70th Annual Conference on Magnetism and Magnetic Materials

October 27-31, 2025
www.magnetism.org

MMM2025

Palm Beach, Florida

PALM BEACH CONVENTION CENTER

PROGRAM BOOK

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SCOPE OF THE CONFERENCE

The 70th Annual Conference on Magnetism and Magnetic Materials (MMM 2025) is sponsored jointly by AIP Publishing and the IEEE Magnetics Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend and contribute to the technical sessions. The technical program will include invited and contributed papers in oral and poster sessions, invited symposia, a tutorial, plenary, and several special sessions. This Conference provides an outstanding opportunity for worldwide participants to meet, share their research, and to discuss and learn about the most recent developments in all areas of magnetism research.

CONFERENCE INFORMATION

LOCATION: Palm Beach County Convention Center
HOTELS: Hilton West Palm Beach **and** West Palm Beach Marriott

MOBILE APP:
The **MyItinerary by ScholarOne** mobile app and online desktop planner provide attendees with instant access to the entire Conference program including abstracts, speakers, and the schedule of events. You can also use it to build your own customized schedule and to get in touch with other attendees. Download the free app before you arrive!

CONFERENCE MATERIALS:

- Program Overview
- Symposia and Invited Speakers
- Program Book: Desktop Optimized / Mobile Optimized
- Abstracts Book will be posted once available.
- Special Events & Sessions

SOCIAL MEDIA LINKS:

CONFERENCE SUPPORTERS & EXHIBITORS: View Confirmed Partners & Exhibitors

CONFERENCE ORGANIZATION

CONFERENCE MANAGEMENT COMMITTEE

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MMM Chair-Elect
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PROGRAM COMMITTEE

(Name in blue indicates Team Lead)

Category	Name	Institution
I. Fundamental Properties and Cooperative Phenomena	**Paulo Eduardo de Faria Junior**	**University of Central Florida, USA**
	Denis Candido	University of Iowa, USA
	Roland Kawakami	Ohio State University, USA
II. Magnetoelectronic Materials and Phenomena	**Sajid Husain**	**University of California, Berkeley, USA**
	Amr Abdelsamie	Laboratory Albert Fert, CNRS, France
	Christian Tzschaschel	University of Zurich, Switzerland
III. Spintronics - Fundamentals and Devices	**Dario Arena**	**University of South Florida, USA**
	Simranjeet Singh	**Carnegie Mellon University, USA**
	Javier Villegas	**CNRS, France**
	Saroj Dash	Chalmers University of Technology, Sweden
	Alex Jenkins	International Iberian Nanotechnology Laboratory, Portugal
	Paul Keatley	University of Exeter, United Kingdom
	Luqiao Liu	Massachusetts Institute of Technology, USA
	Susmita Saha	Ashoka University, India
	Guoqiang Yu	Chinese Academy of Sciences, China
IV. Magnetization Dynamics and Micromagnetics	**Enrique Cobas**	**US Naval Research Laboratory, USA**
	Anjan Soumyanarayanan	**National University of Singapore, Singapore**
	Philipp Pirro	RPTU Kaiserslautern-Landau, Germany
	Mark Stiles	National Institute of Standards and Technology (NIST), USA
	Olaf van 't Erve	US Naval Research Laboratory (NRL), USA
	Wei Zhang	UNC Chapel Hill, USA
V. Magnetic Recording, Storage and Computing	**Stephanie Hernandez**	**Seagate, USA**
	Byong-Guk Park	**KAIST, Korea**
	Damien Querlioz	**Univ Paris-Saclay, CNRS, France**
	Flavio Abreu Araujo	Université Catholique de Louvain, Belgium
	Jayasimha Atulasimha	Virginia Commonwealth University, USA
	Tobias Maletzky	Headway Technologies, USA
	Niranjan Natekar	Western Digital, USA
	Chi-Feng Pai	National Taiwan University, Taiwan
	Chris Safranski	IBM, USA
VI. Soft Magnetic Materials	**Piotr Kulik**	**University of Central Florida, USA**
	Chins Chinnasamy	ORNL, USA
	Sara Mills	NRL, USA
VII. Hard Magnetic Materials	**Yukiko Takahashi**	**NIMS, Japan**
	Perumal Alagarsamy	Indian Institute of Technology, India
	Pelin Tozman	Technische Universitat Darmstadt, Germany

Category	Name	Institution
VIII. Structured Materials	**Jamileh Beik Mohammadi**	**University of Alabama, USA**
	Arantxa Fraile Rodriguez	University of Barcelona, Spain
	Anish Rai	Western Digital, USA
IX. Multi-Functional Magnetic Materials and Applications	**Ssu-Yen Huang**	**National Taiwan University, Taiwan**
	Xin Fan	University of Denver, USA
	Tino Gottschall	Dresden High Magnetic Field Laboratory, Germany
X. Sensors, High Frequency Devices, and Power Devices	**Tianxiang Nan**	**Tsinghua University, China**
	Jianhua Liu	Chinese Academy of Science, China
	Masahiro Yamaguchi	Tohoku University, Japan
XI. Interdisciplinary and Emerging Topics	**Ravi Hadimani**	**Virginia Commonwealth University, USA**
	Shawn Pollard	**University of Memphis, USA**
	John Fullerton	Argonne National Laboratory, USA
	Alejandro Gómez Roca	ICN2, Barcelona, Spain
	Michael Vogel	University of Kiel, Germany
	Kai Wu	Texas Tech University, USA
XII. Magnetic Characterization	**Shawn Pollard**	**University of Memphis, USA**
	John Fullerton	Argonne National Laboratory, USA
	Michael Vogel	University of Kiel, Germany

SESSION CHAIRS

Session		First Name	Last Name	Institution
AA	Spin-optoelectronics Towards Real World Applications	Yuan	Lu	Institut Jean Lamour
AB	Quantum Sensing of Novel Magnetism	Gregory D.	Fuchs	Cornell University
AC	Skyrmions and Magnetic Textures Related Phenomena	Chung-Tao	Chou	Massachusetts Institute of Technology
AD	Magnetoelectric and Multiferroics I	Paul	Stevenson	Northeastern University
		Yayoi	Takamura	University of California, Davis
AE	New Applications and Other Emerging Topics I	Shawn	Pollard	The University of Memphis
AF	Spin-orbit Torque and Related Phenomena	Raghvendra	Posti	Carnegie Mellon University
AG	Electronic Structure and Magnetic Excitations	Christianne	Beekman	Florida State University
AP	Biomagnetism and Biomedical Applications I	Javier	Alonso Masa	University of Cantabria
AQ	Instrumentation and Measurement Techniques	Kazi Zahirul	Islam	The University of Memphis
AR	Magnetization Dynamics	Amir	Capua	The Hebrew University of Jerusalem
BA	Recent Advances and Future Challenges with Non-Collinear Antiferromagnets	Satoru	Nakatsuji	University of Tokyo
BB	Biomagnetic Sensors: From Bench to Bedside	Ravi	Hadimani	Virginia Commonwealth University
BC	Thermoelectric, Magnetic, and Superconducting Effects in Hybrid Heterostructures and Spin Textures	Yingying	Wu	University of Florida
BD	Soft Magnetic Materials I	Chins	Chinnasamy	Oak Ridge National Laboratory
		Piotr	Kulik	University of Central Florida
BE	Magneto-Optic and Magneto-Caloric Materials and Devices	Anis	Biswas	Ames National Laboratory
		Mahmud	Khan	Miami University
BF	STT-MRAM and SOT-MRAM and Related Devices	Dong-Jun	Kim	KAIST
BG	Hard Magnetic Materials I: Sm-based and Rare Earth Free Magnets	Harshida	Parmar	Ames National Laboratory
BP	Magnonics I: Spin Waves & Spin Dynamics	Jing	Zhou	Institute of Materials Research and Engineering, A*STAR
BQ	Transformers and Power Electronics I	Hiroaki	Matsumori	Nagoya Institute of Technology
BR	Energy Assisted Magnetic Recording & Magnetic Sensors	Takahide	Kubota	Tohoku University
		Niranjan	Natekar	Western Digital

Session		First Name	Last Name	Institution
CA	Beyond Polycrystalline Films: Textured Materials for High-Performance Spintronic Devices	Pedram	Khalili Amiri	Northwestern University
CB	Future Read Head Technologies	Stephanie	Hernandez	Seagate Technology
CC	Magneto-transport and Magneto-optics of Higher Orders in Magnetization	Timo	Kuschel	Bielefeld University
CD	Magnetoelectric and Multiferroics II	Sajid	Husain	University of California, Berkeley
CE	Altermagnetism & Antiferromagnetism - Thin Films and Other Systems	Rahul	Gupta	University of Gothenburg
CF	Low-Dimensional Systems, Molecular and Organic Magnets	Jacob	Hanson-Flores	University of Central Florida
CG	Magnetic Microscopy and Imaging	John	Fullerton	Argonne National Laboratory
CH	Fast and Efficient Switching	Xin	Fan	University of Denver
		Peter	Finkel	Naval Research Laboratory
CQ	Biomagnetism and Biomedical Applications II	Dario	Arena	University of South Florida
		Prashant	Kumar	IMS RIKEN Center for Integrative Medical Sciences
CR	Soft Magnetic Materials II	Emmanuel	Rowe	Air Force Research Laboratory
DA	Perspective of Probabilistic Computing with Magnetic Tunnel Junctions	Giovanni	Finocchio	University of Messina
DB	Advancing Magnonics: Unlocking the Potential of the Third Dimension	Gianluca	Gubbiotti	IOM-CNR
DC	Nanoparticles, 3D, and Other Structured Materials	Michalis	Charilaou	University of Louisiana at Lafayette
DD	Nd2Fe14B and Measurement Techniques	Yusuke	Hirayama	National Institute of Advanced Industrial Science and Technology (AIST)
		Abdellah	Lisfi	Morgan State University
DE	Magnetic Ground States, Phase Transitions and Magneto-Elastic Phenomena	Hang	Chi	University of Ottawa
		Nicholas	Jones	Naval Surface Warfare Center, Carderock Division
DF	Spin Injection, Pumping and Transfer Torques	Danru	Qu	National Taiwan University
DG	Magnetic Sensors, High Frequency Devices, and Power Electronics I	Natheer	Alatawneh	Sacred Heart University
		Noah	Schulz	Naval Surface Warfare Center, Panama City Division
DQ	Magneto-Caloric, Magnetoelectric, and Multiferroic Materials and Devices	Karthik	Srinivasan	Boise State University
DR	Magnetoresistance, Spin Torque, and Spin Injection in Heterostructures and Films	Avinash Kumar	Chaurasiya	University of Gothenburg
		Guoqiang	Yu	Chinese Academy of Sciences

Session		First Name	Last Name	Institution
EA	Compact EUV Sources: Exceptional New Tools for Ultrafast Spin Dynamics	Dario	Arena	University of South Florida
EB	Altermagnetic Materials	Qihang	Liu	Southern University of Science and Technology
EC	Modeling and Machine Learning	Frank	Abel	United States Naval Academy
ED	Spin-charge Interconversion and Magnetotransport	Marcos	Guimaraes	University of Groningen
EE	Magnonics II: Crystals & Devices	Riccardo	Hertel	Centre National de la Recherche Scientifique
EF	Spin and Magnetism in van der Waals Layered Materials	Paulo Eduardo	de Faria Junior	University of Central Florida
EG	Advanced Magnetic Recording Technologies	Aneesh	Venugopal	Seagate Technology
EP	Spin and Orbital Dynamics	Gyung-Min	Choi	Sungkyunkwan University College of Natural Science
EQ	Transformers and Power Electronics II	Chins	Chinnasamy	Oak Ridge National Laboratory
ER	Hard Magnetic Materials II	Shusuke	Okada	National Institute of Advanced Industrial Science and Technology (AIST)
FA	All-Orbitronic Concepts and Devices	Akash	Kumar	University of Gothenburg
FB	Coherent X-ray for Probing the Interplay of Heterogeneity and Spin-electronic Correlations	Sujoy	Roy	Lawrence Berkeley National Laboratory
FC	Biomagnetism and Biomedical Applications III	Jenifer	Gomez-Pastora	Texas Tech University
		Ravi	Hadimani	Virginia Commonwealth University
FD	Low Damping and Topological Systems	Ayomipo	Ojo	University of South Florida
		Eklavya	Thareja	University of South Florida
FE	Magnetism and Spintronics: Low-dimensional Systems	Yunqiu Kelly	Luo	University of Southern California
FF	Unconventional Computing	Philippe	Talatchian	SPINTEC
FG	Thin Film and Interfaces	Paola	Tiberto	INRIM
FP	Shielding and Levitation / Structured Materials, Nanoparticles, and Nanocomposites	Yiming	Shen	Nanyang Technological University
FQ	Antiferromagnets, Ferrimagnets & Ultrafast Spin Dynamics	Sudip	Majumder	University of South Florida
FR	Skyrmions and Spin-orbit Torque	Biplab	Sanyal	Uppsala University
GA	Unconventional and Nonreciprocal Superconductivity	Denys	Makarov	Helmholtz-Zentrum Dresden-Rossendorf

Session		First Name	Last Name	Institution
GB	Probing and Manipulating Magnetic Order in 2D Systems	Simranjeet	Singh	Carnegie Mellon University
GC	Quantum Materials and Cooperative States	Juan	Sierra	Catalan Institute of Nanoscience and Nanotechnology (ICN2)
GD	Magnetoelectric and Multiferroics III	Sajid	Husain	University of California, Berkeley
GE	Magnonics III: Materials & Spin Texture Dynamics	Benjamin	Jungfleisch	University of Delaware
GF	Alter- / Anti-ferromagnetism in RuO_2 and Other Materials	Oliver	Amin	University of Nottingham
GG	Magnetoresistance in Heterostructures (GMR, TMR, TAMR)	Hai	Li	Analog Devices
		Guoqiang	Yu	Chinese Academy of Sciences
GP	Antiferromagnets and 2D Materials	Zhe	Yuan	Fudan University
GQ	Multi-Functional Magnetic Materials and Other Emerging Topics	Hanu	Arava	Argonne National Laboratory
		Yingying	Wu	University of Florida
GR	Fundamental Properties and Cooperative Phenomena	Debajit	Chakraborty	University of Nebraska
VP1	Computational Methods	Riccardo	Hertel	Centre National de la Recherche Scientifique
VP2	Fundamental Properties and Cooperative Phenomena	Yingying	Wu	University of Florida
VP3	Hard Magnets and Functional Magnetic Materials	Tino	Gottschall	Dresden High Magnetic Field Laboratory
VP4	Magnetic Sensors, High Frequency Devices, and Power Electronics II	Saijian	Ajia	Tohoku University
		Karthik	Srinivasan	Boise State University
VP5	New Applications and Other Emerging Topics II	K	Sriram	IIT Guwahatti
VP6	Soft Magnetic Materials III	Daniel	Hedlund	University of Central Florida
		Sara	Mills	US Naval Research Laboratory
VP7	Spintronic Materials and Devices	Sajid	Husain	University of California, Berkeley

EDITORS

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FUTURE CONFERENCES

2026 Intermag Conference
April 13 - 17, 2026, Manchester, UK

71st Annual Conference on Magnetism and Magnetic Materials
November 2 - 6, 2026, Honolulu, HI

2027 Intermag Conference
May 10 - 14, 2027, Jeju Island, South Korea

23rd International Conference on Magnetism (ICM)
June 14 – 18, 2027, San Juan, Puerto Rico

TU: TUTORIAL: 2D MAGNETS – FUNDAMENTALS AND EMERGING FRONTIERS

Chair(s): T. Santos, Western Digital, San Jose, California, United States

Monday, October 27, 2025
02:30 PM-05:00 PM
Grand Ballroom

02:30 PM-02:35 PM
Welcome and Introduction

02:35 PM-03:20 PM
TU-01. 2D Magnetic Heterostructures – Skyrmions and Their Applications
Y. Wu
Electrical and Computer Engineering, University of Florida, Gainesville, Florida, United States

03:20 PM-03:20 PM
TU-02. Epitaxial Growth, Spin-Orbit Torque, and Magnetization Dynamics in 2D Magnets
R. Kawakami
Department of Physics, The Ohio State University, Columbus, Ohio, United States

03:20 PM-04:05 PM
TU-03. 2D van der Waals Magnets: From Fundamental Physics to Applications
J. Park
Seoul National University, Seoul, Korea (the Republic of)

WELCOME RECEPTION
Monday, October 27, 2025
05:00 PM-06:30 PM
Convention Center Courtyard

SESSION AA: SPIN-OPTOELECTRONICS TOWARDS REAL WORLD APPLICATIONS
Chair(s): Y. Lu, *Institut Jean Lamour, Nancy, France*
Tuesday, October 28, 2025
08:30 AM-12:00 PM
Grand Ballroom

08:30 AM-09:06 AM

AA-01. Controlling the helicity of light by electrical magnetization switching in Spin Light Emitting Diodes

P. Renucci[1, 7], A. Dainone[2], N. Figueiredo-Prestes[3], M. Morassi[4], X. Devaux[2], M. Lindemann[5], J. George[3], H. Jaffrès[3], A. Lemaitre[4], B. Xu[6, 7], M. Stoffel[2], L. Lombez[1], D. Lagarde[1], G. Cong[10], T. Ma[11], M. Vergnat[2], X. Marie[1], X. Han[8], S. Mangin[2], J. Rojas-Sanchez[2], J. Wang[9], M. C. Beard[12], N. Gerhardt[5], I. Zutic[13], Y. Lu[2]

[1]Université de Toulouse, INSA-CNRS-UPS, LPCNO, Toulouse, France, [2]Institut Jean Lamour, Université de Lorraine, CNRS, UMR 7198, Nancy, Nancy, France, [3]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France, [4]Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, Palaiseau, France, [5]Photonics and Terahertz Technology, Ruhr-Universität Bochum, Bochum, France, [6]Key Laboratory of Semiconductor Materials Science, Institute of Semiconductors, Chinese Academy of Sciences,, Beijing, China, [7]College of Materials Science and Opto-Electronic Technology, University of Chinese Academy of Sciences, Beijing, China, [8]Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China, [9]Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States, [10]Platform Photonics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, [11]Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China, [12]Chemistry and Nanoscience Center, National Renewable Energy Laboratory, Golden, Colorado, United States, [13]Department of Physics, University at Buffalo, State University of New York, Buffalo, New York, New York, United States

09:06 AM-09:42 AM

AA-02. Efficient generation of spin-polarized light emission with 2D magnetic heterostructure

X. Zhang

Physics, University of Florida, Gainesville, Florida, United States

09:42 AM-10:18 AM

AA-03. Room-temperature spin-optoelectronics based on defect-enabled spin amplification

S. Hiura

Hokkaido University, Sapporo, Japan

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
AA-04. Chiral Induced Spin Selectivity in Lead-Halide Hybrid Semiconductors
M. C. Beard
Chemical and Nanoscience Center, National Renewable Energy, Golden, Colorado, United States

11:21 AM-11:57 AM
AA-05. Recent Progress in Understanding Polarization Modulation in Spin Lasers
N. Yokota
Research Institute of Electronics, Shizuoka University, Hamamatsu, Shizuoka, Japan

SESSION AB: QUANTUM SENSING OF NOVEL MAGNETISM
Chair(s): G. Fuchs, *Cornell University, Ithaca, New York, United States*
Tuesday, October 28, 2025
08:30 AM-12:00 PM
Ballroom A

08:30 AM-09:06 AM
AB-01. Imaging and Control of 2D Magnets Revealed by Quantum Sensors
B. Zhou
Physics, Boston College, Chestnut Hill, Massachusetts, United States

09:06 AM-09:42 AM
AB-02. Quantum Sensing with Single Spin Defects in 2D and 1D Materials
T. Li
Purdue University, West Lafayette, Indiana, United States

09:42 AM-10:18 AM
AB-03. Quantum Sensing of Nonlinear Magnonic Dynamics
L. Liu, Z. Hu, Q. Wang
MIT, Cambridge, Massachusetts, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
AB-04. Quantum Sensing with Spin Defects: From Spin-Wave Spectroscopy to Symmetry Detection
B. Flebus
Boston College, Chestnut Hill, Massachusetts, United States

11:21 AM-11:57 AM
Panel Discussion

SESSION AC: SKYRMIONS AND MAGNETIC TEXTURES RELATED PHENOMENA

Chair(s): C. Chou, *Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States*
Tuesday, October 28, 2025
08:30 AM-12:00 PM
Ballroom C

08:30 AM-08:42 AM
AC-02. Controlled Formation of Skyrmion Bags
L. Kern
Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States

08:42 AM-08:54 AM
AC-03. Stabilization of Non-collinear Magnetic Textures in Epitaxial Fe_3GeTe_2/Bi_2Te_3 Heterostructures from Interfacial Strain and Dzyaloshinskii–Moriya Interaction
D. Le[1], E. Thareja[1], Y. K. Luo[2], M. Phan[1], J. D. Gayles[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics and Astronomy, University of Southern California, Tampa, California, United States

08:54 AM-09:06 AM
AC-04. Efficient Manipulation of Topological Objects in B20 Multilayer Structures
G. M. Pantano, E. Thareja, D. Le, J. D. Gayles
Department of Physics, University of South Florida, Tampa, Florida, United States

09:06 AM-09:18 AM

AC-05. Tunable magnetic skyrmions in self-formed 3D wrinkles in freestanding membranes*

Z. Yin[1, 2*], K. Gu[1], P. Wang[1], H. Meyerheim[1], T. Jiang[1], A. Srivastava[1], S. Parkin[1, 2]

[1]NISE, Max Planck Institute of Microstructure Physics, Halle, Germany, [2]Department of Physics, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany

09:18 AM-09:30 AM

AC-07. Interlayer Dzyaloshinskii– Moriya interactions in epitaxial Co/Ir/Co/Pt multilayers

A. Koziol Rachwal, E. Oles, P. Drozdz, A. Kwiatkowski, M. Slezak, T. Slezak

AGH University of Krakow, Krakow, Poland

09:30 AM-09:42 AM

AC-08. *Ab-initio* Study of the Topological Hall Effect Caused by Magnetic Skyrmions in Pd/Fe/Ir(111)

A. Kosma[1], P. Rüßmann[1, 5], Y. Mokrousov[1, 2], S. Blügel[1, 3], P. Mavropoulos[4]

[1]Peter Grünberg Institut, Forschungszentrum Jülich and JARA, Juelich, Germany, [2]Institute of Physics, Johannes Gutenberg-University Mainz, Mainz, Germany, [3]Physics Department, RWTH-Aachen University, Aachen, Germany, [4]Department of Physics, National and Kapodistrian University of Athens, Athens, Greece, [5]Institute for Theoretical Physics and Astrophysics, University of Würzburg, Würzburg, Germany

09:42 AM-09:54 AM

AC-09. Control on the motion of magnetic skyrmions by the interfacial improvement

H. Koizumi[1], W. Zeng[2], H. Ma[2], R. Ishikawa[3], Y. Suzuki[4], A. Hirohata[1, 5]

[1]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan, [2]College of Engineering, City University of Hong Kong, Hong Kong, Hong Kong, [3]ULVAC, Osaka, Japan, [4]Osaka University, Osaka, Japan, [5]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany

09:54 AM-10:06 AM
AC-11. Voltage-Controlled Magnetic Anisotropy Effects in Skyrmionic Magnetic Tunnel Junctions
A. Kumar[1], S. Chen[2], A. Chaturvedi[1], B. Xie[1], J. Lourembam[2], A. Soumyanarayanan[1, 2], J. Zhou[2]
*[1]Physics, National University of Singapore, Singapore, [2]Institute of Materials Research & Engineering (IMRE), Agency for Science, Technology and Research (A*STAR), Singapore*

10:06 AM-10:18 AM
AC-12. A study on room temperature ferromagnetic Fe_3GaTe_2
R. Jain[1], L. Tsai[1], N. Hai[1], H. Chang[1], R. Sankar[1], Y. Liou[2], Y. Chen[2], J. Liang[3], S. Lee[1]
[1]Institute of Physics, Academia Sinica Taiwan, Taipei, Nangang, Taiwan, [2]Department of Physics, National Cheng Kung University, Tainan, Taiwan, [3]Department of Physics, Fu-Jen Catholic University, Taipei, Taiwan

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
AC-13. Effect of the Dzyaloshinskii-Moriya interaction on the energy dispersion of spin spirals
D. Huang, A. Manchon
Aix-Marseille Université, CNRS, CINaM, Marseille, France

10:57 AM-11:09 AM
AC-14. Localized Skyrmion Formation in Amorphous $Fe_{0.56}Ge_{0.44}$ Thin Films Driven by Intrinsic Magnetic Disorder
S. Satapathy[3], R. Yalisove[2, 5], T. Bayaraa[3], S. M. Griffin[3], S. Roy[1], P. Fischer[3], M. Scott[2, 5], F. Hellman[4]
[1]ALS, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [2]Department of Materials Science and Engineering,, University of California, Berkeley, Berkeley, California, United States, [3]Material Science, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [4]Department of Physics, University of California, Berkeley, Berkeley, California, United States, [5]National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, California, United States

SESSION AD: MAGNETOELECTRIC AND MULTIFERROICS I

Co-Chair(s): P. Stevenson, *Physics, Northeastern University, Boston, Massachusetts, United States* and Y. Takamura, *Materials Science and Engineering, University of California, Davis, Davis, California, United States*

Tuesday, October 28, 2025
08:30 AM-12:00 PM
Ballroom B

08:30 AM-09:06 AM

AD-01. Colossal enhancement of spin transmission through magnon confinement in an antiferromagnet

S. Husain
Department of Materials Science and Engineering, University of California Berkeley, Berkeley, California, United States

09:06 AM-09:18 AM

AD-03. Multiphysics and Multiscale FEM Modeling of Ni-LNO-Ni Magnetoelectric Composites with Self-Bias Behavior

D. Bidouba-Sanvany[1, 2], T. Huang[1, 2], A. Gensbittel[1, 2], Y. Zheng[3], E. Dandeu[3], H. Talleb[1, 2], M. Marangolo[3]
[1]Sorbonne Université, CNRS, Laboratoire de Génie Electrique et Electronique de Paris, Paris, France, [2]Université Paris-Saclay, Centrale Supélec, CNRS, Laboratoire de Génie Electrique et Electronique de Paris, Paris, France, [3]Sorbonne Université, CNRS, Institut des NanoSciences de Paris, INSP, UMR7588, Paris, France

09:18 AM-09:30 AM

AD-04. Achieving Large and Tunable VCMA in CoFeB/MgO through Electron Depletion with Work-Function-Engineered PtxW1−x Underlayer

Y. Chen[1], T. Peterson[2], Q. Jia[1], Y. Yang[1], S. Liang[3], B. Zink[1], Y. Huang[4, 1], D. Lyu[1], B. Dixit[1], J. Wang[1, 2, 3]
[1]ECE, University of Minnesota, Minneapolis, Minnesota, United States, [2]School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota, United States, [3]Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, United States, [4]National Yang Ming Chiao Tung University, Materials Science and Engineering, Hsinchu, Taiwan

09:30 AM-09:42 AM
AD-05. Interfacial multiferroics of super-orbital-splitting type with colossal interfacial response at room temperature
H. Naganuma[1], K. Nawa[2], T. Ichinose[2], K. Amemiya[4], Y. Sato[3], T. Shiraishi[3], T. Fukushima[2]
[1]Nagoya University, Nagoya, Aichi, Japan, [2]AIST, Tsukuba, Japan, [3]Kumamoto University, Kumamoto, Japan, [4]KEK, Tsukuba, Japan

09:42 AM-09:54 AM
AD-06. Double-leaf Riemann surface topological converse magnetoelectricity
Y. Zhou, S. Dong
Southeast University, Nanjing, Jiangsu, China

09:54 AM-10:06 AM
AD-07. Optimizing the Preparation Process and Magnetic Properties of Pure CrO_2 Powders and Films
J. Lyu[1], Z. Zhang[1], X. Zheng[2], J. Park[2], P. Si[1, 2], Y. Song[2], B. Zhang[2], Q. Wu[1], C. Choi[2]
[1]China Jiliang University, Hangzhou, China, [2]Korea Institute of Materials Science, Changwon, Gyongnam, Korea (the Republic of)

10:06 AM-10:45 AM
Break

10:45 AM-11:21 AM
AD-08. Seeing is Believing: Imaging Magnetic Order in Multiferroics
P. Stevenson
Physics, Northeastern University, Boston, Massachusetts, United States

11:21 AM-11:33 AM
AD-09. Direct Evidence of Non-oxidative Mechanism in Oxygen Based Magnetoionics
T. Bhatnagar-Schöffmann[2, 3], P. Schöffmann[4], A. Resta[4], A. Lamperti[1], G. Bernard[2, 3], A. Kovács[5], L. Largeau[2, 3], A. Durnez[2, 3], A. Harouri[2, 3], X. Lafosse[2, 3], D. Ourdani[7], M. Syskaki[6], Y. Roussigné[7], S. Ono[8], R. E. Dunin-Borkowski[5], J. Langer[6], D. Ravelosona[2, 3], M. Belmeguenai[9], A. Solignac[9, 3], L. Herrera Diez[2, 3]
[1]CNR-IMM, Agrate Brianza, MB, Italy, [2]C2N, CNRS, Palaiseau, France, [3]Université Paris-Saclay, Palaiseau, France, [4]Synchrotron SOLEIL, Saint-Aubin, France, [5]Forschungszentrum Jülich GmbH, Jülich, Germany, [6]Singulus Technology AG, Kahl Am Main, Germany, [7]CNRS-UPR 3407 Université Sorbonne Paris Nord,

Villetaneuse, France, [8]Central Research Institute of Electric Power Industry, Yokosuka, Japan, [9]CEA, CNRS, SPEC, Gif-sur-Yvette, France

SESSION AE: NEW APPLICATIONS AND OTHER EMERGING TOPICS I

Chair(s): S. Pollard, *Physics and Materials Science, The University of Memphis, Memphis, Tennessee, United States*

Tuesday, October 28, 2025
08:30 AM-12:00 PM
Room 2DE

08:30 AM-08:42 AM
AE-02. High-Gradient Magnetic Separation of Lithium Iron Phosphate in Lithium Ion Batteries
D. Rogers, P. Andrei, P. Wang
Florida State University, Tallahassee, Florida, United States

08:42 AM-08:54 AM
AE-03. Orbital hybridization induced changes to oscillatory dynamics in epitaxial $La_{0.67}Sr_{0.33}MnO_3$ films
H. Chhabra, A. Jaman, I. Garcia, T. Banerjee
University of Groningen, Groningen, Netherlands

08:54 AM-09:06 AM
AE-05. A Workflow for Magnetic Material Discovery: Experimental Database meets Graph Neural Networks
B. Schoener[1], Y. Hu[2], H. Hui[1], Y. Liu[1], T. Wojnar[1], J. Xiong[2], I. Zutic[1], H. Zeng[1]
[1]Physics, University at Buffalo, Buffalo, New York, United States, [2]Computer Science and Engineering, University at Buffalo, Buffalo, New York, United States

09:06 AM-09:18 AM
AE-06. Magnetic Tag Recognition via High-Order Projection of Far-Field Measurements
S. Ben Mbarek, S. Amara, G. Setti
CEMSE, KAUST, Jeddah, Thuwal, Saudi Arabia

09:18 AM-09:54 AM
AE-07. Integrating spins and ions for spiontronics
G. Miao[1, 2]
[1]Electrical and Computer Engineering, University of Waterloo, Waterloo, Ontario, Canada, [2]Institute for Quantum Computing, Waterloo, Ontario, Canada

09:54 AM-10:06 AM
AE-08. Magnetic Image Recognition Under Environmental Noise: A Machine Learning Approach
S. Amara, D. Divyanshu, S. Ben Mbarek, G. Setti
CEMSE, KAUST, Jeddah, Thuwal, Saudi Arabia

10:06 AM-10:18 AM
AE-09. Phase Separation and Magnetic Properties of FeCoNiCrAl-Based High-Entropy Alloys
S. Na, J. Yoo, N. J. Jones
Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center Carderock Division, West Bethesda, Maryland, United States

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
AE-10. Exfoliation of Hematene: An Air-Stable Non-van der Waals 2D Material Exhibiting Room-Temperature Ferromagnetism
A. Puthirath Balan[1, 2, 4], S. Radhakrishnan[1, 3], M R Anantharaman[1, 4], C. Tiwary[1, 5], A. Pulickel M.[1]
[1]Rice University, Houston, Texas, United States, [2]Johannes Gutenberg University Mainz, Mainz, Germany, [3]Intel Corporation, Rio Rancho, New Mexico, United States, [4]Cochin University of Science and Technology, Kochi, India, [5]Indian Institute of Technology Khargpur, Kharagpur, India

10:57 AM-11:09 AM
AE-11. Characterization of Current-Flux and Current-Force Relationships in Reluctance Actuators for High-Precision Applications
M. Al Saaideh[1], N. Alatawneh[2, 3], M. Al Janaideh[3]
[1]Memorial University of Newfoundland, St. John's, Newfoundland, Canada, [2]Sacred Heart University, Fairfield, Connecticut, United States, [3]University of Guelph, Guelph, Ontario, Canada

11:09 AM-11:21 AM
AE-12. Magnetocaloric properties and magnetic structures in Tb_2CoGe_2
A. Herrero[1], A. Morozkin[2], E. Apiñaniz[3], I. Puente-Orench[4], A. Garshev[5, 2], V. Yapaskurt[6], A. Oleaga[1]
[1]University of the Basque Country UPV/EHU, Bilbao, Spain, [2]Department of Chemistry, Moscow State University, Moscow, Russian Federation, [3]Universidad del País Vasco UPV/EHU, Vitoria-Gazteiz, Spain, [4]Institute Laue Langevin, Grenoble, France, [5]Faculty of Materials

Science, Moscow State University, Moscow, Russian Federation, [6]Department of Petrology, Moscow State University, Moscow, Russian Federation

11:21 AM-11:33 AM
AE-13. Magnetic demonstrations to establish a sense of wonder
N. J. Jones[1], S. Wolff[2]
[1]Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, Maryland, United States, [2]Mechanical Engineering, The Ohio State University, Columbus, Ohio, United States

SESSION AF: SPIN-ORBIT TORQUE AND RELATED PHENOMENA
Chair(s): R. Posti, *Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States*
Tuesday, October 28, 2025
08:30 AM-12:00 PM
Room 2BC

08:30 AM-09:06 AM
AF-01. Symmetry-based Classifcation of Spin Current Origin
B. Miao
Nanjing University, Nanjing, China

09:06 AM-09:18 AM
AF-02. Observation of Field-Free Orbital Hall Torque Switching in In-Plane Magnetized NiFe/Cr Devices
A. Kumar[1], A. Ashokan.K[1], C. Kalouni[1], K. Varshney[1], V. K. Malik[2], D. Roy[1]
[1]Physics, Indian Institute of Technology Ropar, Rupnagar, Punjab, India, [2]Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India

09:18 AM-09:30 AM
AF-03. Orbital Torque and Field-Free Magnetization Switching in a Light-Element-Based SOT Device
G. K. Shukla, S. Isogami
Research Centre for Magnetic and Spintronics Material, National Institute For Materials Science, Tsukuba, Ibaraki, Japan

09:30 AM-09:42 AM
AF-04. Spin-orbit torque efficiency in IrPt alloy/ferromagnet bilayers
G. Jung[1], S. Lee[2], S. Ko[3], S. Yoon[1], W. Kim[1], H. Jeon[1], H. Cho[1], D. Woo[1], K. Kim[3], B. Park[4], J. Hong[2], K. Eom[1], S. Lee[1]
[1]Semiconductor Engineering, Gachon University, Seongnam, Korea (the Republic of), [2]Materials Science and Engineering, Yonsei university, Seoul, Korea (the Republic of), [3]Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea (the Republic of), [4]Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea (the Republic of)

09:42 AM-09:54 AM
AF-05. Spin-orbit torque switching of both magnetization and exchange bias in Pt/IrMn/CoFeB Hall cross devices
Y. Fan, L. Wan, G. Mihajlović, J. Gibbons, J. Katine, T. Santos
Western Digital, San Jose, California, United States

09:54 AM-10:06 AM
AF-06. Spin-Orbital Conversion in Resonantly Excited Magnetization
O. A. Bakare[1], G. T. Street[1], R. E. Maizel[1], C. Klewe[2], S. Emori[1]
[1]Physics, Virginia Tech, Blacksburg, Virginia, United States, [2]Lawrence Berkeley National lab, Berkeley, California, United States

10:06 AM-10:18 AM
AF-07. Harnessing Spin Reorientation for Energy-efficient Field-free Switching by Orbital Torque
S. Das, B. Jamshed, M. Ramu, S. Piramanayagam
School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
AF-08. Orbital-Spin Hall nano oscillator
R. Gupta[1, 2], N. Behera[1], U. Shashank[1], A. Kumar[1, 3, 4], S. Ghosh[1], J. choi[1], J. Akerman[1, 3, 4]
[1]Physics, University of Gothenburg, Gothenburg, Sweden, [2]Physics, University of South Florida, Tampa, Florida, United States, [3]Research Institute of Electrical Communication, Tohoku University, Sendai, Japan, [4]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan

11:21 AM-11:33 AM
AF-09. Spin–Orbit Torque and Nernst Effects in a Bulk Rashba Channel
J. Ahn[1, 2], J. Jeon[3], S. Cho[2], S. Lee[2], O. Lee[2], H. Koo[1, 2]
[1]KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea (the Republic of), [2]Center for Semiconductor Techonolgy, Korea Institute of Science and Technology, Seoul, Korea (the Republic of), [3]Package Manufacturing Technology Group, Samsung Electro-Mechanics, Busan, Korea (the Republic of)

11:33 AM-11:45 AM
AF-10. Enhancement of damping-like spin-orbit torque efficiency in RuO_2/αW-Ta and RuO_2/Pt systems
Y. Saito[1], S. Ikeda[1, 2], S. Karube[3], T. Endoh[1, 4]
[1]Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan, [2]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan, [3]Institute for Chemical Research, Kyoto University, Kyoto, Japan, [4]Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan

SESSION AG: ELECTRONIC STRUCTURE AND MAGNETIC EXCITATIONS

Chair(s): C. Beekman, *Florida State University, Tallahassee, Florida, United States*
Tuesday, October 28, 2025
08:30 AM-12:00 PM
Room 2A

08:30 AM-09:06 AM
AG-01. Coupling between magnetons and excitons in magnetic insulators
M. van Schilfgaarde[1], S. Acharya[1], D. Pashov[2]
[1]National Renewable Energy Labs, Golden, Colorado, United States, [2]Physics, King's College London, London, United Kingdom

09:06 AM-09:18 AM
AG-02. Realistic modeling of transport properties at finite temperature in magnetic materials by local quantization of a Heisenberg model
F. Engelke[1, 2], C. Heiliger[1, 2]
[1]Institute for theoretical Physics, Justus Liebig University Giessen, Giessen, Hesse, Germany, [2]Center for Materials Research, Justus Liebig University Giessen, Giessen, Hesse, Germany

09:18 AM-09:30 AM
AG-03. Observation of multiple flat bands and van-Hove singularities in the distorted kagome metal $NdTi_3Bi_4$
M. Mondal[1], A. Sakhya[1], M. Sprague[1], B. Ortiz[2], M. Matzelle[3], A. Kumay[1], A. Seal[1], B. Ghosh[3], A. Bansil[3], M. Neupane[1]
[1]Physics, University of Central Florida, Orlando, Florida, United States, [2]Oak Ridge National lab, Oak Ridge, Tennessee, United States, [3]Physics, Northeastern University, Boston, Massachusetts, United States

09:30 AM-09:42 AM
AG-04. Gapless Topological Behaviors in a Long-Range Quantum Spin Chain
S. Yang[1], H. Lin[1], X. Yu[2, 3]
[1]Institute for Advanced Study in Physics and School of Physics, Zhejiang University, Hangzhou, Zhejiang, China, [2]Department of Physics, Fuzhou University, Fuzhou, Fujian, China, [3]Fujian Key Laboratory of Quantum Information and Quantum Optics, College of Physics and Information Engineering, Fuzhou University, Fuzhou, Fujian, China

09:42 AM-10:18 AM
AG-05. Altermagnetism: What can we believe?
P. S. Stamenov, M. T. Stamenova
School of Physics and CRANN, Trinity College, Dublin, Dublin, Ireland

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
AG-06. Electronic and Magnetic Properties of Hole Doped Topological Kagome Metal Thin Films
R. Dutta[1], P. M. Laxmeesha[1], T. Tandon[1], T. D. Tucker[1], S. Sheikh[2], U. M. Jayathilake[2], W. Tian[3], A. Aczel[3], T. Lee[4], A. X. Gray[2], S. May[1]

[1]Department of Materials Science and Engineering, College of Engineering, Drexel University, Philadelphia, Pennsylvania, United States, [2]Department of Physics, Temple University, Philadelphia, Pennsylvania, United States, [3]Neutron Scattering Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States, [4]Diamond Light Source Ltd., Didcot, United Kingdom

10:57 AM-11:09 AM
AG-07. Observation of Spin-Splitting in an Intercalated Transition Metal Dichalcogenide Altermagnet
M. X. Sprague
Department of Physics, University of Central Florida, Orlando, Florida, United States

11:09 AM-11:45 AM
AG-08. Beyond Altermagnetism: Unconventional Magnetism
Q. Liu
Southern University of Science and Technology, Shenzhen, Guangdong, China

SESSION AP: BIOMAGNETISM AND BIOMEDICAL APPLICATIONS I (POSTER SESSION)
Chair(s): J. Alonso Masa, *CITIMAC, University of Cantabria, Santander, Cantabria, Spain*
Tuesday, October 28, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

AP-01. Temperature Measurement of Magnetic Nanoparticles using Diamond Quantum Sensor for Magnetic Hyperthermia
Y. Arakawa, M. Inoue, S. Yabukami, A. Kuwahata
Tohoku University, Sendai, Miyagi, Japan

AP-02. Gradiometer using single bulk diamond quantum sensor for magnetic field sensing
M. Inoue, Y. Arakawa, S. Yabukami, A. Kuwahata
Tohoku University, Sendai, Japan

AP-03. Highly sensitive detection of GDF15 in Urine using magnetic nanoparticle aggregation
S. Yabukami[1, 2], T. Murayama[1], L. Tonthat[1], K. Okita[2], T. Abe[1]
[1]Tohoku University, Sendai, Japan, [2]Tohoku-TMIT, Sendai, Japan

AP-04. Hydrophilic Magnetite Nanoparticles for Biomedical Applications

E. Jaberolansar[1], S. Jan[1], R. Roy Chowdhury[1], D. A. Arena[1], S. Mohapatra[2], H. Srikanth[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Morsani College of Medicine, University of South Florida, Tampa, Florida, United States

AP-06. Investigation of the Impact of Individualized Neuroanatomy and Functional Connectivity on Primary Motor Cortex Excitability During Transcranial Magnetic Stimulation

M. Paslar[1], T. J. Taylor[1], B. Embree[2], W. Lohr[1], T. Atalugama[2], C. L. Peterson[1], R. L. Hadimani[1, 2]
[1]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

AP-07. Tuning Size, Shape, and Phase Composition for Enhanced Magnetic Hyperthermia in FeO/Fe_3O_4 Nanoparticles and Superclusters

W. Manuel[1, 2], D. Luu[1], M. Gili[1, 2], D. Brown[1], S. Jan[1], M. Nguyen[3], M. Vega[2], T. Lee[3], H. Srikanth[1], M. Phan[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Materials Science and Engineering Program, College of Science, University of the Philippines Diliman, Diliman, Philippines, [3]Department of Chemistry and the Texas Center for Superconductivity, University of Houston, Houston, Texas, United States

AP-08. Development of a novel Ferromagnetic Suppression Coil to Increase Focality in TMS Procedures on Small Animals

T. V. Atalugama, W. Lohr, R. L. Hadimani
Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

AP-09-LB. Simulation of Adaptive Magnetic Coils for Directionally Adjustable Targeted Neuromodulation

P. Chan[1], J. Pothuganti[2], G. Licwinko[2], W. Yu[2], V. Chen[2]
[1]Indiana University, Bloomington, Indiana, United States, [2]Loyola University Chicago, Chicago, Illinois, United States

AP-10-LB. Bio-resorbable magnetic tunnel junctions
D. Kim[1], B. Kim[2], B. Park[1], J. Ahn[2], H. Yang[3]
[1]Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea (the Republic of), [2]School of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea (the Republic of), [3]Department of Electrical and Computer Engineering, National University of Singapore (NUS), Singapore

SESSION AQ: INSTRUMENTATION AND MEASUREMENT TECHNIQUES (POSTER SESSION)

Chair(s): K. Islam, *Physics and Materials Science, The University of Memphis, Memphis, Tennessee, United States*
Tuesday, October 28, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

AQ-01. Emergence of Anomalous and Topological Hall Effects in Magnetic Topological Insulator $Mn_2BiSbTe_5$
A. Saxena[1, 2]
[1]Program on Key Materials, National Cheng Kung University, Tainan, Tainan, Taiwan, [2]Physics, National Sun Yat-sen University, Gushan, Kaohsiung, Taiwan

AQ-02. High-Precision Iron Loss Evaluation with Reduced Signal Averaging via Bayesian Inference
T. Suwa[1], N. Ono[1, 2], S. Okamoto[1, 3, 4]
[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan, [2]Department of Applied Physics, Tohoku University, Sendai, Japan, [3]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan, [4]National Institute for Materials Science, Tsukuba, Japan

AQ-03. A Scalable Implementation of a 3D Magnetic Hall Sensor Card for Mapping and Monitoring Applications
L. Messner[1, 2]
[1]EP-DT, CERN, Meyrin, Switzerland, [2]Biomedical Engineering Group, Department of Mechatronics, University of Innsbruck, Innsbruck, Austria

AQ-04. Magnetic Orientation of Rod-shaped Diamagnetic Crystals in Rotating Magnetic Fields Based on Real-time Observation and the Analysis of Orientation Conditions

Y. Takeuchi[1], R. Kimoto[1], A. Hamasaki[2]
[1]Muroran Institute of Technology, Muroran, Japan, [2]Faculty of science, Shinshu University, Matsumoto, Japan

AQ-05. Red Blood Cell Magnetic Property Monitoring Using Cell Tracking Velocimetry: Applications to Blood Banking and Sickle Cell Disease

L. Nguyen T. Tran[1], K. Paz Gonzalez[1], H. Choe[2], X. Wu[2], P. Iyer[2], K. Wu[3], J. Chalmers[2], J. Gomez-Pastora[1]
[1]Chemical Engineering, Texas Tech University, Lubbock, Texas, United States, [2]Chemical and Biomolecular Engineering, The Ohio State University, Columbus, Ohio, United States, [3]Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States

AQ-06. Computational Design of a Magnetic Particle Imaging (MPI) Prototype: Effects of Gradient Fields and Nanoparticle Properties on Imaging Performance

S. Mostufa, B. Rezaei, K. Wu
Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States

AQ-07. Design of a Mechanical-part-free Rotational Magnetic Field with Minimal Poles

A. Hamasaki[1], K. Sato[2], H. Kawaguchi[2], Y. Takeuchi[2]
[1]Faculty of science, Shinshu University, Matsumoto, Japan, [2]Muroran Institute of Technology, Muroran, Japan

AQ-08. Optimization Method of Interface Exchange-Coupled Magnetic Moment in Iron-Based Dual-Phase Magnetic Materials Based on First-Principles

J. Yuan[1, 2], D. Zhang[1, 2], X. Chen[1, 2], H. Zhou[1, 2], F. Xiao[1, 2], F. Yang[3, 4], Y. Liu[3, 4], C. Wang[3, 4], T. Ma[5], X. Guo[5], X. Ma[5]
[1]School of Electrical Engineering and Automation, Wuhan university, Wuhan, Hubei, China, [2]State Key Laboratory of Power Grid Environmental Protection, School of Electrical Engineering and Automation, Wuhan University, Wuhan, Hubei, China, [3]China Electric Power Research Institute, Beijing, China, [4]State Key Laboratory of Advanced Power Transmission Technology, Beijing, China, [5]State Grid Anhui Electric Power Co., Ltd. Huaibei Power Supply Company, Huaibei, Anhui, China

AQ-09. Structural Health Monitoring in Austenitic Steels by Means of Determining Martensitic Phases
T. Damatopoulou, X. Vourna, E. V. Hristoforou
National TU of Athens, Athens, Greece

AQ-10. Probing the Antiferromagnetic–Ferromagnetic Phase Transition in FeRh using Ultrafast Extreme Ultraviolet High Harmonic Spectroscopy
N. Li, A. Grafov, E. Sawruk, M. Lebrat, H. C. Kapteyn, M. M. Murnane
JILA, University of Colorado, Boulder, Colorado, United States

SESSION AR: MAGNETIZATION DYNAMICS (POSTER SESSION)
Chair(s): A. Capua, *Electrical Engineering and Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Jerusalem, Israel*
Tuesday, October 28, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

AR-01. Effect of oxygen ion implantation on the interfacial properties of the Pt/Co/Pt multilayer with perpendicular magnetic anisotropy
A. Sharma[1], P. Karmakar[2], R. Brajpuriya[1], V. Reddy[3], A. Gupta[1], M. Gupta[3], S. Pathak[1]
[1]Physics, UPES Dehradun, Dehradun, Uttarakhand, India, [2]Variable Energy Cyclotron Centre, Kolkata, West Bengal, India, [3]UGC DAE CSR, Indore, Madhya Pradesh, India

AR-02. Depinning of Domain Walls in a Notched Ferromagnetic Nanostrip: Role of Inertial and Nonlinear Damping Effects
S. Dolui[1], S. Maity[1], S. Dwivedi[1], G. Consolo[2]
[1]School of sciences, National Institute of Technology Andhra Pradesh, Tadepalligudem, Andhra Pradesh, India, [2]Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy

AR-03. Modulation of switching dynamics in magnetic tunnel junctions for low-error-rate computational random-access memory
Y. Lv, B. Dixit, J. Wang
Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, Minnesota, United States

AR-04. Nonlinear dynamics of spin waves in L-shaped ferromagnetic nanowires and nanoplatelets under high-power microwave pumping
B. Hussain[1], M. G. Cottam[2]
[1]University of Michigan, Dearborn, Michigan, United States, [2]University of Western Ontario, London, Ontario, Canada

AR-05. Data-Driven Estimation of Magnetic Nanoparticle Properties via Stochastic Langevin Model
E. Azizi[1], H. Zuo[2], V. K. Chugh[3], R. He[1], K. Wu[1]
[1]Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States, [2]Lubbock High School, Lubbock, Texas, United States, [3]Seagate Technology LLC, Bloomington, Minnesota, United States

AR-06. Development of High-sensitive ST-FMR with Amplitude Modulated Magnetic Field
A. Kamiryo[1], T. Horaguchi[2], T. Manago[2]
[1]Osaka Metropolitan Univ., Sakai, Osaka, Japan, [2]Fukuoka Univ., Fukuoka, Fukuoka, Japan

AR-07. Dynamic Control and Amplification of Spin Waves via Temporally Modulated Magnetic Fields
K. W. Sobucki, P. Gruszecki
Adam Mickiewicz University, Poznan, Poland

AR-08. Broadband Magnetization Dynamics and Multiphase Switching in Cobalt Ferrite Nanoparticles Embedded in Activated Carbon
S. Jan[1], R. Roy Chowdhury[1], N. Schulz[4], A. I. Ojo[1], M. González de la Vega[2], J. Á. Blanco Rodríguez[2], P. Gorria[2, 3], D. A. Arena[1], H. Srikanth[1]
[1]University of South Florida, Tampa, Florida, United States, [2]Universidad de Oviedo, Oviedo, Spain, [3]IUTA, Universidad de Oviedo, Gijón, Spain, [4]Naval Surface Warfare Center, Panama City, Florida, United States

AR-09. Investigation of the magnetic behavior of 11 nm diameter magnetite (Fe_3O_4) nanoparticles encased in a 2 nm coating
T. M. Pekarek[1], K. O'Shea[2]
[1]Physics, Univ. of N. Florida, Jacksonville, Florida, United States, [2]Department of Chemistry and Biochemistry, Florida International Univ., Miami, Florida, United States

AR-10. PETASPIN 2.0: a high-performance CUDA™-native numerical solver for micromagnetic and ferroelectrics calculations

A. Giordano[1], A. Hasan[2], E. Piccolo[3], D. Rodrigues[3], M. Carpentieri[3], G. Finocchio[2]

[1]Department of Engineering, University of Messina, MESSINA, ME, Italy, [2]MIFT, University of Messina, Messina, Italy, [3]Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy

AR-11-LB. Chip-Scale Band Engineering in Doped MoS_2 Heterostructure for Spintronic Integration

N. Do[1], H. Ko[2], U. Palanivel[3], S. Kim[4], J. Kim[5], H. Kim[3], T. Kim[1]

[1]Department of Physics, Ewha Womans University, Seoul, Korea (the Republic of), [2]SKKU Advanced Institute of Nanotechnology, SKKU, Suwon, Korea (the Republic of), [3]Center for Ultrafast Phase Transformation, Sogang University, Seoul, Korea (the Republic of), [4]Department of Chemistry, Sookmyung Woman's University, Seoul, Korea (the Republic of), [5]Departement of Physics, Pusan National University, Pusan, Korea (the Republic of)

AR-12. Prediction of Magnetocrystalline Anisotropy Constants in FeCoNi Thin Films Using Density of States Features

R. Sudo[1], T. Ueno[1], S. Yamashita[1, 2], M. Oogane[1]

[1]Tohoku University, Sendai, Japan, [2]The Max Planck Institute for Chemical Physics of Solids, Dresden, Germany

AR-13. Interpretable Machine Learning for Designing Atomic-Scale Magnets

J. Navratil[1], R. Topolnicki[2, 4], M. Otyepka[1, 3], P. S. Blonski[1, 3]

[1]Palacky University Olomouc, Olomouc, Czechia, [2]University of Wroclaw, Wroclaw, Poland, [3]VSB–Technical University of Ostrava, Ostrava, Czechia, [4]Polish Academy of Sciences, Warsaw, Poland

AR-14. Automated Experimental Platform for AI Driven Magnetic Materials Discovery

A. Huang

MTI Corporation, Richmond, California, United States

MMM MARIOKART

Tuesday, October 28, 2025
12:15 PM-01:45 PM
Room 1DE

SESSION BA: RECENT ADVANCES AND FUTURE CHALLENGES WITH NON-COLLINEAR ANTIFERROMAGNETS

Chair(s): S. Nakatsuji, *Department of Physics, University of Tokyo, Tokyo, Tokyo, Japan*

Tuesday, October 28, 2025

02:00 PM-05:30 PM

Grand Ballroom

02:00 PM-02:36 PM

BA-01. Spin Polarization of Noncollinear Antiferromagnets

E. Y. Tsymbal

University of Nebraska-Lincoln, Lincoln, Nebraska, United States

02:36 PM-03:12 PM

BA-02. Sub-nanosecond electrical switching of non-collinear antiferromagnetic Mn_3Sn through chiral-spin rotation

Y. Takeuchi[1, 2], Y. Sato[3, 4], Y. Yamane[3, 5], J. Yoon[3, 4], Y. Kanno[3, 4], T. Uchimura[3, 4], K. De Zoysa[3, 4], J. Han[1], S. Kanai[3, 6], J. Ieda[7], H. Ohno[3, 8], S. Fukami[3, 6, 9]

[1]WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Sendai, Miyagi, Japan, [2]Research Center for Magnetic and Spintronic Materials (CMSM), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan, [3]Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication (RIEC), Tohoku University, Sendai, Miyagi, Japan, [4]Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [5]Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University, Sendai, Miyagi, Japan, [6]Center for Science and Innovation in Spintronics (CSIS), Tohoku University, Sendai, Miyagi, Japan, [7]Advanced Science Research Center, Japan Atomic Energy Agency (JAEA), Tokai, Ibaraki, Japan, [8]Center for Innovative Integrated Electronic Systems (CIES), Tohoku University, Sendai, Miyagi, Japan, [9]Inamori Research Institute for Science (InaRIS), Kyoto, Kyoto, Japan

03:12 PM-03:48 PM

BA-03. Spin-torque-driven GHz magnetization dynamics in the noncollinear antiferromagnet Mn_3Sn

W. Lee[1], S. Hwang[1], H. Ko[1], B. Park[1], K. Lee[1], G. Choi[2]

[1]KAIST, Daejeon, Korea (the Republic of), [2]Sungkyunkwan University, Suwon, Korea (the Republic of)

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
BA-04. Observation of antiferromagnetic spin torque diode effect
S. Sakamoto[1, 2], T. Nomoto[3, 4], T. Higo[1, 5], Y. Hibino[6], T. Yamamoto[6], S. Tamaru[6], Y. Kotani[7], H. Kosaki[1], M. Shiga[1], D. Nishio-Hamane[1], T. Nakamura[7, 8], T. Nozaki[6], K. Yakushiji[6], R. Arita[3, 9], S. Nakatsuji[1, 5, 10], S. Miwa[1]
[1]The Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan, [2]Institute for Materials Research, Tohoku University, Sendai, Japan, [3]Research Center for Advanced Science and Technology, The University of Tokyo, Meguro, Japan, [4]Department of Physics, Tokyo Metropolitan University, Hachioji, Japan, [5]Department of Physics, The University of Tokyo, Bunkyo, Japan, [6]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan, [7]Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan, [8]International Center for Synchrotron Radiation Innovation Smart, Tohoku University, Sendai, Japan, [9]Center for Emergent Matter Science, RIKEN, Wako, Japan, [10]Institute for Quantum Matter and Department of Physics and Astronomy, Johns Hopkins University, Baltimore, Maryland, United States

04:51 PM-05:27 PM
BA-05. Optically induced renormalization of coherent magnons in antiferromagnets.
D. Bossini
University of Konstanz, Konstanz, Germany

SESSION BB: BIOMAGNETIC SENSORS: FROM BENCH TO BEDSIDE
Chair(s): R. L. Hadimani, *Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States*
Tuesday, October 28, 2025
02:00 PM-05:30 PM
Ballroom A

02:00 PM-02:36 PM
BB-01. Structure-property relationships in core-shell magnetoelectric nanowires –towards minimally invasive neural stimulation
N. Ferson, J. Andrew
Dept. of Materials Sci. & Eng., University of Florida, Gainesville, Florida, United States

02:36 PM-03:12 PM
BB-02. Magneto-LC Resonance Biosensing Technology for Advanced Biodetection and Diagnostics
M. Phan[1, 2]
[1]University of South Florida, Tampa, Florida, United States, [2]VinUniversity, Hanoi, Viet Nam

03:12 PM-03:48 PM
BB-03. Wireless Brain-Machine Interface with MagnetoElectric NanoParticles
E. Zhang[2], P. Liang[1], M. Abdel-Mottaleb[3], S. Chen[3], M. Shotbolt[3], V. Andre[3], J. Tian[3], A. Scott-Vandeusen[3], E. Zhu[3], S. Pané[2], S. Khizroev[3]
[1]Cellular Nanomed, Irvine, California, United States, [2]Institute of Robotics and Intelligent Systems, Swiss Federal Institute of Technology, Zurich, Switzerland, [3]University of Miami, Coral Gables, Florida, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
BB-04. Magnetic Nanoparticles and Sensors for Antigen Tests
M. Rivas, M. Salvador, V. Pilati, J. L. Marques, J. C. Martinez-Garcia
Department of Physics, University of Oviedo, Gijón, Spain

04:51 PM-05:27 PM
BB-05. NV Centers as Quantum Sensors for Biomagnetic Signal Measurement
M. Sekino[1], M. Fushimi[1], A. Kuwahata[2], M. Hatano[3]
[1]The University of Tokyo, Tokyo, Japan, [2]Tohoku University, Sendai, Japan, [3]Institute of Science Tokyo, Tokyo, Japan

SESSION BC: THERMOELECTRIC, MAGNETIC, AND SUPERCONDUCTING EFFECTS IN HYBRID HETEROSTRUCTURES AND SPIN TEXTURES

Chair(s): Y. Wu, *Electrical and Computer Engineering, University of Florida, Gainesville, Florida, United States*

Tuesday, October 28, 2025
02:00 PM-05:30 PM
Ballroom C

02:00 PM-02:12 PM

BC-01. Single-Molecule Magnets (SMM) Transport Channel Formation Along the Liftoff Produced Exposed Sides of Metal-Insulator-Semiconductor (MIS) Diodes

P. Suh

Mechanical Engineering, University of the District of Columbia, Washington DC, District of Columbia, United States

02:12 PM-02:24 PM

BC-02. Enhanced Interfacial Magnetism Driven by Magnetic Proximity Effects in LSMO/YBCO Superlattices

H. T. Salazar[1, 2], Y. Tsai[1], S. Sun[1, 3], L. Chen[1], A. J. Grutter[4], T. Charlton[5], J. Lynn[4], H. Chou[1, 3]

[1]National Sun Yat-sen University, Kaohsiung, Kaohsiung, Taiwan, [2]Adamson University, Manila, Metro Manila, Philippines, [3]National University of Kaohsiung, Kaouhsiung, Kaohsiung, Taiwan, [4]National Institute of Standards and Technology, Washington DC, District of Columbia, United States, [5]Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

02:24 PM-02:36 PM

BC-03. Observation of nonlinear thermoelectric effect at room temperature

Y. Hirata[1], T. Kikkawa[1, 2], H. Arisawa[1, 3], E. Saitoh[1, 3, 4]

[1]Department of Applied Physics, University of Tokyo, Bunkyo-ku, Tokyo, Japan, [2]ASRC, JAEA, Tokai-mura, Japan, [3]CEMS, RIKEN, Wako-shi, Saitama, Japan, [4]Beyond AI, University of Tokyo, Bunkyo-ku, Tokyo, Japan

02:36 PM-02:48 PM

BC-07. Thermally induced spin transport in in situ post-annealed $NiFe_2O_4$ thin films with varying lattice parameters and saturation magnetization

F. Meier[1], J. Straßburger[1], J. Biedinger[1], M. Gaerner[1], F. Peters[1], T. Samanta[1], L. Caron[1], O. Gomonay[2], T. Kuschel[1, 2]

[1]Bielefeld University, Bielefeld, Germany, [2]Johannes Gutenberg University Mainz, Mainz, Germany

02:48 PM-03:00 PM
BC-08. Sources Affecting Decision-making in Nanomagnetic Junctions
H. Arava[1], D. Sanz Hernandez[2], J. Woods[1], J. Grollier[2], A. Petford-Long[1]
[1]Argonne National Laboratory, Lemont, Illinois, United States, [2]Laboratoire Albert Fert, Palaiseau, France

03:00 PM-03:12 PM
BC-09. Distinct element-specific nanoscale magnetization dynamics following ultrafast laser excitation
E. Bernard[1], R. Jangid[1, 2], N. Zhou Hagström[1], F. Meera[1], J. A. Brock[3], M. Pancaldi[4], D. De Angelis[4], F. Capotondi[4], E. Pedersoli[4], K. Rockwell[5], M. Keller[6], S. Bonetti[7], E. Fullerton[3], T. Silva[6], R. Kukreja[1]
[1]Materials Science and Engineering, University of California Davis, Davis, California, United States, [2]NSLS-II, Brookhaven National Laboratory, Upton, New York, United States, [3]Center for Memory and Recording Research, University of California San Diego, San Diego, California, United States, [4]Elettra Sincrotrone, Trieste, Italy, [5]Center for Magnetism and Magnetic Nanostructures, University of Colorado Colorado Springs, Colorado Springs, Colorado, United States, [6]Quantum Electromagnetics Division, NIST, Boulder, Colorado, United States, [7]Molecular Sciences and Nanosystems, a' Foscari University of Venice, Venice, Italy

03:12 PM-03:24 PM
BC-11. Néel Domain Walls with Bistable Chirality in a Perpendicularly Magnetized Ferrimagnetic Insulator
Y. Song[1], S. Huang[1], D. Bono[1], J. Sadowski[2], C. A. Ross[1], G. Beach[1]
[1]Massachusetts Institute of Technology, Cambridge, Massachusetts, United States, [2]Brookhaven National Laboratory, Upton, New York, United States

03:24 PM-03:36 PM
BC-12. Meron chirality selection by transverse magnetic fields at reconfigurable domain wall racetrack
V. V. Fernandez[1, 2], A. Herguedas[1, 2], C. Quirós[1, 2], P. Suarez-Blanco[1], C. Fernandez-Gonzalez[3], A. Sorrentino[3], S. Ferrer[3], A. Hierro-Rodriguez/[1, 2], M. Velez[1, 2]

[1]Universidad de Oviedo, OVIEDO, Spain, [2]CINN (CSIC-UO), El Entrego, Spain, [3]Alba Synchrotron, Cerdanyola del Vallès, Spain

03:36 PM-03:48 PM
BC-13. Vortex Nernst effect in ferrimagnetic insulator/high-temperature superconductor heterostructures
M. Yang, J. Li
Department of Physics, Southern University of Science and Technology, Shengzheng, GuangDong, China

03:48 PM-04:00 PM
BC-14. Chirally Coupled Magnetic Tunnel Junctions resulting from the Dzyaloshinskii-Moriya interaction *
B. Vermeulen[1, 2*], J. Chatterjee[1], G. Talmelli[1], Y. Canvel[1], Y. Li[1], S. Rao[1], B. Sorée[1, 3, 4], K. Temst[2, 1], V. Nguyen[1]
[1]IMEC, Leuven, Belgium, [2]Department of Physics and Astronomy, Quantum Solid-State Physics Division, KU Leuven, Leuven, Belgium, [3]Department of Electrical Engineering, ESAT-INSYS Division, KU Leuven, Leuven, Belgium, [4]Department of Physics, Universiteit Antwerpen, Antwerpen, Belgium

SESSION BD: SOFT MAGNETIC MATERIALS I
Co-Chair(s): C. Chinnasamy, *Manufacturing Science Division, Oak Ridge National Laboratory, Knoxville, Tennessee, United States* and P. Kulik, *University of Central Florida, Orlando, Florida, United States*
Tuesday, October 28, 2025
02:00 PM-05:30 PM
Ballroom B

02:00 PM-02:36 PM
BD-01. Iron Nitride Based Nanocomposite Magnet and its Prototype Motor Application
T. Ogawa[1, 2], S. Yamamoto[3], N. Kobayashi[2], H. Yamamoto[2], K. Nakamura[1]
[1]Graduate School of Engineering, Tohoku University, Sendai, Japan, [2]Future Materialz Co. Ltd., Tokyo, Japan, [3]Sankei Giken Kogyo Co. Ltd., Tokyo, Japan

02:36 PM-02:48 PM
BD-02. Theoretical Investigation of Magnetic Moment Enhancement in $(Fe_{1-x}Co_x)_{16}N_2$ Compared to $Fe_{1-x}Co_x$ Alloy
Y. Asari[1], T. Tabata[1], M. Noujima[1], S. Terada[1], M. Enoki[2], T. Ogawa[3]
[1]Hitachi, Ltd, Hitachi, Japan, [2]Shimane university, Matsue, Japan, [3]Tohoku university, Sendai, Japan

02:48 PM-03:00 PM
BD-03. Microstructure and permeability of Fe-deficient Ni-Cu-Zn ferrites sintered under reduced oxygen partial pressure
C. Priese, J. Töpfer
Ernst-Abbe-Hochschule Jena, Jena, Germany

03:00 PM-03:12 PM
BD-04. $Nd_2Fe_{17}N_3$ with planar magnetocrystalline anisotropy for sub-terahertz broadband absorbers
S. Abe[1], J. Akamatsu[1], N. Mitsui[1], N. Imaoka[1], S. Okada[2], K. Ozaki[2]
[1]Nichia Corporation, Anan, Japan, [2]National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan

03:12 PM-03:24 PM
BD-05. Role of Dipolar Interactions on the Determination of Effective Magnetic Anisotropy in Biopolymer coated Eu doped Magnetite Nanoparticles
K. Hazarika, D. P. Borah
Department of Science and Humanities, National Institute of Technology, DIMAPUR, Nagaland, India

03:24 PM-03:36 PM
BD-06. Advanced In-Situ Friction Stir Forging of Soft Magnetic Composites for Axial-Flux Electric Motor Applications
R. Kalsar[1], H. Das[1], S. Shukla[1], L. Li[1], T. Ajantiwalay[1], J. Haag[1], T. P. Chhetri[1], B. Gwalani[2], V. Joshi[1], C. Chinnasamy[3]
[1]Pacific Northwest National Laboratory, Richland, Washington, United States, [2]North Carolina State University, Raleigh, North Carolina, United States, [3]Manufacturing Science Division, Oak Ridge National Laboratory, Knoxville, Tennessee, United States

03:36 PM-03:48 PM
BD-07. Minnealloy Fabrication for High Power Transformers
A. S. Padgett[1], S. R. Bishop[1], J. D. Boissiere[1], C. R. Riley[1], P. F. Weck[1], S. Percival[1], D. Bosomtwi[1], A. R. Marotta[1], D. Richards[1], W. Echtenkamp[2], J. Wang[2]
[1]Sandia National Laboratories, Albuquerque, New Mexico, United States, [2]University of Minnesota, Minneapolis, Minnesota, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
BD-08. Co-sputtered FeCo-AlN Thin Films with Ultra-high Resistivity for High-Frequency Integrated Magnetics
R. Anjum, G. Wei, A. Masood, R. Sai
Integrated Power and Energy Systems, Tyndall National Institute, Cork, Ireland

04:27 PM-04:39 PM
BD-09. Bipolar Faraday Rotation Garnets for Integrated Magnet-free Isolators on Si
P. Liu[1], B. Moghal[2], B. Stadler[2, 1]
[1]Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, United States, [2]Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States

04:39 PM-04:51 PM
BD-10. Micromagnetic Modeling of Gap-Controlled Permeability in Realistically Structured Soft Magnetic Materials
J. Duan, V. Lomakin
University of California San Diego, San Diego, California, United States

04:51 PM-05:03 PM
BD-11. Engineering High Thermal Stability in Zr/Nb-doped CoFeB for High Power Conditioning in Extreme Environments
M. F. Mancias[1], N. M. Bruno[2], V. Keylin[2], A. Leary[2], K. Chinnathambi[3], R. D. Noebe[2], K. Srinivasan[1]
[1]Electrical and Computer Engineering, Boise State University, Boise, Idaho, United States, [2]Materials and Structures Division, NASA Glenn Research Center, Cleveland, Ohio, United States, [3]Boise State Center for Materials Characterization, Boise State University, Boise, Idaho, United States

05:03 PM-05:15 PM
BD-12. Soft magnetic properties of Fe-Co-B-Si-Cu nanocrystalline alloys at high temperatures
I. Skorvanek[1], J. Marcin[1], B. Kunca[1], P. Svec jr.[2], P. Svec[2]
[1]Institute of Experimental Physics, SAS, Kosice, Slovakia, [2]Institute of Physics, SAS, Bratislava, Slovakia

05:15 PM-05:27 PM

BD-13. Fabrication of soft magnetic cores composed of amorphous Fe-B particles for next-generation magnetic passive components

S. Ajia[1], C. Masumoto[1], Y. Kodama[1], T. Miyazaki[2], S. Muroga[1], Y. Endo[1, 3]

[1]Department of Electrical Engineering, Tohoku University, Sendai, Japan, [2]School of Engineering, Tohoku University, Sendai, Japan, [3]CSIS, Tohoku University, Sendai, Japan

SESSION BE: MAGNETO-OPTIC AND MAGNETO-CALORIC MATERIALS AND DEVICES

Co-Chair(s): A. Biswas, *Ames National Laboratory, Ames, Iowa, United States* and M. Khan, *Physics, Miami University, Oxford, Ohio, United States*

Tuesday, October 28, 2025

02:00 PM-05:30 PM

Room 2DE

02:00 PM-02:36 PM

BE-01. High-efficiency Optical Training of Spin Textures in 2D Magnets

C. Gong

University of Maryland, College Park, Maryland, United States

02:36 PM-02:48 PM

BE-02. Photon-Magnon Coupling in Asymmetric Meander Microstrip Line for Frequency Tunable and Controllable Nonreciprocal Microwave Transmission

E. Kwao[2], Y. Xiong[1, 2], S. Zhou[1], S. Desai[2], W. Zhang[1], B. Yang[2]

[1]Department of Physics and Astronomy, University of North Carolina Chapel Hill, Chapel Hill, North Carolina, United States, [2]Department of Electrical and Computer Engineering, North Carolina A&T State University, Greensboro, North Carolina, United States

02:48 PM-03:00 PM

BE-03. Stochastic magnetic tunnel junction arrays for infrared sensing

A. Deka[2], U. Singh[1], L. Bauer[1], M. Mousa[1], B. Prasad[3], Z. Jacob[1]

[1]ECE, Purdue University, West Lafayette, Indiana, United States, [2]Birck Nanotechnology Center, Purdue University, West Lafayette, Indiana, United States, [3]Indian Institute of Science, Bangalore, India

03:00 PM-03:12 PM

BE-04. Multi-Lanthanide Metal-Organic Frameworks: From Multifunctional Magnetic Materials to Quantum Applications

E. Bartolomé[1], X. Liu[1], A. Arauzo[3], Z. Li[2], J. Giner-Planas[1]

[1]Institut de Ciència de Materials de Barcelona (ICMAB), Barcelona, Spain, [2]Shandong Provincial Key Laboratory of Monocrystalline Silicon Semiconductor Materials and Technology, Dezhou University, Dezhou, China, [3]Condensed Matter Physics, Instituto de Nanociencia y Materiales de Aragón (INMA)-Universidad de Zaragoza, Zaragoza, Spain

03:12 PM-03:24 PM

BE-06. Enhanced Ferromagnetism and Magnetocaloric Effect in Al-Substituted Antiperovskite $Mn_{4-x}Al_xC$ Compounds

B. Zhang, P. Si, X. Zheng, Y. Song, J. Park, C. Choi

Korea Institute of Materials Science, Changwon, Busan, Korea (the Republic of)

03:24 PM-03:36 PM

BE-07. Theoretical Modeling of Magnetocaloric Effect During Hexagonal-Orthorhombic Phase Transition

A. Kosogor[1, 2, 3], D. Böhm[1], T. Schrefl[1]

[1]University for Continuing Education Krems, Krems, Austria, [2]Faculty of Physics, University of Vienna, Vienna, Austria, [3]V.G. Baryakhtar Institute of Magnetism of the NAS of Ukraine, Kyiv, Ukraine

03:36 PM-03:48 PM

BE-08. From Concept to Operation: Design Strategies, Experimental Evaluation, and Engineering Challenges across Three Generations of a Magnetocaloric Air Conditioner *

G. Fidelis Peixer[2*], A. Lorenzoni[2], P. Vitor de Faria[2], D. D. Reif[3], A. T. Dias Nakashima[2], C. Silva Teixeira[3], J. A. Lozano[2], J. Riso Barbosa Jr.[1, 2]

[1]Craft & Hawkins Department of Petroleum Engineering, Louisiana State University, Baton Rouge, Louisiana, United States, [2]POLO - Research Laboratories for Emerging Technologies in Cooling and Thermophysics,, Federal University of Santa Catarina, Florianópolis, Santa Catarina, Brazil, [3]Lab3M - Laboratory of Magnetism and Magnetic Materials, Federal University of Santta Catarina, Blumenau, Santa Catarina, Brazil

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM

BE-10. Magnetic and magnetocaloric properties of the new $Gd_3Co_{1+x}Ni_{1-x}$ solid solution

A. Herrero[1], A. Provino[2, 3], I. Aseguinolaza[1], S. De Negri[2], D. Peddis[2, 4], P. Manfrinetti[2, 3], A. Oleaga[1]
[1]University of the Basque Country, Bilbao, Spain, [2]Department of Chemistry, University of Genova, Genova, Italy, [3]CNR, Institute SPIN, Genova, Italy, [4]CNR, Institute of Structure of Matter, Genova, Italy

04:27 PM-04:39 PM

BE-13. Magnetocaloric Properties of $Gd_{1-x}Er_xNiAl$ Alloys near Hydrogen Liquefaction Temperatures

P. Chaitanya[1], A. Kumar[2], L. Patra[3, 4], J. P. Nunez[1], E. R. Canavan[5], B. Liao[4], M. J. Dipirro[5], Y. Mudryk[2], R. L. Hadimani[1]
[1]Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Ames Laboratory, Iowa State University, Ames, Iowa, United States, [3]Department of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, United States, [4]Department of Mechanical Engineering, University of California, Santa Barbara, Santa Barbara, California, United States, [5]Cryogenics and Fluids Branch, Code 552, NASA Goddard Space Flight Center, Greenbelt, Maryland, United States

SESSION BF: STT-MRAM AND SOT-MRAM AND RELATED DEVICES

Chair(s): D. Kim, *Department of Materials Science and Engineering, KAIST, Daejeon, Korea (the Republic of)*
Tuesday, October 28, 2025
02:00 PM-05:30 PM
Room 2BC

02:00 PM-02:36 PM

BF-01. Energy Efficient Spintronic Devices for Memory and Computing by New Materials, New Physics and Voltage Control

J. Wang[1, 2, 3], Y. Yang[1], Y. Chen[1], Q. Jia[1], S. Lee[1], T. Low[1], O. Benally[1], B. Dixit[1], D. Sousa[1], T. Peterson[3], D. Lyu[1], M. Odlyzko[4], J. Garcia-Barriocanal[4], G. Yu[4], G. Haugstad[4], Y. Fan[1], Y. Huang[1], Y. Lv[1], S. Liang[2], B. Zink[1], Z. Cresswell[2]
[1]Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States, [2]Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, United States,

[3]Physics, University of Minnesota, Minneapolis, Minnesota, United States, [4]Characterization Facility, University of Minnesota, Minneapolis, Minnesota, United States

02:36 PM-02:48 PM
BF-02. Large Voltage-Controlled Magnetic Anisotropy in 3X-nm Perpendicular Magnetic Tunnel Junctions
J. G. Athas[1], C. Duffee[1], T. Neuner[1], N. Davila[2], J. Katine[2], P. Khalili Amiri[1]
[1]Electrical and Computer Engineering, Northwestern University, Evanston, Illinois, United States, [2]Western Digital Corporation, San Jose, California, United States

02:48 PM-03:00 PM
BF-03. Improved VCMA Coefficients in Perpendicular MRAM Measured With Device-Level Spin-Torque Ferromagnetic Resonance
R. V. Chopdekar, H. J. Richter, J. Li, T. Santos
Western Digital Research Center, Western Digital Corporation, San Jose, California, United States

03:00 PM-03:12 PM
BF-04. Spin transfer torque switching in double magnetic tunnel junctions based on dual MgO layers
W. Jung, G. Mihajlović, R. V. Chopdekar, J. Lille, M. Grobis, T. Santos
Western Digital, San Jose, California, United States

03:12 PM-03:24 PM
BF-05. Perpendicular Magnetic Tunnel Junction with Co-Ni-based Synthetic Antiferromagnet
W. Skowronski[1], M. Cierpial[1], D. Maslanka[1], K. Gubala[1], J. Mojsiejuk[1], K. Grochot[1], J. Wrona[2], J. Langer[2], T. Nan[3]
[1]Institute of Electronics, AGH University of Krakow, Krakow, Poland, [2]Singulus Technologies, Kahl am Main, Germany, [3]School of Integrated Circuit, Tsinghua University, Beijing, China

03:24 PM-03:36 PM
BF-06. Electrical Detection of Synthetic Antiferromagnet States via Tunnel Magnetoresistance
D. Giuliano[1, 2], B. Vermeulen[1, 2], V. Kateel[1], G. Talmelli[1], M. Gama Monteiro[1], S. Rao[1], C. Fleischmann[1, 2], K. Temst[2, 1], V. Nguyen[1]
[1]Imec, Leuven, Belgium, [2]Physics and Astronomy, KU Leuven, Leuven, Belgium

03:36 PM-03:48 PM
BF-07. Multi-level spin-orbit torque magnetic nanoarray for process-in-memory applications
D. Koh, M. Kang, D. Kim, B. Park
Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea (the Republic of)

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
BF-08. Domain Wall Leaky-Integrate-Fire Dendrites with Spatiotemporally Varied Inputs for Event-Based Sensing
H. Jin[1], F. Chance[2], C. H. Bennett[2], S. G. Cardwell[2], J. Incorvia[1]
[1]Chandra Family Department of Electrical and Computer Engineering, University of Texas at Austin, Austin, Texas, United States, [2]Sandia National Laboratories, Albuquerque, New Mexico, United States

04:27 PM-04:39 PM
BF-09. Standby Magnetic Immunity Calculator
A. Talapatra[1], F. Schlaphof[1], P. Scharf[1], M. Mansueto[1], D. Sanchez Hazen[1], J. Müller[1], S. Soss[2], A. Zaka[1]
[1]GlobalFoundries, Dresden, Germany, [2]GlobalFoundries, Malta, New York, United States

04:39 PM-04:51 PM
BF-10. Harnessing GHz Frequency Spin-Orbit Torque for Spin-Wave Amplification in Cobalt Nanomagnets
P. Pal[1], R. Fabiha[2], A. Mondal[1], S. Bandyopadhyay[2], A. Barman[1]
[1]Department of Condensed Matter and Materials Physics, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India, [2]Department of Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

SESSION BG: HARD MAGNETIC MATERIALS I: SM-BASED AND RARE EARTH FREE MAGNETS

Chair(s): H. Parmar, *Critical Materials Institute Hub, Ames National Laboratory, Ames, Iowa, United States*

Tuesday, October 28, 2025

02:00 PM-05:30 PM

Room 2A

02:00 PM-02:36 PM

BG-01. High Entropy Thin Films with High Magnetic Anisotropy and Tunable Magnetic Order

W. Beeson[1], D. Bista[1], D. Bhattacharya[1], H. Zhang[2, 3], S. Krylyuk[2], N. Naushin[4], A. T. N'Diaye[5], R. Kukreja[4], A. Davydov[2], G. Yin[1], K. Liu[1]

[1]Physics Department, Georgetown University, Washington, District of Columbia, United States, [2]National Institute of Standards and Technology, Gaithersburg, Maryland, United States, [3]Theiss Research, Inc, La Jolla, California, United States, [4]University of California, Davis, Davis, California, United States, [5]Lawrence Berkeley National Lab, Berkeley, California, United States

02:36 PM-02:48 PM

BG-02. Investigation of the phase formation and thermal stability of the $L1_0$ phase in the MnAlCu system

H. Baldino[1], N. Schnitzer[2, 3], Z. Monem[4], S. Rego[5], D. Hedlund[5], D. Heiman[6, 7], B. Cui[8], L. Li[4], D. Muller[3, 9], P. Kulik[1, 5]

[1]Material Science and Engineering, University of central Florida, Orlando, Florida, United States, [2]Material Science and Engineering, Cornell University, Ithaca, New York, United States, [3]Kavli Institute at Cornell for Nanoscale Science, Cornell University, Ithaca, New York, United States, [4]Mechanical and Aerospace Engineering, University of Central Florida, Orlando, Florida, United States, [5]Electrical and Computer Engineering, University of Central Florida, Orlando, Florida, United States, [6]Physics, Northeastern University, Boston, Massachusetts, United States, [7]Plasma science and Fusion center, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States, [8]Division of Critical Materials, Ames National Laboratory, Ames, Iowa, United States, [9]School of Applied and Engineering Physics, Cornell University, Ithaca, New York, United States

02:48 PM-03:00 PM
BG-03. A New Approach in Sintered Mn-Bi Magnets via Silane Coupling Agent
Y. Song[1, 2], B. Zhang[1, 3], X. Zheng[1, 3], C. Choi[1], K. Jong-Woo[1], K. Lee[2], J. Park[1]
[1]Nano Materials Research Division, Korea Institute of Materials Science, Changwon, Gyeongsangnam-do, Korea (the Republic of), [2]School of Materials Science and Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea (the Republic of), [3]Division of Materials Science and Engineering, Pusan National University, Busan, Korea (the Republic of)

03:00 PM-03:12 PM
BG-04. A Material Processing Perspective on Exchange-Spring Permanent Magnets
T. Lamichhane
Engineering & Physics, University of Central Oklahoma, Edmond, Oklahoma, United States

03:12 PM-03:24 PM
BG-05. Enhancing Magnetic Performance of AlNiCo Permanent Magnets via Magnetic Field-Assisted Directed Energy Deposition
O. Bishop[1, 2], A. R. Duong[1], I. M. Smith[3], E. E. Carpenter[3], K. Snyder[2], R. Barua[1]
[1]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Commonwealth Center for Advanced Manufacturing, Disputanta, Virginia, United States, [3]Chemistry, Virginia Commonwealth University, Richmond, Virginia, United States

03:24 PM-03:36 PM
BG-06. Magnetic Behavior of Co(Mo) Nanoparticles
S. Dhapola[1, 2], D. Sagar[3], A. Kashyap[3], J. Shield[1, 2]
[1]Mechanical and Materials Engineering, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [3]School of Physical Sciences, Indian Institute of Technology, Mandi, Himanchal Pradesh, India

03:36 PM-03:48 PM
BG-07. The Possibility of New Complex Magnet Materials
J. Snyder
northwestern, EVANSTON, Illinois, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
BG-08. Investigation on magnetic properties of anisotropic nanocrystalline Sm-Co-Cu magnets
K. Park[1], Y. Hirayama[1], Y. Akita[2]
[1]Multi-Material Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan, [2]AISIN CORPORATION, Kariya, Japan

04:27 PM-04:39 PM
BG-09. Exploring stable sites and compositional ranges in $Sm_2Fe_{17}M_x$ (M = H, C, N) using neural network potentials
Y. Tatetsu
Health Informatics, Meio University, Nago, Okinawa, Japan

04:39 PM-04:51 PM
BG-10. Microstructure–Magnetism Correlation in $SmCo_5$-Based Materials via Solid-State Design Strategies
F. Ishrak, M. Lastovich, M. Uddin, F. Tsai, B. Gwalani
Materials Science and Engineering, North Carolina State University, Raleigh, North Carolina, United States

04:51 PM-05:03 PM
BG-11. Improvement of Thermal Stability of $TbCu_7$ Sm-Fe phase by Addition of Zr and Y in Synthesis of the Fine Powder with Low-temperature Reduction-Diffusion
S. Okada
Multi-Material Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Aichi, Japan

05:03 PM-05:15 PM
BG-12. High coercivity $TbCu_7$-type Sm-Fe-N powder prepared by induction thermal plasma process
Y. Hirayama, Z. Liu, W. Yamaguchi
National Institute of Advanced Industrial Science and Technology, Nagoya, Japan

05:15 PM-05:27 PM

BG-13. First-Principles Prediction of Permanent Magnetism in $SmFe_{11}Ti$

B. Narangerel[1], M. Adiya[1], D. Odkhuu[1, 2]
[1]Department of Physics, Incheon National University, Incheon, Korea (the Republic of), [2]Institute of Physics and Technology, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia

SESSION BP: MAGNONICS I: SPIN WAVES & SPIN DYNAMICS (POSTER SESSION)

Chair(s): J. Zhou, *Institute of Materials Research and Engineering, A*STAR, Singapore*
Tuesday, October 28, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

BP-01. Magnetic field dependence of dipole-exchange spin waves in square ferromagnetic nanorings

A. Frost[1], B. Hussain[1], M. G. Cottam[2]
[1]University of Michigan, Dearborn, Michigan, United States, [2]University of Western Ontario, London, Ontario, Canada

BP-02. Nanoscale Quantum Imaging of Caustic Spin-Wave in YIG Film

T. Zheng, E. Zhang, B. Yang, J. Zhu
Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States

BP-03. Dynamic Spin-Wave Characterization in Ferrimagnetic Insulators: Time-Resolved Imaging and Frequency Domain Analysis

V. Ganepola Arachchige[1], Z. Ishraque[1], S. Alaei[2], S. Wintz[3], Y. Suzuki[2], R. Knut[4], D. A. Arena[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics, Stanford University, Stanford, California, United States, [3]Helmholtz-Zentrum Berlin, Berlin, Germany, [4]Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden

BP-04-LB. Ultra-small fine particle inspection system for LIB cathode by HTS SQUIDs

S. Tanaka[1], P. Polkotuwa[2], T. Ohtani[2]
[1]Institute for Research on Next-generation Semiconductor and Sensing Science (IRES2), Toyohashi University of Technology, Toyohashi, Aichi, Japan, [2]R & D Division, Nikka Densok Limited, Kawagoe, Saitama, Japan

BP-05-LB. Tunable Coupling, Topology, and Chirality by Antimagnons in Magnetic Multilayer
Y. Liu[1], Z. Chen[2], Q. Shao[1]
[1]Electronic Engineering, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong, [2]Physics, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong

BP-06. Magnon Superlattices around Skyrmions in Frustrated Magnets
A. Hullahalli[1, 2], C. Panagopoulos[1], C. Psaroudaki[2]
[1]Nanyang Technological University, Singapore, [2]École Normale Supérieure, Paris, France

BP-07. Role of interfacial Dzyaloshinskii-Moriya interactions on dipole-exchange spin waves in ferromagnetic nanoribbons
S. Hussain[1], B. Hussain[2], M. G. Cottam[3]
[1]Orange Coast College, Costa Mesa, California, United States, [2]University of Michigan, Dearborn, California, United States, [3]University of Western Ontario, London, Ontario, Canada

BP-09. Simulating Magnon Dispersion of Layered Antiferromagnets
T. Jeffrey, E. Stimpson, J. Sklenar
Physics & Astronomy, Wayne State University, Detroit, Michigan, United States

BP-10. Observation of breathing magnetic domain wall at ferromagnetic nanowires
S. Ahn
Postech, Pohang, Korea (the Republic of)

SESSION BQ: TRANSFORMERS AND POWER ELECTRONICS I (POSTER SESSION)

Chair(s): H. Matsumori, *Nagoya Institute of Technology, Nagoya, Japan*

Tuesday, October 28, 2025

02:30 PM-05:30 PM

Exhibit Hall Posters

BQ-01. Structural Design of a Common-Mode Inductor with Metal Casing for Improved High-Frequency Performance

Y. Ueda[1], H. Matsumori[1], K. Nagayoshi[2]

[1]Electrical and Mechanical Eng., Nagoya Institute of Technology, Nagoya, Aichi, Japan, [2]Toyota industries corporation, Nagoya, Aichi, Japan

BQ-02. A Study on volume reduction and power density improvement of motor using PCB stator

Y. Lim, D. Choi, Y. Lee, J. Lee, W. Kim

Electrical Engineering, GACHON UNIVERSITY, Seongnam-si, Gyeonggi-do, Korea (the Republic of)

BQ-03. Thin-film YIG-based Tunable Inductors at Microwave Frequencies

S. Sultana, D. Hedlund, P. Kulik

University of Central Florida, ORLANDO, Florida, United States

BQ-04. New Slim Microspeaker Design for Smartwatches with Halbach Array Magnetic Circuit

Y. Jeong[1], J. Park[1], D. Xu[2], S. Hwang[1]

[1]Department of Mechanical Engineering, Pusan National University, Busan, Korea (the Republic of), [2]School of Mechatronic Engineering and Automation, Shanghai University, Shanghai, China

BQ-05. A Heating Power Optimization Method for Electro-Thermal Multi-Energy Flexible Generator Based on Composite Anisotropic Materials

J. Yuan[1, 3], H. Wang[1, 3], B. Peng[1, 3], H. Zhou[1, 3], X. Chen[2], Q. Wang[2]

[1]School of Electrical Engineering and Automation, Wuhan University, Wuhan, Hubei, China, [2]Electric Power Research Institute China Southern Power Grid, Guangzhou, China, [3]State Key Laboratory of Power Grid Environmental Protection, School of Electrical Engineering and Automation, Wuhan University, Wuhan, Hubei, China

BQ-06. Configuration of Transmitter and Receiver of Wireless Power Transfer System while Driving for Electric Vehicles (EVs)

K. Hidaka[1], F. Sato[1], O. Ito[1], S. Miyahara[1], S. Sasaki[2]
[1]Tohoku Gakuin University, Sendai, Miyagi, Japan,
[2]Hikaridenshi .CO.,LTD., Osaki, Miyagi, Japan

BQ-07. Research on a Nanocrystalline Amorphous-Based Magnetically Saturated Bridge Arm Coupled Reactor Applied in MMC-HVDC Systems

J. Yuan, W. Zhang, H. Zhou, J. L. Liu, Y. Sun, J. Liu, D. Zhang
Wuhan University, Wuhan, China

BQ-08. A Study on the Shape of Axial Flux Motor for Collaborative Robot Joints to Improve Output

M. Hong[1], D. Choi[2], H. Kim[2], Y. Lee[2], W. Kim[2]
[1]Hanyang University, Seoul, Korea (the Republic of),
[2]Gachon University, Seongnam, Korea (the Republic of)

BQ-09. Design and Analysis of Nanocrystalline Core for Low-Temperature-Rise Anode Saturation Reactor

X. Li[2, 1], J. Yuan[2, 1], H. Zhou[2, 1], Z. Mo[1], Y. Wang[1], J. Hou[2, 1]
[1]School of Electrical Engineering and Automation, Wuhan University, Wuhan, China, [2]State Key Laboratory of Power Grid Environmental Protection, School of Electrical Engineering and Automation, Wuhan University, Wuhan, China

BQ-10. Research on Adjustment Range Expansion of Orthogonal Controllable Reactors Based on Low-Saturation-Point Core Materials

J. Hou[1, 2], J. Yuan[1, 2], H. He[1, 2], G. Ma[1, 2], X. Li[1, 2], H. Liu[1, 2], H. Zhou[1, 2]
[1]State Key Laboratory of Power Grid Environmental Protection, Wuhan University, Wuhan, China, [2]School of Electrical Engineering and Automation, Wuhan University, Wuhan, China

SESSION BR: ENERGY ASSISTED MAGNETIC RECORDING & MAGNETIC SENSORS (POSTER SESSION)

Co-Chair(s): N. A. Natekar, *Western Digital, San Jose, California, United States* and T. Kubota, *Advanced Spintronics Medical Engineering, Tohoku University, Sendai, Miyagi, Japan*

Tuesday, October 28, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

BR-01. Magnetization dynamics: maxwell equation based approach

K. Rivkin
RKMAG Corporation, Pacific Grove, California, United States

BR-02. Cubic Anisotropy Media for Microwave Assisted Magnetic Recording

S. Greaves[1], Y. Kanai[2]
[1]RIEC, Tohoku University, Sendai, Japan, [2]Niigata Institute of Technology, Kashiwazaki, Japan

BR-03. Plasmonic Nanoantennas for Helicity-Dependent All-Optical Switching

T. E. McCormack, J. Scott, W. R. Hendren, N. Kuninski, R. M. Bowman
Centre for Quantum Materials and Technologies, Queen's University Belfast, Belfast, Antrim, United Kingdom

BR-04. Effect of rare earth metal substitution in FePt-C granular films on magnetic properties and nanostructure

K. Tham[1], D. Miyazaki[1], S. Saito[2]
[1]Tanaka Precious Metal Technologies, Tsukuba, Japan, [2]Tohoku University, Sendai, Japan

BR-05. FePt granular films with rare earth metal oxides as ferromagnetic grain boundary materials

D. Miyazaki[1], K. Tham[1], S. Saito[2]
[1]TANAKA PRECIOUS METAL TECHNOLOGIES, Tsukuba, Ibaraki, Japan, [2]Tohoku University, Sendai, Miyagi, Japan

BR-06. Thermally Activated Magnetic Switching in Films with Perpendicular and Random Anisotropies
D. Alharbi[1, 2], M. Guy[1], M. Davis[1], F. Bakhshizadeh[1], F. Efe[1], A. Lisfi[1]
[1]Physics, Morgan State University, Baltimore, Maryland, United States, [2]Physics, The Catholic University of America, Washington DC, District of Columbia, United States

BR-07. A Frequency-Tunable Copper Coil-Based Microfluidic Sensor for High-Throughput Screening and Magnetic Biomarker Detection
D. Brown[1], W. Manuel[1, 2], D. Luu[1], M. Gili[1, 2], M. Vega[2], M. Phan[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Materials Science and Engineering Program, College of Science, University of the Philippines, Diliman, Philippines

BR-08. Highly Sensitive Magnetic Sensor Using Superparamagnetic Tunnel Junctions with Stochastic Magnetization Reversal
R. Hirama[1], T. Kubota[2], M. Endo[2], K. Fujiwara[3], S. Sasaki[4], H. Yutaka[4], L. Sakai[4], M. Hosomi[4], M. Oogane[1]
[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi Prefecture, Japan, [2]Department of Advanced Spintronics Medical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi Prefecture, Japan, [3]Spin Sensing Factory Corporation, Sendai, Miyagi Prefecture, Japan, [4]Sony Semiconductor Solutions, Minato ku, Tokyo, Japan

BR-09. Methods for Quantifying Parameter Estimation Uncertainty in Eddy Current Testing of Coated Steel Sheets
M. Koll[1], D. Wöckinger[1], G. Bramerdorfer[1], N. Gstöttenbauer[2], S. Scheiblhofer[2], S. Schuster[2], J. Reisinger[2]
[1]Institute of Electric Drives and Power Electronics, Johannes Kepler University, Linz, Austria, [2]voestalpine Stahl GmbH, Linz, Austria

BR-10. Electromagnetic Material Characteristics of Steels Used for Hot-dip Galvanization and their Impact on the Coating Thickness Estimation Bias in Eddy Current Testing

M. Koll[1], D. Wöckinger[1], M. Peer[1], C. Dobler[1], G. Bramerdorfer[1], N. Gstöttenbauer[2], S. Scheiblhofer[2], S. Schuster[2], J. Reisinger[2]
[1]Institute of Electric Drives and Power Electronics, Johannes Kepler University, Linz, Austria, [2]voestalpine Stahl GmbH, Linz, Austria

BR-11. Variable Exploration of Micromagnetic Simulations of Concentration Detection Range of Large Area Low Aspect Ratio GMR Sensors in Biomedical Diagnostics

R. A. Mendonsa, S. Liang, J. Wang
University of Minnesota, Minneapolis, Minnesota, United States

BR-12. Tuning TMR magnetic sensors using ion irradiation

E. Monteblanco, Y. Sassi, M. Deroo, M. Grelier, M. Drouhin, D. Gouéré, D. Ravelosona
R&D, Spin-Ion Technologies, Ile de France, Palaiseau, France

BR-13. Noise-Robust Method Using Sparsity for Locating a Crack in a Steel Rod Based on the Fourier Coefficients of the Leakage Magnetic Flux

K. Shiku[1], N. Shigematsu[2], Y. Kuwahara[2], Y. Gotoh[3], T. Nara[1]
[1]The University of Tokyo, Bunkyo-ku, Japan, [2]Neturen Co., Ltd., Hiratsuka Kanagawa, Japan, [3]Oita University, Oita-shi, Japan

BIERSTUBE
Tuesday, October 28, 2025
05:00 PM-06:30 PM
Exhibit Hall Events

WOMEN IN MAGNETISM NETWORKING & WINE TASTING EVENT
Tuesday, October 28, 2025
05:00 PM-06:30 PM
Hilton Mezze Patio

XA: COMMEMORATING 50 YEARS OF THE MAGNETIC TUNNEL JUNCTION

Tuesday, October 28, 2025
06:30 PM-08:00 PM
Grand Ballroom

06:30 PM-07:00 PM
XA-01. A Perspective on Magnetic Tunnel Junctions and Tunnel Magnetoresistance – The Journey
J. S. Moodera
Physics, Plasma Science and Fusion Center, MIT, Cambridge, Massachusetts, United States

07:00 PM-07:30 PM
XA-02. Advances in magnetic tunnel junctions for giant tunnel magnetoresistance: Interface engineering and novel materials toward future applications
H. Sukegawa
Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan

07:30 PM-08:00 PM
XA-03. Perpendicularly magnetized magnetic tunnel junctions for Spin-Transfer-Torque MRAM applications
G. Hu, M. G. Gottwald, C. Safranski, P. L. Trouilloud, L. Rehm, S. Brown, J. Bruley, C. Heinsohn, G. Kim, J. Kim, J. Liang, M. Robbins, P. Hashemi, D. Worledge
IBM T J Watson Research Center, Yorktown Heights, New York, United States

SESSION CA: BEYOND POLYCRYSTALLINE FILMS: TEXTURED MATERIALS FOR HIGH-PERFORMANCE SPINTRONIC DEVICES

Chair(s): P. Khalili Amiri, *Northwestern University, Evanston, Illinois, United States*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Grand Ballroom

08:30 AM-09:06 AM
CA-01. Integration of highly textured, and epitaxial, materials into 300 mm MRAM manufacturing
S. Mertens[1], M. Ben Chroud[1], X. Piao[2], K. Sankaran[1], T. Tran[1], N. Jossart[1], A. Palomino Lopez[1], N. Franchina Vergel[1], M. Gama Monteiro[1], S. Rao[1], R. Carpenter[1]
[1]imec, Leuven, Belgium, [2]The Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan

09:06 AM-09:42 AM
CA-02. Epitaxial magnetic Weyl semimetals for efficient magnetic reading and writing
C. Chou, Z. He, L. Liu
MIT, Cambridge, Massachusetts, United States

09:42 AM-10:18 AM
CA-03. Ultrafast and Chiral Spin Dynamics in Engineered Heusler Architectures: From Synthetic Antiferromagnets to Monolayer Tunnel Junctions
P. C. Filippou
Research, IBM, San Jose, California, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
CA-04. High-Performance $L1_0$-FePd Materials for Next-Generation Extreme-Environment Magnetic Memory
D. B. Gopman
Materials Science and Engineering Division, NIST, Gaithersburg, Maryland, United States

11:21 AM-11:57 AM
CA-05. Epitaxial Noncollinear Antiferromagnetic Devices for Microwave Spintronics
S. Nakatsuji
Department of Physics and Astronomy, Johns Hopkins University, Baltimore, Maryland, United States

SESSION CB: FUTURE READ HEAD TECHNOLOGIES
Chair(s): S. Hernandez, *Seagate Technology, Bloomington, Minnesota, United States*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Ballroom A

08:30 AM-09:06 AM
CB-01. Reader Technology for Ultra-High Capacity HDDs
A. Grier
Seagate Technology, Derry, United Kingdom

09:06 AM-09:42 AM
CB-02. Ultra Narrow Readers – Challenges and Outlook
H. G. Zolla, G. Baiao De Albuquerque, J. L. Grab, J. Liu, C. Yu, J. M. Freitag, I. Andoni, X. Liu, Y. Hong
Western Digital, San Jose, California, United States

09:42 AM-10:18 AM
CB-03. Sub-10 nm Reader Design Using Lateral Spin Valve Structure
R. H. Victora[1, 2], R. Hao[1]
[1]ECE, U. Minnesota, Minneapolis, Minnesota, United States, [2]Physics, U. Minnesota, Minneapolis, Minnesota, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
CB-04. Tailoring MTJs for future applications: Barrier interfaces engineering and new spinel barrier materials
T. Scheike[1, 2], H. Sukegawa[1]
[1]NIMS, Tsukuba, Ibaraki, Japan, [2]AIST, Tsukuba, Ibaraki, Japan

11:21 AM-11:57 AM
CB-05. Potential and challenges of anomalous Hall sensors for future read head technology
T. Nakatani, P. D. Kulkarni, M. Manikketh, R. Toyama, H. Suto, K. Masuda, N. Suwannaharn, T. Sasaki, H. Iwasaki, Y. Sakuraba
National Institute for Materials Science, Tsukuba, Japan

SESSION CC: MAGNETO-TRANSPORT AND MAGNETO-OPTICS OF HIGHER ORDERS IN MAGNETIZATION
Chair(s): T. Kuschel, *Bielefeld University, Bielefeld, Germany*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Ballroom C

08:30 AM-09:06 AM
CC-01. Angle-dependent magneto-transport of higher order in magnetization
M. Althammer[1, 2]
[1]Walther-Meißner-Institut, Garching, Germany, [2]TUM School of Natural Sciences, Physics Department, Technical University of Munich, Garching, Germany

09:06 AM-09:42 AM
CC-02. Quadratic and Cubic Magneto-optic Kerr Effect in Thin Films Depending on Structural Domain Twinning and Crystal Orientation
J. Hamrle[1, 2], M. Gaerner[4], R. Silber[3], M. Schäffer[4], M. Veis[1], T. Kuschel[4]
[1]Faculty of Mathematics and Physics, Charles University, Prague, Czechia, [2]Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University, Prague, Czechia, [3]Department of Materials Engineering and Recycling, VSB - Technical University of Ostrava, Ostrava, Czechia, [4]Faculty of Physics, Bielefeld University, Bielefeld, Germany

09:42 AM-10:18 AM
CC-03. Magneto-optical-Kerr-effect measurement of spin-orbit torques with two magnetic layers
X. Fan
University of Denver, Denver, Colorado, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
CC-04. Application of Q-MOKE in Magnetometry
E. Schmoranzerová, Z. Sadeghi, V. Wohlrath, J. Kimák, P. Kubascik, L. Nadvornik, P. Nemec, T. Ostatnicky
Department of Chemical Physics and Optics, Charles University, Prague, Czechia

11:21 AM-11:57 AM
CC-05. Multipolar Anisotropy in Anomalous Hall Effect from Spin-Group Symmetry Breaking
Z. Liu[1], M. Wei[1], D. Hou[2], Y. Gao[1], Q. Niu[1]
[1]Department of Physics, University of Science and Technology of China, Hefei, Anhui, China, [2]University of Science and Technology of China, Hefei, Anhui, China

SESSION CD: MAGNETOELECTRIC AND MULTIFERROICS II

Chair(s): S. Husain, *Material Science and Engineering, University of California, Berkeley, Berkeley, California, United States*

Wednesday, October 29, 2025
08:30 AM-12:00 PM
Ballroom B

08:30 AM-09:06 AM
CD-01. Magneto-Ionic Vortices: Paving the Way for Secure, Reconfigurable and Energy-Efficient Devices
I. Spasojević[1], Z. Ma[1], A. Barrera[2], F. Celegato[3], A. Magni[3], S. Ruiz Gómez[4], M. Foerster[4], A. Palau[2], P. Tiberto[3], K. Buchanan[5], J. Sort[1]
[1]Physics Department, Autonomous University of Barcelona, Bellaterra, Barcelona, Spain, [2]Instituto de Ciencia de Materiales de Barcelona (ICMAB), Bellaterra, Spain, [3]Advanced Materials and Life Science Division, Istituto Nazionale di Ricerca Metrologica, Torino, Italy, [4]ALBA Synchrotron, Cerdanyola del Vallès, Spain, [5]Physics Department, Colorado State University, Fort Collins, Colorado, United States

09:06 AM-09:18 AM
CD-02. Superior Magnetoelectric Coupling via Magnetic Anisotropy Control in Ferromagnetic-Piezoelectric Heterostructure
P. Finkel, T. R. Mion, M. Staruch
US Naval Research Laboratory, Washington, District of Columbia, United States

09:18 AM-09:30 AM
CD-03. Boosting magneto-ionics in Ta/CoFeB/Pt/MgO/HfO_2 by interfacial atomic intermixing through Ne^+ irradiation
S. Chen[1, 2], E. Monteblanco[2], M. Deroo[2], Z. Ma[3], A. Cataldo[4], A. Lamperti[4], A. Solignac[5], S. Ono[6], E. Menéndez[3], J. Sort[3], D. Ravelosona[2]
[1]Centre de Nanosciences et de Nanotechnologies, Palaiseau, France, [2]Spin-Ion Technologies, Palaiseau, France, [3]Departament de Física, Universitat Autònoma de Barcelona, Cerdanyola del Vallés, Spain, [4]IMM-CNR, Agrate Brianza, Italy, [5]Institut Rayonnement-Mati` ere de Saclay, CEA-Saclay, Gif-sur-Yvette, France, [6]International Center for Synchrotron Radiation Innovation Smart, Tohoku University, Sendai, Japan

09:30 AM-09:42 AM

CD-04. Exploring the Full Magneto-ionic Oxidation Spectrum in Pt/CoFeB/HfO_2

I. Benguettat- El Mokhtari[1], R. Pachat[1], V. Poree[2], A. Lamperti[3], Y. Roussigné[4], M. Syskaki[5], J. Wrona[5], G. Bernard[1], A. Cataldo[3, 6], A. Resta[2], A. Nicolau[2], S. Ono[7], S. Cherif[4], J. Langer[5], D. Ravelosona[1], M. Belmeguenai[4], A. Solignac[8], L. H. Diez[1]

[1]Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, Palaiseau, France, [2]Synchrotron SOLEIL, Saint-Aubin, France, [3]CNR-IMM, Agrate Brianza, Italy, [4]Laboratoire des Sciences des Procédés et des Matériaux, CNRS-UPR, Villetaneuse, France, [5]Singulus Technologies AG, Kahl am Main, Germany, [6]Department of Chemistry, Materials and Nanotechnology, Politecnico di Milano, Milan, Italy, [7]Central Research Institute of Electric Power Industry, Kanagawa, Japan, [8]SPEC, CEA, CNRS, Gif-sur-Yvette Cedex, France

09:42 AM-09:54 AM

CD-05. Theoretical and experimental investigation of magnetic order in Mn_2PtIn

C. Sadler[1], M. Pulse[2], A. Venner[2], M. Anas[2], P. Kharel[2], P. Shand[1], P. Lukashev[1]

[1]Physics, University of Northern Iowa, Cedar Falls, Iowa, United States, [2]South Dakota State University, Brookings, South Dakota, United States

09:54 AM-10:06 AM

CD-06. Scale-dependent thermodynamic control of metal-insulator transition in $La_{0.67}Sr_{0.33}MnO_3$

I. Bhaduri[1, 2], S. Snijder[1], T. Banerjee[1, 2]

[1]Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands, [2]Groningen Cognitive Systems and Materials Center, University of Groningen, Groningen, Netherlands

10:06 AM-10:18 AM

CD-07. Investigation of Compensation Temperature in TmIG Thin Film with Perpendicular Magnetic Anisotropy

C. C. Soares[1, 2, 3], T. J. Mori[2], F. Béron[3], J. S. Moodera[4, 5], J. Criginski Cezar[2], J. Brandao[2], G. Vilela[1, 5]

[1]Física de Materiais, Universidade de Pernambuco, Recife, Pernambuco, Brazil, [2]Laboratório Nacional de Luz Síncrotron, Centro Nacional de Pesquisa em Energia e Materiais, Campinas, São Paulo, Brazil, [3]Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, [4]Physics Department, MIT, Cambridge, Massachusetts, United

States, [5]Plasma Science and Fusion Center, and Francis Bitter Magnet Laboratory, MIT, Cambridge, Massachusetts, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
CD-08. Tailoring Magnetic Spin Textures in $La_{0.7}Sr_{0.3}MnO_3$-based Micromagnets
D. Sasaki[2, 1], B. Achinuq[2], T. Sahoo[1], I. Nihal[1], E. Teano[1], M. Frame[1], I. Snowden[1], S. Retterer[3], Y. Takamura[1]
[1]Materials Science and Engineering, University of California, Davis, Davis, California, United States, [2]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

11:21 AM-11:33 AM
CD-09. Voltage-driven fluorine motion for novel organic spintronic memristor
Y. Lu[1], A. Nachawaty[1], T. Chen[1], F. Ibrahim[2], Y. Wang[3], Y. Hao[1], K. Francesca[4], P. Tyagi[1], A. Da Costa[4], A. Ferri[4], C. Liu[3], X. Li[3], M. Chshiev[2], S. Migot[1], L. Badie[1], W. Jahjah[5], R. Desfeux[4], J. Le Breton[5], P. Schieffer[5], A. Le Pottier[5], T. Gries[1], X. Devaux[1]
[1]Institut Jean Lamour, Nancy, France, [2]SPINTEC, Grenoble, France, [3]University of Science and Technology of China, Hefei, China, [4]Univ. Artois, Lens, France, [5]Univ. Rennes, Rennes, France

11:33 AM-11:45 AM
CD-10. Energy-Efficient Control of Probabilistic Switching in sMTJs via Voltage-Controlled Exchange Coupling: Experiment and Simulation *
Q. Jia[1*], O. Benally[1], B. Zink[1], D. Zhang[1], Y. Lv[1], S. Liang[1], D. Lyu[1], Y. Chen[1], Y. Yang[1], Y. Huang[2], J. Wang[1]
[1]University of Minnesota, Minneapolis, Minnesota, United States, [2]National Yang Ming Chiao Tung University, Hsinchu, Taiwan

11:45 AM-11:57 AM
CD-11. Mutual Suppression of Polar and Magnetic Orders in Charge-Compensated Fe-Substituted $Bi_{0.5}Na_{0.5}TiO_3$: Evidence of inverse Magnetoelectric Coupling
M. Kumari[1, 2], R. Chatterjee[1]
[1]Physics, Indian Institute of Technology, New Delhi, New Delhi, India, [2]HDD, Western Digital Corporation, San Jose, California, United States

SESSION CE: ALTERMAGNETISM & ANTIFERROMAGNETISM - THIN FILMS AND OTHER SYSTEMS
Chair(s): R. Gupta, *Institute of Physics, University of Gothenburg, Gothenburg, Sweden*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Room 2DE

08:30 AM-09:06 AM
CE-01. Collective excitations in altermagnetic α-MnTe
A. De la Torre Duran
Northeastern University, Burlington, Massachusetts, United States

09:18 AM-09:30 AM
CE-03. Magnetoelastic stabilization of 180° domain walls in a collinear antiferromagnet
A. Koziol Rachwal[1], M. Szpytma[1], P. Drozdz[1], E. Madej[2], D. Wilgocka-Slezak[2], A. Kwiatkowski[1], E. Oles[1], M. Slezak[1], T. Slezak[1]
[1]AGH University of Krakow, Krakow, Poland, [2]Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland

09:30 AM-09:42 AM
CE-04. Two-dimensional antiferromagnets with non-relativistic spin splitting switchable by electric polarization
H. Mavani, K. Huang, K. Samanta, E. Y. Tsymbal
Department of Physics and Astronomy, University of Nebraska, Lincoln, Lincoln, Nebraska, United States

09:42 AM-10:18 AM
CE-05. Structure and Magnetotransport in Altermagnetic MnTe Thin Films
S. Bey[1], M. Zhukovskyi[3], T. Orlova[3], S. Fields[2], V. Lauter[4], H. Ambaye[4], A. Ievlev[5], S. P. Bennett[2], X. Liu[1], B. A. Assaf[1]

[1]Physics and Astronomy, The University of Notre Dame, Notre Dame, Indiana, United States, [2]Materials Science and Technology Division, U.S. Naval Research Laboratory, Washington, District of Columbia, United States, [3]Integrated Imaging Facility, The University of Notre Dame, Notre Dame, Indiana, United States, [4]Neutron Sciences Directorate, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States, [5]Center for Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
CE-06. Probing altermagnetic band splitting and magnetic order in epitaxial CrSb thin films
N. Samarth[1, 2]
[1]Dept. of Physics and Dept. of Materials Science and Engineering, The Pennsylvania State University, University Park, Pennsylvania, United States, [2]Argonne National Lab, Lemont, Illinois, United States

11:21 AM-11:33 AM
CE-07. Robust Biaxial Anisotropy and Electrical Switching of $LaFeO_3$ Epitaxial Thin Films
J. Lanier, J. Michel, D. Russell, J. Flores, B. Liu, J. Hwang, F. Yang
The Ohio State University, Columbus, Ohio, United States

11:33 AM-11:45 AM
CE-08. High-temperature anomalous Hall and magnetoresistance effects driven by frustrated spin fluctuations in the antiferromagnetic metallic delafossite $PdCrO_2$
Y. Tao[1], P. Jain[1], Y. Zhang[1], F. Tutt[1], D. Phelan[2], C. Balz[3], S. Hatt[4], E. Zappala[4], J. Neuefeind[3], S. Rosenkranz[2], B. Frandsen[4], C. Leighton[1]
[1]University of Minnesota, Minneapolis, Minnesota, United States, [2]Argonne National Lab, Argonne, Illinois, United States, [3]Oak Ridge National Lab, Oak Ridge, Tennessee, United States, [4]Brigham Young University, Provo, Utah, United States

11:45 AM-11:57 AM
CE-09. Nanoscale Magnetic Structure Imaging of an Atomically Thin 2D Antiferromagnet
J. Katoch[1], A. Tiwari[1], A. Smekhova[2], S. Patil[2], R. Bandapelli[1], Z. Cui[1], I. Kao[1], R. Posti[1], F. Kronast[2], S. Singh[1]

[1]*Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States,* [2]*Helmholtz-Zentrum Berlin für Materialien und Energie, Albert-Einstein-Straße, Berlin, Germany*

SESSION CF: LOW-DIMENSIONAL SYSTEMS, MOLECULAR AND ORGANIC MAGNETS

Chair(s): J. Hanson-Flores, *Physics, University of Central Florida, Orlando, Florida, United States*

Wednesday, October 29, 2025

08:30 AM-12:00 PM

Room 2BC

08:30 AM-09:06 AM

CF-01. Quantum and Nonlinear Magnonics

G. Fuchs

Applied and Engineering Physics, Cornell University, Ithaca, New York, United States

09:06 AM-09:18 AM

CF-02. Low-Lying Excitations, Magnetic Irreversibilities and Griffith's Phase in Quasi-two-dimensional Manganite

M. Verma, Y. Bitla

Physics, Central University of Rajasthan, Ajmer, Rajasthan, India

09:18 AM-09:30 AM

CF-03. Enhanced Coercivity and Spin-Glass Behavior in SiO_2-Coated Fe_5C_2 Nanorods

P. Joshi[1], H. Abbas[1], T. Karki[1], J. Mohapatra[1], X. Liu[2], P. Liu[1]

[1]*Physics, The University of Texas at Arlington, Arlington, Texas, United States,* [2]*Ames Laboratory, Critical Materials Institute, Ames, Iowa, United States*

09:30 AM-09:42 AM

CF-04. Field-induced breathing magnetic domain wall at ferromagnetic nanowires

S. Ahn

Postech, Pohang, Korea (the Republic of)

09:42 AM-10:18 AM

CF-05. Electron Spin Resonance Measurement of a Single Molecule Magnet Terbium Phthalocyanine ($TbPc_2$) Using Scanning Tunneling Microscopy

T. Komeda

Tohoku University, Sendai, Japan

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
CF-06. Development and Characterization of Magnetite Reinforced Nanocomposites for Electromagnetic Responsiveness and Smart Material Applications
D. Di Napoli, S. Vattathurvalappil
Aerospace Engineering, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

10:57 AM-11:09 AM
CF-07. Integrated Numerical and SAXS Investigation of Ultra-Small SPIONs Magnetophoresis and Separation in High Field and Gradient Fields
X. Wu[1], H. Choe[1], P. Iyer[1], B. Yunker[1], I. H. Karampelas[2], K. Wu[3], J. Chalmers[1], J. Gomez-Pastora[3]
[1]The Ohio State University, Columbus, Ohio, United States, [2]Nemak, Sheboygan, Wisconsin, United States, [3]Texas Tech University, Lubbock, Texas, United States

11:09 AM-11:21 AM
CF-08. Characterization of Magnetic Core-shell Nanoparticles in Different Carbon Matrices under Annealing by Oxygen and Nitrogen
V. Pena Perez, S. Figueroa, F. Iglesias, A. Khodagulyan, O. Bernal, A. N. Kocharian
Physics and Astronomy, California State University Los Angeles, Los Angeles, California, United States

11:21 AM-11:33 AM
CF-09. Efficient Fe_3O_4@CuS nanocomposites for enhanced removal of organic dyes from wastewater
J. Gupta[2, 1], K. C. Barick[1]
[1]Chemistry Division, Bhabha Atomic Research Centre, Navi Mumbai, Maharashtra, India, [2]School of Advanced Sciences and Languages, VIT Bhopal University Bhopal, Sehore, Madhya Pradesh, India

11:33 AM-11:45 AM
CF-10. Emergence of the Verwey Transition in Fe_5C_2@Fe_3O_4 Core–Shell Nanocrystals Below 5 nm Thickness
H. Abbas, J. Mohapatra, P. Joshi, T. Karki, P. Liu
Physics, The University of Texas at Arlington, Arlington, Texas, United States

11:45 AM-11:57 AM

CF-11. Magnetic Properties of Fe_3O_4 Membranes Transferred from a $SrTiO_3$ substrate by Etching a BaO Sacrificial Layer

D. Matsubara[1], T. Takeda[2], M. Tanaka[1, 3, 4], S. Ohya[1, 3, 4]
[1]Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Tokyo, Japan, [2]Department of Chemical System Engineering, The University of Tokyo, Bunkyo-ku, Tokyo, Japan, [3]Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo-ku, Tokyo, Japan, [4]Institute for Nano Quantum Information Electronics, The University of Tokyo, Bunkyo-ku, Tokyo, Japan

SESSION CG: MAGNETIC MICROSCOPY AND IMAGING

Chair(s): J. Fullerton, *Argonne National Laboratory, Lemont, Illinois, United States*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Room 2A

08:30 AM-08:42 AM

CG-01. Scanning NV magnetometry in a closed-cycle cryostat

M. Bacani[1], C. Schäfermeier[1], G. Puebla-Hellmann[2], J. Rhensius[2], K. Karrai[1], A. Morales[2]
[1]attocube systems GmbH, Haar by Munich, Germany, [2]QZabre AG, Zurich, Switzerland

08:42 AM-08:54 AM

CG-02. Spin structure imaging with ptychography in antiferromagnetic CuMnAs

D. M. Burn[1], K. Edmonds[2], P. Wadley[2], C. Parmenter[3], R. Campion[2], B. Daurer[1], S. S. Dhesi[1]
[1]Diamond Light Source, Didcot, Oxfordshire, United Kingdom, [2]School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom, [3]Nanoscale and Microscale Research Centre, University of Nottingham, Nottingham, United Kingdom

08:54 AM-09:06 AM

CG-03. Magnetic Patterning By Light He^+ Ion Irradiation For New Generation Reference Samples

Y. Sassi[1], K. Bouzehouane[2], A. Finco[3], S. Collin[2], F. Godel[2], N. Reyren[2], V. Cros[2], E. Monteblanco[1], D. Ravelosona[1]

[1]Spin-Ion Technologies, Centre de Nanosciences et Nanotechnologies (C2N), Palaiseau, France, [2]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, 1 avenue Augustin-Fresnel, Palaiseau, France, [3]Laboratoire Charles Coulomb, Université de Montpellier, CNRS, Montpellier, France

09:06 AM-09:18 AM

CG-04. A Sensitive MOKE and Optical Hall Effect Technique at Visible Wavelengths: Insights Into The Gilbert Damping

N. Am-Shalom, N. Bernstein, B. J. Assouline, A. Capua

Institution of Electrical Engineering and Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel

09:18 AM-09:30 AM

CG-05. 3D Vector Ptycho-Tomographic Imaging of Topological Structures in FeGd Multilayer

I. Binnie[1], H. Fang[1], B. Shearer[1], T. Feggeler[5, 4], A. Oh[6, 7], S. Yazdi[1], E. Cating-Subramanian[1], S. Montoya[2], E. Fullerton[2], D. Shapiro[4], J. Miao[3], H. C. Kapteyn[1], M. M. Murnane[1]

[1]University of Colorado Boulder, Boulder, Colorado, United States, [2]University of California San Diego, San Diego, California, United States, [3]University of California, Los Angeles, Los Angeles, California, United States, [4]Lawrence Berkeley National Lab, Berkeley, California, United States, [5]Brookhaven National Lab, Upton, New York, United States, [6]Vanderbilt University, Nashville, Tennessee, United States, [7]Columbia University, New York, New York, United States

09:30 AM-09:42 AM

CG-06. Unveiling Hidden Spatio-Magnetic Phases in Quantum Materials through Quantitative Magnetic Imaging and Transport*

M. Sim[1*], G. Krishnaswamy[1], G. Ji Omar[1], M. Pardo-Almanza[2], Y. Fujisawa[2], X. Chen[3], H. Tan[3], Y. Okada[2], A. Ariando[1], A. Soumyanarayanan[1, 3]

*[1]Department of Physics, National University of Singapore (NUS), Singapore, [2]Quantum Materials Science Unit, Okinawa Institute of Science and Technology (OIST), Okinawa, Japan, [3]Institute of Materials Research and Engineering (IMRE), A*STAR, Singapore*

09:42 AM-10:18 AM
CG-07. Probing Magnon Dynamics with Microwave-Based Ultrafast Electron Microscopy
C. Liu, S. Reisbick, Y. Zhu
Condensed Matter Physics, Brookhaven National Lab, Upton, New York, United States

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
CG-08. Curvature engineered unconventional 3D spin textures in amorphous $Fe_{0.58}Ge_{0.42}$ thin films
S. Satapathy[1], D. W. Raftrey[1], O. Bezsmertna[2], J. Sands[3], T. Bayaraa[1], S. Virasawmy[4], A. Gashi[4], S. Dhuey[4], C. Fernandez-Gonzalez[5], A. Sorrentino[5], D. Makarov[2], S. M. Griffin[1], F. Hellman[6], P. Fischer[1, 3]
[1]Material Science, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [2]Intelligent Materials and Systems, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, 01328, Germany, Dresden, Germany, [3]Department of Physics, University of California Santa Cruz, Santa Cruz, California, United States, [4]Molecular Foundry, Lawrence Berkeley National laboratory, Berkeley, California, United States, [5]ALBA Synchrotron, Cerdanyola del Vallès, Cerdanyola del Vallès, Spain, [6]Department of Physics, University of California, Berkeley, California, United States

10:57 AM-11:09 AM
CG-09. 3D spin wave microscopy
K. Rivkin
RKMAG Corporation, Pacific Grove, California, United States

11:09 AM-11:21 AM
CG-10. Mechanochemical Synthesis of Strontium Hexaferrite Magnets from Mill Scale Waste
N. Gunduz Akdogan[1, 3], D. Kalkavan[1], D. Celebi[1, 2], O. Akdogan[1, 2]
[1]NANOTerial Technology Co., Istanbul, Turkey, [2]Bahcesehir University, Istanbul, Turkey, [3]Piri Reis University, Istanbul, Turkey

11:21 AM-11:57 AM
CG-11. Nanoscale imaging and control of altermagnetism in MnTe
O. Amin[1], A. Dal Din[1], E. Golias[2], Y. Niu[2], A. Zakharov[2], S. Fromage[1], C. Fields[1, 3], S. Heywood[1], R. Cousins[4], F.

Maccherozzi[3], J. Krempaský[5], H. Dil[6, 5], D. Kriegner[7], B. Kiraly[1], R. Campion[1], A. Rushforth[1], K. Edmonds[1], S. S. Dhesi[3], L. Šmejkal[8, 9, 10], T. Jungwirth[7, 1], P. Wadley[1]
[1]University of Nottingham, Nottingham, United Kingdom, [2]MAX IV Laboratory, Lund, Sweden, [3]Diamond Light Source, Didcot, United Kingdom, [4]Nanoscale and Microscale Research Centre, Nottingham, United Kingdom, [5]Photon Science Division, Paul Scherrer Institut, Villigen, Switzerland, [6]Institut de Physique, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [7]Institute of Physics, Czech Academy of Sciences, Prague, Czechia, [8]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, [9]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, [10]Institute of Physics, Johannes Gutenberg University, Mainz, Germany

SESSION CH: FAST AND EFFICIENT SWITCHING
Co-Chair(s): X. Fan, *Division of Natural Sciences and Mathematics, University of Denver, Denver, Colorado, United States* and P. Finkel, *Materials Science Division, Naval Research Laboratory, Washington, District of Columbia, United States*
Wednesday, October 29, 2025
08:30 AM-12:00 PM
Room 1BC

08:30 AM-09:06 AM
CH-01. Ultrafast Creation of Magnetization Through the Targeted Excitation of Circularly-polarized Phonons
T. Zalewski[1, 2], A. V. Boris[3], A. Kirilyuk[1, 2], C. S. Davies[1, 2]
[1]HFML-FELIX, Radboud University, Nijmegen, Netherlands, [2]Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands, [3]Max Planck Institute for Solid State Research, Stuttgart, Germany

09:06 AM-09:18 AM
CH-03. Strain-Assisted Magnetization Reversal in Nanomagnets
S. Sarker[1], M. F. Chowdhury[1], M. J. Gross[5], M. Rajib[1], P. S. Keatley[6], R. Hicken[3], C. A. Ross[4], J. Atulasimha[1, 2]
[1]Mechanical & Nuclear Engineering Department, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Electrical & Computer Engineering Department, Virginia Commonwealth University, Richmond, Virginia, United States, [3]Department of Physics and Astronomy, University of Exeter, Exeter, United Kingdom, [4]Department of Materials Science and Engineering, Massachusetts Institute of Technology, Boston,

Massachusetts, United States, [5]Electrical Engineering and Computer Science Department, Massachusetts Institute of Technology, Boston, Massachusetts, United States, [6]Electromagnetic and Acoustic Materials Department, University of Exeter, Exeter, United Kingdom

09:18 AM-09:30 AM

CH-04. Origin of Enhanced Switching Efficiency by Increasing Magnetic Anisotropy Field in Accelerated STT-Switching and High-Retention MTJ (AccelHR-MTJ)

S. Itai, K. Koi, H. Maekawa, R. Takashima, M. Toko, Y. Lee, M. Nakayama
Frontier Technology R&D Institute, KIOXIA Corporation, Yokohama, Japan

09:30 AM-09:42 AM

CH-05. Magnetostrictive $Fe_{(100-x)}Al_x$ thin films on Flexible Substrates: correlation between microstructural and magneto-dynamic properties

P. Kumar[1, 2], P. Kumar[1], V. Sharma[3], M. K. Khanna[4], B. K. Kuanr[1]
[1]Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, Delhi, India, [2]Department of Physics, Motilal Nehru College, University of Delhi, South Campus, New Delhi, Delhi, India, [3]Department of Physics, Northeastern University, Boston, Massachusetts, United States, [4]Department of Electronic Science, University of Delhi, South Campus, New Delhi, Delhi, India

09:42 AM-09:54 AM

CH-06. Pt-Transition Metal Synthetic Ferrimagnets for All Optical Switching

J. Scott[1], M. Dabrowski[2], C. Sait[2], W. R. Hendren[1], N. Kuninski[1], T. E. McCormack[1], D. M. Burn[3], D. G. Newman[2], P. S. Keatley[2], A. T. N'Diaye[4], T. Hesjedal[5], G. van der Laan[3], R. Hicken[2], R. M. Bowman[1]
[1]Queen's University Belfast, Belfast, United Kingdom, [2]University of Exeter, Exeter, United Kingdom, [3]Diamond Light Source, Didcot, United Kingdom, [4]Lawrence Berkeley National Laboratory, Berkeley, California, United States, [5]University of Oxford, Oxford, United Kingdom

09:54 AM-10:06 AM

CH-07. Tracking and Characterization of Domains in $Nd_2Fe_{14}B$ Micro-Magnets

F. Lasthofer[1], O. Hrushko[1], A. Kosogor[1], T. Schrefl[1], S. Raznjevic[2], K. Zuzek Rozman[2], V. Sršan[2], S. Šturm[2]
[1]University for Continuing Education Krems, Wr. Neustadt, Austria, [2]Jozef Stefan Institute, Ljubljana, Slovenia

10:06 AM-10:18 AM
CH-08. Self-modulation instability in high-power ferromagnetic resonance of BiYIG nanodisks
I. N. Yemeli[1], S. Perna[2], D. Gouéré[4], A. Kolli[1], M. Muñoz[3], A. Anane[4], M. d'Aquino[2], H. Merbouche[1], C. Serpico[2], G. de Loubens[1]
[1]SPEC, CEA, CNRS, Université Paris-Sarclay, Gif-sur-Yvette, Paris, France, [2]Department of Electrical Engineering and Information Technology, University of Naples Federico II, Naples, Italy, [3]Institute de Tecnologías Fisicas y de la Información (CSIC), Madrid, Spain, [4]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Sarclay, Palaiseau, France

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
CH-09. A Physically Unclonable Function Implemented with Defective Magnetic Tunnel Junctions
J. W. Huber[1], R. Rahman[2], S. Bandyopadhyay[1]
[1]Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

10:57 AM-11:09 AM
CH-10. Exploring Low Sheet Resistance Materials for Enhanced Ferromagnetic Resonance Signals
N. Kuninski, J. N. Scott, W. R. Hendren, T. E. McCormack, R. M. Bowman
CQMT, Queen's University Belfast, Belfast, United Kingdom

11:09 AM-11:21 AM
CH-11. The role of the magnetic part of the optical field in the optical control of the magnetization
B. J. Assouline, A. Capua
Applied Physics, Hebrew University of Jerusalem, Jerusalem, Jerusalem, Israel

SESSION CQ: BIOMAGNETISM AND BIOMEDICAL APPLICATIONS II (POSTER SESSION)

Co-Chair(s): P. Kumar, *IMS RIKEN Center for Integrative Medical Sciences, Yokohama, Japan* and D. A. Arena, *Physics, University of South Florida, Tampa, Florida, United States*

Wednesday, October 29, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

CQ-01. Application of the FDTD Method to Analysis of Light Scattering in Suspensions of Crystals with Magnetic Anisotropy

Y. Takeuchi[1], T. Yamada[1], H. Kawaguchi[1], A. Hamasaki[2]
[1]Muroran Institute of Technology, Muroran, Japan, [2]Faculty of science, Shinshu University, Matsumoto, Japan

CQ-02. Temperature-Dependent Agglomeration Dynamics of Magnetic Nanoparticles: Implications for Diffusion and Spatial Control in Magnetic Hyperthermia

B. Cheng, J. Sakurai, S. Hata, C. Oka
Micro-Nano Mechanical Science and Engineering, Nagoya University, NAGOYA, AICHIKEN, Japan

CQ-03. Automated TMS E-Field Mapping of Brain Phantom using Collaborative Robot

L. Schorr[1], W. Lohr[2], R. L. Hadimani[1]
[1]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

CQ-04. Shape-Directed Magnetic and Hyperthermic Properties of Hydrothermally Synthesized $Mn_{0.5}Zn_{0.5}Fe_2O_4$-based Magnetic Fluid

H. H. Patel[1], K. Parekh[1], P. Kopcansky[2], M. Rajnak[2]
[1]Dr. K. C. Patel Research and Development Centre, Charotar University of Science and Technology, CHARUSAT Campus, Changa, Gujarat, India, [2]Institute of Experimental Physics, SAS, Watsonova 47, 040 01, Košice, Slovakia

CQ-05. Wireless Temperature Measurement based on Magnetic Harmonic Signal during Magnetic Heating Operation for Hyperthermia

A. Kuwahata, A. Yamazaki, R. Shinohara, S. Yabukami
Tohoku University, Sendai, Japan

CQ-06. Iron Oxide Magnetic Nanoparticles Synthesized by Wet Ball Milling: Evaluation of Hyperthermia Properties

S. Mostufa[1], B. Rezaei[1], I. H. Karampelas[2], J. Gomez-Pastora[3], K. Wu[1]
[1]Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States, [2]Nemak USA, Inc., Sheboygan, Wisconsin, United States, [3]Department of Chemical Engineering, Texas Tech University, Lubbock, Texas, United States

CQ-07. PEG-Functionalized Spherical and Cubic Iron Oxide Nanoparticles for Magnetic Hyperthermia in Serum-Based Environments

B. Rezaei[1], S. Mostufa[1], I. H. Karampelas[2], J. Gomez-Pastora[3], K. Wu[1]
[1]Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States, [2]Nemak USA, Inc., Sheboygan, Wisconsin, United States, [3]Department of Chemical Engineering, Texas Tech University, Lubbock, Texas, United States

CQ-08. Magnetic Orientation of Monosodium Urate Crystals in Microspaces: Implications for Gout Diagnosis

A. Hamasaki[1], Y. Takeuchi[2]
[1]Faculty of science, Shinshu University, Matsumoto, Japan, [2]Muroran Institute of Technology, Muroran, Japan

CQ-09. Anatomical and Conductive Rhesus Macaque Head Phantom for E-field sensing in Transcranial Magnetic Stimulation.

W. Lohr[1], T. Atalugama[2], M. Basker[2], R. L. Hadimani[2]
[1]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

SESSION CR: SOFT MAGNETIC MATERIALS II (POSTER SESSION)

Chair(s): E. Rowe, *RXEEG, Air Force Research Laboratory, Wright Patterson AFB, Ohio, United States*

Wednesday, October 29, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

CR-01. Analysis of Domain Wall Pinning and Anomalous Eddy Current Losses via Multiscale Magnetic Simulations

Y. Shima[1], T. Yamazaki[1], S. Tamaru[2], C. Mitsumata[3], A. L. Foggiatto[1], M. Kotsugi[1]
[1]Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan, [2]National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan, [3]University of Tsukuba, Tsukuba, Ibaraki, Japan

CR-02. *Ab initio* study of promising antiferromagnetic aluminides for magnetocaloric applications

H. Aihemaiti[1], E. Dastanpour[1], A. Bergman[2], L. Vitos[1, 2]
[1]Material Science and Engineering, KTH Royal Institute of Technology, Stockholm, Sweden, [2]Department of Physics and Astronomy, Uppsala university, Uppsala, Sweden

CR-03. Influence of Annealing Treatment on Magnetic Properties of Submicron Sized Amorphous Fe-Co-B Particles

K. Sato[1], K. Wakabayashi[1], S. Ajia[1], T. Miyazaki[1], S. Muroga[1], Y. Endo[1, 2]
[1]Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [2]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Miyagi, Japan

CR-04. 120 °C Si-O insulating shell formation on iron nanoparticles synthesized from micron-size magnetite by gas-solid reaction

A. Nishikura, M. Miyazawa, H. Nakashinden, M. Tobise, S. Saito
Tohoku University, Sendai, Japan

CR-05. Additive manufacturing of soft ferrite components

B. Capraro[1], S. Bachmann[2], R. Wachs[2], H. Lauterbach[3], O. Horst[3]
[1]Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Hermsdorf, Thuringia, Germany, [2]Tridelta Weichferrite GmbH, Hermsdorf, Thuringia, Germany, [3]QSIL Metals Hermsdorf GmbH, Hermsdorf, Thuringia, Germany

CR-06. Research on High Thrust Density Permanent Magnet Vernier Linear Electric Machine for Gravity Energy Storage Systems Based on High Saturation Magnetic Flux Density Materials

J. Yuan, Q. Wu, H. Zhou
School of Electrical Engineering and Automation, Wuhan University, Wuhan, China

CR-07. Giant Magnetization and Low Anisotropy in Zn-Doped Cobalt ferrite

F. Bakhshizadeh[1], F. Efe[1], D. Alharbi[1, 2], M. Guy[1], M. Davis[1], A. Lisfi[1]
[1]Physics, Morgan State University, Baltimore, Maryland, United States, [2]Physics, The Catholic University of America, Washington DC, District of Columbia, United States

CR-08. Magnetostriction of Iron-Based Binary Alloys

T. Fukuzaki, T. Inoue, T. Kanematsu, T. Yoshimoto
Nidec Product Technology R&D Center, NIDEC CORPORATION, Kawasaki, Kanagawa, Japan

CR-09. Magnetometry of Buried Nanolayers by Hard X-ray Photoelectron Spectroscopy

A. Hloskovsky[1], C. Schlueter[1], G. Fecher[2]
[1]Photon Science, DESY, Hamburg, Germany, [2]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany

CR-10. Fabrication and Evaluation of Magnetic anisotropy of Co-based Heusler alloy $Co_2FeAl_xSi_{1-x}$ epitaxial thin films

T. Hojo[1, 2], H. Hamasaki[2], M. Tsunoda[3, 4], M. Oogane[2, 5]
[1]Department of Advanced Spintronics Medical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [2]Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [3]Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [4]Research

Center for Green X-Tech, Green Goals Initiative, Tohoku University, Sendai, Miyagi, Japan, [5]Center for Science and Innovation in Spintronics (Core Research Cluster) Organization for Advanced Studies, Tohoku University, Sendai, Miyagi, Japan

CR-11. Enhancement of microwave absorption and resonance linewidth through large specific surface area of magnesium substituted Zn-Ni Ferrites

S. Kaushik[1], M. Dabla[1], P. Kumar[1], M. Sharma[1, 2], B. K. Kuanr[1]
[1]Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, Delhi, India, [2]Department of Physics, Deshbandhu College, University of Delhi, New Delhi, Delhi, India

CR-12. Normalized switching field distribution for the thin film of Co

J. Hidalgo Gonzalez[1], S. P. Sánchez[1], A. E. Oropesa[1], J. Matutes[2]
[1]Universidad Autonoma de San Luis Potosi, San Luis Potosí, Mexico, [2]Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico

CR-13. Exploring Interfacial Effects in Transition Metal Dichalcogenide / Ferrimagnetic Alloy Heterostructure

L. Ramos, D. A. Arena, A. I. Ojo, H. Rodríguez Gutiérrez, Y. Wadumesthri
Physics, University of South Florida, Tampa, Florida, United States

CR-14. Epitaxial CoFeMnGe Thin Films with Low Gilbert Damping: A Promising Quaternary Heusler Alloy for Spintronics

R. Roy Chowdhury, V. Mishra, A. I. Ojo, R. Huligerepura Shankaregowda, P. Sharma, D. DeTellem, H. Srikanth, D. A. Arena, S. Witanachchi, M. Phan
Department of Physics, University of South Florida, Tampa, Florida, United States

WORKSHOP: WOMEN IN MAGNETISM

Wednesday, October 29, 2025
12:15 PM-01:45 PM
Room 1DE

SESSION DA: PERSPECTIVE OF PROBABILISTIC COMPUTING WITH MAGNETIC TUNNEL JUNCTIONS

Chair(s): G. Finocchio, *University of Messina, Messina, Italy*

Wednesday, October 29, 2025
02:00 PM-05:30 PM
Grand Ballroom

02:00 PM-02:36 PM
DA-01. Advanced Designs of Stochastic Magnetic Tunnel Junctions for Spintronic Probabilistic Computing
S. Kanai[1, 2, 3]
[1]Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan, [2]WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Sendai, Miyagi, Japan, [3]Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan

02:36 PM-03:12 PM
DA-02. Solving Combinatorial Optimization Problems with Stochastic Actuated Magnetic Tunnel Junction
A. D. Kent
Physics, New York University, New York, New York, United States

03:12 PM-03:48 PM
DA-03. Probabilistic Computing with Voltage-controlled Magnetic Tunnel Junctions and Digital CMOS
P. Khalili Amiri
Northwestern University, Evanston, Illinois, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
DA-04. Ising machine based on Magnetic Tunnel Junctions
E. Raimondo[1, 3], A. Grimaldi[2], R. Tomasello[2], M. Chiappini[1], A. Giordano[3], M. Carpentieri[2], G. Finocchio[3]
[1]Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy, [2]Politecnico di Bari, Bari, Italy, [3]University of Messina, Messina, Italy

04:51 PM-05:27 PM
DA-05. On-chip Training of Stochastic Multilayer Spintronic Neural Networks
P. Talatchian
SPINTEC, Grenoble, France

SESSION DB: ADVANCING MAGNONICS: UNLOCKING THE POTENTIAL OF THE THIRD DIMENSION
Chair(s): G. Gubbiotti, *IOM-CNR, Perugia, Italy*
Wednesday, October 29, 2025
02:00 PM-05:30 PM
Ballroom A

02:00 PM-02:36 PM
DB-01. Magnon control in dipolar 3D multilayered artificial spin-ice hybrid systems
R. Sultana[1], R. Negrello[2], V. Bhat[1], M. T. Kaffash[1], H. Carfagno[3], T. C. Dion[4], K. D. Stenning[5], A. Vanstone[5], H. Holder[5], G. Alatteili[6], V. Martinez[6], T. Kimura[4], R. Oulton[5], H. Kurebayashi[7], W. Branford[5], E. Iacocca[6], M. Doty[8], Y. Ji[1], J. Gartside[5], F. Montoncello[2], G. Gubbiotti[9], B. Jungfleisch[1]
[1]Department of Physics and Astronomy, University of Delaware, Newark, Delaware, United States, [2]Università di Ferrara, Ferrara, Italy, [3]Department of Materials Science and Engineering, University of Delaware, Newark, Delaware, United States, [4]Solid State Physics Laboratory, Kyushu University, Fukuoka, Japan, [5]Dept of Physics, Blackett Laboratory, Imperial College London, London, United Kingdom, [6]Center for Magnetism and Magnetic Nanostructures, University of Colorado Colorado Springs, Colorado Springs, Colorado, United States, [7]London Centre for Nanotechnology, University College London, London, United Kingdom, [8]Department of Materials Science and Engineering, University of Delaware, Newark, Delaware, United States, [9]5Istituto Officina dei Materiali del Consiglio Nazionale delle Ricerche (IOM-CNR), Perugia, Italy

02:36 PM-03:12 PM
DB-02. Three-dimensional Control and Imaging of Spin Waves in Nanostructured Thin Films
V. Levati[1], M. Vitali[1], D. Girardi[1], S. Finizio[2], C. Donnelly[3], J. Raabe[2], M. Panzeri[1], R. Silvani[4], M. Madami[4], D. Breitbach[6], P. Pirro[6], R. Bertacco[1], V. Russo[1], A. Li Bassi[1], G. Corrielli[7], R. Osellame[7], F. Maspero[1], A. Del Giacco[1], N. Pellizzi[1], I. Biancardi[1], P. Florio[1], S. Tacchi[5], D. Petti[1], E. Albisetti[1]
[1]Politecnico di Milano, Milano, Italy, [2]PSI, Villigen, Switzerland, [3]Max Planck Institute, Dresden, Germany,

[4]Università di Perugia, Perugia, Italy, [5]CNR-IOM, Perugia, Italy, [6]RPTU Kaiserslautern-Landau, Kaiserslautern, Germany, [7]CNR-IFN, Milano, Italy

03:12 PM-03:48 PM
DB-03. Micromagnetic Simulation of High-Frequency Modes in Interconnected Nanowire Arrays
R. Hertel
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
DB-04. Nonreciprocal magnonics in 3D nanostructures
F. Brevis[1], L. Körber[2], B. Mimica-Figari[1], R. Gallardo[1], A. Kákay[3], P. Landeros[1]
[1]Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile, [2]Institute of Molecules and Materials, Radboud University, Nijmegen, Netherlands, [3]Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

04:51 PM-05:27 PM
DB-05. Nonreciprocal Magnons in Programmable 3D Ferromagnetic Screws and Tubular Nanonetworks Created by Atomic Layer Deposition
D. Grundler[1, 2]
[1]Institute of Materials (IMX), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland, [2]Institute of Electrical and Micro Engineering (IEM), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Vaud, Switzerland

SESSION DC: NANOPARTICLES, 3D, AND OTHER STRUCTURED MATERIALS

Chair(s): M. Charilaou, *Physics, University of Louisiana at Lafayette, Lafayette, Louisiana, United States*
Wednesday, October 29, 2025
02:00 PM-05:30 PM
Ballroom C

02:00 PM-02:36 PM
DC-01. Creating Topological Spin and Stray Field Textures with Coupled 3D Magnetic Nanohelices
J. Fullerton[1], N. Leo[2], J. Jurczyk[3], C. Donnelly[4], D. Sanz Hernandez[5], L. Skoric[6], N. Mille[7], S. Stanescu[7], D.

MacLaren[8], R. Belkhou[7], A. Hierro-Rodriguez/[9], A. Fernández-Pacheco[3], C. Phatak[1, 10]
[1]Materials Science Division, Argonne National Laboratory, Lemont, Illinois, United States, [2]Department of Physics, University of Loughborough, Loughborough, United Kingdom, [3]Institute of Applied Physics, TU Wien, Vienna, Austria, [4]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, [5]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France, [6]University of Cambridge, Cambridge, United Kingdom, [7]Synchrotron SOLEIL, Saint-Aubin, France, [8]SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom, [9]Depto. Fisica, Universidad de Oviedo, Oviedo, Spain, [10]Department of Materials Science and Engineering, Northwestern University, Evanston, Illinois, United States

02:36 PM-02:48 PM
DC-02. Unconventional Spin Textures in 3D Magnetic Möbius Bands
C. Langton[1], D. Bhattacharya[1], B. Fugetta[1], Z. Chen[1], O. Bezsmertna[4], D. W. Raftrey[2, 3], J. Sands[2, 3], S. Satapathy[2], C. Fernandez-Gonzalez[5], A. Sorrentino[5], D. Makarov[4], P. Fischer[2], G. Yin[1], K. Liu[1]
[1]Department of Physics, Georgetown University, Washington, District of Columbia, United States, [2]Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Department of Physics, University of California Santa Cruz, Santa Cruz, California, United States, [4]Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany, [5]MISTRAL Beamline, ALBA Synchrotron Light Facility, Barcelona, Spain

02:48 PM-03:00 PM
DC-03. Characterizing fragile magnetic textures in three dimensions using Scanning NV magnetometry
P. Rickhaus[1], A. van den Berg[2], J. Lenz[1], S. Ladak[2]
[1]Qnami AG, Basel, Switzerland, [2]School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom

03:00 PM-03:12 PM
DC-04. Effect of curvature on chirality and magnetic configuration in perpendicular Co/Pd multilayer films
D. Bhattacharya[1], C. Langton[1], D. W. Raftrey[2], B. Fugetta[1], S. Satapathy[2], O. Bezsmertna[3], A. Sorrentino[4], D. Makarov[3], G. Yin[1], K. Liu[1], P. Fischer[2]
[1]Physics, Georgetown University, Washington, District of Columbia, United States, [2]Materials Sciences Division,

Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Helmholtz-Zentrum Dresden-Rossendorf e.V., Institute of Ion Beam Physics and Materials Research, Dresden, Germany, [4]ALBA light source, Cerdanyola del Vallès, Spain

03:12 PM-03:24 PM
DC-05. Nonlinear Dynamics and Frequency Comb Generation in Macroscopic Artificial Spin Ice
R. Peroor, L. A. Scafuri, E. Iacocca, D. A. Bozhko
Department of Physics and Energy Science, University of Colorado Colorado Springs, Colorado Springs, Colorado, United States

03:24 PM-03:36 PM
DC-06. Perturbing the Pyrochlore Structure: Local structure and Magnetic tuning in doped rare earth titanate compound
R. Sain[1], M. Sahoo[3], C. Upadhyay[2]
[1]School of Materials Science and Technology, IIT (BHU), Varanasi, UTTAR PRADESH, India, [2]School of Materials Science and Technology, IIT (BHU), Varanasi, UTTAR PRADESH, India, [3]Surface and Sensors Studies Division, Materials Science Group, Indira Gandhi Centre for Atomic Research, Kalpakkam, Kalpakkam, India

03:36 PM-03:48 PM
DC-07. Complex Evolution of Magnetic Anisotropies in Magnetosomes of Magnetotactic Bacteria
D. Gandia[1], L. Marcano[2, 3], L. Gandarias[4, 5], A. G. Gubieda[4], A. García-Prieto[12], L. Fernández Barquín[6], J. Espeso[6], E. M. Jefremovas[7, 8, 9], I. Orue[10], A. Abad[4], A. García-Arribas[11], M. Fernandez Gubieda[11], J. Alonso Masa[6]
[1]Ciencias, Universidad Pública de Navarra, Pamplona, Spain, [2]Física, Universidad de Oviedo, Oviedo, Spain, [3]CIC biomaGUNE, Donostia, Spain, [4]Inmunología, Microbiología y Parasitología, Universidad del País Vasco (UPV/EHU), Leioa, Spain, [5]Aix-Marseille Institute of Biosciences and Biotechnologies (BIAM), Aix-Marseille Université, CNRS, Saint-Paul-lez-Durance, France, [6]CITIMAC, Universidad de Cantabria, Santander, Spain, [7]Institute of Physics. Johannes Gutenberg University of Mainz, Mainz, Germany, [8]Physics and Materials Science, University of Luxembourg, Grand Duchy of Luxembourg, Luxembourg, [9]Institute for Advanced Studies, Luxembourg, Luxembourg, [10]SGIker, Universidad del País Vasco (UPV/EHU), Leioa, Spain, [11]Electricidad y Electrónica, Universidad del País Vasco (UPV/EHU), Leioa,

Spain, [12]Física Aplicada, Universidad del País Vasco (UPV/EHU), Bilbao, Spain

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
DC-09. Carbon-Driven Enhancement of Magnetic Response in Pyrolyzed Copper–Porphyrin Nanocomposites
S. Figueroa, V. Pena Perez, F. Iglesias, A. Khodagulyan, O. Bernal, A. N. Kocharian
Physics and Astronomy, California State University Los Angeles, Los Angeles, California, United States

04:27 PM-04:39 PM
DC-10. All-Oxide Hybrid Spinel Core@Shell Nanoparticles: *A Seed-Mediated Approach Toward Magneto-Optical Theranostics*
S. Jan[1], R. Das[2], R. Roy Chowdhury[1], A. I. Ojo[1], Y. Wadumesthri[1], H. Rodríguez Gutiérrez[1], H. Srikanth[1], D. A. Arena[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]SEAM Research Centre, South East Technological University, Waterford, Ireland

04:39 PM-04:51 PM
DC-11. Nanostructuring effects on the Verwey Transition in Fe_3O_4 Nanoparticles
R. Gautam[1], W. Pitt[3], R. Harrison[2], K. Chesnel[1]
[1]Physics, Brigham Young University, Provo, Utah, United States, [2]Chemistry, Brigham Young University, Provo, Utah, United States, [3]Chemical Engineering, Brigham Young University, Provo, Utah, United States

04:51 PM-05:03 PM
DC-12. Dynamics of magnetic fluctuations in Fe_3O_4 nanoparticles
K. Chesnel, J. Rackham
BYU, Provo, Utah, United States

SESSION DD: ND2FE14B AND MEASUREMENT TECHNIQUES

Co-Chair(s): A. Lisfi, *Physics, Morgan State University, Baltimore, Maryland, United States* and Y. Hirayama, *National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan*

Wednesday, October 29, 2025
02:00 PM-05:30 PM
Ballroom B

02:00 PM-02:12 PM
DD-01. Unveiling Buried Magnetic Nanodomains: High-Resolution Phase Mapping in Thin Films with Synchrotron Radiation

A. Lengyel[1], D. G. Merkel[1], G. Bazso[1], A. I. Chumakov[2], D. L. Nagy[1], G. Hegedus[1], Z. E. Horvath[3], N. M. Nemes[4], M. A. Gracheva[3], E. O. Szilagyi[1], S. Sajti[1], A. Deak[3], L. Illes[3], A. Nemeth[1], F. Maccari[5], I. Radulov[5], M. Major[1, 5], Z. Zolnai[3], S. Graning[6], K. Sajerman[7], T. Vaczi[1], P. Petrik[3], D. Mukherjee[3], S. Lenk[7], D. Bessas[2], G. Z. Radnoczi[3]
[1]HUN-REN Wigner Research Centre for Physics, Budapest, Budapest, Hungary, [2]European Synchrotron Radiation Facility, Grenoble, France, [3]HUN-REN Centre for Energy Research, Budapest, Budapest, Hungary, [4]Universidad Complutense de Madrid, Madrid, Spain, [5]Technische Universität Darmstad, Darmstad, Germany, [6]Eotvos Lorand University, Budapest, Budapest, Hungary, [7]Budapest University of Technology and Economics, Budapest, Budapest, Hungary

02:12 PM-02:24 PM
DD-02. Quantification of Retained Austenite via Magnetic Saturation

A. Jackson, N. J. Jones, J. Yoo
Naval Surface Warfare Center Carderock Division, West Bethesda, Maryland, United States

02:24 PM-02:36 PM
DD-03. Accurate Saturation Magnetization Measurement Method for Fe-based Alloy Foils

T. Tabata, Y. Asari, M. Noujima, S. Terada
Research & Development Group, Hitachi Ltd., Hitachi, Ibaraki, Japan

02:36 PM-02:48 PM
DD-05. New steel coupons hosting residual stresses for steel health monitoring calibration

T. Damatopoulou, E. V. Hristoforou
National TU of Athens, Athens, Greece

02:48 PM-03:00 PM
DD-06. Raman Spectroscopic and Computational Investigation of Gold-Coated $CoFe_2O_4$ Thin Films
T. Lamichhane
Engineering & Physics, University Of Central Oklahoma, Edmond, Oklahoma, United States

03:00 PM-03:12 PM
DD-07. Measuring Magnetic Exchange using Magnetometry and Atomistic Simulations
C. Swindells[1, 2], W. K. Peria[1], J. Barker[3], J. J. Wisser[1], M. Schneider[1], M. Pufall[1], H. T. Nembach[1]
[1]NIST, Boulder, Colorado, United States, [2]Electrical Engineering, CU Denver, Denver, Colorado, United States, [3]School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom

03:12 PM-03:24 PM
DD-08. Mechanical Strengthening of Nd-Fe-B Sintered Magnets via Microstructure Engineering
B. Cui, X. Liu, W. Tang, I. Nlebedim, J. Cui
Ames National Laboratory, Ames, Iowa, United States

03:24 PM-03:36 PM
DD-10. Relationship between Nd-rich phase and oxygen content for additive-free sintering with regenerated powder from magnet sludge waste
D. Kim[1], V. Galkin[2]
[1]Korea Institute of Materials Science, Changwon, Korea (the Republic of), [2]Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea (the Republic of)

03:36 PM-03:48 PM
DD-11. Correlation of Coercivity, Microstructure, and Surface Defects in HDDR-Processed Nd-Fe-B Powders for Bonded Magnet Applications
X. Liu[1], M. K. Kesler[2], Z. Tener[3], M. J. Kramer[4], I. Nlebedim[1]
[1]Division of Critical Materials, Ames National Laboratory, Ames, Iowa, United States, [2]Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States, [3]Savannah River National Laboratory, Aiken, South Carolina, United States, [4]Division of Materials Science and Engineering, Ames National Laboratory, Ames, Iowa, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
DD-12. Critical Rare Earth Lean Nd-Ce-Fe-B Permanent Magnets Powder via Wet Chemical Process
H. Parmar, M. Broders, C. I. Nlebedim, X. Liu
Division of Critical Materials, Ames National Laboratory, Critical Materials Innovation Hub, Ames, Iowa, United States

04:27 PM-04:39 PM
DD-13. Tailoring Nd-Fe-B Microstructure via LPBF like Cooling in Melt Spinning
A. Paul[1, 2], J. Shield[1, 2]
[1]Mechanical and Materials engineering, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, Nebraska, United States

04:39 PM-04:51 PM
DD-14. Dy-Free Sintered Nd-Fe-B Magnets Enhanced by Pr-Al-Cu Alloy via Different Grain Boundary Engineering Techniques.
W. Tang[1], J. Wang[1], Y. Varma[2], C. Pan[1], J. Cui[1, 2]
[1]Ames National Laboratory, Ames, Iowa, United States, [2]Materials Science and Engineering, Iowa State University, Ames, Iowa, United States

SESSION DE: MAGNETIC GROUND STATES, PHASE TRANSITIONS AND MAGNETO-ELASTIC PHENOMENA
Co-Chair(s): N. J. Jones, *Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, Maryland, United States* and H. Chi, *University of Ottawa, Ottawa, Ontario, Canada*
Wednesday, October 29, 2025
02:00 PM-05:30 PM
Room 2DE

02:00 PM-02:36 PM
DE-01. Tuning Magnetic Properties of FeGa Magnetostrictive Thin Films Using Light or Electric Fields
P. Tiberto[1], G. Barrera[1], F. Celegato[1], M. Coisson[1], G. Pradhan[1], D. Martella[2]
[1]Advance Materials and Life Sciences, INRIM, Torino, Italy, [2]Department of Chemistry "Ugo Schiff", Università di Firenze, Torino, Italy

02:36 PM-02:48 PM
DE-03. Ultra-Flexible Magneto-Elastic Diaphragm for Low-Power Actuation Applications
K. Moussi, S. Ben Mbarek, S. Amara, G. Setti
King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia

02:48 PM-03:00 PM
DE-04. Heterogeneously Integrated Lithium Niobate-Yttrium Iron Garnet Heterostructures for Magnetoelectric Devices
A. R. Will-Cole[1], L. Hackett[1], M. Miller[1], T. Friedmann[1], S. Arterburn[1], S. Herrera[1], M. Eichenfield[2]
[1]Sandia National Laboratories, Albuquerque, New Mexico, United States, [2]University of Arizona, Tucson, Arizona, United States

03:00 PM-03:12 PM
DE-05. Multimodal Magnetoactive Elastomers for Magnetic and Touch Sensing with Stylus Functionality
Y. Sekertekin[1, 2], S. Sonkusale[1, 2]
[1]Electrical and Computer Engineering, Tufts University, Medford, Massachusetts, United States, [2]Sonkusale Research Laboratory, Medford, Massachusetts, United States

03:12 PM-03:24 PM
DE-06. Selective readout of isolated superconducting hybrid magnonic circuit
P. Pal[1, 2], U. Welp[1], R. Divan[3], V. Novosad[1], A. Hoffmann[2], Y. Li[1]
[1]Materials Science Division, Argonne National Laboratory, Lemont, Illinois, United States, [2]Department of Materials Science and Engineering and Materials Research Laboratory, University of Illinois Urbana-Champaign, Champaign, Illinois, United States, [3]Center for Nanoscale Materials, Argonne National Laboratory, Lemont, Illinois, United States

03:24 PM-03:36 PM
DE-07. Tailored Ferromagnetic Resonance in Thick Film YIG via Ion-Implantation Technique
H. Baldino[1], D. Hedlund[2], K. Collins[3], P. Ström[4], D. Heiman[5, 6], R. Peroor[7], E. Abels[7], D. A. Bozhko[7], M. Page[3], M. Newburger[3], P. Kulik[1, 2]
[1]Material Science and Engineering, University of Central Florida, Orlando, Florida, United States, [2]Electrical and Computer Engineering, University of Central Florida, Orlando, Florida, United States, [3]Materials and Manufacturing Directorate, Air Force Research

Laboratory, WPAFB, Ohio, United States, [4]Physics and Astronomy, Uppsala University, Uppsala, Sweden, [5]Physics Department, Northeastern University, Boston, Massachusetts, United States, [6]Plasma Science and Fusion Center, Massachusetts institute of technology, Cambridge, Massachusetts, United States, [7]Department of Physics and Energy Science, Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, Colorado, United States

03:36 PM-04:15 PM
Break

04:15 PM-04:51 PM
DE-08. An exploration of field-induced ground states and phase transitions in pyrochlores using torque magnetometry
C. Beekman[1, 2]
[1]Physics, Florida State University, Tallahassee, Florida, United States, [2]National High Magnetic Field Laboratory, Tallahassee, Florida, United States

04:51 PM-05:03 PM
DE-10. Effect of Si Concentration on the Crystal Structure and Magnetic Ground State of $Mn_2FeAl_{1-x}Si_x$ Heusler Alloys
S. Saha[1], A. K. Khorwal[1], Y. Bitla[1], A. K. Patra[1, 2]
[1]Department of Physics, Central University of Rajasthan, Ajmer, Rajasthan, India, [2]School of Physics, University of Hyderabad, Hyderabad, Telangana, India

SESSION DF: SPIN INJECTION, PUMPING AND TRANSFER TORQUES
Chair(s): D. Qu, *Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*
Wednesday, October 29, 2025
02:00 PM-05:30 PM
Room 2BC

02:00 PM-02:36 PM
DF-01. Self-generated Spin-orbit Torques Driven by Magnonic Spin Dissipation in Antiferromagnet/Ferromagnet Bilayer
W. Choi[1, 2], J. Ha[1, 3], M. Jung[1], S. Kim[1], H. Koo[1, 4], O. Lee[1], B. Min[1], H. Jang[2, 5], A. Shahee[6], J. Kim[7], M. Kläui[6], J. Hong[3], K. Kim[8], D. Han[1]
[1]Center for Semiconductor Technology, Korea Institute of Science and Technology, Seoul, Korea (the Republic of), [2]Department of Materials Science and Engineering, Seoul National University, Seoul, Korea (the Republic of),

[3]Department of Physics and Chemistry, Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea (the Republic of), [4]KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea (the Republic of), [5]Research Institute of Advanced Materials, Seoul National University, Seoul, Korea (the Republic of), [6]Institute for Physics, Johannes Gutenberg University, Mainz, Germany, [7]Department of Physics, Kunsan National University, Kunsan, Korea (the Republic of), [8]Department of Physics, Yonsei University, Seoul, Korea (the Republic of)

02:36 PM-03:12 PM

DF-02. Temperature gradient-driven motion of magnetic domains in a magnetic metal multilayer by entropic forces

L. Huang[1, 2], J. Barker[1], L. Kailas[1], S. Hait[1], S. Connell[1], G. Burnell[1], C. Marrows[1]
[1]University of Leeds, Leeds, United Kingdom, [2]University of Sheffield, Sheffield, United Kingdom

03:12 PM-03:24 PM

DF-03. Dependence of Current-Induced Switching Threshold on Composition Gradient Width in Si/Al-Integrated Perpendicular Magnetic Films

S. Takagi[1], K. Yamanoi[1], Y. Nozaki[1, 2]
[1]Dept. of Phys., Keio Univ., Yokohama, Kanagawa, Japan, [2]Center for Spintronics Research Network, Keio Univ., Yokohama, Kanagawa, Japan

03:24 PM-03:36 PM

DF-04. Dissipationless Spin-orbit Torque in Magnetic Insulators

S. Ahmad[1], F. Mahfouzi[2], P. Haney[2], F. Xue[1]
[1]Department of Physics, University of Alabama at Birmingham, Birmingham, Alabama, United States, [2]PML, National Institute of Standards and Technology, Gaithersburg, Maryland, United States

03:36 PM-03:48 PM

DF-05. Effect of Interfacial DMI on Write Error Rate Anomalies of STT-MRAM Devices

P. Das[1], M. Rajib[1], J. Atulasimha[1, 2]
[1]Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Department of Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
DF-06. Influence of Device Structure on RF Oscillation Properties in Spin Hall Nano Oscillators
H. Iida[1, 2], K. De Zoysa[1], Y. Yoshida[1, 2], A. Sud[3], A. Lagarrigue[1], T. Dohi[1], A. Kumar[4, 5], A. A. Awad[1, 4], S. Kanai[1, 6], J. Akerman[1, 4], S. Fukami[1, 5], H. Ohno[5, 7]
[1]LNS, RIEC, Tohoku Univ., Sendai, Japan, [2]Graduate School of Engineering, Tohoku Univ., Sendai, Japan, [3]FRIS, Tohoku Univ., Sendai, Japan, [4]Physics department, Univ. of Gothenburg, Gothenburg, Sweden, [5]CSIS, Tohoku Univ., Sendai, Japan, [6]WPI-AIMR Tohoku Univ., Sendai, Japan, [7]CIES, Tohoku Univ., Sendai, Japan

04:27 PM-04:39 PM
DF-07. Magnetotransport Signatures of Spin Transfer Beyond the Semiclassical Regime
G. T. Street, S. Emori
Physics, Virginia Tech, Blacksburg, Virginia, United States

04:39 PM-04:51 PM
DF-08. Single-Layer Spin-Orbit-Torque Magnetization Switching Due to Spin Berry Curvature Generated by Minute Spontaneous Atomic Displacement in Weyl Oxide $SrRuO_3$
H. Horiuchi[1], Y. Araki[2], Y. K. Wakabayashi[3], J. Ieda[2], M. Yamanouchi[4], Y. Sato[5], S. Kaneta-Takada[1], Y. Taniyasu[3], H. Yamamoto[3], Y. Krockenberger[3], M. Tanaka[1, 6, 7], S. Ohya[1, 6, 7]
[1]Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Tokyo, Japan, [2]Advanced Science Research Center, Japan Atomic Energy Agency, Tokai-mura, Ibaraki, Japan, [3]NTT Basic Research Laboratories, NTT Corporation, Atsugi-shi, Kanagawa, Japan, [4]Division of Electronics for Informatics, Graduate School of Information Science and Technology, Hokkaido University, Sapporo-shi, Hokkaido, Japan, [5]Research and Education Institute for Semiconductors and Informatics, Kumamoto University, Chuo-ku, Kumamoto, Japan, [6]Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo-ku, Tokyo, Japan, [7]Institute for Nano Quantum Information Electronics, The University of Tokyo, Bunkyo-ku, Tokyo, Japan

04:51 PM-05:03 PM
DF-09. Spin Pumping and Inverse Spin Hall Effect in Chiral Polymers
S. Li, S. Jeon, Y. Chen, M. Yoo, A. Hoffmann, Y. Diao
University of Illinois Urbana Champaign, Urbana, Illinois, United States

05:03 PM-05:15 PM
DF-10. Unconventional spin polarization unleashed by Fermi surface modulation
S. Sugimoto[2], Y. Araki[1], J. Ieda[1], S. Kasai[2], Y. K. Takahashi[2]
[1]Japan Atomic Energy Agency, Tokai, Japan, [2]National Institute for Materials Science, Tsukuba, Japan

05:15 PM-05:27 PM
DF-11. Increased Rectified Voltage in Magnetic Tunnel Junction with Pseudo Spin Valve Structure for Wireless Signals Energy Harvesting
K. Kino[1, 2], H. Chiku[1, 2], T. Dohi[2], T. Shinoda[1, 2], S. Kanai[1, 2, 3], H. Ohno[1, 3, 4], S. Fukami[1, 2, 3]
[1]RIEC, Tohoku Univ., Sendai, Japan, [2]Graduate School of Engineering, Tohoku Univ., Sendai, Japan, [3]WPI-AIMR, Tohoku Univ., Sendai, Japan, [4]CSIS, Tohoku Univ., Sendai, Japan

SESSION DG: MAGNETIC SENSORS, HIGH FREQUENCY DEVICES, AND POWER ELECTRONICS I

Co-Chair(s): N. Alatawneh, *Sacred Heart University, Trumbull, Connecticut, United States* and N. Schulz, *Naval Surface Warfare Center, Panama City Division, Panama City Beach, Florida, United States*
Wednesday, October 29, 2025
02:00 PM-05:30 PM
Room 2A

02:00 PM-02:36 PM
DG-01. Magnetic Field Detection from an Ingestible Device using a Tunnel Magnetoresistance Sensor
T. Kubota[1], H. Wagatsuma[2], K. Fujiwara[2], M. Endo[1], T. Hojo[1, 3], M. Ishida[1], N. Nakasato[1, 6], H. Ono[2], H. Fukushima[2], S. Kumagai[2], H. Matsuzaki[2], K. Yokoi[4], S. Oyagi[4], R. Otsuka[4], I. Yamane[4], D. Canlas[5], J. Komaili[5], S. Pathare[5], J. Withrington[5], T. Thompson[5], J. Jinno[4], K. Onishi[4], Y. Ando[1, 3]
[1]Advanced Spintronics Medical Engineering, Tohoku University, Sendai, Miyagi, Japan, [2]Spin Sensing Factory Inc., Sendai, Japan, [3]Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan, [4]Otsuka Pharmaceutical Co., Ltd., Tokyo, Japan, [5]Otsuka Precision

Health Inc., Hayward, California, United States, [6]Graduate School of Medicine, Tohoku University, Sendai, Japan

02:36 PM-02:48 PM
DG-02. Enhancement of Exchange bias in NiFe-IrMn Planar Hall bilayer thin films for rotary sensing applications
K. S. Narasimhan, P. Anil Kumar
Physics, Indian Institute of Science, Bangalore, Bangalore, Karnataka, Karnataka, India

02:48 PM-03:00 PM
DG-03. Plasmonically-enhanced Digital Spintronic Detector based on Stochastic Magnetic Tunnel Junctions
S. Gupta, Z. Yang, J. Shalabi, A. Deka, L. Bauer, Z. Jacob
Purdue University, West Lafayette, Indiana, United States

03:00 PM-03:12 PM
DG-04. Split-Core Magnetic Harvester for Self-Sustaining IoT Sensor Systems on Power Transmission Lines
R. Lorena, M. García-de-Blas, M. Silva, D. M. Caetano
INESC MN, Lisbon, Lisbon, Portugal

03:12 PM-03:24 PM
DG-05. Area-Efficient Perpendicular Magnetic Tunnel Junction Detectivity Enhancement using Vertical Flux Concentrators
Z. Ali[1], H. Naganuma[2], P. Wallace[3], S. X. Wang[1], A. Poon[1]
[1]Electrical Engineering, Stanford University, Stanford, California, United States, [2]Nagoya University, Nagoya, Japan, [3]Stanford University, Stanford, California, United States

03:24 PM-03:36 PM
DG-06. Noise Reduction and Dynamic Range Enhancement of Pulse-Driven GMI Sensors via Optimized Anti-Aliasing Filtering
S. Idachi, T. Uchiyama
Department of Electronics, Nagoya university, Nagoya, Aichi, Japan

03:36 PM-03:48 PM
DG-07. High Frequency Transformer Integrated with SiC MOSFETs for Smart Transformer
J. Lu, W. Yao, N. Subhani, A. Seagar, Y. Zhu
School of EBE, Griffith University, Gold Coast, Queensland, Australia

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
DG-08. Influence of heat-treatment on structure and magnetic properties of 10 μm-thick Fe-1,2,3wt.%Si foils
S. Ajia[1], T. Takasu[1], S. Muroga[1], Y. Endo[1, 2]
[1]Department of Electrical Engineering, Tohoku University, Sendai, Japan, [2]CSIS, Tohoku University, Sendai, Japan

04:27 PM-04:39 PM
DG-09. An Optimized Design of a Dual Rotor Axial Flux Switched Reluctance Electrical Machine
M. Trapanese
Dipartimento di Ingegneria, Palermo University, Palermo, Italy

04:39 PM-04:51 PM
DG-10. Microwave-Driven Magnetic Dynamics in Low-Temperature Synthesized Hexaferrites: A Static-to-Dynamic Perspective
K. Rana[1, 2], M. Tomar[1], A. Thakur[3, 2]
[1]Department of Physics and Astrophysics, University of Delhi, Delhi, New Delhi, India, [2]Innovative Science Research Society, Shimla, Himachal Pradesh, India, [3]Physics, Amity University, Gurugram, Haryana, India

04:51 PM-05:03 PM
DG-11. Magnetic Bias-Driven Modulation of Graphene for Tunable Gyrotropic and Magnetoplasmon Devices
S. Amanatiadis[1], T. Ohtani[2], T. Zygiridis[3], N. V. Kantartzis[1], Y. Kanai[4]
[1]Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]1-17-134, Omachi, Asahikawa, Japan, [3]University of Western Macedonia, Kozani, Greece, [4]Niigata Institute of Technology, Kashiwazaki, Japan

05:03 PM-05:15 PM
DG-12. Optimization of Magnetoelastic Ribbons for Mass Sensors and Development of Novel Applications in Hydrogel Gelation Time Control
M. Shaji[1], I. Tapon[1], J. Vilas-Vilela[1, 2], A. Lasheras[1], L. Pérez-Álvarez[1, 2], A. Lopes[1]
[1]University of Basque Country, Leioa, Spain, [2]BCMaterials, Leioa, Spain

05:15 PM-05:27 PM

DG-13. High-frequency Magnetic Levitation of Macroscopic Masses

V. Sharma[1], M. Simon[2], R. Candler[1, 3]
[1]Department of Electrical and Computer Engineering, University of California, Los Angeles, Los Angeles, California, United States, [2]Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, California, United States, [3]California NanoSystems Institute, University of California, Los Angeles, Los Angeles, California, United States

SESSION DQ: MAGNETO-CALORIC, MAGNETOELECTRIC, AND MULTIFERROIC MATERIALS AND DEVICES (POSTER SESSION)

Chair(s): K. Srinivasan, *Electrical and Computer Engineering, Boise State University, Boise, Idaho, United States*

Wednesday, October 29, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

DQ-01. Structural, Magnetic, and Magnetocaloric Properties of Pseudo-binary $(Er_{1-x}Yb_x)_2In$

A. Kumar, A. Thayer, P. Singh, A. Biswas, Y. Mudryk
Ames National Laboratory, Ames, Iowa, United States

DQ-02. The Effect of Ti Addition on the Magnetic and Magnetocaloric Properties of Drop-casted $Ni_2Mn_{0.55}Cu_{0.35}Fe_{0.10}Ga$ Heusler alloy

K. Schaeffer[1], H. A. Adedo[1], J. R. DeFeo[2], V. Yenugonda[2], A. Lamichhane[1], A. Pathak[2], M. Khan[1]
[1]Physics, Miami University, Oxford, Ohio, United States, [2]SUNY Buffalo State University, Buffalo, New York, United States

DQ-03. A study of martensitic phase transitions in the paramagnetic state in Fe doped $Ni_2Mn_{0.65-x}Cu_{0.35}Fe_xGa$ Heusler alloys prepared by drop-casting

A. Lamichhane[1], J. R. DeFeo[2], H. A. Adedo[1], V. Yenugonda[2], K. Schaeffer[1], A. Pathak[2], M. Khan[1]
[1]Physics, Miami University, Oxford, Ohio, United States, [2]Physics, SUNY Buffalo State University, Buffalo, New York, United States

DQ-04. Magnetocaloric Effect in $PrNi_{2-x}Co_x$ Alloys: Simulation and Experimental Approaches

R. Duarte de Melo, C. L. Rodrigues, A. Gomes
Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil

DQ-05. Colloidal Synthesis and Size-Dependent Magnetic Properties of Discrete MnNiSb Nanoparticles for Thermomagnetic Waste Heat Recovery
F. Amoo[2], S. Brock[2], J. Sklenar[1], V. Ostapyuk[2], T. Jeffrey[1]
[1]Physics and Astronomy, Wayne State University, Detroit, Michigan, United States, [2]Chemistry, Wayne State University, Detroit, Michigan, United States

DQ-06. Topological Magnetic Texture Stabilization in ε-Fe_2O_3 Thin Films
D. DeTellem, S. Witanachchi, M. Phan
Department of Physics, University of South Florida, Tampa, Florida, United States

DQ-07. Assembly of Magnetic Tunnel Junctions with Chiral Nanographenes
C. Fang, W. Niu, J. Deka, S. Parkin
Max Planck Institute of Microstructure Physics, Halle (Saale), Sachsen-Anhalt, Germany

DQ-08. Magnetic and Transport Properties of ordered $LaSrMnRuO_6$ double perovskite thin Films
A. Kumar[1, 2], D. Palai[3], D. Samal[3], P. Santhosh[1, 2]
[1]Department of physics, IIT Madras, Chennai, Tamilnadu, India, [2]Functional oxide Research Group, IIT Madras, Chennai, Tamilnadu, India, [3]Department of physics, Indian Institute of Physics, Bhubaneswar, Odisha, India

DQ-09. Doped yttrium iron garnet magnetic nanoparticles with high Zn concentration for potential magneto-electric applications
R. Mohammed[1], V. Grynko[1, 2], J. Rado[1], A. Alexandrov[1], A. Hodgson[1], H. Chumak[3], M. Popov[3], V. Batarchuk[1, 2], A. Reznik[1], Y. Shepelytskyi[1, 2], M. S. Albert[1, 2, 4]
[1]Lakehead University, Thunder Bay, Ontario, Canada, [2]Thunder Bay Regional Health Research Institute, Thunder Bay, Ontario, Canada, [3]Taras Shevchenko National University of Kyiv, Kyiv, Ukraine, [4]Northern Ontario School of Medicine, Thunder Bay, Ontario, Canada

DQ-10. Experimental and computational study of nearly half-metallic V_2CoGa
P. Kharel[2], C. Sadler[1], C. Brown[2], M. Anas[2], P. Shand[1], P. Lukashev[1]
[1]Physics, University of Northern Iowa, Cedar Falls, Iowa, United States, [2]Chemistry, Biochemistry and Physics, South Dakota State University, Brookings, South Dakota, United States

SESSION DR: MAGNETORESISTANCE, SPIN TORQUE, AND SPIN INJECTION IN HETEROSTRUCTURES AND FILMS (POSTER SESSION)

Co-Chair(s): A. Chaurasiya, *Physics, University of Gothenburg, Gothenburg, Sweden* and G. Yu, *Institute of Physics, Chinese Academy of Sciences, Beijing, China*

Wednesday, October 29, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

DR-01. Magnetization switching by a laser induced thermo-current in a GdFeCo/Pt hetero-structure film

S. Sumi[1], M. Mohammadi[1], K. Tanabe[1], H. Awano[1], Y. Nakatani[2]
[1]Toyota Technological Institute, Nagoya, Japan, [2]University of Electro-Communications, Tokyo, Japan

DR-02. NIST SP 800-90B Compliant Perpendicular Magnetic Tunnel Junction Based True Random Number Generator

O. Jia[1], S. Egan[2], Y. Lv[1], J. Wang[1]
[1]Univerisity of Minnesota, Minneapolis, Minnesota, United States, [2]Deep Science Ventures, London, United Kingdom

DR-03. Influence of In-Plane Geometry design on Spin Transport in NiFe Thin Films

D. Han, J. Lee, K. Son
Physics education, Kongju National University, Gongju, Korea (the Republic of)

DR-04. Electrical detection of a minimal spin accumulation in silicon

Y. Koshino[1], M. Goto[3], R. Ohshima[2], M. Shiraishi[2], Y. Ando[1]
[1]Osaka Metropolitan University, Osaka, Japan, [2]Kyoto University, Kyoto, Japan, [3]Tokyo University of Science, Tokyo, Japan

DR-05. Electrochemical Deposition Optimization of Fe-Co-B/Ta Magnetic Multilayers for Spintronics

A. S. Poulo, T. Lamichhane, J. A. Torres, M. Goodman, L. Cosgrove, J. Le Chin, H. Kluck Graham
Engineering and Physics, University of Central Oklahoma, Oklahoma City, Oklahoma, United States

DR-06. Solid-phase epitaxy of $Co_2Fe_{0.4}Mn_{0.6}Si$ full-Heusler-alloy thin films utilizing (001)-textured MgO barrier

K. Watanabe[1], T. Nakano[1, 2], M. Oogane[1, 3]
[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan, [2]Research Center for Green X-Tech, Green Goals Initiative, Tohoku University, Sendai, Japan, [3]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan

DR-07. Fabrication of Fcc(111)-Oriented MTJs on Bcc(110)-Oriented FeAlSi Films for TMR Sensors Application

D. Amiie[1], T. Hojo[1], M. Oogane[1, 2]
[1]Graduate school of Engineering, Tohoku Univ., Sendai-shi, Miyagi-ken, Japan, [2]Tohoku Univ. CSIS, Sendai-shi, Miyagi-ken, Japan

DR-08. Suppression of Electrical 1/f Noise in Magnetic Tunnel Junctions with Mg-Al-O Barriers

S. Nii[1], C. Zhang[1], H. He[1], Y. Wang[1], T. Hojo[1], T. Nakano[1, 2], M. Oogane[1, 3]
[1]Department of Applied Physics, School of Engineering, Tohoku Univ., Sendai, Japan, [2]Green X-tech, Tohoku Univ., Sendai, Japan, [3]CSIS, Tohoku Univ., Sendai, Japan

DR-09. Thickness-dependence of the anomalous Hall effect in magnetic heterostructures

E. M. Ababneh[1], N. Boyd[2], X. Fan[2], V. Amin[1]
[1]Indiana University Indianapolis, Indianapolis, Indiana, United States, [2]University of Denver, Denver, Colorado, United States

DR-10. The effect of argon plasma exposure on in-plane uniaxial anisotropy in WS_2/Py bilayers

K. Islam, H. Pokhrel, S. Pollard
Physics and Materials Science, The University of Memphis, Memphis, Tennessee, United States

DR-11. Large Spin Nernst Effect in $Ni_{70}Cu_{30}$ Alloy

W. Li[1, 2], C. Lin[1], G. Guo[1, 3], S. Huang[1, 4], D. Qu[2, 4]
[1]Department of Physics, National Taiwan University, Taipei, Taiwan, [2]Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan, [3]Physics Division, National Center for Theoretical Sciences, Taipei, Taiwan, [4]Center of Atomic Initiatives for New Materials, National Taiwan University, Taipei, Taiwan

DR-12. High-throughput ab initio study of magnetoelastic coupling and magnetostriction in cubic intermetallic compounds
H. Abdelhafiz[1], F. Mahfouzi[2], N. Kioussis[3], K. Belashchenko[1]
[1]Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, Maryland, United States, [3]Department of Physics and Astronomy, California State University, Northridge, California, United States

DR-13. MTJ-Based Neuromorphic Circuit for Analog Machine Learning
S. Louis[1], A. N. Slavin[1], C. Trevillian[1], H. Bradley[1], D. Hanna[1], M. Abramson[2], I. Krivorotov[2], V. Tyberkevych[1]
[1]Oakland University, Rochester, Michigan, United States, [2]University of California, Irvine, California, United States

DR-14. Solution of advanced classification tasks including MNIST dataset using spin wave based multiler AI system with nonlinear activation functions
K. Rivkin
RKMAG Corporation, Pacific Grove, California, United States

BIERSTUBE
Wednesday, October 29, 2025
05:00 PM-06:30 PM
Exhibit Hall Events

STUDENTS IN MAGNETISM NETWORKING EVENT
Wednesday, October 29, 2025
05:00 PM-06:30 PM
Hilton Event Lawn 1 & 2 (weather backup is Mezze & Mezze Patio)

AI IN MAGNETISM: THE GOOD, THE BAD, AND THE UGLY
Wednesday, October 29, 2025
06:30 PM-08:00 PM
Grand Ballroom

SESSION EA: COMPACT EUV SOURCES: EXCEPTIONAL NEW TOOLS FOR ULTRAFAST SPIN DYNAMICS

Chair(s): D. A. Arena, *Physics, University of South Florida, Tampa, Florida, United States*

Thursday, October 30, 2025

08:30 AM-12:00 PM

Grand Ballroom

08:30 AM-09:06 AM

EA-01. Probing Spin Textures and Dynamics using Ultrafast EUV and Soft X-Ray Sources

M. M. Murnane

JILA and Physics, University of Colorado, Boulder, Colorado, United States

09:06 AM-09:42 AM

EA-02. Toward *in Operando* Metrology of Active Devices: Element-Specific, High-Frequency Ferromagnetic Resonance Spectroscopy

M. Tanksalvala[1], A. Kos[1], J. J. Wisser[1], B. McBennett[1], S. Diddams[2], H. T. Nembach[1], J. M. Shaw[1]

[1]Applied Physics Division, National Institute of Standards and Technology, Boulder, Colorado, United States, [2]Electrical, Computer & Energy Engineering, University of Colorado, Boulder, Colorado, United States

09:42 AM-10:18 AM

EA-03. Magnetization Dynamics in Transition Metal Films with Low Perpendicular Magnetic Anisotropy

B. Vodungbo[1], E. Jal[1], M. Hennes[3], R. Delaunay[1], J. Milano[2], F. Fortuna[5], M. Marangolo[3], M. Eddrief[3], J. Dubois[1, 4], G. Lambert[4]

[1]Laboratoire de Chimie Physique – Matière et Rayonnement, Sorbonne Université – CNRS, Paris, France, [2]Instituto de Nanociencia y Nanotecnologia, CNEA – CONICET, Bariloche, Argentina, [3]Institut des Nanosciences de Paris, Sorbonne Université – CNRS, Paris, France, [4]Laboratoire d'Optique Appliquée, ENSTA – CNRS – École Polytechnique, Palaiseau, France, [5]Institut des Sciences Moléculaires d'Orsay, Université Paris-Saclay – CNRS, Orsay, France

10:18 AM-10:45 AM

Break

10:45 AM-11:21 AM
EA-04. Electron dynamics in two-dimensional semiconductors and spinel ferrites at the NSF-NeXUS user facility
R. Kawakami
NSF-NeXUS and Department of Physics, The Ohio State University, Columbus, Ohio, United States

11:21 AM-11:57 AM
EA-05. Revealing domain wall stability during ultrafast demagnetization with subwavelength EUV imaging
H. Chang[1], S. Zayko[1], T. Schmidt[2], O. Kfir[3], M. Sivis[1, 4], J. H. Mentink[5], M. Albrecht[2], C. Ropers[1, 4]
[1]Max Planck Institute for Multidisciplinary Sciences, Göttingen, Germany, [2]Institute of Physics, University of Augsburg, Augsburg, Germany, [3]School of Electrical Engineering, Tel Aviv University, Tel Aviv, Israel, [4]4th Physical Institute, University of Göttingen, Göttingen, Germany, [5]Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands

SESSION EB: ALTERMAGNETIC MATERIALS
Chair(s): Q. Liu, *Physics, Southern University of Science and Technology, Shenzhen, Guangdong, China*
Thursday, October 30, 2025
08:30 AM-12:00 PM
Ballroom A

08:30 AM-09:06 AM
EB-01. Altermagnetic electronic and magnetic structure explored in MnTe
P. Wadley[1], T. Jungwirth[1, 2], O. Amin[1]
[1]School of Physics and Astronomy, University of Nottingham, Nottingham, Nottinghamshire, United Kingdom, [2]nanospintronics, Institute of Physics ASCR, Praha, Czechia

09:06 AM-09:42 AM
EB-02. Mn_5Si_3: A Case Study in Altermagnetic Materials
L. Michez[1], J. Rial[2], M. Leiviska[3], H. Reichlova[3], D. Kriegner[3], A. Badura[3], I. Kounta[1], M. Petit[1], G. Skobjin[4], S. Beckert[6], E. Schmoranzerova[5], O. Gomonay[7], A. Thomas[6], R. Lopes Seeger[2], L. Smejkal[7], J. Sinova[7], S. Goennenwein[4], T. Jungwirth[3], V. Baltz[2]
[1]CINaM-CNRS, Aix Marseille University, Marseille, France, [2]Univ. Grenoble Alpes, CNRS, CEA, Grenoble INP, Spintec, Grenoble, France, [3]Institute of Physics, Czech Academy of Science, Prague, Czechia, [4]Fachbereich Physik, Universität

Konstanz, Konstanz, Germany, [5]Faculty of Mathematics and Physics, Charles University, Prague, Czechia, [6]Leibniz-Institut für Festkörper- und Werkstoffforschung, Dresden, Germany, [7]Institut fur Physik, Johannes Gutenberg Universität, Mainz, Germany

09:42 AM-10:18 AM
EB-03. Three-dimensional mapping of the altermagnetic spin splitting in CrSb
Y. Liu
Physics, Zhejiang University, Hangzhou, Zhejiang Province, China

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
EB-04. Orbitally Resolved Spin Hamiltonians: Unveiling Additional Splitting in Altermagnets and Beyond
G. Moore, O. Ashour, M. Vila Tusell, I. Na, K. Eggestad, S. M. Griffin
Lawrence Berkeley National Laboratory, Berkeley, California, United States

11:21 AM-11:57 AM
Panel Discussion

SESSION EC: MODELING AND MACHINE LEARNING
Chair(s): F. M. Abel, *Physics, United States Naval Academy, Annapolis, Maryland, United States*
Thursday, October 30, 2025
08:30 AM-12:00 PM
Ballroom C

08:30 AM-08:42 AM
EC-01. Theory of Magnetization Dynamics Beyond the Landau-Lifshitz-Gilbert Equation
C. M. Webb, S. Zhang
Physics, University of Arizona, Tucson, Arizona, United States

08:42 AM-08:54 AM
EC-02. Reduction of materials criticality in hybrid manufacturing of Halbach arrays using sintered NdFeB magnets and additively manufactured soft magnet frames
L. Cosgrove, T. Lamichhane
Engineering & Physics, University of Central Oklahoma, Edmond, Oklahoma, United States

08:54 AM-09:06 AM
EC-03. Exploration of Novel Fe_3Pt Structures for Application as Magnetic Materials: A Density Functional Theory Study
N. L. Lethole
Physics, University of Fort Hare, Alice, Eastern Cape, South Africa

09:06 AM-09:18 AM
EC-04. Field-assisted thermal fluctuation in non-collinear antiferromagnet Mn_3Sn
S. Qian, A. Shukla, S. Rakheja
Electrical and Computer Engineering, University of Illinois Urbana Champaign, Champaign, Illinois, United States

09:18 AM-09:30 AM
EC-05. Synchronization of spin transfer torque oscillators via magnetoelastic interactions
E. Savostin[1, 2], V. Lomakin[3, 2, 1]
[1]Program in Materials Science and Engineering, University of California San Diego, San Diego, California, United States, [2]Center for Memory and Recording Research, University of California San Diego, San Diego, California, United States, [3]Department of Electrical and Computer Engineering, , University of California San Diego, San Diego, California, United States

09:30 AM-09:42 AM
EC-06. Wave equation formulation for spin wave propagation in thin magnetic films
K. Rivkin
RKMAG Corporation, Pacific Grove, California, United States

09:42 AM-09:54 AM
EC-07. Temperature and Thickness Dependence of Gilbert Damping in CoFe thin films: Atomistic Study
P. Sharma[1], E. Sampson[2], G. Luepke[1]
[1]Applied Science, William and Mary, Williamsburg, Virginia, United States, [2]Physics, William and Mary, Williamsburg, Virginia, United States

09:54 AM-10:06 AM
EC-08. Machine Learning Force-Field Models for Large-Scale Dynamical Simulations of Itinerant Electron Magnets
G. Chern[1], S. Zhang[1], Y. Fan[1], K. Shimizu[2]
[1]Physics, University of Virginia, Charlottesville, Virginia, United States, [2]RIKEN Center for Emergent Matter Science, Saitama, Japan

10:06 AM-10:18 AM
EC-10. Machine Learning for Predicting Magnetic Properties from X-ray Diffraction for $L1_0$ FePt and Iron Oxide Nanoparticles Using Simple Physics-Based Models
F. M. Abel[1, 2], D. Wines[2], B. Donavon[1], M. E. Jamer[1], K. Choudhary[2]
[1]Physics, United States Naval Academy, Annapolis, Maryland, United States, [2]Material Science and Engineering, National Institute of Standards and Technology, Gaithersburg, Maryland, United States

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
EC-11. Micromagnetic Simulations of Magnon-Phonon Coupling Dynamics
F. Millo[1], A. Sharma[1], D. Stoeffler[2], J. Duquesne[1], P. Rovillain[1], M. Marangolo[1]
[1]Physics, Sorbonne University, Paris, Ile-de-France, France, [2]Physics, Strasbourg University, Strasbourg, France

10:57 AM-11:09 AM
EC-12. Micromagnetic modelling and simulation of inertial spin waves in ferromagnetic nanodots
M. d'Aquino, S. Perna, C. Serpico
Department of Electrical Engineering and Information Technology, University of Naples Federico II, Naples, Italy

11:09 AM-11:21 AM
EC-13. Theory of magnetism and topological spin textures in disordered magnets: a case study of amorphous FeGe
T. Bayaraa[1, 2], S. M. Griffin[1, 2]
[1]Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [2]Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, California, United States

11:21 AM-11:33 AM
EC-14. Interlayer and interfacial Dzyaloshinskii-Moriya interaction in magnetic trilayers: First-principles and micromagnetic calculations
E. Y. Vedmedenko
Physics, University of Hamburg, Hamburg, Germany

SESSION ED: SPIN-CHARGE INTERCONVERSION AND MAGNETOTRANSPORT
Chair(s): M. H. Guimaraes, *University of Groningen, Groningen, Netherlands*
Thursday, October 30, 2025
08:30 AM-12:00 PM
Ballroom B

08:30 AM-09:06 AM
ED-01. Advancing Transistors via Spin-to-Charge Current Conversion in 3D and 2D Ferroelectric Chalcogenides
C. Rinaldi
Physics, Politecnico di Milano, Milano, Italy

09:06 AM-09:18 AM
ED-02. Orbital-to-Spin Conversion Material Exploration for Improving SOT-MTJ Performances
M. Biagi[1], C. C. Capriata[1], L. Hutin[2], B. Viala[2], R. Sousa[1], K. Garello[1]
[1]SPINTEC, CEA, Grenoble, Isere, France, [2]Leti, CEA, Grenoble, Isere, France

09:18 AM-09:30 AM
ED-04. Interfacial orbital transmission and mechanical torque in metals
C. Sun, A. Manchon
Aix-Marseille Université, CNRS, CINaM, Marseille, France

09:30 AM-09:42 AM
ED-05. Anisotropic orbital Hall effect in an epitaxial titanium
S. Karube[1], Y. Yahagi[2], Y. Saito[3], R. Hisatomi[1], Y. Shiota[1], T. Ono[1]
[1]Kyoto University, Uji, Kyoto, Japan, [2]NEC corporation, Minato-ku, Tokyo, Japan, [3]Tohoku University, Sendai, Miyagi, Japan

09:42 AM-09:54 AM
ED-06. Absence of large spin-charge conversion in $Bi_{1-x}Sb_x$ alloys
R. Zhang, W. Lin
Key Laboratory of Quantum Materials and Devices of Ministry of Education, School of Physics, Southeast University, Nanjing, China

09:54 AM-10:06 AM
ED-07. Antiferromagnetic spin dynamics revealed by effective magnetization increase on exchange-coupled ferromagnet
C. Gonzalez-Fuentes[1], P. Landeros[2], J. W. Gonzalez[3], S. Oyarzún[4], R. Rodriguez[1], R. Gallardo[2]
[1]Instituto de Física, Pontificia Universidad Católica de Chile, Santiago, RM, Chile, [2]Departamento de Física, Universidad Técnica Federico Santa Maria, Valparaiso, V, Chile, [3]Departamento de Física, Universidad de Antofagasta, Antofagasta, Antofagasta, Chile, [4]Departamento de Física, Universidad de Santiago, Santiago, RM, Chile

10:06 AM-10:18 AM
ED-08. Field-free spin-orbit torque switching via spin-reorientation in synthetic antiferromagnets
B. Jamshed, M. Ramu, D. Kumar, H. Rahaman, S. Das, S. Piramanayagam
School of Mathematics and Physics, Nanyang Technological University, Singapore, Singapore

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
ED-09. Distortion-Aware Magnetic Symmetry Groups: A Versatile Framework for Identifying Altermagnets and Predicting their Unconventional Properties
M. D. Kitcher, B. Lee, G. Beach
Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States

10:57 AM-11:09 AM
ED-10. Observation of D'yakonov-Perel'-type Magnon Spin Relaxation in Uniaxial Antiferromagnetic Insulators
Q. Gao[1, 4], A. Cong[2], B. Liang[3], M. Yang[1], J. Liu[1], S. Wu[3], K. Shen[2], J. Li[1]
[1]Southern University of Science and Technology, Shenzhen, China, [2]Beijing Normal University, Beijing, China, [3]Fudan University, Shanghai, China, [4]Quantum Science Center of Guangdong–Hong Kong–Macao Greater Bay Area (Guangdong), Shenzhen, China

11:09 AM-11:21 AM
ED-11. Disentangling thermal contributions to the spin-orbit torque switching of a chiral antiferromagnet
T. Matsuo[4, 1], T. Higo[4, 2, 3], H. Tsai[4], D. Nishio-Hamane[4], T. Matsuda[5], K. Kondou[5], S. Miwa[4], Y. Otani[4, 6], S. Nakatsuji[4, 1, 7]
[1]Johns Hopkins University, Baltimore, Maryland, United States, [2]JST-PRESTO, Tokyo, Japan, [3]Keio University, Yokohama, Japan, [4]The University of Tokyo, Tokyo, Japan, [5]Osaka University, Osaka, Japan, [6]RIKEN, Saitama, Japan, [7]CIFAR, Toronto, Ontario, Canada

11:21 AM-11:33 AM
ED-13. Chiral Magnets
R. Winkler[1, 2], U. Zülicke[3]
[1]Physics, Northern Illinois University, DeKalb, Illinois, United States, [2]Materials Science Division, Argonne National Laboratory, Lemont, Illinois, United States, [3]School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand

SESSION EE: MAGNONICS II: CRYSTALS & DEVICES
Chair(s): R. Hertel, *Insitut de Physique et Chimie des Matériaux de Strasbourg, Centre National de la Recherche Scientifique, Strasbourg, France*
Thursday, October 30, 2025
08:30 AM-12:00 PM
Room 2DE

08:30 AM-08:42 AM
EE-02. Magnon-magnon interaction stimulated by the vertical dynamic coupling in a hybrid magnonic crystal
R. Sultana[1], M. T. Kaffash[1], G. Gubbiotti[2], Y. Ji[1], B. Jungfleisch[1], F. Montoncello[3]
[1]Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, Delaware, United States, [2]CNR-Istituto Officina dei Materiali (IOM), Unità di Perugia, Perugia I-06123, Italy, [3]Department of Physics and Earth Sciences, University of Ferrara, Ferrara I-44121, Italy

08:42 AM-09:18 AM
EE-03. Scalable and Programmable Spin Hall Nano-Oscillator Networks: From Phase-Tunable Synchronization to Networks of 100,000 nano-oscillators
A. Kumar[1, 2], A. Chaurasiya[1], V. Gonzalez[1], N. Behera[1], R. Khymyn[1], A. A. Awad[1, 2], J. Akerman[1, 2]
[1]Department of Physics, University of Gothenburg, Gothenburg, Sweden, [2]RIEC and CSIS, Tohoku University, Japan, Sendai, Japan

09:18 AM-09:30 AM
EE-04. Strong coupling between spin waves and microwave photons in a superconducting resonator
Y. Li[1], J. Lim[2], T. Polakovic[3], C. Kiehl[1, 4], R. Divan[5], U. Welp[1], C. Phatak[1], J. Zuo[2], A. Hoffmann[2], V. Novosad[1]
[1]Materials Science Division, Argonne National Laboratory, LEMONT, Illinois, United States, [2]Materials Science Engineering, University of Illinois at Urbana Champaign, Urbana, Illinois, United States, [3]Physics Division, Argonne National Laboratory, LEMONT, Illinois, United States, [4]Physics Department, Carthage College, Kenosha, Wisconsin, United States, [5]Center for Nanoscale Materials, Argonne National Laboratory, LEMONT, Illinois, United States

09:30 AM-09:42 AM

EE-05. Experimental Observation of Magnetic Rogue Waves

K. H. McAllister[1], M. Copus[1], C. Abbott[1], M. Elo[2], J. Netzer[2], E. Iacocca[1], R. E. Camley[1], D. A. Bozhko[1]
[1]Department of Physics and Energy Science, University of Colorado Colorado Springs, Colorado Springs, Colorado, United States, [2]Tabor Electronics, Inc., Nesher, Israel

09:42 AM-09:54 AM

EE-06. Monolithic magnetic MEMS integration on a magnonic device

S. Mantion[1], R. Lebrun[1], H. Merbouche[2], I. Boventer[1], P. Che[1], J. Ben Youssef[3], P. Bortolotti[1], P. Martins[4], A. Anane[1]
[1]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France, [2]Service de Physique de l'État Condensé, CEA, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France, [3]LabSTICC, CNRS, Université de Bretagne Occidentale, Brest, France, [4]Thales Research and Technology, Palaiseau, France

09:54 AM-10:06 AM

EE-07. Polarization Selective Quantum Sensing of Spin Wave

E. Zhang[1, 3], T. Zheng[1, 3], B. Yang[1, 3], S. Nallan[1, 3], M. Ku[2], J. Zhu[1, 3]
[1]Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States, [2]University of Delaware, Newark, Delaware, United States, [3]Data Storage System Center, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States

10:06 AM-10:18 AM

EE-08. Sustained Amplification of Coherent Spin-waves by Parametric Pumping with Surface Acoustic Waves

P. Dhagat[1], A. Jander[1], C. Rivard[2]
[1]Electrical Engineering and Computer Science, Oregon State University, Corvallis, Oregon, United States, [2]Intel Corp., Hillsboro, Oregon, United States

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
EE-09. Quantum Micromagnetic Theory of Magnons in Finite Nanostructures
C. Serpico, S. Perna, M. d'Aquino
Department of Electrical Engineering and Information technology, University of Naples Federico II, Naples, Italy

10:57 AM-11:09 AM
EE-10. Anisotropy-driven population transfer in magnonic directional nanocouplers with STIRAP protocol
F. Montoncello, P. Micaletti
Department of Physics and Earth Sciences, University of Ferrara, Ferrara I-44121, Italy

11:09 AM-11:21 AM
EE-11. Bringing Light into the Landau-Lifshitz-Gilbert Equation: Consequences of its Fractal Non-Markovian Memory Kernel for Optically Induced Magnetic Inertia and Magnons
F. Reyes-Osorio, B. Nikolić
Physics and Astronomy, University of Delaware, Newark, Delaware, United States

11:21 AM-11:33 AM
EE-12. Spontaneous Emergence of Phase Coherence in a Quasiparticle Bose-Einstein Condensate
M. Koster[2], M. R. Schweizer[2], T. B. Noack[2], V. I. Vasyuchka[2], B. Hillebrands[2], M. Weiler[2], A. A. Serga[2], G. von Freymann[2, 3], D. A. Bozhko[1]
[1]Center for Magnetism and Magnetic Nanostructures, University of Colorado Colorado Springs, Colorado Springs, Colorado, United States, [2]Department of Physics and Research Center OPTIMAS, RPTU Kaiserslautern-Landau, Kaiserslautern, Germany, [3]Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern, Germany

11:33 AM-11:45 AM
EE-13. Squeezed Vacuum and Entanglement in Nonperturbative Cavity Magnonics with Soft Magnons
T. Chiba[1, 2], R. Suzuki[2], T. Otaki[2], H. Matsueda[2, 3]
[1]Department of Information Science and Technology, Graduate School of Science and Engineering, Yamagata university, Yonezawa, Japan, [2]Department of Applied Physics, Graduate School of Engineering, Tohoku university, Sendai, Japan, [3]Center for Science and Innovation in Spintronics, Tohoku university, Sendai, Japan

SESSION EF: SPIN AND MAGNETISM IN VAN DER WAALS LAYERED MATERIALS

Chair(s): P. de Faria Junior, *Department of Physics, University of Central Florida, Orlando, Florida, United States*

Thursday, October 30, 2025
08:30 AM-12:00 PM
Room 2BC

08:30 AM-09:06 AM

EF-01. Gate-tunable in-plane spin lifetime anisotropy via proximity-induced spin-orbit coupling in low-symmetry graphene-based heterostructures

J. F. Sierra[1], J. Svetlik[1, 2], W. Savero-Torres[1], L. Camosi[1], F. Herling[1], T. Guillet[1], K. Xu[3], J. Reparaz[3], V. Marinova[4], D. Dimitrov[4, 5], S. O. Valenzuela[1, 6]
[1]Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology (BIST), Barcelona, Spain, [2]Universitat Autònoma de Barcelona, Barcelona, Spain, [3]Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Barcelona, Spain, [4]Institute of Optical Materials and Technologies, Bulgarian Academy of Science, Sofia, Bulgaria, [5]Institute of Solid State Physics, Bulgarian Academy of Sciences, Sofia, Bulgaria, [6]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

09:06 AM-09:18 AM

EF-02. Large-Scale Epitaxial Growth of Fe_3GaTe_2/Graphene van der Waals Heterostructures with Above-Room-Temperature Ferromagnetism

T. Shinwari[1], K. Khan[1], H. Lv[1], A. Kassa[1], F. Munnik[2], S. Josephy[3], A. Trampert[1], V. Ukleev[4], C. Luo[4], F. Radu[4], J. Herfort[1], M. Hanke[1], J. J. Lopes[1]
[1]Paul-Drude-Institut für Festkörperelektronik, Leibniz-Institut im Forschungsverbund Berlin e.V, Berlin, Germany, [2]Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research e.V, Dresden, Germany, [3]QZabre AG, Neunbrunnenstrasse 50, 8050, Zürich, Switzerland, [4]Helmholtz Zentrum Berlin for Materialien und Energie, Albert-Einstein Straße 15, 12489, Berlin, Germany

09:18 AM-09:30 AM

EF-03. Control of magnetic order in quasi-2D magnets by external perturbations: microscopic understanding

K. Carva, K. Pokhrel, S. Ray, P. Qureshi
DCMP, Charles University, Prague, Czechia

09:30 AM-09:42 AM
EF-05. Nitrogen-Vacancy Magnetometry of Edge Magnetism in Pristine and Fe Implanted WS_2 Flakes
I. Fescenko[1], R. Kumar[2], T. Gas-osoth[5, 3, 4], Y. Wang[5, 3], S. Lamichhane[5], T. Li[5], A. Erickson[5], T. Delord[2], C. Cress[6], N. Proscia[6], S. LaGasse[6, 7], S. Liou[5], X. Hong[5], J. Fonesca[6], T. An[3], C. Meriles[2], A. Laraoui[5]
[1]University of Latvia, Riga, Latvia, [2]CUNY-City College of New York, New York, New York, United States, [3]Japan Advanced Institute of Science and Technology, Nomi, Japan, [4]University of Phayao, Mae Ka, Thailand, [5]University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [6]US Naval Research Laboratory, Washington, District of Columbia, United States, [7]Laboratory for Physical Sciences, College Park, Maryland, United States

09:42 AM-09:54 AM
EF-06. Impacts of alloying and finite thickness on ferromagnetism in kagome Fe_3Sn_2 heterostructures
S. May[1], P. M. Laxmeesha[1], R. Dutta[1], T. Tandon[1], A. Velic[1], R. K. Rai[2], E. A. Stach[2], S. Sheikh[3], U. M. Jayathilake[3], A. X. Gray[3], T. Charlton[4], C. Jensen[5], J. Borchers[5], A. J. Grutter[5]
[1]Materials Science and Engineering, Drexel University, Philadelphia, Pennsylvania, United States, [2]Materials Science and Engineering, University of Pennsylvania, Philadelphia, Pennsylvania, United States, [3]Department of Physics, Temple University, Philadelphia, Pennsylvania, United States, [4]Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States, [5]NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, Maryland, United States

09:54 AM-10:06 AM
EF-07. Spin Waves in a Bilayer Kagome Ferromagnet Fe_3Sn_2
Y. Soh
Paul Scherrer Institut, Villigen, Switzerland

10:06 AM-10:18 AM
EF-09. Intrinsic Non-linear Hall Effect
F. Xue, S. Ahmad
Physics Department, University of Alabama at Birmingham, Birmingham, Alabama, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
EF-08. Engineering Magnetic Transition Metal Chalcogenide-Based Quantum Interfaces
H. Chi
University of Ottawa, Ottawa, Ontario, Canada

11:21 AM-11:33 AM
EF-10. Studying the Effect of Nb Doping on the Magnetic Properties of $CrTe_2$ Crystals
D. R. Lawati[1], J. Kumar[1], P. Karki[2], K. Prasad[2], M. A. Elekhtiar[1], S. Lamichhane[1], B. Tiwari[1], K. Huang[1], Z. Hubble[2], J. Watt[3], S. Liou[1], E. Y. Tsymbal[1], J. Wang[2], K. Ambal[2], A. Laraoui[1]
[1]University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Wichita State University, Wichita, Kansas, United States, [3]Los Alamos National Laboratory, Albuquerque, New Mexico, United States

11:33 AM-11:45 AM
EF-11. Fe_3GeTe_2 single crystals with varying Fe content probed by x-ray spectroscopy
D. Backes[1], R. Fujita[2], L. Veiga[1], D. Mayoh[3], G. Wood[3], S. S. Dhesi[1], G. Balakrishnan[3], G. van der Laan[1], T. Hesjedal[2]
[1]Diamond Light Source, Didcot, United Kingdom, [2]Claredon Laboratory, University of Oxford, Oxford, United Kingdom, [3]Department of Physics, University of Warwick, Coventry, United Kingdom

SESSION EG: ADVANCED MAGNETIC RECORDING TECHNOLOGIES
Chair(s): A. Venugopal, *Seagate Research, Seagate Technology, Edina, Minnesota, United States*
Thursday, October 30, 2025
08:30 AM-12:00 PM
Room 2A

08:30 AM-08:42 AM
EG-01. Quantifying Erasure and Interference from Adjacent Tracks in Heat-Assisted Magnetic Recording
S. Zheng, W. R. Eppler, J. Loven, J. Gadbois
Seagate Technology, Bloomington, Minnesota, United States

08:42 AM-08:54 AM
EG-02. Detection of In-Plane Magnetized Grains with a Magnetoresistive Head
Y. Chen, R. H. Victora
University of Minnesota, Minneapolis, Minnesota, United States

08:54 AM-09:06 AM
EG-03. The impact of in-plane grains on Heat Assisted Magnetic Recording performance and THMap metrics
N. A. Natekar, P. Jubert, T. Olson, A. Goncharov, R. Brockie, K. Tanahashi
Western Digital, San Jose, California, United States

09:06 AM-09:18 AM
EG-04. Dependence of Microstructure and Grain Density on Nucleation Layer Thickness in $L1_0$ FePt-*h*BN Granular Thin Films
J. Chang[1, 2], A. K. Gribik[1, 2, 3], O. R. Peterson[1, 2, 4], B. L. Reese[1, 2], D. E. Laughlin[1, 2, 5], J. Zhu[1, 2, 5]
[1]Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States, [2]Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States, [3]Computational and Chemical Sciences, Carlow University, Pittsburgh, Pennsylvania, United States, [4]Physics, Kenyon College, Gambier, Ohio, United States, [5]Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States

09:18 AM-09:30 AM
EG-05. Microstructure and Magnetic properties of high-density *L*1_0-FePt grains on an electrically conductive (Mg,Ti)O underlayer for HAMR media.
D. Angayarkanni Ramamurthy[1], H. Sepehri-Amin[1], I. Suzuki[1], Y. K. Takahashi[1, 2]
[1]Research Centre for Magnetic and Spintronic Materials, national Institute for Materials Science, Tsukuba, Ibaraki, Japan, [2]Research Institute of Electrical Communications, Tohoku University, Sendai, Tohoku, Japan

09:30 AM-09:42 AM
EG-06. Thermal spin-torque heat-assisted magnetic recording
S. Isogami[1], Y. Sasaki[1], Y. Fan[2], Y. Kubota[3], J. Gadbois[2], K. Hono[1], Y. K. Takahashi[1]
[1]NIMS, Tsukuba, Japan, [2]Seagate Technology, Minneapolis, Minnesota, United States, [3]Seagate Technology, Fremont, California, United States

09:42 AM-09:54 AM
EG-07. Vector Recording: Advancing Areal Density in Heat-Assisted Magnetic Recording with Innovative Reader Designs
K. Hosen[1], R. H. Victora[1, 2]

[1]*Department of Electrical and Computer Engineering, University of Minnesota Twin Cities, Minneapolis, Minnesota, United States,* [2]*Department of Physics, University of Minnesota Twin Cities, Minneapolis, Minnesota, United States*

09:54 AM-10:06 AM
EG-08. First-principles exploration of Cu-*X* spacers to enhance magnetoresistance in CPP-GMR read head for next generation HDD
K. Simalaotao[1, 2], I. Kurniawan[2], Y. Miura[3, 2], Y. Sakuraba[1, 2]
[1]*Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan,* [2]*Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Ibaraki, Japan,* [3]*Faculty of Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Kyoto, Japan*

10:06 AM-10:18 AM
EG-09. In-Plane Magnetization Switching in Spin Valves Using Optically Excited Spin Currents
J. Lin[1], Y. L. Guen[1], J. Hohlfeld[1], J. Igarashi[1], Q. Remy[2], J. Gorchon[1], G. Malinowski[1], S. Mangin[1], T. Hauet[1], M. Hehn[1]
[1]*Institut Jean Lamour, Nancy, France,* [2]*Freie Universität Berlin, Berlin, Germany*

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
EG-10. Magneto-structural characterization and THz emission enhancement in ultrathin Fe/L1$_0$-FePt/Pt heterostructures
O. Crisan
National Institute for Materials Physics, Bucharest, Romania

10:57 AM-11:09 AM
EG-11. High resolution spin wave based magnetic reader
K. Rivkin
RKMAG Corporation, Pacific Grove, California, United States

11:09 AM-11:21 AM
EG-12. Laser induced magnetization reversal in Co-Rare Earth alloys
B. Kunyangyuen[1], G. Malinowski[1], D. Lacour[1], J. Lin[1], Y. L. Guen[1], L. D. Buda-Prejbeanu[2], S. Mangin[1], J. Gorchon[1], M. Hehn[1]
[1]Institute Jean-Lamour, Nancy, France, [2]SPINTEC, Grenoble, France

11:21 AM-11:33 AM
EG-13. CNN/DNN approximation of the recording process coupled with DNN accelerated solution for the magnetization reversal
K. Rivkin
RKMAG, Pacific Grove, California, United States

SESSION EP: SPIN AND ORBITAL DYNAMICS (POSTER SESSION)
Chair(s): G. Choi, *Department of Energy Science, Sungkyunkwan University College of Natural Science, Suwon, Korea (the Republic of)*
Thursday, October 30, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

EP-01-LB. Spin pumping revisited: towards a non linear theory.
A. Abbout
Physics, King Fahd University of Petroleum and Minerals, Dhahran, Alkhobar, Saudi Arabia

EP-02-LB. A High Performance Finite Element Approach to Linear and Nonlinear Magnetostatic Modeling
J. Brown, D. Faircloth
IERUS Technologies, Inc., Huntsville, Alabama, United States

EP-03-LB. Understanding the Line Shape of Ferromagnetic Resonance Spectrum in a Flip-Chip Measurement
E. D. DeVisscher, A. E. Mays, X. Fan
Physics and Astronomy, University of Denver, Denver, Colorado, United States

EP-05-LB. Bilinear magnetoresistance in conventional heterostructures
D. Kim[1], K. Kim[2], J. Jeong[3], K. Lee[4], H. Yang[5]
[1]Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea (the Republic of), [2]Department of Physics, Yonsei University, Seoul, Korea (the Republic of), [3]Department of Materials Science and Engineering, Chungnam National University, Daejeon, Korea (the Republic of), [4]Department of Physics, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea (the Republic of), [5]Department of Electrical and Computer Engineering, National University of Singapore (NUS), Singapore

EP-08-LB. Orbital dynamics of hybrid bosonic quasiparticles in magnetic systems
D. To, M. Doty
University of Delaware, Newark, Delaware, United States

EP-09-LB. Novel spin Hall effect materials and artificially engineered magnetic thin film heterostructures for energy-efficient spintronic memories
P. Wang, S. Parkin
Max Planck Institute of Microstructure Physics, Halle, Germany

SESSION EQ: TRANSFORMERS AND POWER ELECTRONICS II (POSTER SESSION)
Chair(s): C. Chinnasamy, *Manufacturing Science Division, Oak Ridge National Laboratory, Knoxville, Tennessee, United States*
Thursday, October 30, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

EQ-01. Design for AC Loss Reduction in PCB Motors Using Magnet Chamfering
J. Lee, Y. Lee, H. Kim, Y. Lim, W. Kim
Gachon University, Seongnamsi, Korea (the Republic of)

EQ-02. Optimal Design of a Support Structure to Enhance Counter-Torque Resistance in a Block-Coil-Type Compact Urban Wind Turbine Generator
H. Kim, Y. Lee, D. Choi, J. Lee, W. Kim
Gachon University, Seongnam-si, Gyeonggi-do, Korea (the Republic of)

EQ-03. Force Characterization and Axis Transformation of a Fixed-Bias Flux Three-Phase Magnetic Bearing
S. Noh, S. Byun, J. Kim, J. Park, H. Cho
Chungnam National University, Daejeon, Korea (the Republic of)

EQ-04. Study on the Reduction of Eddy Current Loss of Permanent Magnet Synchronous Motor considering PWM
Y. Lee[1], Y. Lim[2], J. Lee[2], H. Kim[1], W. Kim[3]
[1]Department of Next Generation Energy System Convergence, Gachon University, Seongnam-Si, Korea (the Republic of), [2]Department of Electrical Engineering, Gachon University, Gyeonggi-do, Korea (the Republic of), [3]Department of Electrical Engineering, Gachon University, Seongnam-Si, Korea (the Republic of)

EQ-05. Design of Magnetization Yoke to Reduce the number of Double Spoke Type PMSM Magnetization Using I-Core
D. Choi, J. Lee, H. Kim, Y. Lim, W. Kim
Gachon University, Seongnam, Korea (the Republic of)

EQ-06. A Study on Improvement of Magnetization Performance and Torque Ripple through Magnet Shape Modification in Double-Spoke Type PMSM
S. Kim, H. Kim, D. Choi, J. Lee, W. Kim
Gachon University, Seongnam-si, Korea (the Republic of)

EQ-07. A Study on the Eddy Current Loss Characteristics of Axial Flux Permanent Magnet Motors According to Pole–Slot Combinations and Magnet Structures
D. Kim, S. Oh, S. Song, D. Ji, H. Lee
Dankook University, Yonginsi, Korea (the Republic of)

EQ-08. Iron Loss Calculation Method for Large-Capacity AC Filter Inductors Considering Non-Uniform Magnetic Flux Density
H. Matsumori[1], T. Yamaguchi[1], N. Kobayashi[1], K. Wada[2], K. Takano[2]
[1]Nagoya institute of technology, Nagoya, Aichi, Japan, [2]Tokyo metropolitan university, Hachioji, Tokyo, Japan

SESSION ER: HARD MAGNETIC MATERIALS II (POSTER SESSION)

Chair(s): S. Okada, *Multi-Material Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan*

Thursday, October 30, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

ER-01. Altering Solidification Kinetics in Nd-Fe-B Alloys through Alloying Additions for 3D-Printable Magnets

S. Krishnan, Q. Guo, J. Shield
MME, University of Nebraska - Lincoln, Lincoln, Nebraska, United States

ER-03. Chemical bond and phase stability of Ga-doped $Sm_2Fe_{17}C_x$ Magnet

X. Liu, C. I. Nlebedim
Ames National Laboratory, Ames, Iowa, United States

ER-04. Tuning the Intrinsic Magnetic Properties of $Sm(Fe_{1-x}Co_x)_{10}V_2$ Compounds with the $ThMn_{12}$-type Structure

X. Zheng, P. Si, B. Zhang, Y. Song, J. Park
Korea Institute of Materials Science, Changwon, Korea (the Republic of)

ER-05. Magnetic properties and element site occupation of Zn-substituted W-type hexagonal ferrites

T. Nakagawa, K. Ota, A. Yonaga, S. Seino
The University of Osaka, Suita, Japan

ER-06. Process-driven Microstructure Control in Additively Manufactured Alnico Permanent Magnets

A. R. Duong[1], I. M. Smith[1], O. Bishop[1], C. Mayer[1], K. Snyder[2], R. Barua[1]
[1]Virginia Commonwealth University, Richmond, Virginia, United States, [2]Commonwealth Center for Advanced Manufacturing, Disputanta, Virginia, United States

ER-07. Enhanced magnetic anisotropy in $(Fe_{0.7-x}Co_{0.3}Zr_x)_2B$ Nanocrystallites

P. Joshi[1], H. Abbas[1], T. Karki[1], J. Mohapatra[1], X. Liu[2], P. Liu[1]
[1]Physics, The University of Texas at Arlington, Arlington, Texas, United States, [2]Ames Laboratory, Critical Materials Institute, Ames, Iowa, United States

ER-08. High Anisotropy Field in Fe_3CoB_2 Nanocrystallite Ribbons

H. Abbas[1], P. Joshi[1], T. Karki[1], J. Mohapatra[1], X. Liu[2], P. Liu[1]

[1]Physics, The University of Texas at Arlington, Arlington, Texas, United States, [2]Ames Laboratory, Critical Materials Institute, Ames, Iowa, United States

ER-09. Prediction, Synthesis, and Experimental Validation of Magnetic Order and Dimensionality in Cerium-Based Compounds Guided by Structural Characteristics and Tri-critical Exponents

J. A. Torres, T. Lamichhane, A. S. Poulo

Engineering Physics, University of Central Oklahoma, Oklahoma City, Oklahoma, United States

ER-10. Effect of Mn and V Doping on the Structural and Magnetic Properties of $Fe_{16}N_2$ Thin Films

E. Gokce-Polat[1], A. DeRuiter[2], W. Echtenkamp[1], H. Kim[1], B. Wolf[2], J. Wang[1, 2]

[1]Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States, [2]Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, United States

ER-12. Controlling $L1_0$ Ordering in the MnAl System Through Cu Elemental Addition

H. Baldino[1, 2], X. Zhang[1, 3], G. Hadjipanayis[1], L. H. Lewis[1, 3]

[1]Chemical Engineering, Northeastern University, Boston, Massachusetts, United States, [2]Material Science and Engineering, University of Central Florida, Orlando, Florida, United States, [3]Mechanical and Industrial Engineering, Northeastern University, Boston, Massachusetts, United States

EQ-09-LB. Measuring initial curves and minor hysteresis loops for high coercivity rare earth magnets using the Pulsed Field Magnetometer (PFM) system

J. Mckenzie, R. Cornelius, J. Wade

Hirst Magnetic Instruments Ltd, Falmouth, United Kingdom

EQ-10-LB. Tunable magnetic properties for epitaxially grown Co-rich CoPtP films by electrodeposition on Cu(111)/Si substrates: Crossover from non-exchange-spring to exchange spring/coupled magnetic states
S. Seth, S. Roy
Micropower Devices & Nanomagnetics Group, Tyndall National Institute, University College Cork, Cork, Ireland

MAGNETIC SENSORS CHALLENGE FINAL PRESENTATIONS
Thursday, October 30, 2025
12:15 PM-01:45 PM
Room 1DE

IEEE MAGNETICS SOCIETY STANDARDS COMMITTEE MEETING
Thursday, October 30, 2025
05:00 PM-06:30 PM
Room 1F

SESSION FA: ALL-ORBITRONIC CONCEPTS AND DEVICES
Chair(s): A. Kumar, *Physics, University of Gothenburg, Gothenburg, Sweden*
Thursday, October 30, 2025
02:00 PM-05:30 PM
Grand Ballroom

02:00 PM-02:36 PM
FA-01. Ultrafast Spin-Orbitronics with Terahertz Electromagnetic Pulses
O. Gueckstock
Freie Universität Berlin, Berlin, Germany

02:36 PM-03:12 PM
FA-02. Lanthanide nitride ferromagnets with large orbital magnetic moments
S. Granville[1, 2]
[1]Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand, [2]MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand

03:12 PM-03:48 PM
FA-03. All-Orbitronic Effects and Device Concepts
M. Kläui[1, 2]
[1]Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany, [2]Center for Quantum Spintronics and Department of Physics, NTNU, Trondheim, Norway

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
FA-04. Chiral Orbitronics
B. Göbel
Martin Luther University Halle-Wittenberg, Halle, Germany

04:51 PM-05:27 PM
FA-05. Nonlocal Electrical Detection of Reciprocal Orbital Edelstein Effect
W. Gao, L. Liao, Y. Otani
The Institute for Solid State Physics, The University of Tokyo, KASHIWA, Chiba, Japan

SESSION FB: COHERENT X-RAY FOR PROBING THE INTERPLAY OF HETEROGENEITY AND SPIN-ELECTRONIC CORRELATIONS
Chair(s): S. Roy, *Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, United States*
Thursday, October 30, 2025
02:00 PM-05:30 PM
Ballroom A

02:00 PM-02:36 PM
FB-01. Imaging Transient States in Magnetic Materials: Complexity across Space and Time
C. Mazzoli
NSLS-II, Brookhaven National Lab, Upton, New York, United States

02:36 PM-03:12 PM
FB-02. Coherent x-ray studies of spontaneous fluctuations in rare earth nickelates
R. Kukreja
University of California Davis, Davis, California, United States

03:12 PM-03:48 PM
FB-03. Competition between two antiferromagnetic phases in Fe_xNbS_2 studied through Coherent Resonant Scattering
A. Frano[1], R. Basak[1], S. Wu[2]
[1]University of California San Diego, La Jolla, California, United States, [2]Santa Clara University, Santa Clara, California, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
FB-04. Investigating topological Hall effect using simultaneous soft x-ray scattering in Fe/Gd
A. Us-Saleheen[1], A. Singh[1], D. W. Raftrey[2, 3], M. A. Brozius[6], M. McCarter[1], Z. Tumbleson[1, 3], M. Im[2], S. Montoya[4], E. Fullerton[4, 5], P. Fischer[2], S. Kevan[1], S. Roy[1], S. A. Morley[1]
[1]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [2]Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Physics Department, University of California Santa Cruz, Santa Cruz, California, United States, [4]Center for Memory and Recording Research, University of California San Diego, La Jolla, California, United States, [5]Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, California, United States, [6]Department of Applied Physics and Science Education, Eindhoven University of Technology, Eindhoven, Netherlands

04:51 PM-05:27 PM
FB-05. Dispersion of Spontaneous Spin Fluctuations measured by MHz X-ray Photon Correlation Spectroscopy
L. Shen[1], J. J. Turner[1], S. Roy[2], Z. Tumbleson[2], E. Blackburn[3]
[1]SLAC National Accelerator Laboratory, Menlo Park, California, United States, [2]Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Lund University, Lund, Sweden

SESSION FC: BIOMAGNETISM AND BIOMEDICAL APPLICATIONS III

Co-Chair(s): R. L. Hadimani, *Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States* and J. Gomez-Pastora, *Texas Tech University, Lubbock, Texas, United States*

Thursday, October 30, 2025

02:00 PM-05:30 PM

Ballroom C

02:00 PM-02:12 PM

FC-01. Validation of the Impact of Cylindrical Sensor Arrays on Cardiac Current Source Estimation Performance

W. Shang[1], M. Fushimi[2], S. Chikaki[1], M. Sekino[1]

[1]Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Graduate School of Information science and Technology, The University of Tokyo, Tokyo, Japan

02:12 PM-02:24 PM

FC-02. Design of a High-Frequency Magnetic Particle Spectroscopy Instrument for Applications In Vivo

E. Whittier[1, 2], J. Beckham[2, 3, 4], N. Kent[2, 4], P. Anikeeva[3, 2, 4]

[1]EECS, MIT, Cambridge, Massachusetts, United States, [2]RLE, MIT, Cambridge, Massachusetts, United States, [3]DMSE, MIT, Cambridge, Massachusetts, United States, [4]McGovern, MIT, Cambridge, Massachusetts, United States

02:24 PM-02:36 PM

FC-03. Optimal Operating Condition of a Magnetic Helical Robot to Maximize the Kinetic Energy for Tunneling the Clogged Blood Vessel

S. Lee, J. Kwon, J. Sa, G. Jang

Department of Mechanical Convergence Engineering, Hanyang Univ., Seoul, Korea (the Republic of)

02:36 PM-02:48 PM

FC-04. Magnetoencephalographic mapping by optical stimulation of optogenetic rats using Optically pumped magnetometers

K. Komuro[1], M. Fushimi[2], Y. Kainuma[3], T. Zhu[1], S. Funatani[1], S. Chikaki[1], M. Sekino[1]

[1]Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Graduate School of Information Science and Technology, The University of Tokyo, Tokyo, Japan, [3]National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan

02:48 PM-03:00 PM

FC-05. Exploiting the distinct Fe metabolism of breast cancer cells to analyze and separate stem tumor cells

K. Paz Gonzalez[1], L. Nguyen T. Tran[1], R. Farrell[2], K. Chen[2], K. Wu[3], J. Chalmers[4], J. Gomez-Pastora[1]

[1]Chemical Engineering, Texas Tech University, Lubbock, Texas, United States, [2]Deparment of Biological Science, Texas Tech University, Lubbock, Texas, United States, [3]Electrical and Computer Engineering, Texas Tech University, Lubbock, Texas, United States, [4]William G. Lowrie Department of Chemical and Biomolecular Engineering, The Ohio State University, Columbus, Ohio, United States

03:00 PM-03:12 PM

FC-06. Measurement of the concentration of organic molecules in exhaled gas before and after repetitive magnetic or electrical stimulation of rat hindlimb muscle contractions.

R. Takahashi[1], J. Yang[1], G. Kwoun[3], H. Yamada[3], H. Yamahara[1], S. Funatani[1], I. Mimura[3], M. Fushimi[2], H. Nishi[3], H. Tabata[1], M. Nangaku[3], M. Sekino[1]

[1]Graduate School of Engineering, The University of Tokyo, Bunkyo, Tokyo, Japan, [2]Graduate School of Information Science and Technology, The University of Tokyo, Bunkyo, Tokyo, Japan, [3]Graduate School of Medicine, The University of Tokyo, Bunkyo, Tokyo, Japan

03:12 PM-03:24 PM

FC-07. Development and Phantom-Based Evaluation of a Deep Transcranial Magnetic Stimulation Coil for the Treatment of Psychiatric Disorders

A. Iino[1], W. Lohr[2], H. M. Kim[1], S. Chikaki[1], M. Fushimi[3], R. L. Hadimani[5], Y. Noda[4], M. Sekino[1]

[1]Bioengineering, The University of Tokyo, Tokyo, Japan, [2]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [3]Information Physics and Computing, The University of Tokyo, Tokyo, Japan, [4]Psychiatry, International University of Health and Welfare, Tokyo, Japan, [5]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

03:24 PM-03:36 PM

FC-08. Rapid Detection of *Fusobacterium Nucleatum* in Saliva using Magnetic Susceptibility

S. Yabukami[1, 2], T. Murayama[1], A. Ban[1], K. Okita[2], S. Tohtake[1], L. Tonthat[1], Y. Ozawa[1], S. Asamitsu[1], H. Okamoto[1], T. Kamei[1], T. Abe[1]
[1]Tohoku University, Sendai, Japan, [2]Tohoku-TMIT, Sendai, Japan

03:36 PM-03:48 PM

FC-09. Superparamagnetic Nanoparticles: bridging traditional Characterization up to 1 GHz and Real-World Biosensing Applications

M. Hauwaert[1], R. Hanus[1], S. Spassov[3], V. Pilati[2], R. B. Goldfarb[4], L. Lejeune[5], M. Salvador[2], S. Hermans[5], M. Rivas[2], J. Raskin[1]
[1]ICTEAM, UCLouvain, Louvain La Neuve, Belgium, [2]Dept de Fisica Applicada, Universidad De Oviedo, Gijón, Spain, [3]Geophysics Department, IRM-KMI, Dourbes, Belgium, [4]NIST, Boulder, Colorado, United States, [5]IMCN, UCLouvain, Louvain La Neuve, Belgium

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM

FC-10. Additive Manufacturing of Parabolic Ferromagnetic Coils for Transcranial Magnetic Stimulation Using Laser-Based Directed Energy Deposition

D. Mudakavi[1], V. E. Bodur[1], P. J. Udapudi[1], M. Tashli[2], R. L. Hadimani[2], S. M. Adinarayanappa[1]
[1]Additive Manufacturing and 4D Printing lab, Dept of Mechanical Materials and Aerospace Engineering, Indian Institute of Technology, Dharwad, Dharwad, Karnataka, India, [2]Biomagnetics lab, Dept of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Virginia, Virginia, United States

04:27 PM-04:39 PM

FC-11. Evaluation of a Geometrically and Conductively Accurate Brain Phantom for Predicting TMS-Induced Electric Fields

M. Paslar[1], W. Lohr[1], T. J. Taylor[1], T. Atalugama[2], B. Embree[2], R. L. Hadimani[2, 1], C. L. Peterson[1]
[1]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

04:39 PM-04:51 PM

FC-12. Wearable Magnetic Shielding for the Safe Application of Transcranial Magnetic Stimulation in Patients with Brain Implants

W. Lohr[1], T. Atalugama[2], B. Embree[2], H. Shah[3], J. Chen[3], K. Holloway[3], R. L. Hadimani[2]

[1]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [3]Neurosurgery, Virginia Commonwealth University, Richmond, Virginia, United States

04:51 PM-05:03 PM

FC-13. Magnetic Field Gradient Trapping Efficacy on SH-SY5Y Cancer Cells and Total RNA

B. Gungordu[1], N. Gunduz Akdogan[3, 2], C. Bagci[1], O. Akdogan[1, 2]

[1]Faculty of Engineering and Natural Sciences, Bahcesehir University, Istanbul / Besiktas, Istanbul / Besiktas, Turkey, [2]NANOTerial Technology Corporation, Istanbul, Istanbul, Turkey, [3]Faculty of Engineering, Piri Reis University, Istanbul, Istanbul, Turkey

05:03 PM-05:15 PM

FC-14. Bioplastics Based on Gelatin–Pectin Blends Enriched with Multifunctional Nanoparticles

B. Gungordu[1], S. Can[1], B. Onat[1], N. Gunduz Akdogan[2, 3], O. Akdogan[1, 3]

[1]Bahcesehir University, Istanbul, Turkey, [2]Piri Reis University, Istanbul, Turkey, [3]NANOTerial Technology Corporation, Istanbul, Turkey

05:15 PM-05:27 PM

FC-15. Dual-Mode Detection of Magnetic and Dielectric Responses in Core–Shell Nanoparticles for Biomedical Diagnostics

D. Brown[1], D. Luu[1], K. Hwang[1], M. Nguyen[2], S. Hoijang[2], T. Lee[2], M. Phan[1]

[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Chemistry and the Texas Center for Superconductivity, University of Houston, Houston, Texas, United States

SESSION FD: LOW DAMPING AND TOPOLOGICAL SYSTEMS

Co-Chair(s): A. I. Ojo, *Physics, University of South Florida, Tampa, Florida, United States* and E. Thareja, *Department of Physics, University of South Florida, Tampa, Florida, United States*

Thursday, October 30, 2025
02:00 PM-05:30 PM
Ballroom B

02:00 PM-02:36 PM

FD-01. Vertically Graded FeNi Alloys with Low Damping and a Sizeable Spin-Orbit Torque

R. E. Maizel[1], S. Wu[1], P. P. Balakrishnan[2], A. J. Grutter[2], C. Kinane[3], A. Caruana[3], P. Nakarmi[4], B. Nepal[4], D. A. Smith[1], Y. Lim[1], J. L. Jones[1], W. C. Thomas[1], J. Zhao[5], M. F. Michel[5], T. Mewes[4], S. Emori[1]
[1]Physics, Virginia Tech, Blacksburg, Virginia, United States, [2]National Institute of Standards and Technology, Center for Neutron Research, Gaithersburg, Maryland, United States, [3]ISIS-Neutron and Muon Source, STFC Rutherford Appleton Laboratory, Didcot, United Kingdom, [4]Dept. of Physics and Astronomy, University of Alabama, Tuscaloosa, Alabama, United States, [5]Geoscience, Virginia Tech, Blacksburg, Virginia, United States

02:36 PM-02:48 PM

FD-02. Low Gilbert damping of canonical frustrated Kagome magnet Fe_3Sn_2

Z. Jin[1, 2], E. Lesne[3], K. Nukui[1, 2], S. Miki[2], C. Felser[3], A. Hirohata[5, 4, 3], S. Mizukami[2, 4]
[1]Department of Applied Physics, Graduate School of Engineering, Tohoku Univ., Sendai, Miyagi, Japan, [2]WPI-AIMR, Tohoku Univ., Sendai, Miyagi, Japan, [3]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, [4]CSIS, Tohoku Univ., Sendai, Miyagi, Japan, [5]RIEC, Tohoku Univ., Sendai, Miyagi, Japan

02:48 PM-03:00 PM

FD-03. Magnetic Losses in Soft Magnetic Composites and Ferrites under Rectangular Asymmetric Excitation

S. Dobák, F. Onderko, J. Fuzer, P. Kollár
Institute of Physics, P. J. Safarik University in Kosice, Kosice, Slovakia

03:00 PM-03:12 PM
FD-04. Modulation of spin dynamics in Fe thin films induced by adjacent Co/Ni multilayers with perpendicular magnetic anisotropy
S. Baek, T. Izumi, S. Komori, T. Taniyama
Nagoya University, Nagoya, Japan

03:12 PM-03:48 PM
FD-05. Gilbert damping in low-dimensional magnetic systems: Quantum oscillations and symmetry constraint
Z. Yuan
Interdisciplinary Center for Theoretical Physics and Information Sciences, Fudan University, Shanghai, China

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
FD-06. Quantifying Spin-Mixing in Ferrimagnetic Fe-Gd Alloys via XMCD and FMR Spectroscopy
V. Ganepola Arachchige[1], J. J. Wisser[2], R. Knut[3], D. A. Arena[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]National Institute of Standards and Technology, Boulder, Colorado, United States, [3]Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden

04:27 PM-04:39 PM
FD-07. Crystal growth and terahertz time-domain spectroscopy in $Sm_{1-x}R_xFeO_3$ orthoferrite
A. Wu[1], Z. Zhang[1], Z. Zhang[1], L. Su[1], L. Luo[2], J. Wang[2]
[1]State Key Laboratory of Functional Crystals and Devices, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China, [2]Department of Physics and Astronomy, Iowa State University, Ames, Iowa, United States

04:39 PM-04:51 PM
FD-08. Micromagnetic Insights into History-Dependent Domain Behavior in MBE-grown 2D Magnet/Topological Insulator Heterostructure Fe_3GeTe_2/Bi_2Te_3
M. Zhao[1], T. Cham[6, 2], A. Koerner[1], E. Berg[1], D. Bergner[1], W. Zhou[3], Z. Li[3], L. Powalla[4], S. Wintz[5], M. Weigand[5], D. C. Ralph[2], R. Kawakami[3], Y. Luo[1, 7, 8]
[1]Department of Physics and Astronomy, University of Southern California, Los Angeles, California, United States, [2]Laboratory of Atomic and Solid State Physics,

Cornell University, Ithaca, New York, United States, [3]Ohio State University, Columbus, Ohio, United States, [4]Max Planck Institute for Solid State Research, Stuttgart, Germany, [5]Helmholtz-Zentrum Berlin für Materialien und Energie, Dresden, Germany, [6]Division of Physics, Math and Astronomy, California Institute of Technology, Pasadena, California, United States, [7]USC Mork Family Department of Chemical Engineering and Materials Science, University of Southern California, Los Angeles, California, United States, [8]Department of Chemistry, University of Southern California, Los Angeles, California, United States

04:51 PM-05:03 PM

FD-09. Probing Temperature-dependent Magnetization Dynamics in Co_2MnGa Weyl Semimetal Thin Films

A. I. Ojo[1], V. Ganepola Arachchige[1], D. DeTellem[1], A. Markou[2, 3], C. Felser[3], J. D. Gayles[1], M. Phan[1], D. A. Arena[1]

[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Physics Department, University of Ioannina, Ioannina, Ioannina, Greece, [3]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany

SESSION FE: MAGNETISM AND SPINTRONICS: LOW-DIMENSIONAL SYSTEMS

Chair(s): Y. Luo, *Physics and Astronomy, University of Southern California, Los Angeles, California, United States*

Thursday, October 30, 2025
02:00 PM-05:30 PM
Room 2DE

02:00 PM-02:36 PM

FE-01. Spin-filter tunneling detection of antiferromagnetic resonance with electrically-tunable damping

T. Cham[1, 2], D. G. Chica[3], X. Huang[1], K. Watanabe[4], T. Taniguchi[5], X. Roy[3], Y. Luo[7, 8, 9], D. C. Ralph[1, 6]

[1]Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, New York, United States, [2]Division of Physics, Math and Astronomy, Caltech, Pasadena, California, United States, [3]Department of Chemistry, Columbia University, New York, New York, United States, [4]Research Center for Electronic and Optical Materials, National Institute for Materials Science, Tsukuba, Ibaraki, Japan, [5]Research Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Ibaraki,

Japan, [6]Kavli Institute at Cornell, Ithaca, New York, United States, [7]Department of Physics and Astronomy, University of Southern California, Los Angeles, California, United States, [8]Mork Family Department of Chemical Engineering and Materials Science, University of Southern California, Los Angeles, California, United States, [9]Department of Chemistry, University of Southern California, Los Angeles, California, United States

02:36 PM-02:48 PM
FE-02. Probing Magnetotransport in 2D Heterostructure of a Weyl Semimetal and a Semiconducting Antiferromagnet
R. Posti, R. Bandapelli, I. Kao, Z. Cui, J. Katoch, S. Singh
Department of Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States

02:48 PM-03:00 PM
FE-03. Unusual Hall effect in vdW ferromagnetic Fe_3GeTe_2 nanoflake devices
R. Roy Chowdhury[1, 2], D. Kurebayashi[3], J. Lustikova[4], O. Tretiakov[3], S. Fukami[5, 4], R. Singh[2], S. DuttaGupta[6, 4, 5]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics, Indian Institute of Science Education and Research Bhopal, Bhopal, Madhya Pradesh, India, [3]School of Physics, University of New South Wales, Sydney, New South Wales, Australia, [4]Center for Science and Innovation in Spintronics (CSIS), Tohoku University, Sendai, Miyagi, Japan, [5]Research Institute of Electrical Communication (RIEC), Tohoku University, Sendai, Miyagi, Japan, [6]Condensed Matter Physics Division, Saha Institute of Nuclear Physics, Kolkata, West Bengal, India

03:00 PM-03:12 PM
FE-04. Interface Engineering of Exchange Bias in van der Waals Heterostructures
A. Puthirath Balan[1], A. Kumar[1], P. Reiser[2], J. Vas[3], T. Denneulin[3], J. Yang[4], A. Bonanni[5], B. Lotsch[6], P. Maletinsky[2], R. E. Dunin-Borkowski[3], M. Kläui[1, 7]
[1]Johannes Gutenberg University Mainz, Mainz, Germany, [2]University of Basel, Basel, Switzerland, [3]Forschungszentrum Jülich, Jülich, Germany, [4]Peking University, Beijing, China, [5]Johannes Kepler University Linz, Linz, Austria, [6]Max Planck Institute for Solid State Research, Stuttgart, Germany, [7]Norwegian University of Science and Technology, Trondheim, Norway

03:12 PM-03:24 PM
FE-05. Light-induced orbital and spin magnetism in 3d, 4d, and 5d transition metals
T. Adamantopoulos[1, 2, 3], D. Go[1, 2], Y. Mokrousov[2, 1]
[1]Johannes Gutenberg University Mainz, Mainz, Germany, [2]Forschungszentrum Jülich, Jülich, Germany, [3]RWTH Aachen University, Aachen, Germany

03:24 PM-03:36 PM
FE-06. Tunable Moiré Phases in Magnetic Van der Waals Homobilayers
G. Cheng[1], P. Upadhyaya[2], Y. P. Chen[1, 2]
[1]Tohoku University, Sendai, Japan, [2]Purdue University, West Lafayette, Indiana, United States

03:36 PM-03:48 PM
FE-07. Ultrafast carrier dynamics explored in micron-sized van der Waals materials through spatially localized spintronic terahertz emission spectroscopy
P. Agarwal, M. Jiang, L. Ke, J. Lourembam
*Institute of Materials Research and Engineering (IMRE), Agency for Science, Technology and Research (A*STAR), Singapore*

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
FE-08. Controllable Synthesis and Modulation of Two-dimensional Magnetic Materials
Z. Meng[1], Y. Hou[2]
[1]Peking University, Beijing, China, [2]Sun Yat-sen University, Shenzhen, China

04:51 PM-05:03 PM
FE-09. Twist-angle-programmable magnetism in graphene/CrI_3 heterostructures
F. Sanchez-Ochoa
Instituto de Fisica, Universidad Nacional Autonoma de Mexico, CDMX, Mexico

05:03 PM-05:15 PM
FE-10. Giant Odd-Parity Magnetoresistance in α-Sn/(In,Fe)Sb Heterostructures via Magnetic Proximity-Induced Topological States
L. Anh[1], T. Hotta[1], T. Chiba[2, 3], Y. Kota[4], M. Tanaka[1]
[1]The University of Tokyo, Tokyo, Japan, [2]Yamagata University, Yamagata, Japan, [3]Tohoku University, Sendai, Japan, [4]NIT, Fukushima College, Iwaki, Japan

05:15 PM-05:27 PM
FE-11. Magnetic properties of $Fe_{5-x}GeTe_2/WSe_2$ van-der-Waals heterostructures
H. Lv[1], J. Herfort[1], T. Shinwari[1], K. Khan[1], M. Hanke[1], A. Trampert[1], R. Engel-Herbert[1], C. Chen[2], J. M. Redwing[2], J. J. Lopes[1]
[1]Paul-Drude Institut für Festkörperelektronik, Berlin, Germany, [2]Pennsylvania State University, University Park, Pennsylvania, United States

SESSION FF: UNCONVENTIONAL COMPUTING
Chair(s): P. Talatchian, *SPINTEC, Grenoble, Isère, France*
Thursday, October 30, 2025
02:00 PM-05:30 PM
Room 2BC

02:00 PM-02:36 PM
FF-01. Towards All-Electric, Non-volatile Intelligence in Physical Neural Systems
J. Zhou
*Institute of Materials Research and Engineering (IMRE), Agency for Science Technology and Research (A*STAR), Singapore*

02:36 PM-02:48 PM
FF-02. N-ary In-memory Computing in a Crossbar Array of Multistate Magnetic Tunnel Junctions
A. Moureaux, A. Lopes Temporao, F. Abreu Araujo
Institute of Condensed Matter and Nanosciences, UCLouvain, Louvain-la-Neuve, Walloon Brabant , Belgium

02:48 PM-03:00 PM
FF-03. Skyrmion based Reservoir Computing for Spatiotemporal Motion Recognition
M. Alam[1], M. Rajib[1], S. Sabyasachi[1], M. Stiles[2], J. Atulasimha[1, 3]
[1]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Alternate Computing Group, NIST, Gaithersburg, Maryland, United States, [3]Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

03:00 PM-03:12 PM
FF-04. Stochastic Multilayer Spintronic Neural Networks Trained using Local-Learning Rules
J. Peters[1], N. Phan[1, 2], U. Ebels[1], P. Talatchian[1]

[1]*Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, Spintec, Grenoble, France,* [2]*Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Paris, France*

03:12 PM-03:24 PM
FF-05. A Probabilistic Nanomagnetic Logic Network Enabling Reversible Computing
S. Nallan, J. Zhu
Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States

03:24 PM-03:36 PM
FF-06. Field-Free Random Number Generation with Elliptical Voltage-Controlled Magnetic Tunnel Junctions for Probabilistic Computing
J. G. Athas, C. Duffee, T. Neuner, P. Khalili Amiri
Electrical and Computer Engineering, Northwestern University, Chicago, Illinois, United States

03:36 PM-03:48 PM
FF-07. Exploiting Probabilistic Switching of Magnetic Tunnel Junctions (MTJs) for Near-Memory and In-Memory Computing
S. S. Mugdho, E. Rogers, K. Gupte, C. Wang
Electrical and Computer Engineering, Iowa State University, Ames, Iowa, United States

03:48 PM-04:15 PM
Break

04:15 PM-04:51 PM
FF-08. Wafer-Scale SOT-MRAM for Energy- and Memory-Efficient Analog Computing
S. Liu[1], M. Song[2], J. C. Incorvia[1]
[1]*The University of Texas at Austin, Austin, Texas, United States,* [2]*Taiwan Semiconductor Manufacturing Corporation, Hsinchu, Taiwan*

04:51 PM-05:03 PM
FF-09. Non-reciprocal phase transitions in kagome artificial spin ice plasmonic metasurfaces
S. Gupta[1], L. Martinez[2], L. McClintok[2], Z. Jacob[1], P. Padmanabhan[2], P. Iyer[3]
[1]*Purdue University, West Lafayette, Indiana, United States,* [2]*Los Alamos National Laboratory, Los Almos, New Mexico, United States,* [3]*Sandia National Laboratory, Albuquerque, New Mexico, United States*

05:03 PM-05:15 PM
FF-10. Integrated Magnonic Reservoir Computing with Magnetic Metamaterials
C. Swindells[1], I. T. Vidamour[2, 1], G. Venkat[1], T. Hayward[1]
[1]Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom, [2]Department of Computer Science, University of Sheffield, Sheffield, United Kingdom

05:15 PM-05:27 PM
FF-11. Energy Relaxation Pathways in Finite-Sized Artificial Square Ice Structures
H. Arava[1], N. Kern[1], J. Woods[1], P. Mellado[2], C. Phatak[1, 3]
[1]Argonne National Laboratory, Lemont, Illinois, United States, [2]Adolfo Ibáñez University, Santiago, Chile, [3]Northwestern University, Evanston, Illinois, United States

SESSION FG: THIN FILM AND INTERFACES
Chair(s): P. Tiberto, *INRIM, Torino, Italy*
Thursday, October 30, 2025
02:00 PM-05:30 PM
Room 2A

02:00 PM-02:12 PM
FG-01. Design and Optimization of Thin-film Ferromagnetic Patterns for Ultra-Compact High Frequency Bandstop Filters
H. Yin, A. El-Ghazaly
Electrical and Computer Engineering, Cornell University, Ithaca, New York, United States

02:12 PM-02:24 PM
FG-02. Interface-Induced Magnetism in Hybrid Heterostructures Containing Monolayer Transition Metal Dichalcogenide Coated with V_2O_5 Thin Films
Y. Wadumesthri[1], N. Kapuruge[1], R. B. de Oliveira[2], B. Ipaves[2], G. S. Fabris[2], R. Tromer[3], K. Lasek[1], N. Schulz[1], H. Srikanth[1], M. Phan[1], D. S. Galvão[2], H. Rodríguez Gutiérrez[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Applied Physics Department and Center for Computational Engineering & Sciences, State University of Campinas, Campinas, São Paulo, Brazil, [3]Institute of Physics, University of Brasília, Brasília, DF, Brazil

02:24 PM-02:36 PM

FG-03. Mechanistic Insights into Anisotropy and Magnetoresistance Control in Cobalt Ferrite Thin Films by Swift Heavy Ion Irradiation

R. Charak[1], S. Gautam[2, 3], S. Garg[2], R. Meena[4], Y. Kim[6], K. Chae[5]

[1]Energy Research Center, Panjab University, Chandigarh, India, [2]Department of Physics, Panjab University, Chandigarh, India, [3]Advanced Functional Materials Lab Pvt. Ltd, Panjab University, Chandigarh, India, [4]Materials Science Centre, Inter University Accelerator Centre, New Delhi, India, [5]Advanced Analysis & Data Center, Korea Institute of Science and technology, Seoul, Korea (the Republic of), [6]Pohang Accelerator Lab, Pohang University of Science & Technology, Pohang, Korea (the Republic of)

02:36 PM-02:48 PM

FG-04. Structural origin of the Perpendicular Magnetic anisotropy in Ta/CoFeB/MgO heterostructure

M. Singh[1], S. K. Vayalil[2, 1], A. Hloskovsky[2], C. Schlueter[2], C. Meneghini[3], I. Carlomagno[4], S. Pathak[1], A. Gupta[1]

[1]Department of Physics, Applied Science Cluster, UPES, Dehradun, India, [2]Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany, [3]Department of Science, Roma Tre University, Rome, Italy, [4]Elettra Sincrotrone Trieste, Trieste, Italy

02:48 PM-03:00 PM

FG-05. Post-Oxidation Strategy for Reducing Antiphase Boundaries in Spinel Ferrites

H. Yanagihara, K. Takeo, E. Kita

University of Tsukuba, Tsukuba, Japan

03:00 PM-03:12 PM

FG-06. Spin-Canting at the Frontiers of $NiCo_2O_4$ Thin Films

A. Subedi[1], B. Giri[1], M. Z. Zaz[1], W. K. Chin[1], G. Viswan[1], A. T. N'Diaye[2], T. Komesu[1], X. Xu[1], P. Dowben[1]

[1]Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, United States

03:12 PM-03:24 PM

FG-07. On the nature of spin reorientation transition thermal hysteresis in AFM/FM bilayers: experiment and phenomenology

M. Slezak[1], E. Swierkosz[1], A. Kwiatkowski[1], M. Szpytma[1], W. Janus[1], M. Zajac[2], P. Drozdz[1], E. Oles[1], A. Koziol Rachwal[1], T. Slezak[1]

[1]AGH University of Krakow, Krakow, Poland, [2]National Synchrotron Radiation Centre SOLARIS, Jagiellonian University, Krakow, Poland

03:24 PM-03:36 PM
FG-08. Plasma-Treated Perpendicular Magnetic Anisotropy in Sub-Nanometer W/CoFeB/MgO for BEOL Integration
G. Hong[1], J. Park[1], J. Pyo[1], J. Yoo[1], S. Lee[1], B. Kang[1], J. An[1], B. Ham[1], J. Choi[1], J. Lee[2], J. Kwon[2], S. Ahn[1], R. Baek[1]
[1]Department of Electrical Engineering, POSTECH, Pohang, Gyeongbuk, Korea (the Republic of), [2]AVP Division, Hyundai Motor Company, Hwaseong, Gyeonggi, Korea (the Republic of)

03:36 PM-03:48 PM
FG-09. Growth and Characterization of β-Mn Structured CoZn Thin Films
M. Dearg[1, 2], S. Langridge[3], G. Burnell[1], C. Marrows[1]
[1]University of Leeds, Leeds, United Kingdom, [2]University of York, York, United Kingdom, [3]STFC Rutherford Appleton Laboratory, Didcot, Oxon., United Kingdom

03:48 PM-04:15 PM
Break

04:15 PM-04:27 PM
FG-10. Utilizing a synthetic exchange bias effect to measure ferromagnetic interlayer interactions
I. Hatala, E. Stimpson, J. Sklenar
Physics, Wayne State University, Detroit, Michigan, United States

04:27 PM-04:39 PM
FG-11. Low-temperature T-ALD HfO_2 for magneto-ionic applications
A. Cataldo[1, 2], D. Gouéré[3], E. Monteblanco[3], D. Ravelosona[3], A. Li Bassi[4], A. Lamperti[1]
[1]CNR-IMM, Agrate Brianza, Italy, [2]Department of Chemistry, Materials and Nanotechnology, Politecnico di Milano, Milan, Italy, [3]Spin-Ion Technologies, Palaiseau, France, [4]Department of Energy, Politecnico di Milano, Milan, Italy

04:39 PM-04:51 PM

FG-12. Depth-Resolved Profile of the Interfacial Ferromagnetism in $CaMnO_3/CaRuO_3$ Superlattices

J. R. Paudel[1, 2], A. Mansouri Tehrani[3], M. Terilli[4], M. Kareev[4], J. Grassi[1], R. K. Sah[1], L. Wu[4], V. N. Strocov[5], C. Klewe[2], P. Shafer[2, 6], J. Chakhalian[4], N. A. Spaldin[3], A. X. Gray[1]

[1]Physics Department, Temple University, Philadelphia, Pennsylvania, United States, [2]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]Materials Theory, ETH Zurich, Zurich, Switzerland, [4]Department of Physics and Astronomy, Rutgers University, Piscataway, New Jersey, United States, [5]Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland, [6]National Synchrotron Light Source II, Brookhaven National Laboratory, Upton, New York, United States

04:51 PM-05:03 PM

FG-13. Engineering strong perpendicular magnetic anisotropy in Cu-buffered Co/Pt multilayers grown by moderate vacuum e-beam deposition

J. Porro[1, 2], D. Doménech[1], A. Villar[1], C. Redondo[3], N. Río-López[1, 3], R. Morales[3, 1, 2]

[1]BCMaterials, Bilbao, Spain, [2]Ikerbasque, Bilbao, Spain, [3]Physical Chemistry, University of the Basque Country, UPV/EHU, Leioa, Spain

SESSION FP: SHIELDING AND LEVITATION / STRUCTURED MATERIALS, NANOPARTICLES, AND NANOCOMPOSITES (POSTER SESSION)

Chair(s): Y. Shen, *School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore*

Thursday, October 30, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

FP-01. Experimental Evaluation of an Active Magnetic Shielding System with a Moving Phantom

X. Cao, T. Zhu, S. Chikaki, M. Sekino

Graduate School of Engineering, The University of Tokyo, Tokyo, Japan

FP-02. Penetration of Magnetic Field by Long Cables into a Slot on Conducting Plate and Rectangular Enclosure

J. Kwon[1], H. Park[2]

[1]*Electronics and Telecommunications Research Institute, Daejeon, Korea (the Republic of),* [2]*The University of Suwon, Hwaseong, Korea (the Republic of)*

FP-03. Advancing PM Motor Sustainability Through Rapid Computational Evaluation of Alternative Magnet Materials

A. Baghel, I. Nlebedim
Division of Critical Materials, Ames National Laboratory, Ames, Iowa, United States

FP-04. A Link Type Haptic Motor with a Pure Magnetic Spring for Enhanced Lifespan and Performance

Y. Oh[1], K. Park[1], D. Xu[2], S. Hwang[1]
[1]*School of Mechanical Engineering, Pusan National University, Busan, Korea (the Republic of),* [2]*School of Mechatronic Engineering and Automation, Shanghai University, Shanghai, China*

FP-05. A Railgun Concept for Space Launches and Return Travel from the Moon

M. Trapanese
Dipartimento di Ingegneria, Palermo University, Palermo, Italy

FP-06. Asymmetric Magnetization Switching Behavior in FeRh/NiFe Bilayers with Interplay of Competing Exchange Interactions

J. Ahn, M. Jung
Department of Physics, Sogange University, Seoul, Korea (the Republic of)

FP-07. Time-resolved and 3-dimensional vector imaging of magnetic materials with coherent soft x-rays

D. M. Burn, L. Turnbull, A. Walters, S. S. Dhesi
Diamond Light Source, Didcot, Oxfordshire, United Kingdom

FP-08. Effect of GO incorporation on microwave characteristics of Zn-Co ferrites nanocomposites

M. Dabla[1], S. Kaushik[1], P. Kumar[1], M. Sharma[1, 2], B. K. Kuanr[1]
[1]*Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, Delhi, India,* [2]*Department of Physics, Deshbandhu College, University of Delhi, New Delhi, Delhi, India*

FP-09. Engineering Next-Generation Magnetic Coupling in Magnetite Core-Shell Nanostructures: The Influence of Advanced Preparation Methods

J. G. Lambe[3, 1], M. Gamal[1, 2], C. Castaño[1]
[1]Mechanical and Nuclear Engineering Department, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Polymers and Pigments Department, National Research Centre, Cairo, Dokki, Egypt, [3]Mechanical Engineering and Physics, Rose-Hulman Institute of Technology, Terre Haute, Indiana, United States

FP-10. Fabrication of Fe-B/Epoxy Composite Film via LbL-Assisted Composite Plating Using Silica-Coated Fe-B Particles

T. Nishii[1], I. Tanigawa[3], W. K. Tan[4], H. Muto[4], Y. Endo[1], M. Izaki[2], N. Fujita[2]
[1]Tohoku University, Sendai, Miyagi, Japan, [2]National Institute of Technology, Nara College, Yamatokoriyama, Nara, Japan, [3]Okuno Chemical Industries co., ltd., Osaka, Osaka, Japan, [4]Toyohashi University of Technology, Toyohashi, Aichi, Japan

SESSION FQ: ANTIFERROMAGNETS, FERRIMAGNETS & ULTRAFAST SPIN DYNAMICS (POSTER SESSION)

Chair(s): S. Majumder, *Department of Physics, University of South Florida, Tampa, Florida, United States*
Thursday, October 30, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

FQ-01. Observation of magnon polarons in non-local spin transport in an antiferromagnetic crystal Cr_2O_3

O. Gao[1, 2], J. Li[1, 2]
[1]Department of Physics, Southern University of Science and Technology, Shenzhen, Guangdong, China, [2]Quantum Science Center of Guangdong–Hong Kong–Macao Greater Bay Area (Guangdong), Shenzhen, Guangdong, China

FQ-02. Enhancing the Magneto-Optical Kerr Effect in Non-collinear Antiferromagnets via a Dielectric Layer

E. Gong[2, 1], M. Yoo[2, 1], A. Hoffmann[2, 1]
[1]Department of Materials Science and Engineering, The Grainger College of Engineering, University of Illinois Urbana-Champaign, Urbana, Illinois, United States, [2]Materials Research Laboratory, University of Illinois Urbana-Champaign, Urbana, Illinois, United States

FQ-03. Engineering of magnetic anisotropy in antiferromagnetic NiO(111) epitaxial thin films
M. Slezak[1], A. Kwiatkowski[1], E. Swierkosz[1], M. Szpytma[1], M. Zajac[2], A. Koziol Rachwal[1], T. Slezak[1]
[1]AGH University of Krakow, Krakow, Poland, [2]National Synchrotron Radiation Centre SOLARIS, Jagiellonian University, Krakow, Poland

FQ-04-LB. Reduction of materials criticality in hybrid manufacturing of Halbach arrays using sintered NdFeB magnets and additively manufactured soft magnet frames
L. Cosgrove[1], T. Lamichhane[1], M. P. Paranthaman[2], N. Poudel[3], T. Charlton[2]
[1]Engineering, University of Central Oklahoma, Edmond, Oklahoma, United States, [2]Oakridge National Lab, Oak Ridge, Tennessee, United States, [3]Veryst Engineering, Needham, Massachusetts, United States

FQ-07. Antiferromagnetic-Ferromagnetic Phase Transition in Epitaxial and Non-oriented FeRh Thin Films
F. Efe[1], F. Bakhshizadeh[1], D. Alharbi[1, 2], M. Guy[1], M. Davis[1], A. Lisfi[1]
[1]Physics, Morgan State University, Baltimore, Maryland, United States, [2]Physics, The Catholic University of America, Washington DC, District of Columbia, United States

FQ-08. Defect-Mediated Ferromagnetism in Transition Metal-Doped ZnO Thin Films
A. Alsmadi, B. Salameh
PHYSICS, Kuwait University, Kuwait, Kuwait

FQ-09. Deterministic modelling of ultrafast dynamics in magnetic tunnel junctions
P. Thibaudeau[1], M. Fattouhi[2], L. D. Buda-Prejbeanu[2]
[1]CEA, DAM, Le Ripault, Monts, France, [2]SPINtronique et Technologie des Composants, Grenoble, France

FQ-10. Terahertz emission from CoFeB/$Pt_{1-x}Cu_x$ spintronic bilayers
C. Bull[1, 2], R. Ji[1, 2], C. Lin[1, 2], T. Gething[2, 1], S. M. Hewett[1, 2], B. Spencer[3], H. J. Waring[1], T. Thomson[1], D. M. Graham[2, 4], P. Nutter[1]
[1]Dept. of Computer Science, University of Manchester, Manchester, United Kingdom, [2]Dept. of Physics and Astronomy, University of Manchester, Manchester, United Kingdom, [3]Department of Materials, University of

Manchester, Manchester, United Kingdom, [4]The Cockcroft Institute, Daresbury, United Kingdom

SESSION FR: SKYRMIONS AND SPIN-ORBIT TORQUE (POSTER SESSION)

Chair(s): B. Sanyal, *Department of Physics & Astronomy, Uppsala University, Uppsala, Sweden*

Thursday, October 30, 2025
02:30 PM-05:30 PM
Exhibit Hall Posters

FR-01. Spin accumulation-induced magneto-photogalvanic effect in metals

A. Kamiryo[1], M. Yamamoto[2], T. Nishijima[2], R. Ohshima[2], M. Shiraishi[2], Y. Ando[1]
[1]Osaka Metropolitan Univ., Sakai, Osaka, Japan, [2]Kyoto Univ., Kyoto, Kyoto, Japan

FR-02. Field-free highly efficient spin-orbit torque switching in Fe_3GaTe_2 at room temperature enabled by a unique reduced crystal symmetry of WTe_2

P. R. Sharma[1], B. Jang[1], G. Zhang[2], W. Jin[2], H. Chang[2], J. Hong[1]
[1]Materials Science and Engineering, Yonsei University, Seoul, Seoul, Korea (the Republic of), [2]School of Materials Science and Engineering, Huazhong University, Wuhan, Wuhan, China

FR-03. Effects of In-Plane Magnetic Fields and Energy Analysis during the Control of Antiskyrmion Formation

Y. Machida, M. Taniwaki, A. L. Foggiatto, M. Kotsugi
Materials Science and Technology, Tokyo University of Science, Tokyo, Japan

FR-04. Antisymmetric Planar Hall-Induced Artifacts in Second Harmonic Hall SOT Measurements: A Case Study in RuO_2(101)

O. Jia, S. Nair, Y. Yang, S. G. Jeong, S. Lee, D. Tonini, S. Liang, Y. Chen, O. Benally, B. Dixit, T. Low, B. Jalan, J. Wang
University of Minnesota, Minneapolis, Minnesota, United States

FR-05. Metallic 2D-MXene: a promising underlayer of SOT device for field-free switching and enhancement of efficiency

P. Kumar[1], H. Abe[2], Y. Kotani[3], A. Sumiyoshiya[3], T. Nakamura[4, 3], G. K. Shukla[1], S. Isogami[1]
[1]NIMS, Tsukuba, Japan, [2]KEK, Tsukuba, Japan, [3]PhoSIC, Sendai, Japan, [4]Tohoku University, Sendai, Japan

FR-06. Nonlinear dynamics excited for room-temperature skyrmions by current injection
S. Yadav[1], S. Chatterjee[1], S. Sugimoto[2], S. Kasai[2]
[1]Physics, IIT Varanasi, Varanasi, India, [2]NIMS, Tsukuba, Japan

FR-07. Skyrmion-like magnetic domain structures in epitaxial $[Ru/Co/Pt]_n$ synthetic antiferromagnets
Y. Hisada, S. Komori, T. Taniyama
Dept. Phys., Nagoya Univ., Nagoya, Japan

FR-08. Current-driven dynamics of an isolated skyrmion in a racetrack with materialistic defects: Influence of defect size and density
P. Kamal, R. Posti, A. Tripathi
Physics, Indian Institute of Technology, Ropar, Department of Physics, Rupnagar, Ropar, Punjab, India

FR-09. Comparing spin Hall angle in $(Bi_{1-x}Sb_x)_2Te_{3-y}Se_y$ (x = 0.58, y=1) using spin- torque ferromagnetic resonance and non-local voltage measurements
V. Sharma[1, 2], S. Jois[2], G. M. Stephen[2], T. Hossain[3], B. Jungfleisch[3], P. J. Taylor[4], A. T. Hanbicki[2], A. Friedman[2]
[1]Department of Electrical and Computer Engineering, University of Maryland College Park, College Park, Maryland, United States, [2]Laboratory for Physical Sciences, College Park, Maryland, United States, [3]Department of Physics and Astronomy, University of Delaware, Newark, Delaware, United States, [4]Army Research Laboratory, Adelphi, Maryland, United States

FR-10. Static and Dynamic Magnetic Properties of Ultrathin Co Films on $MoSe_2$/Sapphire Heterostructures for Opto-Spintronic Applications
I. A. Almuhanna, Y. Wadumesthri, A. I. Ojo, H. Rodríguez Gutiérrez, D. A. Arena
University of South Florida, Tampa, Florida, United States

FR-13. Ultrafast stochastic thermal switching of dipolar skyrmion cores in Fe_3Sn_2 nanodisks with perpendicular magnetic anisotropy
C. M. Nezat, M. Charilaou
Department of Physics, University of Louisiana at Lafayette, Lafayette, Louisiana, United States

BIERSTUBE
Thursday, October 30, 2025
05:00 PM-06:30 PM
Exhibit Hall Events

FROM THE LAB TO A STARTUP
Chair(s): C. Rinaldi, *Politecnico di Milano, Milan, Italy*
Thursday, October 30, 2025
06:30 PM-08:00 PM
Grand Ballroom

SESSION GA: UNCONVENTIONAL AND NONRECIPROCAL SUPERCONDUCTIVITY
Chair(s): D. Makarov, *Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
Friday, October 31, 2025
08:30 AM-12:00 PM
Grand Ballroom

08:30 AM-09:06 AM
GA-01. Superconducting Spintronics
S. Parkin
NISE, Max Planck Institute for Microstructure Physics, Halle (Saale), Germany

09:06 AM-09:42 AM
GA-02. Superconducting diode effect in metallic multilayers
T. Ono
Kyoto University, Uji, Japan

09:42 AM-10:18 AM
GA-03. Superconductor-Ferromagnet Proximity Coupled Bilayers Leads to Majorana Bound States and Nonreciprocal Critical Current Flow
J. S. Moodera
Physics, Plasma Science and Fusion Center, MIT, Cambridge, Massachusetts, United States

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
GA-05. Magnetic Imaging of Chiral and Magnetic Superconductors
Y. Iguchi[1, 2]
[1]Geballe Laboratory for Advanced Materials, Stanford University, Stanford, California, United States, [2]Stanford Institute for Materials and Energy Sciences, SLAC National Accelerator Laboratory, Menlo Park, California, United States

11:21 AM-11:57 AM
Panel Discussion

SESSION GB: PROBING AND MANIPULATING MAGNETIC ORDER IN 2D SYSTEMS
Chair(s): S. Singh, *Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States*
Friday, October 31, 2025
08:30 AM-12:00 PM
Ballroom A

08:30 AM-09:06 AM
GB-01. Spin-orbit torque in van der Waals magnetic heterostructures: from microscopic domain imaging to ultrasensitive Sagnac Kerr interferometry
Y. Luo[1, 2, 3]
[1]Department of Physics and Astronomy, University of Southern California, Los Angeles, California, United States, [2]Mork Family Department of Chemical Engineering and Materials Science, University of Southern California, Los Angeles, California, United States, [3]Department of Chemistry, University of Southern California, Los Angeles, California, United States

09:06 AM-09:42 AM
GB-02. Quantum Sensing Using Two-dimensional Hexagonal Boron Nitride
H. Wang, J. Zhou
School of Physics, Georgia Institute of Technology, Atlanta, Georgia, United States

09:42 AM-10:18 AM
GB-03. Electrostatic and Optical Control over the Magneto-Optics and the Magnetization Dynamics of van der Waals Magnets
M. H. Guimaraes
University of Groningen, Groningen, Netherlands

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
GB-04. Magnetism and spin transport in van der Waals heterostructures with 2D magnets
B. Sanyal, S. Ershadrad, M. Davoudiniya
Uppsala University, Uppsala, Sweden

11:21 AM-11:57 AM
GB-05. Broadband Spin Dynamics and Magnon Transport in van der Waals Antiferromagnets
A. Melendez[1, 2], S. Das[2], F. Ayala Rodriguez[2], I. Kao[3], W. Liu[4], A. Williams[5], B. Lv[4], J. Goldberger[5], S. Chatterjee[3], S. Singh[3], C. Hammel[2]
[1]Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Knoxville, Tennessee, United States, [2]Department of Physics, The Ohio State University, Columbus, Ohio, United States, [3]Department of Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States, [4]Department of Physics, The University of Texas at Dallas, Dallas, Texas, United States, [5]Department of Chemistry, The Ohio State University, Columbus, Ohio, United States

SESSION GC: QUANTUM MATERIALS AND COOPERATIVE STATES

Chair(s): J. F. Sierra, *Catalan Institute of Nanoscience and Nanotechnology (ICN2), Bellaterra, Barcelona, Spain*
Friday, October 31, 2025
08:30 AM-12:00 PM
Ballroom C

08:30 AM-09:06 AM
GC-01. Diverse Electronic Landscape of Kagome Motif
M. Neupane
Department of Physics, University of Central Florida, Orlando, Florida, United States

09:06 AM-09:18 AM
GC-03. Magnetic Enhancement and Possible Gap Opening for LSMO layers in LSMO/YBCO Superlattice
Y. Tsai[1], H. Salazar[2, 1], S. Sun[3, 1], L. Chen[1], A. J. Grutter[4], D. Cortie[5], T. Huang[6], Y. Chin[7], J. Lynn[4], H. Chou[1, 3]
[1]Physics, National Sun Yat-sen University, Kaohsiung City, Taiwan, [2]International PhD Program for Science, National Sun Yat-sen University, Kaohsiung City, Taiwan, [3]Applied Physics, National University of Kaohsiung, Kaohsiung City, Taiwan, [4]Center for Neutron Research, NIST, Gaithersburg, Maryland, United States, [5]ANSTO, Lucas Heights, New South Wales, Australia, [6]NSRRC,

Hsinchu, Taiwan, [7]Physis, National Chung Chen University, Chiayi, Taiwan

09:18 AM-09:30 AM
GC-04. Molecular Beam Epitaxy Growth of $EuIn_2As_2$ Thin Films on Sapphire and YAG
M. Abdul Karim, X. Liu, B. A. Assaf
Physics, University of Notre Dame, Notre Dame, Indiana, United States

09:30 AM-10:06 AM
GC-05. Fractional Quantum Anomalous Hall Effect and Chiral Superconductivity in Graphene
L. Ju[1], Z. Lu[2]
[1]Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States, [2]Department of Physics, Florida State University, Tallahassee, Florida, United States

10:06 AM-10:18 AM
GC-06. Asymmetric Superconducting Vortex-induced Magnetoresistance in a Superconductor/Ferromagnet Heterostructure
R. Zhang[1], J. Huang[2], Y. Hao[2]
[1]School of Integrated Circuit, Huazhong University of Science and Technology, Wuhan, Hubei, China, [2]School of Microelectronics, University of Science and Technology of China, Hefei, Anhui, China

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
GC-07. Fate of entanglement in quantum spin liquid under Lindbladian or non-Markovian dynamics induced by sudden coupling to dissipative bosonic environment
F. E. García Gaitan, B. Nikolić
Department of Physics, University of Delaware, Newark, Delaware, United States

10:57 AM-11:09 AM
GC-08. Structural design and multiple magnetic orderings of the intergrowth compound $Eu_2CuMn_2P_3$
X. Chen[1], Z. Wang[1], W. Yang[2], J. Lu[3], Z. Zhou[1], Z. Ren[2], G. Cao[3], S. Dong[1], Z. Wang[1]
[1]Southeast University, Nanjing, China, [2]Westlake University, Hangzhou, China, [3]Zhejiang University, Hangzhou, China

11:09 AM-11:21 AM
GC-09. Evidence for electron fractionalization in a kagome metal
G. Aeppli[1, 2, 3], S. Ekahana[3], Y. Soh[3], Z. Wenliang[3], T. Schmitt[3]
[1]ETH, Zurich, Switzerland, [2]EPFL, Lausanne, Switzerland, [3]PSI, Villigen, Switzerland

SESSION GD: MAGNETOELECTRIC AND MULTIFERROICS III
Chair(s): S. Husain, *Material Science and Engineering, University of California, Berkeley, Berkeley, California, United States*
Friday, October 31, 2025
08:30 AM-12:00 PM
Ballroom B

08:30 AM-09:06 AM
GD-01. Magnetoelectric Coupling Reprogrammed Magnonic Logic in Multiferroic Heterostructure
P. Che[1], A. Abdelsamie[1], Á. Papp[2], S. Salama[3], A. Thiaville[4], R. Lebrun[1], S. Fusil[1], V. Garcia[1], A. Vecchiola[1], K. Bouzehouane[1], M. Bibes[1], A. Barthelemy[1], J. Adam[3], V. E. Demidov[5], P. Bortolotti[1], A. Anane[1], I. Boventer[1]
[1]Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, Île-de-France, France, [2]Faculty of Information Technology and Bionics, Pazmany Peter Catholic University, Budapest, Hungary, [3]Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, Palaiseau, Île-de-France, France, [4]Laboratoire de Physique des Solides, Université Paris-Saclay, CNRS, Orsay, Île-de-France, France, [5]Institute of Applied Physics, University of Muenster, Muenster, Germany

09:06 AM-09:42 AM
GD-02. Ferroelectric-Control of Magnetotransport in Ruddlesden-Popper Strontium Iridates
X. Hong
Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, Nebraska, United States

09:42 AM-09:54 AM
GD-03. Stress-Coupled Nonlinear Magneto-Thermo-Mechanical Behaviour of Magnetostrictive and Magnetoelectric Composites under Combined Loads
S. Somavarapu[1], P. Kondaiah[1], K. Deepak[2]

[1]Department of Aerospace and Mechanical Engineering, Mahindra University, Hyderabad, Telangana, India, [2]Department of Metallurgical Engineering, Indian Institute of Technology (BHU) Varanasi, Varanasi, Uttar Pradesh, India

09:54 AM-10:06 AM
GD-04. Giant interfacial Dzyaloshinskii-Moriya Interaction of epitaxial perovskite $La_{0.7}Sr_{0.3}MnO_3$ films
N. Lei[1], L. Yang[1], X. Zhang[2], H. Wang[1]
[1]Beihang University, Beijing, China, [2]Fudan University, Shanghai, China

10:06 AM-10:18 AM
GD-05. Swift Heavy Ion-Induced Modifications in the Magnetic and Electronic Properties of $LaMn_{0.8}Co_{0.2}O_3$ Thin Film
F. H. Bhat[1], A. Jan[1], G. Anjum[2]
[1]Department of Physics, Islamic University of Science and Technology, Kashmir, Pulwama, India, [2]Department of Physics, Govt. SAM Degree College Budgam, Budgam, India

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
GD-06. Boosting Magneto-Ionic Effects in CoFeB/MgO/HfO_2/LiPON Stacks by Ion Irradiation
Y. Sassi[1], R. Mansell[2], D. Gouéré[1], E. Monteblanco[1], S. van Dijken[2], D. Ravelosona[1]
[1]Spin-Ion Technologies, Centre de Nanosciences et Nanotechnologies, Palaiseau, France, [2]NanoSpin, Department of Applied Physics, Aalto University School of Science, FI-00076 Aalto, Finland

10:57 AM-11:09 AM
GD-07. Precession-Field-Free Voltage Controlled Magnetic Anisotropy Switching of Magnetic Tunnel Junction
D. Favaro[2, 1], D. Narducci[2], J. Chatterjee[2], M. Gama Monteiro[2], S. Rao[2], R. Carpenter[2], J. Van Houdt[2, 1], K. Temst[1, 2], W. Kim[2]
[1]Physics and Astronomy, KU Leuven, Leuven, Belgium, [2]Imec, Leuven, Belgium

11:09 AM-11:21 AM
GD-08. Large Room-Temperature Anomalous Nernst Effect in a Magnetic Equiatomic Heusler Alloy for Spin-Caloritronic Applications
R. Roy Chowdhury[1], P. Sharma[1], A. Bera[2], J. Nag[2, 3], A. Alam[2], K. G. Suresh[2], M. Phan[1], H. Srikanth[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India, [3]Pennsylvania State University, University Park, Pennsylvania, United States

SESSION GE: MAGNONICS III: MATERIALS & SPIN TEXTURE DYNAMICS
Chair(s): B. Jungfleisch, *University of Delaware, Newark, Delaware, United States*
Friday, October 31, 2025
08:30 AM-12:00 PM
Room 2DE

08:30 AM-08:42 AM
GE-01. Magnetic Properties of CoFeB Films in the Ultrathin Limit
W. K. Peria[1], J. J. Wisser[1], C. Swindells[2, 4], M. Tanksalvala[1], M. Kiechle[2], G. Hu[3], M. Pufall[1], H. T. Nembach[1]
[1]Applied Physics Division, National Institute of Standards and Technology, Boulder, Colorado, United States, [2]Associate, Physical Measurement Laboratory, National Institute of Standards and Technology, Boulder, Colorado, United States, [3]IBM T. J. Watson Research Center, Yorktown Heights, New York, United States, [4]Department of Electrical Engineering, University of Colorado Denver, Denver, Colorado, United States

08:42 AM-08:54 AM
GE-02. Emulating 2D Materials with Magnonic Crystals
B. Kaman, J. Lim, A. Hoffmann
Materials Research Laboratory and Department of Materials Science and Engineering, The Grainger College of Engineering, University of Illinois Urbana-Champaign, Urbana, Illinois, United States

08:54 AM-09:06 AM
GE-03. Magnon-Magnon Coupling in a Pinned Synthetic Antiferromagnet
D. Backes
Diamond Light Source, Didcot, United Kingdom

09:06 AM-09:18 AM

GE-04. Experimental study of magnon-magnon interaction in bilayer, tetralayer, hexlayer, octlayer, and decalayer synthetic antiferromagnets (SAFs)

M. M. Subedi[1], K. Deng[2], Y. Xiong[3, 4, 5], J. Mongeon[2], T. Hossain[6], P. Meisenheimer[7], E. T. Zhou[1], J. Heron[7], B. Jungfleisch[6], W. Zhang[3, 4], B. Flebus[3], J. Sklenar[1]
[1]Physics and Astronomy, Wayne State University, Detroit, Michigan, United States, [2]Department of Physics, Boston College, Chestnut Hill, Massachusetts, United States, [3]Department of Physics and Astronomy, University of North Carolina, Chapel Hill, North Carolina, United States, [4]Department of Physics, Oakland University, Rochester, Michigan, United States, [5]Department of Electronic and Computer Engineering, Oakland University, Rochester, Michigan, United States, [6]Department of Physics and Astronomy, University of Delaware, Newark, Delaware, United States, [7]Department of Materials Science and Engineering, University of Michigan, Ann Arbor, Michigan, United States

09:18 AM-09:30 AM

GE-05. Soliton Formation and Topological Transitions during Stripe Collapse in Fe/Gd Multilayers

J. A. Reddinger[1], E. Fullerton[2], S. Montoya[2], B. McMorran[1]
[1]Department of Physics, University of Oregon, Eugene, Oregon, United States, [2]Center for Memory and Recording Research, University of California San Diego, San Diego, California, United States

09:30 AM-09:42 AM

GE-06. Skyrmion Dynamics Probed with Neutron and X-ray Scattering and in situ Excitations

N. Tang[1], N. Liyanage[1], C. C. Buchanan[1], S. A. Morley[2], S. Roy[2], E. Fullerton[3], S. Montoya[3], L. DeBeer-Schmitt[4], D. A. Gilbert[1]
[1]University of Tennessee, Knoxville, Tennessee, United States, [2]Lawrence Berkeley National Laboratory, Berkeley, California, United States, [3]University of California, San Diego, San Diego, California, United States, [4]Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

09:42 AM-09:54 AM

GE-08. Coherent phonon excitation by phonon-magnon coupling in stripe domains

N. Arora[1], D. Prestwood[1, 2, 3], T. Kikkawa[4], E. Saitoh[4, 5, 6], W. R. Branford[3, 7], J. Gartside[3, 7], H. Kurebayashi[1, 2, 8]
[1]London Centre for Nanotechnology, University College London, London, United Kingdom, [2]Department of

Electronic and Electrical Engineering, University College London, London, United Kingdom, [3]Blackett Laboratory, Imperial College London, London, United Kingdom, [4]Advanced Science Research Center, Japan Atomic Energy Agency, London, United Kingdom, [5]Institute for AI and Beyond, The University of Tokyo, Tokyo, Japan, [6]Department of Physics and Astronomy & Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, Nebraska, United States, [7]London Centre for Nanotechnology, Imperial College London, London, United Kingdom, [8]WPI-Advanced Institute for Material Research, Tohoku University, Sendai, Japan

09:54 AM-10:06 AM

GE-09. Spin-torque skyrmion resonance in a frustrated Fe_3Sn_2 kagome magnet

N. Bernstein[1], B. J. Assouline[1], H. Li[2], Y. Lau[2], I. Rozhansky[3], A. Capua[1]

[1]Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel, [2]Physics, Beijing National Laboratory for Condensed Matter Physics, Beijing, China, [3]National Graphene Institute, University of Manchester, Manchester, United Kingdom

10:06 AM-10:45 AM
Break

10:45 AM-10:57 AM

GE-10. All-optical stochastic switching of magnetization textures in Fe_3Sn_2

A. Kovács[1], J. T. Weber[2], M. Charilaou[3], D. Kong[1], N. Kiselev[4], I. Kezsmarki[5], R. E. Dunin-Borkowski[1], A. Tavabi[1], S. Schäfer[2]

[1]Ernst Ruska Centre, Forschungszentrum Juelich, Juelich, Germany, [2]Department of Physics, University of Regensburg, Regensburg, Germany, [3]Department of Physics, University of Louisiana at Lafayette, Lafayette, Louisiana, United States, [4]Peter Gruenberg Institute, Forschungszentrum Juelich, Juelich, Germany, [5]Experimental Physics V, University of Augsburg, Augsburg, Germany

10:57 AM-11:33 AM

GE-11. Non-Abelian Gauge Theory for Magnons in Topologically Textured Frustrated Magnets

R. Zarzuela[1], S. Kim[2]

[1]Institut für Physik, Johannes Gutenberg Universität Mainz, Mainz, Germany, [2]Department of Physics, Korean Advanced Institute of Science and Technology, Daejeon, Korea (the Republic of)

SESSION GF: ALTER- / ANTI-FERROMAGNETISM IN RuO_2 AND OTHER MATERIALS

Chair(s): O. Amin, *University of Nottingham, Nottingham, United Kingdom*

Friday, October 31, 2025
08:30 AM-12:00 PM
Room 2BC

08:30 AM-09:06 AM
GF-01. Revisiting Spin Transport in RuO_2: Distinguishing Anisotropic Spin Hall from Altermagnetic Spin Splitting Effects

D. Qu[1], Y. Wang[2], C. Liao[2], Z. Shen[2], C. Lin[2], W. Hsu[2], Y. Chen[1], Y. Tien[2], Y. Chin[3], A. Singh[4], W. Lee[4], S. Huang[2]
[1]Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan, [2]Department of Physics, National Taiwan University, Taipei, Taiwan, [3]Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan, [4]Institute of Physics, Academia Sinica, Taipei, Taiwan

09:06 AM-09:18 AM
GF-02. Negative and Large Spin Hall Angle in RuO_2

Y. Wang[1, 2], Z. Shen[1], C. Lin[1], W. Hsu[1], Y. Chen[2], Y. Chin[3], A. Singh[4], W. Lee[4], S. Huang[1, 5], D. Qu[2, 5]
[1]Department of Physics, National Taiwan University, Taipei, Taiwan, [2]Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan, [3]Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan, [4]Institute of Physics, Academia Sinica, Taipei, Taiwan, [5]Center of Atomic Initiatives for New Materials, National Taiwan University, Taipei, Taiwan

09:18 AM-09:30 AM
GF-03. Enhanced Transport of Altermagnet Grain Boundaries Between Crystallographic Domains of Opposite Handedness

S. Tkacik, G. M. Pantano, E. Thareja, J. D. Gayles
University of South Florida, Tampa, Florida, United States

09:30 AM-09:42 AM
GF-04. Spin-to-charge current conversion in altermagnet candidate RuO_2 probed by terahertz emission spectroscopy

J. Jechumtal[1], O. Gueckstock[2], K. Jasenský[1], Z. Kašpar[1, 3], K. Olejník[3], M. Gaerner[4], G. Reiss[4], S. Moser[5], P. Kessler[5], G. De Luca[6], S. Ganguly[7], J. Santiso[7], D. Scheffler[3], J. Zázvorka[1], P. Kubascik[1], H. Reichlova[3], E.

Schmoranzerova[1], P. Nemec[1], T. Jungwirth[3], P. Kuzel[3], T. Kampfrath[2], L. Nadvornik[1]
[1]Faculty of Mathematics and Physics, Charles University, Prague, Czechia, [2]Department of Physics, Freie Universität Berlin, Berlin, Germany, [3]Institute of Physics, Czech Academy of Science, Prague, Czechia, [4]Faculty of Physics, Bielefeld University, Bielefeld, Germany, [5]Physikalisches Institut and Würzburg-Dresden Cluster of Excellence ct.qmat, Universität Würzburg, Würzburg, Germany, [6]Materials Science Institute of Barcelona (ICMAB-CSIC), Barcelona, Spain, [7]Catalan Institute of Nanoscience and Nanotechnology, Barcelona, Spain

09:42 AM-09:54 AM
GF-05. Indications of Terahertz Spin Transport in the Altermagnet Candidate RuO_2
O. Gueckstock[1], J. Jechumtal[2], M. Gaerner[3], C. Simons[1], Z. Kaspar[2, 4], T. Seifert[1], T. Kuschel[3, 5], G. Reiss[3], L. Nadvornik[2], T. Kampfrath[1]
[1]Department of Physics, Freie Universität Berlin, Berlin, Germany, [2]Faculty of Mathematics and Physics, Charles University, Prague, Czechia, [3]Faculty of Physics, Bielefeld University, Bielefeld, Germany, [4]Institute of Physics, Czech Academy of Sciences, Prague, Czechia, [5]Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany

09:54 AM-10:06 AM
GF-06. Surface roughness effect on dynamic magnetic properties of RuO_2/CoFeB stack
T. Nguyen[1, 2], H. Naganuma[3, 4], Y. Saito[2], S. Maruyama[5], T. Nguyen[6], D. Vu[6], S. Ikeda[2, 1], T. Endoh[2, 1, 5]
[1]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Miyagi, Japan, [2]Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Miyagi, Japan, [3]Institute for Advanced Study, Nagoya University, Nagoya, Aichi, Japan, [4]Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Aichi, Japan, [5]Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, [6]Institute of Physics, Vietnam Academy of Science and Technology, Hanoi, Hanoi, Viet Nam

10:06 AM-10:18 AM
GF-07. Giant Tunneling Magnetoresistance in Antiferromagnetic Tunnel Junctions with Non-collinear Mn_3NiN Electrodes
M. A. Elekhtiar[1], G. Gurung[2], D. Shao[3], E. Y. Tsymbal[1]
[1]Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, Nebraska, United States, [2]Trinity College,

University of Oxford, Oxford, United Kingdom, [3]Institute of Solid-State Physics, Chinese Academy of Sciences, Hefei, China

10:18 AM-10:45 AM
Break

10:45 AM-11:21 AM
GF-08. Spintronics in "dirty" antiferromagnetic materials
B. L. Zink
Physics & Astronomy, University of Denver, Denver, Colorado, United States

11:21 AM-11:33 AM
GF-09. Temperature dependence of current-induced switching in epitaxial Mn_3Sn thin films
K. Nihei[1, 2], T. Uchimura[1, 2], J. Han[1, 3], S. Kanai[1, 3], H. Ohno[1, 4], S. Fukami[1, 4]
[1]RIEC, Tohoku Univ., Sendai, Miyagi, Japan, [2]Grad School of Eng., Tohoku Univ., Sendai, Miyagi, Japan, [3]AIMR, Tohoku Univ., Sendai, Miyagi, Japan, [4]CSIS, Tohoku Univ., Sendai, Miyagi, Japan

11:33 AM-11:45 AM
GF-10. Distinct pulse-width dependence of two threshold currents driving a noncollinear antiferromagnetic nanodot via spin-orbit torque
Y. Sato[1, 2], Y. Takeuchi[3, 4], Y. Yamane[1, 5], S. Kanai[1, 4], H. Ohno[6, 7], S. Fukami[1, 6]
[1]Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku Univ., Sendai, Japan, [2]Graduate School of Engineering, Tohoku Univ., Sendai, Japan, [3]CMSM, NIMS, Tsukuba, Japan, [4]WPI-AIMR, Tohoku Univ., Sendai, Japan, [5]FRIS, Tohoku Univ., Sendai, Japan, [6]CSIS, Tohoku Univ., Sendai, Japan, [7]CIES, Tohoku Univ., Sendai, Japan

11:45 AM-11:57 AM
GF-11. Structural and Magnetic properties of pristine and gamma irradiated $(Mo_{2/3}Dy_{1/3})_2AlC$ polycrystalline samples
B. K. Rai[3], A. Bretana[3], B. Bastakoti[1], B. Gautam[2]
[1]Chemistry, North Carolina Agricultural and Technical State University, Greensboro, North Carolina, United States, [2]Chemistry, Fayetteville State University, Fayetteville, North Carolina, United States, [3]Savannah River National Laboratory, Aiken, South Carolina, United States

SESSION GG: MAGNETORESISTANCE IN HETEROSTRUCTURES (GMR, TMR, TAMR)

Co-Chair(s): H. Li, *Analog Devices, Hillsboro, Oregon, United States* and G. Yu, *Institute of Physics, Chinese Academy of Sciences, Beijing, China*

Friday, October 31, 2025
08:30 AM-12:00 PM
Room 2A

08:30 AM-08:42 AM

GG-01. Enhancing and Decoupling Magnetic Anisotropy and Tunnel Magnetoresistance in $CoFe_2O_4$/MgO Bilayers via Swift Heavy Ion Irradiation

R. Charak[1, 2], S. Gautam[2, 3], S. Garg[2], Y. Kim[4], K. Chae[5]
[1]Energy Research Centre, Panjab University, Chandigarh, India, [2]Dr. SSB Univ Inst of Chemical Engineering & Technology, Panjab University, Chandigarh, India, [3]Advanced Functional Materials Lab Pvt. Ltd., Panjab University, Chandigarh, India, [4]Pohang Accelerator Lab, Pohang University of Science and Technology, Pohang, Korea (the Republic of), [5]Advanced Analysis & Data Center, Korea Institute of Science & Technology, Seoul, Korea (the Republic of)

08:42 AM-08:54 AM

GG-02. Revisiting the Role of Symmetry for High Performance Magnetic Tunnel Junctions

S. Chakraborti[1], A. Sharma[2]
[1]Electrical Engineering, Indian Institute Of Technology Ropar, Rupnagar, Punjab, India, [2]School of Computing and Electrical Engineering, Indian Institute of Technology, Mandi, Mandi, Himachal Pradesh, India

08:54 AM-09:06 AM

GG-03. Magnetic Tunnel Junctions utilizing metastable cubic GaN tunnel barrier

H. Kwon[1, 2], K. Suzuki[1, 2], D. Kumar[2], M. Tsujikawa[3], T. Roy[4, 3], S. Miki[2], M. Shirai[3, 4], S. Mizukami[2, 4]
[1]School of engineering, Tohoku University, Sendai, Japan, [2]WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan, [3]Research Institute of Electrical Communication, Tohoku University, Sendai, Japan, [4]Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan

09:06 AM-09:18 AM

GG-05. Magnetically Modulated Electrical Switching in an Antiferromagnetic Transistor

C. Chou[1], E. Park[1], J. Ingla-Aynes[1], J. Klein[1], K. Mosina[2], J. S. Moodera[1], Z. Sofer[2], F. Ross[1], L. Liu[1]

[1]*MIT, Cambridge, Massachusetts, United States,* [2]*University of Chemistry and Technology Prague, Prague, Czechia*

09:18 AM-09:30 AM
GG-06. Metastable Spin Canting Lifetimes in Magnetic Tunnel Junction Artificial Spin Ice
C. Sullivan[1], H. Chen[2], S. Majetich[2]
[1]*Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States,* [2]*Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States*

09:30 AM-09:42 AM
GG-07. Impact of Synthetic Ferrimagnetic Free Layers on Current-in-Plane Giant Magnetoresistance
S. Abdizadeh Kalan[1], V. Amin[2], S. Emori[1]
[1]*Physics, Virginia Tech, Blacksburg, Virginia, United States,* [2]*Physics, School of Science, Indiana University–Purdue University Indianapolis (IUPUI), Indianapolis, Indiana, United States*

09:42 AM-09:54 AM
GG-08. Co-Sputtered Diluted Magnetic Layers for Thermal Compensation in Vortex Magnetic Tunnel Junction Sensors
T. Fernandes[1], P. Araujo[1], R. Macedo[1], P. Freitas[1, 2], S. Cardoso[1, 2]
[1]*INESC Microssistemas e Nanotecnologias, Lisboa, Portugal,* [2]*Instituto Superior Técnico, Lisboa, Portugal*

09:54 AM-10:06 AM
GG-10. Anomalous Spin Canting and Monopole-Like Excitations in Artificial Spin Ice
S. Majetich[1], C. Sullivan[2]
[1]*Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States,* [2]*Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, United States*

10:06 AM-10:18 AM
GG-11. Predicting Novel Tunnel Barrier Materials for Magnetic Tunnel Junctions using Language Models and First-Principles Screening
S. Islam[1], W. Rogers[1], C. Hu[2], M. Song[2], X. Bao[2], S. Sayed[3], J. Incorvia[1]
[1]*Chandra Family Department of Electrical and Computer Engineering, University of Texas at Austin, Austin, Texas, United States,* [2]*Taiwan Semiconductor Manufacturing*

Company, Taipei, Taiwan, [3]Headway Technologies Inc., Milpitas, California, United States

10:18 AM-10:45 AM
Break

10:45 AM-10:57 AM
GG-12. Phase-resolved Ultrabroadband Terahertz Spectroscopy of Giant Magnetoresistance
Z. Kaspar[1, 2], O. Gueckstock[3], B. D. Mohapatra[4], G. Schmidt[4], P. Kubascik[2], J. Jechumtal[2], P. Kuzel[1], L. Nadvornik[2], T. Kampfrath[3]
[1]FZU - Institute of Physics of the Czech Academy of Sciences, Prague, Czechia, [2]Charles University, Prague, Czechia, [3]Freie Universität Berlin, Berlin, Germany, [4]Martin-Luther-Universität Halle-Wittenberg, Halle, Germany

10:57 AM-11:09 AM
GG-13. Terahertz spectroscopy of spin-Hall magnetoresistance: case study of YIG|Pt and CoFeB|Pt
P. Kubascik[1], R. Schlitz[2], O. Gueckstock[3, 4], O. L. Franke[3], D. Reiss[3], M. Borchert[5], M. Busina[1], G. Jakob[6], K. Olejník[7], A. Farkas[1, 7], Z. Kaspar[1, 7], J. Jechumtal[1], E. Schmoranzerova[1], P. Nemec[1], M. Wolf[4], Y. Wu[8, 9], G. Woltersdorf[10], M. Kläui[6], P. Brouwer[3], S. Goennenwein[2], T. Kampfrath[3, 4], L. Nadvornik[1]
[1]Department of chemical physics and optics, Charles University, Prague, Czechia, [2]Department of Physics, University of Konstanz, Konstanz, Germany, [3]Department of Physics, Freie Universität Berlin, Berlin, Germany, [4]Department of Physical Chemistry, Fritz Haber Institute of the Max Planck Society, Berlin, Germany, [5]Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany, [6]Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany, [7]Insitute of Physics, Czech Academy of Sciences, Prague, Czechia, [8]Department of Physics, State Key Laboratory of Surface Physics, Fudan University, Shanghai, China, [9]Shanghai Research Center for Quantum Sciences, Shanghai, China, [10]Institut für Physik, Martin-Luther-Universität, Halle, Germany

SESSION GP: ANTIFERROMAGNETS AND 2D MATERIALS (POSTER SESSION)

Chair(s): Z. Yuan, *Interdisciplinary Center for Theoretical Physics and Information Sciences, Fudan University, Shanghai, China*

Friday, October 31, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

GP-01-LB. Highly Tunable Electronic States near Chirality-reversed Planar Defect with Magnetic Interstitial Atomic Layer in Magnetic Weyl Semimetals

E. Thareja[1], G. M. Pantano[1], I. Vekhter[2], J. D. Gayles[1]
[1]Physics, University of South Florida, Tampa, Florida, United States, [2]Physics, Louisiana State University, Baton Rouge, Louisiana, United States

GP-02-LB. Topological Magnetic Insulators for Dissipationless Monostructural Adiabatic Spintronics

J. Hanson-Flores[1], A. Regmi[1], J. Tang[2], J. Keum[4], J. Park[4], R. Cheng[3], E. del Barco[1]
[1]Physics, University of Central Florida, Orlando, Florida, United States, [2]Physics, University of California, Riverside, Riverside, California, United States, [3]Electrical Engineering, University of California, Riverside, Riverside, California, United States, [4]Physics and Astronomy, Seoul National University, Seoul, Korea (the Republic of)

GP-03-LB. Probing Magnetic Properties of RuO_2 Heterostructures Through Polarized Neutron Reflectometry

F. M. Abel[1], S. Bhatt[2], J. Q. Xiao[2], V. Lauter[3], M. E. Jamer[1]
[1]United States Naval Academy, Annapolis, Maryland, United States, [2]Department of Physics and Astronomy, University of Delaware, Newark, Delaware, United States, [3]Neutron Scattering Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States

GP-04-LB. Octupole-driven spin-transfer torque switching in all-antiferromagnetic tunnel junctions

J. Kang[1], M. Hamdi[1], S. Cheung[1], L. Yuan[1], M. A. Elekhtiar[2], W. Rogers[1], A. Meo[3], P. G. Lim[1], M. N. Tey[1], A. D'Addario[4], S. Konakanchi[5], E. Matt[1], J. G. Athas[1], S. Arpaci[1], L. Wan[6], S. Mehta[6], P. Upadhyaya[5], M. Carpentieri[3], V. P. Dravid[1], M. C. Hersam[1], J. Katine[6], G. Fuchs[4], G. Finocchio[7], E. Y. Tsymbal[2], J. M. Rondinelli[1], P. Khalili Amiri[1]
[1]Northwestern University, Evanston, Illinois, United States, [2]University of Nebraska, Lincoln, Nebraska, United

States, [3]Politecnico di Bari, Bari, Italy, [4]Cornell University, Ithaca, New York, United States, [5]Purdue University, West Lafayette, Indiana, United States, [6]Western Digital Corporation, San Jose, California, United States, [7]University of Messina, Messina, Italy

GP-06-LB. Altermagnetism and Strain Induced Altermagnetic Transition in Cairo Pentagonal Monolayer

S. Li, Y. Zhang, A. Bahri, X. Zhang, C. Jia
Physics, University of Florida, Gainesville, Florida, United States

GP-08-LB. Sub-Terahertz Spin Pumping in Easy Plane Canted Antiferromagnet α-Fe_2O_3

A. Regmi[1], G. Fritjofson[1], J. Hanson-Flores[1], J. Michel[2], J. Tang[3], F. Yang[2], R. Cheng[3], E. del Barco[1]
[1]Physics, University of Central Florida, Orlando, Florida, United States, [2]Department of Physics, The Ohio State University, Columbus, Ohio, United States, [3]Department of Physics and Astronomy, University of California, Riverside, California, United States

GP-09-LB. Magnetoresistance in RuO_2(001)/Co Bilayers

S. Yoon[1], S. Ko[2], D. Woo[1], H. Jeon[1], H. Cho[1], W. Kim[1], G. Jung[1], K. Kim[2], J. Jeong[3], B. Park[4], S. Lee[1]
[1]Semiconductor Engineering, Gachon university, Seong, Korea (the Republic of), [2]Physics, KAIST, Dae jeon, Korea (the Republic of), [3]Materials Science and Engineering, Chungnam National university, Daejoen, Korea (the Republic of), [4]Materials Science and Engineering, KAIST, Daejoen, Korea (the Republic of)

GP-10-LB. Angle-Resolved Sub-THz Resonant Absorptions in α-Fe_2O_3

S. Zhou[1], Y. Xiong[1], J. Wu[1], E. Kwao[2], B. Yang[2], W. Zhang[1]
[1]Physics and Astronomy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States, [2]Electrical and Computer Engineering, North Carolina Agricultural and Technical State University, Greensboro, North Carolina, United States

SESSION GQ: MULTI-FUNCTIONAL MAGNETIC MATERIALS AND OTHER EMERGING TOPICS (POSTER SESSION)

Co-Chair(s): H. Arava, *Argonne National Laboratory, Lemont, Illinois, United States* and Y. Wu, *Electrical and Computer Engineering, University of Florida, Gainesville, Florida, United States*

Friday, October 31, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

GQ-01. Investigation of Magnetic Field-Induced Phase Transition $Ni_{50}Mn_{28}Ga_{22}$, Ferromagnetic Shape Memory Alloy

P. Chaitanya[1], S. Smith[3], M. Staruch[4], R. L. Hadimani[1, 2]
[1]Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [3]Department of Chemical and Life Sciences Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [4]Materials Science and Technology Division, US Naval Research Laboratory, Washington DC, District of Columbia, United States

GQ-02. Influence of Cu Partial Substitution on Saturation Magnetostriction Constant of Polycrystalline $CoFe_2O_4$

S. Kosugi[1], M. Hisamatsu[1], S. Fujieda[2], Y. Ohishi[1], H. Muta[1], S. Seino[1], T. Nakagawa[1]
[1]Graduate School of Engineering, Osaka University, Suita, Osaka, Japan, [2]IAMR&D, Shimane University, Matsue, Shimane, Japan

GQ-03. Enhanced Superparamagnetism and Emergent Phenomena at C_{60}/PdCo Interface

V. H. Bui[1], Y. T. Pham[1], T. A. Ngo[2], N. Schulz[1], D. Le[1], T. D. Nguyen[2], M. Phan[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics, University of Georgia, Athens, Georgia, United States

GQ-04. Binary Magnon-Polaron Formation in a two-dimensional Artificial Magneto-Elastic Crystal

S. Majumder[1], J. L. Drobitch[2], S. Bandyopadhyay[2], A. Barman[1]
[1]Department of Condensed Matter and Materials Physics, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India, [2]Department of Electrical and

Computer Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

GQ-05. Optimizing Magnetostrictive Films for Surface Acoustic Wave Devices
Z. Zhang, J. Lim, H. Ni, J. Zuo, A. Hoffmann
Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, Illinois, United States

GQ-06. CeF_3 Magneto-Optical Crystal for Ultraviolet to Mid-Infrared Broadband Applications
Z. Zhang, Z. Zhang, A. Wu, L. Su
Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

GQ-07. Silicon Nitride Integrated Magneto-Optical Isolator based on Mach–Zehnder Interferometer
B. Moghal[1], B. Stadler[2]
[1]Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States, [2]Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, United States

GQ-08. Transport of Paramagnetic Ions in Porous Materials
P. Andrei[1, 2], P. Wang[1]
[1]Department of Electrical and Computer Engineering, Florida State University, Tallahassee, Florida, United States, [2]Center for Rare Earths, Critical Minerals, and Industrial Byproducts, National High Magnetic Field Laboratory, Tallahassee, Florida, United States

GQ-09. Processing of Functional Magnetic Composite Filaments for Additive Manufacturing of Broadband Electromagnetic Absorbers
K. Bhandari, M. Patel, R. Barua
Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States

GQ-10-LB. Dynamic Phase Transitions in Mean-Field Ginzburg–Landau Models: Conjugate Fields and Fourier-Mode Scaling
L. Satynska, D. T. Robb
Physics, Roanoke College, Salem, Virginia, United States

SESSION GR: FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA (POSTER SESSION)
Co-Chair(s): D. Chakraborty, *Physics & Astronomy, University of Nebraska, Kearney, Nebraska, United States*
Friday, October 31, 2025
09:00 AM-12:00 PM
Exhibit Hall Posters

GR-01. Coexistence of superconductivity and antiferromagnetism in $GdNi_{0.7}Bi_2$
J. Moon[1], M. Jung[1], Y. Choi[1], T. Park[2], S. Yousuf[2]
[1]Department of Physics, Sogang University, Seoul, Korea (the Republic of), [2]Department of Physics, Sungkyunkwan University, Suwon, Korea (the Republic of)

GR-02. Competing Magnetic Interactions and Functional Implications in Disordered $Co_2TiSi_{0.5}Al_{0.5}$ Heusler Alloy
P. Yadav, B. K. Mani, R. S. Dhaka
Physics, Indian Institute of Technology Delhi, New Delhi, Delhi, India

GR-03-LB. Permanent Magnet Repulsive Force Based Floor structure to mitigate Floor Impact Noise
J. Kim[1], S. Byun[1], S. Noh[2], W. Lee[3], J. Han[3], S. Lee[3], H. Cho[1]
[1]Electric., Electron. & Comm. Engineering Education, Chungnam National University, Daejeon, Korea (the Republic of), [2]Korea Research Institute of Ships & Ocean Engineering, Daejeon, Korea (the Republic of), [3]Floor Impact Noise Laboratory, Samsung C&T, Seoul, Korea (the Republic of)

GR-04. Magnetic Field-Modulated Critical Phenomena in van der Waals Ferromagnets
N. T. Duc[1], N. Mudiyanselage[1], D. Le[1], H. Srikanth[1], L. Balicas[2], M. Phan[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]National High Magnetic Field Laboratory, Florida State University, Tampa, Florida, United States

GR-05. Magnetic ground states in Sc-Fe-Ge kagome systems
Z. Zhang[1], K. Belashchenko[2], V. Antropov[1]
[1]Iowa State University, Ames, Iowa, United States, [2]University of Nebraska-Lincoln, Lincoln, Nebraska, United States

GR-06. Magnetic properties of the quaternary Heusler alloy CoFeTiSn

I. Shigeta[1], K. Kuma[1], H. Aoshima[1], T. Yamauchi[2], R. Umetsu[3], T. Kanomata[4], M. Hiroi[1]
[1]Kagoshima University, Kagoshima, Japan, [2]The University of Tokyo, Kashiwa, Japan, [3]Tohoku University, Sendai, Japan, [4]Tohoku Gakuin University, Tagajo, Japan

GR-07. Unconventional magnetic glassiness in noncentrosymmetric Sm_7Pd_3

A. Kumar, A. Biswas, Y. Mudryk
Ames National Laboratory, U.S. Department of Energy, Iowa State University, Ames, Iowa, United States

GR-08. Effect of Second-Neighbor Hopping on Weyl points in the Antiferromagnetic Phase of Rashba-Hubbard Model

A. Jain, D. K. Singh
Department of Physics and Material Science, Thapar Institute of Engineering and Technology, Patiala, Punjab, India

GR-09. Observation of an Odd-Symmetric Planar Hall Effect in α″-$Fe_{16}N_2$ Thin Films

O. Jia, E. Gokce-Polat, A. DeRuiter, Y. Chen, W. Echtenkamp, B. Wolf, J. Wang
University of Minnesota, Minneapolis, Minnesota, United States

GR-10. Emergent Low-Temperature Magnetic Properties of [2.2.2] Cryptand (DHS)-$MnBr_4$ Compound

D. Le[1], K. Nassar[2], M. Elolimy[2], G. M. Pantano[1], I. Spanopoulos[2], J. D. Gayles[1], M. Phan[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Chemistry, University of South Florida, Tampa, Florida, United States

GR-11. A Comparative Study of Static and Dynamic Magnetic Responses in Equiatomic Heusler Alloys CoRuXGe (X = Co, Mn)

P. Sharma[1], R. Roy Chowdhury[1], J. Nag[2], A. Alam[2], K. G. Suresh[2], S. Witanachchi[1], M. Phan[1], H. Srikanth[1]
[1]Department of Physics, University of South Florida, Tampa, Florida, United States, [2]Department of Physics, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India

GR-12. Frequency-Dependent Nonlinear Hall Response in Focused-Ion-Beam-Deposited Platinum Cross-Bar Devices

J. Wu[1], S. Zhou[1], R. Sun[2], S. Lei[3], D. Sun[2], W. Zhang[1]
[1]Physics and Astronomy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States, [2]Department of Physics, North Carolina State University, Raleigh, North Carolina, United States, [3]Materials Science and Engineering, University of Central Florida, Orlando, Florida, United States

GR-13-LB. Sub 10 mK Refrigeration and Enhanced Magnetocaloric Effects

A. M. Donald[1], A. G. Duque[1], S. Li[1], C. J. Ollmann[1], R. Schanen[2], C. Huan[1], R. P. Haley[2], M. W. Meisel[1], C. Jia[1], R. Gazizulin[1]
[1]Physics, University of Florida, Gainesville, Florida, United States, [2]Physics, Lancaster University, Lancaster, United Kingdom

GR-14-LB. Multiferroic heterostructured devices for energy efficient electronics and biomedical applications

J. Hong
Hubei University of Technology, Wuhan, Hubei, China

SESSION VP1: COMPUTATIONAL METHODS

Chair(s): R. Hertel, *Insitut de Physique et Chimie des Matériaux de Strasbourg, Centre National de la Recherche Scientifique, Strasbourg, France*
Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP1-01. Impact of Surface Termination on Magnetic Anisotropy and Gilbert Damping in $L1_0$-MnAl Thin Films

R. R. Sheikh, R. K. Ghosh
Electronics and Communication Engineering, Indraprastha Institute of Information Technology Delhi, New Delhi, India

VP1-02. Prediction of Hysteresis Behavior in Soft Magnetic Materials Based on Neural Networks and Preisach Model

Y. Qin[1], Z. Li[1], R. Pei[1, 2], Y. Li[1], J. Li[1], L. Zeng[2]
[1]Department of Electric Engineering, Shenyang University of Technology, Shenyang, China, [2]Suzhou Inn-Mag New Energy Ltd, Suzhou, China

VP1-03. Application of DeepONet Based on Multi-branch Residual Structure and Physical Priors in Magnetic Field Prediction
L. Chen, Z. Yang, T. Ben, W. Ke
China Three Gorges University, Yichang, China

VP1-04. Optimizing Recoil Damping in Artillery Systems Using Magnetorheological Fluid
K. Feng, Y. Li
National Defense University, Chung-Cheng Institute of Technology, Taoyuan, Taiwan

VP1-05. Manipulation of the spiking activity of Hodgkin-Huxley-analogue spintronic neuron based on magneto-impedance thin-film structure
G. D. Demin, N. A. Djuzhev
R&D Center "MEMSEC", National Research University of Electronic Technology (MIET), Moscow, Zelenograd, Russian Federation

VP1-06. Integrating Domain Knowledge with Machine Learning for Property Prediction from Chemical Composition
M. Shabir, A. Bashir, F. H. Bhat
Department of Physics, Islamic University of Science and technology, Kashmir, Awantipora, Jammu and Kashmir 192122, India

SESSION VP2: FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA
Chair(s): Y. Wu, *Electrical and Computer Engineering, University of Florida, Gainesville, Florida, United States*
Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP2-02. Spin Nematic Phase of the Ferromagnetic Dimer System on the Shastry-Sutherland Lattice
T. Sakai[1, 2]
[1]School of Science, University of Hyogo, Kamigori, Hyogo, Japan, [2]Institutes for Quantum Science and Technology, SPring-8, Sayo, Hyogo, Japan

VP2-03. Magnetization Plateau of the S=1 Spin Ladder with Anisotropies
Y. Hamazaki, R. Hasegawa, T. Kawatsu, H. Suzuki, T. Houda, H. Nakano, T. Sakai, K. Okamoto
School of Science, University of Hyogo, Kamigouri, Hyogo, Japan

VP2-04. Field-Induced Spin Nematic Liquid of the S=1/2 Kondo Necklace Spin Chain
R. Hasegawa, Y. Hamazaki, T. Kawatsu, H. Suzuki, T. Houda, H. Nakano, K. Okamoto, T. Sakai
school of science, University of Hyogo, Kamigori, Hyogo, Japan

VP2-05. Application of Screened Range-Separated Hybrid Functional to Antiferromagnetic 3*d*-oxides
A. B. Shick[1, 2], L. Kronik[2]
[1]Department of Condensed Matter Theory, Institute of Physics, Czech Academy of Sciences, Prague, Czechia, [2]Department of Molecular Chemistry and Materials Science, Weizmann Institute of Science, Rehovoth, Israel

VP2-06. Magnetism of rare earth intermetallic compound Pr_3Te_4: a neutron diffraction study
R. Nirmala[1], G. Jangam[2], T. A[2], A. Morozkin[3]
[1]Physics, Indian Institute of Technology Madras, Chennai, India, [2]Tata Institute of Fundamental Research, Mumbai, India, [3]Moscow Lomonosov State University, Moscow, Russian Federation

VP2-07. Low symmetry inter-orbital pairing states in Sr_2RuO_4 from DFT+DMFT
C. Moon
Korea Research Institute of Standards and Science, Daejeon, Korea (the Republic of)

VP2-08. Synthesis of niobium-doped sodium cobalt tellurate $Na_2Co_2Te_{1-x}Nb_xO_6$ towards zero-magnetic field stable quantum spin liquids
S. C. Mills[1], N. Hill[2], E. Patterson[1], M. Staruch[1]
[1]Materials Science and Technology, US Naval Research Laboratory, Washington, District of Columbia, United States, [2]Department of Chemistry, Howard University, Washington, District of Columbia, United States

SESSION VP3: HARD MAGNETS AND FUNCTIONAL MAGNETIC MATERIALS

Chair(s): T. Gottschall, *Dresden High Magnetic Field Laboratory, Dresden, Germany*

Wednesday, November 19, 2025

08:30 AM-08:30 PM

Conference Resource Center

VP3-01. Effect of Solution Temperature on the Microstructures and Magnetic Properties of Fe-Rich Sm-Co-Fe-Cu-Zr Permanent Magnets

J. Yang[1], D. Zhang[2], H. Li[1], H. Sun[1], Z. Wang[1]

[1]Anyang Institute of Technology, Anyang, Henan, China, [2]Beijing University of Technology, Beijing, China

VP3-02. Hard magnetic properties of Sm-Fe-Ga-C melt-spun ribbons with $SmFe_5$ phase

T. Saito[1], D. Nishio-Hamane[2]

[1]Chiba Institute of Technology, Narashino, Japan, [2]University of Tokyo, Kashiwa, Japan

VP3-03. (Nd,Ce)-Fe-B core-shell magnet simulation using mumax3 software

C. Li, J. Zuo, Y. Li, M. Zhang

School of Science, Inner Mongolia University of Science and Technology, Baotou, China

VP3-05. Influence of ytterbium-doping on the structural, magnetic and dielectric properties of gallium ferrite nanoparticles

T. Han, C. Lai, Y. Chen

Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan

VP3-06. Influence of device structure on magnetoelectric coupling in laminate composites of textured Fe-Ga thin sheet and PZT

J. Liu[1, 2], Z. He[1, 2], S. Hu[1, 2], Y. Sha[3], L. Chen[1, 2], L. Zuo[3]

[1]School of Materials Science and Engineering, Shenyang University of Technology, Shenyang, China, [2]Shenyang Key Laboratory of Advanced Structural Materials and Applications, Shenyang University of Technology, Shenyang, China, [3]Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), Northeastern University, Shenyang, China

VP3-08. Structural, magnetic and electrical transport properties of YMnAl
P. Kharel, M. Anas
Chemistry, Biochemistry and Physics, South Dakota State University, Brookings, South Dakota, United States

SESSION VP4: MAGNETIC SENSORS, HIGH FREQUENCY DEVICES, AND POWER ELECTRONICS II
Co-Chair(s): S. Ajia, *Department of Electrical Engineering, Tohoku University, Sendai, Miyagi, Japan* and K. Srinivasan, *Electrical and Computer Engineering, Boise State University, Boise, Idaho, United States*
Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP4-01. Measurement of added mass of a spherical model in water using Magnetic Suspension and Balance System
N. Riho, H. Fujiwara
Mechanical engineering, National Defense Academy, Yokosuka, Kanagawa, Japan

VP4-02. Flyback Converter Design for Satellite Data Server Auxiliary Power Systems
Z. Lin, K. Zheng, T. Zhang, Y. Zhuang, Y. Zhang
College of Electrical Engineering and Automation, Fuzhou University, Fuzhou, Fujian, China

VP4-03. Analysis and Design of a Dual-Output Wireless Power Transfer System
J. Wang[1], D. Ahn[2], C. Liu[1], H. Xie[1], X. Mao[1], Y. Zhang[1]
[1]College of Electrical Engineering and Automation, Fuzhou University, Fuzhou, China, [2]Department of Electrical Engineering, Incheon National University, Incheon, Korea (the Republic of)

VP4-04. Electromagnetic Shielding Analysis of Canned Magnetic Bearings
H. Jiang[1, 2], Z. Su[1, 2], Y. Wei[1, 2]
[1]Naval University of Engineering, Wuhan, Hubei, China, [2]East Lake Laboratory, Wuhan, Hubei, China

VP4-06. Novel Design of Dual-Coil Microspeaker for Low-Frequency Sound Pressure Level Improvement in Tablet
J. Park[1], K. Park[1], D. Xu[2], S. Hwang[1]
[1]Department of Mechanical Engineering, Pusan National University, Busan, Korea (the Republic of), [2]School of

Mechatronic Engineering and Automation, Shanghai University, Shanghai, China

VP4-07. Fundamental Consideration related to the Construction of a Bi-directional Wireless Power Transfer System for Independent Operation of Flying Drones.
T. Nitta, Y. Osaki, F. Sato, S. Miyahara, O. Ito
Tohoku Gakuin University, Sendai, Miyagi, Japan

VP4-08. Construction of Transformer Equivalent Circuit Model Based on Piecewise Linear Reluctance
Z. Ye, Y. Wang
School of Mechanical and Electrical Engineering, China University of Mining and Technology-Beijing, Beijing, China

VP4-09. Remanence Evaluation of Transformer Core Based on Magnetic Barkhausen Noise
L. Chen[1, 2], L. Wu[1], T. Ben[1], H. Huang[1]
[1]College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, Hubei, China, [2]Hubei Provincial Engineering Technology Research Center for Power Transmission Line, China Three Gorges University, Yichang, Hubei, China

VP4-10. Basic Consideration about Constructing Cell-culture Management System by Functionalized Petri Dishes with Wireless Power Transfer
Y. Hara[1], F. Sato[1], O. Ito[1], S. Miyahara[1], K. Sagara[2], S. Sasaki[2], T. Abe[3], K. Inada[3]
[1]Tohoku Gakuin University, Sendai, Miyagi, Japan, [2]Hikaridenshi Co., Ltd., Osaki, Miyagi, Japan, [3]NITTOKU Co., Ltd., Fukushima, Japan

VP4-12. Calculation and Optimization Design of Parasitic Capacitance in High-Frequency Transformers
J. Liu, Y. Li, S. Yue, Z. Wan, Z. Cao
Hebei University of Technology, Tianjin, China

VP4-15. Energy Harvester Based on FeCoV-PZT Laminated Magnetoelectric Composite for Transformer Temperature Monitoring System
C. Zhang, Z. Wang
Faculty of Electrical Engineering, Hebei University of Technology, Tianjin, China

VP4-17. Noninvasive Current Measurement in Multi-conductor Cables with TMR Sensor Array
C. Zhang, S. Zhao
School of Electrical Engineering, Hebei University of Technology, Tianjin, China

VP4-18. Quantifying Magnetic Degradation in Laser-Cut Electrical Steel: A Domain-Level Study with Angle-Dependent Magnetization
R. Shahbaz[1, 2], C. Zhang[1], H. Fatima[3], H. Zhang[1]
[1]Electrical Engineering, State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, Hebei, China, [2]Electrical Engineering, Hebei Key Laboratory of Equipment and Technology Demonstration of Flexible DC Transmission, Hebei University of Technology,,, Tianjin, Hebei, China, [3]Physics, Xidian University, Xi'an, Shaanxi, China

VP4-19. Damping Capacitor for Suppression of Ringing Caused by Parasitic Components in PCBs and EMI Reduction
H. Park[1], J. Cheon[1], S. Kim[2], D. Kim[1]
[1]Yeungnam University, Gyeongsan-si, Gyeongsangbuk-do, Korea (the Republic of), [2]Gyeongbuk Technopark, Gyeongsan-si, Gyeongsangbuk-do, Korea (the Republic of)

SESSION VP5: NEW APPLICATIONS AND OTHER EMERGING TOPICS II
Chair(s): K. Sriram, *Electronics and Electrical Engineering, IIT Guwahatti, Assam, India*
Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP5-01. Machine Learning Estimation of Curie Temperature for Ferromagnetic Perovskites
M. Shabir, F. H. Bhat
Physics, Islamic University of Science and Technology, Pulwama, Jammu and Kashmir, India

VP5-02. Loss research of graphene copper flat wire electrical machinery considering deformation and temperature effects
J. Li[1], Z. Li[1], R. Pei[1, 2], Y. An[1]
[1]Electrical Engineering, Shenyang University of Technology, Shenyang, China, [2]Suzhou INN-MAG New Energy Technology Co.. Ltd., Suzhou, China

VP5-03. High-Tc SQUID-Based Ultra-Low Field MRI in Unshielded Environments

S. Liao, H. Huang
Institute of Electro-Optical Engineering, National Taiwan Normal University, Taipei city, Taiwan

VP5-04. Multi-harmonic Response of Superparamagnetic Nanoparticles As a Function of Particle Size and Concentration Across Multiple Optical Configurations

M. Syed, C. Su, S. Reza
Physics, Optical Engineering and NanoEngineering, Rose-Hulman Institute of Tech, Terre Haute, Indiana, United States

VP5-05. Research on Magnetic Anomaly Noise Suppression Method Based on Magnetic Fields Induced by Three-dimensional Short Peak Ocean Waves

Y. Xu, J. Qiu, C. Cao, H. Sun, B. Fan, X. Zeng
College of Optoelectronic Engineering, Chongqing University, Chongqing, China

VP5-06. Stress Tunable Multiferroic Magnetic Circuit: The Magnetic Rheostat

T. R. Mion[1], M. Staruch[1], N. J. Jones[2], J. Yoo[2], R. Olsson[3], M. G. Allen[3], P. Finkel[1]
[1]US Naval Research Laboratory, Washington, District of Columbia, United States, [2]Naval Surface Warfare Center, Bethesda, Maryland, United States, [3]University of Pennsylvania, Philadelphia, Pennsylvania, United States

VP-07. Measurement of Viscoelastic Properties Using Magnetic Resonance Elastography (MRE) Technique on Brain Phantoms

M. M. William[1], W. Lohr[1], L. Schandler[2], V. J. Weir[3], R. M. Khan[4], R. L. Hadimani[2, 1]
[1]Biomedical Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [2]Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, Virginia, United States, [3]Department of Veterans Affairs, Central Virginia VA Health Care System, Richmond, Virginia, United States, [4]Clinical Professor of Diagnostic Radiology, Virginia Commonwealth University,, Richmond, Virginia, United States

SESSION VP6: SOFT MAGNETIC MATERIALS III

Co-Chair(s): S. C. Mills, *Materials Science and Technology, US Naval Research Laboratory, Washington, District of Columbia, United States* and D. Hedlund, *Department of Electrical and Computing Engineering, University of Central Florida, Orlando, Florida, United States*

Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP6-01. Role of Surfactants in Enhancing Colloidal Stability and Magnetic Hyperthermia Efficiency of Fe_3O_4 Nanoparticles.

S. Singh[1], Y. Kaur[2], B. Chudasama[1]
[1]Physics, Thapar Institute of engineering and Technology, Patiala, Punjab, India, [2]Physics, Maharishi Markandeshwar University, Mullana, Ambala Cantt, Haryana, India

VP6-04. Giant Magnetoimpedance and Magneto-optical Characterization of Amorphous Alloys

C. S. Martins[1], V. Bellintani[1], F. A. Albuquerque[2], A. D. Santos[3], J. H. Severo[4]
[1]DEG, FATEC, São Paulo, SP, Brazil, [2]Energy and Nuclear Research Institute, IPEN/CNEN, São Paulo, SP, Brazil, [3]Institute of Physics, University of Sao Paulo, São Paulo, SP, Brazil, [4]Institute of Physics, university of Sao Paulo, São Paulo, SP, Brazil

VP6-06. Analysis and Calculation of Magnetostrictive Properties of Thin-gauge Low-loss Electrical Steel Sheets Considering Stress Effects

J. Wang[1], D. Ma[1], Z. Chen[2], P. Meng[1], L. Zeng[3], R. Pei[1, 3]
[1]Shenyang University of Technology, ShenYang, China, [2]Hunan CRRC Times Electric Drive Technology Co., Ltd., ZhuZhou, China, [3]SuZhou Inn-Mag New Energy Ltd, SuZhou, China

VP6-07. Comparative Research on the Magnetic Properties of High Permeability Soft Magnetic Materials and Conventional Silicon Steel Under Stress-electromagnetic Coupling

X. Liu[1], J. Li[1], Z. Li[1], S. Zhang[1], Z. Chen[2], R. Pei[3, 1], L. Zeng[3]
[1]Shenyang University of Technology, Shenyang, China, [2]Hunan CRRC Times Electric Drive Technology Co., Ltd., Zhuzhou, China, [3]Suzhou InnMag New Energy Ltd., Suzhou, China

VP6-08. Research on Magnetic Properties in Soft Magnetic Composites Considering Temperature and Stress Effect

Y. Li[1], Z. Li[1], B. Yang[1], R. Pei[1], L. Zeng[2]
[1]Shenyang University of Technology, Shenyang, Liaoning, China, [2]Suzhou InnMag New Energy Ltd, Suzhou, China

VP6-09. Analysis of Amorphous Alloy-Ultra-Thin Silicon Steel Hybrid Iron Core for High-Speed Electrical Machine

J. Feng[1], X. Lu[1], Z. Li[1], J. Wang[1], L. Zeng[2], R. Pei[1, 2]
[1]Shenyang University of Technology, Shenyang, Liaoning, China, [2]Suzhou InnMag New Energy Ltd, Suzhou, Jiangsu, China

VP6-10. Measuring Magnetostriction in Electric Motor Stator Cores Considering Manufacturing Factors and Material Anisotropy

L. Chen[1], H. Huang[1], T. Ben[1, 2], L. Wu[1]
[1]College of Electrical Engineering and New Energy, China Three Gorges University, Yichang City, China, [2]Hubei Provincial Research Center on Microgrid Engineering Technology, China Three Gorges University, Yichang City, China

VP6-11. Optimization of amorphous magnetostriction prediction model considering the effect of stresses

X. Liu[1], X. Lu[1], Z. Li[1], J. Feng[1], L. Zeng[2], R. Pei[1, 2]
[1]Shenyang University of Technology, Shenyang, Liaoning, China, [2]Suzhou InnMag New Energy Ltd, Suzhou, Jiangsu, China

VP6-12. Analysis of Stator Core Losses in Motors Made of Amorphous Alloy Materials Considering Temperature and Compressive Stress Factors

X. Lu[1], D. Ma[1], J. Feng[1], N. Zhang[1], L. Zeng[2], R. Pei[1, 2]
[1]Department of Electrical Engineering, Shenyang University of Technology, Shenyang, Liaoning, China, [2]Suzhou INN-MAG New Energy Technology Co., Ltd., Suzhou, Jiangsu, China

VP6-13. Effect of Ytterbium substitution on the structural and magnetic properties of cobalt ferrite nanoparticles

T. Han, F. Huang, T. Du
Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan

VP6-15. Observation and Quantitative Analysis of Magnetic Domains in Grain-Oriented Silicon Steel under Two-Dimensional Magnetization

C. Zhang[1, 2], G. Sun[1, 2], Y. Li[1, 2], W. Meng[1, 2]
[1]State Key Laboratory of Intelligent Power Distribution Equipment and System, Hebei University of Technology, Tianjin, China, [2]Hebei Key Laboratory of Equipment and Technology Demonstration of Flexible DC Transmission, Hebei University of Technology, Tianjin, China

VP6-16. On the analysis of the skin effect on the loss evaluation of soft magnetic materials under broadband magnetization

L. Chen[1, 2], L. Tan[1], T. Ben[1], H. Huang[1], B. Huang[1]
[1]College of Electrical Engineering and New Energy, China Three Gorges University, Yichang, Hubei, China, [2]Hubei Provincial Research Center on Microgrid Engineering Technology, China Three Gorges University, Yichang, Hubei, China

VP6-17. Structural and Magnetic Investigation of Fe doped $Mn_{3-x}Fe_xO_4$ ($x \leqq 0.1$)

S. Yoon
Department of Physics, Gunsan National University, Gunsan, Korea (the Republic of)

VP6-18. Research and Analysis of Different Thickness Silicon Steels for an Ultra High-Speed PMSM

M. Cheng, Z. Li, Y. Li, R. Pei
Shenyang University of Technology, Shenyang, Liaoning, China

VP6-19. Magneto-Optical Investigation of Magnetization Reversal and Anisotropy in Amorphous Co-Based Microwires

M. Lostun, I. Murgulescu, H. Chiriac, T. A. Ovari, N. Lupu
National Institute of Research and Development for Technical Physics, Iasi, Romania

VP6-20. Effect of Lamination Forming Process on the Magnetic Properties of Electrical Steel Core

W. Li[1], Y. Li[1], Z. Xie[1], L. Zeng[2], R. Pei[1, 2]
[1]Shenyang University of Technology, Shenyang, China, [2]Suzhou Inn-Mag New Energy Ltd., Suzhou, China

VP6-21. A Mean Field Approach to Analyzing the Magnetization of Interacting Ferrimagnetic Particles under Superparamagnetic Conditions
S. Rajput, S. Tiwari
Department of Physics and Materials Science, Thapar institute of Engineering and Technology, Patiala, Punjab, India

SESSION VP7: SPINTRONIC MATERIALS AND DEVICES
Chair(s): S. Husain, *Material Science and Engineering, University of California, Berkeley, Berkeley, California, United States*
Wednesday, November 19, 2025
08:30 AM-08:30 PM
Conference Resource Center

VP7-01. Spin-orbit torque magnetization switching in CoFeB/Ta/CoFeB tri-layer thin films
K. Okada, M. Matsuura, Y. Saito, N. Tezuka
Tohoku University, Sendai, Miyagi, Japan

VP7-02. Thermal noise induced probability switching in SOT-MTJs based on spin-circuit simulation
T. Huang, S. Hu
Shenzhen Technology University, Shenzhen, Guangdong, China

VP7-03. High-Throughput SEM Imaging of Nanoscale Metal Grains for Heat Assisted Magnetic Recording
M. Hauwiller, C. Mann, P. Mach, T. Zhao, T. Gao, A. Abdurahman, S. Hernandez, K. Terry, M. Kautzky
Seagate Technology, Bloomington, Minnesota, United States

VP7-05. Field-free magnetic resonance detection in the terahertz band using $Gd_{3/2}Yb_{1/2}BiFe_5O_{12}$
T. Tsuchida[1], Y. Ishikawa[2], T. Ito[2], K. Kawagita[2], Y. Goto[2], K. Yabushita[2], H. Fukumoto[2], Y. Fujii[2], K. Mikuni[3], T. Satoh[3], M. Goto[1, 4]
[1]Department of Electrical and Electronics Engineering, University of Fukui, Fukui, Japan, [2]Research Center for Development of Far-Infrared Region, University of Fukui, Fukui, Japan, [3]Department of Physics, Institute of Science Tokyo, Tokyo, Japan, [4]Center for Spintronics Research Network (CSRN-Osaka), Osaka, Japan

VP7-06. Micromagnetic study of spin wave transmission in bent ferrimagnetic strips.
L. Sánchez-Tejerina, L. M. Moreno-Ramírez, O. Alejos
Universidad de Valladolid, Valladolid, Valladolid, Spain

VP7-07. Theoretical Insights Into Room-temperature Ferromagnetism of Metal-doped $MoSe_2$ Monolayer
B. Narangerel, M. Adiya, D. Odkhuu
Physics, Incheon National University, Incheon, Korea (the Republic of)

VP7-09. Exchange-Driven Ferrimagnetism and Magnetic Compensation in a Distorted Honeycomb $Ni_4Nb_2O_9$ Lattice
H. Singh[1], M. S. Seehra[2], M. Roy Chowdhury[1], P. Pramanik[3], T. Sarkar[3], S. Thota[1]
[1]Department of Physics, Indian Institute of Technology Guwahati, Guwahati, Assam, India, [2]Department of Physics & Astronomy, West Virginia University, Morgantown, Morgantown, West Virginia, United States, [3]Department of Materials Science and Engineering, Uppsala University, Uppsala, Sweden

VP7-10. Spin-Damping Dynamics Inspired Optimizer for Neural Networks
S. Ghaderi, A. D. Kent
Physics, New York University, New York, New York, United States

VP7-11. Magnetic Multilayer (MMLs) Domain Wall-Driven dynamically coupled hybrid vortex structures for mobile Majorana zero modes
K. K. Mishra
Physics & Astrophysics, University of Delhi, Delhi, Delhi, India

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