132
Dürrenfeld, P. (FC-10)	168
Dusad, R. (GG-04)	207
Dusch, Y. (HI-12)	247
Dushenko, S. (DB-13)	103
Dushenko, S. (EB-04)	133
Dutra, R. (BD-03)	39
Dutra, R. (EQ-05)	153
Dutta, S. (EC-12)	136
Duttagupta, S. (FB-05)	165
Duttagupta, S. (HB-02)	228
Dvornik, M. (CC-10)	72
Dvornik, M. (EA-02)	132
Dvornik, M. (FD-04)	169
Dvornik, M. (FD-05)	169
Dvornik, M. (HE-02)	235
Dwivedi, J. (HH-06)	243

- E -

Eames, P. (DE-02)	107
Ebels, U. (CA-04)	68
Ebels, U. (CC-06)	72
Ebels, U. (DC-09)	104
Ebels, U. (FQ-09)	185
Ebels, U. (FR-15)	188
Eberbeck, D. (BG-03)	47
Ebert, H. (EG-08)	145
Ebnet, T. (GR-16)	218
Ebrahimi, F. (AD-01)	7
Ebrahimi, F. (BP-11)	55
Ebrahimi, F. (BP-12)	55
Ebrahimi, F. (FP-06)	182
Echenique, P.M. (DG-09)	114
Edwards, E. (DD-07)	106
Edwards, E. (DD-09)	106
Edwards, E. (FB-06)	165
Edwards, E. (GA-01)	194
Egel, E. (GP-08)	214
Eggers, T. (CI-11)	86
Eggers, T. (CU-05)	99
Eggers, T. (DT-05)	128
Eggers, T. (HG-06)	241
Eguchi, K. (AQ-14)	23
Eguchi, K. (CP-10)	88
Eisebitt, S. (ER-09)	156
Eisenbach, M. (BH-01)	49
Eisenbach, M. (GP-14)	214
Ekeroth, S. (CH-07)	83
El Hadri, M. (GB-13)	197
El Hog, S. (FG-01)	176
El Hog, S. (FG-03)	176
El-Gendy, A. (AG-12)	15
El-Gendy, A. (CQ-09)	90
El-Gendy, A. (DU-04)	130
El-Gendy, A. (ET-05)	160
El-Gendy, A. (ET-13)	161
El-Ghazaly, A. (AH-08)	17
Ellinger, F. (FR-15)	188
Ellis, M.O. (FS-13)	189
Ellsworth, D. (FR-08)	187
Elmazria, O. (HI-12)	247
Eloirdi, R. (EG-03)	144
Elrefai, A.L. (CU-14)	100
Elyasi, M. (DG-04)	113

Emery, J. (DH-02)	115
Emori, S. (DB-09)	102
Emori, S. (ED-05)	138
Emori, S. (FB-01)	164
Emori, S. (GH-15)	210
Enamullah, E. (GS-02)	219
Encinas, A. (DS-03)	126
Enders, A. (HG-04)	240
Endo, Y. (AP-14)	21
Endo, Y. (CI-14)	86
Endoh, T. (BE-04)	42
Endoh, T. (CA-02)	68
Ener, S. (AF-06)	12
Engel, D. (ER-09)	156
Enobio, E.I. (AE-09)	10
Enokido, Y. (AF-04)	11
Enpuku, K. (CU-14)	100
Eom, C. (EB-08)	134
Erbe, A. (BD-10)	41
Ercius, P. (BH-01)	49
Eriksson, O. (BF-13)	46
Eriksson, O. (DD-09)	106
Eriksson, O. (DF-10)	111
Eriksson, O. (ED-01)	137
Eriksson, O. (ED-02)	137
Eriksson, O. (ED-08)	138
Eriksson, O. (EG-10)	145
Eriksson, O. (FD-01)	169
Erina, E. (BI-06)	52
Ermer, H. (GC-06)	198
Ermer, H. (GH-01)	208
Ernst, A. (DG-09)	114
Erwin, R. (CU-02)	98
Eschbach, M.E. (EG-08)	145
Eschbach, M.E. (EG-09)	145
Eschrig, M. (HE-08)	236
Escobar, R.A. (ET-04)	160
Escrig, J. (AS-02)	26
Espejo, A. (AT-02)	28
Esser, B. (BB-13)	36
Esser, B.D. (BB-06)*	35
Esser, B.D. (DD-10)	107
Etgens, V. (DF-03)	110
Evans, R.F. (BF-05)	45
Evans, R.F. (BG-08)	48
Evans, R.F. (BQ-03)	57
Evans, R.F. (CC-11)	72
Evans, R.F. (CH-13)	84
Evans, R.F. (DD-03)	106
Evans, R.F. (EF-11)	143
Evans, R.F. (FD-11)	170
Evans, R.F. (FE-03)	171
Evans, R.F. (FE-11)	173
Evans, R.F. (FS-13)	189
Evans, R.F. (GB-06)	196
Evans, R.F. (GB-07)	196
Evans, R.F. (GD-15)	202
Evans, R.F. (HD-09)	234
Evelt, M. (CD-02)	74
Everschor-Sitte, K. (FA-05)	164
Ewing, D. (DT-13)	129
Ewing, J.J. (CF-07)	78
Eyal, A. (GG-04)	207
Eyvazov, A. (GG-04)	207
Ezawa, M. (BB-03)	35
Ezawa, M. (FS-08)	189

- F -

Fabre, M. (FQ-09)	185
Fakhru, T. (EI-01)	149
Fall, M.D. (GD-09)	201
Fallarino, L. (FE-12)	173
Fallon, K. (EC-09)	136
Fan, R. (GF-11)	205
Fan, W. (EU-11)	162
Fan, W. (FQ-08)	185

*Best student presentation award finalist

Fan, X. (BR-10)	59	Finizio, S. (FS-12)	189
Fan, X. (CB-08)	70	Finkel, P. (AH-14)	17
Fan, X. (EF-03)	142	Finkel, P. (GI-06)	211
Fan, X. (FR-12)	187	Finley, J.T. (BC-02)	37
Fan, X. (GA-01)	194	Finley, J.T. (FC-07)	167
Fan, X. (HH-12)	244	Finocchio, G. (AB-06)	3
Fanchiang, Y. (DB-04)	101	Finocchio, G. (AE-03)	9
Fanchiang, Y. (DG-03)	113	Finocchio, G. (AE-04)	9
Fang, C. (ES-11)	158	Finocchio, G. (EA-04)	132
Fang, C. (FR-01)	186	Fiorani, D. (AR-04)	24
Fang, W. (CU-05)	99	Fischbacher, J. (AF-05)	11
Fang, Y. (DE-14)	109	Fischbacher, J. (AF-10)	12
Fangohr, H. (AT-07)	28	Fischbacher, J. (BF-05)	45
Fangohr, H. (CD-03)	74	Fischer, J.A. (GC-07)	198
Fangohr, H. (GQ-11)	216	Fischer, M. (EQ-01)	153
Farhan, A. (HC-06)	231	Fischer, P. (AB-05)	3
Farheen, A. (BV-13)	67	Fischer, P. (DI-04)	117
Faria, R. (FA-02)	163	Fischer, P. (GG-03)	207
Farle, M. (ED-04)	137	Fischer, P. (HC-06)	231
Farle, M. (GR-11)	218	Fischer, T. (AE-10)	10
Farmer, B.W. (AT-13)	29	Fischer, T. (CI-07)	85
Farmer, B.W. (FD-13)	171	Fisher, I.R. (EH-03)	146
Farmer, B.W. (GG-03)	207	Fisk, Z. (CS-15)	96
Farmer, W. (AV-13)	33	Fitch, J. (DI-07)	118
Fassbender, J. (AC-08)	5	Fitterling, E. (CP-07)	88
Fassbender, J. (BD-10)	41	Fitzell, K. (BP-10)	55
Fassbender, J. (CC-13)	73	Fitzell, K. (EP-15)	152
Fassbender, J. (ER-05)	155	Fitzell, K. (EQ-16)	155
Fassbender, J. (FS-14)	190	Fitzsimmons, M. (EH-04)	146
Fauzi, M. (BI-05)	52	Fitzsimmons, M. (EH-05)	147
Fazlali, M. (BC-11)	38	Fitzsimmons, M. (EH-09)	147
Fazlali, M. (HE-02)	235	Fjellvåg, H. (CQ-05)	89
Fedorov, V. (GQ-15)	216	Fjellvåg, H. (GG-13)	208
Feggeler, T. (ED-04)	137	Flament, S. (HD-04)	233
Feist, A. (FC-08)	167	Flannigan, D. (BG-05)	47
Felser, C. (EI-10)	150	Flannigan, D. (CP-11)	88
Felser, C. (HB-01)	228	Flannigan, D. (EI-03)	149
Felser, C. (HD-01)	233	Flatte, M.E. (DA-03)	100
Feng, G. (BE-09)	43	Flatte, M.E. (DB-10)	102
Feng, J. (CB-09)	70	Flatté, M.E. (DD-12)	107
Feng, J. (FB-08)	165	Fliegans, J. (EF-13)	143
Feng, J. (HB-14)	230	Flint, C. (EH-03)	146
Feng, Q. (AP-11)	21	Foerster, M. (FC-05)	167
Feng, X. (CQ-16)	91	Folven, E. (BH-09)	50
Feng, Y. (CG-11)	81	Folven, E. (CU-06)	99
Feng, Y. (DU-13)	131	Folven, E. (EH-07)	147
Feng, Z. (AP-07)	20	Folven, E. (FE-10)	172
Feng, Z. (AV-06)	32	Fontana, R. (CE-11)	77
Feng, Z. (FQ-15)	186	Fontana, R. (EE-01)	139
Ferdegini, C. (GF-09)	205	Forbes, A. (CS-08)	95
Ferguson, A. (HE-08)	236	Forment Aliaga, A. (FH-04)	178
Ferguson, C. (GG-02)	206	Fortunato, N.M. (FI-10)	181
Fernández Cuñado, J. (GD-11)	201	Fortunato, N.M. (HD-11)	234
Fernández Cuñado, J. (GQ-15)	216	Fouineau, A. (CP-12)	88
Fernandez-Pacheco, A. (DH-04)	115	Fourneau, E. (FR-11)	187
Fernandez-Roldan, J. (CH-01)	82	Fowley, C. (AC-08)	5
Fernandez-Scarioni, A. (BC-14)	39	Fowley, C. (CC-13)	73
Ferona, A. (FD-14)	171	Fowley, C. (FS-14)	190
Ferreira, D.D. (AR-07)	24	Fraile Rodríguez, A. (CH-03)	83
Ferrer, S. (CU-04)	98	Fraile Rodríguez, A. (CH-08)	83
Ferrer, S. (DC-11)	105	Fraile Rodríguez, A. (EH-11)	148
Ferriera, R. (CC-10)	72	Franco Jr., A. (GV-14)	226
Ferriera, R. (DC-09)	104	Franco, F. (HI-04)	245
Ferriera, R. (FR-15)	188	Franco, V. (FI-02)	180
Fert, A. (BB-08)	35	Franco, V. (FI-04)	180
Fert, A. (BB-11)	36	Francoval, S. (GF-13)	206
Fert, A. (DC-06)	104	Franke-Schubert, E. (DH-01)	115
Fert, A. (DG-08)	114	Franke, J. (AG-02)	13
Fert, A. (ZA-02)	131	Franke, K.J. (BD-04)	40
Filho, J.A. (AR-07)	24	Frankowski, M. (FF-11)	175
Filimonov, Y. (HI-13)	247	Frankowski, M. (HI-07)	246
Finizio, S. (BB-03)	35	Franson, A. (HC-09)	232
Finizio, S. (BB-10)	36	Frederick, C. (EH-02)	146
Finizio, S. (BD-10)	41	Freeland, J.W. (DI-07)	118
Finizio, S. (CU-03)	98	Freeland, J.W. (EG-10)	145
Finizio, S. (FB-08)	165	Freeland, J.W. (EH-04)	146
Finizio, S. (FC-02)	166	Freimuth, F. (AB-04)	2

*Best student presentation award finalist

Garello, K. (BE-11)	43	Givord, D. (AF-01)	11
Garello, K. (FB-08)	165	Givord, D. (BB-05)	35
Garg, C. (EC-04)	135	Givord, D. (EF-13)	143
Garlow, J.A. (EC-06)	136	Glassell, M. (CH-12)	84
Garst, M. (AB-01)	2	Glassell, M. (DU-09)	130
Garwood, M. (BG-05)	47	Glavic, A.G. (BV-01)	66
Gaspar, J. (AG-11)	15	Gliga, S. (AD-07)	8
Gastaldo, D. (ES-01)	157	Gliga, S. (DI-06)	118
Gastaldo, D. (ET-01)	159	Gliga, S. (FC-02)	166
Gastev, S. (GQ-15)	216	Gloppe, A. (DA-01)	100
Gates, D. (FU-07)	193	Go, G. (BC-08)	38
Gaudin, G. (AT-16)	29	Goad, A.G. (EH-13)	148
Gaudin, G. (BC-10)	38	Goennenwein, S.T. (AC-13)	6
Gaudin, G. (FC-05)	167	Goering, E.J. (AD-04)	7
Gaudin, G. (FQ-09)	185	Goering, E.J. (AS-15)	27
Gautam, K. (GF-13)	206	Goering, E.J. (FD-03)	169
Gautam, K. (GG-06)	207	Gohda, Y. (AF-08)	12
Gautam, N. (CT-05)	96	Gohda, Y. (EF-09)	143
Gautier, E. (BE-15)	44	Goldman, S. (CR-11)	93
Gautier, E. (FR-15)	188	Gollwitzer, J. (BD-12)	41
Gauzzi, A. (AV-01)	31	Gollwitzer, J. (GP-07)	213
Gavilano, J. (HA-02)	227	Golub, V. (ES-13)	159
Gawronski, P. (AD-04)	7	Gomes Filho, J. (DD-13)	107
Gayles, J. (AB-04)	2	Gomez-Perez, J. (CB-10)	70
Ge, H. (AR-05)	24	Gomez-Polo, C. (HI-08)	246
Ge, H. (CS-11)	95	Gomez, A. (CQ-07)	90
Ge, Q. (DP-16)	121	Gomez, J. (BV-03)	66
Ge, X. (AV-02)	32	Gomi, A. (DE-10)	109
Ge, X. (AV-03)	32	Gomonay, O. (ED-07)	138
Gee, S. (FP-04)	182	Gomonay, O. (HB-08)	229
Gehlmann, M.G. (EG-08)	145	Gonçalves, J. (FI-10)	181
Gehlmann, M.G. (EG-09)	145	Gonçalves, J. (HD-11)	234
Geilhufe, J. (ER-09)	156	Gonçalves, R. (GF-02)	204
Gelfand, J. (AC-10)	6	Goncharov, A. (GD-12)	201
Gemming, S. (FS-14)	190	Gong, R. (AP-05)	20
Geng, R. (AC-01)	4	Gong, R. (AP-07)	20
Gengchiao, L. (FP-07)	183	Gong, R. (AV-06)	32
Gentile, T. (CU-02)	98	Gong, R. (EP-09)	152
Gentry, C. (ED-02)	137	Gong, R. (EP-11)	152
George, J. (DG-08)	114	Gong, R. (EP-12)	152
George, T. (DD-11)	107	Gong, R. (EP-13)	152
Geprägs, S. (AC-13)	6	Gong, Z. (GC-08)	198
Ger, T. (CT-09)	97	González-Chávez, D.E. (BD-03)	39
Ger, T. (CT-12)	97	González-Chávez, D.E. (DD-13)	107
Ger, T. (CU-12)	99	González-Chávez, D.E. (EQ-05)	153
Geraldi, N. (HI-10)	246	Gonzalez-Fuentes, C.A. (BP-15)	56
Gerard, E.F. (FF-01)	173	Gonzalez-Fuentes, C.A. (DS-01)	125
Gerber, A. (DB-13)	103	Gonzalez-Guiterrez, J. (EF-04)	142
Gerber, T. (EG-09)	145	González-Sánchez, R. (GS-06)	219
Gercsi, Z. (FI-10)	181	González, S. (BH-04)	49
Gerken, M. (CU-08)	99	Good, B. (GD-14)	202
Ghahremani, M. (CQ-06)	90	Gopalan, D.P. (CG-13)	82
Ghahremani, M. (FI-06)	180	Gopalan, D.P. (GF-04)	204
Ghasemi, A. (HD-03)	233	Gopalan, R. (BF-01)	44
Ghee, T. (EQ-03)	153	Gopman, D.B. (AH-02)	16
Ghee, T. (FP-07)	183	Gopman, D.B. (DH-09)	116
Ghee, T. (FP-08)	183	Gopman, D.B. (GI-06)	211
Ghemes, A. (BG-05)	47	Gorchon, J. (AH-08)	17
Ghimire, M. (CR-09)	92	Gorchon, J. (GB-10)	196
Ghimire, M. (CR-10)	93	Gorchon, J. (GB-11)	197
Ghimire, M. (CS-09)	95	Gorige, V. (BV-05)	67
Ghimire, M. (FT-13)	191	Gorshenkov, M. (HD-10)	234
Ghimire, M. (FT-14)	192	Gospodaric, P. (EG-08)	145
Ghosh, A. (HD-02)	233	Gospodaric, P. (EG-09)	145
Gibbons, J. (EB-08)	134	Goto, M. (CI-06)	85
Gifford, J. (CC-12)	73	Goto, M. (FB-11)	166
Giglia, A. (BI-08)	52	Goto, M. (FF-04)	174
Gilbert, A.D. (BG-10)	48	Goto, T. (BD-05)	40
Gilbert, A.D. (CT-06)	97	Goto, T. (GV-11)	226
Gilbert, D. (ER-05)	155	Gotoh, H. (AS-13)	27
Gilbert, D.A. (GC-13)	199	Gottwald, M.G. (BE-08)	43
Giménez-Marqués, M. (HI-01)	245	Gou, J. (GI-10)	212
Giordano, A. (AB-06)	3	Gould, R. (BT-04)	63
Giordano, A. (EA-04)	132	Govinda, S. (EG-10)	145
Giovannini, L. (FD-13)	171	Govor, G. (ET-06)	160
Giri, A. (FI-12)	181	Gowtham, P. (GR-13)	218
Girt, E. (AS-06)	26	Goyat, E. (EU-15)	163

*Best student presentation award finalist

Ham, W. (BP-04)	54	Hashi, S. (CI-14)	86
Ham, W. (BS-02)	61	Hashimoto, R. (AF-04)	11
Hamada, H. (DC-02)	103	Hashimoto, Y. (ED-07)	138
Hämäläinen, S.J. (BD-04)	40	Hashmi, M. (BG-09)	48
Hamamura, R. (GV-04)	225	Hashmi, M. (BG-12)	48
Hamasaki, Y. (BV-04)	66	Hasiak, M. (BR-14)	60
Hamaya, K. (HD-03)	233	Hassan, M. (CU-02)	98
Hameyer, K. (DS-13)	127	Hassan, P. (DU-07)	130
Hamilton, H. (AV-13)	33	Hastings, J.T. (AT-13)	29
Hamilton, J.K. (BG-10)	48	Hatridge, M. (GF-04)	204
Hammel, P. (CC-09)	72	Hatton, P. (GQ-11)	216
Hammel, P. (CG-03)	80	Hauback, B.C. (CQ-05)	89
Hammel, P. (DD-12)	107	Hauback, B.C. (GG-13)	208
Hammel, P. (ED-11)	139	Haugstad, G. (DB-09)	102
Hammel, P. (GR-15)	218	Hauser, C. (DB-10)	102
Hammel, P. (HB-06)	229	Hayashi, Y. (CI-14)	86
Hammel, P.C. (DD-10)	107	Hayashi, Y. (GV-01)	225
Hamrle, J. (EI-08)	150	Hayward, T.J. (HC-05)	231
Hamrle, J. (HD-07)	234	Hazra, B.K. (BI-04)	52
Han, D. (FQ-13)	185	He, C. (BC-05)	37
Han, F. (DR-02)	123	He, C. (GR-04)	217
Han, H. (AT-14)	29	He, J. (CQ-04)	89
Han, H. (DI-04)	117	He, J. (HD-02)	233
Han, H. (FS-11)	189	He, K. (BI-01)	51
Han, H. (GQ-09)	216	He, Q. (BC-05)	37
Han, J. (BC-02)	37	He, S. (AQ-16)	23
Han, J. (CI-13)	86	He, S. (BC-07)	38
Han, J. (EU-13)	162	He, W. (GB-07)	196
Han, J. (FC-07)	167	He, W. (GC-08)	198
Han, R. (FT-01)	190	He, X. (BS-10)	62
Han, W. (DG-05)	113	He, Y. (CI-08)	86
Han, X. (AB-11)	4	He, Y. (GU-09)	224
Han, X. (BH-06)	50	Healy, J. (HH-10)	243
Han, X. (CH-05)	83	Hebler, B. (DI-05)	117
Han, X. (DP-16)	121	Hebler, B. (FE-09)	172
Han, X. (EQ-09)	154	Heczko, O. (ES-07)	158
Han, X. (ET-07)	160	Hehn, M. (AH-09)	17
Han, X. (ET-08)	160	Hehn, M. (BD-02)	39
Han, X. (FP-05)	182	Hehn, M. (EE-02)	140
Han, X. (FP-11)	183	Hehn, M. (GB-13)	197
Han, X. (FR-01)	186	Hehn, M. (HI-12)	247
Han, X. (FR-02)	186	Heider, T.H. (EG-09)	145
Han, X. (FS-01)	188	Heiman, D. (CF-10)	79
Hanberry, M. (BP-06)	54	Heiman, D. (ES-04)	158
Hanberry, M. (GP-03)	213	Heiman, D. (GF-02)	204
Hanham, S.D. (GQ-06)	215	Heimbach, F. (GP-09)	214
Hankiewicz, J.H. (AG-03)	13	Heinonen, O. (AB-02)	2
Hankiewicz, J.H. (CR-02)	91	Heinonen, O. (AD-07)	8
Hanks, A. (EH-13)	148	Heinonen, O. (FR-06)	187
Hansen, T.W. (BH-13)	51	Heinrich, A. (FH-06)	178
Hao, J. (CQ-04)	89	Heinrich, B. (AS-06)	26
Hao, K. (HB-12)	229	Heinz, B. (AE-10)	10
Hao, L. (EH-02)	146	Heinz, T. (CG-06)	80
Hao, P. (DU-05)	130	Helbert, A. (GH-07)	209
Hara, M. (HI-02)	245	Helgesen, G. (CQ-05)	89
Hara, Y. (EU-01)	161	Helgesen, G. (GG-13)	208
Hardie, C. (BQ-14)	58	Hellman, F. (CC-12)	73
HariPriya, G. (FH-03)	178	Hellwig, O. (FE-09)	172
Haragea, C. (HG-06)	241	Helmersson, U. (CH-07)	83
Harris, V.G. (AP-11)	21	Hem, J. (CC-06)	72
Harris, V.G. (AV-06)	32	Hem, J. (FR-15)	188
Harris, V.G. (GH-09)	209	Hendren, W.G. (FE-11)	173
Harris, V.G. (GH-11)	210	Henne, B. (ES-05)	158
Harris, V.G. (GT-03)	221	Henne, B. (FE-08)	172
Harris, V.G. (GT-11)	222	Henry, T. (FP-04)	182
Harris, V.G. (HG-10)	241	Henry, Y. (BD-02)	39
Harris, V.G. (HG-11)	241	Herchenroeder, J. (EF-07)	142
Harstad, S.M. (CQ-09)	90	Herea, D. (DU-02)	129
Harstad, S.M. (DU-04)	130	Herklotz, A. (HB-15)	230
Harstad, S.M. (ET-05)	160	Hernandez, S. (EE-03)	140
Harstad, S.M. (ET-13)	161	Hernando, B. (ET-10)	160
Hartzell, C.M. (CT-01)	96	Heron, J. (BV-09)	67
Harumoto, T. (AS-12)	27	Heron, J. (ER-14)	157
Harumoto, T. (EU-03)	161	Herper, H.C. (BF-13)	46
Harward, I. (DT-08)	128	Herper, H.C. (DF-10)	111
Hasan, S. (CH-06)	83	Herrera Diez, L. (DC-04)	104
Hasegawa, K. (BC-03)	37	Herrera Diez, L. (FC-13)	168

*Best student presentation award finalist

Herrera-Diez, L. (HE-10)	236	Holcomb, M. (DI-07)	118
Hertel, R. (CD-11)	75	Holcomb, M. (GC-12)	199
Hesjedal, T. (GQ-11)	216	Holcomb, M. (GV-12)	226
Hessing, P. (ER-09)	156	Holler, M. (DI-06)	118
Heussner, F. (CI-07)	85	Holloway, K. (AG-12)	15
Heyderman, L. (DI-06)	118	Holmes-Hewett, W.F. (GI-02)	211
Heyns, M. (AE-06)	10	Holý, V. (ES-07)	158
Heyns, M. (EC-11)	136	Honda, J. (GV-04)	225
Heyroth, F. (DB-10)	102	Honda, S. (DC-02)	103
Hibbard-Lubow, D. (FD-12)	170	Hong, E. (BU-05)	65
Hibbard-Lubow, D. (GR-08)	218	Hong, H. (CH-10)	84
Hibino, Y. (BC-03)	37	Hong, J. (BS-05)	61
Hicken, R.J. (FC-10)	168	Hong, J. (DI-04)	117
Hickey, B. (CS-05)	94	Hong, M. (DB-04)	101
Hickey, D.R. (DB-03)	101	Hong, M. (DG-03)	113
Hickey, D.R. (DG-01)	112	Hong, S. (AG-02)	144
Hickey, D.R. (DG-02)	113	Hong, X. (AH-06)	16
Hierro-Rodriguez, A. (CU-04)	98	Hong, Y. (BP-07)	55
Hierro-Rodriguez, A. (DC-11)	105	Hong, Y. (CI-03)	85
Hierro-Rodriguez, A. (HC-13)	232	Hong, Y. (DF-02)	110
Higashi, Y. (HI-02)	245	Hong, Y. (GE-02)	202
Hilaman, R. (AG-05)	14	Hong, Y. (GT-07)	221
Hilaman, R. (CR-13)	93	Hono, K. (AF-05)	11
Hillebrands, B. (BD-01)	39	Hono, K. (AF-09)	12
Hillebrands, B. (CD-10)	75	Hono, K. (AF-10)	12
Hillebrands, B. (CI-07)	85	Hono, K. (BE-02)	42
Hillebrands, B. (DB-05)	101	Hono, K. (BP-10)	55
Hillebrands, B. (EI-06)	149	Hono, K. (CF-04)	78
Hillion, A. (AH-09)	17	Hono, K. (EF-01)	141
Hinata, S. (BQ-02)	56	Hono, K. (EF-10)	143
Hinata, S. (EE-07)	140	Hori, A. (HI-02)	245
Hinkel, D. (CB-11)	70	Horie, A. (DR-12)	124
Hirai, T. (BC-03)	37	Horio, Y. (FA-04)	163
Hiramatsu, R. (GR-12)	218	Horita, T. (FU-01)	192
Hirata, Y. (BP-04)	54	Hornbuckle, B. (HH-10)	243
Hiratani, T. (CP-09)	88	Hornig, L. (BP-07)	55
Hirayama, Y. (AC-06)	5	Horwath, J. (GH-13)	210
Hirayama, Y. (BI-05)	52	Horwath, J. (GU-03)	223
Hirohata, A. (DI-09)	118	Hoshikawa, A. (DR-12)	124
Hirohata, A. (FE-05)	172	Hossein, S. (EF-10)	143
Hirohata, A. (HD-06)	234	Hosseinnia, M. (FI-06)	180
Hiroi, M. (DQ-03)	121	Hou, D. (DB-07)	102
Hiroi, M. (DQ-04)	122	Hou, D. (HB-04)	228
Hiroi, M. (DQ-12)	122	Hou, Z. (FP-12)	183
Hirosawa, S. (AF-14)	13	Houshang, A. (CC-05)	72
Hirosawa, S. (CF-04)	78	Houshang, A. (CC-10)	72
Hirosawa, S. (EF-09)	143	Houshang, A. (EA-02)	132
Hisatomi, R. (DA-01)	100	Houshang, A. (FD-03)	169
Hjörvarsson, B. (HC-03)	231	Houshang, A. (FD-04)	169
Hjörvarsson, B. (HC-07)	231	Houshang, A. (FD-05)	169
Ho, K. (GT-01)	221	Hoveyda, F. (GB-12)	197
Ho, K. (HG-04)	240	Hovorka, O. (AG-09)	14
Ho, L. (AR-09)	25	Hovorka, O. (AT-07)	28
Ho, S. (BS-14)	62	Hovorka, O. (GQ-11)	216
Ho, S. (BT-06)	63	Howe, B.M. (DB-09)	102
Ho, S. (BT-14)	64	Howe, B.M. (ED-05)	138
Hobosyan, M. (BV-12)	67	Howe, B.M. (EH-03)	146
Hoch, J. (EB-02)	133	Howe, B.M. (GH-15)	210
Hoefler, M. (BP-03)	54	Howe, B.M. (GI-07)	211
Hoefler, M. (CB-13)	71	Hrkac, G. (BF-05)	45
Hoefler, M. (GB-06)	196	Hrkac, G. (EF-11)	143
Hoefler, M. (HE-01)	235	Hrkac, G. (FC-10)	168
Hoffmann, A. (AT-05)	28	Hrkac, G. (GC-03)	198
Hoffmann, A. (AT-08)	28	Hrvoic, I. (GE-13)	204
Hoffmann, A. (CD-07)	75	Hsiao, C. (EU-06)	161
Hoffmann, A. (DG-06)	113	Hsu, M. (CS-12)	95
Hoffmann, A. (FD-13)	171	Hsu, W. (EE-11)	141
Hoffmann, A. (FR-01)	186	Hu, F. (CQ-04)	89
Hoffmann, A. (GD-07)	201	Hu, F. (CU-09)	99
Hoffmann, A. (GR-09)	218	Hu, F. (DP-05)	119
Hohenstein, E. (GB-12)	197	Hu, F. (DP-06)	119
Hohlfeld, J. (EE-04)	140	Hu, F. (DP-10)	120
Hojem, A. (AC-04)	5	Hu, F. (DP-12)	120
Hojem, A. (DB-06)	102	Hu, F. (DR-03)	123
Holanda, G.H. (AR-07)	24	Hu, F. (DR-04)	124
Holanda, J. (BR-12)	60	Hu, F. (ES-06)	158
Holanda, J. (HB-05)	228	Hu, F. (FT-03)	190

*Best student presentation award finalist

Hu, F. (FT-07)	191	Iacocca, E. (AD-07)	8
Hu, F. (GQ-02)	215	Iacocca, E. (BP-03)	54
Hu, F. (GR-03)	217	Iacocca, E. (CB-13)	71
Hu, G. (BE-08)	43	Iacocca, E. (EA-02)	132
Hu, J. (CI-02)	85	Iacocca, E. (GB-06)	196
Hu, L. (GT-09)	222	Iacocca, E. (HE-01)	235
Hu, L. (GT-13)	222	Ibarra-Gaytan, P. (CS-03)	94
Hu, Q. (CI-13)	86	Ibarra-Hernandez, W. (DI-07)	118
Hu, S. (FR-14)	187	Ibarra-Hernandez, W. (GC-12)	199
Hu, S. (GS-12)	220	Iben, I.E. (EE-01)	139
Hu, X. (GU-13)	224	Ibrahim, F. (FF-07)	174
Hu, Y. (FH-08)	179	Ibrahim, F. (HF-06)	238
Hu, Z. (BS-10)	62	Ibrahim, K. (AV-02)	32
Hu, Z. (HE-11)	237	Idzerda, Y.U. (EG-05)	144
Huang, C. (CT-09)	97	Ievlev, A. (HB-15)	230
Huang, C. (DI-07)	118	Igarashi, J. (ED-12)	139
Huang, C. (GC-12)	199	Igarashi, T. (DR-12)	124
Huang, C. (GV-12)	226	Igawa, N. (DR-12)	124
Huang, H. (DU-01)	129	Iguchi, S. (DR-11)	124
Huang, J. (CQ-16)	91	Iguchi, S. (DR-13)	125
Huang, J. (FF-01)	173	Ihnfeldt, R. (DP-03)	119
Huang, L. (BC-07)	38	Ihnfeldt, R. (DP-04)	119
Huang, L. (BP-01)	54	Ijanaten, S. (AG-05)	14
Huang, L. (FP-05)	182	Ijanaten, S. (CR-13)	93
Huang, L. (FR-02)	186	Ijiri, Y. (DH-09)	116
Huang, P. (BQ-03)	57	Ikeda, T. (BP-05)	54
Huang, Q. (GG-05)	207	Ikeda, T. (DT-10)	128
Huang, Q. (GI-08)	212	Ikegami, K. (AE-07)	10
Huang, S. (AC-07)	5	Ikegami, K. (FF-02)	174
Huang, S. (BB-04)	35	Im, M. (DI-04)	117
Huang, S. (BC-01)	37	Im, M. (HC-06)	231
Huang, S. (GF-05)	204	Imai, S. (DT-10)	128
Huang, T. (BQ-13)	58	Imakita, K. (DE-10)	109
Huang, W. (DE-14)	109	Imamura, H. (CE-05)	76
Huang, Y. (AB-08)	3	Ina, Y. (BE-01)	41
Huang, Y. (AR-09)	25	Inaba, N. (CF-02)	78
Huang, Y. (CQ-16)	91	Inaba, N. (CP-03)	87
Huang, Y. (EC-03)	135	Inami, S. (AC-03)	5
Huang, Y. (ER-10)	156	Inami, S. (AC-06)	5
Huang, Z. (BI-02)	51	Incorvia, J.C. (CG-06)	80
Huang, Z. (EU-11)	162	Inkson, B.J. (AD-09)	8
Huang, Z. (GS-05)	219	Innocenti, C. (DU-08)	130
Huber, R. (GR-16)	218	Inokuchi, T. (AE-07)	10
Hubert, O. (CQ-10)	90	Inokuchi, T. (FF-02)	174
Hubert, O. (GD-09)	201	Inoue, J. (ES-09)	158
Hubert, O. (GH-07)	209	Inoue, M. (AI-03)	18
Hudl, M. (GB-01)	195	Inoue, M. (BD-05)	40
Hueso, L.E. (CB-10)	70	Inoue, M. (GV-09)	226
Hueso, L.E. (DB-11)	103	Inoue, M. (GV-11)	226
Hueso, L.E. (EB-13)	135	Ionin, A.L. (GC-13)	199
Hueso, L.E. (FH-05)	178	Ip, V. (FP-04)	182
Hug, H.J. (FB-13)	166	Ipatov, M. (DP-02)	119
Hug, H.J. (FE-02)	171	Ipatov, M. (HH-11)	244
Huh, Y. (DP-07)	120	Iqbal, M. (CH-11)	84
Huhtinen, H. (EH-15)	148	Iquierdo, J. (EU-16)	163
Huisman, T. (FQ-14)	185	Irfan, M. (CH-05)	83
Humphries, A.M. (GA-01)	194	Irisawa, T. (BP-14)	56
Hunagund, S. (DU-04)	130	Isbell, K. (CI-03)	85
Hunagund, S. (ET-05)	160	Ishibashi, M. (EQ-12)	154
Hunagund, S. (ET-13)	161	Ishibashi, M. (ER-07)	156
Hunt, B. (CG-13)	82	Ishigaki, T. (DR-12)	124
Hunt, B. (GF-04)	204	Ishigaki, T. (GS-04)	219
Huon, A. (EH-09)	147	Ishii, N. (EC-08)	136
Husain, S. (EU-15)	163	Ishikawa, M. (AE-07)	10
Husain, S. (GR-01)	217	Ishikawa, M. (FF-02)	174
Husain, S. (GR-02)	217	Ishikawa, T. (DF-11)	111
Husain, S. (GS-01)	219	Ishikawa, T. (EF-06)	142
Huskisson, D. (GC-03)	198	Ishikawa, T. (FU-05)	193
Hussain, S. (CH-11)	84	Ishino, S. (AS-13)	27
Hussein, Z.A. (DU-04)	130	Ishioka, K. (CF-04)	78
Hutchings, D. (EI-02)	149	Ishiyama, K. (CI-14)	86
Hütten, A. (FP-14)	183	Ishiyama, K. (GV-01)	225
Hwang, C. (DC-08)	104	Ishizaki, T. (DH-06)	115
Hwang, C. (GC-04)	198	Isnard, O. (DR-10)	124
Hwang, D. (CT-07)	97	Itagaki, R. (BQ-08)	57
Hwang, J. (DH-06)	115	Itakura, M. (FU-03)	192
Hwang, K. (EB-08)	134		

*Best student presentation award finalist

Ito, J. (BE-07)	42
Ito, J. (DE-04)	108
Ito, M. (DQ-03)	121
Ito, M. (DQ-04)	122
Ito, M. (DQ-12)	122
Ito, S. (BU-03)	64
Ito, T. (EQ-15)	154
Itoh, M. (BV-04)	66
Itoh, M. (BV-05)	67
Itoh, S. (GU-16)	224
Ivanov, B. (HC-13)	232
Iwano, K. (DF-11)	111
Iwano, K. (FU-05)	193
Iwano, K. (GQ-03)	215
Iwasaka, M. (BG-11)	48
Iwasaka, M. (CR-03)	92
Iwasaka, M. (CT-15)	98
Iwasaka, M. (GV-10)	226
Iwase, A. (CS-01)	94
Iwase, A. (EU-09)	162
Iwata, S. (CF-04)	78
Iwata, S. (FR-09)	187
Iwata, S. (FS-06)	189
Izadkhah, H. (GF-11)	205
Izquierdo, J. (AV-05)	32

- J -

J. De Rego, P. (DT-13)	129
Jacinto, C. (CR-05)	92
Jacinto, C. (CT-13)	97
Jackson, E. (DI-09)	118
Jackson, M.A. (EQ-14)	154
Jacques, V. (EC-01)	135
Jacquet, E. (EI-04)	149
Jafari, S. (AG-05)	14
Jafari, S. (CR-13)	93
Jaffres, H. (BI-06)	52
Jaffres, H. (DG-08)	114
Jahromi, S. (DQ-01)	121
Jain, M. (FI-11)	181
Jain, S. (EE-05)	140
Jain, S.K. (AV-08)	32
Jakubisova, E.L. (DT-08)	128
Jalan, B. (BI-13)	53
Jalil, M.B. (CS-12)	95
Jalil, M.B. (EQ-03)	153
Jalil, M.B. (FP-07)	183
Jalil, M.B. (FP-08)	183
Jamali, A. (CE-07)	76
Jamali, M. (DG-01)	112
Jamali, M. (DG-02)	113
Jamali, M. (FR-05)	186
Jamer, M.E. (AH-02)	16
Jamer, M.E. (ES-04)	158
Jamer, M.E. (FE-01)	171
Jamet, M. (DG-08)	114
Jammalamadaka, S. (CQ-14)	91
Jammalamadaka, S. (DS-09)	126
Jana, S. (ED-01)	137
Jana, S. (ED-02)	137
Jana, S. (ED-08)	138
Jana, S. (EG-10)	145
Janantha, P. (AC-10)	6
Janantha, P. (DB-03)	101
Janantha, P. (DG-06)	113
Jander, A. (AD-06)	8
Jander, A. (GH-15)	210
Jander, A. (GI-07)	211
Jang, G. (CT-10)	97
Jang, P. (ER-07)	156
Jaouen, N. (BB-08)	35
Jaouen, N. (CG-14)	82
Jaouen, N. (DC-06)	104
Jara, A.A. (GF-08)	205
Jaris, M. (ED-03)	137
Jaris, M. (FD-12)	170

Jaris, M. (GR-07)	217
Jaris, M. (GR-08)	218
Javed, K. (CH-05)	83
Javerliac, V. (CA-03)	68
Jayaprakash, C. (DD-12)	107
Jayaraman, T.V. (BV-14)	68
Jayaraman, T.V. (CP-07)	88
Jayich, A. (AB-11)	4
Je, S. (BP-09)	55
Je, S. (FC-05)	167
Jenkins, A. (AB-11)	4
Jenkins, A. (DC-09)	104
Jenkins, A. (EA-03)	132
Jenkins, S. (FE-03)	171
Jensen, B. (DP-15)	121
Jensen, B. (FI-08)	180
Jensen, B. (GH-05)	209
Jeon, C. (AC-05)	5
Jeon, H. (DB-09)	102
Jeon, H. (ED-05)	138
Jeon, H. (GH-15)	210
Jeon, H. (GI-07)	211
Jeon, K. (HE-08)	236
Jeon, S. (BT-10)	63
Jeon, Y. (ET-11)	160
Jeon, Y. (HH-08)	243
Jeong, D. (GQ-09)	216
Jeong, H. (BU-10)	65
Jeong, J. (AC-05)	5
Jeong, J.S. (EB-02)	133
Jeong, S. (BQ-05)	57
Jeong, Y. (BC-08)	38
Jermain, C.L. (DI-02)	117
Jesko, R. (HD-07)	234
Jesus, C.B. (CS-15)	96
Jettanassen, C. (CE-09)	77
Jeudy, V. (DC-05)	104
Jeudy, V. (FC-13)	168
Jeyaramane, A. (EU-12)	162
Jeyaramane, A. (GC-05)	198
Jha, S. (GS-02)	219
Jhahria, D. (GP-06)	213
Ji, C. (GU-10)	224
Jia, H. (AP-05)	20
Jia, M. (BI-09)	53
Jia, M. (CB-02)	69
Jia, M. (EU-08)	162
Jia, X. (GH-06)	209
Jia, X. (HH-03)	242
Jia, Y. (AQ-10)	23
Jia, Y. (AQ-11)	23
Jia, Y. (GF-14)	206
Jiang, B. (BS-13)	62
Jiang, F. (CP-04)	87
Jiang, J. (CI-15)	87
Jiang, J. (GD-02)	200
Jiang, L. (EQ-09)	154
Jiang, L. (FP-11)	183
Jiang, Q. (CQ-11)	90
Jiang, Q. (GU-13)	224
Jiang, S. (AC-09)	6
Jiang, S. (BS-05)	61
Jiang, S. (CC-05)	72
Jiang, S. (CI-11)	86
Jiang, S. (CU-05)	99
Jiang, S. (EU-11)	162
Jiang, S. (FD-03)	169
Jiang, S. (GS-05)	219
Jiang, W. (AB-11)	4
Jiang, W. (FU-12)	193
Jiang, W. (GR-09)	218
Jiang, X. (GT-03)	221
Jiang, X. (GT-04)	221
Jiang, X. (GT-11)	222
Jiang, Y. (CP-11)	88
Jiang, Y. (EQ-13)	154
Jiang, Y. (FS-02)	188

*Best student presentation award finalist

Kappe, D. (FP-14)	183	Keller, S. (BV-15)	68
Kaprzyk, S. (ES-04)	158	Keller, S. (CB-05)	69
Kapteyn, H. (ED-02)	137	Keller, S. (CI-02)	85
Kar, G.S. (BE-11)	43	Kellogg, C. (GP-03)	213
Kar, G.S. (BE-13)	43	Kenichi, S. (AF-04)	11
Karaba, C.T. (BR-04)	59	Kenney, M. (GH-05)	209
Karel, J. (CC-12)	73	Kent, A.D. (AE-13)	11
Karenowska, A.D. (BD-09)	40	Kent, A.D. (HB-03)	228
Karenowska, A.D. (CD-09)	75	Kent, N. (HC-06)	231
Kargar, F. (GP-02)	213	Kent, P. (BH-01)	49
Karis, O. (DD-09)	106	Kepaptsoglou, D. (CH-13)	84
Karis, O. (ED-01)	137	Kepaptsoglou, D. (DH-10)	116
Karis, O. (ED-02)	137	Kepaptsoglou, D. (HD-03)	233
Karis, O. (ED-05)	138	Keppens, V. (FG-02)	176
Karis, O. (ED-08)	138	Kermorvant, J. (DC-09)	104
Karis, O. (EG-10)	145	Keshavarz, S. (EG-10)	145
Karna, S.P. (CH-10)	84	Keshavarz, S. (GT-06)	221
Karpenkov, D.Y. (FI-04)	180	Keskinbora, K. (AD-04)	7
Karsch, J. (DI-02)	117	Ketterson, J. (AD-05)	7
Karube, K. (HA-02)	227	Ketterson, J. (CD-07)	75
Karube, S. (FQ-10)	185	Ketterson, J. (FD-13)	171
Kasai, S. (BE-02)	42	Ketterson, J. (GP-10)	214
Kasama, T. (BH-13)	51	Ketterson, J. (GR-09)	218
Kase, A. (BQ-07)	57	Kevan, S. (AB-05)	3
Kashyap, A. (AV-08)	32	Kevan, S. (GG-03)	207
Kashyap, A. (DQ-11)	122	Kewenig, M. (AE-10)	10
Kashyap, A. (EH-14)	148	Keylin, V. (AI-05)	18
Kashyap, A. (FP-09)	183	Keylin, V. (AI-08)	19
Kashyap, A. (GS-03)	219	Kfir, O. (DI-05)	117
Kashyap, A. (HF-10)	239	Khalili, P. (AB-11)	4
Kassen, A.G. (GT-09)	222	Khalili, P. (AD-01)	7
Kassen, A.G. (GT-13)	222	Khalili, P. (BP-10)	55
Kassner, E.R. (GG-04)	207	Khalili, P. (BP-11)	55
Kaszynski, P. (AV-16)	33	Khalili, P. (FB-04)	164
Katiyar, R. (AP-02)	20	Khan, M. (AS-16)	27
Katiyar, R. (AR-15)	25	Khan, M. (BG-09)	48
Katiyar, R. (DR-08)	124	Khan, M.U. (DQ-07)	122
Kato, A. (BF-05)	45	Khan, M.U. (EI-11)	150
Kato, A. (BF-11)	46	Khan, N. (HG-07)	241
Kato, A. (EF-10)	143	Khan, P. (GB-02)	195
Kato, A. (HH-05)	243	Khan, S. (BH-06)	50
Kato, T. (CF-04)	78	Khan, U. (CH-05)	83
Kato, T. (FR-09)	187	Khanal, S. (AS-16)	27
Kato, T. (FS-06)	189	Khanal, S. (DC-12)	105
Kato, Y. (AE-07)	10	Khanna, M. (EP-06)	151
Kato, Y. (FF-02)	174	Kharel, P.R. (CS-07)	95
Katoch, J. (CG-05)	80	Kharel, P.R. (DP-07)	120
Katona, G. (FE-09)	172	Kharel, P.R. (GS-03)	219
Kattel, S. (FR-08)	187	Kharkwal, K.C. (DR-09)	124
Kaul, S.N. (BI-04)	52	Kharlan, Y. (ES-13)	159
Kawabe, T. (EB-04)	133	Khazdozian, H.A. (CF-13)	79
Kawaguchi, M. (FF-10)	175	Khazdozian, H.A. (CR-07)	92
Kawaguchi, S. (EF-09)	143	Khazdozian, H.A. (GT-05)	221
Kawai, T. (CP-03)	87	Khitun, A. (EP-02)	151
Kawakami, K. (FS-06)	189	Khitun, A. (GP-02)	213
Kawakami, R. (BB-06)	35	Khitun, A. (HI-13)	247
Kawakami, R. (CG-03)	80	Khodadadi, B. (EB-01)	133
Kawakami, R. (CG-05)	80	Khodadady, M. (BV-12)	67
Kawakami, R. (CG-07)	81	Khodadady, M. (DT-11)	128
Kawakami, R. (CG-08)	81	Khovaylo, V. (BF-14)	46
Kawakami, R. (CG-10)	81	Khovaylo, V. (HD-10)	234
Kawakami, R. (CG-15)	82	Khunkitti, P. (BQ-01)	56
Kawakami, R. (EH-13)	148	Khymyn, R. (BD-06)	40
Kawana, M. (CU-10)	99	Khymyn, R. (CC-10)	72
Kawana, M. (EC-08)	136	Khymyn, R. (FD-04)	169
Kawasaki, Y. (AG-13)	15	Khymyn, R. (HB-09)	229
Kawato, Y. (BE-06)	42	Kichanov, S. (DR-14)	125
Kawato, Y. (FR-09)	187	Kichin, G. (EE-02)	140
Kazakova, O. (BC-14)	39	Kiehl, R. (BI-02)	51
Kazakova, O. (CU-08)	99	Kieu, X. (DP-01)	119
Kazemi, M. (AE-12)	10	Kikkawa, A. (HA-02)	227
Kazemi, M. (FP-02)	182	Kikkawa, T. (DB-07)	102
KC, A. (HF-13)	239	Kikuchi, H. (DT-06)	128
Ke, L. (DP-15)	121	Kikuchi, K. (BE-07)	42
Ke, L. (FI-08)	180	Kikuchi, N. (CE-01)	76
Keatley, P.S. (FC-10)	168	Kikuchi, N. (ED-09)	138
Kehlberger, A. (AC-13)	6	Kilic, U. (DT-01)	127

*Best student presentation award finalist

Kim, B. (HA-04)	227	Kim, S. (ER-07)	156
Kim, C. (AP-04)	20	Kim, S. (ET-11)	160
Kim, C. (AP-08)	20	Kim, S. (FP-15)	184
Kim, C. (AP-15)	21	Kim, S. (GT-07)	221
Kim, C. (CU-13)	100	Kim, S. (HH-08)	243
Kim, C. (EH-01)	146	Kim, T. (AQ-05)	22
Kim, D. (AC-05)	5	Kim, T. (BI-10)	53
Kim, D. (AQ-05)	22	Kim, T. (BV-11)	67
Kim, D. (AQ-06)	22	Kim, T. (EF-01)	141
Kim, D. (AQ-07)	22	Kim, T. (ET-02)	159
Kim, D. (AT-04)	28	Kim, W. (BE-11)	43
Kim, D. (AT-10)	29	Kim, W. (BE-13)	43
Kim, D. (AV-10)	32	Kim, W. (BU-04)	64
Kim, D. (BP-01)	54	Kim, W. (BU-05)	65
Kim, D. (BP-04)	54	Kim, W. (BU-07)	65
Kim, D. (BP-09)	55	Kim, Y. (BE-08)	43
Kim, D. (BT-01)	62	Kim, Y. (BU-08)	65
Kim, D. (BT-16)	64	Kim, Y. (BU-09)	65
Kim, D. (BV-11)	67	Kim, Y. (BU-10)	65
Kim, D. (CC-12)	73	Kim, Y. (BU-13)	65
Kim, D. (CP-08)	88	Kim, Y. (EB-08)	134
Kim, D. (CT-14)	98	Kim, Y. (ET-11)	160
Kim, D. (DP-01)	119	Kim, Y. (FB-12)	166
Kim, D. (ER-07)	156	Kim, Y. (GE-12)	203
Kim, D. (ET-02)	159	Kim, Y. (HH-08)	243
Kim, D. (FP-16)	184	Kim, Y.K. (FB-12)	166
Kim, D. (FS-07)	189	Kimel, A. (DD-05)	106
Kim, D. (FT-11)	191	Kimel, A. (ED-07)	138
Kim, D. (GC-09)	199	Kimel, A. (FQ-14)	185
Kim, D. (GF-10)	205	Kimel, A. (GB-03)	195
Kim, D. (GP-16)	215	Kimel, A. (GR-16)	218
Kim, D. (GS-03)	219	Kimura, T. (FQ-04)	184
Kim, E. (DP-03)	119	Kimura, T. (FR-09)	187
Kim, E. (DP-04)	119	Kimura, T. (FR-14)	187
Kim, E. (EQ-01)	153	Kinane, C. (FH-09)	179
Kim, G. (EB-08)	134	Kinane, C. (GC-03)	198
Kim, G. (FB-12)	166	Kindo, K. (DQ-03)	121
Kim, H. (AP-04)	20	Kinoshita, T. (AH-01)	15
Kim, H. (AQ-06)	22	Kioseoglou, G. (BA-04)	34
Kim, H. (AQ-07)	22	Kioussis, N. (EQ-14)	154
Kim, H. (BG-01)	47	Kioussis, N. (FQ-11)	185
Kim, H. (CS-13)	95	Kirby, B.J. (AH-02)	16
Kim, J. (AB-09)	3	Kirby, B.J. (AH-04)	16
Kim, J. (AQ-06)	22	Kirby, B.J. (EH-04)	146
Kim, J. (AQ-07)	22	Kirby, B.J. (FE-12)	173
Kim, J. (BP-09)	55	Kirby, B.J. (FH-09)	179
Kim, J. (BU-05)	65	Kirby, B.J. (GC-13)	199
Kim, J. (CD-01)	73	Kirilyuk, A. (DD-05)	106
Kim, J. (CP-08)	88	Kirilyuk, A. (GB-03)	195
Kim, J. (DC-05)	104	Kirino, F. (CF-02)	78
Kim, J. (FE-05)	172	Kirino, F. (CP-03)	87
Kim, J. (FQ-11)	185	Kirk, E. (FC-02)	166
Kim, J. (FS-07)	189	Kirk, E. (FS-12)	189
Kim, J. (GU-06)	223	Kish, L. (EH-10)	147
Kim, J.W. (DF-09)	111	Kishimoto, H. (BF-11)	46
Kim, K. (AD-12)	8	Kishimoto, H. (HH-05)	243
Kim, K. (AT-15)	29	Kita, K. (FF-05)	174
Kim, K. (BP-04)	54	Kitagawa, E. (DE-04)	108
Kim, K. (ER-07)	156	Kitakami, O. (BI-03)	52
Kim, K. (FQ-01)	184	Kitakami, O. (CE-01)	76
Kim, K. (FT-09)	191	Kitakami, O. (ED-09)	138
Kim, K. (HF-03)	238	Kittaka, S. (DR-13)	125
Kim, N. (AT-14)	29	Kizuka, H. (AP-01)	20
Kim, N. (CT-10)	97	Kläui, M. (AC-13)	6
Kim, N. (FS-11)	189	Kläui, M. (DB-07)	102
Kim, N. (GQ-09)	216	Kläui, M. (FA-05)	164
Kim, S. (AP-15)	21	Klein, J. (FG-07)	177
Kim, S. (AT-10)	29	Klein, O. (CD-02)	74
Kim, S. (BP-01)	54	Klein, O. (ED-13)	139
Kim, S. (BP-04)	54	Klein, O. (FQ-09)	185
Kim, S. (BP-16)	56	Klein, T. (DT-03)	127
Kim, S. (CG-06)	80	Klewe, C. (BH-09)	50
Kim, S. (CU-13)	100	Klewe, C. (ED-05)	138
Kim, S. (DB-09)	102	Klewe, C. (GC-04)	198
Kim, S. (DF-02)	110	Klimczyk, P. (DS-13)	127
Kim, S. (DT-04)	128	Klimov, V. (GI-05)	211
Kim, S. (EP-04)	151	Kloodt-Twesten, F. (DI-08)	118

*Best student presentation award finalist

Kluyver, T. (AT-07)	28	Koyama, K. (DQ-12)	122
Kluyver, T. (GQ-11)	216	Koyama, S. (BI-07)	52
Knut, R. (ED-01)	137	Koyama, T. (BC-03)	37
Knut, R. (ED-02)	137	Koyama, T. (EQ-12)	154
Knut, R. (ED-05)	138	Koyama, T. (FF-10)	175
Knut, R. (ED-08)	138	Kozhanov, A. (BP-06)	54
Kobane, A. (BV-07)	67	Kozhanov, A. (GP-03)	213
Kobayashi, R. (FE-04)	172	Kozhevnikov, A. (HI-13)	247
Kobayashi, S. (AR-14)	25	Kozlenko, D. (DR-14)	125
Kobayashi, S. (BT-08)	63	Kozlov, A.G. (AT-09)	28
Kobe, S. (FU-16)	194	Kozlova, T. (HI-01)	245
Koda, K. (AQ-14)	23	Kozlowski, G. (GH-13)	210
Koda, K. (CP-10)	88	Krafft, C. (CB-11)	70
Kodam, U. (GH-10)	209	Kral, D. (EI-08)	150
Kohda, M. (FQ-10)	185	Kral, D. (HD-07)	234
Kohda, M. (FR-10)	187	Kramer, M.J. (CR-07)	92
Koi, K. (AE-07)	10	Kramer, M.J. (DF-13)	112
Koi, K. (FF-02)	174	Kramer, M.J. (DP-15)	121
Köksal, O. (EG-09)	145	Kramer, M.J. (FI-08)	180
Kolesnikov, A.G. (AT-09)	28	Kramer, M.J. (GT-09)	222
Kolesnikov, A.G. (EC-02)	135	Kramer, M.J. (GT-13)	222
Kolesnikov, A.G. (ER-11)	156	Krawczyk, M. (AD-04)	7
Kolesnikov, A.G. (FB-03)	164	Krawczyk, M. (HG-02)	240
Kolesnikov, A.G. (FB-12)	166	Kreil, A.J. (BD-01)	39
Kolesnikov, A.G. (FC-03)	167	Kreissig, M. (FR-15)	188
Koli, S. (ER-10)	156	Kreupl, F. (GP-08)	214
Kolokolitsev, O. (BD-11)	41	Krieger, J. (CG-12)	81
Komatsu, K. (BV-04)	66	Kriegner, D. (ES-07)	158
Komatsu, K. (BV-05)	67	Krishna, V.D. (DT-03)	127
Komine, T. (EU-01)	161	Krishnan, R. (AP-09)	21
Komine, T. (EU-05)	161	Krishnan, R. (BR-02)	58
Kon, R. (EG-06)	144	Krivorotov, I. (AD-02)	7
Konczykowski, M. (HC-10)	232	Krivorotov, I. (AE-02)	9
Kondo, A. (DQ-03)	121	Krivorotov, I. (AE-04)	9
Kondo, H. (FU-03)	192	Krivorotov, I. (BE-10)	43
Kondo, H. (GU-07)	223	Krivorotov, I. (BP-16)	56
Kondo, K. (EQ-04)	153	Krivorotov, I. (CC-14)	73
Kondo, T. (AT-11)	29	Krivorotov, I. (CI-04)	85
Kondou, K. (DB-12)	103	Krivorotov, I. (DB-08)	102
Kong, A. (GD-07)	201	Krivorotov, I. (DE-05)	108
Kong, W. (ET-07)	160	Krivorotov, I. (ED-10)	139
Kong, W. (FS-01)	188	Krivorotov, I. (GF-08)	205
Konishi, K. (FD-06)	170	Krizakova, V. (AB-10)	4
Kono, Y. (CI-05)	85	Krizakova, V. (FC-04)	167
Kons, C. (ED-05)	138	Kronast, F. (EH-11)	148
Kons, C. (ET-12)	161	Krounbi, M. (GD-03)	200
Koo, H. (BB-03)	35	Kruesubthaworn, A. (BQ-01)	56
Koo, H. (DT-04)	128	Krüger, B. (ER-09)	156
Koo, J. (BT-01)	62	Kruglyak, V.V. (AD-09)	8
Koopmans, B. (DI-08)	118	Krycka, K.L. (BH-02)	49
Koopmans, B. (FQ-13)	185	Krycka, K.L. (DH-09)	116
Kopnov, G. (DB-13)	103	Krycka, K.L. (ET-12)	161
Korecki, J. (GE-11)	203	Kuang, H. (DP-12)	120
Kori, S. (DR-15)	125	Kuang, H. (DR-03)	123
Kornev, K. (GI-09)	212	Kuang, H. (DR-04)	124
Korolev, K.A. (HG-10)	241	Kuang, H. (ES-06)	158
Koroteev, Y.M. (DG-09)	114	Kuanr, B.K. (EP-06)	151
Kosch, O. (AG-01)	13	Kuanr, B.K. (GT-10)	222
Kosch, O. (AG-02)	13	Kubo, T. (BE-04)	42
Kosel, J. (HI-09)	246	Kubota, H. (BE-03)	42
Kosel, J. (HI-10)	246	Kubota, H. (BE-07)	42
Kosen, S. (BD-09)	40	Kubota, H. (CC-01)	71
Kosen, S. (CD-09)	75	Kubota, H. (CC-03)	71
Koshmak, K. (GQ-15)	216	Kubota, H. (CI-05)	85
Kosub, T. (HF-01)	238	Kubota, H. (CI-06)	85
Kotani, Y. (AF-14)	13	Kubota, H. (DE-04)	108
Kotani, Y. (EF-09)	143	Kubota, H. (DE-10)	109
Kothandaraman, R. (BE-08)	43	Kubota, H. (DS-12)	127
Kotnana, G. (CQ-14)	91	Kubota, H. (EA-03)	132
Kotov, V. (BR-11)	60	Kubota, H. (FC-12)	168
Kou, B. (BT-05)	63	Kubota, H. (FD-06)	170
Kou, B. (BT-12)	63	Kubota, H. (FF-03)	174
Kourentzi, K. (DT-11)	128	Kubota, H. (FF-06)	174
Kovacs, A. (BH-13)	51	Kubota, T. (BE-01)	41
Kovalev, A. (HE-06)	236	Kubota, T. (BE-06)	42
Kowalska, E. (AC-08)	5	Kubota, T. (DI-09)	118
Kowalska, E. (CC-13)	73	Kubota, T. (EI-08)	150

*Best student presentation award finalist

Kubota, T. (FE-04)	172	L'vov, V.S. (BD-01)	39
Kubota, T. (FP-13)	183	Labanowski, D. (ED-11)	139
Kuchi, R. (CR-15)	93	Labanowski, D. (EP-15)	152
Kuerbanjiang, B. (HD-03)	233	Labanowski, D. (GR-13)	218
Kuerbanjiang, B. (HD-09)	234	Labarta, A. (CH-03)	83
Kukla, C. (EF-04)	142	Labarta, A. (CH-08)	83
Kuksenok, O. (GI-09)	212	Labarta, A. (EH-11)	148
Kulkarni, S. (GQ-08)	216	Lacour, D. (HI-12)	247
Kulkarni, S. (HH-13)	244	Lacroix, C. (DD-02)	105
Kulkarni, S. (HH-14)	244	Lacroix, C. (HF-11)	239
Kumar, A. (AV-02)	32	Laegel, B. (AE-10)	10
Kumar, A. (AV-03)	32	Lage, E. (ET-04)	160
Kumar, A. (BC-11)	38	Lai, K. (BP-07)	55
Kumar, A. (EU-15)	163	Lai, Y. (AQ-13)	23
Kumar, A. (GR-01)	217	Lai, Y. (CI-13)	86
Kumar, A. (GR-02)	217	Lai, Y. (GU-10)	224
Kumar, A. (GS-01)	219	Lake, R. (HE-14)	237
Kumar, D. (BQ-04)	57	Lakhani, A. (BI-04)	52
Kumar, H. (HG-12)	241	Lal, M. (DC-10)	105
Kumar, N. (AR-15)	25	Lambert, C. (BC-06)	37
Kumar, N. (BD-13)	41	Lambert, C.A. (GB-10)	196
Kumar, N. (CS-14)	95	Lambert, C.A. (GB-11)	197
Kumar, N. (DR-08)	124	Lamichhane, T.N. (DF-15)	112
Kumar, P. (BD-07)	40	Lamichhane, T.N. (FU-07)	193
Kumar, P. (DC-10)	105	Lan, J. (AT-12)	29
Kumar, P. (GR-01)	217	Lan, J. (GP-12)	214
Kumar, P. (HG-05)	240	Lan, S. (GH-03)	208
Kumar, R. (DQ-10)	122	Lan, S. (HH-10)	243
Kumar, R. (GF-06)	205	Lan, Z. (EP-05)	151
Kumar, S. (CQ-05)	89	Lan, Z. (GT-03)	221
Kumar, S. (DR-08)	124	Lan, Z. (GT-11)	222
Kumar, S. (GG-13)	208	Lancaster, T. (GQ-11)	216
Kumar, V. (FH-07)	179	Landau, D.P. (GP-14)	214
Kumari, M. (DR-06)	124	Lander, G.H. (EG-03)	144
Kumari, S. (AP-02)	20	Landeros, P. (BP-15)	56
Kumari, S. (DI-07)	118	Landeros, P. (CD-03)	74
Kumari, S. (GC-12)	199	Landeros, P. (CD-04)	74
Kumari, S. (GT-10)	222	Lane, C. (ES-04)	158
Kumari, S. (GV-12)	226	Lanes, O. (GF-04)	204
Kumata, S. (AV-07)	32	Lang, L. (FQ-08)	185
Kumbhare, D. (AG-12)	15	Lang, L.L. (BR-10)	59
Kundu, A. (BV-15)	68	Lang, P. (EI-06)	149
Kundu, S. (BE-11)	43	Langari, A. (DQ-01)	121
Kunz, A. (GG-10)	207	Langer, J. (DC-04)	104
Kurashima, Y. (BE-07)	42	Langer, J. (FC-13)	168
Kurebayashi, H. (HE-08)	236	Langer, J. (FP-12)	183
Kurenkov, A. (FA-04)	163	Langlois, E. (GI-06)	211
Kurenkov, A. (HB-02)	228	Langridge, S. (FH-09)	179
Kurihara, S. (FA-04)	163	Langridge, S. (GG-01)	206
Kurobe, A. (AE-07)	10	Lao, Y. (BH-11)	50
Kurobe, A. (FF-02)	174	Lapa, P.N. (AT-05)	28
Kuroda, M. (BV-08)	67	Lapa, P.N. (AT-08)	28
Kurokawa, Y. (AC-03)	5	Lapa, P.N. (FD-13)	171
Kurokawa, Y. (AC-06)	5	Lari, L. (CH-13)	84
Kurosaki, A. (GU-07)	223	Larica, C. (DP-08)	120
Kurt, H. (CG-04)	80	Laroze, D. (AT-02)	28
Kurtz, K.C. (BF-07)	45	Lascialfari, A. (DU-08)	130
Kusakabe, M. (AG-07)	14	Lass, E. (FI-13)	181
Kusakabe, M. (AG-08)	14	Laszcz, A. (BR-14)	60
Kuschel, T. (EI-08)	150	Lattery, D. (DD-01)	105
Kushibiki, R. (BQ-02)	56	Lau, D.K. (DC-03)	103
Kushwaha, V.K. (BV-02)	66	Lau, D.K. (FB-09)	165
Kushwaha, V.K. (CP-05)	87	Lau, J.W. (GI-06)	211
Kuswik, P. (EB-06)	133	Lau, Y. (FB-04)	164
Kuteifan, M. (GD-10)	201	Laughlin, D. (EE-06)	140
Kuteifan, M. (GD-13)	201	Laughlin, D. (FI-03)	180
Kuwahata, A. (AG-07)	14	Laughlin, D.E. (BH-10)	50
Kuwahata, A. (AG-08)	14	Laurson, L. (GQ-04)	215
Kvashnin, Y. (DD-09)	106	Lauter, V. (BV-01)	66
Kvashnin, Y. (ED-02)	137	Lauter, V. (GF-02)	204
Kvashnin, Y. (ED-08)	138	Lauter, V. (HB-15)	230
Kvashnin, Y. (EG-10)	145	Lavrijsen, R. (DI-08)	118
Kwo, J. (DB-04)	101	Lavrijsen, R. (FQ-13)	185
Kwo, J. (DG-03)	113	Law, J. (FI-04)	180
Kwon, H. (FT-09)	191	Law, W. (AQ-12)	23
Kwon, H. (FT-11)	191	Law, W. (DE-11)	109
Kwon, Y. (DT-04)	128		

*Best student presentation award finalist

Law, W. (HE-12)	237	Lee, K. (DT-04)	128
Lazaro Freire Jr., F. (EQ-05)	153	Lee, K. (ER-07)	156
Lazarov, V. (BG-08)	48	Lee, K. (FP-01)	182
Lazarov, V. (CH-13)	84	Lee, K. (FS-11)	189
Lazarov, V. (DH-10)	116	Lee, K. (GQ-09)	216
Lazarov, V. (GD-15)	202	Lee, M. (CT-09)	97
Lazarov, V. (HD-03)	233	Lee, M.S. (FE-14)	173
Lazarov, V. (HD-09)	234	Lee, M.S. (GC-13)	199
Lazarus, N. (AI-01)	18	Lee, M.S. (HC-04)	231
Lazcano-Ortiz, Z. (BD-11)	41	Lee, N. (BI-10)	53
Le Fevre, P. (DG-08)	114	Lee, S. (AD-05)	7
Le Roy, D. (AG-10)	15	Lee, S. (AQ-06)	22
Le Roy, D. (CF-08)	79	Lee, S. (AQ-07)	22
Le, T.Q. (CC-05)	72	Lee, S. (AT-04)	28
Le, T.Q. (FD-03)	169	Lee, S. (AT-14)	29
Leary, A. (AI-05)	18	Lee, S. (BC-08)	38
Leary, A. (AI-08)	19	Lee, S. (BS-09)	61
LeBeau, J.M. (DI-07)	118	Lee, S. (BU-04)	64
Lebourgeois, R. (EI-04)	149	Lee, S. (BU-09)	65
Lebrun, R. (EA-03)	132	Lee, S. (BV-11)	67
Lederman, D. (HF-13)	239	Lee, S. (CP-08)	88
Ledue, D. (GF-12)	205	Lee, S. (CT-10)	97
Lee, A. (BP-12)	55	Lee, S. (CT-14)	98
Lee, A. (FP-06)	182	Lee, S. (DG-03)	113
Lee, A.J. (DB-02)	101	Lee, S. (DT-04)	128
Lee, A.J. (DD-06)	106	Lee, S. (DT-13)	129
Lee, A.J. (DD-10)	107	Lee, S. (ET-02)	159
Lee, A.J. (HB-06)	229	Lee, S. (FP-15)	184
Lee, B. (AQ-06)	22	Lee, S. (FP-16)	184
Lee, B. (AQ-07)	22	Lee, S. (GP-04)	213
Lee, B. (CP-08)	88	Lee, T. (GI-14)	212
Lee, B. (CS-13)	95	Lee, W. (CI-03)	85
Lee, B. (GV-08)	226	Lee, W. (CT-10)	97
Lee, C. (BS-11)	62	Lee, W. (DF-02)	110
Lee, D. (AF-07)	12	Lee, W. (GE-02)	202
Lee, D. (BE-09)	43	Lee, W. (GT-07)	221
Lee, D. (BF-02)	44	Lee, Y. (BU-08)	65
Lee, D. (BT-10)	63	Lee, Y. (CT-14)	98
Lee, D. (EF-03)	142	Lefebvre, B. (CP-12)	88
Lee, D. (FT-10)	191	Legrand, W. (BB-08)	35
Lee, E.G. (DU-11)	130	Legrand, W. (BB-11)	36
Lee, H. (AD-02)	7	Legrand, W. (DC-06)	104
Lee, H. (AQ-05)	22	Legut, D. (HD-07)	234
Lee, H. (AS-01)	26	Lehndorff, R. (CA-05)	69
Lee, H. (BP-11)	55	Lei, N. (BB-09)	36
Lee, H. (BP-12)	55	Lei, N. (ER-10)	156
Lee, H. (BS-09)	61	Lei, W. (GU-13)	224
Lee, H. (BT-10)	63	Leighton, C. (BH-11)	50
Lee, H. (CT-07)	97	Leighton, C. (EB-01)	133
Lee, H. (DE-05)	108	Leighton, C. (EB-02)	133
Lee, H. (EH-05)	147	Leighton, C. (EH-04)	146
Lee, H. (EH-09)	147	Leitao, D.C. (FP-12)	183
Lee, H. (FP-06)	182	Leitao, D.C. (HI-05)	245
Lee, I. (CC-09)	72	Lejeune, B. (DP-15)	121
Lee, J. (AC-05)	5	Lejeune, B. (FI-08)	180
Lee, J. (BQ-05)	57	Lejeune, B. (HG-01)	240
Lee, J. (BU-08)	65	Lemaire, P.K. (AR-15)	25
Lee, J. (BU-09)	65	Lemaitre, A. (DG-08)	114
Lee, J. (BU-10)	65	Lemesh, I. (BB-07)	35
Lee, J. (BU-13)	65	Lemesh, I. (ER-09)	156
Lee, J. (CF-01)	77	Lemus, A. (AV-14)	33
Lee, J. (CF-03)	78	Lendinez, S. (AT-05)	28
Lee, J. (CI-03)	85	Lendinez, S. (AT-08)	28
Lee, J. (CQ-13)	91	Lenz, K. (AC-08)	5
Lee, J. (CT-10)	97	Lenz, K. (ER-05)	155
Lee, J. (DG-01)	112	Leontsev, S. (GU-03)	223
Lee, J. (FD-09)	170	Lepadatu, S. (AH-12)	17
Lee, J. (FR-05)	186	Lepkowski, D. (FI-12)	181
Lee, J. (FT-09)	191	Lerch, R. (DS-08)	126
Lee, J. (FT-11)	191	Lesniak, M. (CT-08)	97
Lee, J.C. (AB-05)	3	Lesseux, G.G. (DQ-15)	123
Lee, J.C. (AT-13)	29	Leung, C. (BV-16)	68
Lee, J.C. (GG-03)	207	Levartoski de Araujo, C. (GF-02)	204
Lee, K. (AC-05)	5	Levin, E. (DP-15)	121
Lee, K. (AT-14)	29	Levin, E. (FI-08)	180
Lee, K. (BC-08)	38	Lew, W. (AQ-12)	23
Lee, K. (DI-04)	117	Lew, W. (CB-07)	70

*Best student presentation award finalist

Lew, W. (DE-11)	109	Li, S. (DU-14)	131
Lew, W. (HE-12)	237	Li, S. (ER-02)	155
Lew, W. (HE-15)	237	Li, S. (GT-04)	221
Lewis, L. (DP-15)	121	Li, S. (GT-11)	222
Lewis, L. (ES-04)	158	Li, T. (BF-02)	44
Lewis, L. (FE-01)	171	Li, W. (AC-10)	6
Lewis, L. (FI-08)	180	Li, W. (BS-11)	62
Lewis, L. (GT-06)	221	Li, W. (CH-05)	83
Lewis, L. (HG-01)	240	Li, W. (CU-07)	99
Li, A. (BR-13)	60	Li, W. (EF-08)	142
Li, B. (CC-12)	73	Li, W. (ET-07)	160
Li, B. (GC-09)	199	Li, W. (FT-01)	190
Li, B. (GF-10)	205	Li, W. (FU-06)	193
Li, C. (DU-01)	129	Li, W. (GD-08)	201
Li, C. (GV-07)	225	Li, X. (AB-11)	4
Li, C.H. (DG-07)	113	Li, X. (AD-12)	8
Li, D. (EP-11)	152	Li, X. (AS-11)	27
Li, D. (FR-04)	186	Li, X. (AT-15)	29
Li, G. (DD-05)	106	Li, X. (BP-10)	55
Li, G. (FQ-14)	185	Li, X. (DE-14)	109
Li, G. (GQ-02)	215	Li, X. (EC-03)	135
Li, G. (HH-02)	242	Li, X. (EQ-16)	155
Li, H. (DG-01)	112	Li, X. (FH-08)	179
Li, H. (DG-02)	113	Li, X. (GI-01)	210
Li, H. (GV-07)	225	Li, X. (GI-04)	211
Li, J. (BC-05)	37	Li, X. (GR-03)	217
Li, J. (BR-09)	59	Li, X. (HB-12)	229
Li, J. (BS-05)	61	Li, X. (HD-08)	234
Li, J. (BU-15)	66	Li, Y. (AI-12)	19
Li, J. (BV-16)	68	Li, Y. (AP-16)	21
Li, J. (CB-04)	69	Li, Y. (AR-03)	24
Li, J. (CI-04)	85	Li, Y. (AU-06)	30
Li, J. (CQ-04)	89	Li, Y. (BE-12)	43
Li, J. (DC-08)	104	Li, Y. (BG-04)	47
Li, J. (DP-05)	119	Li, Y. (BR-01)	58
Li, J. (DP-12)	120	Li, Y. (BR-13)	60
Li, J. (DR-03)	123	Li, Y. (BR-15)	60
Li, J. (DR-04)	124	Li, Y. (BS-13)	62
Li, J. (ES-06)	158	Li, Y. (BU-12)	65
Li, J. (ES-10)	158	Li, Y. (CF-05)	78
Li, J. (FQ-07)	184	Li, Y. (DG-06)	113
Li, J. (FT-04)	190	Li, Y. (DP-14)	121
Li, J. (FT-08)	191	Li, Y. (DT-07)	128
Li, J. (GC-04)	198	Li, Y. (DT-09)	128
Li, J. (HE-14)	237	Li, Y. (ED-13)	139
Li, K. (AQ-13)	23	Li, Y. (EP-11)	152
Li, L. (BT-03)	63	Li, Y. (EP-12)	152
Li, L. (DG-07)	113	Li, Y. (ET-03)	159
Li, L. (FG-02)	176	Li, Y. (EU-02)	161
Li, M. (EF-08)	142	Li, Y. (FI-05)	180
Li, M. (HH-07)	243	Li, Y. (FU-13)	193
Li, M. (HI-06)	246	Li, Y. (FU-15)	194
Li, M. (HI-11)	246	Li, Y. (GC-08)	198
Li, M.P. (FS-03)	188	Li, Y. (GG-02)	206
Li, N. (GC-08)	198	Li, Y. (GH-04)	209
Li, P. (EQ-07)	154	Li, Y. (GH-06)	209
Li, P. (FR-08)	187	Li, Y. (GP-05)	213
Li, P. (GS-09)	220	Li, Y. (GU-09)	224
Li, Q. (AV-02)	32	Li, Y. (HH-03)	242
Li, Q. (AV-03)	32	Li, Z. (AR-14)	25
Li, Q. (BH-09)	50	Li, Z. (BS-03)	61
Li, Q. (DC-08)	104	Li, Z. (EG-01)	144
Li, Q. (DE-14)	109	Li, Z. (ER-10)	156
Li, Q. (DU-14)	131	Li, Z. (GU-15)	224
Li, Q. (ES-03)	157	Liang, F. (CQ-04)	89
Li, Q. (GC-04)	198	Liang, F. (DP-05)	119
Li, Q. (GH-09)	209	Liang, F. (DP-12)	120
Li, R. (BV-06)	67	Liang, J. (EE-01)	139
Li, R. (CU-09)	99	Liang, J. (GP-04)	213
Li, R. (DH-05)	115	Liang, J. (GU-09)	224
Li, R. (DP-10)	120	Liang, S. (FP-11)	183
Li, R. (FG-09)	177	Liang, W. (AR-09)	25
Li, R. (GQ-02)	215	Liang, X. (AF-02)	11
Li, R. (GS-12)	220	Liang, X. (BR-08)	59
Li, S. (AB-08)	3	Liang, X. (DD-08)	106
Li, S. (BE-02)	42	Liang, X. (EQ-08)	154
Li, S. (DQ-13)	123	Liang, X. (HH-07)	243

*Best student presentation award finalist

Liang, Y. (GH-05)	209	Liu, D. (FT-03)	190
Liao, W. (EC-07)	136	Liu, D. (FT-07)	191
Lichan, J. (DQ-09)	122	Liu, D. (GQ-02)	215
Lim, G.J. (CB-07)	70	Liu, E. (AS-11)	27
Lim, G.J. (DE-11)	109	Liu, E. (BE-11)	43
Lim, G.J. (HE-12)	237	Liu, E. (DS-10)	126
Lim, G.J. (HE-15)	237	Liu, E. (FI-05)	180
Lim, J. (AD-05)	7	Liu, E. (GR-03)	217
Lim, J. (AP-08)	20	Liu, F. (FU-08)	193
Lim, J. (CD-07)	75	Liu, F. (GU-09)	224
Lim, J. (EP-04)	151	Liu, G. (AU-12)	31
Lim, J. (GP-10)	214	Liu, G. (BU-06)	65
Lim, K. (GU-06)	223	Liu, G. (GF-04)	204
Lim, M. (BU-09)	65	Liu, H. (BB-09)	36
Lim, P. (GV-11)	226	Liu, H. (DT-07)	128
Lim, S. (BC-07)	38	Liu, H. (HE-12)	237
Lim, S. (FF-01)	173	Liu, J. (AD-10)	8
Lin, C. (AR-09)	25	Liu, J. (AP-05)	20
Lin, C. (BP-07)	55	Liu, J. (DE-01)	107
Lin, C. (FG-07)	177	Liu, J. (EH-02)	146
Lin, H. (AR-09)	25	Liu, J. (EH-03)	146
Lin, H. (AU-07)	30	Liu, J. (GI-03)	211
Lin, H. (AU-13)	31	Liu, K. (BB-04)	35
Lin, H. (AV-09)	32	Liu, K. (EE-12)	141
Lin, H. (CI-01)*	84	Liu, K. (ER-05)	155
Lin, H. (CI-08)	86	Liu, K. (GC-13)	199
Lin, H. (CS-16)	96	Liu, L. (AU-01)	29
Lin, H. (DU-14)	131	Liu, L. (BC-02)	37
Lin, H. (EP-03)	151	Liu, L. (BF-02)	44
Lin, H. (EP-05)	151	Liu, L. (EC-12)	136
Lin, H. (FB-01)	164	Liu, L. (EF-10)	143
Lin, H. (HI-11)	246	Liu, L. (FC-07)	167
Lin, K. (BU-11)	65	Liu, L. (GA-05)	195
Lin, K. (DB-04)	101	Liu, L. (GU-14)	224
Lin, Q. (DF-15)	112	Liu, M. (BU-12)	65
Lin, T. (BB-09)	36	Liu, M. (CF-10)	79
Lin, W. (AC-02)	4	Liu, M. (CP-13)	88
Lin, W. (AQ-04)	22	Liu, M. (HE-11)	237
Lin, Z. (AU-04)	30	Liu, M. (HF-07)	239
Lin, Z. (HE-14)	237	Liu, P. (AR-06)	24
Linder, J. (GF-07)	205	Liu, P. (DU-03)	129
Lindner, J. (AC-08)	5	Liu, P. (EQ-13)	154
Lindner, J. (BD-10)	41	Liu, P. (FU-09)	193
Lindner, J. (CC-13)	73	Liu, P. (GE-04)	202
Lindner, J. (CD-04)	74	Liu, P. (GT-04)	221
Lindner, J. (CD-11)	75	Liu, Q. (FQ-15)	186
Lindner, J. (FS-14)	190	Liu, R. (FD-07)	170
Linfield, E. (BB-10)	36	Liu, R. (GU-13)	224
Ling, H. (BP-08)	55	Liu, S. (CI-13)	86
Linten, D. (BE-13)	43	Liu, T. (AC-10)	6
Liou, S. (AG-04)	14	Liu, T. (CG-10)	81
Liou, S. (DT-13)	129	Liu, T. (DA-03)	100
Lisenkov, I. (AD-06)	8	Liu, T. (DB-03)	101
Lisenkov, I. (BD-06)	40	Liu, T. (DB-06)	102
Lisenkov, I. (FS-09)	189	Liu, T. (DG-06)	113
Lisenkov, I. (GI-07)	211	Liu, T. (DI-03)	117
Lisfi, A. (AP-13)	21	Liu, T. (ES-08)	158
Lisfi, A. (GV-03)	225	Liu, T. (GB-06)	196
Lisfi, A. (GV-05)	225	Liu, T. (GP-05)	213
Lisiecki, I. (HC-10)	232	Liu, T. (HC-09)	232
Litvinov, D. (BV-12)	67	Liu, W. (AF-15)	13
Litvinov, D. (DT-11)	128	Liu, W. (AP-05)	20
Litvinov, D. (GR-05)	217	Liu, W. (AP-07)	20
Litzius, K. (FA-05)	164	Liu, W. (EF-12)	143
Liu, C. (AC-09)	6	Liu, W. (EU-10)	162
Liu, C. (AQ-02)	22	Liu, W. (FU-12)	193
Liu, C. (AU-09)	30	Liu, W. (FU-13)	193
Liu, C. (BI-01)	51	Liu, W. (GI-05)	211
Liu, C. (DT-02)	127	Liu, W. (GU-15)	224
Liu, C. (GF-14)	206	Liu, X. (BP-05)	54
Liu, C. (GP-09)	214	Liu, X. (BS-10)	62
Liu, D. (AV-09)	32	Liu, X. (DP-09)	120
Liu, D. (CP-01)	87	Liu, X. (DR-16)	125
Liu, D. (CQ-08)	90	Liu, X. (DT-10)	128
Liu, D. (CU-09)	99	Liu, X. (FS-08)	189
Liu, D. (DP-06)	119	Liu, X. (FU-09)	193
Liu, D. (DP-10)	120	Liu, X. (GI-01)	210

*Best student presentation award finalist

Liu, X. (GI-04)	211	Lourembam, J. (FF-01)	173
Liu, Y. (AD-01)	7	Lourenco, A. (CF-11)	79
Liu, Y. (AF-13)	12	Love, C. (GF-11)	205
Liu, Y. (BB-09)	36	Love, C. (HD-03)	233
Liu, Y. (BP-16)	56	Love, C. (HD-09)	234
Liu, Y. (BS-06)	61	Loving, M. (AQ-09)	23
Liu, Y. (CB-02)	69	Loving, M. (GC-06)	198
Liu, Y. (CQ-04)	89	Loving, M. (GH-01)	208
Liu, Y. (DE-12)	109	Low, T. (DG-01)	112
Liu, Y. (DP-05)	119	Lu, H. (FQ-15)	186
Liu, Y. (DP-10)	120	Lu, J. (DE-01)	107
Liu, Y. (DP-12)	120	Lu, J. (DS-04)	126
Liu, Y. (DP-14)	121	Lu, K. (FT-04)	190
Liu, Y. (DR-03)	123	Lu, K. (FT-08)	191
Liu, Y. (DR-04)	124	Lu, M. (HI-03)	245
Liu, Y. (DT-13)	129	Lu, Q. (AF-15)	13
Liu, Y. (EB-12)	134	Lu, Q. (FU-12)	193
Liu, Y. (ES-06)	158	Lu, X. (BP-08)	55
Liu, Y. (ES-10)	158	Lu, X. (EU-10)	162
Liu, Y. (FC-13)	168	Lu, Y. (CE-01)	76
Liu, Y. (FD-02)	169	Lubarda, M.V. (GD-10)	201
Liu, Y. (FT-05)	190	Lucassen, J. (DI-08)	118
Liu, Y. (FU-08)	193	Ludbrook, B. (ER-12)	156
Liu, Y. (GC-11)	199	Ludbrook, B.M. (GP-09)	214
Liu, Y. (GE-10)	203	Lukashev, P. (CS-07)	95
Liu, Y. (GU-09)	224	Lukashev, P. (DP-07)	120
Liu, Y. (HE-04)	235	Luke, G.M. (GG-04)	207
Liu, Y. (HE-10)	236	Lukiewski, M. (BR-14)	60
Liu, Z. (BF-02)	44	Lukin, E. (DR-14)	125
Liu, Z. (CQ-16)	91	Lukovic, M. (BS-12)	62
Liu, Z. (EE-03)	140	Lumsden, M. (FH-02)	178
Liu, Z. (FT-16)	192	Luo, F. (HE-12)	237
Liu, Z. (FU-04)	192	Luo, H. (AP-07)	20
Liu, Z. (GD-08)	201	Luo, H. (AV-06)	32
Liubachko, V. (FG-12)	177	Luo, H. (EP-09)	152
Livesey, K. (AG-09)	14	Luo, H. (EP-12)	152
Livesey, K. (AR-13)	25	Luo, H. (EP-13)	152
Livesey, K. (BG-02)	47	Luo, J. (DU-10)	130
Livesey, K. (CR-11)	93	Luo, L. (FR-13)	187
Livesey, K. (DC-01)	103	Luo, S. (GP-15)	214
Llandro, J. (ED-12)	139	Luo, Y. (CG-07)	81
Lo Conte, R. (AH-05)	16	Luo, Y. (CG-08)	81
Lo Conte, R. (AH-08)	17	Luo, Y. (CG-10)	81
Lo Giudice, A. (BV-03)	66	Luo, Y. (CG-11)	81
Lo, C. (EE-01)	139	Luo, Y. (HH-04)	242
Löber, T. (AE-10)	10	Luo, Z. (EC-07)	136
LoBue, M. (CQ-10)	90	Luong, H. (AC-01)	4
LoBue, M. (CQ-12)	90	Lupu, N. (AQ-01)	22
Locatelli, A. (FC-05)	167	Lupu, N. (AQ-08)	23
Locatelli, N. (CC-03)	71	Lupu, N. (AR-01)	24
Locatelli, N. (FA-01)	163	Lupu, N. (CS-02)	94
Locht, I.L. (ED-08)	138	Lupu, N. (DU-02)	129
Loewa, N. (AG-01)	13	Lupu, N. (FU-14)	194
Löffler, J.F. (GB-05)	196	Lupu, N. (HH-09)	243
Löffler, M. (DS-08)	126	Lutz, C. (FH-06)	178
Lograsso, T.A. (GI-13)	212	Luzanov, V. (BR-11)	60
Lomakin, V. (GB-08)	196	Lv, H. (FP-12)	183
Lomakin, V. (GD-10)	201	Lv, Y. (DE-15)	109
Lomakin, V. (GD-12)	201	Lv, Y. (DG-01)	112
Lomakin, V. (GD-13)	201	Lv, Y. (DG-02)	113
Lombardi, E.B. (EQ-10)	154	Lv, Y. (FR-05)	186
Lömker, P. (EG-09)	145	Lvov, V. (ES-13)	159
Long, Y. (BS-10)	62	Lyange, M. (HD-10)	234
Lopes, A. (FI-01)	179	Lynch, C. (BV-15)	68
Lopez Pedrosa, A. (BV-03)	66	Lyu, S. (AU-07)	30
Lopez-Diaz, L. (DC-04)	104		
Lopez-Diaz, L. (FC-06)	167		
Lopez-Diaz, L. (FC-13)	168		
López-Tabares, J. (GS-06)	219		
Lopez, J. (ET-10)	160		
Lorenz, V.O. (CB-08)	70		
Lou, S. (CT-09)	97		
Loughran, T. (FC-10)	168		
Louie, D. (BG-02)	47		
Louie, S.G. (BA-01)	33		
Louis, D. (BD-02)	39		
Louis, S. (CI-04)	85		

- M -

M, V. (CR-14)	93
M, V. (DR-08)	124
M. M. Myint, L. (CE-09)	77
Ma, B. (CP-11)	88
Ma, C. (BP-05)	54
Ma, C. (FS-08)	189
Ma, F. (CD-03)	74
Ma, J. (HD-02)	233
Ma, J. (HE-11)	237

*Best student presentation award finalist

Ma, L. (BR-10)	59	Malinowski, G. (GB-13)	197
Ma, L. (GS-11)	220	Mallesh, S. (CP-14)	88
Ma, Q. (DP-14)	121	Mamoori, M. (HC-05)	231
Ma, Q. (GU-08)	224	Man, H. (AC-12)	6
Ma, Q. (GU-09)	224	Manabe, A. (BF-05)	45
Ma, R. (FR-15)	188	Manabe, A. (EF-11)	143
Ma, S. (CB-02)	69	Manaka, H. (DQ-03)	121
Ma, S. (DP-16)	121	Manchon, A. (DG-01)	112
Ma, S. (FU-11)	193	Manchon, A. (EQ-01)	153
Ma, S. (GE-04)	202	Manchon, A. (ER-01)	155
Ma, S. (GU-13)	224	Manchon, A. (HB-11)	229
Ma, T. (AF-13)	12	Mancilla-Almonacid, D. (GP-01)	213
Ma, T. (FT-05)	190	Mancilla-Almonacid, D. (GR-14)	218
Ma, T. (GI-10)	212	Mandal, P. (HG-07)	241
Ma, X. (AB-11)	4	Mandal, R. (CF-04)	78
Ma, X. (AT-10)	29	Mandru, A. (FE-02)	171
Ma, X. (BP-01)	54	Mandru, A.O. (FB-13)	166
Ma, X. (DF-05)	110	Mandrus, D. (CG-13)	82
Ma, X. (EP-08)	152	Mandrus, D. (FG-02)	176
Ma, X. (GP-16)	215	Manfrinetti, P. (FG-12)	177
Ma, X. (HB-12)	229	Manfrinetti, P. (FG-13)	177
Maat, S. (CR-11)	93	Manfrinetti, P. (GF-09)	205
Macauley, G. (GG-02)	206	Manfrini, M. (AE-05)	9
Macauley, G. (GG-09)	207	Manfrini, M. (AE-06)	10
Maccariello, D. (BB-08)	35	Manfrini, M. (AE-08)	10
Maccariello, D. (BB-11)	36	Manfrini, M. (EC-11)	136
Maccariello, D. (DC-06)	104	Mangin, S. (EE-02)	140
Maccariello, D. (HD-04)	233	Mangin, S. (GB-08)	196
Maccherozzi, F. (FC-05)	167	Mangin, S. (GB-13)	197
MacDonald, A.H. (BP-16)	56	Manginas, G. (HH-09)	243
MacDougall, G.J. (EH-10)	147	Manipatruni, S. (AE-05)	9
Macedo, R. (EI-09)	150	Manipatruni, S. (EC-11)	136
Macedo, R. (GG-01)	206	Manju, M. (ES-02)	157
Macedo, R. (GG-02)	206	Mankey, G. (HH-01)	242
Macedo, R. (GG-09)	207	Mann, M. (DB-01)	101
MacLaren, D. (BI-08)	52	Mann, M. (FR-07)	187
MacLaren, D. (GG-02)	206	Manno, M. (EB-01)	133
MacNeill, D. (GA-03)	194	Mansell, R. (CT-08)	97
Macziewski, C. (GH-05)	209	Mantel, A.B. (AB-10)	4
Macziewski, C. (GH-14)	210	Mantilla, J. (GV-14)	226
Madami, M. (CD-08)	75	Manuilov, S.A. (CC-09)	72
Maehara, H. (DE-10)	109	Manzano, J.S. (CF-13)	79
Maekawa, S. (EI-07)	150	Manzin, A. (CU-08)	99
Magnani, N. (EG-03)	144	Mao, S. (AI-06)	18
Mahajan, A.V. (FH-07)	179	Mao, S. (AI-11)	19
Mahalingam, K. (DB-09)	102	Mao, S. (AU-10)	30
Mahalingam, K. (EH-03)	146	Mao, S. (BS-04)	61
Mahendiran, R. (DR-06)	124	Mao, S. (BS-06)	61
Mahendiran, R. (HG-08)	241	Mao, S. (DE-01)	107
Mahendra, D. (DG-01)	112	Mao, Z. (AI-06)	18
Mahendra, D. (DG-02)	113	Mao, Z. (AI-11)	19
Mahfouzi, F. (EQ-14)	154	Mao, Z. (AU-10)	30
Maier, D. (HB-05)	228	Mao, Z. (BS-04)	61
Mair, L. (AG-05)	14	Mapasha, R.E. (EQ-10)	154
Mair, L. (CR-13)	93	Maranville, B.B. (ER-05)	155
Majetich, S. (BG-08)	48	Maranville, B.B. (FE-12)	173
Majetich, S. (CB-12)	70	Maranville, B.B. (GC-13)	199
Majetich, S. (CH-13)	84	Marconi, M. (AC-10)	6
Majetich, S. (DH-09)	116	Maria, D. (HH-10)	243
Majetich, S. (DH-10)	116	Mariani, M. (DU-08)	130
Majetich, S. (EC-05)	136	Marioni, M.A. (FB-13)	166
Majetich, S. (FF-12)	175	Marioni, M.A. (FE-02)	171
Majetich, S. (GD-15)	202	Markandeyulu, G. (CQ-15)	91
Majewski, W. (BT-15)	64	Markandeyulu, G. (GH-08)	209
Majid, S.S. (GF-13)	206	Markandeyulu, G. (GH-10)	209
Major, J. (GT-09)	222	Marquardt, F. (DA-04)	100
Maki, T. (FT-06)	191	Marrows, C.H. (AB-04)	2
Maksymov, A. (AS-16)	27	Marrows, C.H. (BB-10)	36
Makuta, H. (AS-04)	26	Marrows, C.H. (DC-05)	104
Malhotra, N. (CT-09)	97	Marrows, C.H. (DQ-05)	122
Malhotra, N. (CT-12)	97	Marrows, C.H. (EC-09)	136
Malhotra, N. (CU-12)	99	Marrows, C.H. (FG-05)	176
Malik, R.S. (ED-01)	137	Marrows, C.H. (GG-01)	206
Malik, R.S. (ED-02)	137	Marrows, C.H. (GG-07)	207
Malik, R.S. (ED-08)	138	Marrows, C.H. (HC-01)	230
Malik, S.K. (BF-15)	46	Martens, K.M. (BE-13)	43
Malinowski, G. (EE-02)	140	Martens, K.M. (FF-13)	175

*Best student presentation award finalist

Martin-Gil, J. (AV-15)	33	McCallum, W. (FI-08)	180
Martin-Ramos, P. (AV-15)	33	McClellan, C. (CG-06)	80
Martin, C. (AU-05)	30	McCloskey, P. (GQ-08)	216
Martin, C. (ES-12)	159	McCloskey, P. (HH-13)	244
Martin, E.L. (CT-06)	97	McCloy, J. (CU-15)	100
Martin, J. (CU-04)	98	McComb, D.W. (BB-06)	35
Martin, J. (DC-11)	105	McComb, D.W. (BB-13)	36
Martinez-Miranda, L. (CR-13)	93	McComb, D.W. (DD-10)	107
Martinez, E. (AT-01)	27	McComb, D.W. (EH-13)	148
Martinez, E. (EC-10)	136	McConney, M. (DB-09)	102
Martinez, J. (CC-12)	73	McCormick, E.J. (CG-07)	81
Martinez, J. (EU-16)	163	McCormick, E.J. (CG-08)	81
Martínez, J.M. (DS-03)	126	McCreary, K.M. (CG-07)	81
Martinez, L. (DR-07)	124	McCullian, B. (DD-12)	107
Martinez, W. (GE-08)	203	McCullian, B. (ED-11)	139
Martins Jr., S.M. (AT-06)	28	McDonald, I.J. (FE-01)	171
Martinson, A. (DH-02)	115	McDonald, I.J. (GT-06)	221
Martirosyan, K. (BV-12)	67	McFadden, A.P. (BC-04)	37
Martone, A. (GH-03)	208	McGlashan-Powell, M. (GH-02)	208
Marty, A. (DG-08)	114	McGrouther, D. (EC-09)	136
Mashraei, Y. (HI-09)	246	McHenry, M.E. (AI-05)	18
Masood, A. (GQ-08)	216	McHenry, M.E. (AI-07)	19
Masood, A. (HH-13)	244	McHenry, M.E. (AI-08)	19
Masood, A. (HH-14)	244	McHenry, M.E. (BH-10)	50
Masood, K. (GI-07)	211	McHenry, M.E. (FI-03)	180
Massey, J. (BB-10)	36	McHenry, M.E. (GE-06)	203
Massey, J. (DQ-05)	122	McKeever, C. (DC-13)	105
Massey, J. (EC-09)	136	McKinnon, T. (AS-06)	26
Massey, J. (FG-05)	176	McLeod, M. (GU-03)	223
Masuda, K. (BE-02)	42	McMichael, R.D. (AD-10)	8
Masuda, K. (DE-07)	108	McQueen, T. (GF-10)	205
Masunishi, K. (HI-02)	245	McVitie, S. (EC-09)	136
Matahum, J. (CU-12)	99	McVitie, S. (GG-02)	206
Matala-Wagner, T. (HB-07)	229	Md. Shah, A. (GP-09)	214
Mathias, S. (DI-05)	117	Mdlalose, W.B. (CT-11)	97
Mathieu, R. (EG-10)	145	Méchin, L. (HD-04)	233
Matin, M. (FG-13)	177	Meckenstock, R. (ED-04)	137
Matis, B. (GI-06)	211	Meckenstock, R. (GR-11)	218
Matlak, K. (GE-11)	203	Medapalli, R. (DD-05)	106
Matoušková, Šárka. (FG-06)	176	Medapalli, R. (FQ-14)	185
Matsuda, S. (AG-07)	14	Medapalli, R. (GB-13)	197
Matsuguma, H. (DQ-12)	122	Mehedi, M. (CP-11)	88
Matsui, T. (CS-01)	94	Mehta, A. (GC-13)	199
Matsui, T. (EU-09)	162	Meier, G. (BD-12)	41
Matsukawa, T. (DR-12)	124	Meier, G. (GP-07)	213
Matsumoto, K. (DQ-05)	122	Meier, G. (HC-06)	231
Matsuo, T. (BU-03)	64	Meilak, D. (GD-15)	202
Matsushima, M. (EB-04)	133	Meinert, M. (AS-14)	27
Matsushita, M. (FS-10)	189	Meinert, M. (FE-07)	172
Matsuura, M. (BP-14)	56	Meinert, M. (HB-07)	229
Matsuura, Y. (FT-02)	190	Meitzler, T. (CI-04)	85
Matsuyama, K. (BQ-10)	57	Meka, V. (CP-07)	88
Matsuzaki, K. (HD-09)	234	Mekkaoui, S. (AG-10)	15
Matthes, P. (FS-14)	190	Mellnik, A.R. (CB-08)	70
Mattson, G. (EQ-14)	154	Menard, D. (DD-02)	105
Matyushov, A. (FB-01)	164	Menard, D. (HF-11)	239
Matyushov, A. (HI-11)	246	Menarini, M. (GB-08)	196
May, S. (EH-09)	147	Mendes, J.B. (EB-11)	134
Mayanovic, R. (CH-06)	83	Mendes, J.B. (HB-05)	228
Mayergoyz, I. (CB-11)	70	Méndez, M. (BH-04)	49
Mayergoyz, I. (GD-04)	200	Mendil, J. (FB-08)	165
Mayergoyz, I. (GE-01)	202	Meng, K. (BB-13)	36
Mayergoyz, I. (GE-05)	202	Meng, K. (DB-09)	102
Mazaleyrat, F. (CQ-10)	90	Meng, K. (FS-02)	188
Mazaleyrat, F. (CQ-12)	90	Meng, K. (GR-15)	218
Mazaleyrat, F. (DF-03)	110	Meng, K.Y. (EQ-11)	154
Mazin, I. (HB-15)	230	Menicanin, A.B. (BS-12)	62
Mazraati, H. (FD-03)	169	Menshaw, S. (DC-09)	104
Mazraati, H. (FD-05)	169	Menshchikova, T.V. (DG-09)	114
Mazumdar, C. (GI-11)	212	Mentes, T.O. (FC-05)	167
Mazumdar, D. (FI-07)	180	Mentink, J. (ED-07)	138
Mazumdar, D. (HD-02)	233	Meo, A. (BG-08)	48
Mboukam, J.J. (DQ-10)	122	Meo, A. (CC-11)	72
McCall, S.K. (CF-01)	77	Meo, A. (DD-03)	106
McCall, S.K. (CF-03)	78	Merazzo-Jaimes, K. (FR-15)	188
McCall, S.K. (CR-07)	92	Merazzo, K.J. (HI-04)	245
McCallum, W. (DP-15)	121	Merbouche, H. (CD-02)	74

*Best student presentation award finalist

Mercer, T. (AH-12)	17	Miura, Y. (DE-09)	108
Mesa, J. (GE-07)	203	Miwa, S. (CI-06)	85
Mestnik-Filho, J. (EG-13)	145	Miwa, S. (EB-04)	133
Mewes, C.K. (EB-01)	133	Miwa, S. (FB-11)	166
Mewes, C.K. (FC-01)	166	Miwa, S. (FD-06)	170
Mewes, C.K. (FR-16)	188	Miwa, S. (FF-03)	174
Mewes, C.K. (GR-06)	217	Miwa, S. (FF-04)	174
Mewes, C.K. (HH-01)	242	Miyakaze, R. (FB-11)	166
Mewes, T. (EB-01)	133	Miyamoto, T. (DR-15)	125
Mewes, T. (FC-01)	166	Miyamoto, Y. (CU-10)	99
Mewes, T. (FR-16)	188	Miyamoto, Y. (EC-08)	136
Mewes, T. (GR-06)	217	Mizrahi, A. (FA-01)	163
Mewes, T. (HH-01)	242	Mizuguchi, M. (DQ-02)	121
Meyer, T. (AE-10)	10	Mizukami, S. (BC-13)	38
Meyer, T. (BD-02)	39	Mizukami, S. (CI-05)	85
Meysers, D.E. (CR-11)	93	Mizukami, S. (DE-09)	108
Mi, W. (CG-09)	81	Mizukami, S. (GC-02)	197
Mi, W. (EG-01)	144	Mizuno, H. (FF-10)	175
Mi, W. (FF-15)	175	Mizunuma, K. (CI-05)	85
Miao, B. (FQ-15)	186	Mizushima, K. (CC-04)	71
Miao, G. (BA-04)	34	Mizushima, K. (CE-02)	76
Miao, J. (BH-01)	49	Mizushima, K. (CE-04)	76
Miao, J. (EQ-13)	154	Mjahed, H. (HI-12)	247
Miao, J. (FS-02)	188	Mkhoyan, A. (DB-03)	101
Miao, X. (EQ-02)	153	Mkhoyan, A. (DG-01)	112
Miao, X. (FI-01)	179	Mkhoyan, A. (DG-02)	113
Mibu, K. (DC-02)	103	Mkhoyan, A. (EB-02)	133
Michea, S. (AS-03)	26	Mlynczak, E. (EG-08)	145
Midhunlal, P. (EU-12)	162	Mlynczak, E. (EG-09)	145
Mifune, T. (BU-01)	64	Mo, L. (DG-01)	112
Mifune, T. (BU-03)	64	Mo, L. (DG-02)	113
Miglierini, M. (BR-14)	60	Mock, A. (DH-01)	115
Mihailovic, D. (ED-07)	138	Mocuta, D. (AE-05)	9
Mikhaylovskiy, R. (DD-05)	106	Mocuta, D. (AE-06)	10
Mikhaylovskiy, R. (FQ-14)	185	Mocuta, D. (AE-08)	10
Mikhaylovskiy, R. (GR-16)	218	Mocuta, D. (EC-11)	136
Miller, C.W. (EB-01)	133	Mocuta, D. (HE-09)	236
Miller, C.W. (FE-12)	173	Mohammadi, S. (DE-05)	108
Miller, D. (GC-06)	198	Mohanan Parakkat, V. (DC-10)	105
Miller, J. (AR-11)	25	Mohanty, J.R. (GC-05)	198
Min, B. (BB-03)	35	Mohanty, P. (CS-10)	95
Min, B. (BP-09)	55	Mohapatra, J. (AR-06)	24
Mina, M. (BS-07)	61	Mohapatra, J. (DU-03)	129
Mina, M. (DS-11)	126	Mohseni, F. (CF-11)	79
Mina, M. (DU-12)	131	Mohseni, M. (BD-02)	39
Minar, J. (EG-08)	145	Mohseni, S. (FC-10)	168
Ming, Y. (AP-03)	20	Mokhosi, S. (CT-11)	97
Mingming, L. (DQ-09)	122	Mokrousov, Y. (AB-04)	2
Miranda, R. (CG-14)	82	Molepo, M.P. (EQ-10)	154
Miranda, R. (FB-10)	165	Möller, M. (DI-05)	117
Miranda, R. (GD-11)	201	Möller, M. (ED-06)	138
Miranda, R. (GQ-15)	216	Möller, M. (FC-08)	167
Miranda, R. (HD-04)	233	Molotnikov, A. (BF-11)	46
Miron, I. (AT-16)	29	Mondal, R. (FG-13)	177
Miron, I. (BC-10)	38	Mondal, S. (AS-08)	26
Misawa, K. (DR-12)	124	Mondal, S. (ER-08)	156
Misawa, T. (BI-03)	52	Mondal, S. (GR-10)	218
Mishra, A. (HH-06)	243	Monsivais, G. (BD-11)	41
Mishra, H. (HI-12)	247	Montaigne, F. (HI-12)	247
Mishra, R. (BC-08)	38	Montazeri, M. (AD-01)	7
Mishra, R. (CB-01)	69	Montiel, X. (HE-08)	236
Mishra, R. (DG-04)	113	Monton, C. (BH-12)	51
Mishra, S. (CR-09)	92	Montoncello, F. (FD-13)	171
Mishra, S. (CR-10)	93	Montoya, E.A. (BP-16)	56
Mishra, S. (CS-09)	95	Montoya, E.A. (CC-14)	73
Mishra, S. (FT-13)	191	Montoya, E.A. (DE-05)	108
Mishra, S. (FT-14)	192	Montoya, E.A. (ED-10)	139
Mishra, S. (GV-06)	225	Montoya, S.A. (AB-05)	3
Mito, S. (GV-09)	226	Montoya, S.A. (BB-02)	34
Mitsuhashi, Y. (DF-07)	111	Moodera, J. (BA-03)	34
Mitsumata, C. (DF-11)	111	Moodera, J. (CG-12)	81
Mitsumata, C. (FU-05)	193	Moodera, J. (GF-02)	204
Mitsumata, C. (GQ-03)	215	Moog, M. (HF-04)	238
Miura, D. (GR-12)	218	Moore, T. (BB-10)	36
Miura, D. (GS-10)	220	Moore, T. (DC-05)	104
Miura, Y. (BE-02)	42	Moore, T. (EC-09)	136
Miura, Y. (DE-07)	108	Moorsom, T. (CS-05)	94

*Best student presentation award finalist

Nakao, A. (FE-04)	172	Ngo, A. (HC-10)	232
Nakata, F. (AC-03)	5	Nguyen, H. (BI-06)	52
Nakata, F. (AC-06)	5	Nguyen, M. (GT-01)	221
Nakata, Y. (DA-01)	100	Nguyen, N. (FR-11)	187
Nakatani, R. (BV-07)	67	Nguyen, T. (AC-01)	4
Nakatani, R. (HF-02)	238	Nguyen, T. (BV-07)	67
Nakayama, H. (FS-05)	189	Nguyen, T. (DP-01)	119
Nakazima, T. (AH-01)	15	Nguyen, T. (FD-03)	169
Nakazima, T. (HG-13)	242	Nguyen, T. (FP-04)	182
Naletov, V. (ED-13)	139	Nguyen, T. (HF-02)	238
Nam, C. (CQ-13)	91	Nguyen, V. (BE-15)	44
Nam, D. (ET-11)	160	Ni, Y. (FS-10)	189
Nam, D. (HH-08)	243	Nichols, J. (EH-09)	147
Nam, Y. (BP-09)	55	Nie, L. (GV-15)	226
Nam, Y. (FS-07)	189	Nie, Y. (AP-05)	20
Nambiar, N. (EC-05)	136	Nie, Y. (AP-07)	20
Namita, M. (AG-07)	14	Nie, Y. (AV-06)	32
Nan, C. (HE-11)	237	Nie, Y. (EP-09)	152
Nan, T. (CI-01)	84	Nie, Y. (EP-11)	152
Nan, T. (EB-08)	134	Nie, Y. (EP-12)	152
Nan, T. (FB-01)	164	Nie, Y. (EP-13)	152
Nan, T. (HI-11)	246	Niensch, K. (CD-11)	75
Nanayakkara, K. (BP-06)	54	Niewa, R. (GG-12)	208
Nanayakkara, K. (GP-03)	213	Nigam, A.K. (BF-15)	46
Narayan, J. (BV-01)	66	Niimi, Y. (EB-13)	135
Narayanan, H. (EU-12)	162	Niizeki, T. (DB-07)	102
Narkovic, R. (AC-08)	5	Nikitin, V. (BE-09)	43
Narumanchi, S. (GT-09)	222	Nikitin, V. (BE-10)	43
Nascimento, F. (GG-09)	207	Nikitov, S. (EP-14)	152
Nascimento, V.P. (DP-08)	120	Nikitov, S. (FB-03)	164
Natali, F. (GI-02)	211	Nikitov, S. (FB-12)	166
Natekar, N.A. (EE-03)	140	Nikonov, D.E. (AE-05)	9
Nath, J. (AT-16)	29	Nikonov, D.E. (EC-11)	136
Nath, J. (BC-10)	38	Nilsson, M. (DE-05)	108
Nath, R.C. (FH-07)	179	Ning, S. (AH-11)	17
Navabi, A. (AD-01)	7	Ning, S. (DU-05)	130
Navabi, A. (BC-05)	37	Niño, M. (CG-14)	82
Navabi, A. (GR-04)	217	Nirmala, R. (BF-15)	46
Navas, D. (HC-13)	232	Nirmala, R. (FI-09)	181
Nawaoka, K. (FB-11)	166	Nishii, J. (BI-03)	52
Nawaoka, K. (FF-04)	174	Nishikawa, M. (BQ-09)	57
Nayak, A.K. (HB-01)	228	Nishikubo, A. (BU-03)	64
Nayak, A.K. (HD-01)	233	Nishimura, K. (BP-14)	56
Nazir, A. (BU-06)	65	Nishimura, K. (BU-01)	64
Nazmunnahar, M. (AI-07)	19	Nishio-Hamane, D. (FU-02)	192
Ndiaye, P. (EQ-01)	153	Nishiuchi, T. (FT-06)	191
Ndiaye, P. (ER-01)	155	Nisoli, C. (BH-11)	50
Nechache, R. (HG-06)	241	Nitta, J. (FQ-10)	185
Nedelkoski, Z. (CH-13)	84	Nitta, J. (FR-10)	187
Negoita, M. (HC-05)	231	Niu, S. (BT-06)	63
Negulescu, B. (AH-10)	17	Nlebedim, C.I. (BG-01)	47
Negusse, E. (CP-06)	87	Nlebedim, C.I. (CF-13)	79
Nekrashevich, I. (GR-05)	217	Nlebedim, C.I. (CR-07)	92
Nelson, K.A. (AA-03)	1	Nlebedim, C.I. (FT-15)	192
Nemati, Z. (ET-12)	161	Nlebedim, C.I. (GT-05)	221
Nembach, H. (DD-07)	106	Noack, T.B. (DB-05)	101
Nembach, H. (DD-09)	106	Noebe, R. (AI-05)	18
Nembach, H. (ED-02)	137	Noel, P. (DG-08)	114
Nembach, H. (ED-08)	138	Noguchi, A. (DA-01)	100
Nembach, H. (FB-06)	165	Nogues, J. (GQ-15)	216
Nembach, H. (GA-01)	194	Nolte, C. (DI-05)	117
Neñer, L. (BV-03)	66	Nomura, K. (DG-10)	114
Neu, V. (CU-08)	99	Nomura, T. (EQ-15)	154
Neupane, M.R. (CG-08)	81	Nongjai, R. (BQ-04)	57
Neves Bez, H. (FI-02)	180	Norden, T. (BA-04)	34
Newburger, M. (CG-07)	81	Nordman, C. (DE-02)	107
Newhouse-Illige, T. (DE-12)	109	Noske, M. (AD-04)	7
Ney, A. (ED-04)	137	Novakoski Fischer, K. (GI-12)	212
Ney, A. (ES-05)	158	Novosad, V. (AT-05)	28
Ney, A. (FE-08)	172	Novosad, V. (AT-08)	28
Ney, A. (GR-11)	218	Novosad, V. (DG-06)	113
Ney, V. (ES-05)	158	Nowak, J.J. (BE-08)	43
Ney, V. (FE-08)	172	Nowak, K. (ES-12)	159
Ng, V. (CE-06)	76	Nowak, U. (DB-07)	102
Ng, V. (GS-07)	220	Nowakowski, M.E. (AH-08)	17
Ng, V. (HC-08)	231	Nozaki, T. (FF-06)	174
Ngelale, R. (DE-05)	108	Nsibi, M. (AT-16)	29

*Best student presentation award finalist

Osofsky, M. (FG-02)	176	Panaccione, G. (FB-07)	165
Ostler, T.A. (BF-05)	45	Pancaldi, M. (FE-12)	173
Ostler, T.A. (GB-06)	196	Pancaldi, M. (GB-01)	195
Ostler, T.A. (GC-03)	198	Pandey, K.K. (HH-06)	243
Östman, E. (HC-03)	231	Pandey, N. (HG-05)	240
Östman, E. (HC-07)	231	Pandey, S. (CQ-01)	89
Otalora Arias, J.A. (CD-11)	75	Pandey, S. (CQ-02)	89
Otani, Y. (AS-08)	26	Pandey, S. (CR-01)	91
Otani, Y. (DB-11)	103	Pandey, S. (CS-03)	94
Otani, Y. (DB-12)	103	Pandey, S. (FI-07)	180
Otani, Y. (DQ-05)	122	Pandey, T. (BF-06)	45
Otani, Y. (EB-13)	135	Pandey, T. (DF-15)	112
Otrokov, M.M. (DG-09)	114	Panduranga, M.K. (AH-05)	16
Otsu, K. (HI-02)	245	Panduranga, M.K. (GI-14)	212
Ott, R.T. (BG-01)	47	Pandurangi, A. (AG-12)	15
Ott, R.T. (GI-13)	212	Pandya, D. (GP-06)	213
Otyepka, M. (HG-03)	240	Pankiev, M. (FF-05)	174
Ou, Y. (AE-11)	10	Pant, R. (DF-06)	111
Ou, Y. (BI-01)	51	Panwar, N. (DR-08)	124
Ou, Y. (EB-05)	133	Papaioannou, E. (EI-06)	149
Ou, Y. (FQ-12)	185	Papaioannou, E.T. (CB-05)	69
Ouardi, S. (GC-02)	197	Papp, A. (CD-08)	75
Ouassou, J.A. (GF-07)	205	Pappas, S.D. (EI-06)	149
Ouyang, G. (GH-05)	209	Papuso, C. (EE-05)	140
Ouyang, G. (GH-14)	210	Paranthaman, P. (CR-07)	92
Ouyang, G. (GT-09)	222	Pardo, M. (DB-11)	103
Ouyang, H. (EU-06)	161	Parent, G. (CP-04)	87
Ouyang, H. (GS-16)	220	Park, B. (AC-05)	5
Ouyang, J. (DT-15)	129	Park, B. (BT-01)	62
Ouyang, J. (GP-15)	214	Park, B. (BT-16)	64
Ovari, T.A. (AQ-01)	22	Park, B. (FP-01)	182
Ovari, T.A. (AQ-08)	23	Park, B. (FQ-01)	184
Ovari, T.A. (AR-01)	24	Park, B. (HH-08)	243
Ovari, T.A. (DU-02)	129	Park, H. (BT-01)	62
Oyarzún, S. (AS-02)	26	Park, H. (BT-16)	64
Oyarzún, S. (AS-03)	26	Park, H. (CT-07)	97
Oyarzún, S. (GP-01)	213	Park, J. (AP-15)	21
Øy garden, V. (GT-16)	222	Park, J. (AR-05)	24

- P -

P Freitas, P. (AG-11)	15	Park, J. (BI-10)	53
P Freitas, P. (HI-05)	245	Park, J. (BT-01)	62
P Singh, R. (DF-06)	111	Park, J. (BT-16)	64
Page, M.R. (DD-12)	107	Park, J. (CS-11)	95
Page, M.R. (HB-06)	229	Park, J. (DF-04)	110
Pagliuso, P. (AV-12)	33	Park, J. (GA-03)	194
Pagliuso, P. (CS-15)	96	Park, K. (FP-01)	182
Pagliuso, P. (DQ-15)	123	Park, M. (BP-09)	55
Pai, C. (BC-01)	37	Park, M. (FS-07)	189
Pai, C. (DB-01)	101	Park, S. (CS-13)	95
Pai, C. (FQ-03)	184	Park, S. (CT-14)	98
Pailloux, S. (BG-05)	47	Park, S. (FD-09)	170
Pak, C. (FH-08)	179	Park, S. (GU-06)	223
Pakuszewski, K.R. (AV-12)	33	Park, S. (GV-08)	226
Pal, B. (EG-10)	145	Park, Y. (BP-09)	55
Pal, J. (CI-10)	86	Park, Y. (FD-09)	170
Pal, S. (EG-10)	145	Park, Y. (FS-07)	189
Pal, S.K. (CQ-05)	89	Parker, D. (BF-06)	45
Pal, S.K. (GG-13)	208	Parker, D. (DF-15)	112
Palai, R. (EH-15)	148	Parkin, S. (GC-07)	198
Palasyuk, A. (DF-15)	112	Parkin, S. (GI-12)	212
Palasyuk, A. (FU-07)	193	Parkin, S.S. (EC-04)	135
Palasyuk, O. (FU-07)	193	Parkin, S.S. (HB-01)	228
Pallecchi, I. (HB-13)	230	Parkin, S.S. (HD-01)	233
Palma, J.L. (AS-02)	26	Parks, B. (CB-12)	70
Palmero, E.M. (BH-04)	49	Parks, B. (FF-12)	175
Palmesi, P. (GQ-13)	216	Parmar, H.G. (BF-08)	45
Palmstrøm, C.J. (BC-04)	37	Parmar, H.G. (EF-02)	141
Pan, C. (GH-05)	209	Parmar, H.G. (EF-05)	142
Pan, F. (FB-02)	164	Parra, C. (CQ-07)	90
Pan, F. (HB-14)	230	Parsons, R.R. (HH-05)	243
Pan, L. (CP-13)	88	Pascotto Gastaldo, V. (AV-01)	31
Pan, L. (GP-16)	215	Pasko, A. (CQ-10)	90
Pan, R. (BT-02)	62	Pasko, A. (CQ-12)	90
Pan, S. (AS-08)	26	Pasko, A. (DF-03)	110
Pan, Y. (CG-10)	81	Pasquali, L. (BI-08)	52
		Pasquali, L. (GQ-15)	216
		Patel, S.K. (BI-11)	53

*Best student presentation award finalist

Patel, S.K. (DD-05)	106	Perez, F. (CR-10)	93
Patel, S.K. (FG-04)	176	Perez, F. (CS-09)	95
Paterson, G. (GG-02)	206	Pérez, M. (GE-07)	203
Pathak, A. (AF-11)	12	Perigo, E. (GT-02)	221
Pathak, A. (CR-06)	92	Perna, P. (CG-14)	82
Pathak, A. (DP-09)	120	Perna, P. (FB-10)	165
Pathak, A. (FU-09)	193	Perna, P. (GD-11)	201
Pathak, A. (GF-09)	205	Perna, P. (GQ-15)	216
Pathak, R. (EH-14)	148	Perna, P. (HD-04)	233
Pathak, R. (GS-03)	219	Perna, S. (AT-03)	28
Pati, S. (AP-14)	21	Perov, N. (HH-15)	244
Patlan, F. (BV-12)	67	Perrière, L. (DF-03)	110
Pattabi, A. (GB-11)	197	Perrin, A.E. (FI-03)	180
Patte, R. (GF-12)	205	Pervaiz, A. (FA-02)	163
Patterson, C. (CU-11)	99	Perween, S. (DF-06)	111
Patwari, M. (EE-08)	140	Pessoni, H.V. (GV-14)	226
Paudyal, D. (AF-03)	11	Pessotto, G. (CQ-12)	90
Paudyal, D. (DQ-06)	122	Peterson, T.A. (BC-04)	37
Paudyal, D. (FI-09)	181	Petford-Long, A. (AB-02)	2
Paudyal, D. (FU-09)	193	Petford-Long, A. (DH-02)	115
Paul, J. (CA-05)	69	Petford-Long, A. (DQ-14)	123
Paysen, H. (AG-01)	13	Petford-Long, A. (HC-02)	230
Paysen, H. (AG-02)	13	Petit-Watlot, S. (HI-12)	247
Paysen, H. (BG-03)	47	Petit, D.C. (CT-08)	97
Pearson, J.E. (AC-09)	6	Petit, S. (FH-01)	178
Pearson, J.E. (AT-05)	28	Petrou, A. (BA-04)	34
Pearson, J.E. (AT-08)	28	Petrov, A.V. (FP-16)	184
Pearson, J.E. (GR-09)	218	Petrov, P.G. (BG-10)	48
Pecharsky, V.K. (AF-11)	12	Petrov, P.G. (CT-06)	97
Pecharsky, V.K. (CQ-09)	90	Pfau, B. (ER-09)	156
Pecharsky, V.K. (DP-09)	120	Phakphisut, W. (CE-08)	77
Pecharsky, V.K. (DQ-06)	122	Pham, M. (AC-01)	4
Pecharsky, V.K. (ET-13)	161	Pham, T. (BI-10)	53
Pecharsky, V.K. (FI-02)	180	Pham, Y.D. (AV-10)	32
Pecharsky, V.K. (FI-09)	181	Pham, Y.D. (DP-01)	119
Pecharsky, V.K. (FI-10)	181	Phan, M. (AC-01)	4
Pecharsky, V.K. (GF-09)	205	Phan, M. (CH-12)	84
Peddis, D. (AR-04)	24	Phan, M. (CI-11)	86
Pegg, I.L. (CS-08)	95	Phan, M. (CU-05)	99
Pei, J. (CP-15)	88	Phan, M. (DR-14)	125
Pei, K. (GS-12)	220	Phan, M. (DT-05)	128
Pelexhov, D.V. (CC-09)	72	Phan, M. (DU-09)	130
Pelexhov, D.V. (GR-15)	218	Phan, M. (ET-12)	161
Pellegren, J.P. (DC-03)	103	Phan, M. (FG-02)	176
Pellegren, J.P. (FB-09)	165	Phan, M. (HG-06)	241
Pellegren, J.P. (GR-07)	217	Phan, T. (CP-08)	88
Pellicciari, J. (EH-01)	146	Phase, D.M. (GG-06)	207
Penedo, M. (FB-13)	166	Phatak, C. (AB-02)	2
Peng, B. (AF-13)	12	Phatak, C. (DH-02)	115
Peng, B. (DD-08)	106	Phatak, C. (DQ-14)	123
Peng, B. (FT-05)	190	Phatak, C. (HC-02)	230
Peng, B. (HC-11)	232	Phillip, J. (CS-08)	95
Peng, B. (HE-11)	237	Philippi-Kobs, A. (ER-06)	156
Peng, D. (AI-13)	19	Phung, T. (EC-04)	135
Peng, H. (CP-16)	88	Piao, H. (AT-04)	28
Peng, H. (CR-08)	92	Piao, H. (AT-10)	29
Peng, H. (DP-13)	120	Piao, H. (BP-01)	54
Peng, H. (EP-10)	152	Piao, H. (CP-13)	88
Peng, H. (HH-04)	242	Piao, H. (DP-01)	119
Peng, L. (CU-09)	99	Piao, H. (GP-16)	215
Peng, R. (DH-03)	115	Piazza, G. (CI-10)	86
Peng, S. (EU-02)	161	Picozzi, S. (FB-07)	165
Peng, S. (FU-15)	194	Pierre, V. (BG-05)	47
Peng, Y. (CF-05)	78	Pignolet, A. (HF-11)	239
Pentcheva, R. (EG-09)	145	Pillars, J. (GI-06)	211
Pepper, R. (AT-07)	28	Pillsbury, T. (CG-10)	81
Pepper, R. (GQ-11)	216	Pinchetti, V. (GI-05)	211
Pereira, A.M. (EI-12)	150	Pinchuk, I.V. (EH-13)	148
Pereira, L.F. (EG-13)	145	Pines, D.J. (DT-12)	129
Pereira, M. (CF-11)	79	Pinsard-Gaudart, L. (FH-01)	178
Pereiro, E. (CU-04)	98	Piramanayagam, S.N. (AQ-12)	23
Pereiro, E. (DC-11)	105	Piramanayagam, S.N. (BP-05)	54
Pereiro, M. (EG-10)	145	Piramanayagam, S.N. (BQ-04)	57
Perera, D. (GP-14)	214	Piramanayagam, S.N. (DT-10)	128
Perez del Real, R. (CH-01)	82	Piriaux, L. (DS-03)	126
Perez-Landazabal, J. (HI-08)	246	Pires, A. (EI-12)	150
Perez, C. (CT-02)	96	Pirro, M. (CI-10)	86

*Best student presentation award finalist

Quan, Y. (AV-09)	32	Rana, K. (GT-08)	222
Quarterman, P. (DG-01)	112	Ranganathan, R. (GI-11)	212
Quarterman, P. (DG-02)	113	Rani, D. (GS-02)	219
Quercia, A. (AT-03)	28	Rani, J. (BV-02)	66
Querlioz, D. (CC-03)	71	Rani, J. (CP-05)	87
Querlioz, D. (FA-01)	163	Ranjbar, M. (BI-02)	51
Quessab, Y. (GB-13)	197	Ranjbar, R. (BC-13)	38
Quetel-Weben, S. (DF-03)	110	Ranjbar, R. (DE-09)	108
Quetz, A. (CQ-01)	89	Ranno, L. (BB-05)	35
Quetz, A. (CQ-02)	89	Ranot, M. (DF-09)	111
Quetz, A. (CR-01)	91	Rao, S. (BE-11)	43
Quetz, A. (CS-03)	94	Rao, S. (BE-13)	43
Quetz, A. (FI-07)	180	Rao, V.N., S. (AE-05)	9
Quezado, S. (BF-15)	46	Rao, X. (DR-16)	125
Quindeau, A. (BC-09)	38	Raposo, V. (AT-01)	27
Quindeau, A. (DB-01)	101	Raposo, V. (EC-10)	136
Quindeau, A. (EH-12)	148	Rasing, T. (DD-05)	106
Quiros, C. (CU-04)	98	Rasing, T. (ED-07)	138
Quiros, C. (DC-11)	105	Rasing, T. (FQ-14)	185
Qureshi, N. (BD-11)	41	Rasing, T. (GB-03)	195

- R -

Raabe, J. (BB-03)	35	Rastogi, P. (DU-10)	130
Raabe, J. (BB-10)	36	Rastogi, P. (DU-11)	130
Raabe, J. (BD-10)	41	Rastogi, P. (DU-12)	131
Raabe, J. (CU-03)	98	Ratcliff, W.D. (FE-01)	171
Raabe, J. (DI-06)	118	Rathi, A. (DF-06)	111
Raabe, J. (FB-08)	165	Raulet, M. (CP-12)	88
Raabe, J. (FC-02)	166	Rausch, T. (BQ-14)	58
Raabe, J. (FS-12)	189	Ravelosona, D. (AR-08)	25
Raama Varma, M. (GS-02)	219	Ravelosona, D. (DC-04)	104
Raberg, W. (HI-15)	247	Ravelosona, D. (FC-13)	168
Radisic, D. (AE-05)	9	Ravelosona, D. (HE-10)	236
Radu, E. (DU-02)	129	Rawat, R. (BI-04)	52
Radu, L.P. (AE-05)	9	Raymenants, E. (AE-05)	9
Radu, L.P. (AE-06)	10	Raymenants, E. (EC-11)	136
Radu, L.P. (AE-08)	10	Razavi, S. (AB-11)	4
Radu, L.P. (EC-11)	136	Razavi, S. (BC-05)	37
Radu, L.P. (FF-13)	175	Razavi, S. (FB-04)	164
Radu, L.P. (HE-09)	236	Razavi, S. (HB-12)	229
Radu, L.P. (HE-13)	237	Rea, C. (BQ-14)	58
Radulov, I.A. (FI-04)	180	Rea, C. (EE-04)	140
Raepsaet, C. (HC-10)	232	Reddy, K. (BH-02)	49
Raevskiy, A. (BR-11)	60	Reddy, K. (BH-12)	51
Raghavendra Reddy, V. (GH-10)	209	Reddy, V.M. (BV-14)	68
Rahman, F. (GG-06)	207	Reddy, V.R. (FE-13)	173
Raja, M. (BI-04)	52	Reddy, V.R. (HH-06)	243
Rajagiri, P. (AP-09)	21	Redjai Sani, S. (FC-10)	168
Rajani Kanth, A. (EU-12)	162	Reese, B.A. (AU-02)	30
Rajapitamahuni, A.K. (AH-06)	16	Reguera, E. (AV-14)	33
Rajasekhar, P. (CQ-15)	91	Rehm, L. (AE-13)	11
Rajput, S. (DG-07)	113	Reiber, A. (GF-15)	206
Ralph, D. (AE-11)	10	Reig-i-Plessis, D. (EH-10)	147
Ralph, D. (EB-05)	133	Reinhardt, P. (FE-09)	172
Ralph, D. (EB-08)	134	Reiss, G. (HB-07)	229
Ralph, D. (FQ-12)	185	Rementer, C.R. (AH-02)	16
Ralph, D. (GA-03)	194	Rementer, C.R. (EP-15)	152
Ralph, D.C. (BC-12)	38	Ren, L. (GC-11)	199
Ralph, D.C. (CB-08)	70	Ren, L. (GE-10)	203
Ralph, D.C. (DI-02)	117	Ren, W. (CF-10)	79
Ralph, D.C. (EB-09)	134	Ren, W. (HE-11)	237
Ralph, D.C. (ER-14)	157	Ren, W. (HF-07)	239
Ramanujan, R.V. (BF-08)	45	Ren, X. (GH-06)	209
Ramanujan, R.V. (BG-06)	47	Ren, X. (GI-10)	212
Ramanujan, R.V. (CQ-16)	91	Retterer, S. (FE-14)	173
Ramanujan, R.V. (EF-02)	141	Retterer, S. (HC-04)	231
Ramanujan, R.V. (EF-05)	142	Rettori, C. (DQ-15)	123
Ramanujan, R.V. (EI-13)	151	Reynolds, N. (EB-09)	134
Ramasse, Q.M. (CH-13)	84	Reynolds, N. (GA-03)	194
Ramasse, Q.M. (HD-03)	233	Reynolds, N. (HA-02)	227
Ramasubramanian, L. (FS-14)	190	Reyren, N. (BB-08)	35
Ramaswamy, R. (DG-04)	113	Reyren, N. (BB-11)	36
Ramirez, J. (EH-11)	148	Reyren, N. (DC-06)	104
Ramirez, J. (GF-15)	206	Reyren, N. (DG-08)	114
Ramos Silva, M. (AV-15)	33	Rezende, S.M. (BR-12)	60
Ramos, R. (DB-07)	102	Rezende, S.M. (EB-11)	134
		Rezende, S.M. (HB-05)	228

*Best student presentation award finalist

Safarov, V. (BI-06)	52	Sankaranarayanan, V. (FH-03)	178
Safonova, N. (GB-09)	196	Sano, T. (GI-13)	212
Safranski, C.J. (BP-16)	56	Santacruz Estevez, D.C. (CR-08)	92
Safranski, C.J. (CC-14)	73	Santamaria, J. (HD-04)	233
Safranski, C.J. (DB-08)	102	Santander-Syro, A.F. (AV-12)	33
Safranski, C.J. (ED-10)	139	Santhanam, S. (CI-10)	86
Sagasta, E. (DB-11)	103	Sanyal, M. (AB-05)	3
Sagasta, E. (EB-13)	135	Saotome, H. (AP-01)	20
Saglam, H. (GR-09)	218	Sapkota, B. (CR-09)	92
Sahoo, R. (HB-01)	228	Sapozhnikov, V. (EE-08)	140
Sahu, B. (AP-09)	21	Sarella, A. (HG-04)	240
Sahu, B. (BR-02)	58	Sarvezuk, P.W. (DR-10)	124
Sai, R. (CI-12)	86	Sasaki, S. (BI-03)	52
Sai, R. (EP-07)	152	Sasaki, S.S. (HB-12)	229
Saint-Martin, R. (FH-01)	178	Sasaki, S.S. (HF-08)	239
Saito, I. (AG-07)	14	Sasaki, T. (BP-10)	55
Saito, K. (FE-04)	172	Sasaki, T. (EF-01)	141
Saito, K. (GS-04)	219	Sasaki, T. (EF-10)	143
Saito, K. (GU-16)	224	Sasaki, Y. (DE-09)	108
Saito, S. (BQ-02)	56	Sasaya, T. (AU-14)	31
Saito, S. (EE-07)	140	Sasayama, T. (CU-14)	100
Saito, S. (GV-16)	227	Saslow, W. (HE-07)	236
Saito, T. (FU-01)	192	Sathe, V. (BH-08)	50
Saito, T. (FU-02)	192	Sato, H. (AE-09)	10
Saito, Y. (AE-07)	10	Sato, H. (ED-12)	139
Saito, Y. (FF-02)	174	Sato, H. (FB-05)	165
Saitoh, E. (DB-07)	102	Sato, H. (GV-16)	227
Saitoh, Y. (CS-01)	94	Sato, K. (EU-04)	161
Saitoh, Y. (EU-09)	162	Sato, M. (CI-05)	85
Sakakibara, T. (DR-13)	125	Sato, M. (EP-07)	152
Sakamaki, M. (CS-01)	94	Sato, R. (BQ-09)	57
Sakamaki, M. (EU-09)	162	Sato, R. (CE-02)	76
Sakamoto, S. (AG-07)	14	Sato, R. (CE-04)	76
Sakova, A. (ET-06)	160	Sato, S. (EU-01)	161
Sakshath, S. (DC-10)	105	Sato, S. (FA-04)	163
Sakuma, A. (GR-12)	218	Sato, T. (AF-04)	11
Sakuma, A. (GS-10)	220	Sato, T. (AR-14)	25
Sakuma, N. (EF-10)	143	Satoh, T. (GB-02)	195
Sakuraba, Y. (BE-02)	42	Satpati, B. (GF-02)	204
Salahuddin, S. (BC-06)	37	Satz, A. (HI-15)	247
Salahuddin, S. (ED-11)	139	Savary, M. (GH-07)	209
Salahuddin, S. (EP-15)	152	Savchak, O. (GI-09)	212
Salahuddin, S. (GB-10)	196	Savenko, B. (DR-14)	125
Salahuddin, S. (GB-11)	197	Sawatzki, S. (AF-06)	12
Salahuddin, S. (GR-13)	218	Sawatzky, G. (EH-09)	147
Salazar-Henao, N. (DS-07)	126	Saxena, R.N. (DH-11)	116
Salazar-Henao, N. (GS-06)	219	Saxena, R.N. (FG-10)	177
Salazar, A. (FG-12)	177	Sayan, S. (AE-05)	9
Salazar, N.O. (AR-16)	25	Scagnoli, V. (DI-06)	118
Sales, F.H. (EU-14)	162	Scalera, V. (AT-03)	28
Salman, Z. (CG-12)	81	Schäfer, S. (BE-09)	43
Salmon, L. (CU-13)	100	Schäfer, S. (DI-05)	117
Salvador, M. (AR-04)	24	Schäfer, S. (ED-06)	138
Salyuk, O. (ES-13)	159	Schäfer, S. (FC-08)	167
Samardak, A. (ET-11)	160	Schaffers, T. (ED-04)	137
Samardak, A. (FB-12)	166	Schaffers, T. (GR-11)	218
Samardak, A.S. (AT-09)	28	Schäffter, T. (AG-01)	13
Samardak, A.S. (ER-11)	156	Schauerte, B. (DS-13)	127
Samardak, A.S. (ET-11)	160	Scheid, P. (GB-08)	196
Samardak, A.S. (FB-03)	164	Scheuer, L. (CB-05)	69
Samardak, A.S. (FB-12)	166	Schiffer, P. (BH-11)	50
Samarth, N. (BC-02)	37	Schio, P. (AV-04)	32
Samarth, N. (CG-10)	81	Schlage, K. (BD-12)	41
Samarth, N. (DG-01)	112	Schlage, K. (GP-07)	213
Samarth, N. (FR-05)	186	Schlagel, D. (GI-13)	212
Samei, S. (BT-15)	64	Schliep, K. (DE-15)	109
Sampaio, J. (EC-01)	135	Schlom, D. (BV-09)	67
Sanchez Llamazares, J.L. (CS-03)	94	Schlom, D. (EB-09)	134
Sánchez Valdés, C. (CS-03)	94	Schmid, A.K. (BB-04)	35
Sánchez-Tejerina, L. (AT-01)	27	Schmidt, F. (BG-01)	47
Sánchez-Tejerina, L. (EC-10)	136	Schmidt, G. (DB-10)	102
Sandeman, K. (FI-10)	181	Schmidt, H. (AD-11)	8
Sander, D. (GC-07)	198	Schmidt, H. (ED-03)	137
Sander, D. (GI-12)	212	Schmidt, H. (FD-12)	170
Sandraskii, L.M. (GC-07)	198	Schmidt, H. (GR-07)	217
Sangregorio, C. (DU-08)	130	Schmidt, H. (GR-08)	218
Sankar, A. (BF-15)	46	Schmidt, M. (AS-15)	27

*Best student presentation award finalist

Schmidt, M. (EB-06)	133	Sepehri-Amin, H. (AF-10)	12
Schneider, C.M. (EG-08)	145	Sepulveda, A. (CD-05)	74
Schneider, C.M. (EG-09)	145	Sepulveda, A. (CI-02)	85
Schneider, J.D. (CD-05)	74	Sepulveda, A. (CR-12)	93
Schneider, M. (AE-10)	10	Serantes, D. (AG-09)	14
Schneider, M. (DD-09)	106	Serantes, D. (AR-13)	25
Schneider, M. (ER-09)	156	Serantes, D. (BG-02)	47
Schneider, T. (AF-06)	12	Serga, A.A. (BD-01)	39
Schneider, T. (BD-10)	41	Serga, A.A. (CD-10)	75
Schneider, T. (CD-04)	74	Serga, A.A. (CI-07)	85
Schoen, M. (DD-09)	106	Serga, A.A. (DB-05)	101
Scholl, A. (AH-08)	17	Sergeev, I. (BD-12)	41
Scholl, A. (DC-08)	104	Serizawa, K. (CP-03)	87
Scholl, A. (FE-14)	173	Serpico, C. (GD-04)	200
Scholl, A. (HC-04)	231	Sevestre, O. (GD-09)	201
Scholl, A. (HC-06)	231	Sha, C. (AE-02)	9
Schönfeld, M. (AF-06)	12	Sha, C. (BE-10)	43
Schöppner, C. (ED-04)	137	Sha, C. (DE-05)	108
Schott, M. (AB-10)	4	Shadman, A. (BE-05)	42
Schott, M. (BB-05)	35	Shafer, P. (BH-09)	50
Schrefl, T. (AF-05)	11	Shafer, P. (DB-09)	102
Schrefl, T. (AF-10)	12	Shafer, P. (ED-05)	138
Schrefl, T. (BF-05)	45	Shafer, P. (EH-03)	146
Schrefl, T. (BF-10)	45	Shafer, P. (GC-04)	198
Schrefl, T. (EF-11)	143	Shah, S.A. (BG-09)	48
Schroeder, C.H. (FP-14)	183	Shahbazi, K. (BB-10)	36
Schroeder, K. (CS-07)	95	Shahbazi, K. (DC-05)	104
Schroeder, K. (DP-07)	120	Shank, C. (CS-07)	95
Schubert, M. (DH-01)	115	Shao, Q. (AB-11)	4
Schuetz, G.A. (AD-04)	7	Shao, Q. (BC-05)	37
Schuetz, G.A. (AS-15)	27	Shao, Q. (GR-04)	217
Schuetz, G.A. (BD-10)	41	Shao, S. (DP-11)	120
Schuetz, G.A. (FD-03)	169	Shapaeva, T.B. (GB-03)	195
Schuller, I.K. (EH-11)	148	Shapere, A. (HA-04)	227
Schuller, I.K. (GF-15)	206	Sharaevskii, Y.P. (EP-14)	152
Schultheiss, H. (CD-11)	75	Sharma, A. (DE-08)	108
Schulz, S.E. (FS-14)	190	Sharma, G. (BH-08)	50
Schumacher, H.W. (BC-14)	39	Sharma, H. (DQ-02)	121
Schwartz, J. (AH-03)	16	Sharma, R. (EP-01)	151
Schwartz, J. (AP-06)	20	Sharma, S. (DA-05)	101
Schwartz, J. (AS-10)	27	Sharma, S.K. (CR-05)	92
Schwartz, J. (GD-06)	200	Sharma, S.K. (CT-13)	97
Schwarzacher, W. (AR-10)	25	Sharma, V. (EI-13)	151
Schwenk, J. (FE-02)	171	Sharma, V. (GT-10)	222
Scott, J.N. (FE-11)	173	Shatruck, M. (FH-08)	179
Scott, M.C. (BH-01)	49	Shaw, J. (DD-07)	106
Secchi, A. (ED-07)	138	Shaw, J. (DD-09)	106
Sechovský, V. (FG-06)	176	Shaw, J. (ED-02)	137
See, A. (DE-11)	109	Shaw, J. (ED-08)	138
Seehra, M. (CH-09)	83	Shaw, J. (FB-06)	165
Seehra, M.S. (GC-12)	199	Shaw, J. (GA-01)	194
Seet, C. (DE-11)	109	She, X. (FR-13)	187
Seidner, A. (EB-09)	134	Shen, B. (CQ-03)	89
Seifu, D. (CH-10)	84	Shen, B. (CQ-04)	89
Seifu, D. (GS-15)	220	Shen, B. (CQ-08)	90
Seki, M. (EH-08)	147	Shen, B. (CU-09)	99
Sekino, M. (AG-07)	14	Shen, B. (DP-05)	119
Sekino, M. (AG-08)	14	Shen, B. (DP-06)	119
Sekino, M. (AG-13)	15	Shen, B. (DP-10)	120
Sekora, D. (DH-01)	115	Shen, B. (DP-11)	120
Sellmyer, D.J. (CS-07)	95	Shen, B. (DP-12)	120
Sellmyer, D.J. (DF-12)	111	Shen, B. (DR-02)	123
Sellmyer, D.J. (DH-07)	116	Shen, B. (DR-03)	123
Sellmyer, D.J. (DH-08)	116	Shen, B. (DR-04)	124
Sellmyer, D.J. (DP-07)	120	Shen, B. (DS-04)	126
Sellmyer, D.J. (GS-03)	219	Shen, B. (ES-06)	158
Sellmyer, D.J. (HD-08)	234	Shen, B. (FT-03)	190
Sellmyer, D.J. (HG-04)	240	Shen, B. (FT-07)	191
Selvaraj, J. (BS-07)	61	Shen, B. (GQ-02)	215
Selvaraj, J. (DS-11)	126	Shen, B. (HH-12)	244
Selvaraj, J. (DU-12)	131	Shen, F. (DP-05)	119
Semenov, Y. (AD-12)	8	Shen, H. (BB-04)	35
Semenov, Y. (AT-15)	29	Shen, H. (CI-11)	86
Sen, S. (FE-13)	173	Shen, J. (AV-02)	32
Seo, S. (BU-13)	65	Shen, J. (AV-03)	32
Sepehri-Amin, H. (AF-05)	11	Shen, J. (BB-09)	36
Sepehri-Amin, H. (AF-09)	12	Shen, J. (FQ-05)	184

*Best student presentation award finalist

Shen, K. (EB-09)	134	Shoji, T. (EF-11)	143
Shen, L. (CG-11)	81	Shoji, T. (GU-16)	224
Shen, X. (CR-10)	93	Shoji, T. (HH-05)	243
Shen, X. (CS-09)	95	Shore, D. (BG-05)	47
Shen, Y. (GH-13)	210	Shoup, J.E. (ED-05)	138
Shen, Y. (GU-03)	223	Shoup, J.E. (FH-09)	179
Sheng, P. (GS-12)	220	Shrivastava, N. (CR-05)	92
Sheppard, C. (CS-10)	95	Shrivastava, N. (CT-13)	97
Sherpa, P. (DC-12)	105	Shukla, D.K. (GF-13)	206
Shevyratanov, S. (HD-10)	234	Shukla, D.K. (GG-06)	207
Shi, D. (GI-03)	211	Shull, R. (FI-12)	181
Shi, D. (HC-01)	230	Shull, R. (FI-13)	181
Shi, G. (FB-02)	164	Shull, R. (GI-06)	211
Shi, J. (AC-12)	6	Shum, D. (AQ-04)	22
Shi, J. (AS-12)	27	Shum, D. (HE-12)	237
Shi, J. (BC-05)	37	Si, P. (AR-05)	24
Shi, J. (BR-09)	59	Si, P. (BF-12)	46
Shi, J. (DR-16)	125	Si, P. (CS-11)	95
Shi, J. (EU-03)	161	Si, P. (DF-04)	110
Shi, J. (FI-11)	181	Sichelschmidt, J. (FH-07)	179
Shi, J. (HE-14)	237	Siddiqui, S.A. (BC-02)	37
Shi, K. (GI-08)	212	Siddiqui, S.A. (EC-12)	136
Shi, S. (AE-11)	10	Siddiqui, S.A. (FC-07)	167
Shi, S. (DG-04)	113	Siddique, A. (BP-13)	55
Shi, S. (FQ-12)	185	Sidis, Y. (FH-01)	178
Shi, W. (EP-05)	151	Silber, R. (EI-08)	150
Shi, X. (AI-04)	18	Silber, R. (HD-07)	234
Shi, X. (FU-06)	193	Silhanek, A.V. (FR-11)	187
Shi, X. (HI-14)	247	Silva, B.G. (DD-13)	107
Shi, Y. (GE-04)	202	Silva, D.J. (FI-01)	179
Shi, Z. (AC-12)	6	Silva, E.F. (EB-11)	134
Shi, Z. (BR-09)	59	Silva, M.D. (HI-05)	245
Shibata, H. (GB-04)	195	Silva, T. (DD-09)	106
Shick, A.B. (EG-03)	144	Silva, T. (ED-02)	137
Shield, J. (DF-12)	111	Silva, T. (ED-08)	138
Shikoh, E. (FQ-02)	184	Silva, T. (FB-06)	165
Shim, H. (AQ-05)	22	Silva, T. (GA-01)	194
Shim, J. (AT-04)	28	Silva, T. (GB-06)	196
Shima, T. (AS-04)	26	Silva, T. (HE-01)	235
Shima, T. (CF-04)	78	Silverio, V. (AG-11)	15
Shima, T. (EU-04)	161	Sim, J. (CT-07)	97
Shima, T. (EU-07)	162	Sima, W. (AI-13)	19
Shimada, T. (BI-03)	52	Simak, S. (EG-12)	145
Shimatsu, T. (CE-01)	76	Simhachalam, N. (AH-13)	17
Shimatsu, T. (ED-09)	138	Simizu, S. (AI-05)	18
Shimazaki, M. (DC-02)	103	Simizu, S. (AI-07)	19
Shimizu, D. (GU-07)	223	Simizu, S. (AI-08)	19
Shimizu, M. (AE-07)	10	Simizu, S. (GE-06)	203
Shimizu, M. (FF-02)	174	Simões e Silva, W. (AV-12)	33
Shimizu, T. (GC-01)	197	Simonetto, E. (CU-08)	99
Shimomura, N. (AE-07)	10	Singamaneni, S. (BV-01)	66
Shimomura, N. (DE-04)	108	Singamaneni, S. (DR-07)	124
Shimomura, N. (FF-02)	174	Singamaneni, S. (HF-04)	238
Shin, J. (GH-13)	210	Singh, A. (AB-05)	3
Shin, S. (BU-08)	65	Singh, A.V. (GR-06)	217
Shinde, K.P. (AR-05)	24	Singh, B.B. (CS-04)	94
Shinde, K.P. (DF-09)	111	Singh, H. (AC-11)	6
Shinde, U.L. (BI-12)	53	Singh, H. (FD-06)	170
Shinjo, T. (DB-13)	103	Singh, J. (CR-14)	93
Shinjo, T. (EB-04)	133	Singh, J. (CR-16)	93
Shinohara, K. (FP-10)	183	Singh, L.N. (BI-12)	53
Shiota, Y. (EQ-12)	154	Singh, M. (CT-11)	97
Shirai, M. (AV-07)	32	Singh, N. (GT-15)	222
Shirai, M. (DF-07)	111	Singh, R. (BV-13)	67
Shirai, M. (EG-06)	144	Singh, R. (CT-05)	96
Shiraishi, M. (DB-13)	103	Singh, S. (BA-05)	34
Shiraishi, M. (EB-04)	133	Singh, S. (CG-03)	80
Shiraishi, M. (FQ-04)	184	Singh, S. (CG-05)	80
Shiratsuchi, Y. (BV-07)	67	Singh, S. (CG-07)	81
Shiratsuchi, Y. (HF-02)	238	Singh, S. (CH-09)	83
Shirotori, S. (AE-07)	10	Singh, S. (EI-10)	150
Shirotori, S. (FF-02)	174	Singha, A. (BI-05)	52
Shiu, D. (BP-07)	55	Singhal, R. (AR-15)	25
Shivashankar, S.A. (CI-12)	86	Singleton, E.W. (FP-04)	182
Shlyk, L. (GG-12)	208	Sinha, J. (AS-08)	26
Shoji, T. (BF-05)	45	Sinha, J. (ER-08)	156
Shoji, T. (EF-10)	143	Sinha, J. (GR-10)	218

*Best student presentation award finalist

Sinko, M.R. (GF-04)	204	Soderstrom, J. (ED-08)	138
Sinova, J. (AB-04)	2	Sofer, Z. (HG-03)	240
Sinova, J. (BC-15)	39	Sohn, H. (AH-05)	16
Sinova, J. (DB-07)	102	Sohn, H. (AH-08)	17
Sinova, J. (FA-05)	164	Sokalski, V.M. (DC-03)	103
Sinova, J. (HB-08)	229	Sokalski, V.M. (FB-09)	165
Siracusano, G. (EA-04)	132	Sokalski, V.M. (FS-03)	188
Sirena, M. (BV-03)	66	Sokalski, V.M. (GR-07)	217
Siritaratiwat, A. (BQ-01)	56	Sokolov, A. (BV-10)	67
Sisodia, N. (AB-07)*	3	Sokolov, A.S. (GH-11)	210
Sisodia, N. (EP-01)	151	Sokolov, A.S. (GT-03)	221
Sisodia, N. (EU-15)	163	Sokolov, A.S. (HG-11)	241
Sitbon, G. (AR-10)	25	Sokolov, N.S. (GQ-15)	216
Sitte, M. (FA-05)	164	Solis, D.A. (CG-02)	80
Siu, Z. (EQ-03)	153	Solis, D.A. (HF-06)	238
Siu, Z. (FP-07)	183	Soma, R. (CS-01)	94
Siu, Z. (FP-08)	183	Soma, R. (EU-09)	162
Sivaih, B. (DF-06)	111	Sommer, R.L. (BD-03)	39
Sivis, M. (DI-05)	117	Sommer, R.L. (DD-13)	107
Sixdenier, F. (AU-05)	30	Sommer, R.L. (EQ-05)	153
Sixdenier, F. (CP-12)	88	Sondezi, B.M. (DQ-10)	122
Skinner, S.F. (AV-13)	33	Sondezi, B.M. (HG-09)	241
Sklenar, J. (AD-05)	7	Song, C. (FB-02)	164
Sklenar, J. (BH-11)	50	Song, C. (HB-14)	230
Sklenar, J. (GR-09)	218	Song, F. (EQ-13)	154
Skokov, K.P. (BF-14)	46	Song, G. (BI-02)	51
Skokov, K.P. (FI-04)	180	Song, H. (AQ-05)	22
Skomski, R. (CS-07)	95	Song, H. (GT-04)	221
Skomski, R. (DF-12)	111	Song, J. (DT-02)	127
Skomski, R. (DH-01)	115	Song, J. (DT-04)	128
Skomski, R. (DH-07)	116	Song, J. (GU-04)	223
Skomski, R. (DH-08)	116	Song, K. (BB-03)	35
Skomski, R. (DP-07)	120	Song, L. (FT-01)	190
Skomski, R. (EH-14)	148	Song, L. (FU-06)	193
Skomski, R. (FP-09)	183	Song, M. (CQ-13)	91
Skomski, R. (GS-03)	219	Song, M. (CT-02)	96
Skomski, R. (GT-14)	222	Song, N. (AP-03)	20
Skomski, R. (HD-08)	234	Song, N. (AR-03)	24
Skomski, R. (HF-10)	239	Song, T. (AF-12)	12
Skomski, R. (HG-04)	240	Song, Y. (CG-09)	81
Skoropata, E. (DH-10)	116	Sonobe, Y. (BE-06)	42
Skowronski, W. (EB-06)	133	Sonobe, Y. (FR-09)	187
Skowronski, W. (FF-11)	175	Sonoda, K. (DQ-04)	122
Slastikov, V. (FC-03)	167	Sonoda, K. (DQ-12)	122
Slavin, A.N. (AE-04)	9	Sorée, B. (AE-06)	10
Slavin, A.N. (BD-06)	40	Sorée, B. (HE-13)	237
Slavin, A.N. (BD-10)	41	Sorescu, M. (FI-03)	180
Slavin, A.N. (CC-02)	71	Sorrentino, A. (CU-04)	98
Slavin, A.N. (CD-10)	75	Sorrentino, A. (DC-11)	105
Slavin, A.N. (CI-04)	85	Sosnowski, K. (BH-03)	49
Slavin, A.N. (EA-01)	132	Soumah, L. (EI-04)	149
Slavin, A.N. (EA-05)	132	Souriau, L. (AE-05)	9
Slavin, A.N. (FD-10)	170	Souriau, L. (BE-11)	43
Slavin, A.N. (FS-09)	189	Sousa, J.B. (EI-12)	150
Slavin, A.N. (HB-09)	229	Sousa, R.C. (AE-01)	9
Slawinska, J. (FB-07)	165	Sousa, R.C. (AS-07)	26
Slezak, M. (GE-11)	203	Sousa, R.C. (BE-12)	43
Slezak, T. (GE-11)	203	Sousa, R.C. (BE-14)	44
Sloetjes, S. (BH-09)	50	Sousa, R.C. (BE-15)	44
Sloetjes, S. (FE-10)	172	Sousa, R.C. (CC-07)	72
Slowing, I.I. (CF-13)	79	Sousa, R.C. (FP-03)	182
Sluka, V. (AE-13)	11	Souza, J.C. (DQ-15)	123
Sluka, V. (BD-10)	41	Speliotis, T. (EQ-06)	153
Sluka, V. (CC-13)	73	Spencer, C.S. (AB-04)	2
Smadici, S. (GB-12)	197	Spinu, L. (AS-16)	27
Smetana, V. (GF-09)	205	Spinu, L. (DC-12)	105
Smith, A. (CC-14)	73	Spoddig, D. (ED-04)	137
Smith, A. (ED-10)	139	Spoddig, D. (GR-11)	218
Smith, A.R. (EQ-11)	154	Spurgeon, S.R. (GC-13)	199
Snow, R.J. (EG-05)	144	Srihari, V. (HH-06)	243
So, J. (AS-13)	27	Srikanth, H. (AC-01)	4
So, Y. (BU-05)	65	Srikanth, H. (CH-12)	84
Soares, J.M. (AR-16)	25	Srikanth, H. (CI-11)	86
Sobolev, N.A. (BE-12)	43	Srikanth, H. (DR-14)	125
Sobolev, N.A. (FP-03)	182	Srikanth, H. (DU-09)	130
Soderstrom, J. (ED-01)	137	Srikanth, H. (ET-12)	161
Soderstrom, J. (ED-02)	137	Srikanth, H. (FG-02)	176

*Best student presentation award finalist

Srikanth, H. (HG-06)	241	Stobiecki, T. (HI-07)	246
Srinath, S. (BI-04)	52	Stoian, G. (AQ-01).	22
Srinivas, V. (AQ-15)	23	Stoian, G. (CS-02)	94
Srinivasan, G. (BV-16).	68	Stoian, G. (FU-14).	194
Srinivasan, K. (BQ-11)	57	Stoian, S. (EG-11)	145
Srinivasan, K. (EI-03)	149	Stokes, S. (EE-08)	140
Srivastava, A. (BT-07)	63	Stoll, H. (AD-04)	7
Srivastava, A. (CR-14).	93	Stoll, J.A. (AG-03).	13
Srivastava, A. (CR-16).	93	Stolt, M. (AB-03).	2
Srivastava, A. (CS-14)	95	Stone, K.H. (EH-03)	146
Srivastava, A. (GR-06).	217	Stonkevitch, E. (HG-01)	240
Srivastava, A.K. (GT-15)	222	Stopfel, H. (BC-11)	38
Srivastava, P. (CH-02)	82	Stopfel, H. (HC-03)	231
Srivastava, T. (AB-10)	4	Stopfel, H. (HC-07)	231
Stadler, B. (BG-05)	47	Strepfer, J. (GF-13)	206
Stadler, B. (BH-02)	49	Streubel, R. (HC-06)	231
Stadler, B. (BH-12)	51	Strobel, S. (GG-12)	208
Stadler, B. (EI-02)	149	Strocov, V.N. (CG-12)	81
Stadler, B. (EI-03)	149	Strohm, C. (BD-12)	41
Stadler, S. (CQ-01).	89	Stroud, J. (AG-03)	13
Stadler, S. (CQ-02).	89	Strydom, A.M. (DQ-10).	122
Stadler, S. (CR-01).	91	Strydom, A.M. (HG-09).	241
Stadler, S. (CS-03).	94	Stuckler, T. (ER-05)	155
Stadler, S. (FI-07).	180	Stückler, T. (GP-09)	214
Stadtmueller, B. (GB-09)	196	Stupic, K. (AG-03).	13
Stahn, J. (HG-05)	240	Stupic, K. (CR-02).	91
Stamenov, P.S. (FB-04)	164	Sturm, S. (FU-16)	194
Stamenov, P.S. (HH-14).	244	Su, C. (CT-09)	97
Stamm, C. (CB-09)	70	Su, D. (DT-03)	127
Stamm, C. (FB-08).	165	Su, W. (HF-07).	239
Stamps, R. (CD-01)	73	Su, Z. (GT-11)	222
Stamps, R. (EI-09)	150	Subrahmanyam, A. (GH-08)	209
Stamps, R. (GG-01)	206	Sudoh, I. (FE-05)	172
Stamps, R. (GG-02)	206	Suergers, C. (GG-05)	207
Stamps, R. (GG-09)	207	Suess, D. (BB-12)	36
Stan, C. (AH-08)	17	Suess, D. (EE-10).	141
Stan, M. (FR-13)	187	Suess, D. (GQ-05)	215
Stancu, A. (DC-07)	104	Suess, D. (GQ-12)	216
Stancu, A. (DU-06)	130	Suess, D. (GQ-13)	216
Staruch, M. (AH-14)	17	Suess, D. (HI-15)	247
Staruch, M. (GI-06)	211	Suga, S. (EG-08)	145
Stashkevich, A. (DC-04)	104	Sugihara, A. (BE-03)	42
Stashkevich, A. (GP-13)	214	Sugihara, A. (BE-07)	42
Staub, U. (AA-05)	2	Sugihara, A. (DE-03)	108
Stebliy, M.E. (EC-02)	135	Sugimoto, K. (EF-09)	143
Stebliy, M.E. (ER-11).	156	Sugimoto, S. (BP-14).	56
Stebliy, M.E. (FB-03).	164	Sugimoto, T. (GE-03).	202
Stebliy, M.E. (FB-12).	166	Sugiyama, H. (AE-07)	10
Steenjtes, S. (DS-13)	127	Sugiyama, H. (FF-02)	174
Stefaniuk, R. (ED-02)	137	Sullivan, C.R. (AU-02)	30
Stefanuik, R. (ED-01)	137	Sullivan, S. (AC-12)	6
Stefanuik, R. (ED-08)	138	Sulymenko, O. (HB-09).	229
Steil, D. (DI-05)	117	Sumida, C. (DT-06)	128
Stein, A. (HC-01)	230	Sumitani, K. (FT-02)	190
Stein, A. (HC-03)	231	Sun, C. (DE-15)	109
Stein, A. (HC-07)	231	Sun, D. (FG-09)	177
Stein, C.R. (AR-07)	24	Sun, F. (BH-01)	49
Steinhardt, R. (BV-09)	67	Sun, F. (GT-12)	222
Steinhoff, U. (AG-01)	13	Sun, H. (CP-13)	88
Steinke, N. (HC-05)	231	Sun, J. (BE-08)	43
Stejskal, O. (EI-08)	150	Sun, J. (CC-08)	72
Stejskal, O. (HD-07)	234	Sun, J. (CI-11)	86
Stelmashenko, N. (GF-07)	205	Sun, J. (CQ-04)	89
Stepanov, P. (AG-05)	14	Sun, J. (CU-05)	99
Stepanov, P. (CR-13)	93	Sun, J. (CU-09)	99
Stephen, G.M. (CF-10)	79	Sun, J. (DP-05).	119
Stephen, G.M. (ES-04).	158	Sun, J. (DP-10).	120
Stephen, G.M. (GF-02)	204	Sun, J. (DP-12).	120
Steren, L.B. (BV-03)	66	Sun, J. (DR-02)	123
Stiehl, G.M. (ER-14)	157	Sun, J. (DR-03)	123
Stiehl, G.M. (GA-03).	194	Sun, J. (DR-04)	124
Stiehl, M. (GB-09)	196	Sun, J. (ES-06)	158
Stiles, M. (BC-15)	39	Sun, J. (ES-08)	158
Stiles, M. (GA-02)	194	Sun, J. (FT-03)	190
Stobiecki, F. (EB-06)	133	Sun, J. (GQ-02)	215
Stobiecki, T. (EB-06)	133	Sun, K. (GT-03)	221
Stobiecki, T. (FF-11)	175	Sun, K. (GT-11)	222

*Best student presentation award finalist

Tan, W. (FQ-15)	186	Thakur, A. (GT-08)	222
Tan, X. (BF-08)	45	Thakur, P. (GT-08)	222
Tan, X. (EF-02)	141	Tham, K. (BQ-02)	56
Tan, X. (EF-05)	142	Thamizhavel, A. (FG-13)	177
Tan, Y. (BU-11)	65	Thanh, T. (AV-10)	32
Tanahashi, N. (BV-08)	67	Thanh, T. (DP-01)	119
Tanaka, K. (FF-10)	175	Theh, W. (DS-11)	126
Tanaka, M. (DC-02)	103	Theh, W. (DU-12)	131
Tanaka, M. (EG-04)	144	Theis, W. (BH-01)	49
Tanaka, M. (EH-08)	147	Thiabgoh, O. (CI-11)	86
Tanaka, T. (AP-01)	20	Thiabgoh, O. (CU-05)	99
Tanaka, T. (BQ-10)	57	Thiabgoh, O. (DT-05)	128
Tanaka, Y. (AF-04)	11	Thirumurugan, A. (FH-07)	179
Tanaka, Y. (DE-10)	109	Thomas, A. (CD-11)	75
Tanaka, Y. (HH-01)	242	Thompson, C.J. (EH-10)	147
Tang, A. (EH-01)	146	Thompson, G. (HH-10)	243
Tang, C. (HE-14)	237	Thomson, T. (GC-03)	198
Tang, H. (AG-06)	14	Thonig, D. (DD-09)	106
Tang, H. (DA-02)	100	Thonig, D. (EG-10)	145
Tang, H. (DI-03)	117	Thul, A. (DS-13)	127
Tang, H. (HC-09)	232	Tian, G. (GU-12)	224
Tang, M. (FT-04)	190	Tian, H. (GF-03)	204
Tang, M. (FT-08)	191	Tian, N. (BR-10)	59
Tang, P. (EQ-09)	154	Tian, N. (GS-11)	220
Tang, R. (HF-12)	239	Tiberto, P. (ES-01)	157
Tang, W. (DF-13)	112	Tiberto, P. (ET-01)	159
Tang, W. (DU-01)	129	Tibu, M. (DU-02)	129
Tang, W. (FT-15)	192	Tibu, M. (HH-09)	243
Tang, W. (GH-05)	209	Tien, M.V. (AV-10)	32
Tang, W. (GT-09)	222	Tien, M.V. (DP-01)	119
Tang, W. (GT-13)	222	Tiercelin, N. (HI-12)	247
Tang, X. (AF-07)	12	Tigre-Lazo, J. (BI-13)	53
Tang, X. (AF-09)	12	Timopheev, A. (BE-12)	43
Tang, X. (AF-12)	12	Timopheev, A. (FP-03)	182
Tang, X. (BE-09)	43	Timopheev, A. (FQ-09)	185
Tang, X. (GU-14)	224	Timoshkov, I. (ET-06)	160
Tang, Y. (DU-11)	130	Timoshkov, V. (ET-06)	160
Tang, Y.W. (BS-11)	62	Titov, M. (HB-10)	229
Taniguchi, T. (ER-07)	156	Tiwari, A. (AE-07)	10
Taniguchi, T. (FR-03)	186	Tiwari, A. (FF-02)	174
Taniyama, T. (BV-04)	66	Tiwari, D. (EP-01)	151
Taniyama, T. (BV-05)	67	Tkac, V. (FG-06)	176
Tao, B. (FP-05)	182	To, D. (BI-06)	52
Tao, L. (AH-06)	16	Toh, A. (GS-07)	220
Tao, L. (FP-11)	183	Tokunaga, Y. (HA-02)	227
Tao, R. (AG-06)	14	Tokura, Y. (HA-02)	227
Tapping, R.C. (FQ-12)	185	Tolbert, S. (BH-07)	50
Tarasenko, R. (FG-06)	176	Tolbert, S. (BR-04)	59
Tartakovskaya, E. (BH-02)	49	Tolbert, S. (HB-12)	229
Taskaev, S.V. (BF-14)	46	Tolbert, S. (HF-08)	239
Tatara, G. (HB-11)	229	Tolley, R.D. (BB-02)	34
Tatetsu, Y. (AF-08)	12	Tomasello, R. (AB-06)	3
Taufour, V. (DF-15)	112	Tomasello, R. (AE-03)	9
Taufour, V. (FU-07)	193	Tomasello, R. (EA-04)	132
Tawhid-Al-Islam, K.M. (AG-06)	14	Tomita, H. (DE-10)	109
Tchoula Tchokonte, M.B. (DQ-10)	122	Tomy, C.V. (BV-02)	66
te Velthuis, S. (GD-07)	201	Tomy, C.V. (CP-05)	87
Teixeira, B. (BE-12)	43	Tong, B. (DT-15)	129
Teixeira, B. (FP-03)	182	Torija, M.A. (DE-02)	107
Teki, Y. (FQ-02)	184	Torosyan, G. (CB-05)	69
Temple, R.C. (EC-09)	136	Torres, D. (ES-14)	159
Temple, R.C. (FG-05)	176	Torres, M.M. (AR-16)	25
Templeton, T.L. (GQ-06)	215	Tosun, O. (DH-07)	116
Temst, K. (FF-13)	175	Tourbot, R. (HC-10)	232
Teo, K. (DG-04)	113	Toyoki, K. (AF-14)	13
Teo, K. (GC-11)	199	Toyoki, K. (EF-09)	143
Teo, K. (GE-10)	203	Tra, V. (DI-07)	118
ter Haar, L.W. (AV-13)	33	Trahms, L. (AG-01)	13
Terada, H. (EG-04)	144	Trahms, L. (AG-02)	13
Terada, N. (DQ-03)	121	Trahms, L. (BG-03)	47
Terada, N. (DQ-12)	122	Tran, Q. (CU-13)	100
Teramoto, H. (EQ-04)	153	Trappen, R. (DI-07)	118
Terasaki, I. (DR-12)	124	Trappen, R. (GC-12)	199
Terasaki, I. (DR-15)	125	Trappen, R. (GV-12)	226
Terki, F. (CU-13)	100	Traynor, N. (EH-02)	146
Tezuka, N. (BP-14)	56	Tremelling, D. (GT-02)	221
		Tretiakov, O. (EC-02)	135

*Best student presentation award finalist

van der Laan, G. (GF-11)	205	Vila, L. (BE-15)	44
van der Laan, G. (HD-09)	234	Vila, L. (CC-07)	72
van der Zant, H. (HI-01)	245	Vila, L. (DC-09)	104
van Dijken, S. (BD-04)	40	Vila, L. (DG-08)	114
Van Houdt, J. (BE-11)	43	Vila, L. (FR-15)	188
van Lierop, J. (DH-10)	116	Vilela-Leao, L. (HB-05)	228
van Loo, A. (BD-09)	40	Vinai, G. (FB-07)	165
van Loo, A. (CD-09)	75	Vincent, A. (FA-01)	163
van Schilfgaarde, M. (HE-06)	236	Vishwakarma, A.K. (BT-07)	63
Varga, L.K. (HD-10)	234	Visnovsky, S. (DT-08)	128
Varga, R. (HD-10)	234	Visscher, P. (DE-06)	108
Vargas, G. (HI-08)	246	Visscher, P.B. (DS-02)	125
Vargas, P. (ET-10)	160	Vittoria, C. (GF-11)	205
Varma, G.D. (CS-14)	95	Vlad, S. (BU-02)	64
Varma, G.D. (GF-06)	205	Vleugels, R. (EI-05)	149
Varma, V.B. (BG-06)	47	Vobornik, I. (FB-07)	165
Varotto, S. (FB-07)	165	Vodenicarevic, D. (CC-03)	71
Varvaro, G. (AR-04)	24	Vodenicarevic, D. (FA-01)	163
Vasili, H. (GH-10)	209	Vogel, E.E. (CH-04)	83
Vasyuchka, V.I. (DB-05)	101	Vogel, J. (BB-05)	35
Vaysset, A. (AE-05)	9	Vogel, J. (CG-14)	82
Vaysset, A. (AE-06)	10	Vogel, J. (FB-10)	165
Vaysset, A. (AE-08)	10	Vogel, J. (FC-04)	167
Vaysset, A. (EC-11)	136	Vogel, J. (FC-05)	167
Vaysset, A. (HE-13)	237	Vogel, M. (FC-01)	166
Vázquez, M. (BH-04)	49	Vogel, M. (FR-16)	188
Vazquez, M. (CH-01)	82	Vogler, C. (BB-12)	36
Veeturi, S. (CP-14)	88	Vogler, C. (EE-10)	141
Vega, V. (BH-04)	49	Vogler, C. (GQ-12)	216
Vega, Y. (AS-02)	26	Vollaire, C. (AU-05)	30
Veis, M. (EH-12)	148	Volvach, I. (GD-10)	201
Veis, M. (EI-01)	149	Volvach, I. (GD-13)	201
Veis, M. (EI-08)	150	Vopson, M. (AH-12)	17
Veis, M. (HD-07)	234	Voto, M. (DC-04)	104
Vekilova, O. (BF-13)	46	Voto, M. (FC-06)	167
Vekilova, O. (DF-10)	111	Voto, M. (FC-13)	168
Velásquez-Salazar, A. (DS-07)	126	Voyles, P. (DE-15)	109
Velásquez-Salazar, A. (GS-06)	219	Voznyuk, V. (BE-09)	43
Velásquez, A.A. (DS-05)	126	Voznyuk, V. (BE-10)	43
Velez, M. (CU-04)	98	Vu, B. (DT-11)	128
Velez, M. (DC-11)	105	Vullum, P. (CU-06)	99
Velez, S. (CB-10)	70	Vyazovskaya, A.Y. (DG-09)	114
Velten, S. (HC-06)	231	Vysochanskii, Y. (FG-12)	177
Vemulkar, T. (CT-08)	97	Vyzulin, S. (CR-01)	91
Venkat, G. (BD-07)	40		
Venkat, G. (BD-13)	41		
Venkataramani, N. (AP-09)	21		
Venkataramani, N. (BR-02)	58		
Venkateswarlu, D. (BD-07)	40		
Venugopal, V. (EE-08)	140		
Venugopal, V. (EP-06)	151		
Verba, R.V. (AE-04)	9		
Verba, R.V. (AE-10)	10		
Verba, R.V. (BD-06)	40		
Verba, R.V. (FD-10)	170		
Verba, R.V. (HC-13)	232		
Verbiest, T. (EI-05)	149		
Vergnaud, C. (DG-08)	114		
Vergniory, M.G. (DG-09)	114		
Verma, H. (CH-10)	84		
Vermeulen, B.F. (FF-13)	175		
Vernier, N. (AR-08)	25		
Vetcher, A. (ET-06)	160		
Victoria, R. (FP-05)	182		
Victoria, R.H. (BQ-14)	58		
Victoria, R.H. (EE-03)	140		
Victoria, R.H. (EE-04)	140		
Victoria, R.H. (EE-11)	141		
Viefhaus, J. (ER-06)	156		
Viefhaus, J. (ER-09)	156		
Viehland, D. (BU-15)	66		
Viehland, D. (BV-16)	68		
Vieira, J. (CF-11)	79		
Vignale, G. (FR-06)	187		
Vigo Cotrina, H. (FC-09)	167		
Viguerras-Zuñiga, M.O. (BD-11)	41		
Vila, L. (AR-08)	25		

- W -

Wado, H. (CI-05)	85
Waeckerlé, T. (GH-07)	209
Wagner, J. (ER-06)	156
Waintal, X. (CG-02)	80
Waintal, X. (HF-06)	238
Wakatake, Y. (CI-06)	85
Wallis, T.M. (DI-03)	117
Walter, J. (EH-04)	146
Walton, A. (EF-04)	142
Wan, C. (ET-08)	160
Wan, C. (FP-05)	182
Wan, C. (FR-01)	186
Wan, C. (FR-02)	186
Wan, C. (FS-01)	188
Wan, D. (AE-05)	9
Wan, D. (EC-11)	136
Wan, L. (BT-02)	62
Wan, L. (DE-05)	108
Wang, B. (AU-11)	30
Wang, B. (BT-02)	62
Wang, B. (BV-06)	67
Wang, B. (DH-05)	115
Wang, B. (DT-07)	128
Wang, B. (DT-09)	128
Wang, B. (FG-09)	177
Wang, B. (GS-12)	220
Wang, C. (BR-08)	59
Wang, C. (CI-13)	86
Wang, C. (ER-10)	156
Wang, C. (EU-13)	162

*Best student presentation award finalist

Wang, C. (FD-02)	169	Wang, L. (EQ-13)	154
Wang, C. (FQ-11)	185	Wang, L. (GI-08)	212
Wang, C. (GG-05)	207	Wang, M. (DH-03)	115
Wang, C. (GI-08)	212	Wang, Q. (AE-10)	10
Wang, C. (GT-01)	221	Wang, Q. (CD-05)	74
Wang, C. (GV-15)	226	Wang, Q. (CI-02)	85
Wang, C. (HG-04)	240	Wang, Q. (CQ-11)	90
Wang, D. (CG-15)	82	Wang, Q. (ES-08)	158
Wang, D. (EU-02)	161	Wang, Q. (FU-11)	193
Wang, F. (AQ-10)	23	Wang, Q. (GD-01)	200
Wang, F. (EP-09)	152	Wang, S. (AP-16)	21
Wang, F.Z. (HE-05)	235	Wang, S. (BE-10)	43
Wang, G. (DP-14)	121	Wang, S. (BR-01)	58
Wang, G. (FU-08)	193	Wang, S. (BS-01)	60
Wang, G. (GU-09)	224	Wang, S. (BS-05)	61
Wang, H. (AF-12)	12	Wang, S. (CC-11)	72
Wang, H. (AI-06)	18	Wang, S. (CQ-03)	89
Wang, H. (AI-11)	19	Wang, S. (DD-03)	106
Wang, H. (AU-10)	30	Wang, S. (DP-11)	120
Wang, H. (BQ-12)	58	Wang, S. (DU-05)	130
Wang, H. (BQ-13)	58	Wang, S. (EU-02)	161
Wang, H. (BS-04)	61	Wang, S. (FU-15)	194
Wang, H. (BS-06)	61	Wang, S. (GB-03)	195
Wang, H. (CG-10)	81	Wang, S. (GD-03)	200
Wang, H. (CP-16)	88	Wang, T. (CB-08)	70
Wang, H. (CR-08)	92	Wang, T. (GA-01)	194
Wang, H. (DP-13)	120	Wang, W. (AP-03)	20
Wang, H. (EH-04)	146	Wang, W. (BI-01)	51
Wang, H. (EP-10)	152	Wang, W. (CB-12)	70
Wang, H. (HH-04)	242	Wang, W. (DE-12)	109
Wang, J. (AQ-03)	22	Wang, W. (DS-10)	126
Wang, J. (AR-12)	25	Wang, W. (FD-08)	170
Wang, J. (AU-04)	30	Wang, W. (FF-14)	175
Wang, J. (AV-02)	32	Wang, W. (FI-05)	180
Wang, J. (BP-02)	54	Wang, X. (AI-04)	18
Wang, J. (BP-08)	55	Wang, X. (AP-05)	20
Wang, J. (CP-11)	88	Wang, X. (AP-07)	20
Wang, J. (CQ-04)	89	Wang, X. (AV-06)	32
Wang, J. (DD-01)	105	Wang, X. (BR-05)	59
Wang, J. (DE-15)	109	Wang, X. (DB-08)	102
Wang, J. (DG-01)	112	Wang, X. (DD-01)	105
Wang, J. (DG-02)	113	Wang, X. (DD-08)	106
Wang, J. (DP-05)	119	Wang, X. (DE-01)	107
Wang, J. (DP-12)	120	Wang, X. (EB-08)	134
Wang, J. (DR-03)	123	Wang, X. (EP-09)	152
Wang, J. (DR-04)	124	Wang, X. (EP-11)	152
Wang, J. (DT-03)	127	Wang, X. (EP-12)	152
Wang, J. (DU-13)	131	Wang, X. (EP-13)	152
Wang, J. (EF-08)	142	Wang, X. (FB-01)	164
Wang, J. (ES-03)	157	Wang, X. (FP-05)	182
Wang, J. (ES-06)	158	Wang, X. (FU-08)	193
Wang, J. (ES-11)	158	Wang, X. (GD-07)	201
Wang, J. (ET-09)	160	Wang, X. (HH-07)	243
Wang, J. (FF-14)	175	Wang, Y. (AQ-02)	22
Wang, J. (FR-05)	186	Wang, Y. (BF-03)	44
Wang, J. (HG-11)	241	Wang, Y. (BI-01)	51
Wang, K. (BQ-03)	57	Wang, Y. (BP-08)	55
Wang, K. (FF-09)	175	Wang, Y. (CF-07)	78
Wang, K. (GF-03)	204	Wang, Y. (DG-04)	113
Wang, K. (GS-11)	220	Wang, Y. (DP-13)	120
Wang, K.L. (AB-11)	4	Wang, Y. (DS-10)	126
Wang, K.L. (AD-01)	7	Wang, Y. (GU-01)	223
Wang, K.L. (BC-05)	37	Wang, Z. (AQ-10)	23
Wang, K.L. (BP-10)	55	Wang, Z. (AQ-11)	23
Wang, K.L. (BP-11)	55	Wang, Z. (BB-09)	36
Wang, K.L. (BP-12)	55	Wang, Z. (CP-15)	88
Wang, K.L. (BP-16)	56	Wang, Z. (EE-04)	140
Wang, K.L. (EC-03)	135	Wang, Z. (EP-05)	151
Wang, K.L. (EQ-16)	155	Wang, Z. (GH-04)	209
Wang, K.L. (FB-04)	164	Wang, Z. (HI-06)	246
Wang, K.L. (FP-06)	182	Wang, Z.P. (BG-06)	47
Wang, K.L. (GD-01)	200	Ward, T.Z. (HB-15)	230
Wang, K.L. (GR-04)	217	Warisarn, C. (CE-09)	77
Wang, K.L. (HB-12)	229	Watanabe, N. (BE-07)	42
Wang, L. (BR-13)	60	Watanabe, N. (DE-10)	109
Wang, L. (CQ-03)	89	Watanabe, S. (GB-04)	195
Wang, L. (DP-11)	120	Watson, S.M. (CU-02)	98

*Best student presentation award finalist

Watts, B. (CU-03)	98	Williams, C.M. (CP-06)	87
Watts, J.D. (BH-11)	50	Williams, R. (EH-13)	148
Watts, J.D. (EB-02)	133	Williams, W. (BH-13)	51
Wautischer, G. (GQ-05)	215	Williamson, M.C. (FF-14)	175
Waybright, J. (DP-07)	120	Willson, R.C. (DT-11)	128
Weber, O. (EF-04)	142	Wilson, C. (AE-06)	10
Weber, R. (BS-07)	61	Wilson, R. (GB-10)	196
Weber, R. (DS-11)	126	Wilson, R. (GB-11)	197
Wegst, U. (AU-02)	30	Windl, W. (EH-13)	148
Wei, D. (DE-01)	107	Winkelhofer, M. (BF-05)	45
Wei, D. (GQ-07)	215	Winlove, C.P. (BG-10)	48
Wei, G. (DR-05)	124	Winlove, C.P. (CT-06)	97
Wei, H. (FP-05)	182	Wintz, S. (BD-10)	41
Wei, L. (AQ-03)	22	Wintz, S. (CU-03)	98
Wei, L. (BP-02)	54	Wintz, S. (FB-08)	165
Wei, P. (BA-03)	34	Wintz, S. (FC-02)	166
Wei, Y. (BR-05)	59	Wintz, S. (FS-12)	189
Wei, Y. (CF-10)	79	Wisniowski, P. (HI-07)	246
Wei, Y. (CI-08)	86	Wittrock, S. (FR-15)	188
Wei, Y. (DD-08)	106	Wohlhüter, P. (FC-02)	166
Wei, Y. (FU-13)	193	Wolfe, C.S. (DD-12)	107
Wei, Z. (DU-01)	129	Wolfman, J. (AH-10)	17
Wei, Z. (FI-05)	180	Wollmann, L. (HB-01)	228
Weigand, M. (BD-10)	41	Wollschläger, J. (EI-08)	150
Weigand, M. (FD-03)	169	Wolverton, C. (HD-02)	233
Weigand, M. (FS-12)	189	Won, H. (CI-03)	85
Weil, R. (EC-01)	135	Won, H. (DF-02)	110
Weinberg, I. (AG-05)	14	Won, H. (GE-02)	202
Weinberg, I. (CR-13)	93	Won, H. (GT-07)	221
Weitensfelder, H. (HI-15)	247	Wong, H. (CG-06)	80
Weller, D. (EE-12)	141	Wong, Q. (CB-07)	70
Weller, D. (GB-09)	196	Wongsathan, R. (CE-08)	77
Wells, J. (AG-01)	13	Woo, S. (BB-01)	34
Wells, J. (AG-02)	13	Woo, S. (BB-03)	35
Wells, J. (BG-03)	47	Woodcock, T.G. (CQ-05)	89
Wen, M. (CT-03)	96	Woods, J.S. (AT-13)	29
Wen, Q. (ET-03)	159	Worthington, M. (CF-01)	77
Wen, T. (CH-13)	84	Wozniak, K. (AV-16)	33
Wen, T. (ET-03)	159	Wrona, J. (FF-11)	175
Wen, X. (BH-05)	50	Wrona, J. (FP-12)	183
Wen, X. (GS-12)	220	Wu, C. (DB-04)	101
Wen, Y. (EQ-07)	154	Wu, C. (DG-03)	113
Wen, Y. (GS-09)	220	Wu, C. (GH-11)	210
Wen, Z. (BE-01)	41	Wu, C. (GT-03)	221
Wen, Z. (DQ-02)	121	Wu, C. (GT-11)	222
Wen, Z. (FP-13)	183	Wu, C. (HG-10)	241
Wende, H. (ED-04)	137	Wu, C. (HG-11)	241
Wende, H. (GR-11)	218	Wu, D. (AF-15)	13
Wereley, N.M. (CT-01)	96	Wu, D. (BP-10)	55
Wereley, N.M. (CT-02)	96	Wu, D. (FB-04)	164
Wereley, N.M. (CT-03)	96	Wu, D. (GU-01)	223
Wesenberg, D. (AC-04)	5	Wu, G. (CG-05)	80
Wesenberg, D. (DB-06)	102	Wu, G. (CG-08)	81
Westmoreland, S.C. (BF-05)	45	Wu, G. (FI-05)	180
Westmoreland, S.C. (EF-11)	143	Wu, H. (CI-09)	86
Wheelwright, J.D. (AS-09)	26	Wu, H. (CS-12)	95
White, E.M. (GT-09)	222	Wu, H. (FE-05)	172
White, E.M. (GT-13)	222	Wu, H. (FR-02)	186
White, J. (HA-02)	227	Wu, J. (BP-07)	55
White, S.P. (DD-10)	107	Wu, J. (BP-08)	55
White, S.P. (GR-15)	218	Wu, J. (DQ-13)	123
White, S.P. (HB-06)	229	Wu, J. (DR-16)	125
Wiedemann, E. (EI-06)	149	Wu, K. (DT-03)	127
Wiekhorst, F. (AG-01)	13	Wu, K. (EU-02)	161
Wiekhorst, F. (AG-02)	13	Wu, K. (FU-15)	194
Wiekhorst, F. (BG-03)	47	Wu, L. (BH-01)	49
Wiertel-Gasquet, C. (HC-10)	232	Wu, L. (FH-02)	178
Wiesendanger, R. (HA-05)	227	Wu, L. (HH-03)	242
Wieser, R. (ER-04)	155	Wu, M. (AC-10)	6
Wild, J. (FC-01)	166	Wu, M. (AD-08)	8
Wilhelm, F. (EG-03)	144	Wu, M. (BQ-11)	57
Wilhelm, F. (ES-05)	158	Wu, M. (CG-10)	81
Willard, M.A. (GH-03)	208	Wu, M. (DB-03)	101
Willard, M.A. (HH-10)	243	Wu, M. (DB-06)	102
Wille, H. (BD-12)	41	Wu, M. (DB-08)	102
Wille, H. (GP-07)	213	Wu, M. (DG-06)	113
Wille, H. (HG-05)	240	Wu, M. (DI-03)	117

*Best student presentation award finalist

Wu, M. (FR-08)	187
Wu, M. (GC-09)	199
Wu, M. (HB-03)	228
Wu, M. (HC-09)	232
Wu, Q. (AF-15)	13
Wu, Q. (AP-03)	20
Wu, Q. (AR-03)	24
Wu, Q. (GV-07)	225
Wu, Q. (GV-13)	226
Wu, R. (BG-06)	47
Wu, R. (CC-12)	73
Wu, R. (DG-06)	113
Wu, R. (EU-13)	162
Wu, S. (GT-01)	221
Wu, S. (HH-01)	242
Wu, S.M. (AC-09)	6
Wu, W. (BI-01)	51
Wu, X. (DR-01)	123
Wu, X. (GF-03)	204
Wu, X. (GF-05)	204
Wu, Y. (BB-04)	35
Wu, Y. (BB-09)	36
Wu, Y. (BE-11)	43
Wu, Y. (BE-13)	43
Wu, Y. (BI-09)	53
Wu, Y. (CB-01)	69
Wu, Y. (CB-02)	69
Wu, Y. (DG-04)	113
Wu, Y. (EC-07)	136
Wu, Y. (EU-08)	162
Wu, Y. (FS-02)	188
Wurft, T. (HI-15)	247
Wurmehl, S. (HD-07)	234
Wuttig, M. (AP-13)	21
Wuttig, M. (GV-03)	225
Wuttig, M. (GV-05)	225

- X -

Xi, H. (HI-03)	245
Xi, X. (DS-10)	126
Xi, X. (FI-05)	180
Xia, H. (GH-11)	210
Xia, H. (HG-11)	241
Xia, J. (DE-01)	107
Xia, J. (FS-08)	189
Xia, K. (AC-12)	6
Xia, W. (GS-12)	220
Xia, Z. (EQ-02)	153
Xiao, D. (BE-05)	42
Xiao, D. (FD-02)	169
Xiao, D. (HE-03)	235
Xiao, D. (XA-01)	1
Xiao, G. (BI-03)	52
Xiao, G. (EB-03)	133
Xiao, G. (EB-10)	134
Xiao, J. (AT-12)	29
Xiao, J. (CB-08)	70
Xiao, J. (GA-01)	194
Xiao, J. (GP-12)	214
Xiao, L. (AP-10)	21
Xiao, Z. (AH-05)	16
Xiao, Z. (AH-08)	17
Xie, C. (BQ-13)	58
Xie, G. (GH-06)	209
Xie, Q. (GF-03)	204
Xie, T. (CB-11)	70
Xie, W. (GF-03)	204
Xie, W. (GF-05)	204
Xie, X. (DT-09)	128
Xie, Y. (AR-12)	25
Xie, Y. (BV-06)	67
Xie, Y. (ET-03)	159
Xie, Y. (ET-09)	160
Xie, Z. (AQ-11)	23
Xie, Z. (FU-11)	193
Xing, F. (BT-05)	63

Xing, F. (BT-12)	63
Xing, M. (AR-06)	24
Xing, M. (DU-03)	129
Xing, T. (BB-09)	36
Xiong, J. (CQ-08)	90
Xiong, J. (CU-09)	99
Xiong, J. (DP-06)	119
Xiong, J. (DP-10)	120
Xiong, J. (FT-03)	190
Xiong, J. (FT-07)	191
Xiong, J. (GQ-02)	215
Xu, B. (BF-09)	45
Xu, C. (CI-15)	87
Xu, F. (AS-11)	27
Xu, F. (EU-11)	162
Xu, F. (GR-03)	217
Xu, G. (AC-12)	6
Xu, G. (BT-06)	63
Xu, H. (CS-12)	95
Xu, H. (GS-12)	220
Xu, H. (GV-07)	225
Xu, J. (BV-16)	68
Xu, J. (CG-05)	80
Xu, J. (CG-08)	81
Xu, J. (CQ-03)	89
Xu, J. (DP-11)	120
Xu, J. (DU-14)	131
Xu, J. (FQ-07)	184
Xu, M. (AR-03)	24
Xu, M. (AU-12)	31
Xu, M. (DE-12)	109
Xu, P. (BI-13)	53
Xu, Q. (AV-02)	32
Xu, Q. (AV-03)	32
Xu, Q. (ES-03)	157
Xu, R. (BH-01)	49
Xu, W. (AP-16)	21
Xu, W. (BR-01)	58
Xu, W. (BS-01)	60
Xu, X. (AG-06)	14
Xu, X. (BA-02)	34
Xu, X. (DP-03)	119
Xu, X. (DP-04)	119
Xu, X. (EF-01)	141
Xu, X. (FQ-11)	185
Xu, X. (FS-02)	188
Xu, X. (FU-16)	194
Xu, X. (GU-08)	224
Xu, X. (HG-04)	240
Xu, Y. (AC-12)	6
Xu, Y. (BP-08)	55
Xu, Y. (DE-12)	109
Xu, Y. (EU-10)	162
Xu, Y. (GH-06)	209
Xu, Y. (HE-14)	237
Xu, Z. (AS-11)	27
Xu, Z. (CQ-03)	89
Xu, Z. (GR-03)	217
Xue, M. (EU-13)	162
Xue, M. (GU-10)	224
Xue, Q. (BI-01)	51

- Y -

Yabukami, S. (EP-07)	152
Yadav, A. (GS-02)	219
Yadav, T.P. (GV-06)	225
Yade, O. (AU-05)	30
Yahagi, Y. (GS-10)	220
Yakovlev, D. (GI-05)	211
Yakushiji, K. (BE-03)	42
Yakushiji, K. (BE-07)	42
Yakushiji, K. (CC-01)	71
Yakushiji, K. (CC-03)	71
Yakushiji, K. (CI-06)	85
Yakushiji, K. (DE-03)	108
Yakushiji, K. (DE-04)	108

*Best student presentation award finalist

Yakushiji, K. (DE-10)	109	Yang, H. (BV-06)	67
Yakushiji, K. (DS-12)	127	Yang, H. (CB-01)	69
Yakushiji, K. (EA-03)	132	Yang, H. (DG-04)	113
Yakushiji, K. (FC-12)	168	Yang, H. (EC-06)	136
Yakushiji, K. (FD-06)	170	Yang, H. (FG-09)	177
Yakushiji, K. (FF-03)	174	Yang, H. (GC-11)	199
Yamada, A. (FQ-04)	184	Yang, H. (GE-10)	203
Yamada, H. (GV-04)	225	Yang, H. (GI-03)	211
Yamada, K. (AH-01)	15	Yang, H. (GP-13)	214
Yamada, K. (EQ-12)	154	Yang, H. (GS-12)	220
Yamada, K. (HG-13)	242	Yang, H. (HF-12)	239
Yamada, S. (HD-03)	233	Yang, H. (XA-03)	1
Yamada, T. (AU-14)	31	Yang, J. (AQ-13)	23
Yamada, Y. (FS-08)	189	Yang, J. (CI-13)	86
Yamagishi, M. (CC-04)	71	Yang, J. (EH-02)	146
Yamaguchi, A. (AH-01)	15	Yang, J. (EP-13)	152
Yamaguchi, A. (HG-13)	242	Yang, J. (EU-13)	162
Yamaguchi, M. (CI-12)	86	Yang, J. (GU-10)	224
Yamaguchi, M. (EP-07)	152	Yang, J. (GU-12)	224
Yamaguchi, T. (CP-02)	87	Yang, L. (AU-08)	30
Yamaguchi, Y. (GU-07)	223	Yang, L. (DR-01)	123
Yamaji, T. (CE-05)	76	Yang, M. (AI-13)	19
Yamamoto, T. (FF-06)	174	Yang, M. (BH-09)	50
Yamamoto, T.D. (DR-12)	124	Yang, M. (DC-08)	104
Yamashita, A. (FU-03)	192	Yang, M. (GC-04)	198
Yamashita, A. (GU-07)	223	Yang, P. (ET-09)	160
Yamazaki, R. (DA-01)	100	Yang, P. (GC-11)	199
Yan, A. (AF-07)	12	Yang, P. (GE-10)	203
Yan, A. (AF-12)	12	Yang, Q. (AI-12)	19
Yan, A. (BF-02)	44	Yang, Q. (AI-13)	19
Yan, A. (EF-03)	142	Yang, Q. (AU-06)	30
Yan, A. (FT-10)	191	Yang, Q. (BR-15)	60
Yan, A. (FT-12)	191	Yang, Q. (BS-13)	62
Yan, A. (GU-04)	223	Yang, Q. (CT-04)	96
Yan, A. (GU-05)	223	Yang, Q. (DQ-09)	122
Yan, A. (GU-11)	224	Yang, Q. (HI-03)	245
Yan, A. (GU-14)	224	Yang, R. (AR-09)	25
Yan, B. (BT-03)	63	Yang, S. (DB-04)	101
Yan, J. (AU-13)	31	Yang, S. (DP-16)	121
Yan, L. (ER-10)	156	Yang, S. (EC-04)	135
Yan, M. (AF-13)	12	Yang, W. (AQ-13)	23
Yan, M. (FT-05)	190	Yang, W. (AV-02)	32
Yan, R. (AU-16)	31	Yang, W. (AV-03)	32
Yan, X. (DR-02)	123	Yang, W. (CI-13)	86
Yan, Y. (EQ-09)	154	Yang, W. (CT-04)	96
Yan, Y. (EU-10)	162	Yang, W. (ED-03)	137
Yanai, T. (AQ-14)	23	Yang, W. (FD-12)	170
Yanai, T. (CP-02)	87	Yang, W. (GR-08)	218
Yanai, T. (CP-10)	88	Yang, W. (GU-10)	224
Yanai, T. (FU-03)	192	Yang, X. (BT-05)	63
Yanai, T. (GU-07)	223	Yang, X. (BT-06)	63
Yanai, T. (GV-04)	225	Yang, X. (BT-12)	63
Yanes, R. (FC-06)	167	Yang, X. (CI-08)	86
Yang, B. (CP-15)	88	Yang, X. (CT-04)	96
Yang, B. (EQ-09)	154	Yang, X. (DT-15)	129
Yang, C. (FD-09)	170	Yang, X. (GP-15)	214
Yang, C. (GP-15)	214	Yang, X. (GU-05)	223
Yang, D. (AV-10)	32	Yang, X. (GU-11)	224
Yang, E. (AD-02)	7	Yang, Y. (BA-04)	34
Yang, E. (DE-05)	108	Yang, Y. (BH-01)	49
Yang, F. (BB-13)	36	Yang, Y. (DG-04)	113
Yang, F. (DB-02)	101	Yang, Y. (DT-13)	129
Yang, F. (DB-09)	102	Yang, Y. (GB-10)	196
Yang, F. (DD-06)	106	Yang, Y. (GB-11)	197
Yang, F. (DD-10)	107	Yang, Y. (GU-10)	224
Yang, F. (DI-02)	117	Yang, Z. (BS-05)	61
Yang, F. (DQ-08)	122	Yano, M. (BF-05)	45
Yang, F. (EQ-11)	154	Yano, M. (EF-10)	143
Yang, F. (GR-15)	218	Yano, M. (EF-11)	143
Yang, F. (HA-03)	227	Yano, M. (GU-16)	224
Yang, F. (HB-06)	229	Yao, A. (AI-03)	18
Yang, H. (AP-03)	20	Yao, A. (GE-03)	202
Yang, H. (AQ-16)	23	Yao, L. (CS-11)	95
Yang, H. (AU-07)	30	Yap, Q. (BC-07)	38
Yang, H. (AU-13)	31	Yarmolich, M.V. (FP-16)	184
Yang, H. (BC-08)	38	Yasin, F. (BE-11)	43
Yang, H. (BS-08)	61	Yasui, A. (AH-01)	15

*Best student presentation award finalist

Yasui, S. (BV-04)	66	Yu, G. (EH-04)	146
Yasui, Y. (DR-11)	124	Yu, G. (FB-04)	164
Yasui, Y. (DR-12)	124	Yu, G. (GD-01)	200
Yasui, Y. (DR-13)	125	Yu, G. (GR-04)	217
Yasui, Y. (DR-15)	125	Yu, G. (HB-12)	229
Yatsugi, K. (DH-06)	115	Yu, H. (BR-07)	59
Yazdani, M. (AD-01)	7	Yu, H. (CI-09)	86
Ye, S. (DB-04)	101	Yu, H. (ER-05)	155
Ye, Z. (HE-11)	237	Yu, H. (FT-16)	192
Ye, Z. (HF-07)	239	Yu, H. (GC-10)	199
Yeh, J. (CT-09)	97	Yu, H. (GP-09)	214
Yen, C. (BG-04)	47	Yu, J. (AQ-04)	22
Yen, H. (BC-01)	37	Yu, J. (BC-08)	38
Yeo, C. (DF-02)	110	Yu, J. (DG-04)	113
Yeo, C. (GT-07)	221	Yu, J. (FT-09)	191
Yeo, J. (AQ-06)	22	Yu, J. (FT-11)	191
Yeo, J. (AQ-07)	22	Yu, J. (GP-13)	214
Yeo, J. (CP-08)	88	Yu, K. (DP-16)	121
Yesilyurt, C. (FP-07)	183	Yu, L. (GD-07)	201
Yi, D. (EH-03)	146	Yu, P. (HE-11)	237
Yi, G. (CT-14)	98	Yu, R. (FQ-15)	186
Yi, J. (BS-03)	61	Yu, S. (AU-11)	30
Yi, M. (AF-06)	12	Yu, S. (AV-10)	32
Yi, M. (BF-09)	45	Yu, S. (BP-01)	54
Yiheng, R. (DQ-09)	122	Yu, S. (DB-02)	101
Yildirim, O. (AC-08)	5	Yu, S. (DP-01)	119
Yildirim, O. (FS-14)	190	Yu, S. (FP-16)	184
Yin, L. (FF-15)	175	Yu, S. (GP-16)	215
Yin, S. (FI-11)	181	Yu, S. (GT-01)	221
Yin, W. (AF-07)	12	Yu, S. (HB-06)	229
Yin, W. (AF-12)	12	Yu, T. (FP-05)	182
Yin, X. (AG-04)	14	Yu, W. (AT-12)	29
Yin, X. (DT-13)	129	Yu, W. (GP-12)	214
Yin, X. (EF-12)	143	Yu, X. (HA-02)	227
Yin, Y. (DE-14)	109	Yu, Y. (DF-14)	112
Yin, Y. (FQ-13)	185	Yu, Y. (DI-04)	117
Yoda, H. (AE-07)	10	Yu, Z. (EP-05)	151
Yoda, H. (BE-07)	42	Yu, Z. (GT-03)	221
Yoda, H. (DE-04)	108	Yu, Z. (GT-11)	222
Yoda, H. (FF-02)	174	Yu, Z. (HG-10)	241
Yokoo, T. (GU-16)	224	Yuan, C. (AB-05)	3
Yomogita, T. (ED-09)	138	Yuan, H. (EE-05)	140
Yoo, B. (DT-12)	129	Yuan, H. (EU-11)	162
Yoo, J. (BS-02)	61	Yuan, J. (AI-02)	18
Yoo, J. (CS-06)	94	Yuan, J. (AI-10)	19
Yoo, J. (GI-13)	212	Yuan, J. (AU-03)	30
Yoo, M. (AB-09)	3	Yuan, J. (AU-15)	31
Yoon, C. (DP-03)	119	Yuan, Y. (AQ-03)	22
Yoon, S. (FT-13)	191	Yuan, Y. (BP-02)	54
Yoshida, K. (BQ-07)	57	Yuasa, H. (AC-03)	5
Yoshida, T. (CU-14)	100	Yuasa, H. (AC-06)	5
Yoshihara, Y. (GV-09)	226	Yuasa, S. (BE-03)	42
Yoshimoto, T. (BD-05)	40	Yuasa, S. (BE-07)	42
Yoshimura, M. (CI-05)	85	Yuasa, S. (CC-01)	71
Yoshinaka, A. (BT-11)	63	Yuasa, S. (CC-03)	71
Yoshioka, T. (BF-04)	44	Yuasa, S. (CC-13)	73
Yoshioka, T. (BF-10)	45	Yuasa, S. (CI-06)	85
Yoshioka, T. (ES-09)	158	Yuasa, S. (DE-03)	108
Yoshizawa, D. (DR-15)	125	Yuasa, S. (DE-04)	108
You, B. (AQ-03)	22	Yuasa, S. (DE-10)	109
You, B. (BP-02)	54	Yuasa, S. (DS-12)	127
You, C. (BR-10)	59	Yuasa, S. (EA-03)	132
You, C. (EF-03)	142	Yuasa, S. (FC-12)	168
You, C. (FF-03)	174	Yuasa, S. (FD-06)	170
You, C. (GS-11)	220	Yuasa, S. (FF-03)	174
Young, A.T. (DC-08)	104	Yuasa, S. (FF-06)	174
Young, I.A. (AE-05)	9	Yudin, D. (HB-10)	229
Young, I.A. (EC-11)	136	Yue, D. (AC-02)	4
Yousefi Sarraf, S. (GC-12)	199	Yue, J. (BI-13)	53
Yousefi Sarraf, S. (GV-12)	226	Yue, J. (EU-11)	162
Yu, B. (EH-04)	146	Yue, L. (DF-12)	111
Yu, C. (GH-11)	210	Yue, M. (AF-15)	13
Yu, C. (HG-11)	241	Yue, M. (AR-03)	24
Yu, G. (AB-11)	4	Yue, M. (BF-03)	44
Yu, G. (AD-01)	7	Yue, M. (CF-05)	78
Yu, G. (BC-05)	37	Yue, M. (EF-12)	143
Yu, G. (EC-03)	135	Yue, M. (FU-12)	193

*Best student presentation award finalist

Yue, M. (FU-13).....	193	Zhang, G. (DD-11).....	107
Yue, M. (GU-01).....	223	Zhang, H. (BF-09).....	45
Yue, M. (GU-08).....	224	Zhang, H. (CQ-03).....	89
Yue, M. (GU-15).....	224	Zhang, H. (DP-11).....	120
Yue, M. (GV-07).....	225	Zhang, H. (DQ-09).....	122
Yue, S. (BR-15).....	60	Zhang, H. (ES-03).....	157
Yun, F. (BF-03).....	44	Zhang, H. (ET-03).....	159
Yun, F. (GU-02).....	223	Zhang, H. (GE-04).....	202
Yun, T. (EF-07).....	142	Zhang, H. (GU-08).....	224
Yusuf, H. (DD-12).....	107	Zhang, J. (BG-05).....	47
Yuzawa, A. (HI-02).....	245	Zhang, J. (CC-12).....	73
- Z -			
Zahedinejad, M. (FD-05).....	169	Zhang, J. (DR-02).....	123
Zaizen, Y. (CP-09).....	88	Zhang, J. (EQ-07).....	154
Zakeri, K. (BD-08).....	40	Zhang, J. (EQ-09).....	154
Zakeri, K. (DD-04).....	106	Zhang, J. (ER-03).....	155
Zandbergen, H. (HI-01).....	245	Zhang, J. (FP-11).....	183
Zander, M. (HI-04).....	245	Zhang, J. (FU-04).....	192
Zang, B. (HH-05).....	243	Zhang, J. (GC-09).....	199
Zang, J. (ER-05).....	155	Zhang, J. (GF-10).....	205
Zayko, S. (DI-05).....	117	Zhang, J. (GP-05).....	213
Zboril, R. (HG-03).....	240	Zhang, J. (GU-08).....	224
Zeissler, K. (BB-10).....	36	Zhang, K. (GV-13).....	226
Zeissler, K. (FC-02).....	166	Zhang, L. (AQ-10).....	23
Zelalem, A. (FS-02).....	188	Zhang, L. (GU-13).....	224
Zelent, M. (AD-04).....	7	Zhang, M. (CQ-06).....	90
Zeltser, A. (CC-06).....	72	Zhang, M. (FT-03).....	190
Zeng, H. (BA-04).....	34	Zhang, N. (DU-05).....	130
Zeng, H. (BH-01).....	49	Zhang, P. (BA-04).....	34
Zeng, H. (FU-04).....	192	Zhang, Q. (GS-09).....	220
Zeng, J. (GU-05).....	223	Zhang, Q. (GU-11).....	224
Zeng, J. (GU-11).....	224	Zhang, Q. (HI-03).....	245
Zeng, M. (CG-11).....	81	Zhang, S. (AB-02).....	2
Zeng, Q. (GU-13).....	224	Zhang, S. (ER-03).....	155
Zha, L. (EU-13).....	162	Zhang, S. (FR-06).....	187
Zha, L. (GU-10).....	224	Zhang, S. (HE-14).....	237
Zhai, Y. (EU-11).....	162	Zhang, S. (HI-14).....	247
Zhai, Y. (GS-05).....	219	Zhang, T. (FU-11).....	193
Zhai, Z. (FQ-15).....	186	Zhang, W. (AQ-03).....	22
Zhan, Q. (BV-06).....	67	Zhang, W. (BP-02).....	54
Zhan, Q. (ET-03).....	159	Zhang, W. (CB-02).....	69
Zhan, Q. (GS-12).....	220	Zhang, W. (CS-07).....	95
Zhan, W. (CG-08).....	81	Zhang, W. (DF-12).....	111
Zhang, A. (DR-01).....	123	Zhang, W. (DP-07).....	120
Zhang, B. (CU-09).....	99	Zhang, W. (GB-07).....	196
Zhang, B. (DP-06).....	119	Zhang, W. (GH-04).....	209
Zhang, B. (DP-10).....	120	Zhang, W. (GH-06).....	209
Zhang, B. (DU-11).....	130	Zhang, W. (GR-09).....	218
Zhang, B. (EH-10).....	147	Zhang, W. (HD-08).....	234
Zhang, C. (AI-12).....	19	Zhang, W. (HH-03).....	242
Zhang, C. (AU-06).....	30	Zhang, X. (AB-08).....	3
Zhang, C. (BF-02).....	44	Zhang, X. (AR-08).....	25
Zhang, C. (BR-13).....	60	Zhang, X. (BB-03).....	35
Zhang, C. (BR-15).....	60	Zhang, X. (BF-02).....	44
Zhang, C. (BS-13).....	62	Zhang, X. (DP-14).....	121
Zhang, C. (BT-03).....	63	Zhang, X. (EQ-07).....	154
Zhang, C. (BU-12).....	65	Zhang, X. (ER-02).....	155
Zhang, C. (CC-09).....	72	Zhang, X. (ER-03).....	155
Zhang, C. (CS-16).....	96	Zhang, X. (ER-10).....	156
Zhang, C. (DT-15).....	129	Zhang, X. (FP-11).....	183
Zhang, C. (DU-05).....	130	Zhang, X. (FS-08).....	189
Zhang, C. (EI-02).....	149	Zhang, X. (FU-08).....	193
Zhang, C. (EQ-07).....	154	Zhang, X. (GB-07).....	196
Zhang, C. (FB-05).....	165	Zhang, X. (GC-08).....	198
Zhang, C. (HB-02).....	228	Zhang, X. (GD-02).....	200
Zhang, D. (AF-15).....	13	Zhang, X. (GI-04).....	211
Zhang, D. (DD-01).....	105	Zhang, X. (GS-09).....	220
Zhang, D. (DE-15).....	109	Zhang, X. (GU-08).....	224
Zhang, D. (DG-01).....	112	Zhang, X. (GU-09).....	224
Zhang, D. (DG-02).....	113	Zhang, X. (HC-09).....	232
Zhang, D. (FR-05).....	186	Zhang, Y. (AF-13).....	12
Zhang, D. (FU-12).....	193	Zhang, Y. (AR-12).....	25
Zhang, D. (GU-01).....	223	Zhang, Y. (BB-09).....	36
Zhang, D. (GU-08).....	224	Zhang, Y. (BR-07).....	59
Zhang, D. (GU-15).....	224	Zhang, Y. (BS-14).....	62
		Zhang, Y. (BT-14).....	64
		Zhang, Y. (CC-12).....	73
		Zhang, Y. (CQ-03).....	89

*Best student presentation award finalist

Zhang, Y. (CQ-08)	90	Zhao, Z. (DE-15)	109
Zhang, Y. (CU-09)	99	Zhao, Z. (DG-01)	112
Zhang, Y. (DP-06)	119	Zhao, Z. (DG-02)	113
Zhang, Y. (DP-10)	120	Zhao, Z. (DP-14)	121
Zhang, Y. (DT-15)	129	Zhao, Z. (FU-08)	193
Zhang, Y. (DU-14)	131	Zhao, Z. (GQ-07)	215
Zhang, Y. (ER-10)	156	Zhen, L. (CI-15)	87
Zhang, Y. (ET-09)	160	Zheng, J. (BT-02)	62
Zhang, Y. (FT-05)	190	Zheng, L. (BE-09)	43
Zhang, Y. (FT-07)	191	Zheng, M. (FT-01)	190
Zhang, Y. (GB-07)	196	Zheng, P. (BU-16)	66
Zhang, Y. (GP-09)	214	Zheng, R. (BF-03)	44
Zhang, Y. (GP-15)	214	Zheng, R. (GU-02)	223
Zhang, Y. (GV-15)	226	Zheng, W. (DT-07)	128
Zhang, Y. (HC-11)	232	Zheng, X. (CP-16)	88
Zhang, Z. (AP-05)	20	Zheng, X. (CQ-03)	89
Zhang, Z. (AP-07)	20	Zheng, X. (CQ-08)	90
Zhang, Z. (AS-11)	27	Zheng, X. (DP-06)	119
Zhang, Z. (BP-10)	55	Zheng, X. (DP-10)	120
Zhang, Z. (EH-04)	146	Zheng, X. (DP-11)	120
Zhang, Z. (FB-04)	164	Zheng, X. (DT-15)	129
Zhang, Z. (GR-03)	217	Zheng, X. (FT-07)	191
Zhang, Z. (GU-15)	224	Zheng, X. (HH-04)	242
Zhao, B. (FS-02)	188	Zheng, Y. (GC-11)	199
Zhao, C. (BA-04)	34	Zheng, Y. (GE-10)	203
Zhao, C. (GT-04)	221	Zheng, Z. (AP-11)	21
Zhao, G. (CC-12)	73	Zhong, G. (CS-16)	96
Zhao, G. (DU-14)	131	Zhong, H. (CQ-11)	90
Zhao, G. (GC-09)	199	Zhong, K. (CE-06)	76
Zhao, G. (GF-10)	205	Zhong, M. (FU-04)	192
Zhao, G. (GS-03)	219	Zhong, M. (GU-13)	224
Zhao, H. (AQ-02)	22	Zhong, X. (CQ-16)	91
Zhao, H. (AQ-13)	23	Zhong, X. (DU-10)	130
Zhao, H. (ET-05)	160	Zhong, X. (FU-04)	192
Zhao, J. (DE-01)	107	Zhong, X. (HB-14)	230
Zhao, L. (FT-16)	192	Zhong, Y. (AI-02)	18
Zhao, L. (FU-04)	192	Zhong, Y. (AI-10)	19
Zhao, L. (GD-08)	201	Zhong, Y. (AU-03)	30
Zhao, N. (CQ-11)	90	Zhong, Y. (AU-15)	31
Zhao, R. (DT-07)	128	Zhong, Y. (BF-08)	45
Zhao, S. (CF-06)	78	Zhong, Y. (EF-02)	141
Zhao, S. (GV-02)	225	Zhong, Y. (EF-05)	142
Zhao, S. (HE-11)	237	Zhong, Z. (DQ-09)	122
Zhao, T. (CQ-08)	90	Zhong, Z. (ET-03)	159
Zhao, T. (CU-09)	99	Zhong, Z. (FU-04)	192
Zhao, T. (DP-06)	119	Zhong, Z. (GU-13)	224
Zhao, T. (DP-10)	120	Zhou, B. (EE-06)	140
Zhao, T. (FT-03)	190	Zhou, C. (BB-04)	35
Zhao, T. (FT-07)	191	Zhou, C. (BI-09)	53
Zhao, T. (GQ-02)	215	Zhou, C. (CB-02)	69
Zhao, W. (AB-08)	3	Zhou, D. (FT-01)	190
Zhao, W. (AR-08)	25	Zhou, D. (FU-06)	193
Zhao, W. (BB-09)	36	Zhou, D. (FU-12)	193
Zhao, W. (BR-07)	59	Zhou, H. (AI-02)	18
Zhao, W. (EC-03)	135	Zhou, H. (AI-10)	19
Zhao, W. (ER-02)	155	Zhou, H. (AU-03)	30
Zhao, W. (ER-10)	156	Zhou, H. (AU-15)	31
Zhao, W. (GP-09)	214	Zhou, H. (BR-10)	59
Zhao, X. (CU-09)	99	Zhou, H. (EB-08)	134
Zhao, X. (DE-01)	107	Zhou, H. (EH-04)	146
Zhao, X. (DP-06)	119	Zhou, H. (HF-12)	239
Zhao, X. (DP-10)	120	Zhou, H. (HH-07)	243
Zhao, X. (DQ-13)	123	Zhou, H. (HI-06)	246
Zhao, X. (DR-16)	125	Zhou, J. (AC-12)	6
Zhao, X. (FB-13)	166	Zhou, J. (AP-03)	20
Zhao, X. (FE-02)	171	Zhou, J. (AQ-04)	22
Zhao, X. (FT-03)	190	Zhou, J. (AQ-16)	23
Zhao, X. (FT-07)	191	Zhou, J. (BH-01)	49
Zhao, X. (GQ-02)	215	Zhou, L. (CB-02)	69
Zhao, X. (GT-01)	221	Zhou, L. (DF-13)	112
Zhao, X. (HG-04)	240	Zhou, L. (GH-05)	209
Zhao, Y. (CP-13)	88	Zhou, L. (GT-09)	222
Zhao, Y. (EQ-07)	154	Zhou, L. (GT-13)	222
Zhao, Y. (ES-06)	158	Zhou, Q. (GD-08)	201
Zhao, Y. (FT-04)	190	Zhou, S. (BG-01)	47
Zhao, Y. (GP-16)	215	Zhou, S. (BR-10)	59
Zhao, Y. (GS-09)	220	Zhou, S. (FQ-08)	185

*Best student presentation award finalist

Zhou, X. (CQ-11)	90	Zhu, Y. (GF-07)	205
Zhou, X. (EU-11)	162	Zhu, Z. (AU-07)	30
Zhou, Y. (AB-08)	3	Zhu, Z. (AU-13)	31
Zhou, Y. (BB-03)	35	Zhu, Z. (GT-01)	221
Zhou, Y. (BT-05)	63	Zhuang, X. (BU-15)	66
Zhou, Y. (BT-12)	63	Zhuang, X. (BV-16)	68
Zhou, Y. (ER-02)	155	Zhukov, A.P. (DP-02)	119
Zhou, Y. (ER-10)	156	Zhukov, A.P. (HH-11)	244
Zhou, Y. (FS-08)	189	Zhukova, V. (DP-02)	119
Zhou, Y. (FT-10)	191	Zhukova, V. (HH-11)	244
Zhou, Y.Q. (FT-10)	191	Zi, Z. (DF-05)	110
Zhou, Z. (HE-11)	237	Zi, Z. (EP-08)	152
Zhou, Z. (HF-07)	239	Ziemys, G. (AS-05)	26
Zhu, B. (DT-15)	129	Ziemys, G. (FC-11)	168
Zhu, C. (EC-07)	136	Zietek, S. (EB-06)	133
Zhu, D. (DG-04)	113	Zietek, S. (FF-11)	175
Zhu, D. (ER-02)	155	Zilske, P. (AS-14)	27
Zhu, J. (AP-16)	21	Zimanyi, G. (BF-05)	45
Zhu, J. (AU-06)	30	Zimmermann, B. (FR-16)	188
Zhu, J. (BE-05)	42	Zink, B. (AC-04)	5
Zhu, J. (BR-01)	58	Zink, B. (DB-06)	102
Zhu, J. (BR-13)	60	Zink, B. (DU-13)	131
Zhu, J. (BS-01)	60	Zivanov, L. (BS-12)	62
Zhu, J. (CE-03)	76	Zivieri, R. (EA-04)	132
Zhu, J. (CP-01)	87	Zografos, O. (AE-08)	10
Zhu, J. (DD-01)	105	Zou, L. (AV-09)	32
Zhu, J. (EB-12)	134	Zou, M. (AI-13)	19
Zhu, J. (EE-06)	140	Zou, Q. (GD-02)	200
Zhu, J. (EE-09)	140	Zou, Y. (BQ-13)	58
Zhu, J. (HE-03)	235	Zu, J. (BU-11)	65
Zhu, J. (HE-04)	235	Zuñiga, B. (AS-02)	26
Zhu, L. (BC-12)	38	Zuo, S. (CQ-08)	90
Zhu, L. (FQ-15)	186	Zuo, S. (CU-09)	99
Zhu, M. (CF-10)	79	Zuo, S. (DP-06)	119
Zhu, M. (EF-08)	142	Zuo, S. (DP-10)	120
Zhu, M. (FT-01)	190	Zuo, S. (FT-03)	190
Zhu, M. (FU-06)	193	Zuo, S. (FT-07)	191
Zhu, M. (FU-08)	193	Zuo, W. (FT-07)	191
Zhu, N. (DI-03)	117	Zuo, W. (GQ-02)	215
Zhu, N. (HC-09)	232	Zusin, D. (ED-02)	137
Zhu, T. (CG-08)	81	Zuzek Rozman, K. (FU-16)	194
Zhu, T. (CG-15)	82	Zvezdin, A.K. (GB-03)	195
Zhu, Y. (BR-08)	59	Zvezdin, A.K. (GR-16)	218
Zhu, Y. (EC-06)	136	Zvezdin, K.A. (GB-03)	195
Zhu, Y. (EQ-08)	154	Zweck, J. (FC-01)	166
Zhu, Y. (EQ-13)	154		

New Developments from GMW

Visit us at booth 25!

5405 - Dipole Magnet

Peak Field, 8mm gap >3T
(15mm pole face, 70A excitation)

Peak Field, 40mm gap >1.3T
(50mm pole face, 70A excitation)

Max Current, continuous 70A

Max Current, triangle 120A

Mounting Orientation Any

Mass 215kg

Optional Overbar

For slight increased field and greatly increased uniformity. Overbar has Ø40mm bore for 1½" cryostat or optical access.

Applications for EPR, FMR, MOKE.



New options on Dipole Magnets

GMW is developing new options for our line of standard Dipole Lab Magnets, including:

- Waterflow switch for protection.
- Waterflow meter for yellow alert status.
- Separate temperature sensor circuit for yellow alert status.
- Custom poles, pole bores

IECO BPS-85-70

6kW Bipolar Power Supply

In development with IECO, a ±85V, ±70A Magnet Power Supply

- Full 4-quadrant output operation
- Voltage mode and Current mode control
- Parallel operation in current mode for ±85V and ±140A output
- Very low switching ripple and noise
- Fluxgate current transducer for excellent temperature and long-term current stability
- Ramp response for different loads tuned from front panel
- Analog voltage programming of output or current
- Air cooled, 19" rack mountable package (5U), 50kg

GMW Associates

www.gmw.com • sales@gmw.com • 650-802-8292