



IEEE International Magnetics Conference
May 5 - 10, 2024 Rio de Janeiro, Brazil

Conference Booklet

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SCOPE OF THE CONFERENCE

The organizing committee welcome you to the IEEE International Magnetics Conference, INTERMAG 2024, which will be held in Rio de Janeiro, Brazil, on May 5-10, 2024. The conference will be in-person, with on-demand access to uploaded content provided afterwards.

The INTERMAG Conference is the premier annual conference on fundamental and applied magnetism sponsored by the IEEE Magnetics Society. Members of the international scientific and engineering communities interested in recent developments in magnetism and associated technologies are invited to attend and contribute to the conference.

The conference will cover a wide range of topics that include spintronics, magnetization dynamics, biomagnetics, electrical machines and power transformers, memory and logics, data storage, sensors, hard and soft magnetic materials, and interdisciplinary and emerging topics.

In 2024, the conference will take place for the first time in South America.

The conference program will include oral and poster presentations, invited talks, symposia, tutorials, and several special sessions.

CITY INFORMATION

RIO DE JANEIRO



Founded in 1565 by the Portuguese, Rio de Janeiro has grown to become a globally renowned city. It is celebrated for its breathtaking natural beauty, dynamic Carnival, eclectic music genres like samba and bossa nova, and picturesque balneary beaches such as Barra da Tijuca, Copacabana, Ipanema, and Leblon. Its historic journey from being a port city for the trade of gold and precious stones to its evolution as a vibrant, multicultural metropolis makes it an irresistible destination in the Southern Hemisphere.

During its tenure as the capital of Brazil from 1763 to 1960, Rio de Janeiro functioned as the nation's political and economic epicenter. The city reflected the grandeur of Portuguese cities while nurturing a distinct Brazilian identity. This rich legacy manifest

itself in its architectural diversity. From the neoclassical beauty of the National Museum of Fine Arts and the colonial charm of the São Bento Monastery to the modernist lines of the Rio de Janeiro Cathedral and the futuristic design of the Museum of Tomorrow, Rio's cityscape stands as a testament to its enduring historical phases of monarchic rule, republic, and rapid urbanization.

Rio's contributions to literature, cinema, and music are substantial. The cultural resistance displayed through its thriving street art scene and cultural festivals like the Carnival underscores the city's resilience and multifaceted identity. Renowned authors like Machado de Assis and Clarice Lispector shaped Brazilian literature. In cinema, directors like Fernando Meirelles and Walter Salles have earned international acclaim, with movies like "City of God" and "Central Station" receiving Oscar nominations. Rio hosts prestigious events such as the Rio International Film Festival and the Rio Music Carnival, attracting talent and audiences from across the globe. The city is also the birthplace of legendary musicians and composers like Tom Jobim and Vinicius de Moraes, who penned the internationally acclaimed song "The Girl from Ipanema," emblematic of the iconic Bossa Nova genre. The city's scientific pursuits are equally commendable. Rio hosts over 20 renowned scientific and academic institutions, including federal research labs such as the Brazilian Center for Research in Physics (CBPF) and the Oswaldo Cruz Foundation. Adding to the city's scientific prowess is the Petrobras Research Center (CENPES), one of the world's largest oil and gas research centers. This combination, along with many federal and state universities, including the largest federal university in Brazil, the Federal University of Rio de Janeiro (UFRJ), emphasizes Rio's dedication to scientific research and technological advancement.

In sports, Rio's history and enthusiasm are unparalleled. The city is home to legendary football clubs like Flamengo, Fluminense, Botafogo, and Vasco da Gama, which have nurtured many players who have graced the Brazil national football team and have played a significant role in Brazil's world football reputation. Rio's passion for sports is evident from hosting the 2016 Summer Olympics and Paralympics, marking it as the first South American and Portuguese-speaking city to host these events, to showcasing legendary football matches at the Maracanã Stadium. With the city preparing to host the G20 summit in 2024, it continues to cement its global position. Rio de Janeiro is a dynamic city of scientific progress, vibrant culture, and impressive historical heritage.

TIME ZONE

BRT (Brasília Standard Time)

UTC/GMT -3hours

No daylight-saving time in 2024

<https://www.timeanddate.com/worldclock/brazil/rio-de-janeiro>

CONFERENCE LOCATION

Windsor Conference, Exhibition Center and Hotels
(Complex for Conferences located at the Barra da Tijuca neighborhood of the Rio de Janeiro city)

<https://windsorexpocenter.com.br/en/>

WINDSOR OCEÂNICO ROOM MAPS

GROUND FLOOR – WINDSOR OCEÂNICO



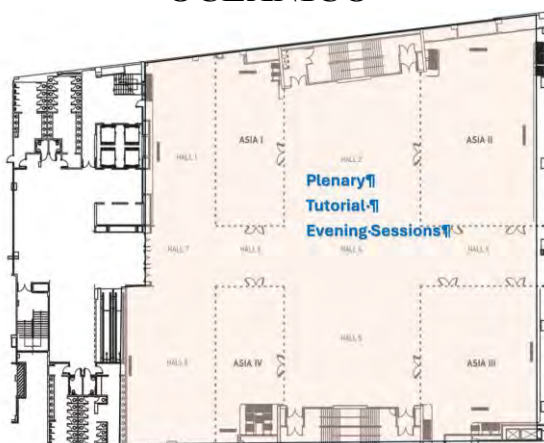
2nd LOWER LEVEL - WINDSOR OCEÂNICO



2nd FLOOR – WINDSOR OCEÂNICO



3rd FLOOR – WINDSOR OCEÂNICO



REGISTRATION

The Conference Registration Desk will be located on the 2nd lower level of the Windsor Conference, Exhibition Center. Name badges must be always worn during Conference sessions and events.

REGISTRATION HOURS:

Sunday, May 5	1:00 PM – 6:00 PM
Monday, May 6	8:00AM - 6:00PM
Tuesday, May 7	8:00AM - 6:00PM
Wednesday, May 8	8:00AM - 6:00PM
Thursday, May 9	8:00AM - 6:00PM
Friday, May 10	8:00AM - 12:30PM

SCHEDULE-AT-A-GLANCE

Morning coffee service from 10:00-10:30 AM / Afternoon coffee service from 3:30-4:00 PM on Monday only				
Start Time	End Time	ID	Title	Location
Monday May 6, 2024				
9:00 AM	11:45 AM		Industrial Day (Pre-registration required) - STT-MRAM	Europa I
1:30 PM	4:00 PM		Industrial Day (Pre-registration required) - SOT-MRAM	
4:00 PM	6:30 PM	TU	Tutorial: Spins in the Quantum World	Asia
7:30 PM	9:00 PM		Welcome Reception	Europa IV
Tuesday May 7, 2024				
8:30 AM	11:30 AM	AA	New Directions and Challenges in Neuromorphic Spintronics	Oceania IV & V
		AB	Interdisciplinary Topics: Chirality, Micromagnetic and Nanomagnetic Structures	Oceania VI & VII
		AC	Spin Torque and Voltage-Controlled Magnetic Anisotropy	Oceania IX & X
		AD	MRAM Applications and Magnetic Recording	Oceania I & II
		AE	Fundamental Properties, Cooperative Phenomena and Computational Magnetism	Europa I
		AF	Magneto-Optic and Magneto-Elastic Materials and Devices	Europa II
		AG	Skyrmions and Magnetic Heterostructures	Europa IV
9:00 AM	12:00 PM	AP	Magnetization Dynamics and Micromagnetics I	Exhibit Hall
		AQ	Thin Films, Multi-layered Films and Superlattices	
		AR	Transformers and Wireless Power Transfer, Magnetic Bearings and Levitation	
		AS	Interdisciplinary Topics in Magnetism I	
11:30 AM	12:00 PM		Magnetic Sensor Challenge	Aruba I, II & III

12:00 PM	2:00 PM		Communications Workshop (<i>Pre-registration required</i>)	Europa III
2:00 PM	5:00 PM	BA	Magnetics for Tomorrow's Medical Technologies	Oceania IV & V
		BB	Magnonics I: Fundamental Properties	Oceania VI & VII
		BC	Patterned Films, Nanocomposites, Self-assembly	Oceania IX & X
		BD	Ultrafast Dynamics and All-Optical Switching	Oceania I & II
		BE	Numerical, Semi-analytical and Analytical Analysis Methods I	Europa I
		BF	Magnetoelectric Materials and Phenomena	Europa II
		BG	Skyrmions and Spin-Orbit Torque Devices	Europa IV
2:30 PM	5:30 PM	BP	Magnetic Recording, MRAM and Related Devices	Exhibit Hall
		BQ	Spintronics with Antiferromagnets	
		BR	Nanoparticles and Nanowires	
5:00 PM	6:30 PM	BS	Permanent Magnet Machines I	Exhibit hall
			Bierstube	
5:30 PM	7:00 PM		Women in Magnetism Networking Event	Europa III
7:00 PM	9:00 PM		100 Years of the Concept of Spin (Spin100)	Asia
Wednesday May 8, 2024				
8:30 AM	11:30 AM	CA	Gradient Dzyaloshinskii-Moriya Interaction	Oceania IV & V
		CB	Magnonics II: Electrical and Other Coupling Effects	Oceania VI & VII
		CC	Neuromorphic and Unconventional Computing	Oceania IX & X
		CD	Novel Spintronics	Oceania I & II
		CE	Electrical Machines and Power System Components	Europa I
		CF	Magnetic Textures, Statics, and Dynamics	Europa II
		CG	Magnetoresistance and Spin Current Generation	Europa IV
9:00 AM	12:00 PM	CP	2D Spintronics and Topological Materials	Exhibit Hall
		CQ	Magnetoresistance and Related Phenomena I	

		CR	Magnonics and Related Phenomena	
		CS	Soft Magnetic Materials: Amorphous, Crystalline and Nanocrystalline	
12:00 PM	2:00 PM		Meet the Experts (<i>Pre-registration required</i>)	Europa III
2:00 PM	4:00 PM		Panel: Magnetics for Tomorrow's Medical Technologies	Oceania IV & V
2:00 PM	4:00 PM		Hackathon: Machine Learning AI for Magnetism - Tutorial and Hands-on Experience	Oceania VI & VII
2:00 PM	4:00 PM		Panel on Large Open Facilities in Latin America: opportunities for Magnetism	Oceania I e II
4:00 PM	5:00 PM		Awards Ceremony	Asia
5:00 PM	6:00 PM		Plenary Talk #1	
6:00 PM	7:00 PM		Plenary Talk #2	
7:30 PM	10:00 PM		Conference Reception	El Pardo I, II & Segovia
Thrusday May 9, 2024				
8:30 AM	11:30 AM	DA	Magnetic Tunnel Junction and Quantum Devices for Unconventional Computing	Oceania IV & V
		DB	Magnonics III: Band Properties and Devices	Oceania VI & VII
		DC	Path Towards More Sustainable Tomorrow – Magnetic Solutions	Oceania IX & X
		DD	Biomagnetics I	Oceania I & II
		DE	Hard Magnetic Materials I	Europa I
		DF	Soft Magnetic Alloys: Materials and Methods	Europa II
		DG	2D Spintronics and Magnetism	Europa IV
9:00 AM	12:00 PM	DP	High-speed, Wound-field, Induction and Reluctance Machines I	Exhibit Hall
		DQ	Skyrmions and Related Phenomena	
		DR	Multi-Functional Magnetic Materials and Applications I	
		DS	Sensors and High-frequency Devices I	
12:00 PM	2:00 PM		Lunch with Speakers (<i>Pre-registration required</i>)	Europa III

12:00 PM	1:00 PM		Magnetic Energy Conversion Meeting	Oceania I & II
2:00 PM	4:00 PM		Panel: Magnetic Technologies for Smooth Transition Towards More Sustainable Tomorrow	Galápagos I, II & III
2:00 PM	5:00 PM	EA	Orbitronics: From Theory to Experiments	Oceania IV & V
		EB	Magnetic Field Sensors	Oceania VI & VII
		EC	Interdisciplinary Topics: Sensors, Antennas, and Nanofabrication	Oceania IX & X
		ED	Biomagnetics II	Oceania I & II
		EE	Hard Magnetic Materials II	Europa I
		EF	Soft Magnetic Alloys: Synthesis, Characterization and Modeling	Europa II
		EG	Magnetization Dynamics, Damping, and Micromagnetic Modeling	Europa IV
	2:30 PM	EP	Biomagnetics III	Exhibit Hall
		EQ	Numerical, Semi-analytical and Analytical Analysis Methods II	
		ER	Spin-Orbit Torques and Related Phenomena	
		ES	Hard Magnetic Materials III	
5:00 PM	6:30 PM		Bierstube	Exhibit Hall
5:30 PM	7:00 PM		Students in Magnetism Networking Event	Europa III
6:30 PM	8:00 PM		Latin America magnetic Community Meeting	Europa IV
7:00 PM	7:30 PM		Magnetic Sensor Challenge Final Competition	Aruba I, II & III
Friday May 9, 2024				
8:30 AM	11:30 AM	FA	Magnonic Materials and Devices	Oceania IV & V
		FB	Novel Characterization Approaches	Oceania VI & VII
		FC	Magnetism for Niche Applications: Sensors, Robots, Drones and Other Devices	Oceania IX & X
		FD	Antiferromagnetic/Ferrimagnetic Spintronics and Domain Wall Devices	Oceania I & II
		FE	Linear Machines and Field Modulating Machines	Europa I

12:00 PM	2:00 PM	FF	Topological Insulators, Weyl and Dirac Semimetals	Europa II
		FG	Magneto-Caloric Materials and Devices	Europa IV
			Young Professionals Lightning Talks	Galápagos I, II & III
12:00 PM	2:00 PM		Meet the Editors (Pre-registration required)	Europa III
2:00 PM	5:00 PM	GA	Magnetic Sensor Standardization	Oceania IV & V
		GB	Multilayers, Surface and Interface Phenomena	Oceania VI & VII
		GC	High Frequency, Microwave and Millimeter Wave Materials and Devices	Oceania IX & X
		GD	Antiferromagnetic Spintronics with Skyrmions and Textures	Oceania I & II
		GE	Permanent Magnet, High-speed, Wound-field, Induction and Reluctance Machines	Europa I
		GF	Amorphous and Nanocrystalline Soft Magnetic Materials	Europa II
		GG	Thin Films and Surface Effects	Europa IV
Poster Virtual Only Sessions Available on Virtual Platform May 17, 2024				
		VP1	Field Modulated Machines	Digital Conference Resource Center
		VP2	Hard Magnetic Materials IV	
		VP3	High-speed, Wound-field, Induction and Reluctance Machines II	
		VP4	Interdisciplinary Topics in Magnetism II	
		VP5	Linear Machines and Magnetic Gearing	
		VP6	Magnetization Dynamics and Micromagnetics II	
		VP7	Magnetoresistance and Related Phenomena II	
		VP8	Motor Drives, Bearing, Testing and Control	
		VP9	Multi-Functional Magnetic Materials and Applications II	
		VP10	Numerical, Semi-analytical and Analytical Analysis Methods III	
	VP11	Permanent Magnet Machines II		

VP1 2	Permanent Magnet Machines III	
VP1 3	Sensors and High- frequency Devices II	
VP1 4	Soft Magnetic Materials	
VP1 5	Transformers and Wireless Power Transfer	

SESSION CHAIRS

Symposium	AA	New Directions and Challenges in Neuromorphic Spintronics
		Chair: Pedro Landeros - Universidad Técnica Federico Santa María
Oral	AB	Interdisciplinary Topics: Chirality, Micromagnetic and Nanomagnetic Structures
		Chair: Silvia Tacchi - Consiglio Nazionale delle Ricerche
Oral	AC	Spin Torque and Voltage- Controlled Magnetic Anisotropy
		Chair: Hari Srikanth - University of South Florida
Oral	AD	MRAM Applications and Magnetic Recording
		Chair: Jonathan Sun - IBM Research
Oral	AE	Fundamental Properties, Cooperative Phenomena and Computational Magnetism
		Chair: Artur Carbonari - Instituto de Pesquisas Energeticas e Nucleares
Oral	AF	Magneto-Optic and Magneto- Elastic Materials and Devices
		Co-Chair: Ekkes Brück - TU Delft
		Co-Chair: Fanny Béron - Universidade Estadual de Campinas
Oral	AG	Skyrmions and Magnetic Heterostructures
		Chair: Johanna Fischer - CEA- SPINTEC
Poster	AP	Magnetization Dynamics and Micromagnetics I
		Co-Chair: Luis Aviles Felix - Centro Atomico Bariloche
		Co-Chair: Emily Darwin - EMPA
Poster	AQ	Thin Films, Multi-layered Films and Superlattices

		Chair: Xiufeng Han - Institute of Physics, Chinese Academy of Sciences
Poster	AR	Transformers and Wireless Power Transfer, Magnetic Bearings and Levitation
		Chair: Hamed Hamzehbahmani - Durham University
Poster	AS	Interdisciplinary Topics in Magnetism I
		Chair: Alisson Krohling - Nuclear Technology Development Center
Symposium	BA	Magnetism for Tomorrow's Medical Technologies
		Chair: Ravi Hadimani - Virginia Commonwealth University
Oral	BB	Magnonics I: Fundamental Properties
		Chair: David Cortés-Ortuño - Universidad Técnica Federico Santa María
Oral	BC	Patterned Films, Nanocomposites, Self-assembly
		Chair: Julian Geshev - Institute of Physics, UFRGS
Oral	BD	Ultrafast Dynamics and All-Optical Switching
		Chair: Alex Jenkins - International Iberian Nanotechnology Laboratory
Oral	BE	Numerical, Semi-analytical and Analytical Analysis Methods I
		Chair: Yacine Amara - Université Le Havre Normandie
Oral	BF	Magnetoelectric Materials and Phenomena
		Chair: Thiago Mori - Brazilian Center for Research in Energy and Materials
Oral	BG	Skyrmions and Spin-Orbit Torque Devices
		Chair: Michal Slezak - AGH University of Science and Technology
Poster	BP	Magnetic Recording, MRAM and Related Devices
		Co-Chair: SN Piramanayagam - Nanyang Technological University
		Co-Chair: Simon Greaves - Tohoku University
Poster	BQ	Spintronics with Antiferromagnets
		Chair: Qi Wang - Huazhong University of Science & Technology
Poster	BR	Nanoparticles and Nanowires

		Chair: Marcio Correa - Federal University of Rio Grande do Norte
Poster	BS	Permanent Magnet Machines I
		Co-Chair: Narayan Kar - University of Windsor
		Co-Chair: Elena Lomonova - Technische Universiteit Eindhoven
Symposium	CA	Gradient Dzyaloshinskii-Moriya Interaction
		Chair: Witold Skowronski - AGH University of Krakow
Oral	CB	Magnonics II: Electrical and Other Coupling Effects
		Chair: Santa Pile - Johannes Kepler University Linz
Oral	CC	Neuromorphic and Unconventional Computing
		Co-Chair: Sonal Shreya - Aarhus University
		Co-Chair: Sai Li - Beihang University
Oral	CD	Novel Spintronics
		Chair: Clécio de Souza Silva - Federal University of Pernambuco
Oral	CE	Electrical Machines and Power System Components
		Chair: Yacine Amara - Université Le Havre Normandie
Oral	CF	Magnetic Textures, Statics, and Dynamics
		Co-Chair: Christian Tzschaschel - Max Born Institute
		Co-Chair: Adekunle Adeyeye - Durham University
Oral	CG	Magnetoresistance and Spin Current Generation
		Chair: Gyoung-Min Choi - Sungkyunkwan University
Poster	CP	2D Spintronics and Topological Materials
		Chair: Connie Li - Naval Research Lab
Poster	CQ	Magnetoresistance and Related Phenomena I
		Chair: Jakub Zelezny - FZU - Institute of Physics, Czech Academy of Sciences
Poster	CR	Magnonics and Related Phenomena
		Chair: Philippe Talatchian - CEA-SPINTEC
Poster	CS	Soft Magnetic Materials: Amorphous, Crystalline and Nanocrystalline

		Co-Chair: Paola Tiberto - INRIM
		Co-Chair: Arkady Zhukov - Basque Foundation for Science
Symposium	DA	Magnetic Tunnel Junction and Quantum Devices for Unconventional Computing
		Co-Chair: Nathan Satchell - Texas State University
		Co-Chair: Guohan Hu - IBM
Oral	DB	Magnonics III: Band Properties and Devices
		Chair: Pawel Gruszecki - Uniwersytet im Adama Mickiewicza w Poznaniu
Symposium	DC	Path Towards More Sustainable Tomorrow – Magnetic Solutions
		Chair: Yacine Amara - Université Le Havre Normandie
Oral	DD	Biomagnetics I
		Co-Chair: Ahmed El-Gendy - The University of Texas at El Paso
		Co-Chair: Bethanie Stadler - University of Minnesota
Oral	DE	Hard Magnetic Materials I
		Chair: Pelin Tozman - Technical University of Darmstadt
Oral	DF	Soft Magnetic Alloys: Materials and Methods
		Chair: Del Atkinson - Durham University
Oral	DG	2D Spintronics and Magnetism
		Chair: Xufeng Zhang - Northeastern University
Poster	DP	High-speed, Wound-field, Induction and Reluctance Machines I
		Chair: Marco Trapanese - Palermo University
Poster	DQ	Skymions and Related Phenomena
		Chair: Svitlana Kondovych - Leibniz Institute for Solid State and Materials Research (IFW) Dresden
Poster	DR	Multi-Functional Magnetic Materials and Applications I
		Co-Chair: Joao Belo - IFIMUP
		Co-Chair: Lei Bi - University of Electronic Science and Technology of China
Poster	DS	Sensors and High-frequency Devices I
		Chair: Shin Yabukami - Tohoku University
Symposium	EA	Orbitronics: From Theory to Experiments

		Chair: Antonio Azevedo - Universidade Federal de Pernambuco (Physics)
Oral	EB	Magnetic Field Sensors
		Chair: Paul Stevenson - Northeastern University
Oral	EC	Interdisciplinary Topics: Sensors, Antennas, and Nanofabrication
		Chair: Luiz Sampaio - Brazilian Center for Research in Physics
Oral	ED	Biomagnetics II
		Co-Chair: Kai Wu - Texas Tech University
		Co-Chair: Andris Bakuzis - Federal University of Goiás
Oral	EE	Hard Magnetic Materials II
		Co-Chair: Paulo Wendhausen - Universidade Federal de Santa Catarina
		Co-Chair: Ping Liu - University of Texas at Arlington
Oral	EF	Soft Magnetic Alloys: Synthesis, Characterisation and Modeling
		Chair: Ivan Skorvanek - Institute of Experimental Physics, Slovak Academy of Sciences
Oral	EG	Magnetization Dynamics, Damping, and Micromagnetic Modeling
		Co-Chair: Jose Angel Fernandez- Roldan - HZDR
		Co-Chair: Vito Puliafito - Politecnico di Bari
Poster	EP	Biomagnetics III
		Co-Chair: Javier Alonso - University of Cantabria
		Co-Chair: Ravi Hadimani - Virginia Commonwealth University
		Co-Chair: Ana García-Prieto - University of the Basque Country UPV/EHU
Poster	EQ	Numerical, Semi-analytical and Analytical Analysis Methods II
		Chair: Johannes Paulides - Advanced Electromagnetics Group
Poster	ER	Spin-Orbit Torques and Related Phenomena
		Chair: Mathias Kläui - Universität Mainz
Poster	ES	Hard Magnetic Materials III
		Co-Chair: Matthew Kramer - Ames National Laboratory
		Co-Chair: Alex Aubert - Technische Universität Darmstadt

Symposium	FA	Magnonic Materials and Devices
		Co-Chair: Santa Pile - Johannes Kepler University Linz
		Co-Chair: Jaroslaw Klos - Adam Mickiewicz University
Oral	FB	Novel Characterization Approaches
		Chair: Pedram Khalili - Northwestern University
Oral	FC	Magnetism for Niche Applications: Sensors, Robots, Drones and Other Devices
		Chair: Susana Cardoso de Freitas - INESC Microsistemas e Nanotecnologias
Oral	FD	Antiferromagnetic/Ferrimagnetic Spintronics and Domain Wall Devices
		Chair: Kim Kong Tham - Tanaka Kikinzoku Kogyo
Oral	FE	Linear Machines and Field Modulating Machines
		Co-Chair: Jonathan Bird - Portland State University
		Co-Chair: Chinweze Ubadigha - National Cheng Kung University
		Co-Chair: Kenji Nakamura - Tohoku University
Oral	FF	Topological Insulators, Weyl and Dirac Semimetals
		Co-Chair: Jiadong Zang - University of New Hampshire
		Co-Chair: Hao Zeng - University of Buffalo
Oral	FG	Magneto-Caloric Materials and Devices
		Co-Chair: Ekkes Brück - TU Delft
		Co-Chair: Fanny Béron - Universidad Estadual de Campinas
Symposium	GA	Magnetic Sensor Standardization
		Chair: Philip Keller - Metrolab Technology S.A.
Oral	GB	Multilayers, Surface and Interface Phenomena
		Chair: Kleber Pirota - University of Campinas
Oral	GC	High Frequency, Microwave and Millimeter Wave Materials and Devices
		Co-Chair: Andrei Slavin - Oakland University
		Co-Chair: Alexey Ustinov - St. Petersburg Electrotechnical University

Oral	GD	Antiferromagnetic Spintronics with Skyrmions and Textures
		Chair: Kun-Rok Jeon - Chung-Ang University (CAU)
Oral	GE	Permanent Magnet, High-speed, Wound-field, Induction and Reluctance Machines
		Co-Chair: Min-Fu Hsieh - National Cheng Kung University
		Co-Chair: Po-Wei Huang - National Cheng Kung University
Oral	GF	Amorphous and Nanocrystalline Soft Magnetic Materials
		Chair: Massimo Pasquale - INRIM
Oral	GG	Thin Films and Surface Effects
		Chair: Juliano Denardin - Universidad de Santiago
Poster Virtual Only	VP1	Field Modulated Machines
		Co-Chair: Mohamed Ibrahim - University of Ghent
		Co-Chair: Metin Aydin - Kocaeli University
Poster Virtual Only	VP10	Numerical, Semi-analytical and Analytical Analysis Methods III
		Co-Chair: Abdelmounaim Tounzi - Univ. Lille, Arts et Metiers Institute of Technology
		Co-Chair: Smail Mezani - Université de Lorraine
Poster Virtual Only	VP11	Permanent Magnet Machines II
		Chair: Konstantin Boynov - Eindhoven University of Technology
Poster Virtual Only	VP12	Permanent Magnet Machines III
		Co-Chair: Yukihiro Yoshida - Akita University
		Co-Chair: Sho Sakurai - Akita University
Poster Virtual Only	VP13	Sensors and High-frequency Devices II
		Chair: Yajie Chen - Rogers Corp.
Poster Virtual Only	VP14	Soft Magnetic Materials
		Chair: Samuel Dobák - P. J. Šafárik University
Poster Virtual Only	VP15	Transformers and Wireless Power Transfer
		Chair: Sandro Rubino - Politecnico di Torino
Poster Virtual Only	VP2	Hard Magnetic Materials IV
		Chair: Imants Dirba - TU Darmstadt
Poster Virtual Only	VP3	High-speed, Wound-field, Induction and Reluctance Machines II

		Chair: Shuangxia Niu - The Hong Kong Polytechnic University
Poster Virtual Only	VP4	Interdisciplinary Topics in Magnetism II
		Chair: Bruno Silva - Centro Brasileiro de Pesquisas Físicas
Poster Virtual Only	VP5	Linear Machines and Magnetic Gearing
		Chair: Noureddine Takorabet - Université de Lorraine
Poster Virtual Only	VP6	Magnetization Dynamics and Micromagnetics II
		Chair: Myoung-Woo Yoo - University of Illinois Urbana-Champaign
Poster Virtual Only	VP7	Magnetoresistance and Related Phenomena II
		Chair: Jakub Zelezny - FZU - Institute of Physics, Czech Academy of Sciences
Poster Virtual Only	VP8	Motor Drives, Bearing, Testing and Control
		Chair: Zhu Ke - China Three Gorges University
Poster Virtual Only	VP9	Multi-Functional Magnetic Materials and Applications II
		Co-Chair: Alberto Mendonça - Universidade Estadual de Campinas
		Co-Chair: Jia-Yan Law - University of Seville

PUBLICATIONS

FULL PAPERS IN IEEE TRANSACTIONS ON MAGNETICS

Full papers will be published in IEEE Transactions on Magnetism. To be eligible for publication, all papers must be presented at the Conference by a registered author (or representative) who is knowledgeable about the work. If not, they will be recorded as a “No Show”, and therefore the corresponding paper will not be suitable for publication. **All papers will be submitted to MAGCONF IEEE Author Portal at <https://iee.atyponrex.com/journal/magconf-ieee>.**

Note that this site is different from the digest submission site.

CONFERENCE SHORT PAPER

Authors may also choose to **publish their accepted digest ("conference short paper") in the Magnetism Society's Digital Library on IEEE Xplore**

(optional). To be eligible for publication, all papers must be presented at the Conference by a registered author (or representative) who is knowledgeable about the work. Each published digest will receive a unique digital object identifier (DOI). Publication of digests will still allow you to publish your accepted full paper in IEEE Transactions on Magnetics (or other journals) or, in some cases, the Magnetics Society's Digital Library as a "long paper". **To submit your digest ("conference short paper") for publication, follow the instructions at <https://ieeexpresconferencepublishing.ieee.org/confid/author-instructions-for-intermag-2024-shortpapers/>.**

DAILY EVENTS

LUNCH

Lunch time scheduled from 12:00 PM - 2:00PM

COFFEE SERVICE

Morning coffee service from 10:00AM -10:30AM

Afternoon coffee service from 3:00PM - 3:30PM *on Monday only*

BIERSTUBE

Tuesday, May 7 5:00PM - 6:30PM

Thursday, May 9 5:00PM - 6:30PM

Exhibition Hall – Americas I-IV

ORAL SESSIONS

There will be seven simultaneous oral session rooms daily.

Tuesday8:30 AM – 11:30 PM and 2:00 PM – 5:00 PM

Wednesday8:30 AM – 12:00 PM and 1:30 PM – 5:00 PM

Thursday8:30 AM – 12:00 PM and 1:30 PM – 5:00 PM

Friday 8:30 AM – 12:00 PM and 1:30 PM – 5:00 PM

POSTER SESSIONS

In-person poster sessions will be held in the Exhibit Hall (Americas I-IV) daily.

Tuesday9:00 AM – 12:00 PM and 2:30 PM – 5:30 PM

Wednesday9:00 AM – 12:00 PM and 2:30 PM – 5:30 PM

Thursday9:00 AM – 12:00 PM and 2:30 PM – 5:30 PM

Note: There will be virtual poster sessions available in the digital conference library starting May 17, 2024.

SESSION CHAIRS

On the day of their session, Oral and Poster Session Chairs should attend the Session Chair Breakfast at 7:45 AM, in Oceania VIII, 2nd Floor, Windsor Oceânico.

SPEAKER'S PRACTICE ROOM

Speakers have the possibility to test their computer connections and screen settings before the start of the session in the Speaker's Practice Room, located in room OCEANIA III, 2nd Floor – Windsor Oceânico.

Note: This room is available from Monday at 8:00 AM until Friday at 11:00 AM.

SPECIAL SESSIONS

Updated: March 20, 2024

Special Sessions and Events

Several Special Sessions and Events will be organized during INTERMAG 2024. Check below the ones that fit your interests and pay attention to those that demand pre-registration due the maximum number of attendees.

Plenary Talk 1

Wednesday (May 8) from 5 to 6 PM.

Room: ASIA

Title: Advances in orbitronics: giant torques from orbital textures at interfaces, light-induced orbital currents for TeraHz emission.

Albert Fert – CNRS, Université Paris-Saclay, France
Nobel Prize in Physics 2007 for Giant Magnetoresistance.

Note: This Plenary Talk will be presented remotely by Prof. Albert Fert, following medical recommendations.

Plenary Talk 2

Wednesday (May 8) from 6 to 7 PM.

Room: ASIA

Title: Spintronics: Fundamentals and some recent advances.

Sergio M. Rezende – Universidade Federal de Pernambuco, Brazil

Brazilian Minister of Science Technology and Innovation from 2005 to 2010

Special Session: 100 Years of the Concept of Spin (Spin100)

This will be a special session to celebrate the 100th Anniversary of “Spin” that will feature three distinguished plenary talks by:

Tuesday (May 7) from 7 to 9 PM

Room: ASIA

No pre-registration required

Alberto P. Guimarães – from Centro Brasileiro de Pesquisas Físicas (Brazil) will delve into the history of Spin.

Stuart Parkin – from the Max Planck Institute of Microstructure Physics (Germany) will provide insights into the latest advances in spintronics.

Gregory Fuchs – from Cornell University (USA) will explore the perspective of spin qubits. This unique session promises to offer valuable perspectives on the evolution of spin-related research and technology.

TUTORIAL: SPINS IN THE QUANTUM WORLD

Monday (May 6) from 4 to 6:30 PM

Room: ASIA

Spins in quantum information systems

Qiang Li – Stony Brook University

Quantum sensing using NV spins in diamond

Toeno van der Sar – Delft University of Technology

Spintronics for quantum technologies

Michael Flatte – University of Iowa

PANELS

PANEL: MAGNETICS FOR TOMORROW'S MEDICAL TECHNOLOGIES

Wednesday (May 8) from 2 to 4 PM

Room: OCEANIA IV & V

This Panel is Organized by The IEEE Magnetics Society Technical Committee

PANEL SPEAKERS

Cindi Dennis – NIST – Magnetic Nanoparticles for theranostic applications

Dominic Labanowski – Sonera Brain sensing

Masaki Sekino – Tokyo University Transcranial Magnetic Stimulation

Shelly Fried – Harvard University/Massachusetts General Hospital -Micromagnetic brain stimulation.

Usha Varshney – NSF – Funding in biomagnetics and international collaborations

PANEL: LARGE OPEN FACILITIES IN LATIN AMERICA – OPPORTUNITIES FOR MAGNETISM

Wednesday (May 8) from 2 to 4 PM

Room: OCEANIA I & II

PANEL TALKS

1. Neutron Science and Magnetism: Opportunities and Challenges posed by the Argentine Neutron Beam Laboratory.

Marina Tortarolo – Argentine Neutron Beam Laboratory LAHN/CNEA

2. Status of SIRIUS, the new Brazilian synchrotron source, and its potential in the investigation of magnetic materials

Julio Criginski Cezar – Brazilian Synchrotron Light Laboratory LNLS/ CNPEM

PANEL: MAGNETIC TECHNOLOGIES FOR SMOOTH TRANSITION TOWARDS MORE SUSTAINABLE TOMORROW

Thursday (May 9) from 2 to 4 PM

Room: OCEANIA I & II

Note: This Panel is Organized by The IEEE Magnetics Society Technical Committee

PANEL SPEAKERS

Parag Upadhyay, PhD, SM-IEEE

Noureddine Takorabet – Director of the research center GREEN: Group of Research in Electrical Engineering of Nancy

Kenji Nakamura – Graduate School of Engineering, Tohoku University

Johan Paulides – Senior Member, IEEE

SPECIAL EVENTS

Note: to register for activities and special sessions requiring pre-registration, go to your attendee area. Just click on the registration button in the registration page and login. Once logged in, click on the attendee tab and then in the ADD/EDIT Activities. Just choose the activities you wish to pre-register, according to your category.

SPECIAL SESSIONS AND EVENTS

Several Special Events were organized for INTERMAG 2024, pre-registration is mandatory due the maximum number of attendees.

COMMUNICATIONS WORKSHOP

Tuesday (May 7) from noon to 2 PM

Room: EUROPA III

Max. number of attendees: 100 students

Lunch box will be provided
Pre-registration required

The Communications Workshop, organized by the IEEE Magnetics Society Technical Committee, will consist of three tutorials geared toward helping graduate students and postdoctoral fellows improve their skills and techniques.

1 – How to Write Exciting Papers

Ron Goldfarb – National Institute of Standards and Technology (NIST), USA

2 – Preparation of Professional Resumes

Guohan Hu – IBM T. J. Watson Research Center, USA

3 – Preparation of Oral Scientific Presentations

Montserrat Rivas – The University of Oviedo, Spain

WOMEN IN MAGNETISM

Monstserrat Rivas

Tuesday (May 7) 5:30 – 7:00 PM

Room: EUROPA III

No pre-registration required

WOMEN IN MAGNETISM, WHAT'S NEXT?

Step into the future of magnetism at the Women Networking Event during Intermag 2024!

All women at the conference are warmly invited to join our dynamic gathering. With the motto guiding us, seize the chance to exchange job positions, resumes, volunteering, mentorship offers, and project announcements within the community of “magnetic women.” Engage in meaningful discussions at topical tables covering leadership, academia, post-PhD opportunities, publications, work-life balance, and more. Let’s collaboratively shape the future of women in magnetism—what shall we do next?

Organized by the Women in Magnetism committee of the IEEE Magnetics Society:

<https://ieeemagnetics.org/membership/community/women-magnetism>



SENSOR CHALLENGE

Luiz Augusto Sousa de Oliveira – Federal University of Rio de Janeiro, Brazil

Instruction meeting: Tuesday (May 7) at 11:30 a.m.

Final competition on Thursday (May 9) at 7:00 PM

Max. number of attendees: 30 students

Room: ARRUBA I-III

Pre-registration required

The challenge will be proposed to pre-register students. It will begin on Tuesday morning with a meeting, where instructions for the challenge will be given.

Teams will be drawn and receive an Arduino design kit to complete the proposed challenge.

MEET THE EXPERTS

Mingzhong Wu - Northeastern University - US

Wednesday (May 8) from noon to 2 PM

Room: EUROPA III

Max. number of attendees: 90 students

Lunch will be provided

Pre-registration required

This event will foster a meeting between students and an outstanding group of magnetism experts. A small group of students will have the opportunity to participate in an informal conversation over lunch and obtain expert advice on the stages of their research career planning.

Montserrat Rivas - The University of Oviedo, Spain

Yoichiro Tanaka - Tohoku University, Japan

Laura Steren, INN CNEA-CONICET, Argentina

Angela Burlamaqui Klautau - Federal University of Pará, Brazil

Adekunle Adeyeye - Durham University, United Kingdom

Masahiro Yamaguchi - Tohoku University, Japan

Guohan Hu - IBM T J Watson Research Center, USA

Kerem Camsari - UC Santa Barbara, USA

Jian-Ping - University of Minnesota, USA

Piramanayagam - Nanyang Technological University, Singapore.

HACKATHON: MACHINE LEARNING AI FOR MAGNETISM - TUTORIAL AND HANDS-ON EXPERIENCE

Wednesday (May 8) from 2 to 4 PM

Room: OCEANIA VI-VII

Max. number of attendees: 300 participants

Pre-registration required

Thomas Winkler, Kilian Leutner and Mathias Kläui
- Institute of Physics, Johannes Gutenberg University
Mainz, 55099 Mainz, Germany

Yuriy Mokrousov - Peter Grünberg Institut and
Institute for Advanced Simulation (IAS-1),

Forschungszentrum Jülich and JARA, 52425 Jülich, Germany

Hans Fangohr - Max-Planck Institute for the Structure and Dynamics of Matter, Luruper Chaussee 149, 22761 Hamburg, Germany; University of Southampton, SO17 1BJ, Southampton, United Kingdom

Machine-learning-based techniques are becoming more relevant in modern research, as they enable fast and robust data evaluation or can predict the physical properties of investigated systems. We will cover these two aspects of artificial intelligence (AI) in the research field of spintronics.

This session organized by M. Kläui will consist of three parts: a talk on magnetic pattern recognition given by T. Winkler, a talk on AI-supported electronic structure predictions given by Y. Mokrousov, and hands-on activities led by K. Leutner and T. Winkler.”

The first introductory talk will deal with the data evaluation of magnetic imaging techniques, such as Kerr microscopy, with convolutional neural networks [1,2]. In the second part, AI-supported methods are presented to predict intricate changes in the electronic structure of non-collinear magnetic materials [3]. Participants can follow instructions to run AI models on their own laptop devices in the subsequent hands-on session. We will provide exemplary magnetic microscopy measurement data and suitable pre-trained AI models for their evaluation. Further instructions and files can be downloaded prior to the session under <https://download.klaui-lab.de/intermag24/>.

[1] Isaac Labrie-Boulay, Thomas Brian Winkler et al., Phys. Rev. Applied 21, 014014 (2024)

[2] Winkler, T. B., Labrie-Boulay et al., Zenodo, doi: 10.5281/zenodo.7636110 (2023)

[3] Kipp, J., et al., <https://arxiv.org/abs/2401.03044>

LUNCH WITH SPEAKERS

Luiz Augusto Sousa de Oliveira – Federal University of Rio de Janeiro, Brazil

Thursday (May 9) from noon to 2 PM

Room: EUROPA III

Max. number of attendees: 90 students

Lunch will be provided

Pre-registration required

The event will consist of a meeting between small groups of students and distinguished speakers from the Conference.

CONFIRMED SPEAKERS:

Manuel Vazquez - National Spanish Council for Research, Spain;

Connie Li - Naval Research Lab., United States;

Johanna Fischer - SPINTEC, France;

Pedro Landeros - Universidad Técnica Federico Santa María, Chile;

Daniela P. Valdes - CNEA-CONICET, Universidad Nacional de Cuyo, Argentina;

Xin Zhang - Hefei Institutes of Physical Science, China;

Masaki Sekino - The University of Tokyo, Japan;

Anthony Tan - Imperial College London;

Kleber Roberto Pirola - UNICAMP, Brazil.

Alexandra Mougin - Université Paris-Saclay, France.

MAGNETIC ENERGY CONVERSION MEETING

Thursday (May 9) from noon to 1:00 PM

Room: OCEANIA I-II

No pre-registration required

STUDENTS IN MAGNETISM

May Inn Sim

Thursday (May 9) 5:30 - 7:00 PM

Room: EUROPA III

No pre-registration required.

Calling all graduate students!

Join us for a graduate student networking session with food, drinks, and freebies!

All graduate students are invited to mix and mingle at this networking session while enjoying some fun and games!

To ensure that you can secure your goodies, please reserve them as early as possible through the provided link.

* Giveaway items are subjected to availability, i.e. the earlier you inform us, the higher the chance we can make sure that yours is reserved!



www.studentsinmagnetism.org/intermag2024

LATIN AMERICAN MAGNETICS COMMUNITY MEETING

Thursday (May 9) 6:30 - 8:00 PM

Room: EUROPA IV

No pre-registration required.

YOUNG PROFESSIONALS MEETING (STUDENTS & JUNIOR RESEARCHERS)

Dmytro Bozhko

Friday (May 10) from noon to 2 PM

Room: EUROPA III

Max. number of attendees: 100

Lunch will be provided

Pre-registration required

The Lightning Talks, organized by the IEEE Magnetics Society Young Professionals, is setting a challenge – to present your research understandably to an audience outside of your field.

The event will consist of a set of short 3-minute talks presented by young professionals in magnetism (from Postdocs to Asst. Professors and industry) followed by audience feedback and a panel discussion.

Stay tuned for registration information! Everyone is welcome to attend the event. There is no additional cost to attend.

MEET THE EDITORS OF IEEE TRANSACTIONS ON MAGNETICS & IEEE MAGNETICS LETTERS

Tom Thompson

Friday (May 10) noon - 2 PM

Max. number of attendees: 100

Room: OCEANIA III

Lunch Box will be available

Pre-registration required

INDUSTRIAL DAY

Morning and Afternoon of Monday (May 6)

Pre-registration required.

These special sessions will focus on several current topics involving Magnetism in Industry.

A TECHNOLOGY PERSPECTIVE ON MRAM: STATUS, CHALLENGES, AND FUTURE DIRECTIONS

Join us for a special event on Magneto-resistive Random-Access Memory (MRAM) to delve into the status, challenges, and future directions of MRAM through insights shared by industry experts. This full-day event will cover both STT-MRAM (Spin-Transfer Torque MRAM) and SOT-MRAM (Spin-Orbit Torque MRAM) with a tutorial and the latest technological advancements in each domain. Designed to be educational and accessible, this event caters to a general audience, offering a valuable experience for both those with and without prior MRAM knowledge. Don't miss this opportunity to broaden your understanding of MRAM technology and stay informed about its exciting developments!

Monday, May 6th, 2024

Time: 9:00 AM - 11:45 AM & 1:30 PM - 4:00 PM

EVENT CO-ORGANIZERS

Guohan Hu - IBM T J Watson Research Center, USA

Jeong-Heon Park - Semiconductor R&D Center, Samsung Electronics, South Korea

INVITED SPEAKERS ON STT-MRAM

Daniel Worledge - IBM Almaden Research Center, USA

Sanjeev Aggarwal - Everspin Technologies, Inc., USA

Aleksandra Titova - GlobalFoundries, Germany

Hyunsung Jung - Semiconductor R&D Center, Samsung Electronics, South Korea

INVITED SPEAKERS ON SOT-MRAM

Luqiao Liu, Massachusetts Institute of Technology, USA

Kevin Garello, Spintec, France

Siddharth Rao, Compute and Memory Technologies, IMEC, Belgium

Hiroaki Yoda, YODA-S, Inc., Japan

AWARDS

IEEE NEIL SMITH AWARD FOR CONTRIBUTIONS TO THE UNDERSTANDING OF MAGNETIC PHENOMENA IN MATERIALS AND DEVICES

IEEE Neil Smith Award for Contributions to the Understanding of Magnetic Phenomena in Materials and Devices

The Neil Smith Award will be presented at Intermag this year for the best student contribution to the understanding of magnetic phenomena in Materials and Devices. The IEEE award is in memory of Neil Smith, whose productive industrial research career exemplified a mastery of experimental measurement techniques and theoretical analysis. An award committee will select winners in two subject categories: magnetic data storage & emerging memory/compute. The two winners will each receive a \$1,000 cash prize. The winning submissions need to be original contributions that contain an advance in the understanding of a technologically relevant physical system or phenomena. The selection criteria will be based on originality and impact of the material, as well as quality of the oral or poster presentation.

INTERMAG 2024 Finalists

AB-02: Spin-reorientation driven emergent phases, unconventional magnetotransport and magnetic anisotropy in a quasi-2D ferromagnet Fe_4GeTe_2

Riju Pal - S. N. Bose National Centre for Basic Sciences, Leibniz Institute for Solid State and Materials Research, Institute for Solid State and Materials Physics, TU Dresden, Germany

AD-04: Electrically controlled all-antiferromagnetic tunnel junctions on silicon

Sevdnur Arpacı - Northwestern University, EUA

AC-08: Symmetry engineering induced out-of-plane spin-orbit fields in WSe_2 and NbIrTe_4

Wei Yang - Beihang University

BD-02: Optical control of the magnetization emerging from the magnetic part of the optical field in the Landau-Lifshitz-Gilbert equation

Benjamin Assouline - The Hebrew University of Jerusalem, Israel

CC-07: Brownian reservoir computing approach for Gesture recognition by using geometrically confined skyrmion dynamics

Grischa Beneke - Johannes Gutenberg-Universität Mainz

INTERMAG 2024 BEST POSTER AWARD

One poster will be awarded for each poster session of Intermag 2024.

Only in-person poster presentations will be eligible for this award, provided they meet the following requirements:

Posters must consist of well-prepared visual materials about the work.

The presenting author must be registered for the Conference and present their poster in person.

The presenting author must be present at their poster during their designated Poster Session to answer questions.

Selections, made by the Poster Session Chairs, will be based on the level of the research, quality of the poster, and clarity of the presentation.

Award winners will be announced during the Conference and prominently displayed onsite and on the Conference website.

INTERMAG 2024 BEST STUDENT ORAL PRESENTATION AWARD

The Best Student Oral Presentation Award is presented by the IEEE Magnetics Society to recognize

and encourage excellence in graduate studies of magnetism.

The winners will be selected by the Best Student Oral Presentation Award Committee and announced during the Conference. The award consists of a prize of \$1000 USD and a certificate for the winners, and a \$250 USD prize and certificate for each of the remaining finalists.

INTERMAG 2024 Finalists:

AB-02: Spin-reorientation driven emergent phases, unconventional magnetotransport and magnetic anisotropy in a quasi-2D ferromagnet Fe_4GeTe_2

Riju Pal - S. N. Bose National Centre for Basic Sciences; Leibniz Institute for Solid State and Materials Research; Institute for Solid State and Materials Physics, TU Dresden, Germany

AC-06: Influence of metal-insulator transition of NdNiO_3 on the magnetization dynamics of metallic ferromagnet

Biswajit Sahoo - Center for Memory and Recording Research, University of California San Diego, EUA

AF-10: Magnetoelastic Resonators Functionalized with Metal Organic Frameworks for Wireless Humidity Detection

Beatriz Sisniega Soriano - Universidad del Pais Vasco, Spain

BF-03: Study of the Magnetoelectric Effect in PVDF/Ni Composites

Federica Luciano - Imec, KU Leuven, Belgium

CG-07: Self-induced inverse spin Hall effect in disordered FePt thin films

Jose Luis Ampuero Torres - Instituto Balseiro, Argentina

SOCIAL AND CULTURAL EVENTS

Special Sessions and Events Chair: ***Luiz Augusto Sousa de Oliveira***

WELCOME RECEPTION

Monday (May 6) 7:00 - 9:00PM

No pre-registration needed

CONFERENCE RECEPTION

Wednesday (May 8) 7:00 - 10:00PM

An experience with typical Brazilian foods and beverages followed by an experience on Samba Culture by a Traditional Samba School.

No pre-registration needed

LAB TOUR ON MAGNETISM

Saturday (May 11) 10:00AM - 2:00PM

A visit to the Magnetism Laboratories at the Brazilian Center for Physics Research (CBPF) located at the Urca neighborhood.

Maximum number of participants: 80

Bus transfer will be organized by the conference

Pre-registration needed

Special City Tours and Soccer Game experience (at the Maracanã Stadium)

These on demand activities have to be booked with the partner travel agent Follow Up Tours (see link below)

<https://www.net-expert.com/followuptour/Evento/intermag2024Im>

MAGNETISM AS ART SHOWCASE

Intermag 2024 will host a Magnetism as Art Showcase to highlight the beauty of magnetism and magnetic materials. Submissions will be displayed on the Conference website, Social Media pages, and virtual platform. Additionally, submitted images may appear in the IEEE Magnetics Society Newsletter, and other communication platforms, where the author's name will be indicated. Four finalists will be selected by a panel of judges, and the winner will be selected by popular vote. The four finalists will be displayed onsite in Rio de Janeiro.

FUTURE INTERMAG CONFERENCES

1. ICM 2024 - International Conference on Magnetism

Link: <https://www.icm2024.org/>

Jun 2024 – 5 Jul 2024

Bologna, Italy

2. MMM-Intermag 2025 - 16th Joint MMM-Intermag Conference

Link: <https://2025-joint.magnetism.org/>

13 Jan 2025 – 17 Jan 2025

New Orleans, LA, USA

3. MMM 2025 - 70th Annual Conference on Magnetism and Magnetic Materials

27 Oct 2025 – 31 Oct 2025

Palm Beach, FL, USA

4. INTERMAG 2026 - 2026 IEEE International Magnetics Conference

April 2026

Manchester, UK

SPONSORS & EXHIBITORS



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SUPPORT

TRAVEL SUPPORT

Provided by



The INTERMAG 2024 Conference provides travel support to a limited number of students working in magnetism and magnetic materials who wish to attend the Conference. Student travel support is intended to partially offset travel costs. Additional support will be available specifically for students and researchers from underrepresented countries.

RECIFE MAGSOC CHAPTER SPECIAL SUPPORT

The IEEE Magnetics Society Recife Chapter is providing partial support for undergraduate and graduate students attending INTERMAG 2024. The funds may be used to cover expenses with transportation, food and accommodation during the event.

IEEE BRAIN TRAVEL AWARD

Provided by



The IEEE BRAIN provides 2 travel support awards for up to \$750 per student working in the area of brain and magnetism who wish to attend the conference. Student travel support is intended to partially offset travel costs.

SPECIAL SUPPORT FOR BRAZILIANS

Due to the support of CAPES and CNPq Brazilian researchers (non-students) are eligible to receive discounts on the registration rate. The INTERMAG 2024 Conference will provide the discount to a limited number of researchers (with permanent positions or pos-docs) working in magnetism and magnetic materials who wish to attend the Conference.

Priority will be given to researchers without research grants to cover the registration expenses.

The effective discount depends on the amount effectively received from the Brazilian agencies.

CHILDCARE SUPPORT

Provided by



INTERMAG 2024 will offer a limited number of childcare supports to parents with childcare responsibilities who wish to attend the conference. Participants who are bringing small children to the conference, or who incur extra expenses in leaving their children at home (i.e., extra day care or babysitting services), are invited to apply for reimbursement of allowable expenses upon receipt of digest acceptance notification.

PUBLICATION INTERMAG 2024

EDITORS IN CHIEF (EiCs)	
<i>Jean Anne Incorvia</i>	The Universilty of Texas at Austin, United States
<i>Felipe Bohn</i>	Universidade Federal do Rio Grande do Norte, Brazil
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<i>Thierry Lubin</i>	University of Lorraine, France
<i>Wei-heng Hsu</i>	Seagate Technology, United States

INTERMAG 2024 PROCOM ROSTER

1. SPINTRONICS	
<i>Olena Gomonay</i>	Johannes Gutenberg University Mainz, Germany
<i>Seiji Mitani</i>	National Institute for Materials Science, Japan
<i>Masaki Mizuguchi</i>	Nagoya University, Japan
<i>Hao Zeng</i>	University of Buffalo, United States
<i>Alina Deac</i>	Helmholtz-Zentrum Dresden-Rossendorf, Germany
<i>Jung-Il Hong</i>	Daegu Gyeongbuk Institute of Science and Technology, Korea (the Republic of)
<i>Myung-Hwa Jung</i>	Sogang University, Korea (the Republic of)
<i>Romain Lebrun</i>	Unité Mixte de Physique CNRS/Thales, France
<i>Byong-Guk Park</i>	Korea Advanced Institute of Science and Technology (KAIST), Korea (the Republic of)
<i>Anjan Soumyanarayanan</i>	A*STAR Institute of Materials Research and Engineering, Singapore

<i>Hiromi Yuasa</i>	Kyushu Daigaku, Japan
<i>Jianhua Zhao</i>	Institute of Semiconductor s, Chinese Academy of Sciences, China
<i>Liuyan Zhao</i>	University of Michigan, Ann Arbor, United States
2. MEMORY, LOGIC, AND DATA STORAGE	
<i>Yiming Huai</i>	Avalanche Technology, United States
<i>Yukiko Takahashi</i>	NIMS, Japan
<i>Varaprasad Bollapragada</i>	Carnegie Mellon University, United States
<i>Richard Brockie</i>	Western Digital, United States
<i>Qing Dai</i>	WDC, United States
<i>Jongill Hong</i>	Yonsei University, Korea (the Republic of)
<i>Mathias Kläui</i>	Universität Mainz, Germany
3. MAGNETIZATION DYNAMICS AND MICROMAGNETICS	
<i>Mi-Young Im</i>	Lawrence Berkeley National Laboratory, United States
<i>Joo-Von Kim</i>	Université Paris-Saclay, France
<i>Mehrdad Elyasi</i>	Tohoku University, Japan
<i>Giovanni Finocchio</i>	University of Messina, Italy
<i>Ki-Suk Lee</i>	Ulsan National Institute of Science and

	Technology (UNIST), Korea (the Republic of)
<i>Daniela Petti</i>	Politecnico di Milano, Italy
4. ELECTRICAL MACHINES, MAGNETIC DEVICES AND CONTROL	
<i>Yacine Amara</i>	Université Le Havre Normandie, France
<i>Kais Atallah</i>	University of Sheffield, United Kingdom
<i>Jonathan Bird</i>	Portland State University, United States
<i>Kenji Nakamura</i>	Tohoku University, Japan
<i>Philip Pong</i>	University of Hong Kong, Hong Kong
<i>Amr Adly</i>	Cairo University, Egypt
<i>Metin Aydin</i>	Kocaeli University, Turkey
<i>Xiao Chen</i>	The University of Sheffield, United Kingdom
<i>Hatem Elbidweihy</i>	United States Naval Academy, United States
<i>Ahmed Hemeida</i>	Aalto University, Finland
<i>Mohamed Ibrahim</i>	University of Ghent, Belgium
<i>Narayan Kar</i>	University of Windsor, Canada
<i>Elena Lomonova</i>	Technische Universiteit Eindhoven, Netherlands

<i>Smail Mezani</i>	Université de Lorraine, France
<i>Carlo Stefano Ragusa</i>	Politecnico di Torino, Italy
<i>Noureddine Takorabet</i>	Université de Lorraine, France
<i>Abdelmounaim Tounzi</i>	Univ. Lille, Arts et Metiers Institute of Technology, France
<i>Mi-Ching Tsai</i>	National Cheng Kung University, Taiwan
<i>Rong-Jie Wang</i>	Stellenbosch University, South Africa
<i>Yukihiro Yoshida</i>	Akita University, Japan
5. SENSORS AND HIGH-FREQUENCY DEVICES	
<i>Alexey Ustinov</i>	St. Petersburg Electrotechnical University, Russian Federation
<i>Stefano Bonetti</i>	Universita Ca' Foscari, Italy
<i>Yajie Chen</i>	Rogers Corp., United States
<i>Umut Parlak</i>	Technical University Dortmund, Germany
6. MULTI-FUNCTIONAL MAGNETIC MATERIALS AND APPLICATIONS	
<i>Ekkas Brück</i>	TU Delft, Netherlands
<i>Fanny Béron</i>	Universidade Estadual de Campinas, Brazil
<i>Lei Bi</i>	University of Electronic Science and Technology of China, China
<i>Jia-Yan Law</i>	University of Seville, Spain

7. SOFT MAGNETIC MATERIALS	
<i>Paola Tiberto</i>	INRIM, Italy
<i>Naoki Ito</i>	Proterial, Ltd., Japan
<i>Tibor Ovari</i>	National Institute of Research and Development for Technical Physics, Romania
8. HARD MAGNETIC MATERIALS	
<i>Nora Dempsey</i>	Institut Néel CNRS, France
<i>Cajetan Nlebedim</i>	Ames Laboratory, US Department of Energy, United States
<i>Pelin Tozman</i>	Technical University of Darmstadt, Germany
9. MAGNETOELECTRONIC MATERIALS AND PHENOMENA	
<i>John Heron</i>	University of Michigan, United States
<i>Fengxia Hu</i>	Institute of Physics, Chinese Academy of Sciences, China
<i>Jiamian Hu</i>	University of Wisconsin- Madison, United States
<i>Julia Lyubina</i>	Evonik Operations GmbH, Germany
10. FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA	
<i>Jinke Tang</i>	University of Wyoming, United States
<i>Claudia Rodriguez Torres</i>	IFLP (UNLP- CONICET), Argentina

<i>Di Wu</i>	Fudan University, China
11. NANO-STRUCTURED MATERIALS	
<i>David Lederman</i>	UC Santa Cruz, United States
<i>Cristina Bran</i>	Spanish National Research Council (CSIC), Spain
<i>Yasushi Endo</i>	Tohoku University, Japan
<i>Juliano Denardin</i>	Universidad de Santiago, Chile
<i>Jyoti Ranjan Mohanty</i>	IIT Hyderabad, India, India
12. Biomagnetics	
<i>Ravi Hadimani</i>	Virginia Commonwealth University, United States
<i>Ana García-Prieto</i>	University of the Basque Country UPV/EHU, Spain
<i>Akihiro Kuwahata</i>	Tohoku University, Japan
<i>Robert Morel</i>	IRIG/SPINTE C, France
13. MICROSCOPY, IMAGING, AND CHARACTERIZATION	
<i>Peter Fischer</i>	Lawrence Berkeley National Laboratory, United States
<i>Trevor Almeida</i>	University of Glasgow, United Kingdom
<i>Charudatta Phatak</i>	Argonne National Laboratory, United States
14. INTERDISCIPLINARY AND EMERGING TOPICS	

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<i>Gustavo Dalpian</i>	Universidade de São Paulo, Brazil
<i>Yuko Ichiyanagi</i>	Yokohama National University, Japan
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<i>Names in blue represent Team Leads</i>	

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PROGRAM

Session AA

**NEW DIRECTIONS AND CHALLENGES IN
NEUROMORPHIC SPINTRONICS**

Pedro Landeros, Chair

Universidad Técnica Federico Santa María, Valparaíso, Chile

8:30

- AA-01. Machine Learning in Networks of Mathematically Agnostic Dynamical Devices. (Invited)** L. Manneschi¹, I.T. Vidamour¹, K.D. Stenning², J. Gartside², C. Swindells¹, G. Venkat¹, D. Griffin³, S. Stepney³, W.R. Branford², T. Hayward¹, M.O. Ellis¹ and E. Vasilaki¹ *1. University of Sheffield, Sheffield, United Kingdom; 2. Imperial College, London, United Kingdom; 3. University of York, York, United Kingdom*
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9:00

- AA-02. Reprogrammable Analogue Multi-functional Nanodevices: the building blocks of Neuromorphic Spintronics. (Invited)** A. Jenkins¹ and R. Ferreira¹
1. Spintronics, International Iberian Nanotechnology Laboratory, Braga, Portugal
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9:30

- AA-03. Harnessing stochastic properties of spintronic nanodevices for cognitive computing. (Invited)** N. Phan¹, L. Soumah¹, L. Desplat¹, N. Prasad^{2,3}, A. Hakam¹, A. Sidi El Valli¹, L. Anghel¹, L. Benetti⁴, A. Jenkins⁴, R. Ferreira⁴, F. Disdier¹, L.D. Buda-Prejbeanu¹, R. Sousa¹, A. Madhavan^{2,5}, M.D. Stiles², U. Ebels¹ and P. Talatchian¹ *1. SPINTEC, Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, Grenoble, France; 2. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Department of Chemistry and Biochemistry, University of Maryland, College Park, MD, United States; 4. International Iberian Nanotechnology Laboratory, Braga, Portugal; 5. Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD, United States*
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10:00

- AA-04. Advancing Edge Computing: Leveraging MRAM Devices for Enhanced Efficiency and Security. (Invited)** S. Li¹
1. Beihang University, Beijing, China
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- AA-05. Applications of Magnetic Straintronics to Unconventional Computing. (Invited)** *S. Bandyopadhyay¹ 1. Virginia Commonwealth University, Richmond, VA, United States*
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- AA-06. Exploiting the potential of magnetic tunnel junctions for spiking and dynamical neurons. (Invited)** *D. Rodrigues¹, M. Carpentieri¹ and G. Finocchio² 1. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 2. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*
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OCEANIA VI & VII

Session AB INTERDISCIPLINARY TOPICS: CHIRALITY, MICROMAGNETIC AND NANOMAGNETIC STRUCTURES

Silvia Tacchi, Chair
 Consiglio Nazionale delle Ricerche, Perugia, Italy

- AB-01. Chiral Magnetic Phases in Moire Bilayers of magnetic Dipoles. (Invited)** *I. Tapia¹, X. Cazor¹ and P. Mellado¹ 1. Department of Engineering and Sciences, Universidad Adolfo Ibañez, Santiago, Chile*
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- AB-02. Spin-reorientation driven emergent phases, unconventional magnetotransport and magnetic anisotropy in a quasi-2D ferromagnet Fe_4GeTe_2 .** *R. Pal^{1,2,5*}, B. Pal¹, S. Mondal³, R. Sharma⁴, J. Abraham^{2,5}, T. Das⁴, B. Buchner^{2,5}, V. Kataev^{2,5}, P. Mandal¹, A. Alfonsov^{2,5} and A. Pal¹ 1. Department of Condensed Matter and Materials Physics, S. N. Bose National Centre for Basic Sciences, Block JD, Sector III, Salt Lake, 700106, Kolkata, India; 2. Leibniz Institute for Solid State and Materials Research, Helmholtzstr. 20, D-01069, Dresden, Germany; 3. Saha Institute of Nuclear Physics, HBNI, 1/AF Bidhannagar, Calcutta 700064, Kolkata, India; 4. Department of Physics, Indian Institute of Science, Bengaluru 560012, Bengaluru, India; 5. Institute for Solid State and Materials Physics, TU Dresden, D-01062, Dresden, Germany*
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- AB-04. Engineered magnetic domain patterns in exchange-biased thin films: A technological platform for multipurpose close-to-substrate transport of magnetic particles in liquids.** *R. Huhnstock*¹ and *A. Ehresmann*¹ *1. Institute of Physics and Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), University of Kassel, Kassel, Germany*
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9:30

- AB-05. Halbach Array Collaborative Robot End Effector for Advanced Handling of Magnetic Materials.** *L. Schorr*¹, *I. Scaparo*¹, *I. Thakur*¹, *J.P. Nunez*¹, *F. Hanna*¹ and *R.L. Hadimani*¹ *1. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Henrico, VA, United States*
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9:45

- AB-06. Connecting magnetization dynamics measurements of suspended magnetic nanoparticles through the fluctuation-dissipation theorem.** *K. Everaert*^{1,2,3}, *D. Eberbeck*¹, *R. Körber*¹, *P. Radon*¹, *B. Van Waeyenberge*², *J. Leliaert*² and *F. Wiekhorst*¹ *1. Physikalisch-Technische Bundesanstalt, Berlin, Germany; 2. Ghent University, Ghent, Belgium; 3. University of Maryland, College Park, MD, United States*
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10:00

- AB-07. Enhanced Magnetism through Controlled Nanostructuring and Advanced Correlative Microscopy Probes. (Invited)** *A. Fraile Rodríguez*^{1,2}, *C. Moya*^{1,2}, *M. Escoda-Torroella*^{1,2}, *J. Rodríguez Alvarez*^{1,2}, *A.I. Figueroa*^{1,2}, *I. García*¹, *I. Batalla Ferrer-Vidal*¹, *A. Gallo-Cordova*³, *L. Aballe*⁴, *M.d. Morales*³, *A. Labarta*^{1,2} and *X. Batlle*^{1,2} *1. Física de la Matèria Condensada, Universitat de Barcelona, Barcelona, Spain; 2. Institut de Nanociència i Nanotecnologia (IN2UB), Universitat de Barcelona, Barcelona, Spain; 3. Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), Madrid, Spain; 4. Experiments Division, ALBA Synchrotron Light Facility, CELLS, Barcelona, Spain*
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10:30

- AB-08. Sound as an Additional Tool for Spin-Wave Dynamics Analysis.** *S. Pile*¹, *O. Lesota*¹, *S.D. Peter*¹, *C. Humer*¹ and *M. Gasser*² *1. Johannes Kepler University Linz, Linz, Austria; 2. University of Applied Arts Vienna, Vienna, Austria*
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- AB-09. Magnetic Properties Stability from 5 K to 800 K in Metastable γ -Fe₈₅Pd₁₅ Nanowires.** P.G. Bercoff^{1,2}, S. Aprea^{1,2}, E. Céspedes³, J. Martínez³, S. Urreta¹ and M. Vázquez³ *1. Facultad de Matemática, Astronomía, Física y Computación, Universidad Nacional de Córdoba, Córdoba, Argentina; 2. Instituto de Física Enrique Gaviola (IFEG), CONICET, Córdoba, Argentina; 3. Institute of Materials Science of Madrid (ICMM-CSIC), Madrid, Spain*
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11:00

- AB-11. Simulations of magnetic nanoparticles with internal magnetization dynamics for magnetic hyperthermia.** S. Helbig¹, A. Kuznetsov¹, D. Mostarac¹, D. Zehner¹, C. Abert¹, P. Sánchez^{1,2}, S. Kantorovich¹ and D. Suess¹
1. Faculty of Physics, University of Vienna, Vienna, Austria; 2. Physics Department, University of the Balearic Islands, Palma de Mallorca, Spain
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OCEANIA IX & X

Session AC

SPIN TORQUE AND VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY

Hari Srikanth, Chair
 University of South Florida, Tampa, FL, United States

8:30

- AC-04. Non-Relativistic Spin Currents and Torques in Antiferromagnets. (Invited)** J. Zelezny¹, S. Ghosh¹, R. González-Hernández² and A. Manchon³ *1. FZU - Institute of Physics, Czech Academy of Sciences, Prague, Czechia; 2. Universidad del Norte, Barranquilla, Colombia; 3. Aix-Marseille Univ, Marseille, France*
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9:00

- AC-02. Reconfigurable classifier based on spin torque driven magnetization switching in electrically connected magnetic tunnel junctions.** A. López^{1,2}, D. Costa³, T. Böhnert³, P.P. Freitas³, R. Ferreira³, I. Barbero¹, J. Camarero^{2,4}, C. León^{1,5}, J. Santamaria^{1,5}, J. Grollier⁶ and M. Romera^{1,5} *1. Universidad Complutense de Madrid, Madrid, Spain; 2. IMDEA Nanociencia, Madrid, Spain; 3. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal; 4. Universidad Autónoma de Madrid, Madrid, Spain; 5. Lab. de Heteroestructuras con Aplicación en Espintrónica, Unidad Asociada UCM/CSIC, Madrid, Spain; 6. Unité Mixte de Physique CNRS, Thales, Université Paris-Sud, Université Paris-Saclay, Palaiseau, France*
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- AC-03. The Effect of Thermal Fields on Spin Hall Switching in Devices Stabilized by In-Plane Magnetocrystalline Anisotropy.** *S. Nallan*¹ and *J. Zhu*¹ *1. Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*
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- AC-05. Orbital currents and torques on transition metals using interfacial orbital Rashba effect.** *B. Bony*¹, *S. Krishnia*¹, *E. Rongione*², *L. Vicente Arche*¹, *T. Denneulin*³, *Y. Lu*³, *R.E. Dunin-Borkowski*³, *S. Collin*¹, *A. Fert*¹, *J. George*¹, *N. Reyren*¹, *J. Moussy*⁴, *M. Viret*⁴, *V. Cros*¹ and *H. Jaffrès*¹
1. Laboratoire Albert Fert, CNRS-Thales - Université Paris-Saclay, Bourg-La-Reine, France; 2. Catalan Institute of Nanoscience and Nanotechnology, Barcelona, Spain; 3. Ernst Ruska-Centre for microscopy and spectroscopy with Electrons and Peter Grünberg Institute, Jülich, Germany; 4. Service de Physique de l'Etat Condensé, CEA, CNRS, Gif-sur-Yvette, France
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- AC-06. Influence of metal-insulator transition of NdNiO₃ on the magnetization dynamics of metallic ferromagnet.** *B. Sahoo*^{1,3*}, *K. Akilan*², *S. Das*¹, *S. Petit-Watelot*², *A. Frano*¹ and *E. Fullerton*^{1,3} *1. Department of Physics, University of California San Diego, La Jolla, CA, United States; 2. Institut Jean Lamour, Nancy, France; 3. Center for Memory and Recording Research, University of California, La Jolla, CA, United States*
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- AC-08. Symmetry engineering induced out-of-plane spin-orbit fields in WSe₂ and NbIrTe₄.** *W. Yang*^{1,2,3^}, *D. Zhou*^{1,2}, *X. Wang*¹, *J. Rojas-Sanchez*³, *X.L. Lin*^{1,2} and *W. Zhao*^{1,2}
1. National Key Lab of Spintronics, Institute of International Innovation, Beihang University, Hangzhou, China; 2. Fert Beijing Institute, Beihang University, Beijing, China; 3. Université de Lorraine, Institut Jean Lamour, Nancy, France
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10:15

- AC-09. **Experimental Analysis of the Impact of Voltage Pulse Parameters on the Writing Performance in VCMA-MRAM.** *D. Favaro*^{1,2}, *W. Kim*¹, *S. Ranjbar*¹, *M. Gama Monteiro*¹, *R. Carpenter*¹, *K. Sankaran*¹, *S. Rao*¹, *J. Van Houdt*^{1,3}, *K. Temst*^{1,2} and *S. Couet*¹ *1. Imec, Leuven, Belgium;* *2. Quantum Solid State Physics, Department of Physics and Astronomy, KU Leuven, Leuven, Belgium;* *3. Semiconductor Physics, Department of Physics and Astronomy, KU Leuven, Leuven, Belgium*
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10:30

- AC-10. **Enhancement of voltage-controlled magnetic anisotropy (VCMA) via electron depletion utilizing a W/Pt/W high work function underlayer.** *Y. Chen*¹, *J. Qi*¹, *D. Lyu*¹, *T. Peterson*² and *J. Wang*¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States;* *2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States*
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10:45

- AC-11. **Controllable Synthesis and Property Manipulation of 2D (nonlayered) Magnetic Nanomaterials.** *Y. Hou*¹
1. Sun Yat-Sen University, Shenzhen, China
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OCEANIA I & II

Session AD MRAM APPLICATIONS AND MAGNETIC RECORDING

Jonathan Sun, Chair
IBM Research, Yorktown Heights, NY, United States

8:30

- AD-01. **Self compensated ferromagnetic micro-structures: Forming a dense superconducting memory. (Invited)** *C. Pot*¹, *W.F. Holmes-Hewett*², *E. Anton*¹, *J. Miller*², *B. Ruck*¹ and *J. Trodahl*¹ *1. Victoria University of Wellington, Wellington, New Zealand;* *2. Robinson Research Institute, Wellington, New Zealand*
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- AD-02. Origin of the Switching Current Reduction in PtCu-SOT-MRAM.** *W. Janssens^{1,2}, G. Talmelli¹, R. Carpenter¹, V. Nguyen¹, K. Cai¹, K. Wostyn¹, S. Couet¹ and J. De Boeck^{1,2}* 1. imec, Leuven, Belgium; 2. Department of Electrical Engineering, KU Leuven, Leuven, Belgium
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9:15

- AD-03. Decision-Feedback Single-Layer Read Reconstruction and Separation for Three-dimensional Magnetic Recording.** *Y. Liao^{1,3}, K. Zhang^{1,3}, Y. Jian^{2,3}, S. Wang⁴, J. Chen^{1,2,3}, P. Lu^{1,2,3} and K. Luo^{2,3}* 1. School of Computer Science & Technology, Huazhong University of Science & Technology, Wuhan, China; 2. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China; 3. Key Laboratory of Information Storage System, Engineering Research Center of Data Storage Systems and Technology, Huazhong University of Science and Technology, Wuhan, China; 4. School of Public Health, Hubei University of Medicine, Shiyan, China
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9:30

- AD-04. Electrically controlled all-antiferromagnetic tunnel junctions on silicon.** *S. Arpaci^{1,2*}, J. Shi¹, V. Lopez-Dominguez^{1,3}, V. K. Sangwan⁴, F. Mahfouzi⁵, J. Kim⁵, J.G. Athas¹, M. Hamdi¹, C. Aygen¹, C. Phatak⁶, M. Carpentieri⁷, J.S. Jiang⁶, M.A. Grayson^{1,2}, N. Kioussis⁵, G. Finocchio⁸, M.C. Hersam^{1,2,4} and P. Khalili Amiri^{1,2}* 1. Department of Electrical and Computer Engineering, Northwestern University, Evanston, IL, United States; 2. Applied Physics Program, Northwestern University, Evanston, IL, United States; 3. Institute of Advanced Materials (INAM), Universitat Jaume I, Castellón, Spain; 4. Department of Materials Science and Engineering, Northwestern University, Evanston, IL, United States; 5. Department of Physics and Astronomy, California State University Northridge, Northridge, CA, United States; 6. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States; 7. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 8. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy
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9:45

- AD-05. Electrical manipulation of exchange bias for memory and logic applications.** *A. Du¹, D. Zhu¹, K. Cao¹, Z. Zhang¹, Z. Guo¹, K. Shi¹, C. Zhao¹, Y. Zhang¹, S. Luo², A. Fert³ and W. Zhao¹* 1. Beihang University, Beijing, China; 2. Huawei Technologies, Shenzhen, China; 3. University of Paris-Saclay, Paris, France
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10:00

- AD-06. Synthetic Antiferromagnetic/Ferromagnetic Spin-Orbit Torque Devices with an Oxide Spacer.** *Y. Huang¹, C. Cheng¹, J. Hsu², Y. Wu¹, Y. Lin¹, W. Chang³ and Y. Tseng¹*
1. Department of Materials Science & Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan;
2. Industry Academia Innovation School, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; *3. Powerchip Semiconductor Manufacturing Corporation, Hsinchu, Taiwan*
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10:15

- AD-08. How Magnetic Inhomogenieties Relate to Device Performance for Magnetic Storage Devices.** *V.J. Borras¹, R. Carpenter², S. Couet², U. Celano^{3,4}, L. Zaper^{1,5}, A. Stark¹, M. Munsch¹, H. Zhong¹, C. Adelman⁴, P. van der Heide⁴, P. Maletinsky^{5,1} and P. Rickhaus¹*
1. Qnami, Muttensz, Switzerland; *2. MRAM, Imec, Leuven, Belgium;* *3. Arizona State University, Phoenix, AZ, United States;* *4. Imec, Leuven, Belgium;* *5. University of Basel, Basel, Switzerland*
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10:30

- AD-09. Reduction of writing temperature by the exchange-coupled FePt-C/Ru-C/FePt-C tri-layer films with different T_c .** *D. Ogawa¹, A. Bolyachkin¹, D. Angayarkanni Ramamurthy^{1,2}, N. Kulesh¹, H. Sepehri-Amin^{1,2} and Y. Takahashi¹*
1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba City, Japan;
2. University of Tsukuba, Tsukuba City, Japan
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10:45

- AD-10. Effect of Curie Temperature Distributions on the Areal Density Capability of Heat-Assisted Magnetic Recording.** *S. Greaves¹, H. Suto², Y. Nakamura³ and Y. Kanai⁴*
1. Tohoku University, Sendai, Japan; *2. National Institute for Materials Science (NIMS), Tsukuba, Japan;* *3. Ehime University, Matsuyama, Japan;* *4. Niigata Institute of Technology, Kashiwazaki, Japan*
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11:00

- AD-11. Quaternary Neural Network Equalization for Three-Dimensional Magnetic Recording.** *K. Luo¹, Y. Wu², Y. Liao², S. Wang³, Y. Jian¹, J. Chen¹ and P. Lu²*
1. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science & Technology, Wuhan, China; *2. School of Computer Science & Technology, Huazhong University of Science and Technology, Wuhan, China;* *3. School of Public Health, Hubei University of Medicine, Shiyan, China*
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Session AE

FUNDAMENTAL PROPERTIES, COOPERATIVE PHENOMENA AND COMPUTATIONAL MAGNETISM

Artur Carbonari, Chair

Instituto de Pesquisas Energeticas e Nucleares, São Paulo, Brazil

8:30

- AE-01. Cluster magnetic toroidal quadrupole and anomalous Hall effect in NiCo_2O_4 thin film. (Invited) H. Koizumi¹**
1. Tohoku University (CSIS), Sendai, Japan
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9:00

- AE-02. Dimension-Dependent Critical Scaling Analysis and Emergent Competing Interaction Scales in a 2D Van der Waals magnet $\text{Cr}_2\text{Ge}_2\text{Te}_6$.** *P.C. Mahato¹, S. Saha¹, B. Das², S. Datta², R. Mondal³, S. Mal⁴, A. Garg⁵, P. Sen⁴ and S. Banerjee¹*
1. Department of Physics, Indian Institute of Technology, Kanpur, Kanpur, India; 2. School of Physical Sciences, Indian Association for the Cultivation of Science, Jadavpur, Kolkata, India; 3. UGC-DAE Consortium for Scientific Research, Kolkata Centre, Bidhannagar, Kolkata, India; 4. Harish-Chandra Research Institute, HBNI, Allahabad, India; 5. Department of Sustainable Energy Engineering, Indian Institute of Technology Kanpur, Kanpur, India
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9:15

- AE-03. MnGaGe nanomagnets epitaxially grown on GaAs.** *R.M. Araujo^{1,2}, C.A. Costa³, I.T. Neckel² and D.H. Mosca⁴*
1. PPG Engenharia e Ciência dos Materiais - PIPE, Universidade Federal do Paraná, Curitiba, Brazil; 2. Laboratório Nacional de Luz Síncrotron - LNLS, Centro Nacional de Pesquisa em Energia e Materiais - CNPEM, Campinas, Brazil; 3. Laboratório Nacional de Nanotecnologia - LNNano, Centro Nacional de Pesquisa em Energia e Materiais - CNPEM, Campinas, Brazil; 4. PPG Física, Universidade Federal do Paraná, Curitiba, Brazil
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9:30

- AE-04. Automated analysis of magnetic domain structure using feature extended Landau free energy theory.** *M. Kotsugi¹*
1. Tokyo University of Science, Katsuhika, Japan
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- AE-05. Deconvolution of Magnetic Field by Coupling Efficiency Tensor of TMR Sensor Array.** *J. Rice*^{1,2} 1. *Allegro Microsystems, Boulder, CO, United States*; 2. *Crocus Technology, Lafayette, CO, United States*
[View Digest Text](#)

10:00

- AE-07. Simulation Acceleration Through a Data-Driven Technique for Non-Linear Dynamics in Vortex-Based Spin-Torque Nano-Oscillators.** *F. Abreu Araujo*¹, *C. Chopin*^{1,2}, *A. Moureaux*¹ and *S. de Wergifosse*¹
 1. *IMCN / BSMA, Université Catholique de Louvain, Louvain-la-Neuve, Belgium*; 2. *SPINTEC, CEA, Grenoble, France*
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10:15

- AE-08. Polarity Influence of Poles on Positional Accuracy in Absolute Encoders.** *K. Peng*¹ and *J. Chang*^{1,2} 1. *Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*; 2. *Department of Mechanical and Computer-Aided Engineering, National Formosa University, Huwei Township, Taiwan*
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10:30

- AE-09. NeuralMag: An Open-Source Nodal Finite-Difference Code for Inverse Micromagnetics.** *C. Abert*¹, *S. Pathak*², *R. Kraft*¹, *A. Voronov*¹, *R. Allayarov*¹, *F. Bruckner*¹, *S. Koraltan*¹, *S.J. Holt*², *M. Lang*², *T. Schreffl*³, *H. Fangohr*² and *D. Suess*¹ 1. *University of Vienna, Vienna, Austria*; 2. *Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany*; 3. *University for Continuing Education Krems, Wiener Neustadt, Austria*
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10:45

- AE-10. Quantum thermal expectation values from an effective atomistic spin dynamics model using path integrals.** *T. Nussle*¹, *S. Nicolis*² and *J. Barker*¹ 1. *School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*; 2. *Institut Denis Poisson, Université de Tours, Tours, France*
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- AE-11. Discretization Anisotropy In Micromagnetics.** *S.J. Holt^{1,2}, M. Lang^{1,2}, S.A. Pathak^{1,2} and H. Fangohr^{1,2,3}* *1. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany; 2. Center for Free-Electron Laser Science, Hamburg, Germany; 3. The University of Southampton, Southampton, United Kingdom*
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EUROPA II

Session AF

MAGNETO-OPTIC AND MAGNETO-ELASTIC MATERIALS AND DEVICES

Ekkes Brück, Co-Chair
 TU Delft, Delft, Netherlands

Fanny Béron, Co-Chair
 Universidad Estadual de Campinas, Campinas, Brazil

8:30

- AF-01. Terahertz and far infrared magneto-optics in emergent magnets. (Invited)** *Y. Takahashi^{1,2}* *1. The University of Tokyo, Tokyo, Japan; 2. Center for Emergent Matter Science, RIKEN, Wako, Japan*
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9:00

- AF-02. Efficient Synthesis and Magneto-Optical Enhancement of Au-Fe₃O₄ Hetero-dimer Nanoparticles with Triiron Dodecacarbonyl.** *L. Tonthat¹, T. Ogawa² and S. Yabukami²* *1. Department of Electrical Engineering, Tohoku University, Sendai, Japan; 2. Tohoku University, Sendai, Japan*
[View Digest Text](#)

9:15

- AF-03. Magneto-optical Ce:YIG Film with Maze-Shaped Magnetic Domains on GGG Substrate.** *T. Goto¹, Y. Yoshihara¹, T. Koguchi¹, T. Watanabe², K. Mori¹, H. Miyashita¹, M. Inoue¹, C. Ross³ and K. Ishiyama¹* *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Shin-Etsu Chemical Co., Ltd., Annaka, Japan; 3. Massachusetts Institute of Technology, Cambridge, MA, United States*
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9:30

- AF-04. Magnetoelastic Coupling of Surface Spin & Surface Acoustic Waves.** *N. Homrocky¹, C. Trevillian¹ and V. Tyberkevych¹* *1. Department of Physics, Oakland University, Rochester, MI, United States*
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9:45

- AF-05. Self-consistent time integration of the dynamics of surface acoustic waves and spin waves in magnetic films.** *P. Flauger^{1,2}, M. Küß³, M.K. Steinbauer^{1,2}, M. Albrecht³ and C. Abert^{1,2}* *1. Faculty of Physics, University of Vienna, Vienna, Austria; 2. University of Vienna Research Platform MMM Mathematics - Magnetism - Materials, University of Vienna, Vienna, Austria; 3. Institute of Physics, University of Augsburg, Augsburg, Germany*
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10:00

- AF-06. Magnetorheological printable elastomers: from optimizing performance to self-sensing devices. (Invited)** *S. Lanceros-Mendez¹* *1. Basque Center for Materials, Applications and Nanostructures, BC Materials, Leioa, Spain*
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10:30

- AF-07. Comparison of Torque Generated by In-Plane and Out-of-Plane Anisotropic Magnetorheological Elastomers.** *H. Htet¹, L. Cestarollo² and A. El-Ghazaly¹* *1. Department of Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States; 2. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, United States*
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10:45

- AF-08. U-shape Magnetostrictive Harvester: Design and Experimental Validation.** *D. Gandia¹, E. Garaio¹, J. Beato-Lopez¹, I. Royo-Silvestre¹ and C. Gomez-Polo¹* *1. Department of Science, UPNA, Pamplona, Spain*
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11:00

- AF-09. Piezomagnetism in Cr-doped Fe₆₅Co₃₅ alloy.** *I. Braga Silva¹, F. Froes¹, H. Natan Alves Ferreira¹, O. Hubert² and C. Bormio-Nunes¹* *1. Departamento de Engenharia de Materiais, Universidade de São Paulo - Escola de Engenharia de Lorena, Lorena, Brazil; 2. ENS Paris-Saclay, Université Paris-Saclay, Gif-sur-Yvette, France*
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- AF-10. Magnetoelastic Resonators Functionalized with Metal Organic Frameworks for Wireless Humidity Detection.** *B. Sisniega Soriano*^{1*}, R. Fernández de Luis², J. Gutiérrez^{1,2} and A. García-Arribas^{1,2} *1. Departamento de Electricidad y Electrónica, Universidad del País Vasco, Leioa, Spain; 2. BC Materials, Applications and Nanostructures, Leioa, Spain*
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EUROPA IV

Session AG
SKYRMIONS AND MAGNETIC
HETEROSTRUCTURES

Johanna Fischer, Chair
 CEA-SPINTEC, Grenoble, France

8:30

- AG-01. Skyrmion-based applications: recent developments and future directions. (Invited)** *R. Tomasello*¹, M. Carpentieri¹ and G. Finocchio² *1. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 2. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*
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9:00

- AG-02. The role of interfacial atomic intermixing in the formation of skyrmions.** *P. Costa Carvalho*¹, I. de Paula Miranda², J. Brandao³, A. Bergman², J.C. Cezar³, A.B. Klautau⁴ and H.M. Petrilli¹ *1. University of Sao Paulo, São Paulo, Brazil; 2. Uppsala University, Uppsala, Sweden; 3. Centro Nacional de Pesquisa em Energia e Materiais, São Paulo, Brazil; 4. Federal University of Pará, Belém, Brazil*
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9:15

- AG-03. Skyrmion stabilisation in 3D magnetic nanostructures.** *M.K. Zelent*¹, M. Moalic¹, B. Rana¹, K. Gusliyenkov^{2,3} and M. Krawczyk¹ *1. Faculty of Physics, Uniwersytet im Adama Mickiewicza w Poznaniu, Poznan, Poland; 2. Departamento de Polímeros y Materiales Avanzados: Física, Química y Tecnología, Universidad del País Vasco, San Sebastián, Spain; 3. The Basque Foundation for Science, IKERBASQUE, Bilbao, Spain*
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9:30

- AG-04. **Magnetic skyrmions in synthetic ferri- and antiferromagnets. (Invited)** *A. Hoffmann*¹ *1. University of Illinois at Urbana-Champaign, Urbana, IL, United States*
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10:00

- AG-05. **Higher-order skyrmions and antiskyrmions at room temperature. (Invited)** *S. Koraltan*¹, *M. Hassan*^{2,3}, *A. Ullrich*², *F. Bruckner*¹, *R. Serha*¹, *K. Levchenko*¹, *G. Vavaro*³, *N. Kiselev*⁴, *M. Heigl*², *C. Abert*¹, *D. Suess*¹ and *M. Albrecht*² *1. Faculty of Physics, University of Vienna, Wien, Austria; 2. Institute of Physics, University of Augsburg, Augsburg, Germany; 3. nM2-Lab, ISM-CNR, Roma, Italy; 4. Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany*
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10:30

- AG-07. **Ultrafast Skyrmion Motions and Detections. (Invited)** *J. Zang*¹ *1. Department of Physics, University of New Hampshire, Durham, NH, United States*
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11:00

- AG-08. **Unveiling Orbital Pumping in Magnetic Heterostructures.** *E. Santos*¹, *J.E. Abrão*¹, *J.B. Mendes*² and *A. Azevedo*¹ *1. Universidade Federal de Pernambuco (Physics), Recife, Brazil; 2. Física, Universidade Federal de Viçosa, Viçosa, Brazil*
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EXHIBIT HALL

Session AP
MAGNETIZATION DYNAMICS AND
MICROMAGNETICS I
(Poster Session)

Luis Aviles Felix, Co-Chair
Centro Atomico Bariloche, Bariloche, Argentina
Emily Darwin, Co-Chair
EMPA, Zurich, Switzerland

- AP-01. **A Data-driven Extended Landau Theory Method For The Coercivity Analysis Of Magnetic Materials.** *C. Mitsumata*¹, *A.L. Foggiatto*¹ and *M. Kotsugi*¹ *1. Department of Materials Science, Tokyo University of Science, Tokyo, Japan*
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- AP-02. Modifying the trajectory of a skyrmionium using defects.** H. Vigo¹, S. Urcia Romero², S.R. Navarro Vilca³ and A.P. Guimarães⁴ 1. *Universidad Privada del Norte, Trujillo, Peru*; 2. *University of Puerto Rico, Mayagüez, Puerto Rico*; 3. *Universidad Nacional Jorge Basadre Grohmann, Tacna, Peru*; 4. *Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*
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- AP-03. Control of 3D Topological Spin Texture in a Ferromagnetic Rectangular disk.** M. Kang¹, H. Han², H. Ok¹, G. Kim¹, S. Jeong¹, Y. Yu³, S. Je⁴, W. Chao⁵, M. Im⁵ and K. Lee¹ 1. *Ulsan National Institute of Science and Technology (UNIST), Ulsan, The Republic of Korea*; 2. *Korea National University of Transportation, Chungju, The Republic of Korea*; 3. *Chungbuk National University, Cheongju, The Republic of Korea*; 4. *Chonnam National University, Gwangju, The Republic of Korea*; 5. *Center for X-ray Optics, Berkeley, CA, United States*
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- AP-04. Magnetization dynamics in $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{LaTiO}_3(\delta)/\text{SrTiO}_3(001)$ thin films.** K. Lal¹, P. Ghising¹, B. Samantaray¹ and Z. Hossain¹ 1. *Department of Physics, Indian Institute of Technology, Kanpur, India*
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- AP-06. Magnetic and elasto optic dynamic on Co/Pt multilayers.** T. Fernandes¹, L.H. de Andrade¹, M.D. Martins², J. Zarpellon³, D.H. Mosca³ and F.M. Matinaga² 1. *SENAN, Centro de Desenvolvimento de Tecnologia Nuclear, Belo Horizonte, Brazil*; 2. *SEMAV, Centro de Desenvolvimento de Tecnologia Nuclear, Belo Horizonte, Brazil*; 3. *Departamento de Física, Universidade Federal do Paraná, Curitiba, Brazil*
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- AP-09. Interpretation in physics on magnetic domain structure dynamics in soft magnetic materials using feature extended energy landscape.** R. Nagaoka¹, K. Masuzawa¹, A.L. Foggiatto¹, T. Yamazaki¹, I. Obayashi³, Y. Hiraoka², C. Mitsumata¹ and M. Kotsugi¹ 1. *Department of Material Science, Tokyo University of Science, Katsushika-ku, Japan*; 2. *Kyoto University, Kyoto, Japan*; 3. *Okayama University, Okayama, Japan*
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- AP-10. Structural and magnetic properties of Fe/Ti superlattices.** M.S. Yactayo Yaranga¹, H.S. Tarazona¹, J. Ghanbaja², O. Copie², J. Rojas-Sanchez², C. Landauro Saenz^{1,3} and J. Quispe-Marcatoma^{1,3} 1. *Facultad de Ciencias Físicas, Universidad Nacional Mayor de San Marcos, P.O.-Box 14-0149, Lima, Peru*; 2. *Institut Jean Lamour-U. Lorraine UMR7198 CNRS, Nancy, France*; 3. *Centro de Investigaciones Tecnológicas, Biomédicas y Medioambientales, Calle José Santos Chocano 199, Callao, Peru*
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- AP-11. Analysis of the high-frequency magnetization process through machine learning and topological data techniques.** *A.L. Foggiatto¹, R. Nagaoka¹, M. Taniwaki¹, T. Yamazaki¹, T. Ogasawara², I. Obayashi³, Y. Hiraoka⁴, C. Mitsumata¹ and M. Kotsugi¹* *1. Tokyo University of Science, Katsushika, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. Okayama University, Okayama, Japan; 4. Kyoto University, Kyoto, Japan*
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- AP-12. Tailoring the exchange bias by AFM interface patterned control.** *G. de Oliveira Gurgel Rebouças¹, A.L. Dantas² and A.S. Carriço³* *1. Departamento de Ciências Exatas e Tecnologia da Informação, UFERSA, Mossoró, Brazil; 2. Departamento de Ciência e Tecnologia, UERN, Natal, Brazil; 3. Departamento de Física, UFRN, Natal, Brazil*
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- AP-14. Utilizing exchange bias in ferro/anti-ferromagnetic structure for obtaining a field-free Spin Hall Nano Oscillator (SHNO).** *M.S. Ban¹ and S. Bhuktare¹* *1. Department of Electrical Engineering, Indian Institute of Technology Tirupati, Tirupati, India*
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EXHIBIT HALL

Session AQ

THIN FILMS, MULTI-LAYERED FILMS AND SUPERLATTICES (Poster Session)

Xiufeng Han, Chair
Institute of Physics, Chinese Academy of Sciences, Beijing, China

- AQ-01. Electrodeposition of Fe-based thin films for applications in nanodevices.** *B.G. Silva¹, D. Gonzalez-Chavez¹, J. Gomes Filho¹ and R.L. Sommer¹* *1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*
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- AQ-02. Consecutive field-assisted Ne ion irradiation of Co and Ni films with collapsed hard-magnetization axes.** *H.S. Acosta¹, L. F. S. Azeredo¹, A. M. H. de Andrade¹ and J. Geshev¹* *1. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil*
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- AQ-03. Strain-induced oxygen vacancies and ferromagnetic order near the interface in CaMnO₃ thin films.** *J. Gajst^{1,2,3}, J.P. Coronel¹, J. Santiso⁴, F.J. Williams^{2,3} and L. Steren^{1,2}* *1. Instituto de Nanociencia y Nanotecnología CAC—CNEA/ CONICET, San Martín, Argentina; 2. Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina; 3. INQUIMAE, Facultad de Ciencias Exactas y Naturales, Buenos Aires, Argentina; 4. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, UAB, Bellaterra, Spain*
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- AQ-04. Effect of Cobalt doping on Resistive Switching Process in ZnO and TiO₂ Nanostructures for Flexible Non-Volatile Memories.** *A. Dussan Cuenca*¹, *H.P. Quiroz*¹, *C.L. Terán*¹ and *J.A. Calderón*^{1,2} *1. Department of Physics, Universidad Nacional de Colombia, Bogotá, Colombia; 2. Engineering and Basic Science Faculty, Universidad Central, Bogotá, Colombia*
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- AQ-05. Withdrawn**
- AQ-06. H⁺ and He⁺ irradiation induce selective oxygen diffusion for oxide/metal/oxide interfaces heterostructures fabrication.** *M. Mery*¹, *I. Stankovic*², *C. Gonzalez*¹, *J. Nunez*³, *J. Valdes*¹, *M. Aguirre*^{4,3} and *C. Garcia*^{1,5} *1. Department of Physics, UTFSM - Universidad Tecnica Federico Santa Maria, Valparaiso, Chile; 2. Center for Solid State Physics and New Materials, Institute of Physics Belgrade, University of Belgrade, Belgrade, Serbia; 3. Fisica de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 4. INMA-Instituto de Nanociencia y Materiales de Aragon-CSIC, Zaragoza, Spain; 5. CCTVal - Centro Cientifico y Tecnologico de Valparaiso, Valparaiso, Chile*
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- AQ-07. The Interplay of Orbital Magnetic Moments in Tuning Perpendicular Magnetic Anisotropy in TmIG Thin Films.** *C.C. Soares*^{1,2,3}, *D. Chaves*², *T.J. Mori*², *T. Rocha*², *J. Brandao*², *F. Béron*³, *J.C. Cezar*², *J.S. Moodera*⁴ and *G. Vilela*¹ *1. Física de Materiais, Universidade de Pernambuco, Campinas, Brazil; 2. Laboratório Nacional de Luz Sincrotron, Centro Nacional de Pesquisa em Energia e Materiais, Campinas, Brazil; 3. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil; 4. Plasma Science and Fusion Center and FBML, Massachusetts Institute of Technology, Cambridge, MA, United States*
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- AQ-08. Structural characterization and local surface electronic response of sputtered growth Bi₂Se₃ on MgO (100) substrate.** *G.R. Junior*¹, *A. Vieira*¹, *R. Magalhães-Paniago*², *L. Moura*¹, *R.O. da Cunha*¹ and *J.B. Mendes*¹ *1. Department of Physics, Universidade Federal de Viçosa, Viçosa, Brazil; 2. Department of Physics, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*
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- AQ-09. Magnetometry of Buried Co-based Nanolayers by Hard X-ray Photoelectron Spectroscopy.** *A. Hloskovsky*¹, *C. Schlueter*¹ and *G. Fecher*² *1. Photon Science, DESY, Hamburg, Germany; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*
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- AQ-10. Structure and magnetic properties of Co₂FeGa Heusler alloy films grown by sputtering deposition.** *B.D. dos Santos*¹, *A.C. Krohling*¹ and *W.A. Macedo*¹ *1. Centro de Desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil*
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- AQ-11. Thin Films of Heusler alloy – Ni₂(MnCu)(GaAl): structural and magnetic properties, a spin glass behavior-like appears.** *R. Duarte de Melo¹, V.M. T.S. Barthem¹ and A. Gomes¹* 1. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
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- AQ-13. Surface Spin Wave Resonance in NiFe/Zr Multilayers.** *M. Pessoa¹, F. Pelegrini², A. Biondo³, V. Nascimento³ and E.M. Saitovitch⁴* 1. Departamento de Ciências Naturais, Universidade Federal do Espírito Santo, São Mateus, Brazil; 2. Instituto de Física, Universidade Federal de Goiás, Goiânia, Brazil; 3. Departamento de Física, Universidade Federal do Espírito Santo, Vitória, Brazil; 4. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil
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- AQ-14. Simulations of Experimentally Detected Ambient Skyrmions in Symmetric Synthetic Antiferromagnetic Multilayers.** *L.S. Palhares^{1,2}, T.M. Batistel^{1,2}, J. Brandao² and F. Béron¹* 1. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil; 2. Laboratório Nacional de Luz Síncrotron, Centro Nacional de Pesquisa em Energia e Materiais, Campinas, Brazil
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- AQ-15. High frequency response of magnetically coupled Co/Cu/CoFeB trilayers.** *Z. Wei¹, D. Navas¹, S.A. Bunyayev², M. Abellan³, C. Garcia^{3,4}, G.N. Kakazei² and M. Vázquez¹* 1. Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), Madrid, Spain; 2. IFIMUP/Department of Physics and Astronomy, University of Porto, Porto, Portugal; 3. Centro Científico Tecnológico de Valparaíso - CCTVal, Universidad Técnica Federico Santa María, Valparaíso, Chile; 4. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile
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- AQ-16. Correlation between strains, oxygen vacancies and magnetotransport properties of CaMnO₃ thin films.** *A. Lopez Pedroso^{1,2}, J. Gajst^{1,2,6}, S. Carreira³, J. Santiso⁴, M. Aguirre⁵, J. Briatico³, F.J. Williams^{2,6} and L. Steren^{1,2}* 1. Instituto de Nanociencia y Nanotecnologia CNEA/ CONICET- Constituyentes, San Martin, Argentina; 2. Consejo Nacional de Investigaciones Científicas y Técnicas, San Martin, Argentina; 3. Laboratoire Albert Fert, Palaiseau, France; 4. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and the Barcelona Institute of Science and Technology (BIST), Campus de la UAB, Bellaterra, Spain; 5. Condensed Matter Physics, INMA-Instituto de Nanociencia y Materiales de Aragón, Zaragoza, Spain; 6. Chemistry, Inquimae, Buenos Aires, Argentina
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Session AR
TRANSFORMERS AND WIRELESS POWER
TRANSFER, MAGNETIC BEARINGS AND
LEVITATION
(Poster Session)

Hamed Hamzehbahmani, Chair
Durham University, Durham, United Kingdom

- AR-01. Magnetic Ageing of Electrical Steel: Precipitates Impact on Magnetic Losses.** M. Mota^{1,2}, W. França¹, L.F. Costa¹, J. Dias^{1,3}, L. Favarato³, T. Barros¹, J.R. Oliveira Junior³, L.M. Meireles¹ and D.L. Rocco¹ *1. Departamento de Formação Geral, Centro Federal de Educação Tecnológica de Minas Gerais, Timóteo, Brazil; 2. SENAI/MG, Ipatinga, Brazil; 3. Aperam South America, Timóteo, Brazil*
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- AR-02. An alternative heat treatment recovery of the magnetic properties of a non-grain oriented Fe-Si steel after cutting.** A.C. Junior¹, J.C. Ferreira¹, D.L. Rocco¹ and L.M. Meireles¹ *1. POSMAT, Centro Federal de Educacao Tecnologica de Minas Gerais, Timoteo, Brazil*
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- AR-03. Influence of leakage inductance of a transformer operating in a DC resistance welding machine on welding conditions.** Z. Mikno² and M. Stepień¹ *1. Department of Power Electronics, Electrical Drives and Robotics, Silesian University of Technology, Gliwice, Poland; 2. Lukasiewicz Research Network – Upper Silesian Institute of Technology, Gliwice, Poland*
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- AR-04. An Ultra-thin Self-Resonant Coupler with Nanocrystalline Flake Ribbons for Wireless Power Transfer System.** J. Xiang¹, C. Jiang¹, T. Ma¹, Y. Wang¹ and Y. Fan¹ *1. Department of Electrical Engineering, City University of Hong Kong, Kowloon, Hong Kong*
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- AR-05. Configurable Nanocrystalline Flake Ribbon Transformer with Variable Leakage Inductance.** R. Sheng¹, C. Jiang¹, L. Mo¹, C. Chen¹ and Y. Wang¹ *1. Department of Electrical Engineering, City University of Hong Kong, Kowloon, Hong Kong*
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- AR-06. Design Method of Transformer in LLC Resonant Converters considering Electro-magnetic and Thermal Characteristics.** J. Ryu¹, S. Cho¹, D. Lee¹, Y. Shin¹, G. Koo¹, J. Park¹, B. Kim¹ and H. Seol¹ *1. Korea Automotive Technology Institute, Cheonan-Si, The Republic of Korea*
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- AR-10. Multi-source vibration suppression of magnetic bearing supporting rotor system based on phase-shift Least Mean Square adaptive filter.** *P. Xiao*¹, *K. Liu*¹ and *J. Wei*¹
1. Sun Yat-Sen University, ShenZhen, China
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- AR-12. K-best-Sphere-Decoding-Based Model Predictive Control for Dual Three-Phase SPMSMs.** *Z. Zhang*¹, *J. Chen*¹, *R. Han*², *Y. Wu*¹, *Y. Gong*¹ and *S. Chang*¹ *1. Tianjin University, Tianjin, China; 2. Tianjin Navigation Instruments Research Institute, Tianjin, China*
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- AR-13. Torque-Ripple-Mitigated Model-Free Predictive Current Control with Extended Control Set for PMSMs.** *Z. Zhu*¹, *X. Wei*¹, *Z. Zhang*¹, *R. Han*², *Y. Wu*¹, *Y. Gong*¹ and *S. Chang*¹ *1. Tianjin University, Tianjin, China; 2. Tianjin Navigation Instruments Research Institute, Tianjin, China*
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- AR-14. Dc-link Utilization Enhanced Implicit Model Predictive Control for Dual Three-Phase PMSMs.** *Y. Wu*¹, *Z. Zhang*¹, *R. Han*², *Y. Gong*¹ and *S. Chang*¹ *1. Tianjin University, Tianjin, China; 2. Tianjin Navigation Instruments Research Institute, Tianjin, China*
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- AR-15. Modulation-Incorporated Model Predictive Control Using Symmetric Single Pulse for Dual Three-Phase PMSMs.** *B. Deng*¹, *R. Gu*¹, *Y. Gong*¹ and *Y. Wu*¹ *1. Tianjin University, Tianjin, China*
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- AR-16. Drag Force Analysis of Superconducting EDS Type Hyperloop System According to Changes in Tube Material Properties.** *S. Kim*¹, *J. Lee*¹, *C. Kim*² and *H. Lee*²
1. Hanyang University, Seoul, The Republic of Korea; 2. Department of Railway Vehicle & Operation System Engineering, Korea National University of Transportation - Uiwang Campus, Uiwang-si, The Republic of Korea
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EXHIBIT HALL

Session AS INTERDISCIPLINARY TOPICS IN MAGNETICS I (Poster Session)

Alisson Krohling, Chair
Nuclear Technology Development Center, Belo Horizonte, Brazil

- AS-01. High-frequency electric Dipole-Dipole interaction contribution for the magnetoelectric effect in the multiferroic composite PZT/NFO.** *A.J. Gualdi*¹ and *F.L. Zabotto*¹ *1. Department of Physics, Federal University of São Carlos, São Carlos, Brazil*
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- AS-02. Synthesis and Characterization of BiFeO₃ Nanoparticles Obtained by the Coprecipitation Method.** J. Duque¹, B. Santos¹, G. Cunha¹, L. Fernandes¹ and P. Oliveira¹
1. Federal University of Sergipe, Itabaiana, Brazil
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- AS-03. Temperature dependence of the magnetic hyperfine field and electric field gradient in HfNiO₃ ferroic perovskite.** L.F. Pereira¹, T. da Silva Nascimento Sales¹, L. Scalise¹, A. Burimova¹, K.S. Souza¹, B.S. Corrêa¹, A. A. Miranda¹, I.S. Ribeiro-Junior¹, M. Ozório¹, W.L. Ferreira¹, F.A. Genezini¹, R.N. Saxena¹ and A.W. Carbonari¹ *1. Centro do Reator de Pesquisas, Instituto de Pesquisas Energéticas e Nucleares, São Paulo, Brazil*
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- AS-05. Transition metal spin and color center in β-Ga₂O₃.** M. Jansson¹, J. Stehr¹, S. Pearton², J. McCloy³, J. Jesenovec³, B. Dutton³, M. McCluskey³, W.M. Chen¹ and I.A. Buyanova¹
1. Linköping University, Linköping, Sweden; 2. University of Florida, Gainesville, FL, United States; 3. Washington State University, Seattle, WA, United States
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- AS-06. Magnetic Resonance Imaging Contrast Enhancement Induced by Hydrophobic Iron Oxide Nanoparticles in Oil-in-Water Emulsion.** A.d. da Cruz¹, C.L. Rodrigues¹, M.G. Martins², A.M. Souza¹, M. Nascimento³, I.S. Oliveira¹ and F. Garcia¹ *1. Centro Brasileiro de Pesquisas Físicas, São Gonçalo, Brazil; 2. Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; 3. Centro de Pesquisas e Desenvolvimento Leopoldo Américo Miguez de Mello, Rio de Janeiro, Brazil*
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- AS-07. Evaluation of Hydrogen-Induced Degradation of Steel Through Multispectral Analysis of Magnetic Barkhausen Noise.** G. Psuj¹, C. Camerini², M. Maciusowicz¹ and G. Pereira² *1. Faculty of Electrical Engineering, West Pomeranian University of Technology, Szczecin, Poland; 2. Laboratory of Non-Destructive Testing, Corrosion and Welding, Department of Metallurgical and Materials Engineering, University of Rio de Janeiro, Rio de Janeiro, Brazil*
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- AS-08. Itinerant SDW phases, contributions from the CrNb dilute alloys.** P.E. de Souza¹, L.M. Oliveira², F. Yokaichiya⁴, P.C. de Camargo³ and A.J. de Oliveira³ *1. Institute of Physics, Universidade de Brasília, Brasília, Brazil; 2. Coleg. Ciências da Natureza, Universidade Federal do Vale do São Francisco, Petrolina, Brazil; 3. Dept. of Physics, Universidade Federal de São Carlos, São Carlos, Brazil; 4. Dept. of Physics, Universidade Federal do Paraná, Curitiba, Brazil*
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- AS-11. Impact of annealing on the band structure of (Ga,Mn)(P,As) nanofilms.** *N. Tataryn¹, S. Mamykin¹, L. Riney², X. Liu², B.A. Assaf², V. Romanyuk¹, O. Kondratenko¹, O. Kolomys¹, O. Yastrubchak¹ and J. Furdyna²* *1. V. E. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kiev, Ukraine; 2. Department of Physics and Astronomy, University of Notre Dame, Notre Dame, IN, United States*
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- AS-12. Modeling of the micro-focused Brillouin light scattering signal.** *O. Wojewoda¹, M. Hrton¹ and M. Urbánek¹* *1. CEITEC, Brno University of Technology, Brno, Czechia*
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- AS-13. Bright Envelope Solitons in the Double Negative Media Based on Thin Films of Nonlinear Ferromagnetic Semiconductor.** *S.V. Grishin¹, A.V. Bogomolova¹ and S. Nikitov^{2,1}* *1. Saratov State University, Saratov, Russian Federation; 2. Kotelnikov Institute of Radioengineering and Electronics of Russian Academy of Science, Moscow, Russian Federation*
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- AS-16. Super-Resolution in Computed Tomography Images: An Integrated Approach of Artificial Intelligence and LapSRN Techniques.** *A.M. Guimarães¹ and G.A. Pizo¹* *1. Instituto de Engenhariaia Eletrônica, Universidade de Brasília, Brasília, Brazil*
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OCEANIA IV & V

Session BA

MAGNETICS FOR TOMORROW'S MEDICAL TECHNOLOGIES

Ravi Hadimani, Chair

Virginia Commonwealth University, Richmond, VA, United States

2:00

- BA-01. Biomimetic magnetic nanocarriers for cancer therapy. (Invited)** *J.V. Rocha¹, R. Krause¹, C.E. Cardoso¹, N.C. Oliveira¹, L.R. Sousa¹, E.M. Lima¹, M.C. Valadares¹, M.C. Xavier¹, S. Mendanha¹ and A.F. Bakuzis¹* *1. Federal University of Goiás, Goiânia, Brazil*
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2:30

- BA-02. Toward Non-Invasive Deep Brain Stimulation Using Externally Applied Electromagnetic Fields. (Invited)** *M. Sekino¹, A. Iino¹, M. Fushimi¹, Z. Xin¹, K. Nakagawa¹ and K. Inoue¹* *1. The University of Tokyo, Tokyo, Japan*
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3:00

- BA-03. Enhanced Rapid Diagnostic Tests: Improved Sensitivity and Quantification with Magnetic Nanoparticles and Sensors. (Invited)** *M. Rivas¹, M. Salvador¹, J.L. Marques¹, L.B. Fraile¹, V. Pilati¹ and J.C. Martinez-Garcia¹*
1. Department of Physics, Universidad de Oviedo, Gijón, Spain
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3:30

- BA-04. Micromagnetic Neural Stimulation and Spintronic Neural Sensing. (Invited)** *R. Saha¹, D. Tonini¹, M. Hopper¹, A. Goyal², J. Yuen², Y. Oh², Z. Sanger³, S. Faramarzi³, M. Shiao⁴, D. Helden⁵, R. Bloom¹, O. Benally¹, K. Wu¹, S. Keirstead⁴, T. Netoff³, W. Low⁶, J. Osborn⁵, K. Bennet², K. Lee², H. Shin² and J. Wang¹*
1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Department of Neurologic Surgery, Mayo Clinic, Rochester, MN, United States; 3. Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States; 4. Stem Cell Institute, University of Minnesota, Minneapolis, MN, United States; 5. Department of Surgery, University of Minnesota, Minneapolis, MN, United States; 6. Department of Neurosurgery, University of Minnesota, Minneapolis, MN, United States
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4:00

- BA-05. Focal activation of the cochlea with magnetic stimulation from microcoils. (Invited)** *S. Fried^{1,2} and J. Lee¹*
1. Neurosurgery, Massachusetts General Hospital, Boston, MA, United States; 2. Boston VA Healthcare System, Boston, MA, United States
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4:30

- BA-06. Magnetic Hyperthermia Optimization. (Invited)** *H. Chen¹, D. Billington², E. Riordan², J. Blomgren³, S.R. Giblin², C. Johansson³ and S. Majetich¹*
1. Department of Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Department of Physics, Cardiff University, Cardiff, United Kingdom; 3. RISE Research Institutes of Sweden, Göteborg, Sweden
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Session BB

MAGNONICS I: FUNDAMENTAL PROPERTIES

David Cortés-Ortuño, Chair

Universidad Técnica Federico Santa María, Valparaíso, Chile

2:00

- BB-01. Electric analog of magnon excitations and electric polarization transport in ferroelectric materials. (Invited)**
P. Tang¹ 1. Tohoku University, Sendai, Japan
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2:30

- BB-02. Transient Response and Relaxation of Spin Waves Measured in a Rectangular $\text{Ni}_{80}\text{Fe}_{20}$ Microstrip.** *S. Pile¹, S. Wintz^{2,3}, K. Lenz⁴, R. Narkowicz⁴, A. Ney¹, J. Lindner⁴, J. Förster², S. Mayr^{5,6} and M. Weigand³ 1. Johannes Kepler University Linz, Linz, Austria; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 3. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany; 4. Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany; 5. Paul Scherrer Institut, Villigen PSI, Switzerland; 6. Laboratory for Mesoscopic Systems, Department of Materials, Zurich, Switzerland*
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2:45

- BB-03. Increase of Spin-Wave Damping with Wavenumber in YIG/GGG at Millikelvin Temperatures.** *D. Schmoll^{1,2}, R. Serha^{1,2}, R.V. Verba³, K. Levchenko¹, S. Knauer¹ and A. Chumak¹ 1. Faculty of Physics, University of Vienna, Vienna, Austria; 2. Vienna Doctoral School in Physics, University of Vienna, Vienna, Austria; 3. Institute of Magnetism, Kyiv, Ukraine*
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3:00

- BB-04. Local Temperature Control of Magnon Frequency and Direction of Supercurrents in a Magnon Bose–Einstein Condensate.** *A.A. Serga¹, M.R. Schweizer¹, F. Kühn¹, V.S. L'vov^{2,3}, A. Pomyalov³, G. von Freymann^{1,4} and B. Hillebrands¹ 1. Department of Physics, RPTU Kaiserslautern-Landau, Kaiserslautern, Germany; 2. Department of Complex Systems, Weizmann Institute of Science, Rehovot, Israel; 3. Department of Chemical and Biological Physics, Weizmann Institute of Science, Rehovot, Israel; 4. Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern, Germany*
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- BB-05. Excitation Of High-Frequency Short-Wavelength Spin Waves Via High Harmonics Of Magnonic Cavity Mode.** *P. Gruszecki¹, N. Kumar², M. Golebiewski¹, J.W. Klos¹ and M. Krawczyk¹* *1. Faculty of Physics, Uniwersytet im Adama Mickiewicza w Poznaniu, Poznan, Poland; 2. Electronics and Communication Engineering Department, National Institute of Technology Calicut, Calicut, India*
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- BB-07. Nonlinear Effects in Inelastic Scattering of Spin-Wave Beams on Localized Modes for Controlling Propagation of Scattered Beams.** *K. Sobucki¹, J. Kharlan^{1,2}, R.V. Verba², I. Lyubchanskii¹, M. Krawczyk¹ and P. Gruszecki¹* *1. ISIK, Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 2. Institute of Magnetism of NAS of Ukraine and MES of Ukraine, Kyiv, Ukraine*
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- BB-08. Application of Mie-enhanced BLS to study parametric pumping of spin-waves.** *O. Wojewoda¹, D. Pavelka¹, M. Hrtón¹, J. Klima², J. Krcma², J. Holobradek¹, T. Sikola^{2,1} and M. Urbánek¹* *1. CEITEC, Brno University of Technology, Brno, Czechia; 2. Institute of Physical Engineering, Brno University of Technology, Brno, Czechia*
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- BB-10. Brillouin light scattering study of nonreciprocal spin dynamics in magnetic chiral tubes.** *M. Xu¹, A.J. Deenen¹, H. Guo¹ and D. Grundler^{1,2}* *1. Institute of Materials (IMX), Ecole Polytechnique Fédérale de Lausanne (EPFL), Saint-Sulpice, Switzerland; 2. Institute of Electrical and Micro Engineering (IEM), EPFL, Lausanne, Switzerland*
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- BB-11. Solutions to the Landau-Lifshitz-Gilbert equation in the frequency space: Discretization schemes for the dynamic-matrix approach.** *D. Gonzalez-Chavez¹, G.P. Zamudio¹ and R.L. Sommer¹* *1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil*
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Session BC
PATTERNED FILMS, NANOCOMPOSITES,
SELF-ASSEMBLY

Julian Geshev, Chair
 Institute of Physics, UFRGS, Porto Alegre, Brazil

2:00

- BC-01. Role of Magnetic Anisotropy in Applications of Magnetic Nanoparticles. (Invited)** *C. Dennis¹ 1. NIST, Gaithersburg, MD, United States*
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2:30

- BC-03. Vortex-state in Iron Nanodisks: Formation and Response in Water Solutions.** *I. Solozabal Azcarate¹, R. Zurbano¹, C. Redondo¹, A. Benedicto⁴ and R. Morales^{3,2} 1. Department of Physical-Chemistry, University of the Basque Country, Leioa, Spain; 2. IKERBASQUE Basque Foundation for Science, Bilbao, Spain; 3. University of the Basque Country & BC Materials, Leioa, Spain; 4. Department of Cell Biology and Histology, University of the Basque Country, Leioa, Spain*
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2:45

- BC-04. Magnetophoretic-Based Bacterial Cell Localization.** *B. Gungordu¹, N. Gunduz Akdogan^{2,3} and O. Akdogan^{1,2} 1. Faculty of Engineering and Natural Sciences, Bahcesehir University, Istanbul, Turkey; 2. NANOTerial Technology Corporation, Istanbul, Turkey; 3. Faculty of Engineering, Piri Reis University, Istanbul, Turkey*
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3:00

- BC-05. Synthesis and Characterization of CeO₂/g-C₃N₄ Nanocomposites: Structural, Morphological, Optical, and Magnetic Properties Investigation.** *R. Cardoso de Oliveira¹, E. Chaves Pereira² and A.J. de Oliveira¹ 1. Department of Physics, Federal University of São Carlos, São Carlos, Brazil; 2. Department of Chemistry, Federal University of São Carlos, São Carlos, Brazil*
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- BC-06. Simple Tuning of the Magnetic Properties of CoNi Nanoparticles During Generation.** P. Ternero^{1,2}, M. Sedrpooshan^{1,2}, D. Wahlqvist^{3,2}, B.O. Meuller^{1,2}, M. Ek^{3,2}, J.M. Hübner³, R. Westerström^{1,2} and M.E. Messing^{1,2}
1. Department of Physics, Lund University, Lund, Sweden; 2. NanoLund, Lund, Sweden; 3. Chemistry, Lund University, Lund, Sweden
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- BC-07. Magnetic Nanowires: Cylindrical Geometry, Remagnetization and Sensor Applications. (Invited)** M. Vázquez¹ *1. ICMN/CSIC, Madrid, Spain*
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- BC-08. Magneto-Structural Properties of Co₂FeIn Heusler Nanowires for Spintronics Applications.** A.I. Jimenez¹, J. Garcia¹, V. Vega¹, Y. Alvarez¹, A.S. Gonzalez¹, E.D. Barriga-Castro², C. Luna³ and V.M. Prida¹
1. Department of Physics, University of Oviedo, Oviedo, Spain; 2. Centro de Investigación de Química aplicada, Saltillo, Mexico; 3. Department of Physics, Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Mexico
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- BC-09. Cobalt-iron nitride nano-flake powders: synthesis, analysis morphological, structural, magnetic and catalytic activity.** G. Gubert¹, R. Gonçalves¹, R. Cardoso de Oliveira², G. Zepon³, A.J. de Oliveira² and E. Chaves Pereira¹
1. Department of Chemistry, Universidade Federal de São Carlos, São Carlos, Brazil; 2. Department of Physics, Federal University of São Carlos, São Carlos, Brazil; 3. Department of Materials Science and Engineering, Federal University of São Carlos, São Carlos, Brazil
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- BC-10. Magnon-drag thermopower and active Peltier cooling in 3D ferromagnetic nanowire networks.** T. da Câmara Santa Clara Gomes¹, N. Machal¹, F. Abreu Araujo¹ and L. Piraux¹
1. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Belgium
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Session BD
ULTRAFast DYNAMICS AND
ALL-OPTICAL SWITCHING

Alex Jenkins, Chair

International Iberian Nanotechnology Laboratory, Braga, Portugal

2:00

- BD-01. Towards on-chip spintronic-photonic integration. (Invited)** B. Koopmans¹, P. Li¹, H. Pezeshki¹, E. Demirer¹, G. Simons¹, Y. Jiao², J. van der Tol² and R. Lavrijsen¹ *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. Department of Electrical Engineering and Eindhoven Hendrik Casimir Institute, Eindhoven University of Technology, Eindhoven, Netherlands*
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2:30

- BD-02. Optical control of the magnetization emerging from the magnetic part of the optical field in the Landau-Lifshitz-Gilbert equation.** B.J. Assouline¹ and A. Capua¹
1. Department of Electrical Engineering and Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel
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2:45

- BD-03. Picosecond Spin-Orbit Torque Switching Dynamics in a Ferromagnet.** A. Pattabi^{1,2}, D. Polley^{2,3,4}, A. Rastogi², K. Jhuria^{3,5}, E. Díaz⁵, H. Singh², A. Lemaitre⁶, M. Hehn⁵, J. Gorchon⁵ and J. Bokor^{2,3} *1. Department of Engineering, University of San Francisco, San Francisco, CA, United States; 2. Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA, United States; 3. Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. SRM Institute of Science and Technology, Chennai, India; 5. CNRS, IJL, Université de Lorraine, Nancy, France; 6. Centre de Nanosciences et de Nanotechnologies, Université Paris-Saclay, Palaiseau, France*
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3:00

- BD-04. All-optical control and ultrafast spin dynamics in van der Waals magnets. (Invited)** M. Dabrowski¹ *1. Department of Physics and Astronomy, University of Exeter, Exeter, United Kingdom*
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- BD-05. High frequency dynamics in half-metallic compensated ferrimagnetic $\text{Mn}_2\text{Ru}_x\text{Ga}$ thin films.** *K.E. Siewierska¹, G. Atcheson^{2,3}, J. O'Brien³, M. Kusch¹, K. Ruotsalainen¹, C. Liu^{1,4}, R. Decker¹, P.S. Stamenov³, K. Rode³ and A. Föhlisch^{1,4}* *1. PS-ISRR, Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany; 2. CEA-SPINTEC, Grenoble, France; 3. Department of Physics, Trinity College Dublin, Dublin, Ireland; 4. Institute of Physics and Astronomy, Universität Potsdam, Potsdam, Germany*
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3:45

- BD-07. Emission of Coherent THz Magnons in an Antiferromagnetic Insulator Triggered by Ultrafast Spin-Phonon Interactions. (Invited)** *E. Rongione^{1,2,3} and M. Mićica²* *1. Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Laboratoire de Physique de l'Ecole Normale Supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université Paris Cité, Paris, France; 3. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, BIST, Barcelona, Spain*
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4:15

- BD-08. Manipulation of Correlated Weyl Fermions in the Chiral Antiferromagnet Mn_3Sn . (Invited)** *S. Nakatsuji^{1,2,3}* *1. Department of Physics, University of Tokyo, Tokyo, Japan; 2. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, United States; 3. Canadian Institute for Advanced Research, Toronto, ON, Canada*
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EUROPA I

Session BE

NUMERICAL, SEMI-ANALYTICAL AND ANALYTICAL ANALYSIS METHODS I

Yacine Amara, Chair

Université Le Havre Normandie, Le Havre, France

2:00

- BE-01. Frequency Spectrum Analysis of Magnetic Field Strength for Effective Condition Monitoring of Magnetic Cores.** *H. Hamzehbahmani¹* *1. Department of Engineering, Durham University, Durham, United Kingdom*
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- BE-04. Computational Speed Improvement of Reluctance Network Analysis Combined with Play Model.** *Y. Hane¹ and K. Sugahara²* 1. *Department of Electrical Engineering, Tohoku University, Sendai, Japan;* 2. *Kindai University, Higashiosaka, Japan*
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- BE-06. Reluctance Network Model of V-Type IPMSM for Accurate and Practical Design.** *Y. Hane¹ and K. Nakamura¹* 1. *Department of Electrical Engineering, Tohoku University, Sendai, Japan*
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- BE-05. Load Operations Analysis of a Hybrid Excited Flux Switching Vernier Alternator for Renewable Energy Conversion.** *H.N. Nasser¹, V. Dyck¹, E. Lemains¹, Y. Amara¹, F. Chabour¹ and J.J. Paulides²* 1. *Université Le Havre Normandie, Le Havre, France;* 2. *AE Group (Advanced Electromagnetics), Eindhoven, Netherlands*
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- BE-07. Graphical Root Cause Analysis of Magnetically Induced Vibrations in Synchronous Machines.** *A. de Barros¹, A. Ebrahimi², B. Schwarz³ and B. Ponick¹* 1. *Institute for Drive Systems and Power Electronics, Leibniz University Hannover, Hannover, Germany;* 2. *Institute of Electrical Drives, Power Electronics and Devices, University Bremen, Bremen, Germany;* 3. *Voith Hydro Holding GmbH & Co. KG, Heidenheim, Germany*
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- BE-08. A Quasi-3-D Finite Element Modeling of An Axial Flux Magnetic Resonant Motor.** *J. Besong¹* 1. *Institute for Multidisciplinary Sciences, Yokohama National University, Yokohama, Japan*
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- BE-09. Advancing Torque Calculation in Axial-Flux Machines: An Easy-to-Implement Approach for Finite Element Analysis.** *J.M. Silveyra^{1,2} and J.M. Conde Garrido^{1,2}* 1. *University of Buenos Aires, Buenos Aires, Argentina;* 2. *CONICET, Buenos Aires, Argentina*
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- BE-10. Fast Calculation of High Frequency Air Gap Flux Density Harmonics by Frozen Permeability Method in Electrical Machines.** *S. Ni¹, J. Le Besnerais², G. Bauw¹, R. Romary¹ and B. Cassoret¹* *1. LSEE, Artois University, Lille, France; 2. Eomys Engineering, Villeneuve-d'Ascq, France*
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4:00

- BE-11. Interlaminar faults in a GOFesi laminated magnetic core: measurements and simulations.** *B. Ducharne^{1,2,3}, H. Hamzehbahmani⁴ and Y. Gao⁵* *1. Institut National des Sciences Appliquées de Lyon, Villeurbanne, France; 2. Tohoku University, Sendai, Japan; 3. ELyTMax, CNRS, Sendai, Japan; 4. Durham University, Durham, United Kingdom; 5. Oita University, Oita, Japan*
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4:15

- BE-12. A Noval Winding Design for EV Traction Electric Motors: Hybrid Hairpin Winding Layout Containing Both Copper and Aluminum Windings.** *B. Guruwatta Vidanalage¹, Z. Li¹, A. Lombardi² and N. Kar¹* *1. Department of Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada; 2. Nemak, Windsor, ON, Canada*
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EUROPA II

Session BF

MAGNETOELECTRIC MATERIALS AND PHENOMENA

Thiago Mori, Chair

Brazilian Center for Research in Energy and Materials,
Campinas, Brazil

2:00

- BF-01. Low Noise Inverse Magnetoelectric Magnetic Field Sensor. (Invited)** *L. Thormählen¹, P. Hayes¹, E. Elzenheimer¹, E. Spetzler¹, J. McCord¹, G. Schmidt¹, M. Höft¹, D. Meyners¹ and E. Quandt¹* *1. Christian-Albrechts-Universität, Kiel, Germany*
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- BF-02. Exploring the magnetoelectric functionality in PMN-PT/FSMA multiferroic heterostructure for flexible MEMS applications.** D. Arora¹ and D. Kaur¹ *1. Department of Physics, Indian Institute of Technology Roorkee, Roorkee, India*
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- BF-03. Study of the Magnetoelectric Effect in PVDF/Ni Composites.** F. Luciano^{1,2*}, A. De Coster¹, E. Giorgione³, D. Wysocka², S. De Gendt^{1,2}, F. Ciubotaru² and C. Adelmann²
1. KU Leuven, Leuven, Belgium; 2. Imec, Leuven, Belgium; 3. Politecnico di Torino, Turin, Italy
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- BF-04. Electric Field Control of Magnetization in FeGa microstructures on PMN-PT.** G. Pradhan^{1,2}, F. Celegato¹, A. Magni¹, M. Coisson¹, G. Barrera¹, P. Rizzi² and P. Tiberto¹
1. INRIM, Torino, Italy; 2. Department of Chemistry, Università di Torino, Torino, Italy
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- BF-05. Magnetic properties induced by epitaxial strain in BaTi_{1/2}Mn_{1/2}O₃ thin films.** R.P. Amaral^{1,2}, F.R. Estrada¹, J.C. Araújo², T.J. Mori¹, J.C. Cezar¹, R. Lora-Serrano² and P. Schio³ *1. Brazilian Synchrotron Light National Laboratory (LNLS), Brazilian Center for Research in Energy and Materials (CNPEM), Campinas, Brazil; 2. Instituto de Física, Universidade Federal de Uberlândia, Uberlândia, Brazil; 3. Brazilian Nanotechnology National Laboratory (LNNano), Brazilian Center for Research in Energy and Materials (CNPEM), Campinas, Brazil*
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- BF-06. Magnetoelectric Coupling in Pb(Zr,Ti)O₃/Co₄₀Fe₄₀B₂₀ Nanoscale Waveguides Studied by All-Electrical Spin-Wave Spectroscopy.** D. Narducci^{1,2}, X. Wu¹, I. Boventer³, J. De Boeck^{1,4}, A. Anane³, P. Bortolotti³, C. Adelmann¹ and F. Ciubotaru¹ *1. imec, Leuven, Belgium; 2. Departement Materiaalkunde (MTM), KU Leuven, Leuven, Belgium; 3. Unité Mixte de Physique CNRS-Thales, Palaiseau, France; 4. Departement Elektrotechniek (ESAT), KU Leuven, Leuven, Belgium*
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- BF-07. Ptychographic nanoscale imaging of multiferroic domains in freestanding bismuth ferrite films.** *T.A. Butcher*¹, N.W. Phillips¹, S. Finizio¹, C. Wei², C.A. Vaz¹, A. Kleibert¹, J. Yang^{2,3}, S. Huang¹ and J. Raabe¹ *1. Paul Scherrer Institut, Villigen, Switzerland; 2. Department of Physics, National Cheng Kung University, Tainan, Taiwan; 3. Center for Quantum Frontiers of Research & Technology (QFort), National Cheng Kung University, Tainan, Taiwan*
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4:00

- BF-08. Room Temperature Magnetocapacitance in Epitaxial (La,Sr)MnO₃/(K,Na)NbO₃-Based Heterostructures.** S. Pradhan¹, W. Prellier² and M.R. Rao¹ *1. Department of Physics, Indian Institute of Technology, Madras, Chennai, India; 2. Laboratoire de Cristallographie et Sciences des Matériaux, Caen, France*
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4:15

- BF-09. Evidence of strain and charge mediated coupling in Fe-Ga/PMN-PT composite multiferroic.** *M. Tortarolo*^{1,2}, D. Goijman³, S. DiNápoli¹, M.A. Barral¹, A.A. Perez Martinez³, A. Sarmiento³, G. Ramirez¹, J. Gomez³, C.A. Vaz⁴, J. Milano³ and C. Piamonteze⁴ *1. INN, CONICET-CNEA, Buenos Aires, Argentina; 2. LAHN, CNEA, Buenos Aires, Argentina; 3. INN, CONICET-CNEA, Bariloche, Argentina; 4. SLS, PSI, Zurich, Switzerland*
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4:30

- BF-10. Learning fundamental physics of artificial spin systems through machine learning. (Invited)** N. Cruz¹, B.M. Cecchi¹, M. Knobel¹ and K.R. Pirota¹ *1. Universidade Estadual de Campinas, Campinas, Brazil*
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Session BG

SKYRMIONS AND SPIN-ORBIT TORQUE DEVICES

Michał Slezak, Chair

AGH University of Science and Technology, Krakow, Poland

2:00

- BG-01. Gate-controlled skyrmion and domain wall chirality. (Invited)** J. Fischer¹, C. Fillion¹, C. Gueneau¹, F. Ibrahim¹, R. Kumar¹, C. Balan², A. Fassatoui², S. Pizzini², L. Ranno², L. Cagnon², D. Ourdani³, M. Belmeguenai³, Y. Roussigné³, S. Chérif³, S. Auffret¹, I. Joumard¹, O. Boulle¹, G. Gaudin¹, M. Chshiev¹, L.D. Buda-Prejbeanu¹, C. Baraduc¹ and H. Béa¹
1. CEA-SPINTEC, Grenoble, France; 2. Institut Néel CNRS, Grenoble, France; 3. Université Sorbonne, Paris, France
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2:30

- BG-04. Composite skyrmion-vortex matter in ferromagnet-superconductor heterostructures. (Invited)** C.C. de Souza Silva¹ and J.F. Neto^{1,2} *1. Federal University of Pernambuco, Recife, Brazil; 2. Universidade Federal do Piauí, Teresina, Brazil*
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3:00

- BG-05. Spin-orbit torque in α -W-based magnetic tunnel junction.** M. Cierpiał³, K. Grochot³, J. Mojsiejuk³, M. Vafaei¹, J. Wrona¹, T. Nan² and W. Skowronski³ *1. Singulus Technologies AG, Kahl am Main, Germany; 2. Tsinghua University, Beijing, China; 3. Institute of Electronics, AGH University of Krakow, Krakow, Poland*
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3:15

- BG-06. Spin-Orbit Torque Driven True Random Number Generation by Varying the Field-Like to Damping-Like Torque Ratio.** M. Lee¹, S. Kim², S. Yoon¹, J. Lee¹, H. Ko¹, G. Kim³, S. Hong³, K. Lee² and Y. Kim¹ *1. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 2. Department of Physics, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 3. School of Cybersecurity, Korea University, Seoul, The Republic of Korea*
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- BG-10. Spin-orbit torques in CrXY monolayers (X, Y $\in$ {S, Se, Te}): an *ab initio* study.** *L. Vojáček*¹, J.E. Medina Dueñas², J. Li³, F. Ibrahim¹, S. Roche^{2,4}, M. Chshiev^{1,5} and J.H. Garcia²
1. CEA-SPINTEC, Grenoble, France; 2. ICN2, Barcelona, Spain; 3. LETI, Grenoble, France; 4. ICREA, Barcelona, Spain; 5. IUF, Paris, France
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EXHIBIT HALL

Session BP
MAGNETIC RECORDING, MRAM AND
RELATED DEVICES
(Poster Session)

SN Piramanayagam, Co-Chair
 Nanyang Technological University, Singapore
 Simon Greaves, Co-Chair
 Tohoku University, Sendai, Japan

- BP-01. Spin-dependent transport in Spin-orbit Ferroelectric devices, modelled and studied via Finite Element Method simulations.** *P. Sgarro*¹, T. Frottier¹, A. Kandazoglou¹, S. Teresi¹, M. Culot¹, M. Cosset-Cheneau¹, F. Osana¹, L. Anghel¹, A. Marty¹, L. Vila¹, G. Prenat¹ and J. Attané¹
1. CEA-SPINTEC, Grenoble, France
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- BP-02. Enhanced SOT Efficiency in Pt/Co Systems with a NiO Interlayer for SOT-MRAM.** *M. Wijshoff*^{1,2}, R. Carpenter¹, G. Talmelli¹, S. Couet¹, C. Fleischmann^{1,2} and K. Temst^{2,1}
1. imec, Leuven, Belgium; 2. QSP, KU Leuven, Leuven, Belgium
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- BP-03. Magnetic-Resistive Random Access Memories based on Diluted Co-TiO₂ Nanotubes.** K.S. Jaimes¹, H.P. Quiroz¹, J.A. Calderón^{1,2} and A. Dussan Cuenca¹ *1. Department of Physics, Universidad Nacional de Colombia, Bogotá, Colombia; 2. Engineering and Basic Science Faculty, Universidad Central, Bogotá, Colombia*
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- BP-05. Racetrack memory devices based on freestanding multilayers.** *K. Gu*^{1,2}, Y. Guan¹, P. Wang¹, B. Hazra¹, H. Deniz¹, A. Migliorini¹, W. Zhang¹ and S. Parkin^{1,2}
1. NISE, Max Planck Institute of Microstructure Physics, Halle, Germany; 2. Martin-Luther-University Halle-Wittenberg, Halle, Germany
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- BP-07. Towards integrated skyrmionic artificial synapses.** *W. Griggs*¹, M. Lewandowski¹, I. Charalampidis¹, V. Pavlidis^{1,2} and C. Moutafis¹ *1. The University of Manchester, Manchester, United Kingdom; 2. Aristotle University of Thessaloniki, Thessaloniki, Greece*
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- BP-08. Leveraging the phase dynamics of spin-torque nano-oscillators for unconventional computing.** A. Hakam¹, N. Phan¹, L. Martins¹, L. Hutin², F. Badets², L. Benetti³, A. Jenkins³, R. Ferreira³, *P. Talatchian*¹ and U. Ebels¹
1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, SPINTEC, 38000 Grenoble, France; 2. CEA-Leti Minatec, Grenoble, France; 3. International Iberian Nanotechnology Laboratory (INL), 4715-31 Braga, Portugal
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- BP-09. Towards 3.8 nm diameter grains and 53.6 T/in² areal grain density FePt granular films with co-addition of nitride and carbon as grain boundary materials for HAMR media.** *K. Tham*¹, R. Kushibiki¹ and S. Saito²
1. Tanaka Kikinzoku Kogyo, Sendai, Japan; 2. Tohoku University, Sendai, Japan
[View Digest Text](#)
- BP-10. Using Long Short-Term Memory to Estimate the Two-Dimensional Interference of Bit-Patterned Media Recording Systems.** T.A. Nguyen¹ and *J. Lee*¹ *1. Soongsil University, Seoul, The Republic of Korea*
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- BP-11. Optimization of Layer Thicknesses for Dual-Layer Bit-Patterned Media Recording (BPMR) Systems.** *N. Rueangnetr*¹, C. Warisarn¹ and S. Greaves² *1. College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; 2. Research Institute of Electrical Communication (RIEC), Tohoku University, Sendai, Japan*
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EXHIBIT HALL

Session BQ SPINTRONICS WITH ANTIFERROMAGNETS (Poster Session)

Qi Wang, Chair

Huazhong University of Science & Technology, Wuhan, China

- BQ-01. Electrical Manipulation and Detection of Antiferromagnetism in Magnetic Tunnel Junctions.** A. Du¹, *D. Zhu*¹, K. Cao¹, Z. Zhang¹, Z. Guo¹, K. Shi¹, D. Xiong¹, R. Xiao¹, W. Cai¹, J. Yin¹, S. Lu¹, C. Zhang¹, Y. Zhang¹, S. Luo², A. Fert³ and W. Zhao¹ *1. Beihang University, Beijing, China; 2. HUAWEI, Shenzhen, China; 3. Univ. Paris-Sud, Paris, France*
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- BQ-02. Withdrawn**

- BQ-03. Exploring Anomalous Hall Effects in Ta(Al)-TbCo-Ta(Al) Structures with Vertical Composition Gradients.** R.C. Bhatt^{1,2}, L. Ye^{1,2}, M. Tsai^{1,2} and T. Wu^{1,2} *1. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliu, Taiwan; 2. Taiwan Spin Research Center, National Yunlin University of Science and Technology, Douliu, Taiwan*
[View Digest Text](#)
- BQ-04. The Deposition Temperature Influence in Pt/CoFe₂O₄ Thin Films on Spin Hall Magnetoresistance for a Wide Range of Fields and Temperatures.** P.R. Ribeiro¹, M. Gamino², R. Rodriguez³ and K.R. Pirola¹ *1. Universidade Estadual de Campinas, Campinas, Brazil; 2. Universidade Federal do Rio Grande do Norte, Natal, Brazil; 3. Pontificia Universidad Católica de Chile, Santiago, Chile*
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- BQ-05. Spin Seebeck effect in the spin-flop and paramagnetic phases of the antiferromagnet RbMnF₃.** J. Marques de Lima¹, P. Trajano Ribeiro¹, E. Souza¹, F. de Araujo Machado¹ and S.M. Rezende¹ *1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil*
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- BQ-06. Quantum Sensing of Spin Fluctuations in Anisotropic Antiferromagnetic Insulators Using Nitrogen-Vacancy Centers.** R. Rodriguez¹, R. Cabezón¹, F. Pinto¹, E. Rodriguez¹ and J. Maze¹ *1. Department of Physics, Pontifical Catholic University of Chile, Santiago, Chile*
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- BQ-07. Evidence of Spin-Polarized Current in Fe-Rich NbFe₂ Compound.** M. Bigolin Lorenzon¹, O. Isnard², A. M. H. de Andrade¹, M. Tumelero¹, P. Pureur¹ and F. Mesquita¹ *1. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; 2. Université du Grenoble Alpes, Grenoble, France*
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- BQ-08. Unveiling a Bulk Antiferromagnetic Order via the Polarity of Spin-orbit Torque Ratchet at Ferromagnet/Antiferromagnet Interface.** H. Chang¹ and C. Yang¹ *1. Department of Materials Science and Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan*
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- BQ-09. Raman Spectroscopy of Optimally-Doped Manganites with Praseodymium Substitution La_{5/8-x}Pr_xCa_{3/8}MnO₃ (x = 0.35; 0.40; 0.45).** G.K. Soares¹, D. Carranza-Célis², J.A. Bohorquez², J.G. Ramirez² and D. Muraca¹ *1. DEQ, Universidade Estadual de Campinas, Campinas, Brazil; 2. Department of Physics, Universidad de los Andes, Bogota, Colombia*
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- BQ-10. Probing Magnetic Phase Transitions in HoMnO_3 : A Landau Theory Analysis of Perturbed Angular Correlation Spectroscopy Data.** *L. Scalise*¹, N. Pereira de Lima¹, L.F. Pereira¹, J. Schell^{2,3}, A. Burimova¹, B.S. Corrêa¹, A. A. Miranda¹ and A.W. Carbonari¹ *1. CERPq, IPEN, Sao Paulo, Brazil; 2. CENIDE, Essen, Germany; 3. ISOLDE, CERN, Geneva, Switzerland*
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EXHIBIT HALL

Session BR
NANOPARTICLES AND NANOWIRES
(Poster Session)
Marcio Correa, Chair
Federal University of Rio Grande do Norte, Natal, Brazil

- BR-01. Effect of synthesis method and calcination temperature on the physical properties of Ni-NiO nanocomposites.** *R.A. Pinto*¹, J. Soares¹, R.B. da Silva¹, M. Correa² and F. Bohn² *1. Departamento de Física, Universidade do Estado do Rio Grande do Norte, Parnamirim, Brazil; 2. Departamento de Física, Universidade Federal do Rio Grande do Norte, Natal, Brazil*
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- BR-02. Withdrawn**
- BR-03. Control of Magnetic Nanoparticle Properties by Different Syntheses Methodologies.** *B.S. Corrêa*¹, C. Sena², M.S. Costa², G.A. Cabrera-Pasca², R.S. Freitas³ and A.W. Carbonari¹ *1. CERPQ, Instituto de Pesquisas Energéticas e Nucleares, São Paulo, Brazil; 2. Faculdade de Ciências Exatas e Tecnologia, Federal University of Pará, Abaetetuba, Brazil; 3. Instituto de Física, University of São Paulo, São Paulo, Brazil*
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- BR-04. Extremophilic microorganisms: An alternative as synthesizers of ferromagnetic nanoparticles.** *V. Antúnez - Ossio*¹ and J.M. Blamey^{1,2} *1. Laboratorio de Bioquímica de Extremófilos, Universidad de Santiago, Santiago, Chile; 2. Fundación Biociencia, Santiago, Chile*
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- BR-05. Unsaturated Modes of Ferromagnetic Resonance in Maghemite Nanoparticles.** *M. Pessoa*¹, M.A. Sousa², I.C. Merino³, P.C. Morais^{4,5}, F. Pelegri⁶, M.S. Parise⁴, L.C. Figueiredo⁴ and E.M. Saitovitch³ *1. Departamento de Ciências Naturais, Universidade Federal do Espírito Santo, São Mateus, Brazil; 2. Instituto de Ciências Exatas e Tecnológicas, Universidade Federal de Jataí, Jataí, Brazil; 3. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 4. Universidade de Brasília, Brasília, Brazil; 5. Universidade Católica de Brasília, Brasília, Brazil; 6. Universidade Federal de Goiás, Goiânia, Brazil*
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- BR-06. Alternative One-Pot Microwave Assisted Synthesis of Superparamagnetic CoFe₂O₄ Nanoparticles.** *K.O. Abreu^{1,2,3}*
 1. Departamento de Química Orgânica e Inorgânica, Universidade Federal do Ceará, Fortaleza, Brazil;
 2. Departamento de Química Analítica e Físico-Química, Universidade Federal do Ceará, Fortaleza, Brazil;
 3. Instituto de Química, Universidade de São Paulo, São Paulo, Brazil
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- BR-07. Impact of temperature on structural and magnetic properties of CoFe₂O₄ nanoparticles.** *T. da Silva Nascimento Sales¹, K.S. Souza¹, J.A. Guerra¹, D.P. Vieira¹, R.N. Saxena¹ and A.W. Carbonari¹* 1. Instituto de Pesquisas Energéticas e Nucleares, São Paulo, Brazil
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- BR-09. Exchange Bias Effects in Bismuth Ferrite Nanostructures produced by Pulsed Laser Deposition.** *D. M. A. García¹, R. D. Santos¹, A. M. S. Gomes² and W. Castro Nunes¹*
 1. Department of Physics, Universidade Federal Fluminense, Niterói, Brazil; 2. Department of Physics, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
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- BR-10. Investigating Unusual Dynamics: Time and Frequency-Dependent Variations in Specific Power Absorption of Magnetite Nanoparticles in Magnetic Hyperthermia.** *G.S. Silva¹, A.A. de Almeida¹, F. Fabris¹ and D. Muraca¹*
 1. Instituto de Física “Gleb Wataghin”, Universidade Estadual de Campinas, Sumaré, Brazil
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- BR-11. Interface Phenomena and Magnetic Hyperthermia of Fe₃O₄ Nanoparticles.** *M.B. Alves¹, A.A. de Almeida¹, P. Tancredi² and D. Muraca¹* 1. IFGW, Universidade Estadual de Campinas, Campinas, Brazil; 2. Centro de Micro y Nanotecnología, Instituto Nacional de Tecnología Industrial, Buenos Aires, Argentina
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- BR-12. Optimizing Magnetic Hyperthermia: Controlling Magnetic Properties of Co_xFe_{3-x}O₄ Nanoparticles for Enhanced Magnetoliposome-Mediated Drug Release.** *A.A. de Almeida¹, G.S. Silva¹, F. Fabris¹, M. Knobel¹, K.R. Pirota¹ and D. Muraca¹* 1. Universidade Estadual de Campinas, Barão Geraldo - Campinas, Brazil
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- BR-13. Withdrawn**
- BR-14. Producing High-Ratio Nanowires by Pressure-Induced Infiltration into Anodized Aluminum Oxide Nanoporous Template.** *L. Tomiatti¹, A. Mendonça¹ and F. Béron¹*
 1. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil
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BR-15. Structural and Magnetic Characterization of a Ferrofluid Obtained Through an Economical Way of Chemical Synthesis. I.G. Cely Orjuela^{1,2}, P.C. Rivas Rojas^{3,6}, P. Tancredi⁴, O. Moscoso Londoño⁵ and L.M. Socolovsky^{1,2}
1. Universidad Tecnológica Nacional Facultad Regional Santa Cruz, Rio Gallegos, Argentina; 2. CIT Santa Cruz, CONICET, Rio Gallegos, Argentina; 3. Laboratorio de Cristalografía Aplicada, Instituto de Tecnologías Emergentes y Ciencias Aplicadas, UNSAM-CONICET, San Martín, Argentina; 4. Micro y nanotecnología, Instituto Nacional de Tecnología Industrial, San Martín, Argentina; 5. Facultad de Ingeniería, Universidad Autónoma de Manizales, Manizales, Colombia; 6. Instituto de Ingeniería Mecánica, Universidad Austral de Chile, Valdivia, Chile
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BR-16. Cobalt ferrite-polyurethane composites as magnetic valves for microfluidic systems. A. Veloso-Fernández¹, J. Laza¹, S. Muñana-González¹, L. Ruiz-Rubio^{1,3}, L. Pérez-Álvarez^{1,3}, A. Aguilera-Grande¹, D. Salazar Jamillo³, A. Lopes^{1,2} and J. Vilas-Vilela^{1,3}
1. Department of Physical-Chemistry, University of Basque Country, Leioa, Spain; 2. Ikerbasque- Basque Foundation for Science, Bilbao, Spain; 3. BC Materials, Basque Center for Materials, Applications and Nanostructures, Leioa, Spain
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EXHIBIT HALL

Session BS PERMANENT MAGNET MACHINES I (Poster Session)

Narayan Kar, Co-Chair
 University of Windsor, Windsor, ON, Canada
 Elena Lomonova, Co-Chair
 Technische Universiteit Eindhoven, Eindhoven, Netherlands

BS-01. Computation-Efficient Current Harmonic Mitigation for Dual Three-Phase Permanent Magnet Synchronous Motors. Z. Zhang¹, J. Zhang¹, R. Han², Y. Wu¹, Y. Gong¹ and S. Chang¹
1. Tianjin University, Tianjin, China; 2. Tianjin Navigation Instruments Research Institute, Tianjin, China
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BS-02. A Study on reducing electromagnetic vibrations noise by changing the rotor shape for traction motors. S. Lee¹, S. Song², I. Yang², D. Jung³ and W. Kim¹
1. Department of Electrical Engineering, Gachon University, Seongnam-si, The Republic of Korea; 2. Hanyang University, Seoul, The Republic of Korea; 3. Halla University, Wonju, The Republic of Korea
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- BS-03. Design of a Slotless Structure for Minimizing Cogging Torque and Torque Ripple in a Column Type EPS Motor for Vehicles.** D. Choi¹, D. Kim², H.S. Han¹, D. Jung³ and W. Kim⁴ *1. Department of Next Generation Smart Energy System Convergence, Gachon University, Seongnam, The Republic of Korea; 2. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea; 3. Department of Mechanical Automotive and Robot Engineering, Halla University, Wonju, The Republic of Korea; 4. Department of Electrical Engineering, Gachon University, Seongnam, The Republic of Korea*
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- BS-04. Withdrawn**
- BS-05. Asymmetric Design of Consequent-Pole to Reduce Torque Ripple.** C. Jo¹, I. Yun¹, H. Hong¹, C. Jin², S. Yoon² and J. Lee¹ *1. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea; 2. Department of Electrical Engineering, Wonkwang University, Iksan, The Republic of Korea*
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- BS-06. A Study on the Design of Axial Flux Motor for Increased Power Density Compared to Radial Flux Motor.** M. Youn³, D. Nam³, M. Hong², N. Jo³ and W. Kim¹ *1. Department of Electrical Engineering, Gachon University, Seongnam, The Republic of Korea; 2. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea; 3. Department of Next Generation Energy System Convergence, Gachon University, Seongnam, The Republic of Korea*
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- BS-08. Impact of Characteristic Current on Efficiency Area within Flux-Weakening Region of Interior Permanent Magnet Motor.** L.J. Vera¹ and M. Hsieh¹ *1. National Cheng Kung University, Tainan, Taiwan*
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- BS-09. Evaluation of Slot-Modulation Generated Surface Core Loss in Consequent Pole Permanent Magnet Synchronous Motor.** R. Kumar¹, P. Song¹ and N. Kar¹ *1. Department of Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada*
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- BS-10. Improvement of Magnetic Properties of Ring-shaped Laminated Cores by Laser Welding.** Y. Tsuchida¹ and K. Otsuka¹ *1. Oita University, Oita, Japan*
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- BS-11. Comparative Study of Cogging Torque, Torque Ripple and Vibration on Stator Tooth Chamfer Types in Permanent Magnet Synchronous Motors.** Y. Won¹, J. Kim¹, S. An¹ and M. Lim¹ *1. Hanyang University, Seoul, The Republic of Korea*
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- BS-12. Design process of high power density hybrid type motor using 3D printing.** H. Kim¹, Y. Lee¹, H. Pyo², S. Ko¹ and W. Kim² *1. Department of Next Generation Energy System Convergence, Gachon University, Seongnam, The Republic of Korea; 2. Department of Electrical Engineering, Gachon University, Gwangmyeong-si, The Republic of Korea*
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- BS-13. A Study on the High Efficiency Design and Demagnetization of Hybrid Line Start Permanent Magnet Synchronous Motor.** H. Hong¹, C. Jo¹, H. Koo¹, J. Lee¹, D. Jung² and B. Kang³ *1. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea; 2. Department of Mechanical, Automotive and Robot Engineering, Halla University, Wonju, The Republic of Korea; 3. SJ Global Co. R&D Center, Changwon, The Republic of Korea*
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OCEANIA IV & V

Session CA GRADIENT DZYALOSHINSKII-MORIYA INTERACTION

Witold Skowronski, Chair
AGH University of Krakow, Krakow, Poland

8:30

- CA-01. Conical-helix magnetic textures stabilized in planar and curved films with different kinds of Dzyaloshinskii-Moriya interaction. (Invited)** M. Cepeda-Arancibia^{1,2}, B. Mimica-Figari¹, F. Brevis¹, D.I. Cortés-Ortuño¹, R. Gallardo^{1,2} and P. Landeros^{1,2} *1. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), Santiago, Chile*
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9:00

- CA-02. Fast moving spin textures in ferrimagnets: from domain walls to skyrmions. (Invited)** L. Berges¹, E. Haltz¹, S. Panigraphy¹, S. Mallick¹, R. Weil¹, S. Rohart¹, J. Sampaio¹ and A. Mougin¹ *1. UMR CNRS 8502, Laboratoire de Physique des Solides Université Paris-Saclay, Orsay, France*
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9:30

- CA-03. First-principles calculations for Dzyaloshinskii-Moriya interaction. (Invited)** H. Yang¹ *1. Zhejiang University, Hangzhou, China*
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10:00

- CA-04. Skyrmions and Hopfions: Magnetic vs. Polar Structures. (Invited)** *S. Kondovych¹, A. Razumnaya², Y. Tikhonov³, V. Vinokur⁴ and I. Luk'yanchuk³* *1. Institute for Theoretical Solid State Physics, IFW Dresden, Dresden, Germany; 2. Jozef Stefan Institute, Ljubljana, Slovenia; 3. University of Picardie Jules Verne, Amiens, France; 4. Terra Quantum AG, St. Gallen, Switzerland*
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10:30

- CA-05. Withdrawn**

OCEANIA VI & VII

Session CB

MAGNONICS II: ELECTRICAL AND OTHER COUPLING EFFECTS

Santa Pile, Chair

Johannes Kepler University Linz, Linz, Austria

8:30

- CB-01. Room temperature switching of perpendicular magnetization by magnon torques. (Invited)** *F. Wang^{2,1}, G. Shi¹ and H. Yang¹* *1. ECE, National University of Singapore, Singapore; 2. Shanxi Normal University, Taiyuan, China*
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9:00

- CB-02. Optical and electrical investigation of Permalloy nanomagnet reversal induced by propagating magnons in a magnonic memory.** *S. Joglekar¹, M. Xu¹ and D. Grundler^{1,2}* *1. Laboratory of Nanoscale Magnetic Materials and Magnonics, Institute of Materials, Swiss Federal Institute of Technology, (EPFL), Lausanne, Switzerland; 2. Institute of Electrical and Micro Engineering (IEM), Swiss Federal Institute of Technology, (EPFL), Lausanne, Switzerland*
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- CB-03. Controlling Spin-Waves by Spin-Polarized Current for Logic and Neuromorphic Computing.** *R.M. de Menezes^{1,2}, J. Mulkers³, C.C. de Souza Silva¹, B. Van Waeyenberge³ and M. Milosevic²* 1. *Department of Physics, Federal University of Pernambuco, Recife, Brazil;* 2. *Department of Physics, University of Antwerp, Antwerp, Belgium;* 3. *Department of Physics, Ghent University, Ghent, Belgium*
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- CB-04. Magnonic Hall Effect and Magnonic Focusing Induced by Hopfions. (Invited)** *C. Saji¹, R. Troncoso², V. Carvalho³, D. Altbir^{4,5} and A. Nuñez¹* 1. *Departamento de Física, Universidad de Chile, Santiago, Chile;* 2. *Universidad Adolfo Ibañez, Santiago, Chile;* 3. *Universidade Federal de Viçosa, Viçosa, Brazil;* 4. *Universidad Diego Portales, Santiago, Chile;* 5. *Universidad de Santiago de Chile, Santiago, Chile*
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- CB-05. Detection of Gate-Switchable Magnons in Graphene via Thermal Transport.** *J. Waissman^{1,2}, Z. Yan¹, A.V. Talanov¹, Y.J. Shin¹, D.H. Najafabadi¹ and P. Kim¹* 1. *Department of Physics, Harvard University, Cambridge, MA, United States;* 2. *Institute of Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel*
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- CB-06. Going vertical: sub-micrometer spin-wave directional couplers.** *K. Szulc¹ and M. Krawczyk¹* 1. *Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*
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- CB-07. Biasing Magnonic Devices with Integrated Permanent Micromagnets.** *M. Cocconcelli¹, F. Maspero¹, A. Cattoni¹, B. Heinz², P. Pirro², R. Erdélyi³, A. Papp³, G. Csaba³, M. Madami⁴, S. Tacchi⁵ and R. Bertacco¹* 1. *Department of Physics, Politecnico di Milano, Milan, Italy;* 2. *Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau and Landesforschungszentrum OPTIMAS, Kaiserslautern, Germany;* 3. *Pazmany Peter Catholic University, Budapest, Hungary;* 4. *Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy;* 5. *Istituto Officina dei Materiali del CNR, Perugia, Italy*
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- CB-08. Exploring Spin Wave Dynamics in Square Artificial Spin Ice Vertices via Ferromagnetic Resonance.**
G.A. Gomez-Iriarte¹, D. Gonzalez-Chavez¹, R.L. Sommer¹ and J.P. Sinnecker¹ 1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil
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11:00

- CB-09. Phase velocity reversal and propagation of zero-momentum spin waves in synthetic antiferromagnets with uniaxial anisotropy.** O. Wojewoda¹, J. Holobradek¹, D. Pavelka¹, E. Pribytova¹, J. Krcma¹, J. Klima¹, J. Michalicka¹, T. Lednický¹, A. Chumak² and M. Urbánek¹ *1. Brno University of Technology, Brno, Czechia; 2. University of Vienna, Vienna, Austria*
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OCEANIA IX & X

Session CC NEUROMORPHIC AND UNCONVENTIONAL COMPUTING

Sonal Shreya, Co-Chair
 Aarhus University, Aarhus, Denmark

Sai Li, Co-Chair
 Beihang University, Beijing, China

8:30

- CC-01. Spintronics domain wall neuron devices with leak-integrate-fire functions. (Invited)** B. Sekh¹, W. Mah¹, H. Rahaman¹, D. Kumar¹, S. Dhull³, A. Nisar³, M. Ramu¹, J. Chan^{1,2}, K.R. Ganesh², V.B. Naik², B.K. Kaushik³ and S. Piramanayagam¹ *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore; 2. GlobalFoundries, Singapore; 3. Department of Electronics and Communication Engineering, Indian Institute of Technology, Roorkee, India*
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9:00

- CC-02. Neuromorphic Computing with the Ferromagnetic/Antiferromagnetic SOT Systems: the Role of Emerging Antiferromagnetic Phase.** *D.K. Ojha^{1,2,5}, Y. Huang¹, Y. Lin¹, R. Chatterjee^{2,3}, W. Chang⁴ and Y. Tseng^{1,5}* *1. Department of Materials Science & Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; 2. Department of Physics, Indian Institute of Technology Delhi, Delhi, India; 3. National University of Science and Technology MISiS, Moscow, Russian Federation; 4. Powerchips Semiconductor Manufacturing Corporation, Hsinchu, Taiwan; 5. International College of Semiconductor Technology, National Yang Ming Chiao Tung University, Hsinchu, Taiwan*
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9:15

- CC-03. Gradient Descent Learning in Multilayer Antiferromagnetic Neural Networks.** *H. Bradley¹, V. Tyberkevych¹ and A.N. Slavin¹* *1. Department of Physics, Oakland University, Auburn Hills, MI, United States*
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9:30

- CC-04. Unleashing the Potential of Magnetic Vortex in Spintronic Devices for Various Applications. (Invited)** *S. Shreya¹, K.K. Das², Y. Rezaeiyan¹, T. Böhnert³, S. Soni², R. Li¹, A. Jenkins³, B.K. Kaushik², R. Ferreira³, H. Farkhani¹ and F. Moradi¹* *1. Electrical and Computer Engineering Department, Aarhus University, Aarhus, Denmark; 2. Electronics and Communication Engineering Department, Indian Institute of Technology Roorkee, Roorkee, India; 3. Spitronics, International Iberian Nanotechnology Laboratory (INL), Braga, Portugal*
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10:00

- CC-05. Probability distributions generated using stochastic actuated perpendicular magnetic tunnel junctions.** *A. Sidi El Valli¹, L. Rehm¹, M. Tsao¹, S. Misra², D. Smith² and A.D. Kent¹* *1. Department of Physics, New York University, New York, NY, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States*
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10:15

- CC-06. Spintronic Oscillator-based Ising Machine simulated to solve large Max-Cut problems.** *V. Puliafito¹, L. Mazza¹, A. Grimaldi², D. Rodrigues¹, E. Raimondo², M. Carpentieri¹ and G. Finocchio²* *1. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 2. University of Messina, Messina, Italy*
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- CC-07. Brownian reservoir computing approach for Gesture recognition by using geometrically confined skyrmion dynamics.** *G. Beneke^{1^}, T. Winkler¹, K. Raab¹, M.A. Brems¹, F. Kammerbauer¹, P. Gerhards², K. Knobloch², S. Krishnia¹, J. Mentink³ and M. Kläui^{1,4}* *1. Institute of Physics, Johannes Gutenberg-Universität Mainz, Ober-Olm, Germany; 2. Infineon Technologies Dresden, Dresden, Germany; 3. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 4. Center for Quantum Spintronics, Norwegian University of Science and Technology, Trondheim, Norway*
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- CC-08. Skyrmionic Synapse Implementation for Pattern Recognition using Convolutional Neural Network.** *S. Gupta¹, V. Vadde¹, B. Muralidharan¹ and A. Sharma²* *1. Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Electrical Engineering, Indian Institute of Technology Ropar, Rupnagar, India*
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- CC-09. Leveraging Spintronic Nonlinear Random Projections for Handwritten Digit Recognition.** *A. Moureaux¹, S. de Wergifosse¹, C. Chopin¹ and F. Abreu Araujo¹* *1. UCLouvain, Louvain-la-Neuve, Belgium*
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- CC-10. Magnetization Dynamics in Square Lattice Artificial Spin Ice.** *C. Sullivan¹, H. Chen², B. Fang³, X. Zhang³ and S. Majetich²* *1. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Department of Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 3. Department of Materials Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*
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Session CD
NOVEL SPINTRONICS

Clécio de Souza Silva, Chair
 Federal University of Pernambuco, Recife, Brazil

8:30

- CD-01. **Visualizing symmetry-breaking electronic orders in epitaxial Kagome magnet FeSn films. (Invited) L. Li¹**
1. West Virginia University, Morgantown, WV, United States
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9:00

- CD-03. **Withdrawn**

9:15

- CD-04. **Chiral antiferromagnetic Josephson junctions as spin-triplet supercurrent spin-valves and dc SQUIDS. (Invited) K. Jeon¹** *1. Chung-Ang University (CAU), Seoul, The Republic of Korea*
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9:45

- CD-05. **Enhanced Spin-Orbit Torque Flexible Spintronic Device.**
A. Chouhan¹, H.A. Mendonca¹, S. Dutta¹, A. Shukla¹, R.R. Pandey¹ and A.A. Tulapurkar¹ *1. Electrical Engineering Department, Indian Institute of Technology Bombay, Mumbai, India*
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10:00

- CD-06. **Large Interfacial Rashba Torques in Atomically Thin Co|Al Systems.** *N. Sebe¹, S. Krishnia², S. Mallick¹, Y. Sassi¹, S. Collin¹, T. Denneulin³, A. Kovács³, R.E. Dunin-Borkowski³, A. Fert¹, J. George¹, V. Cros¹ and H. Jaffrès¹* *1. Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Institute of Physics, Johannes Gutenberg-University Mainz, Mainz, Germany; 3. Forschungszentrum Jülich, Jülich, Germany*
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10:15

- CD-07. **Transporting the Shape of Spin: From Spintronics to Multipoletronics. (Invited) H. Chen¹** *1. Department of Physics, Colorado State University, Fort Collins, CO, United States*
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- CD-08. Room temperature spin-charge interconversion in nanodevices made of sputtered GeTe.** S. Teresi¹, P. Sgarro¹, M. Cosset-Cheneau¹, T. Frottier¹, W. Savero-Torres¹, M. Wissman¹, M. Culot¹, F. Osana¹, A. Kandazoglou¹, J. Paterson², A. Oysel Mestre², F. Hippert³, F. Leroy⁴, B. Croes⁴, M. Bibes⁵, A. Manchon⁴, A. Marty¹, J. Attané¹, F. Cheynis⁴, G. Prenat¹, L. Hutin², P. Noé² and L. Vila¹
1. CEA-SPINTEC, Grenoble, France; 2. CEA-LETI, Grenoble, France; 3. LMGP, Grenoble INP, Grenoble, France; 4. CINAM, Marseille, France; 5. Laboratoire Albert Fert, Paris, France
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- CD-09. Orbital and spin Hall angles in mesoscopic device.** A.L. Barbosa¹ *1. Physics Department, Universidade Federal Rural de Pernambuco, Recife, Brazil*
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Session CE ELECTRICAL MACHINES AND POWER SYSTEM COMPONENTS

Yacine Amara, Chair
 Université Le Havre Normandie, Le Havre, France

- CE-01. Test bench for characterization of HTS tapes at low magnetic fields based on additive manufacturing.** K. Habelok¹, K. Gruszczyk², P. Lasek¹, D. Koterla³ and M. Stepień¹ *1. Department of Power Electronics, Electrical Drives and Robotics, Silesian University of Technology, Gliwice, Poland; 2. Faculty of Electrical Engineering, Silesian University of Technology, Gliwice, Poland; 3. ILC Dover Poland Sp. z o.o., Gliwice, Poland*
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- CE-03. Overload Capabilities of Synchronous Motors.** H.N. Nasser¹, S. Asfirane¹, Y. Amara¹ and F. Chabour¹
1. Université Le Havre Normandie, Le Havre, France
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9:00

- CE-04. Online Permanent Magnet Demagnetization Monitoring using Model Reference Adaptive System Considering VSI Nonlinearity.** *S. Garaei¹, C. Lai¹ and L. Iyer²*
1. Electrical and Computer Engineering, Concordia University, Montréal, QC, Canada; 2. Magna International Inc, Troy, MI, United States
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9:15

- CE-05. Maximum-Torque-per-Watt Control Framework for Variable Flux Reluctance Machines with Magnetic Saturation and Cross-Coupling.** *G. Bayazit¹, J. Escarate¹, D. Ceylan¹, E. Ilhan Caarls¹, J. Schellekens¹, K.O. Boynov¹ and E. Lomonova¹*
1. Eindhoven University of Technology, Eindhoven, Netherlands
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9:30

- CE-06. Improvement of the propulsion force by optimizing the range of magnetic field influence in a permanent magnet-HTS Hybrid Maglev Transporter System.** *A.H. Takinami¹ and S. Ohashi¹*
1. Department of Electrical Engineering, Kansai University, Suita, Japan
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9:45

- CE-07. Influence of friction on high speed permanent magnet bearing rings.** *T. Tan^{1,2}, D.F. Förster¹, U. Pabst¹, U. Giesen¹, M. Butzek¹ and G. Natour^{1,2}*
1. Central Institute of Engineering, Electronics and Analytics – Engineering and Technology (ZEA-1), Forschungszentrum Jülich GmbH, Jülich, Germany; 2. Faculty of Mechanical Engineering, RWTH Aachen University, Aachen, Germany
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10:00

- CE-08. A Novel Electromagnetic Force Calculation Method for Homopolar Hybrid Magnetic Bearing.** *G. Cao¹, H. Li¹, H. Hu¹, S. Huang¹, H. Wang¹, K. Liu² and J. Wei²*
1. Shenzhen University, Shenzhen, China; 2. Sun Yat-Sen University, Shenzhen, China
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10:15

- CE-09. Noval Electrodynamic Damper for Homopolar and Heteropolar Electrodynamic Bearings.** *A. Alzhrani¹ and K. Atallah²*
1. Department of Electrical Engineering, Jubail Industrial College, Jubail, Saudi Arabia; 2. University of Sheffield, Sheffield, United Kingdom
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10:30

- CE-10. Systematic Optimization of Electromagnet Hardware for Electromagnetic Suspension: A Fusion of Simulation and Multi-Objective Optimization Techniques.** J. Demicoli¹, O. Kleikemper² and S. Steinhorst¹ *1. Technical University of Munich, Munich, Germany; 2. TUM Hyperloop Program, Technical University of Munich, Munich, Germany*
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10:45

- CE-11. Proposal of a Bearingless Consequent-Pole Motor Using Combined Winding with Functions of Three-Phase Radial Suspension and Single-Phase Motor Driven by Zero-Sequence Current.** Y. Fujii¹ and K. Tanaka¹
1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan
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11:00

- CE-12. Experimental Verification of Orthogonal-Core-Type Variable Inductor with Permanent Magnets.** H. Hatakeyama¹, S. Aizu¹, K. Nakamura¹, T. Ohinata² and K. Arimatsu² *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Tohoku Electric Power Co., Inc., Sendai, Japan*
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EUROPA II

Session CF

MAGNETIC TEXTURES, STATICS, AND DYNAMICS

Christian Tzschaschel, Co-Chair
Max Born Institute, Berlin, Germany

Adekunle Adeyeye, Co-Chair
Durham University, Durham, United Kingdom

8:30

- CF-01. Spin wave localization in ferromagnetic layer induced by superconducting nanostructure.** J. Kharlan^{1,2}, K. Sobucki¹, K. Szulc¹, S. Memarzadeh¹ and J.W. Klos¹
1. Adam Mickiewicz University, Poznan, Poland; 2. Institute of Magnetism, Kyiv, Ukraine
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- CF-02. Critical slowing of the spin and charge density wave order in thin film Cr following photoexcitation.** *S.K. Patel*^{1,2}, O. Gorobtsov³, D. Cela², S.B. Hrkac², N. Hua², R. Medapalli¹, A. Shabalin², J. Wingert², J.M. Glowina⁴, D. Zhu⁴, M. Chollet⁴, O. Shpyrko², A. Singer³ and E. Fullerton¹ *1. Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA, United States; 2. Physics Department, University of California, San Diego, La Jolla, CA, United States; 3. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, United States; 4. Linac Coherent Light Source, SLAC National Accelerator Laboratory, Menlo Park, CA, United States*
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9:00

- CF-03. Magnetization dynamics induced by spin-vortex locking in topological insulators proximate to a superconductor.** *F. Nogueira*¹ *1. Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany*
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9:15

- CF-04. Vortex chaotic dynamics in a cross-tie domain wall.** *M. Al-Mahdawi*¹ and *M. Oogane*² *1. Mechatronics Engineering Department, Libya International Medical University, Benghazi, Libya; 2. Tohoku University, Sendai, Japan*
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9:30

- CF-05. Resonant Excitation of Vortex Gyrotropic Mode via Surface Acoustic Waves.** *A. Koujok*¹, *A. Riveros*², *D. Rodrigues*³, *G. Finocchio*⁴, *M. Weiler*¹, *A. Hamadeh*¹ and *P. Pirro*¹ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Rheinland-Pfalzische, Technische Universität Kaiserslautern- Landau, Kaiserslautern, Germany; 2. Escuela de Ingenieria, Universidad Central de Chile, Santiago, Chile; 3. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 4. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*
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- CF-06. Non-Volatile Frequency Reconfiguration of Vortex Oscillators.** *M. Steblii*¹, A. Jenkins¹, L. Benetti¹, A. Schulman¹, E. Paz¹, T. Böhnert¹ and R. Ferreira¹
1. International Iberian Nanotechnology Laboratory, Braga, Portugal
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10:00

- CF-07. Geometry-induced effects in domain wall dynamics in stripes with spatially varying cross-section.** *K. Yershov*^{1,2}
1. Leibniz Institute for Solid State and Materials Research in Dresden, Dresden, Germany; 2. Bogolyubov Institute for Theoretical Physics of the National Academy of Sciences of Ukraine, Kyiv, Ukraine
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10:15

- CF-08. Quantitative Description of the Impact of the Ampère-Oersted Field on the Stiffness of Magnetic Vortices.** *S. de Wergifosse*¹, C. Chopin^{1,2}, A. Moureaux¹ and F. Abreu Araujo¹ *1. UCLouvain, Louvain-la-Neuve, Belgium; 2. CEA-SPINTEC, Grenoble, France*
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10:30

- CF-11. Graph Neural Networks to Predict Coercivity of Hard Magnetic Microstructures.** *H.A. Moustafa*¹, A. Kovacs¹, J. Fischbacher¹, M. Gusenbauer¹, Q. Ali^{1,2}, L. Breth¹, Y. Hong³, W. Rigaut³, T. Devillers³, N. Dempsey³, T. Schrefl^{1,2} and H. Oezelt¹ *1. Department for Integrated Sensor Systems, University for Continuing Education Krems, Wiener Neustadt, Austria; 2. Christian Doppler Laboratory for Magnet Design Through Physics Informed Machine Learning, Wiener Neustadt, Austria; 3. CNRS, Grenoble INP, Institute Néel, Université Grenoble Alpes, Grenoble, France*
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10:45

- CF-12. Numerical simulations and annihilation mechanisms of skyrmion tubes in a bulk chiral magnet.** *D.I. Cortés-Ortuño*¹ and M. Birch² *1. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. RIKEN Center for Emergent Matter Science, Wako, Japan*
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Session CG

MAGNETORESISTANCE AND SPIN CURRENT GENERATION

Gyoung-Min Choi, Chair
Sungkyunkwan University, Suwon, The Republic of Korea

8:30

- CG-01. Thermally driven magneto-transport in quaternary spin-gapless semiconductors and semi-metal Heusler alloys. (Invited) H. Srikanth¹** *1. Department of Physics, University of South Florida, Tampa, FL, United States*
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9:00

- CG-02. Thermal Spin-Current Generation in Bi-substituted YIG films with Perpendicular Magnetic Anisotropy.** *L.M. Solis^{1,2}, A. Anadón³, M. Rengifo², J. Santiso⁴, J. Rojas-Sanchez³, S. Petit-Watelot³, M. Aguirre^{2,5,6} and L. Steren^{1,7}* *1. Instituto de Nanociencia y Nanotecnología CNEA/CONICET - Constituyentes, San Martín, Argentina; 2. Instituto de Nanociencia y Materiales de Aragón, UNIZAR-CSIC, Zaragoza, Spain; 3. Institut Jean Lamour, Université de Lorraine CNRS UMR 7198, Nancy, France; 4. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Universitat Autònoma de Barcelona, Bellaterra, Spain; 5. Departamento de Física de la Materia Condensada, UNIZAR, Zaragoza, Spain; 6. Laboratorio de Microscopías Avanzadas, UNIZAR-CSIC, Zaragoza, Spain; 7. Consejo Nacional de Investigaciones Científicas y Técnicas, Ciudad Autónoma de Buenos Aires, Argentina*
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9:15

- CG-03. Anisotropic Magnetoresistance of Epitaxial Grown CoFe thin films on Flexible Mica and Rigid MgO Substrates.** *J. Cheng¹, M. You¹, A. Anbalagan¹, G. Su¹, K. Chuang², C. Hsieh³, C. Yang³ and C. Lee^{1,2}* *1. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of Nuclear Engineering and Science, National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Materials Science and Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan*
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[Now VP7-21](#)

- CG-04. High TMR in a semiconductor host with black phosphorus.** *H. Wei*¹, M. Galbiati¹, J. Peiro¹, S.M. Dubois², F. Brunnett¹, V. Zatzko¹, R. Galceran¹, P. Brus³, F. Godel¹, D. Perconte¹, F. Bouamrane¹, E. Gaufrès⁴, A. Loiseau⁴, F. Petroff¹, J. Charlier², M. Martin¹, B. Dlubak¹ and P. Seneor¹
1. Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Institute of Condensed Matter and Nanosciences (IMCN), Université Catholique de Louvain, Louvain-la-Neuve, Belgium; 3. Thales Research and Technology, Palaiseau, France; 4. Laboratoire d'Étude des Microstructures (LEM), CNRS, ONERA, Université Paris-Saclay, Châtillon, France
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9:45

- CG-05. Longitudinal Spin Seebeck Effect on exchange biased system: A theoretical overview.** *M.A. Correa*¹ and F. Bohn¹
1. Physics Department, Federal University of Rio Grande do Norte, Natal, Brazil
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10:00

- CG-06. Spintronic applications from polymer-based magnetoelectric materials.** R. Carvalho^{1,2}, L. Amorim^{1,2}, S. Lanceros-Mendez^{3,4} and P. Martins^{1,2} *1. Department of Physics, Universidade do Minho, Braga, Portugal; 2. LaPMET - Laboratory of Physics for Materials and Emergent Technologies, Universidade do Minho, Braga, Portugal; 3. BC Materials, Basque Center for Materials, Applications and Nanostructures, Bilbao, Spain; 4. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*
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10:15

- CG-07. Self-induced inverse spin Hall effect in disordered FePt thin films.** *J. Ampuero Torres*^{1*}, A. Anadon², H. Damas², J. Ghanbaja², S. Petit-Watelot², J. Rojas-Sanchez², D. Velázquez¹, L. Avilés Félix¹, J. Gomez¹ and A. Butera¹
1. Department of Physics, Balseiro Institut, San Carlos de Bariloche, Argentina; 2. Institut Jean Lamour, Nancy, France
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10:30

- CG-08. Efficient spin to charge current conversion in WSe₂ by spin pumping from CoFeB.** *E.O. Burgos Parra*^{1,2}, K. Abdukayumov³, G. Rodriguez², C. Vergnaud³, H. Boukari³, A. Marty³, F. Bonell³, I.G. de Moraes³, R. Rodriguez⁴, S. Oyarzún² and M. Jamet³ *1. Physics Department, Universidad de Chile, Santiago, Chile; 2. Physics Department, Universidad de Santiago de Chile, Santiago, Chile; 3. CEA-SPINTEC, Grenoble, France; 4. Pontificia Universidad Católica de Chile, Santiago, Chile*
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- CG-09. Maximizing Competing Spin Current of the W/Pt/ferromagnet Devices with Spin-torque Ferromagnetic Resonance Analysis.** *J. Hsu*¹, *C. Cheng*², *Y. Huang*², *Y. Wu*², *Y. Lin*², *W. Chang*³ and *Y. Tseng*² *1. Industry Academia Innovation School, Hsinchu, Taiwan; 2. Department of Materials Science & Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; 3. Powerchip Semiconductor Manufacturing Corporation, Hsinchu, Taiwan*
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11:00

- CG-10. Unveiling the mechanism of spin to charge conversion in the ferroelectric Rashba semiconductor SnTe.** *M. Gamino*¹, *E. Souza*², *J. Abr  o*² and *S.M. Rezende*² *1. Departament of Physics, Federal University of Rio Grande do Norte, Natal, Brazil; 2. Departament of Physics, Federal University of Pernambuco, Recife, Brazil*
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11:15

- CG-11. Low damping and large charge-to-spin conversion efficiency in Co₂₅Fe₇₅/Pt thin films and microwire devices.** *P. Radhakrishnan*¹, *T. Chen*¹, *Z. Zhang*², *R. Klause*², *B. Sahoo*³, *E. Fullerton*³, *A. Hoffmann*² and *A.D. Kent*¹
1. Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States; 2. Materials Research Laboratory and Department of Materials Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL, United States; 3. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States
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EXHIBIT HALL

Session CP

2D SPINTRONICS AND TOPOLOGICAL MATERIALS (Poster Session)

Connie Li, Chair

Naval Research Lab, Washington, DC, United States

- CP-01. Magnetic skyrmion ground state in a 2D van der Waals compound.** *Z. Yin*^{1,2}, *A. Srivastava*¹, *K. Gu*^{1,2} and *S. Parkin*^{1,2}
1. NISE, Max Planck Institute of Microstructure Physics, Halle, Germany; 2. Martin-Luther-University Halle-Wittenberg, Halle, Germany
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- CP-02. Harnessing van der Waals CrPS₄ and surface oxides for unique pre-set field induced Exchange Bias in Fe₃GeTe₂.** A. Puthirath Balan¹, A. Kumar¹, T. Scholz², Z. Lin³, A. Shahee¹, S. Fu⁴, T. Denneulin⁵, J. Vas⁵, A. Kovács⁵, R.E. Dunin-Borkowski⁵, H. Wang⁴, J. Yang³, B. Lotsch², U. Nowak⁶ and M. Kläui^{1,7} 1. *Institute of Physics, Johannes Gutenberg University, Mainz, Germany*; 2. *Max Planck Institute for Solid State Research, Stuttgart, Germany*; 3. *School of Physics, State Key Laboratory for Artificial Microstructure and Mesoscopic Physics, Beijing, China*; 4. *Max Planck Institute for Polymer Research Mainz, Mainz, Germany*; 5. *Forschungszentrum Jülich, Jülich, Germany*; 6. *Department of Physics, University of Konstanz, Konstanz, Germany*; 7. *Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway*
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- CP-04. Ultra-high Curie temperature and specific magnetic configuration in 2D Fe₂O₃.** T. Wang¹, W. Xue¹, H. Yang³, C. Song² and X. Xu¹ 1. *Shanxi Normal University, Taiyuan, China*; 2. *Tsinghua University, Beijing, China*; 3. *Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
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- CP-05. Hubbard U correction and long-range exchange interactions in CrXY monolayers (X, Y ∈ {S, Se, Te}).** L. Vojáček¹, F. Ibrahim¹, J. Li² and M. Chshiev^{1,3} 1. *CEA-SPINTEC, Grenoble, France*; 2. *LETI, Grenoble, France*; 3. *IUF, Paris, France*
[View Digest Text](#)
- CP-06. Spin-to-charge current conversion and charge transfer dynamics in graphene/WS₂ heterostructures.** R.O. da Cunha¹, Y. Garcia-Basabe², D.G. Larrude³, M. Gamino⁴, E.N. Lima^{5,6}, F.C. de Lima⁵, A. Fazzio⁵, A. Azevedo⁷, S.M. Rezende⁷ and J.B. Mendes¹ 1. *Departamento de Física, Universidade Federal de Viçosa, Viçosa, Brazil*; 2. *Centro Interdisciplinar de Ciências da Natureza, Universidade Federal da Integração Latino-Americana, Foz do Iguaçu, Brazil*; 3. *Escola de Engenharia, Universidade Presbiteriana Mackenzie, São Paulo, Brazil*; 4. *Departamento de Física, Universidade Federal do Rio Grande do Norte, Natal, Brazil*; 5. *Illum School of Science, Brazilian Center for Research in Energy and Materials (CNPEM), Campinas, Brazil*; 6. *Instituto de Física, Universidade Federal de Mato Grosso, Cuiabá, Brazil*; 7. *Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil*
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- CP-07. Enhancement of thermal stability in heterostructures base on Weyl semimetal WTe₂.** Y. Wang¹, W. Li¹, L. Zhang² and Y. Feng¹ 1. *School of Physics, Dalian University of Technology, Dalian, China*; 2. *School of Chemical Engineering, Dalian University of Technology, Dalian, China*
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- CP-09. Arpes studies on weyl semimetal candidate PrAl(Ge,Si).** K.R. Pakuszewski¹, A.P. Machado¹, J.C. Souza², M. Piva³, V. Brousseau-Couture⁴, M. Côté⁴, P. Pagliuso¹, W. Simões e Silva⁵ and C. Adriano⁶ *1. Instituto de Física Gleb Wataghin, University of Campinas, Campinas, Brazil; 2. Department of Condensed Matter Physics, Weizmann Institute Of Science, Rehovot, Israel; 3. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 4. Université de Montréal, Montreal, QC, Canada; 5. Centro Nacional de Pesquisa em Energias e Materiais, Campinas, Brazil; 6. Université de Sherbrooke, Sherbrooke, QC, Canada*
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- CP-10. Proximity Induced Artificial Magnetic Graphene As An Electrode for Magnetic Tunnel Junctions.** J. Peiro¹, V. Zatkó¹, F. Brunnett¹, R. Galceran¹, M. Galbiati¹, F. Godel¹, L. Kern¹, D. Perconte¹, F. Ibrahim², A. Hallal², M. Chshiev², B. Martinez³, C. Frontera³, L. Balcells³, P. Kidambi⁴, J. Robertson⁵, S. Hoffman⁵, S. Collin¹, F. Petroff¹, M. Martin¹, B. Dlubak¹ and P. Seneor¹ *1. Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. CEA-SPINTEC, Grenoble, France; 3. ICMAB-CSIC, Bellaterra, Spain; 4. Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN, United States; 5. Department of Engineering, University of Cambridge, Cambridge, United Kingdom*
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- CP-11. Spin transfer torque (STT) in graphene interface structures: the emergence of STT-van der Waals tunneling junctions (2DMTJs).** J. Hong¹, J. Lu² and P. Zhang²
1. UC Berkeley, Berkeley, CA, United States; 2. Hubei University of Technology, Wuhan, China
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- CP-12. TMD Engineering of 2D-Magnetic Tunnel Junctions – From Barriers to Electrodes.** F. Brunnett¹, H. Wei¹, J. Peiro¹, V. Zatkó¹, S.M. Dubois², M. Galbiati¹, F. Godel¹, E. Carré¹, M. Och³, C. Mattevi³, F. Fossard⁴, J. Mérot⁴, A. Loiseau⁴, J. Charlier², M. Martin¹, B. Dlubak¹ and P. Seneor¹
1. Laboratoire Albert Fert – CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Institute of Condensed Matter and Nanosciences (IMCN), Université Catholique de Louvain, 1348 Louvain-la-Neuve, Belgium; 3. Department of Materials, Imperial College, London, United Kingdom; 4. Laboratoire d'Etude des Microstructures - ONERA, Châtillon, France
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Session CQ
MAGNETORESISTANCE AND RELATED
PHENOMENA I
(Poster Session)

Jakub Zelezny, Chair

FZU - Institute of Physics, Czech Academy of Sciences,
Prague, Czechia

- CQ-01. Spin injection, spin filtering and spin-photon interfacing in III-V semiconductor nanostructures.** Y. Huang¹, V. Polojärvi², S. Hiura³, P. Höjer¹, A. Aho², R. Isoaho², T. Hakkarainen², M. Guina², S. Sato³, J. Takayama³, A. Murayama³, I.A. Buyanova¹ and W.M. Chen¹ *1. Linköping University, Linköping, Sweden; 2. Tampere University, Tampere, Finland; 3. Hokkaido University, Sapporo, Japan*
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- CQ-02. Withdrawn**
- CQ-03. Thermomagnetic Conversion in Ni₈₉Fe₁₁/Pt Multilayer Grown onto PVDF Flexible Polymer Substrates.** A. de Moraes^{1,2}, C.M. Valença², J.M. de Oliveira², F. Bohn², A. Ferreira³, C.A. Costa³, F. Vaz³ and M.A. Correa²
1. Department of Materials Engineering, Federal University of Rio Grande do Norte, Natal, Brazil; 2. Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil; 3. Physics Department, University of Minho, Braga, Portugal
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- CQ-04. Anomalous Nernst effect on NiFe film grown onto ceramic ribbons substrate.** J.M. de Oliveira¹, A. de Moraes¹, N.L. de Siqueira¹, J.O. Rodriguez¹, M.R. Delmonte¹, F. Bohn¹ and M.A. Correa¹ *1. Departamento de Física Teórica e Experimental, Universidade Federal do Rio Grande do Norte, Natal, Brazil*
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- CQ-05. Mn/Co Substitution Effect on Magnetoelectric and Structural Properties of ZnO Nanostructures Prepared by DC-Magnetron co-Sputtering For Spintronic Applications.** Á.P. Lanchero D.¹, L.F. Prieto R.¹, H.P. Quiroz¹, J.A. Calderón^{1,2}, A. Dussan Cuenca¹ and F. Mesa³
1. Department of Physics, Universidad Nacional de Colombia, Bogotá, Colombia; 2. Engineering and Basic Science Faculty, Universidad Central, Bogotá, Colombia; 3. Engineering and Basic Science Faculty, Universidad Los Libertadores, Bogotá, Colombia
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- CQ-06. Influence of ferromagnetic coupling in Fe₈₈Co₁₅/Py bilayers on the ISHE voltage generated by spin pumping.** Á.A. Pérez Martínez^{1,2}, D. Velázquez^{1,2}, D. Goijman², T.E. Torres¹, A. Butera^{1,2} and J. Milano^{1,2} *1. Magnetic Resonance Laboratory, Instituto de Nanociencias y Nanotecnología (CNEA - CONICET), San Carlos de Bariloche, Argentina; 2. Instituto Balseiro, Universidad Nacional de Cuyo (UNCuyo), Río Negro, Argentina*
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- CQ-07. Development of Interdigitated Devices for Surface Acoustic Waves (SAW) applied to Magnonics.** *M.S. de Lacerda¹, L. Sampaio¹ and J.P. Sinnecker¹* 1. *Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*
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- CQ-08. Colossal superconducting spin-valve effect in superconductor-non-magnetic metal heterostructures.** *A. Paschoa¹, J.L. Gonzalez¹, V. Nascimento¹ and E.C. Passamani¹* 1. *Departamento de Física, Universidade Federal do Espírito Santo (UFES), Vitória, Brazil*
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- CQ-09. Inverse spin hall and spin rectification voltage in NiFe/IrMn exchange-biased multilayer.** *A.R. Syed¹, D. Gonzalez-Chavez¹, R. Dutra¹, D.S. da Rosa¹, R.L. Sommer¹, A.H. de Oliveira², J.N. Rigue² and R.B. da Silva²* 1. *Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*; 2. *Physics Department, Federal University of Santa Maria, Santa Maria, Brazil*
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- CQ-10. Giant spin-to-charge conversion in $\text{Gn}_{(1-x)}\text{Sn}_x$ alloying.** *R. Rodriguez¹, S. Oyarzún², C. Gonzalez-Fuentes¹, F. Pezzoli³ and M. Jamet⁴* 1. *Facultad de Física, Pontificia Universidad Católica de Chile, Santiago, Chile*; 2. *Facultad de Física, Universidad de Santiago, Santiago, Chile*; 3. *LNESS, Milano, Italy*; 4. *Univ. Grenoble Alpes, Grenoble, France*
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- CQ-11. Local and non-local magnetoresistance in ferromagnetic spin valves.** *I.R. Greca¹, J.B. Mendes¹ and R.O. da Cunha¹* 1. *Departamento de Física, Universidade Federal de Viçosa, Viçosa, Brazil*
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- CQ-12. Theory of Pressure-Induced Negative-Positive Magnetoresistance Crossover Near Metal-Insulator Transition in $\text{La}_{0.8}\text{Ag}_{0.1}\text{MnO}_3$.** *Z. Alisultanov^{1,2}* 1. *Moscow Institute of Physics and Technology (State University), Moscow, Russian Federation*; 2. *Amirkhanov Institute of Physics of DFRC of RAS, Makhachkala, Russian Federation*
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- CQ-13. Nanodomes substrates as a tool for tuning the magnetoelectro properties of a Co-based pseudo spinvalve.** *E.O. Burgos Parra^{2,1}, J. Hermosilla¹, J.L. Palma³, J.C. Denardin¹ and S. Oyarzún¹* 1. *Physics Department, Universidad de Santiago de Chile, Santiago, Chile*; 2. *Physics Department, Universidad de Chile, Santiago, Chile*; 3. *Universidad Central de Chile, Santiago, Chile*
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- CQ-14. Efficiency of Spin-Transfer Torque Assist Spin-Orbit Torque Magnetization Switching Under In-plane External Field Application.** *D. Pan¹, D. Oshima¹ and T. Kato¹* 1. *Nagoya University, Nagoya, Japan*
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Session CR
MAGNONICS AND RELATED PHENOMENA
(Poster Session)

Philippe Talatchian, Chair
 CEA-SPINTEC, Grenoble, France

- CR-01. Reconfigurable Magnonics in Santa Fe Ice.** *A. Mondal¹ and A. Barman^{1,2} 1. Technical Research Centre, S. N. Bose National Centre for Basic Sciences, Salt Lake City, India; 2. Condensed Matter and Materials Physics, S. N. Bose National Centre for Basic Sciences, Salt Lake City, India*
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- CR-02. In-Plane Magnon Valve Effect in Magnetic Insulator/ Heavy Metal/ Magnetic Insulator Device.** *T. Zhang¹, C. Wan^{1,2} and X. Han^{1,2,3} 1. Institute of Physics, Chinese Academy of Science, Beijing, China; 2. University of Chinese Academy of Sciences, Beijing, China; 3. Songshan Lake Materials Laboratory, Dongguan, China*
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- CR-03. Spin Pumping into Superconductors: Influence of Spin-Orbit Coupling and Alloy Composition.** *M. Raboni Ferreira^{1,2}, R. Torrao Victor³, D. do Carmo², R. Donizeth dos Reis², F. Garcia^{3,2} and N. Marques de Souza Neto² 1. “Gleb Wataghin” Institute of Physics, University of Campinas, Campinas, Brazil; 2. Brazilian Synchrotron Light Laboratory, Brazilian Center for Research in Energy and Materials, Campinas, Brazil; 3. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*
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- CR-04. Magnon energy renormalization in yttrium iron garnet.** *E. Souza¹, D.S. Maior¹ and S.M. Rezende¹ 1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil*
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- CR-05. Self-Generation of Spatiotemporal Parametric Patterns in Active Ring Resonators Based on Single- and Bicomponent Magnonic Quasicrystals.** *A. Bir¹, S.V. Grishin¹, D. Romanenko¹ and S. Nikitov^{2,1} 1. Saratov State University, Saratov, Russian Federation; 2. Kotelnikov Institute of Radioengineering and Electronics of Russian Academy of Science, Moscow, Russian Federation*
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- CR-07. Spin waves in magnetic films: Micromagnetic simulations results in frequency and reciprocal space.** *A.Y. Requejo¹, G.P. Zamudio², B.R. Pujada Bermudez¹, R.L. Sommer² and D. Gonzalez-Chavez² 1. Faculty of Science, Universidad Nacional de Ingenieria, Chorrillos, Peru; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil*
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- CR-08. Analytical Calculations of Electron’s Phase Shift Due to Interactions with Magnetized Materials.** *G.K. Soares¹ and D. Muraca¹ 1. DEQ, Universidade Estadual de Campinas, Campinas, Brazil*
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Session CS

SOFT MAGNETIC MATERIALS: AMORPHOUS, CRYSTALLINE AND NANOCRYSTALLINE (Poster Session)

Paola Tiberto, Co-Chair
INRIM, Torino, Italy

Arkady Zhukov, Co-Chair

Basque Foundation for Science, San Sebastian, Spain

- CS-01. Magnetic Domain Walls in Rapidly Solidified Magnetostrictive and Non-Magnetostrictive Submicron Amorphous Wires.** *T.A. Ovari¹, G. Ababei¹, G. Stoian¹, S. Corodeanu¹, H. Chiriac¹ and N. Lupu¹* *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
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- CS-02. Exploring the Structural and Functional Frontiers of Nanocrystalline NANOMET-Based Metallic Glasses.** *H. Yim¹* *1. Department of Applied Physics, Sookmyung University, Seoul, The Republic of Korea*
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- CS-03. Amorphous magnetic Zn-Co alloys.** *J.P. Pereira¹, A.O. Guimarães² and M.J. Pires¹* *1. Instituto de Ciência e Tecnologia, Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Brazil; 2. Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, Brazil*
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- CS-04. Non-uniform Gd distribution and magnetization profile within ‘nominally uniform’ GdCoFe alloy thin film.** *O. Inyang¹, C. Swindells², D. Rianto¹, L. Bouchenoire^{3,4}, R. Morris⁵, A. Merkulov⁵, A. Caruana⁶, C. Kinane⁶, T. Hase^{7,4} and D. Atkinson¹* *1. Department of Physics, Durham University, Durham, United Kingdom; 2. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 3. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 4. XMaS Beamline, Grenoble, France; 5. IMEC, Leuven, Belgium; 6. ISIS Neutron and Muon Source, Didcot, United Kingdom; 7. Department of Physics, University of Warwick, Coventry, United Kingdom*
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- CS-05. Magnetic properties of novel TmFe_{1-x}Co_xO₃ perovskites.** *M.E. Vivas Arellano¹, F. Lurgo², J. De Paoli¹, R. Carbonio¹ and R. Sanchez²* *1. Departamento de Fisicoquímica, Universidad Nacional de Córdoba, Córdoba, Argentina; 2. INN-CNEA-CONICET, Bariloche, Argentina*
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- CS-06. Synthesis of NiFe₂O₄/NiFe Nanocomposites: Structural and Magnetic Study.** *M.S. Nunes¹, I. Bezerra¹, J. Lima¹, R. Checca², A. Paesano Jr.¹, J. de Araújo¹ and M. Morales Torres¹* *1. Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil; 2. Brazilian Center for Research in Physics, Rio de Janeiro, Brazil*
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- CS-07. Effective magnetic anisotropy of $\text{Ni}_x\text{Co}_{1-x}\text{Fe}_2\text{O}_4$ nanoparticles.** *L.J. Dalla Costa*¹, *M.R. Freitas*², *G.L. Gouveia*², *R.H. Kiminami*², *A.J. de Oliveira*¹ and *A.J. Gualdi*¹
1. Department of Physics, Universidade Federal de São Carlos, São Carlos, Brazil; 2. Department of Materials Engineering, Federal University of São Carlos, São Carlos, Brazil
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- CS-09. Influence of Electromagnetic Stirring During the Solidification on the Structure and Magnetic Properties of 2% Si Electrical Steel.** *F.G. Toledo Junior*^{2,1}, *S. da Costa Paolinelli*³, *J.R. Oliveira Junior*¹ and *D.L. Rocco*²
1. Research Center, Aperam South America, Timoteo, Brazil; 2. Department of Materials Engineering, Federal Center Technological Education of Minas Gerais, Timoteo, Brazil; 3. Paolinelli Electrical Steels Consultancy Ltda, Carmópolis, Brazil
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- CS-11. Mapping the Magnetic Properties of Polycrystalline CeCrGe_3 Using Macroscopic and Microscopic Techniques.** *B.S. Corrêa*¹, *B.B. Santos*², *E.L. Correa*², *G.A. Cabrera-Pasca*³, *W.L. Ferreira*¹, *A. A. Miranda*¹, *T. da Silva Nascimento Sales*¹, *L. Scalise*¹, *R.N. Saxena*¹ and *A.W. Carbonari*¹ *1. CERPQ, Instituto de Pesquisas Energéticas e Nucleares, São Paulo, Brazil; 2. NIST Center for Neutron Research, Gaithersburg, MD, United States; 3. Faculdade de Ciências Exatas e Tecnologia, Universidade Federal do Pará, Abaetetuba, Brazil*
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- CS-13. Effect of sheet thickness on the Excess Loss of Non-oriented Electrical Steel.** *N.A. Rodrigues*¹ and *F. Landgraf*¹
1. Departamento de Engenharia Metalúrgica e de Materiais, Universidade de São Paulo, São Paulo, Brazil
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- CS-14. Analysis of Cutting Effect on Non-Grain Oriented Steels for High-Frequency Applications.** *R.F. de Medeiros*¹, *O.T. Alves*¹, *E.M. Alves*², *G.A. Mendonça*², *N. Sadowski*¹ and *N.J. Batistela*¹ *1. Departamento de Engenharia Elétrica e Eletrônica, Universidade Federal de Santa Catarina, Florianópolis, Brazil; 2. Research Center, Aperam South America, Timóteo, Brazil*
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- CS-15. Effect of dew point on the microstructure and magnetic properties of non-grain oriented electrical steel during stress relief annealing.** *E.M. Alves*^{1,2}, *C.C. Silveira*¹, *F. Landgraf*² and *M.M. Cesar*³ *1. Research Center, Aperam South America, Timoteo, Brazil; 2. Polytechnic School, University of São Paulo, São Paulo, Brazil; 3. MGRMELO Consultoria Ltda, Timoteo, Brazil*
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- CS-16. Influence of energy density on the microstructure, growth orientation, and anisotropy of magnetic properties in additively manufactured Fe-3.8wt%Si transformer steels.**
S.M. Varahabhatla^{1,2}, M. Nartu^{1,2,3}, S.A. Mantri^{1,2}, V. Chaudhary⁴, M. Karri^{1,2}, S. Joshi^{1,2}, R. Ramanujan⁵, N.B. Dahotre^{1,2} and R. Banerjee^{1,2} 1. Center for Agile and Adaptive Additive Manufacturing (CAAAM), University of North Texas, Denton, TX, United States; 2. Department of Materials Science and Engineering, University of North Texas, Denton, TX, United States; 3. Nuclear Sciences Division, Pacific Northwest National Laboratory, Richland, WA, United States; 4. Industrial and Materials Science, Chalmers University of Technology, Gothenburg, Sweden; 5. School of Materials Science and Engineering, Nanyang Technological University, Nanyang, Singapore
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ASIA

**Session PL
IEEE AWARD CEREMONY &
PLENARY SESSION**

Rubem L. Sommer, Co-Chair

CBPF, Rio de Janeiro, Brazil

Mingzhong Wu, Co-Chair

Northeastern University, Boston, MA, United States

5:00

- PL-01. Advances in Orbitronics: Giant Torques from Orbital Textures at Interfaces, Light-induced Orbital Currents for TeraHz Emission. (Invited)** *A. Fert*¹ 1. Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, Palaiseau, France
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6:00

- PL-02. Spintronics: Fundamentals and Some Recent Advances (Invited)** *S. Rezende*¹ 1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil
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Session DA
**MAGNETIC TUNNEL JUNCTION AND QUANTUM
 DEVICES FOR UNCONVENTIONAL COMPUTING**

Nathan Satchell, Co-Chair
 Texas State University, San Marcos, TX, United States
 Guohan Hu, Co-Chair
 IBM, Yorktown Heights, NY, United States

8:30

- DA-01. Probabilistic Computing with p-bits: Optimization, Machine Learning and Quantum Simulation. (Invited)**
K. Camsari¹ 1. University of California, Santa Barbara, Santa Barbara, CA, United States
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9:00

- DA-02. An easy-plane anisotropy dominant stochastic magnetic tunnel junction as a circuit entropy source. (Invited)**
J.Z. Sun¹ 1. IBM Research, Yorktown Heights, NY, United States
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9:30

- DA-03. Stochastic Actuated Perpendicular Magnetic Tunnel Junctions for True Random Number Generation and Monte-Carlo Modeling. (Invited)** *A.D. Kent¹ 1. Department of Physics, New York University, New York, NY, United States*
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10:00

- DA-04. Physics and engineering of stochastic magnetic tunnel junction devices for probabilistic computing. (Invited)**
S. Kanai¹ 1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan
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10:30

- DA-05. Ising Computer Based on Superparamagnetic Tunnel Junctions. (Invited)** *J. Si¹, S. Yang² and H. Yang²*
1. Peking University, Beijing, China; 2. National University of Singapore, Singapore
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11:00

- DA-06. Emergent magnetism for quantum information. (Invited)**
C. Panagopoulos¹ 1. Division of Physics and Applied Physics, Nanyang Technological University, Singapore
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OCEANIA VI & VII

Session DB

MAGNONICS III: BAND PROPERTIES AND DEVICES

Pawel Gruszecki, Chair

Uniwersytet im Adama Mickiewicza w Poznaniu, Poznan, Poland

8:30

- DB-01. Brillouin Light Scattering investigation of spin-wave dynamics in reconfigurable magnonic systems. (Invited)**
S. Tacchi¹ 1. Istituto Officina dei Materiali, Consiglio Nazionale delle Ricerche, Perugia, Italy
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9:00

- DB-02. Flat bands and compact localized states in magnonic crystals. J.W. Klos¹ and G. Centala¹ 1. ISQI, Faculty of Physics, Adam Mickiewicz University, Poznan, Poland**
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9:15

- DB-03. 3D Ferromagnetic Nanoarchitectures with Lattice-Size dependent Magnon Modes. H. Guo¹, M. Xu¹, A.J. Deenen¹ and D. Grundler^{1,2} 1. IMX, EPFL, Lausanne, Switzerland; 2. IEM, EPFL, Lausanne, Switzerland**
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- DB-04. Opening complete band gaps in two-dimensional magnonic crystals using yttrium iron garnets and non-magnetic metals.** *K. Mori*^{1,2}, T. Koguchi^{1,2}, T. Watanabe³, Y. Yoshihara^{1,2}, H. Miyashita^{1,2}, M. Inoue¹, D. Grundler⁴, K. Ishiyama¹ and T. Goto¹ *1. RIEC, Tohoku University, Sendai, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan; 3. Shin-Etsu Chemical Co., Ltd, Annaka, Japan; 4. Institute of Electrical and Micro Engineering, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland*
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- DB-05. Magnon-magnon coupling in an antidot lattice with perpendicular magnetic anisotropy.** *M. Moalic*¹, M. Krawczyk¹, M.K. Zelent¹ and K. Szulc¹ *1. Uniwersytet im Adama Mickiewicza w Poznaniu, Poznan, Poland*
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- DB-06. Universal magnonic machine-learning module.** *N. Zenbaa*^{1,2}, C. Abert¹, F. Majcen¹, M. Kerber¹, R. Serha^{1,2}, S. Knauer¹, Q. Wang³, T. Schrefl⁴, D. Suess¹ and A. Chumak¹ *1. Faculty of Physics, University of Vienna, Vienna, Austria; 2. Vienna Doctoral School of Physics, University of Vienna, Vienna, Austria; 3. School of Physics, Huazhong University of Science and Technology, Wuhan, China; 4. Center for Modelling and Simulation, Donau-Universität Krems, Wiener Neustadt, Austria*
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- DB-07. Reconfigurable Magnon-based Radio Frequency filters.** *A. Del Giacco*¹, F. Kohl², A. Toniato¹, M. Wagner², F. Maspero¹, A. Cattoni¹, P. Pirro² and R. Bertacco¹ *1. Department of Physics, Politecnico di Milano, Milano, Italy; 2. Nanoscaled Magnonic Hybrids, Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau, Kaiserslautern, Germany*
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- DB-08. All-magnonic repeater based on bistability.** *Q. Wang*^{1,2}, R.V. Verba³, K. Davidková^{2,4}, B. Heinz⁵, S. Tian⁶, Y. Rao⁶, X. Ge¹, O. Wojewoda⁴, C. Dubs⁷, M. Urbánek⁴, P. Pirro⁵ and A. Chumak² *1. Huazhong University of Science & Technology, Wuhan, China; 2. Universitat Wien, Vienna, Austria; 3. Institute of Magnetism, Kyiv, Ukraine; 4. Brno University of Technology, Brno, Czechia; 5. Rheinland-Pfälzische Technische Universität Kaiserslautern-Landau, Kaiserslautern, Germany; 6. Hubei University, Wuhan, China; 7. INNOVENT e.V., Technologieentwicklung, Jena, Germany*
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- DB-09. Arbitrary Two-Qubit Magnon-Mediated Quantum Gates.**
C. Trevillian¹ and V. Tyberkevych¹ 1. Department of Physics, Oakland University, Rochester Hills, MI, United States
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OCEANIA IX & X

Session DC

PATH TOWARDS MORE SUSTAINABLE TOMORROW – MAGNETIC SOLUTIONS

Yacine Amara, Chair
 Université Le Havre Normandie, Le Havre, France

8:30

- DC-01. Challenges Electrical Mobility and Wind Energy Present to Magnetic Materials. (Invited) F. Landgraf¹ 1. University of São Paulo, São Paulo, Brazil**
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9:00

- DC-02. Availing Highly-saturable Advanced Soft Magnetic Materials for Rotating Machines. (Invited) P. Upadhyay¹ 1. Anduril Industries, Costa Mesa, CA, United States**
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9:30

- DC-03. A Comparative Study between Permanent-magnet-free Reluctance Machines for Heavy-duty Electric Vehicles. (Invited) D. Ceylan¹ and K.O. Boynov¹ 1. Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands**
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10:00

- DC-04. PM-Free Axial-Flux Motors for Transport Electrification. (Invited) A. Mahmoudi¹, Z. Cao¹, S. Kahourzade² and W. Soong³ 1. Flinders University, Adelaide, SA, Australia; 2. University of South Australia, Adelaide, SA, Australia; 3. The University of Adelaide, Adelaide, SA, Australia**
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- DC-05. Potential of Wave Energy Harvesting in the North Sea; The AE-WaveHexapod WEC. (Invited) J.J. Paulides^{1,2}, R. Sheno², F. Van Bodegraven², L. Nijman², R. Jonkman¹, L. Encica¹ and P. Wellens³** *1. R&D, Advanced Electromagnetics Group, Waalwijk, Netherlands; 2. R&D, AE-WaveHexaPod, Dordrecht, Netherlands; 3. Ship Hydromechanics and Structures, Delft University of Technology, Delft, Netherlands*
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- DC-06. AI-based Fault Diagnosis for Electric Machines. (Invited)** S. Huang¹, Y. Lu¹ and M. Hsieh¹ *1. National Cheng Kung University, Tainan, Taiwan*
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OCEANIA I & II

Session DD

BIOMAGNETICS I

Ahmed El-Gendy, Co-Chair

The University of Texas at El Paso, El Paso, TX, United States

Bethanie Stadler, Co-Chair

University of Minnesota, Minneapolis, MN, United States

- DD-01. Unveiling the Influence of Interactions in the Behavior of Magnetic Nanoparticle Agglomerates: Experiments and Simulations. (Invited)** D. Valdes^{1,2}, T.E. Torres³, A.C. Moreno Maldonado³, G. Urretavizcaya^{2,4}, M.S. Nadal¹, M. Vasquez Mansilla^{1,2}, I. Rodrigo⁵, I. Orue⁶, R.D. Zysler^{1,2}, J. García⁷, F. Plazaola⁷, G.F. Goya³, E. De Biasi^{1,2} and E. Lima Jr.¹ *1. Instituto de Nanociencia y Nanotecnología (INN), CNEA-CONICET, Bariloche, Argentina; 2. Instituto Balseiro, Universidad Nacional de Cuyo, Bariloche, Argentina; 3. Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC-Universidad de Zaragoza, Zaragoza, Spain; 4. Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), CNEA, Bariloche, Argentina; 5. Departamento de Física Aplicada, Escuela de Ingeniería de Gipuzkoa - Eibar, Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU), Eibar, Spain; 6. SGiker, Servicios Generales de Investigación, Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU), Leioa, Spain; 7. Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU), Leioa, Spain*
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9:00

- DD-02. Multifunctional materials for the applications from electronics to biosensors.** *J. Hong¹ and X. Song²*
1. UC Berkeley, Berkeley, CA, United States;
2. Hubei University of Technology, Wuhan, China
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9:15

- DD-03. Cellular Interaction with Low-Frequency-Vibrating Magnetic Nanoparticles in Bio-Mimetic Mechanical Environment.** *A. Visonà^{1,2}, B. Diény², R. Morel², H. Joisten², S. Soulan¹ and A. Nicolas¹* *1. LTM CNRS, Grenoble, France;*
2. CEA-SPINTEC, Grenoble, France
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9:30

- DD-04. Restoring cryopreserved bio-specimens using magnetic nanobars. (Invited)** *B. Stadler^{1,2}, R. Kolisnyk¹, A. Harpel², Y. Chen² and R. Franklin¹* *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States*
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10:00

- DD-05. Multiplanar Imaging with a Single-Sided MPI Scanner.** *C. McDonough¹, J. Chrisekos¹ and A. Tonyushkin¹*
1. Physics Dept, Oakland University, Rochester, MI, United States
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10:15

- DD-06. MRI Pulse Sequence for Quantifying Magnetic Nanoparticles from Highly Distorted Static Field: View Line.** *S. Liu¹, W. Qiu¹, G. Della Maggiora², A. Kuwahata³, P. Irarrazaval² and M. Sekino¹* *1. The University of Tokyo, Tokyo, Japan; 2. Pontificia Universidad Católica de Chile, Santiago, Chile; 3. Tohoku University, Sendai, Japan*
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10:30

- DD-07. Magnetic Particle Spectroscopy (MPS)-based Bioassays. (Invited)** K. Wu^{1,2}, V.K. Chugh², V.D. Krishna³, A. di Girolamo², Y.A. Wang⁴, M.C. Cheeran³ and J. Wang² *1. Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 3. Department of Veterinary Population Medicine, University of Minnesota, St. Paul, MN, United States; 4. Ocean Nano Tech LLC, San Diego, CA, United States*
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11:00

- DD-08. Development of Transcranial Magnetic Stimulator Coils Achieving Physically the Deepest Stimulation Based on the Inverse Problem Approach.** A. Iino¹, M. Fushimi¹, J. Tabata², T. Kikuchi², Y. Soejima², M. Wada³, S.L. Nakajima³, Y. Noda³ and M. Sekino¹ *1. Department of Bioengineering, The University of Tokyo, Hongo, Japan; 2. Department of Electrical Engineering and Information Systems, The University of Tokyo, Hongo, Japan; 3. Department of Neuropsychiatry, Keio University, Shinanomachi, Japan*
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11:15

- DD-09. Measurement of Somatosensory Evoked Response of Rats towards Noninvasive and High-Resolution Functional Brain Mapping of Small Animals.** M. Fushimi¹, S. Chikaki¹, S. Funatani¹ and M. Sekino¹ *1. The University of Tokyo, Tokyo, Japan*
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EUROPA I

Session DE

HARD MAGNETIC MATERIALS I

Pelin Tozman, Chair

Technical Univiesity of Darmstadt, Darmstadt, Germany

8:30

- DE-01. Anisotropic magnetic nanoparticles. (Invited)** P. Liu¹
1. Department of Physics, University of Texas at Arlington, Colleyville, TX, United States
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9:00

- DE-02. Study of magnetization reversal and magnetic hardening in SmCo5 single crystal magnets.** *A. Aubert¹, H. Zhang^{1,2}, F. Maccari¹, C. Dietz³, M. Yue², O. Gutfleisch¹ and K. Skokov¹*
1. Technische Universität Darmstadt, Darmstadt, Germany; 2. Faculty of Materials and Manufacturing, Beijing University of Technology, Beijing, China; 3. Physics of Surfaces, TU Darmstadt, Darmstadt, Germany
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9:15

- DE-03. Data-Mining Search for Crystal Structure Predicted Rare-Earth-Free Permanent Magnets.** *A. Vishina¹, O. Eriksson¹ and H.C. Herper¹*
1. Uppsala Universitet, Uppsala, Sweden
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9:30

- DE-04. High-temperature phase transition during hydrogen disproportionation of various Nd-Fe-B alloys.** *F. Orlandini Keller¹, G. Bacchetta¹, C. Flament¹, L. Magnier¹, C. Delafosse¹, C. Rado¹, S. Luca¹ and J. Garandet¹*
1. Univ. Grenoble Alpes, CEA LITEN, Grenoble 38000, France
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9:45

- DE-05. Synthesis, processing and magnetic properties of Fe₁₆N₂.** *I. Dirba¹ and O. Gutfleisch¹*
1. Institute of Materials Science, TU Darmstadt, Darmstadt, Germany
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10:00

- DE-06. Tailoring pressless processing parameters to achieve highly textured Nd-Fe-B recycled magnets. (Invited)** *M.A. Rosa¹, E.F. Neves¹, L.T. Quispe¹, L.U. Lopes¹, J.B. Neto¹ and P.A. Wendhausen¹*
1. Federal University of Santa Catarina, Florianópolis, Brazil
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- DE-07. Critical Transitions in Rare-Earths Magnets of $(R,R')_2Fe_{14}B$ Type.** *N. Kostyuchenko*^{1,2}, *D. Plokhov*^{3,2}, *Y. Kudasov*^{4,5}, *I. Tereshina*⁶, *O. Surdin*^{4,5} and *A. Zvezdin*^{3,2}
1. Moscow Institute of Physics and Technology (State University), Moscow, Russian Federation; 2. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russian Federation; 3. Prokhorov General Physics Institute of Russian Academy of Sciences, Moscow, Russian Federation; 4. Russian Federal Nuclear Center – VNIIEF, Sarov, Russian Federation; 5. Sarov Institute of Physics and Technology, National Research Nuclear University MEPhI, Sarov, Russian Federation; 6. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation
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- DE-08. Crystallographic quantification of magnetic alignment degree for permanent magnet fine powders with high anisotropy field.** *Y. Hirayama*¹, *K. Park*¹, *W. Yamaguchi*¹ and *S. Okada*¹
1. Innovative Functional Materials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan
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- DE-09. Benefits of Incorporating Dy-Cu Alloy Through the GBD Process for Recycled Magnets.** *M.B. Dias*^{1,2}, *G. Shimizu*², *L. Azevedo*², *D. Rodrigues Jr*², *W.C. Macedo*³, *L.F. Antunes*³, *L. Ulian Lopes*³, *P.A. Wendhausen*³, *R. Farias*⁴, *C.A. Lino dos Santos*⁵, *F. Pastrían*⁵ and *F. Landgraf*²
1. SENAI SP College, Osasco, Brazil; 2. University of São Paulo, São Paulo, Brazil; 3. Federal University of Santa Catarina, Florianópolis, Brazil; 4. Institute for Energy and Nuclear Research, São Paulo, Brazil; 5. Institute of Technological Research, São Paulo, Brazil
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Session DF
SOFT MAGNETIC ALLOYS: MATERIALS
AND METHODS

Del Atkinson, Chair
 Durham University, Durham, United Kingdom

8:30

- DF-01. Magnetoelastic resonance mass sensors: the importance of their geometry and nanocrystallization annealing induction. (Invited)** P. G. Saiz^{1,2}, A. Lasheras³, J. Vilas-Vilela^{1,2} and A. Lopes^{1,4} *1. Department of Physical-Chemistry, University of Basque Country, Leioa, Spain; 2. BC Materials-Basque Center for Materials Applications and Nanostructures, Leioa, Spain; 3. Department of Physics, University of the Basque Country, Leioa, Spain; 4. Ikerbasque, Basque Foundation for Science, Leioa, Spain*
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9:00

- DF-02. Measurement of Anisotropy and Magnetoelastic Constants of Thin Crystalline Films by Angle- and Strain-Dependent Ferromagnetic Resonance Spectroscopy.** K. Masood¹, A. Jander¹ and P. Dhagat¹ *1. Department of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR, United States*
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9:15

- DF-03. Magnetic behavior of nanoporous FeCo, fully and partially dealloyed by liquid metal.** B. Ducharne^{1,2,3}, S. Joo⁴, P. Geslin¹, E. Wasniewski⁵ and H. Kato² *1. Institut National des Sciences Appliquées de Lyon, Villeurbanne, France; 2. Tohoku University, Sendai, Japan; 3. ELYTMAX CNRS, Sendai, Japan; 4. Dankook University, Seoul, The Republic of Korea; 5. CETIM, Senlis, France*
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9:30

- DF-06. A Matlab Toolbox for Anhysteretic Magnetization Analysis.** J.M. Silveyra^{1,2}, M.I. González¹, T.F. González¹ and J.M. Conde Garrido^{1,2} *1. University of Buenos Aires, Buenos Aires, Argentina; 2. CONICET, Buenos Aires, Argentina*
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9:45

- DF-07. Role of interface roughness in perpendicular magnetic anisotropy of CoFeB/MgO based stacks.** S. Ahn¹ *1. POSTECH, Pohang, The Republic of Korea*
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- DF-08. Magnetic Properties and Applications of Glass-coated Ferromagnetic Microwires.** *V. Zhukova*^{1,2,3}, *P. Corte-Leon*^{1,3,2}, *M. Ipatov*^{1,3}, *A. García-Gómez*^{1,2,3}, *J. Blanco*^{3,2} and *A. Zhukov*^{4,1,2} *1. Dept. Polymers and Advanced Materials, Univ. Basque Country, UPV/EHU, San Sebastian, Spain; 2. EHU Quantum Center, University of the Basque Country, UPV/EHU, San Sebastian, Spain; 3. EIG, Dept. Applied Physics, University of Basque Country, UPV/EHU, San Sebastian, Spain; 4. Ikerbasque, Basque Foundation for Science, San Sebastian, Spain*
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- DF-09. How accurate are magnetic loss measurements?** *M. Pasquale*¹, *E. Ferrara*¹, *N. Banu*¹, *F. Fiorillo*¹, *L. Rocchino*¹, *M. Ulvr*², *F. Weickert*³, *K. Pfnuer*³, *J. Luedke*³, *K. Hoffmann*³, *S. Harmon*⁴, *D. Brunt*⁴ and *A. Wilson*⁴ *1. INRIM, Torino, Italy; 2. CMI, Prague, Czechia; 3. PTB, Braunschweig, Germany; 4. NPL, Teddington, United Kingdom*
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- DF-11. Ferromagnetic behavior induced by structural distortion in pristine g-C₃N₄ pellets prepared via isostatic pressure.** *J.R. dos Santos*¹, *T. de Melo Lima*², *M.W. Paixão*³, *A.A. Correa*³, *E. Chaves Pereira*³ and *A.J. de Oliveira*^{1,4} *1. Departamento de Física, Universidade Federal de São Carlos, São Carlos, Brazil; 2. Departamento de Química Inorgânica, Universidade Federal Fluminense, Niterói, Brazil; 3. Departamento de Química, Universidade Federal de São Carlos, Brazil, Brazil; 4. Instituto de Estudos Avançados e Estratégicos, Universidade Federal de São Carlos, São Carlos, Brazil*
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Session DG

2D SPINTRONICS AND MAGNETISM

Xufeng Zhang, Chair

Northeastern University, Boston, MA, United States

8:30

- DG-01. Observation of octupole-driven magnetoresistance in a chiral antiferromagnetic tunnel junction. (Invited)**
T. Higo¹, X. Chen^{2,1}, K. Tanaka¹, T. Nomoto¹, H. Tsai¹, H. Idzuchi¹, M. Shiga^{3,1}, S. Sakamoto¹, H. Kosaki¹, T. Matsuo^{4,1}, D. Nishio-Hamane¹, R. Arita^{1,5}, S. Miwa¹ and S. Nakatsuji^{1,4}
1. The University of Tokyo, Bunkyo-ku, Japan; 2. University of California, Berkeley, Berkeley, CA, United States; 3. Kyushu University, Fukuoka, Japan; 4. Johns Hopkins University, Baltimore, MD, United States; 5. RIKEN, Wako, Japan
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9:00

- DG-02. Thermal cycling induced metamorphosis of exchange bias in MnPS₃/Fe₃GeTe₂ van der Waals heterostructures.**
A. Puthirath Balan¹, A. Kumar¹, P. Reiser², J. Vas³, T. Denneulin³, M. Tschudin², C. Pellet-Mary², D. Dutta², C. Schrader², T. Scholz⁴, J. Geuchies⁵, S. Fu⁵, H. Wang⁵, A. Bonanni⁶, B. Lotsch⁴, A. Kovács³, R.E. Dunin-Borkowski³, P. Maletinsky² and M. Kläui^{1,7}
1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 2. Department of Physics, University of Basel, Basel, Switzerland; 3. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich, Jülich, Germany; 4. Max Planck Institute for Solid State Research, Stuttgart, Germany; 5. Max Planck Institute for Polymer Research Mainz, Mainz, Germany; 6. Institute of Semiconductor & Solid State Physics, Johannes Kepler University - Linz, Linz, Austria; 7. Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway
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9:15

- DG-03. Automated mechanical exfoliation technique and spin pumping in YIG/TMD heterostructures.** *L. Sampaio¹, R. Torrao Victor¹, J. Marroquin³, S. Safeer^{1,2}, D. Dugato¹, B. Archanjo⁴, F. Garcia¹ and J. Felix³*
1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 2. Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan; 3. Instituto de Física, Universidade de Brasília, Brasília, Brazil; 4. INMETRO, Rio de Janeiro, Brazil
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- DG-04. Exploring Magnon–Magnon Coupling, Spin Hall Magnetoresistance, and Laser–Driven Spin Textures in 2D van der Waals Magnets. (Invited)** C. Freeman^{1,2}, M. Dabrowski³, P.S. Keatley³, Z. Xue¹, A. Budniak⁴, O. Kazakova², G. Eda⁴, R. Hicken³, H. Kurebayashi¹ and M. Cubukcu^{1,2} *1. University College London, London, United Kingdom; 2. National Physical Laboratory, Teddington, United Kingdom; 3. University of Exeter, Exeter, United Kingdom; 4. National University of Singapore, Singapore*
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10:00

- DG-06. Above room temperature ferromagnetism in all-epitaxial Fe_{5-x}GeTe₂/graphene and Fe_{5-x}GeTe₂/WSe₂ van der Waals heterostructures.** J. J. Lopes¹, H. Lv¹, J. Herfort¹, M. Hanke¹, C. Chen², J.M. Redwing², A. Trampert¹, R. Engel-Herbert¹ and M. Ramsteiner¹ *1. Paul-Drude-Institute for Solid State Electronics, Berlin, Germany; 2. 2D Crystal Consortium Materials Innovation Platform, Materials Research Institute, The Pennsylvania State University, University Park, PA, United States*
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10:15

- DG-07. Magnetism and Spin-Orbit Coupling in Iron Chalcogenide Superconductors. (Invited)** Q. Li^{1,2}
1. Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY, United States; 2. Condensed Matter Physics and Materials Sciences Division, Brookhaven National Laboratory, Upton, NY, United States
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10:45

- DG-08. Magnetism and Excitations in Quasi-2D magnets VBr₃ and VI₃.** K. Carva¹, K. Pokhrel¹, D. Hovančík¹ and J. Pospíšil¹ *1. Dept. Condensed Matter Physics, Charles University, Prague, Czechia*
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11:00

- DG-09. Magnetic Properties of Two Dimensional Fe₃GeTe₂ Nanoflakes.** R. Cardias Alves de Almeida¹, T. Cysne¹, A. Bergman², R. Bechara Muniz¹ and M. Costa¹ *1. Instituto de Física, Universidade Federal Fluminense, Niterói, Brazil; 2. Uppsala University, Uppsala, Sweden*
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Session DP
HIGH-SPEED, WOUND-FIELD, INDUCTION AND
RELUCTANCE MACHINES I
(Poster Session)

Marco Trapanese, Chair
 Palermo University, Palermo, Italy

- DP-01. Computation-Efficient Model Predictive Control Using Sphere Decoding Algorithm for Dual Three-Phase SPMSMs.** Z. Zhang¹, J. Chen¹, R. Han², Y. Wu¹, Y. Gong¹ and S. Chang¹ *1. Tianjin University, Tianjin, China; 2. Tianjin Navigation Instruments Research Institute, Tianjin, China*
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- DP-02. Study on the Slotless PM Motor Design Process Considering High Speed.** Y. Lee¹, K. Kim², I. Jang³, I. Yang⁴ and W. Kim⁵ *1. Department of Next Generation Energy System Convergence, Gachon University, Gyeonggi-do, The Republic of Korea; 2. Department of Mechanical Automotive and Robot Engineering, Halla University, Wonju, The Republic of Korea; 3. Electric Powertrain Core Technology, Hyundai Mobis, YoungIn, The Republic of Korea; 4. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea; 5. Department of Electrical Engineering, Gachon University, Seongnam, The Republic of Korea*
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- DP-03. Innovative SynRM Rotor Design for Simplified Construction and Enhanced Mechanical Reliability in High-Speed Applications.** G. Behling da Silveira¹, R. Petry Homrich¹, I.P. Wiltuschnig¹, A. Ferreira Flores Filho¹, A. Tergolina Salton¹ and P. Eckert¹ *1. Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil*
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- DP-04. A Comparative Performance Study of High-Speed SynRM and PMa-SynRM Rare-Earth and Rare-Earth-Less Permanent Magnets for Automotive Traction.** G. Behling da Silveira¹, I.P. Wiltuschnig¹, R. Petry Homrich¹, A. Ferreira Flores Filho¹, A. Tergolina Salton¹, L. Gonçalves Tobias dos Santos², C. de Abreu Soares² and P. Eckert¹ *1. Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil; 2. Mercosul Industria de Motores S.A., Caxias do Sul, Brazil*
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- DP-05. Use of a Ferrofluid in a Magnetic Brake for a Wind Energy Generator.** I.G. Cely Orjuela^{1,2}, O. Moscoso Londoño³ and L.M. Socolovsky^{1,2} *1. Universidad Tecnológica Nacional Facultad Regional Santa Cruz, Rio Gallegos, Argentina; 2. CIT Santa Cruz, CONICET, Rio Gallegos, Argentina; 3. Facultad de Ingeniería, Universidad Autónoma de Manizales, Manizales, Colombia*
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- DP-06. Optimal Design and Experimental Analysis of Rotor Casting Defect Detector.** *K. Lee^{1,2}, J. Seo^{1,2} and S. Lee¹*
1. Korea Institute of Industrial Technology, Gwangju, The Republic of Korea; 2. Department of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea
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- DP-08. Enhancing Noise and Vibration Performance for a Traction Squirrel Cage Induction Machine through Rotor Design Optimization.** *P. Song¹, O. Taqavi¹, Z. Li¹, G. Byczynski¹ and N. Kar¹*
1. Department of Electrical & Computer Engineering, University of Windsor, Windsor, ON, Canada
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- DP-09. Magnetizing Inductance Estimation Method of Induction Motor for EV Traction Considering Magnetic Saturation Changes According to Current and Slip Frequency.** *D. Park¹, C. Song¹, Y. Won¹, J. Park¹, H. Kim¹ and M. Lim¹*
1. Hanyang University, Seoul, The Republic of Korea
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- DP-10. Design of LS-SynRM Rotor for Efficiency Improvement and Torque Ripple Reduction.** *C. Kim¹, H. Lee¹, J. Lee², S. Kim³ and C. Park¹*
1. Department of Railroad Vehicle & Operation System Engineering, Korea National University of Transportation, Uiwang-si, The Republic of Korea; 2. Department of Railroad Electric Engineering, Korea National University of Transportation, Uiwang-si, The Republic of Korea; 3. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea
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EXHIBIT HALL

Session DQ

SKYRMIONS AND RELATED PHENOMENA (Poster Session)

Svitlana Kondovych, Chair

Leibniz Institute for Solid State and Materials Research (IFW) Dresden,
Dresden, Germany

- DQ-01. Ab initio study of Pd/Fe/Ir(111) bilayers decorated with Co nanostructures.** *J.G. Cornelio Palma¹, P. Costa Carvalho¹, A.B. Klautau^{2,1} and H.M. Petrilli¹*
1. Department of Physics of Materials and Mechanics - Institute of Physics, University of Sao Paulo, São Paulo, Brazil; 2. Department of Physics, Federal University of Pará, Belém, Brazil
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- DQ-02. Skyrmionic States and Dynamics in Synthetic Antiferro and Ferrimagnets.** *M.V. Correia¹, J.C. Velásquez² and C.C. de Souza Silva¹*
1. Physics Department, Universidade Federal de Pernambuco, Recife, Brazil; 2. Núcleo de Tecnologia - Centro Acadêmico do Agreste, Universidade Federal de Pernambuco, Caruaru, Brazil
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- DQ-03. Tunable skyrmion nucleation in nanodot arrays.** Y. Zang¹, W. Griggs¹, T. Thomson¹ and C. Moutafis¹ *1. The University of Manchester; Manchester, United Kingdom*
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- DQ-04. Application of Artificial Neural Networks for Identification of Skyrmionic Phases on Bidimensional Archimedean Ferromagnetic Lattices.** J.R. Gomez Quispe¹, P. Autreto¹, T.W. Milla Robles², C. Rojas-Ayala² and J. Rojas-Tapia² *1. Center of Natural and Human Sciences, Federal University of ABC, Sao Paulo, Brazil; 2. Faculty of Physical Sciences, National University of San Marcos, Lima, Peru*
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- DQ-05. Isolated zero-field skyrmions at ambient conditions in ferrimagnetic Pt/Co_x/Gd heterostructures.** J. Brandao^{1,2}, T.J. Mori^{1,2}, F. Béron³ and J.C. Cezar^{1,2} *1. Laboratório Nacional de Luz Síncrotron, Campinas, Brazil; 2. Centro Nacional de Pesquisa em Energia e Materiais, Campinas, Brazil; 3. Universidade Estadual de Campinas, Campinas, Brazil*
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- DQ-07. Towards Skyrmion Nucleation on Multilayered Thin Films Over Self-Formed Nanodomes.** F.L. Vital^{2,1}, D. de Souza Chaves¹, J. Brandao¹, P. Schio³, F. Béron² and J.C. Cezar^{1,2} *1. LNLS, CNPEM, Campinas, Brazil; 2. IFGW, Unicamp, Campinas, Brazil; 3. LNNANO, CNPEM, Campinas, Brazil*
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- DQ-08. In search of Magnetic Skyrmion Phase in 4d Under-Doped MnSi.** P. Khandelwal¹, S. Samatham², A. Patel³ and K.G. Suresh¹ *1. Department of Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Physics, Chaitanya Bharathi Institute of Technology, Gandipet, Hyderabad, Hyderabad, India; 3. Research Centre for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Ibaraki, Ibaraki, Japan*
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- DQ-09. Effects of an Exchange-reducing Defect on a Skyrmion Interaction in Antiferromagnetic Frustrated Films.** I.F. Sharafullin¹, D. Abdrakhmanov¹, A. Nugumanov¹ and H.T. Diep² *1. Institute of Physics and Technologies, Ufa State University of Science and Technology, Ufa, Russian Federation; 2. Laboratoire de Physique Théorique et Modélisation, Cergy-Paris University, Cergy, France*
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- DQ-10. Local Electric-field Control of Skyrmions in Nanostructured Multiferroic Heterostructure.** Y. Wang¹, Q. Liu¹, X. Zhang², S. Zhang³, B. He⁴, G. Yu⁴, H. Piao² and Y. Zhao¹ *1. Tsinghua University, Beijing, China; 2. Yanbian University, Yanji, China; 3. National University of Defense Technology, Changsha, China; 4. Chinese Academy of Sciences, Beijing, China*
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- DQ-11. Proximity-induced moment and saturation magnetization reduction in Pt/Co/Hf/Pt multilayers.** D.A. Dugato^{1,2}, J. Brandao¹, F. Béron³ and T.J. Mori¹ *1. Brazilian Synchrotron Light Laboratory, Brazilian Center for Research in Energy and Materials, Campinas, Brazil; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 3. Universidade Estadual de Campinas, Campinas, Brazil*
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- DQ-13. Effect of Inhomogeneous Magnetoelectric Interaction on Flat Magnetic Structures.** E.B. Magadeev¹ and R.M. Vakhitov¹ *1. Ufa University of Science and Technology, Ufa, Russian Federation*
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EXHIBIT HALL

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

Joao Belo, Co-Chair
IFIMUP, Porto, Portugal

Lei Bi, Co-Chair
University of Electronic Science and Technology of China,
Chengdu, China

- DR-01. Machine Learning-Guided Discovery of Laves Phases for Magnetocaloric Hydrogen Liquefaction.** V.G. Lunde¹, B.G. Eggert¹, A. Möller¹, R. Bjørk², J. Grivel², B.C. Hauback¹ and C. Frommen¹ *1. Department for Hydrogen Technology, Institute for Energy Technology, Oslo, Norway; 2. Department of Energy Conversion and Storage, Technical University of Denmark, Copenhagen, Denmark*
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- DR-02. Fingerprint of magneto-optical Faraday rotation in Raman spectra of MoS₂.** M. Bacani¹, T. Dieing², D. Strom², J. Englert² and P. Altmann¹ *1. Attocube Systems AG, Haar, Germany; 2. WITec GmbH, Ulm, Germany*
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- DR-03. Formation of ferromagnetic clusters affecting the first-order phase transition in off-stoichiometric Fe-Rh.** A. Aubert¹, K. Skokov¹, A. Rogalev², A. Chirkova¹, B. Beckmann¹, E. Dilmieva², F. Wilhelm², V. Nassif³, L.V. Diop⁴, E. Bruder⁵, J. Löfstrand⁶, D. Primetzhofer⁶, M. Sahlberg⁷, E. Adabifiroozjaei¹, L. Molina-Luna¹, G. Gomez⁸, B. Eggert⁸, K. Ollefs⁸, H. Wende⁸ and O. Gutfleisch¹ *1. Technische Universität Darmstadt, Darmstadt, Germany; 2. ESRF, Grenoble, France; 3. University Grenoble Alpes, CNRS, Institut Néel, Grenoble, France; 4. Université de Lorraine, CNRS, IJL, Nancy, France; 5. Department of Physical Metallurgy, TU Darmstadt, Darmstadt, Germany; 6. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 7. Uppsala University, Uppsala, Sweden; 8. University of Duisburg-Essen, Duisburg, Germany*
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- DR-04. Effect of Ge Doping on the Martensitic Transformation and Magnetoelectric Behavior of $\text{Ni}_{42}\text{Co}_8\text{Mn}_{39}\text{Sn}_{11-x}\text{Ge}_x$ Melt-Spun Ribbons.** *A. Rosales-Rivera*¹, D.C. Jaimes-Gómez¹, N.A. Salazar-Henao¹, H. Gómez-Cordoba¹ and D. Salazar Jamillo² *1. Laboratorio de Magnetismo y Materiales Avanzados, Universidad Nacional de Colombia, Sede Manizales, Manizales, Colombia; 2. BC Materials, Basque Center for Materials, Applications, and Nanostructures, Leioa, Spain*
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- DR-05. Structure-property relationships in GdCuX and the corresponding hydrides (X= Si, Al).** *B.G. Eggert*¹, A.M. Döring², K. Skokov², O. Gutfleisch², B.C. Hauback¹ and C. Frommen¹ *1. Hydrogen Technology, Institute for Energy Technology, Kjeller, Norway; 2. Department of Materials Science, TU Darmstadt, Darmstadt, Germany*
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- DR-06. Stability of the Magnetocaloric Effect in Heusler Alloys in Cyclic Magnetic Fields.** *A. Gamzatov*¹ and A. Aliev¹ *1. Amirkhanov Institute of Physics DFRC of RAS, Makhachkala, Russian Federation*
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- DR-07. Magnetic anisotropy control through mechanical deformations: Study of magnetoelastic coupling.** *D. Pérez*¹, J. Espina¹, J. Fuentealba¹ and R.M. Freire¹ *1. Facultad de Ingeniería y Arquitectura, Universidad Central de Chile, Santiago, Chile*
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- DR-08. Residual Stress Monitoring in Magnetostrictive Cylinders.** *E. Mangiorou*¹, *T. Damatopoulou*¹, S. Angelopoulos², A. Ktena² and E.V. Hristoforou¹ *1. Laboratory of Electronic Sensors, National TU of Athens, Athens, Greece; 2. National Kapodistrian University of Athens, Athens, Greece*
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- DR-09. Optimizing Relative Cooling Power through Magnetic Field-Induced Magnetocaloric Effects in $\text{La}_{2-2x}\text{Sr}_{1+2x}\text{Mn}_2\text{O}_7$ (x=0.33).** *A.K. Saw*¹, J.P. Nunez², R.L. Hadimani², S. Gupta³, V. Franco⁴ and V. Dayal¹ *1. Department of Physics, Maharaja Institute of Technology Mysore (Aff: VTU, Belagavi), Mandya, India; 2. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 3. Division of Material Science and Engineering, Ames Laboratory, US Dept. of Energy, Ames, IA, United States; 4. Departamento de Física de la Materia Condensada, Universidad de Sevilla, Sevilla, Spain*
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- DR-10. On the behavior of the magnetocaloric quantities ΔS_{iso} and ΔT_{ad} .** *J. Caro Patiño*¹ and N.A. de Oliveira¹ *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*
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- DR-11. New design of La(Fe, Co, Si)₁₃ magnetocaloric composites using Gd as a binder.** *H. Zhang¹, Z. Wu¹, W. Pan¹, Y. Zhang³, J. Huang³, M. Yue¹, K. Skokov² and O. Gutfleisch²*
1. Beijing University of Technology, Beijing, China;
2. Technical University of Darmstadt, Darmstadt, Germany;
3. Baotou Research Institute of Rare Earths, Baotou, China
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- DR-12. Magnetotransport Properties and Spin Textures in Gd₅Ge₄.** *F. Mesquita¹, N. Marcano², L. Barquin³, S. Magalhães¹, M. Tumelero¹, D. Möckli¹ and P. Pureur¹*
1. Departamento de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; *2. University of Zaragoza, Zaragoza, Spain;* *3. University of Cantabria, Santander, Spain*
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- DR-13. Temperature Anomalies of Magnetic Hyperfine Fields at ¹¹⁹Sn and ¹¹¹Cd probes in Gd₅Ge₄ Studied by Mössbauer and PAC Spectroscopy.** *V. Krylov¹, B.B. Santos¹, G.A. Cabrera-Pasca², A.W. Carbonari¹, R.N. Saxena¹ and O.F. Leite Neto¹*
1. CERPQ, Instituto de Pesquisas Energeticas e Nucleares, São Paulo, Brazil; *2. Faculty of Exact Sciences and Technology, UFPA, Abaetetuba, Brazil*
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EXHIBIT HALL

Session DS

SENSORS AND HIGH-FREQUENCY DEVICES I (Poster Session)

Shin Yabukami, Chair
 Tohoku University, Sendai, Japan

- DS-01. Study of disorientation in polycrystalline hexaferrites and application to the design of a Ka-band planar self-biased isolator.** *V. Laur¹, A. Hoez¹, J. Mattei¹ and R. Lebourgeois²*
1. Lab-STICC / University of Brest, Brest, France; *2. Thales Research & Technology, Palaiseau, France*
[View Digest Text](#)
- DS-02. Dual Band Analysis of a Novel Rectenna for Wireless Power Transmission and Energy Harvesting Applications.** *A.M. Viana¹, S.T. Gonçalves¹, Ú.C. Resende¹ and T.H. Mello¹*
1. Department of Electrical Engineering, Federal Center for Technological Education of Minas Gerais - CEFET-MG, Belo Horizonte, Brazil
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- DS-05. Enhanced Millimeter-wave Filter Design under Stochastic Uncertainties.** *I. Koutzoglou², I. Stamatopoulos⁴, D.I. Karatzidis², T. Ohtani³, Y. Kanai¹ and N.V. Kantartzis²*
1. Department of Enineering, Niigata Institute of Technology, Kashiwazaki, Japan; *2. School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece;* *3. Independent Researcher, Asahikawa, Japan;* *4. Directorate for Transport and Communications, Thessaloniki, Greece*
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- DS-06. Magnetoelastic Constraint on Sensor-Intrinsic Noise.** E. Spetzler¹, B. Spetzler², J. Arbustini³, D. Seidler¹, A. Bahr^{3,4,5} and J. McCord^{1,6} 1. Institute for Material Science, Kiel University, Kiel, Germany; 2. Department of Electrical Engineering and Information Technology, Technical University Ilmenau, Ilmenau, Germany; 3. Institute of Electrical Engineering and Information Technology, Kiel University, Kiel, Germany; 4. Electronics for Medical Applications, Jade University of Applied Sciences, Wilhelmshaven, Germany; 5. Institute for Integrated Circuits, Hamburg University of Technology, Hamburg, Germany; 6. Kiel Nano, Surface and Interface Science (KiNSIS), Kiel University, Kiel, Germany
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- DS-07. Generation of Multiple Dark Solitons in a Magnonic Active Ring Below Self-Oscillation Threshold.** A.B. Ustinov¹, L.S. Vedernikov¹ and A.A. Stashkevich² 1. Dept. of Physical Electronics and Technology, St. Petersburg Electrotechnical University, St. Petersburg, Russian Federation; 2. LSPM (CNRS-UPR 3407), Université Paris 13, Villetaneuse, France
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- DS-08. Implementing Sensors Based on Tunneling Magnetoresistance (TMR) Effect on 3D Self-Assembled Substrate.** Z. Zhou¹, V. Neu², Q. Leng¹, D. Zhu¹, W. Zhao¹, O.G. Schmidt³ and D. Karnaushenko³ 1. Beihang University, Beijing, China; 2. Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 3. TU Chemnitz, Chemnitz, Germany
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- DS-09. Development of Co-based Heusler alloy $\text{Co}_2\text{FeAl}_x\text{Si}_{1-x}$ with small magneto-crystalline anisotropy K_1 for highly sensitive TMR sensor.** T. Hojo¹, H. Hamasaki¹, M. Tsunoda^{3,2} and M. Oogane^{1,4} 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. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan; 4. Center for Science and Innovation in Spintronics (Core Research Cluster) Organization for Advanced Studies, Tohoku University, Sendai, Japan
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- DS-10. RTD Fluxgate Sensors based on Twisted Glass-Coated Microwires.** S. Corodeanu¹, C. Hlenschi¹, H. Chiriac¹, T.A. Ovari¹ and N. Lupu¹ 1. National Institute of R&D for Technical Physics, Iasi, Romania
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Session EA

ORBITRONICS: FROM THEORY TO EXPERIMENTS

Antonio Azevedo, Chair

Universidade Federal de Pernambuco (Physics), Recife, Brazil

2:00

- EA-01. Electron Orbital Dynamics in Solids. (Invited)** S. Han¹, H. Ko², J. Oh², K. Lee², K. Kim³ and H. Lee¹ *1. Department of Physics, Pohang University of Science and Technology, Pohang, The Republic of Korea; 2. Department of Physics, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 3. Center for Spintronics, Korea Institute of Science and Technology, Seoul, The Republic of Korea*
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2:30

- EA-02. Orbital Hall effect, orbital-to-spin conversion and magnetoresistance in metallic heterostructures. (Invited)** P. Gambardella¹ *1. ETH Zurich, Zurich, Switzerland*
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3:00

- EA-03. Optical detection of orbital Hall effect in Ti, Mn, and Cu. (Invited)** Y. Choi¹, D. Jo², K. Ko¹, H. Lee² and G. Choi¹ *1. Sungkyunkwan University, Suwon, The Republic of Korea; 2. POSTECH, Pohang, The Republic of Korea*
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3:30

- EA-04. Orbital currents and orbital torques in metallic systems. (Invited)** K. Ando¹ *1. Keio University, Yokohama, Japan*
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4:00

- EA-05. From Discovery to Application: Orbital Hall Materials for Cutting-Edge SOT-MRAM Devices. (Invited)** R. Gupta¹, C. Bouard², D. Go^{1,3}, A. Bose¹, F. Kammerbauer¹, O. Ledesma¹, S. Martin², G. Jakob¹, Y. Mokrousov^{1,3}, M. Drouard² and M. Kläui^{1,4} *1. Johannes Gutenberg University, Mainz, Germany; 2. ANTAIOS, Meylan, France; 3. Peter Grünberg Institut and Institute for Advanced Simulation, Jülich, Germany; 4. Department of Physics, Center for Quantum Spintronic, Trondheim, Norway*
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- EA-06. Orbitronics in Two-dimensional Materials. (Invited)**
*T.G. Rappoport^{1,2} 1. Department of Physics, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil;
 2. Physics, Minho University, Braga, Portugal*
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OCEANIA VI & VII

Session EB

MAGNETIC FIELD SENSORS

Paul Stevenson, Chair

Northeastern University, Boston, MA, United States

2:00

- EB-01. Acoustically Driven Ferromagnetic Resonance for Miniaturized High-Performance Magnetometry. (Invited)**
D. Labanowski¹, A. Hsin¹, J. Blodgett¹, V. Guzman¹, K. Srinivasan¹, K. Gotlieb¹, J. Katz¹, J. Hubert¹, J. Laprade¹, V. Brajuskovic¹, G. Jaramillo¹, S. Karki¹, T. Fawal¹, H. Wahhab¹ and N. Deka¹ 1. Sonera, Berkeley, CA, United States
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2:30

- EB-02. Skyrmionic device for three dimensional magnetic field sensing enabled by spin-orbit torques.** S. Koraltan¹, R. Gupta², R. Peremadathil Pradeep⁴, F. Kammerbauer², K. Prügl⁵, M. Kirsch⁵, B. Aichner¹, K. Davidkova¹, F. Bruckner¹, S. Zeilinger¹, S. Helbig¹, C. Abert¹, A. Mandru⁴, A. Satz³, G. Jakob², H.J. Hug⁴, M. Kläui² and D. Suess¹
*1. Faculty of Physics, University Vienna, Vienna, Austria;
 2. Faculty of Physics, University Mainz, Mainz, Germany;
 3. Infineon Technologies, Villach, Austria; 4. EMPA, Zürich, Switzerland; 5. Infineon Technologies, Regensburg, Germany*
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2:45

- EB-03. Sensitivity and Linearity of Domain Wall Displacement Modulation GMR Sensors with Closed-loop Current-field Feedback.** K. Komuro¹, D. Oshima¹ and T. Kato²
1. Department of Electronics, Nagoya University, Nagoya, Japan; 2. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan
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- EB-04. An ultrathin, rapidly fabricated, flexible giant magnetoresistive electronic skin.** J. Zhang^{1,2}, Z. Jin^{1,2}, G. Chen¹ and J. Chen^{1,3,2} *1. Chinese Academy of Sciences, State Key Laboratory of Transducer Technology, Aerospace Information Research Institute, Beijing, China; 2. School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China; 3. College of Materials Sciences and Opto-Electronic Technology, University of Chinese Academy of Sciences, Beijing, China*
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- EB-05. Development of Open-structure Rotary Magnetic Encoder for Underwater Applications.** H. Lin¹, K. Peng¹ and J. Chang^{1,2} *1. Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. National Formosa University, Huwei Township, Taiwan*
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- EB-06. Remote sensing of nanoscale displacements through detection of magnetic field gradients with magnetic tunnel junction sensors.** A. Talantsev¹, T. Böhnert¹, A. Araújo¹, E. Paz¹, L. Benetti¹ and R. Ferreira¹ *1. Spintronics, International Iberian Nanotechnology Laboratory, Braga, Portugal*
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- EB-07. Recent Advances in Modeling ΔE -Effect Magnetic Field Sensors. (Invited)** F. Ilgaz², E. Spetzler², P. Wiegand³, F. Faupel², R. Rieger³, J. McCord^{2,4} and B. Spetzler¹ *1. Department of Electrical Engineering and Information Technology, Ilmenau, Germany; 2. Department of Materials Science, Kiel, Germany; 3. Institute of Electrical Engineering and Information Technology, Kiel, Germany; 4. Kiel Nano, Surface and Interface Science (KiNSIS), Kiel, Germany*
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- EB-08. Numerical Modeling of the Magnetoimpedance effect from Micromagnetism.** G. Gestoso¹, D. de Cos Elices², E. Fernandez³ and A. García-Arribas^{1,3} *1. Departamento de Electricidad y Electrónica, Universidad del País Vasco UPV/EHU, Leioa, Spain; 2. Departamento de Física, Universidad del País Vasco UPV/EHU, Vitoria, Spain; 3. BC Materials, Leioa, Spain*
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- EB-09. Multifunctional MgO-Based Magnetic Tunnel Junctions with Coexisting Magnetoresistance and Memristive Properties.** A. Schulman^{1,2}, E. Paz¹, T. Boehnert¹, A. Jenkins¹ and R. Ferreira¹ *1. Spintronics, International Iberian Nanotechnology Laboratory (INL), Braga, Portugal; 2. University of Salamanca, Salamanca, Spain*
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4:45

- EB-10. 2-Axis planar Hall magnetic field sensors with sub nanoTesla resolution.** P.T. Das^{1,2}, H. Nhalil², V. Mor², M. Schultz², N. Hasidim³, A. Grosz³ and L. Klein²
1. Intelligent Materials and Systems (FWID), Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Department of Physics, Bar-Ilan University, Ramat Gan, Israel; 3. Department of Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel
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OCEANIA IX & X

Session EC

INTERDISCIPLINARY TOPICS: SENSORS, ANTENNAS, AND NANOFABRICATION

Luiz Sampaio, Chair

Brazilian Center for Research in Physics, Rio de Janeiro, Brazil

2:00

- EC-01. Nanoscale Magnetic Field Quantification of Skyrmion Spin Textures using in-vacuum Magnetic Force Microscopy.** *(Invited)* H.J. Hug^{1,2}, R. Peremadathil-Pradeep^{1,2}, L. Jamilpanah¹, E. Darwin¹ and A. Mandru¹ *1. Magnetic and Functional Thin Films, Empa, Duebendorf, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland*
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2:30

- EC-02. Frequency-Domain Propagation in Multiconductor Submarine Power Cables.** R.A. Coelho¹, G.C. Biage¹, M.L. P. Filho² and J.R. Cardoso¹ *1. InnovaPower - RCGI, Universidade de São Paulo, São Paulo, Brazil; 2. Institute for Technological Research, São Paulo, Brazil*
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[Now VP13-14](#)

- EC-03. Research on High Performance TMR-Superconducting Composite Magnetic Sensor and Performance Optimization.** *S. Han^{1,2}, Y. Wu³, Z. Jin¹ and J. Chen^{1,2,4}*
1. State Key Laboratory of Transducer Technology, Aerospace Information Research Institute, Beijing, China; 2. School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China; 3. Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China; 4. College of Materials Sciences and Opto-Electronic Technology, University of Chinese Academy of Sciences, Beijing, China
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3:00

- EC-04. Analytical Calculation of Series Impedance for Deeply Buried Coaxial Cables.** *G.C. Biage¹, R.A. Coelho¹ and J.R. Cardoso¹*
1. RCGI, Universidade de São Paulo, São Paulo, Brazil
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3:15

- EC-05. Progress in nanofabrication of superconducting devices and diverse applications.** *A.C. Rebello¹, N.Y. Klein¹, L.M. Ruela², E. Martins³, I.S. Oliveira¹, J.P. Sinnecker¹ and F. Rouxinol²*
1. Department of Condensed Matter, Centro Brasileiro de Pesquisas Físicas, Niteroi, Brazil; 2. University of Campinas, Campinas, Brazil; 3. Centro de Pesquisas, Desenvolvimento e Inovação Leopoldo Américo Miguez de Mello, Rio de Janeiro, Brazil
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3:30

- EC-06. Magnetoelectric Materials and Ultra-compact Mechanical Antennas. (Invited)** *B. Luo¹, Y. Liu¹, R. Huang¹ and N.X. Sun¹*
1. Northeastern University, Boston, MA, United States
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4:00

- EC-07. Withdrawn**

4:15

- EC-08. In Plane Single Domain 3D SOT Sensor with Active Offset Compensation.** *S. Zeilinger¹, A. Satz², J. Guettinger², J.M. Salazar¹ and D. Suess¹*
1. University of Vienna, Vienna, Austria; 2. Infineon Austria, Villach, Austria
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- EC-09. Skyrmion-based rotation counter-sensor device.** *K. Leutner¹, R. Frömter¹, T. Winkler¹, R. Gruber¹, J. Guettinger², H. Fangohr^{3,4} and M. Kläui¹* *1. Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany; 2. Infineon Technologies Austria AG, Villach, Austria; 3. Max-Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany; 4. Faculty of Engineering and Physical Sciences, University of Southampton, Southampton, United Kingdom*
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4:45

- EC-10. A carborane-based Gd metal-organic framework towards scalable Quantum Computing.** *E. Bartolomé¹, A. Arauzo², I. García-Rubio², J. Luzón³, X. Li¹ and J. Giner-Planas¹* *1. Instituto de Ciencia de Materiales de Barcelona (ICMAB), Barcelona, Spain; 2. Department of Condensed Matter Physics, Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC-Universidad de Zaragoza, Zaragoza, Spain; 3. Centro Universitario de Defensa (CUD), Zaragoza, Spain*
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OCEANIA I & II

Session ED BIOMAGNETICS II

Andris Bakuzis, Co-Chair

Federal University of Goiás, Goiânia, Brazil

Kai Wu, Co-Chair

Texas Tech University, Lubbock, TX, United States

2:00

- ED-01. Magnetism for mechanobiology and related biomedical applications. (Invited)** *B. Dieny¹, A. Visonà^{1,2}, R. Morel¹, H. Joisten¹, P. Obeid⁵, A. Nicolas², S. Belin³ and F. Berger⁴* *1. SPINTEC, Univ.Grenoble Alpes, CEA, CNRS, Grenoble, France; 2. LTM, Univ.Grenoble Alpes, CEA, CNRS, Grenoble, France; 3. Grenoble Institut Neurosciences, Univ. Grenoble Alpes, U1216, Grenoble, France; 4. Brain Tech Lab, Univ. Grenoble Alpes, INSERM, Grenoble, France; 5. Biomics, Univ.Grenoble Alpes, CEA, INSERM, Grenoble, France*
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- ED-02. Melanoma Cell Internalization of Spin-Vortex Nanodisks for Cancer Treatment.** *R. Zurbano¹, C. Redondo¹, I. Solozabal Azcarate¹, M. Boyano^{2,3} and R. Morales^{4,5}*
1. Department of Physical Chemistry, University of the Basque Country, Leioa, Spain; 2. Department of Cell Biology and Histology, University of the Basque Country, Leioa, Spain; 3. Biocruces Health Research Institute, Bilbao, Spain; 4. University of the Basque Country UPV/EHU & BC Materials, Leioa, Spain; 5. IKERBASQUE, Bilbao, Spain
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2:45

- ED-03. Level Change of Biochemical Markers in Serum after Acute Administration of Magnetite (Fe₃O₄) Nanoparticles.** *S. Lee¹, J. Choi¹, Y. Hong³ and M. Hasan²*
1. Department of Digital Healthcare Engineering, Sangji University, Wonju, The Republic of Korea; 2. Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Science and Tech. University, Gopalganj, Bangladesh; 3. Department of Information and Communication Software Engineering, Sangji University, Wonju, The Republic of Korea
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3:00

- ED-04. Effects, Mechanisms, and Potential Biomedical Applications of Static Magnetic Fields. (Invited)** *X. Zhang¹*
1. High Magnetic Field Laboratory, Hefei Institutes of Physical Science, Hefei, China
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3:30

- ED-05. Fe₃N nanoparticles: properties, stability and applications.** *Y. Ablets¹, L. Kubičková², A. Chanda³, I. Orue⁴, D. Koch¹, S. Najma¹, S. Forg⁵, E. Adabifiroozjaei¹, L. Molina-Luna¹, T. Kmječ⁶, J. Ángel García⁷, F. Plazaola⁸, R. von Klitzing⁵, W. Donner¹, H. Srikanth³, O. Gutfleisch¹ and I. Dirba¹*
1. Institute of Materials Science, TU Darmstadt, Darmstadt, Germany; 2. FZU - Institute of Physics of the Czech Academy of Sciences, Praha, Czechia; 3. Department of Physics, University of South Florida, Tampa, FL, United States; 4. SGIker Medidas Magnética, Universidad del País Vasco (UPV/EHU), Leioa, Spain; 5. Institute for Condensed Matter Physics, TU Darmstadt, Darmstadt, Germany; 6. Faculty of Mathematics and Physics, Charles University in Prague, Prag, Czechia; 7. Departamento de Física, Universidad del País Vasco (UPV/EHU), Leioa, Spain; 8. Elektrizitatea eta Elektronika Saila, Facultad de Ciencia y Tecnología, (UPV/EHU), Leioa, Spain
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- ED-06. Measurement of Transcranial Magnetic Stimulation-Induced Electric Fields in conductively accurate Rat Head Phantoms.** *W. Lohr*¹, *R.L. Hadimani*^{1,2}, *P. Sundaram*³ and *M. Tashli*² *1. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Department of Mechanical and Nuclear, Virginia Commonwealth University, Richmond, VA, United States; 3. Martino's Center, Harvard Medical School, Boston, MA, United States*
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4:00

- ED-07. Magnetic Nanoparticle-Based Detection of Genetic Biomarkers Using Surface-Localized Nucleic Acid Amplification for Ultrasensitive and Rapid Diagnosis.** *(Invited) J. Lee*¹ *1. Hanyang University, Ansan, The Republic of Korea*
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4:30

- ED-08. Giant Magnetoresistive Biosensors for Measuring Enzyme Kinetics.** *J. Im*¹, *S. Kim*¹, *S. Park*¹, *S.X. Wang*² and *J. Lee*¹ *1. Ewha Womans University, Seoul, The Republic of Korea; 2. Stanford University, Stanford, CA, United States*
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4:45

- ED-09. Magnetically-Enabled Detection of Circulating Tumor DNA in Non-Small Cell Lung Cancer Patients for Therapy Selection Purposes.** *K. Antilla*¹, *C. Choi*² and *S.X. Wang*^{2,3} *1. Department of Chemical Engineering, Stanford University, Stanford, CA, United States; 2. Department of Materials Science and Engineering, Stanford University, Stanford, CA, United States; 3. Department of Electrical Engineering, Stanford University, Stanford, CA, United States*
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Session EE

HARD MAGNETIC MATERIALS II

Paulo Wendhausen, Co-Chair

Universidade Federal de Santa Catarina, Florianópolis, Brazil

Ping Liu, Co-Chair

University of Texas at Arlington, Colleyville, TX, United States

2:00

- EE-01. Development of Permanent Magnets – A Critical Materials Consideration. (Invited) M.J. Kramer^{1,2}, A. Palasyuk¹, I.Z. Hlova¹, J. Cui^{1,2} and D. Parker³** *1. Ames National Laboratory, Ames, IA, United States; 2. Department Materials Science and Engineering, Iowa State University, Ames, IA, United States; 3. Materials Science and Technology Division, ORNL, Oak Ridge, TN, United States*
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2:30

- EE-02. Smart Predictions: Machine Learning in Constructing Sm-Fe-V Phase Diagram.** *P. Tozma¹, A.D. Zamalloa¹, A. Aubert¹, K. Skokov¹ and O. Gutfleisch¹* *1. Functional Materials, Technical University of Darmstadt, Darmstadt, Germany*
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2:45

- EE-04. Novel hardening mechanism and element specific magnetic anisotropy in SmCoCu thin films.** *G. Gkouzia¹, D. Günzing^{2,4}, R. Xie¹, T. Weßels^{2,3}, A. Kovács³, A.T. N'Diaye⁴, M. Major¹, J. Palakkal^{5,1}, R.E. Dunin-Borkowski³, H. Wende², H. Zhang¹, K. Ollefs² and L. Alff¹* *1. Department of Materials Science, TU Darmstadt, Darmstadt, Germany; 2. Department of Physics, University Duisburg-Essen, Duisburg, Germany; 3. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich, Jülich, Germany; 4. Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 5. Department of Physics, Georg August University of Göttingen, Göttingen, Germany*
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3:00

- EE-05. Exploring the Formation of Ordered Tetrataenite Phase in Cryomilled FeNi Alloys with Small Carbon Additions.** *V.R. da Silva¹, B.C. Hauback¹ and S. Deledda¹* *1. Institute for Energy Technology, Kjeller, Norway*
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- EE-06. Effect of different grain boundary diffusion alloys on magnetic properties of Dy-free sintered NdFeB magnet.** W. Tang¹, J. Wang¹, C. Pan¹, M. Kang¹, L. Zhou^{1,2}, M.J. Kramer¹, J. Cui^{1,2} and I.E. Anderson^{1,2} *1. Ames National Laboratory of USDOE, Ames, IA, United States; 2. Department of Materials Science & Engineering, Iowa State University, Ames, IA, United States*
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- EE-08. Disproportionation and recombination reactions - a promising technique of producing sintered nanostructured anisotropic SmCo5 magnets.** I. Bulyk^{1,2,3}, B. Yang^{1,2}, M. Yang^{1,2} and I. Boruch³ *1. Institute of Rare Earth Magnetic Materials and Devices, Jiangxi University of Science and Technology, Ganzhou, China; 2. National Rare Earth Functional Materials Innovation Center, Ganzhou, China; 3. Karpenko Physico-Mechanical Institute of National Academy of Sciences of Ukraine, Lviv, Ukraine*
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- EE-09. Magnetic hardness of Fe₃C-based alloys: A first-principles study.** J. Snarski-Adamski¹, J.N. Rychly-Gruszecka¹ and M. Werwinski¹ *1. Institute of Molecular Physics Polish Academy of Sciences, Poznan, Poland*
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- EE-10. Fe₂MnSn Heusler alloy based rare-earth-free permanent magnets.** M.A. Jami¹, R. Pathak² and A. Bhattacharya¹ *1. Department of Metallurgical Engineering and Materials Science, IIT Bombay, Mumbai, India; 2. Uppsala University, Uppsala, Sweden*
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- EE-11. Deflection patterns on strontium ferrite/iron oxide/Ecoflex 00-30 flexible composites.** V.V. Xavier¹, M. Elabbasi², A. El-Gendy² and A. de Oliveira Barros³ *1. Department of Mechanical Engineering, Federal Institute of Pernambuco, Caruaru, Brazil; 2. Department of Physics, University of Texas at El Paso, El Paso, TX, United States; 3. Department of Industrial, Manufacturing and Systems Engineering, University of Texas at El Paso, El Paso, TX, United States*
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Session EF

**SOFT MAGNETIC ALLOYS: SYNTHESIS,
CHARACTERISATION AND MODELING**

Ivan Skorvanek, Chair

Institute of Experimental Physics, Slovak Academy of Sciences,
Kosice, Slovakia

2:00

- EF-01. The Influence of SiO₂ Layer on the Temperature Stability of SMC Based on Iron and Mn-Zn Ferrite.** *J. Fuzer¹, S. Vovk¹, S. Dobák¹, P. Kollár¹, R. Bureš², M. Fáberová², V. Tsakaloudi³ and V. Zaspalis^{3,4}* *1. Institute of Physics, P.J. Safarik University, Kosice, Slovakia; 2. Insitute of Materials Research, Slovak Academy of Sciences, Košice, Slovakia; 3. CERTH, Thessaloniki, Greece; 4. Department of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece*
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2:15

- EF-02. Effects of warm-rolling condition on microstructure, texture and magnetic properties of Fe-18Co-xSi-0.5Al mass% alloys.** *T. Sato¹* *1. Corporate Research & Development Center, Daido Steel Co., Ltd., Nagoya, Japan*
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2:30

- EF-03. Excess loss modeling in ferromagnetic materials, including thermal effects.** *S. Jacobs¹ and J. Rens²*
1. ArcelorMittal Global R&D, Zwijnaarde, Belgium; 2. ArcelorMittal Global R&D Gent, Zwijnaarde, Belgium
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2:45

- EF-04. Predicting Magnetic Losses in HGO Steel Sheets under Distorted Induction waveform.** *N. Banu¹, M. Pasquale¹ and F. Fiorillo¹* *1. INRIM, Torino, Italy*
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3:00

- EF-05. Tensile stress effect on magnetic Barkhausen noise of silicon steel single crystal (measurements and simulations).** *B. Ducharne^{1,2,3}, E. Wasniewski⁴, L. Daniel⁵, M. Domenjoud⁵ and P. Fagan⁵* *1. Institut National des Sciences Appliquees de Lyon, Villeurbanne, France; 2. Tohoku University, Sendai, Japan; 3. ELyTMaX, CNRS, Sendai, Japan; 4. CETIM, Senlis, France; 5. Université Paris-Saclay, CentraleSupélec, Gif-sur-yvette, France*
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- EF-06. Stress-Induced Magnetization Process in Shifted Grain-Oriented Steel Ring Cores.** *S. Dobák¹, J. Fuzer¹, I. Petryshynets², F. Onderko¹, P. Kollár¹ and F. Kováč²*
1. Institute of Physics, Faculty of Science, P. J. Šafárik University, Košice, Slovakia; 2. Institute of Materials Research, Slovak Academy of Sciences, Košice, Slovakia
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3:30

- EF-08. Effect of tension and compression stress on the magnetic losses in a low-Carbon steel.** *A. Ouazib^{1,2}, M. Domenjoud^{1,2} and L. Daniel^{1,2}*
1. Université Paris-Saclay, CentraleSupélec, CNRS, Laboratoire de Genie Electrique et Electronique de Paris, Gif sur Yvette, France; 2. Sorbonne Université, Paris, France
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3:45

- EF-09. Process Development for Synthesizing FeCoN-based Magnetic Materials.** *T. Tabata¹, Y. Asari¹, M. Noujima¹ and S. Terada¹*
1. Research & Development Group, Hitachi, Ltd., Hitachi, Japan
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4:00

- EF-10. First-Principles Study of Saturation Magnetization Flux Density in Nitrogen Defective α' -Fe₈N_x.** *Y. Asari¹, T. Tabata¹, M. Noujima¹ and S. Terada¹*
1. Hitachi, Ltd., Hitachi, Japan
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4:15

- EF-11. Enhancing Magnetic Properties of Fe-Ni Soft Magnetic Composites via Dry-coated MgO Insulation.** *H. Kim^{1,2}, K. Kim¹, S. Yang¹, Y. Kim² and J. Jeong¹*
1. Korea Institute of Materials Science (KIMS), Changwon, The Republic of Korea; 2. Sungkyunkwan University, Suwon, The Republic of Korea
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4:30

- EF-12. High-Rate Deposition and Characterization Study of CoZrO Films for On-Chip Power Applications.** *E. Ng¹, J. Lin², E. Young-Dohe³, C. Sullivan⁴, A. Hanson¹ and J. Incorvia¹*
1. Chandra Family Department of Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, United States; 2. Materials Engineering Department, Southwest Research Institute, San Antonio, TX, United States; 3. NASA Glenn Research Center, Cleveland, OH, United States; 4. Dartmouth College, Hanover, NH, United States
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- EF-07. Boron added Fe-6.5%Si melt spun ribbon with improved processability and magnetic properties.** G. Ouyang¹, B. Hillard¹, *M.J. Kramer*^{1,2}, I.E. Anderson^{1,2} and J. Cui^{1,2}
1. Department of Material Science and Engineering, Ames Laboratory, Ames, IA, United States; 2. Iowa State University, Ames, IA, United States
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EUROPA IV

Session EG

MAGNETIZATION DYNAMICS, DAMPING, AND MICROMAGNETIC MODELING

Jose Angel Fernandez-Roldan, Co-Chair
 HZDR, Oviedo, Spain
 Vito Puliafito, Co-Chair
 Politecnico di Bari, Bari, Italy

2:00

- EG-01. Optical control of antiferromagnetism. (Invited)**
*C. Tzschaschel*¹ *1. Max Born Institute, Berlin, Germany*
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2:30

- EG-02. Complex Dynamics In Mutually Coupled Spin Torque Vortex Oscillators.** *K. Ho*^{1,2,3}, S. Wittrock⁴, S. Perna⁵, R. Dutra⁶, R. Ferreira⁷, C. Serpico⁵, P. Bortolotti^{1,2,3}, R. Lebrun^{1,2,3} and V. Cros^{1,2,3} *1. Laboratoire Albert Fert, Palaiseau, France; 2. CNRS, University of Paris-Sud, Palaiseau, France; 3. Thales Communications & Security, Palaiseau, France; 4. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 5. University of Naples, Naples, Italy; 6. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 7. International Iberian Nanotechnology Laboratory, Braga, Portugal*
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2:45

- EG-04. Microcoils for magnetisation reset in stroboscopic optical pump-probe experiments.** *C.R. Sait*¹, T.H. Loughran¹, M. Dabrowski¹, P.S. Keatley¹ and R. Hicken¹ *1. Department of Physics, University of Exeter, Exeter, United Kingdom*
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3:00

- EG-05. Dramatic Enhancement of Magnetic Domain Wall Velocity beyond Walker breakdown via the Resonant Dissipation.** *G. Kim¹, D. Jung¹, H. Han², S. Jeong¹, M. Im³ and K. Lee^{1,4}* *1. School of Materials Science and Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea; 2. Department of Materials Science and Engineering, Korea National University of Transportation, Chungju, The Republic of Korea; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. Graduate School of Semiconductor Materials and Devices Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea*
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3:15

- EG-06. Scaling exponents for Barkhausen avalanches in magnetic multilayers.** *F. Bohn¹, N.R. Machado¹, E.F. da Silva¹, M. Gamino¹, M.A. Correa¹ and R.L. Sommer²* *1. Department of Physics, Universidade Federal do Rio Grande do Norte, Natal, Brazil; 2. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil*
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3:30

- EG-07. Tunable 2-D Magnonic Crystals: Effect of Packing Density.** *C. Tian² and A.O. Adeyeye^{1,2}* *1. Department of Physics, Durham University, Durham, United Kingdom; 2. Department of Electrical & Computer Engineering, National University of Singapore, Singapore*
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3:45

- EG-08. Evolution of the magnetic switching processes from in-plane to out-of-plane in Ni₉₀Fe₁₀/Fe₇₀Ga₃₀ magnetostrictive bilayers.** *A. Begué¹, N. Cotón¹, C. Martín-Rubio², M. Jaafar³, R. Sanz González² and R. Ranchal¹* *1. Department of Material Physics, Complutense University, Madrid, Spain; 2. Payloads and Space Sciences Department, Instituto Nacional de Técnica Aeroespacial, Torrejón de Ardoz, Spain; 3. Material Science Institute of Madrid, Madrid, Spain*
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4:00

- EG-09. Enhancement of damping in YIG films at millikelvin temperatures due to GGG substrate.** *R. Serha¹, A. Voronov¹, D. Schmoll¹, R.V. Verba², S. Koraltan¹, M. Urbánek³, M. Lindner⁴, T. Reimann⁴, C. Dubs⁴, C. Abert¹, D. Suess¹, S. Knauer¹ and A. Chumak¹* *1. Department of Physics, University of Vienna, Vienna, Austria; 2. Institute of Magnetism, Kyiv, Ukraine; 3. CEITEC BUT, Brno University of Technology, Brno, Czechia; 4. INNOVENT e.V. Technologieentwicklung, Jena, Germany*
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- EG-10. Magnetization reversal and direct observation of magnetic domains on FePt thin films.** *A. Román^{1,2}, J. Gomez^{3,4,5}, A. Butera^{3,4,5}, P. Vavassori^{6,7} and L. Steren^{1,3}* *1. Instituto de Nanociencia y Nanotecnología, CNEA/CONICET, Nodo Constituyentes, San Martín, Argentina; 2. Instituto de Nanociencia y Nanotecnología, CNEA/CONICET, Buenos Aires, Argentina; 3. Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina, Argentina; 4. Instituto de Nanociencia y Nanotecnología, CNEA/CONICET, Nodo Bariloche, San Carlos de Bariloche, Argentina; 5. Laboratorio de Resonancias Magnéticas, Centro Atómico Bariloche, San Carlos de Bariloche, Argentina; 6. Nanomagnetism, CIC nanoGUNE, Donostia-San Sebastián, Spain; 7. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*
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- EG-11. Theoretical analysis of the spin-torque diode effect driven by magnetization phase-transitions.** *M. Lianeris¹, A. Meo¹, M. Carpentieri¹, R. Tomasello¹ and G. Finocchio²* *1. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 2. University of Messina, Messina, Italy*
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EXHIBIT HALL

Session EP
BIOMAGNETICS III
(Poster Session)

Javier Alonso, Co-Chair
 University of Cantabria, Santander, Spain

Ravi Hadimani, Co-Chair
 Virginia Commonwealth University, Richmond, VA, United States

Ana García-Prieto, Co-Chair
 University of the Basque Country UPV/EHU, Bilbao, Spain

- EP-01. Novel polymer memristor as an integrate and fire synaptic device.** *W. Lohr¹, R.L. Hadimani², S. Khannah³, S. Bothra¹, N. Kumar⁴ and S. Singh³* *1. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 3. Academy of Scientific and Innovative Research, Ghaziabad, India; 4. CSIR-National Physical Laboratory, New Delhi, India*
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- EP-02. An Output-Fusion Fuzzy Logic Controller for Tumor Thermal Ablation Therapy System with Wireless Power Transfer.** *Y. Huang¹, C. Hung¹ and C. Tai¹* *1. Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan*
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- EP-04. Evaluating Magnetic Nanoparticles for Efficient Magnetic Kidney Stone Extraction.** *J. Bryan*¹, *D. Massana Roquero*², *J.C. Liao*² and *S.X. Wang*^{1,3} *1. Department of Materials Science and Engineering, Stanford University, Stanford, CA, United States; 2. Department of Urology, Stanford University, Stanford, CA, United States; 3. Electrical Engineering, Stanford University, Stanford, CA, United States*
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- EP-05. An Ultra-Broadband Magnetic Susceptivity Evaluation of Magnetic Nanoparticle and Protein.** *S. Yabukami*^{1,2}, *J. Honda*¹, *T. Murayama*¹, *L. Tonthat*¹ and *K. Okita*² *1. Tohoku University, Sendai, Japan; 2. Tohoku-TMIT, Sendai, Japan*
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- EP-06. Development of Siloxane-Polyether Hybrid Materials Containing Superparamagnetic Nanoparticles for Future Drug Delivery Applications.** *A.C. Teixeira*¹, *N.M. Suguihiro*¹, *B.R. Salles*², *V. de Oliveira Freitas Lione*³ and *K. Dahmouche*¹ *1. Campus Duque de Caxias, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; 3. Faculdade de Farmácia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil*
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- EP-07. Fe-Cr-Nb-B Magnetic Particles for Cancer Cell Destruction.** *H. Chiriac*¹, *A. Minuti*¹, *C. Stavila*^{1,2} and *N. Lupu*¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania*
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- EP-08. Intermittent F-actin Perturbations by Magnetic Fields Inhibit Breast Cancer Metastasis.** *X. Ji*¹ and *X. Zhang*¹ *1. High Magnetic Field Laboratory of CAS (CHMFL), Hefei, Anhui, China*
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EXHIBIT HALL

Session EQ NUMERICAL, SEMI-ANALYTICAL AND ANALYTICAL ANALYSIS METHODS II (Poster Session)

Johannes Paulides, Chair
Advanced Electromagnetics Group, Waalwijk, Netherlands

- EQ-02. Anisotropic Models of Nonlinear Magnetic Behavior Laws for Finite Element Modeling of Iron Losses in a Toroidal Core.** *J. Drappier*¹, *F. Guyomarch*¹, *R. Cherif*², *Y. Le Menach*¹, *O. MESSAL*¹, *L. Chevallier*¹ and *A. Benabou*¹ *1. L2EP, University of Lille, Lille, France; 2. ESME, Lille, France*
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- EQ-03. Skewing Effect on the Performance Characteristics of Synchronous Reluctance Machine with 3D Printed Axially Laminated Anisotropic Rotor.** *M. Sitnikov¹, F. Martin¹ and A. Belahcen¹* *1. Department of Electrical Engineering and Automation, Aalto University, Espoo, Finland*
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- EQ-04. Highly Efficient Experimental System for Thermomagnetic Coefficient Calculations.** *C.M. Valença¹, J.M. de Oliveira¹, A. de Moraes¹, A. Ferreira², F. Vaz², F. Bohn¹ and M.A. Correa¹* *1. Physics Department, Universidade Federal do Rio Grande do Norte, Natal, Brazil; 2. Physics Department, University of Minho, Braga, Portugal*
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- EQ-05. Implementation of an Edge-Based h-Formulation in the Nonlinear Magnetostatic Case.** *L.D. Domenig¹, K. Roppert¹ and M. Kaltenbacher¹* *1. Institute of Fundamentals and Theory in Electrical Engineering, Graz University of Technology, Graz, Austria*
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- EQ-06. Development of a Combined Maxwell's Equations and Magnetic Equivalent Circuit Solution for Induction Machines in Electric Vehicle Applications.** *O. Taqavi¹, P. Song¹, Z. Li¹ and N. Kar¹* *1. Department of Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada*
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- EQ-07. Shape Optimization of Electric Motors Using 2.5-D Continuum Sensitivity Analysis.** *E. Jung¹, K. Seo¹ and I. Park¹* *1. Sungkyunkwan University, Suwon-si, The Republic of Korea*
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- EQ-08. Frequency Sensitivity Analysis of Magnetoquasistatic System with Voltage or Current Excitation.** *S. Rho¹ and I. Park¹* *1. Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, The Republic of Korea*
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- EQ-12. Optimal Shape Design of Permanent Magnet Synchronous Motor to Reduce Cogging Torque and Torque Ripple.** *H. Koo¹, I. Yun¹, H. Hong¹, C. Jo¹ and J. Lee¹* *1. Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea*
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- EQ-14. Performances of direct drive and magnetically geared PMSMs with different cooling technologies.** *S. Mezani¹, T.A. Marcand¹, C. Bonnard¹ and N. Takorabet¹* *1. Laboratoire GREEN - FST, Université de Lorraine, Vandoeuvre lès Nancy CEDEX, France*
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Session ER
SPIN-ORBIT TORQUES AND RELATED
PHENOMENA
(Poster Session)

Mathias Kläui, Chair
 Universität Mainz, Mainz, Germany

- ER-01. Orbital Current Driven Magnetic Memory.** *Y. Yao*¹, *D. Zhu*¹, *S. Lu*¹, *H. Zhang*¹, *D. Xiong*², *H. Liu*², *K. Cao*² and *W. Zhao*¹ *1. School of Integrated Circuit Science and Engineering, Beihang University, Beijing, China; 2. Truth Memory Corporation, Beijing, China*
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- ER-02. Spin-charge interconversion in oxides for low-power memory and logic devices.** *P. Sgarro*¹, *A. Kandazoglou*¹, *M. Cosset-Cheneau*¹, *W. Savero-Torres*¹, *S. Teresi*¹, *T. Frottier*¹, *M. Culot*¹, *S. Auffret*¹, *M. Bibes*², *J. Attané*¹ and *L. Vila*¹ *1. CEA-SPINTEC, Grenoble, France; 2. Laboratoire Albert Fert, Paris, France*
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- ER-05. Non-Volatile Electric-Field Control of Spin-Orbit Torques in Perpendicular Ferromagnet - SrTiO₃ System.** *C. Grezes*¹, *P. Sgarro*¹, *A. Kandazoglou*¹, *M. Cosset-Cheneau*¹, *L. Vicente Arche*³, *P. Noël*², *S. Auffret*¹, *K. Garello*¹, *M. Bibes*³, *L. Vila*¹ and *J. Attané*¹ *1. CEA-SPINTEC, Grenoble, France; 2. ETH Zurich, Zurich, Switzerland; 3. Laboratoire Albert Fert, Paris, France*
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- ER-03. Spin-orbit torque driven Skyrmion Hall effect-like motion of stripe domains in the perpendicularly magnetized system.** *S. Maji*¹, *I. Bhat*¹ and *P. Anil Kumar*¹ *1. Department of Physics, Indian Institute of Science, Bangalore, Bengaluru, India*
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- ER-04. Ferromagnetic material as dominant spin source achieving field-free SOT switching.** *S. Liu*¹, *C. Wan*¹, *G. Yu*¹ and *X. Han*¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
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- ER-07. Exploring Interatomic Exchange Interactions in Noncollinear Magnetic Configurations.** *J. Silva*^{2,3}, *R. Cardias Alves de Almeida*^{4,1}, *A. Bergman*⁵, *A. Szilva*⁵, *Y. Kvashnin*⁵, *J. Fransson*⁵, *A.B. Klautau*², *O. Eriksson*^{5,6}, *A. Delin*^{4,6} and *L. Nordström*⁵ *1. Instituto de Física, Universidade Federal Fluminense, Niterói, Brazil; 2. Universidade Federal do Pará, Belém, Brazil; 3. Instituto Federal do Pará, Óbidos, Brazil; 4. KTH Royal Institute of Technology, Stockholm, Sweden; 5. Uppsala University, Uppsala, Sweden; 6. Wallenberg Initiative Materials Science for Sustainability, Uppsala University, Uppsala, Sweden*
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- ER-08. Zr thickness dependence of perpendicular magnetic anisotropy and spin-orbit torques in the W/CoFeB/Zr/MgO multilayers.** *T. Zhu*¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
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- ER-09. Field-free spin-orbit torque switching in conically magnetized free layer nanomagnet.** *P.K. Mishra*¹ and *S. Bhuktare*¹ *1. Department of Electrical Engineering, Indian Institute of Technology, Tirupati, India*
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- ER-10. Understanding the Influence of Capping Layer on Spin Wave Modes: An In-Depth Investigation with a Custom Time-Resolved Magneto-Optical Kerr Effect (TR-MOKE) Setup.** *D. Ghosh*¹, *C. Dolai*¹, *S.S. Bodra*¹ and *P. Datta*¹ *1. Physics, IIT Kharagpur, Kharagpur, India*
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EXHIBIT HALL

Session ES HARD MAGNETIC MATERIALS III (Poster Session)

Matthew Kramer, Co-Chair
Ames National Laboratory, Ames, IA, United States
Alex Aubert, Co-Chair
Technische Universitat Darmstadt, Darmstadt, Germany

- ES-01. The potential of SmCo₄B-based compounds as a permanent magnet.** *P. Tozman*¹, *A. Aubert*¹, *K. Skokov*¹, *H. Sepehri-Amin*², *Y. Skourski*³, *Y. Ishii*⁴, *Y. Matsuda*⁴ and *O. Gutfleisch*¹ *1. Functional Materials, Technical University of Darmstadt, Darmstadt, Germany; 2. National Institute for Materials Science (NIMS), Tsukuba, Japan; 3. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. The University of Tokyo, Kashiwa, Japan*
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- ES-02. Transforming Highly Corroded Scrap Magnets into Coercive Powders.** *S.X. Lima*², *M.A. Rosa*², *J.C. Ronchi*², *S.M. Souza*¹, *Q.H. Rebelo*¹, *P.O. Junior*³, *R.D. Souza*³ and *P.A. Wendhausen*² *1. UFAM, Manaus, Brazil; 2. Magnetic Materials Laboratory, Federal University of Santa Catarina, Florianópolis, Brazil; 3. Laboratory-Factory of Magnets and Rare-earth Alloys (LabFabITR), Lagoa Santa, Brazil*
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- ES-03. The Role of Coercivity on Texture Assessment of Nd-Fe-B Magnets via Magnetometry Technique.** *L. Quispe*¹, *L.F. Antunes*¹, *A. Baldarrago-Alcántara*¹, *L. Luza-Mamani*¹, *L. Ulian Lopes*¹, *S.M. Souza*² and *P.A. Wendhausen*¹ *1. Magnetic Materials Laboratory, Federal University of Santa Catarina, Florianópolis, Brazil; 2. Department of Materials Physics, Federal University of Manaus, Manaus, Brazil*
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- ES-04. The detrimental effect on the magnetic properties of Nd-Fe-B magnets subjected to high-temperature treatment (1000 °C) during grain boundary diffusion.** *M.B. Dias^{1,2}, G. Shimizu², L. Azevedo², D. Rodrigues Jr², W.C. Macedo³, L.F. Antunes³, L. Ulian Lopes³, P.A. Wendhausen³ and F. Landgraf³* *1. SENAI SP College, Osasco, Brazil; 2. University of São Paulo, São Paulo, Brazil; 3. Federal University of Santa Catarina, Florianópolis, Brazil*
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- ES-05. Recycling Nd-Fe-B End-of-Life Magnets with Different Levels of Oxidation Using the Magnet-to-Magnet Approach.** *W.C. Macedo¹, L.F. Antunes¹, B. Fertig¹, C.F. Sampietro¹, D.A. Silva¹, N.V. Junior¹, S.M. Souza² and P.A. Wendhausen¹* *1. Magnetic Materials Laboratory, Federal University of Santa Catarina, Florianópolis, Brazil; 2. Department of Materials Physics, Federal University of Amazonas, Manaus, Brazil*
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- ES-06. Using Nanocrystalline HDDR Powders in the Additive Manufacturing of Bonded Nd-Fe-B Magnets.** *B. Fertig¹, M.A. Rosa¹, G. Vieira², M. Martins², C. Ahrens¹, M.V. da Luz¹, A. Mascheroni³, J.M. Mascheroni³ and P.A. Wendhausen¹* *1. Magnetic Materials Laboratory, Federal University of Santa Catarina, Florianópolis, Brazil; 2. Center for the Development of Nuclear Technology, Belo Horizonte, Brazil; 3. Alkimat, São José, Brazil*
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- ES-07. Towards Recycling of Nd-Fe-B Permanent Magnets in a Circular Economy.** *A. Paksoy¹, A. Khan¹, A. Durgun¹, M. Hasan², M. Schönfeldt^{1,2}, I. Radulov², J. Gassmann², I. Dirba¹ and O. Gutfleisch¹* *1. Institute of Materials Science, TU Darmstadt, Darmstadt, Germany; 2. Magnetic Materials, Fraunhofer IWKS, Hanau, Germany*
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- ES-08. Effect of particle size on magnetic properties of SmCo₅ powder prepared by ball-milling process.** *K. Park¹ and Y. Hirayama¹* *1. National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Japan*
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- ES-09. Synthesis of size-controlled and dispersible Sm₂Fe₁₇N₃ particles by reduction diffusion.** *Z. Yang¹, J. Xi¹ and M. Yue¹* *1. Beijing University of Technology, Beijing, China*
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- ES-10. Development of bonded α'' -Fe₁₆N₂ permanent magnet.** *M. Grigoras¹, M. Lostun¹, G. Ababei¹, G. Stoian¹ and N. Lupu¹* *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
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- ES-12. Evaluating the magnetic hardening of Nd-Fe-B magnets after grain boundary diffusion: a layer by layer approach.** *L.F. Antunes¹, L. Quispe¹, W.C. Macedo¹, M.B. Dias³, L. Ulian Lopes¹, S.M. Souza² and P.A. Wendhausen¹* *1. Universidade Federal de Santa Catarina, Florianópolis, Brazil; 2. Universidade Federal do Amazonas, Manaus, AM, Brazil; 3. Universidade de São Paulo, São Paulo, Brazil*
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- ES-13. Magnetic coupling on multilayer of NdFeB/Dy films grown by magnetron sputtering.** *A.C. Krohling¹, L. Fernandez Outon² and J. Ardisson¹* 1. *Department of Physics, Nuclear Technology Development Center, Belo Horizonte, Brazil;* 2. *Department of Physics, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*
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- ES-11. Enhancement of the magnetic performance of Nd-Fe-B sintered magnets through novel powder modification.** *M. Zhu¹, Y. Wang¹, Q. Sun¹, Y. Fang¹ and W. Li¹* 1. *Central Iron & Steel Research Institute, Beijing, China*
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- ES-14. Strategies for ultra-limited utilization of heavy rare-earth Tb in Ce magnets with high Ce-content: synergistic diffusion mechanism of Pr.** *M. Zhu¹, X. Song¹, Q. Sun¹, Y. Fang¹ and W. Li¹* 1. *Central Iron & Steel Research Institute, Beijing, China*
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OCEANIA IV & V

Session FA MAGNONIC MATERIALS AND DEVICES

Santa Pile, Co-Chair
Johannes Kepler University Linz, Linz, Austria
Jaroslaw Klos, Co-Chair
Adam Mickiewicz University, Poznan, Poland

8:30

- FA-01. All-on-chip approach towards quantum magnonic devices. (Invited)** *O. Santos^{1,2} and C. Ciccarelli¹* 1. *Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom;* 2. *Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*
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9:00

- FA-02. Magnon transport in YIG/GGG at millikelvin temperatures for quantum magnonics. (Invited)** *A. Chumak¹* 1. *Faculty of Physics, University of Vienna, Vienna, Austria*
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9:30

- FA-03. Magnon Quantum Effects in Magnon Junction and Heterojunction. (Invited)** *X. Han^{1,2,3} 1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing, China; 3. Songshan Lake Materials Laboratory, Dongguan, China*
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10:00

- FA-04. Active control of spin waves in nanoscale magnonic devices. (Invited)** *H. Qin^{1,2} and S. van Dijken¹ 1. NanoSpin, Department of Applied Physics, Aalto University, Helsinki, Finland; 2. School of Physics and Technology, Wuhan University, Wuhan, China*
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10:30

- FA-05. Thin-Film Magnomechanics. (Invited)** *J. Xu¹, Y. Jiang², Z. Yan² and X. Zhang² 1. University of Central Florida, Orlando, FL, United States; 2. ECE, Northeastern University, Boston, MA, United States*
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OCEANIA VI & VII

Session FB

NOVEL CHARACTERIZATION APPROACHES

Pedram Khalili, Chair

Northwestern University, Evanston, IL, United States

8:30

- FB-01. Antiferromagnetic and ferromagnetic domain and domain wall manipulation revealed using polarised x-ray imaging. (Invited)** *S.S. Dhesi¹ 1. Diamond Light Source Ltd, Didcot, United Kingdom*
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9:00

- FB-02. The photoemission microscopy end station at SIRIUS: an advanced instrument to investigate magnetism at surfaces.** *D. de Souza Chaves¹, J. Brandao¹, M.O. Gardingo¹ and J.C. Cezar¹ 1. LNLS, CNPEM, Campinas, Brazil*
[View Digest Text](#)

- FB-04. Optical heterodyne microscopy for addressing operating spin Hall nano-oscillator networks.** *A. Aleman*^{1,2,3}, *A.A. Awad*^{1,4,5}, *A. Kumar*^{1,4,5}, *A. Houshang*¹, *S. Muralidhar*¹, *D. Hanstorp*³ and *J. Akerman*^{1,4,5} *1. Applied Spintronics Group, University of Gothenburg, Gothenburg, Sweden; 2. NanOsc AB, Gothenburg, Sweden; 3. Atomic and Optical Physics, University of Gothenburg, Gothenburg, Sweden; 4. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 5. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
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- FB-05. Ferris-wheel magneto-optic Kerr effect and optical Hall effect technique.** *A. Rothschild*¹, *N. Am-Shalom*¹, *N. Bernstein*¹ and *A. Capua*¹ *1. The Hebrew University of Jerusalem, Modiin, Israel*
[View Digest Text](#)

- FB-06. Magnetic field imaging of thin exfoliated iron halides flakes.** *F. Meneses*^{1,2}, *R. Qi*^{3,4}, *A. Healey*^{1,2,5}, *Y. You*^{3,4}, *I. Robertson*⁵, *S. Scholten*^{1,2}, *A. Keerthi*^{3,6}, *G. Harrison*⁷, *A. Bera*⁴, *H. Jyothilal*⁴, *L. Hollenberg*^{1,2}, *B. Radha*^{3,4} and *J. Tetienne*⁵ *1. School of Physics, University of Melbourne, Melbourne, VIC, Australia; 2. University of Melbourne, Centre for Quantum Computation and Communication Technology, Melbourne, VIC, Australia; 3. The University of Manchester, National Graphene Institute, Manchester, United Kingdom; 4. The University of Manchester, Department of Physics and Astronomy, Manchester, United Kingdom; 5. RMIT University, School of Science, Melbourne, VIC, Australia; 6. The University of Manchester, Department of Chemistry, Manchester, United Kingdom; 7. The University of Manchester, Department of Materials, Manchester, United Kingdom*
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- FB-07. Probing Low-Dimensional Magnetism with a Quantum Sensor. (Invited)** *A. Tan*¹ *1. Imperial College, London, United Kingdom*
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- FB-08. Advancing Kerr-Microscopy imaging of three-dimensional magnetic structures.** C. Janzen^{1,2}, B.B. Rakholiya¹, F. Ott¹, R. Huhnstock^{1,2} and A. Ehresmann^{1,2} *1. Institute of Physics and Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), University of Kassel, Kassel, Germany; 2. Artificial Intelligence Methods for Experiment Design (AIM-ED), Joint Lab Helmholtzzentrum für Materialien und Energie, Berlin (HZB) and University of Kassel, Berlin, Germany*
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- FB-09. Imaging of Spin Textures and Spin Waves in 2D Magnets. (Invited)** F. Schulz¹, K. Litzius^{1,2}, L. Powalla³, M. Birch^{1,4}, R. Gallardo⁵, S. Satheesh³, M. Weigand⁶, T. Scholz³, B. Lotsch³, G. Schütz³, M. Burghard³ and S. Wintz⁶ *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. University Augsburg, Augsburg, Germany; 3. Max Planck Institute for Solid State Research, Stuttgart, Germany; 4. RIKEN Center for Emergent Matter Science, Wako, Japan; 5. Universidad Tecnica Federico Santa Maria, Valparaiso, Chile; 6. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany*
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OCEANIA IX & X

Session FC

MAGNETISM FOR NICHE APPLICATIONS: SENSORS, ROBOTS, DRONES AND OTHER DEVICES

Susana Cardoso de Freitas, Chair
INESC Microsistemas e Nanotecnologias, Lisboa, Portugal

- FC-03. Generalized Reservoir Computing with Spin-torque Oscillator.** Y. Imai¹, T. Kubota¹, S. Tsunegi² and K. Nakajima¹ *1. The University of Tokyo, Bunkyo, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
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- FC-04. A Blinking Detection System Based on Magnetic Sensor and Magnetic Hair Array.** J. Man^{1,2}, Z. Jin¹ and J. Chen^{1,2,3}
1. Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China; 2. School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China; 3. College of Materials Sciences and Opto-Electronic Technology, University of Chinese Academy of Sciences, Beijing, China
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9:00

- FC-05. IMU-based Robotic Finger Force Sensing with Modular Soft Actuators.** S. Lin¹, H. Chang¹ and J. Chang^{1,2}
1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. National Formosa University, Huwei Township, Taiwan
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9:15

- FC-06. Modeling of Magnetic Separation of Metal Ions in Aqueous Solutions.** P. Andrei¹ and N. Carlstet¹
1. Florida State University, Tallahassee, FL, United States
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9:30

- FC-07. Magnetic Small-Scale Robots: A Path Towards Minimally Invasive Medicine. (Invited)** S. Pané¹ *1. ETH Zurich, Zürich, Switzerland*
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10:00

- FC-08. Biotemplated Magnetic Composites for Microrobotic Applications.** A. Veciana¹, G. Llauredó-Capdevila², C. Franco¹, S. Pané¹ and J. Puigmartí-Luis² *1. Institute of Robotics and Intelligent Systems, ETH Zurich, Zurich, Switzerland; 2. Institut de Química Teòrica i Computacional, Universitat de Barcelona, 2Departament de Ciència de Materials i Química Física, Barcelona, Spain*
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10:15

- FC-09. Two-dimensional fractionally magnetized quantum ferromagnet.** S. Miyahara¹ and I. Maruyama² *1. Fukuoka University, Fukuoka, Japan; 2. Fukuoka Institute of Technology, Fukuoka, Japan*
[View Digest Text](#)

- FC-10. Towards realization of diamondtronics in doped diamond.**
 R. Raj¹, S. Chatterjee¹, D. Das¹, D. Kumar¹ and M.R. Rao¹
*1. Department of Physics, Quantum Centre of Excellence for Diamond and Emergent Materials (QuCenDiEM), India
 Centre for Lab-Grown Diamond (InCent-LGD), Nano Functional Materials Technology Center and Materials Science Research Center, Indian Institute of Technology, Madras, Chennai, India*
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OCEANIA I & II

Session FD
**ANTIFERROMAGNETIC/FERRIMAGNETIC
 SPINTRONICS AND DOMAIN WALL DEVICES**

Kim Kong Tham, Chair
 Tanaka Kikinzoku Kogyo, Sendai, Japan

8:30

- FD-01. Piezomagnetic switching of the anomalous Hall conductivity in an antiferromagnet at room temperature.**
(Invited) O. Tchernyshyov¹ and S. Nakatsuji² 1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, United States; 2. Institute for Solid State Physics, The University of Tokyo, Tokyo, Japan
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9:00

- FD-02. Spin Flop Near the Compensation Temperature of a Sperrimagnet.** J. Coey¹, K. Rode¹ and P. Stamenov¹
1. Department of Physics, Trinity College Dublin, Dublin, Ireland
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9:15

- FD-03. Measurement of the Orbital Hall Effect in Pure Cu and Al by Spin-Torque- and Microwave- Optical Ferromagnetic-Resonance Techniques.** Y. Ben Tal¹, N. Am-Shalom¹, A. Rothschild¹, N. Bernstein¹ and A. Capua¹
1. The Hebrew University in Jerusalem, Jerusalem, Israel
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9:30

- FD-04. Magneto-optical detection of spin-orbit torque vector with first-order Kerr effects.** *C. Gonzalez-Fuentes¹ and M. Abellan²* *1. Department of Physics, Pontificia Universidad Católica de Chile, Santiago, Chile; 2. Department of Physics, Universidad Técnica Federico Santa María, Valparaíso, Chile*
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9:45

- FD-05. Exploiting the non-linear dynamics of defect-induced pinning in vortex-based magnetic tunnel junctions for physical unclonable functions.** *A. Jenkins¹, L. Martins¹, L. Benetti¹, A. Schulman¹, P. Anacleto¹, M. Claro¹, E. Paz¹, I. Caha¹, F.L. Deepak¹ and R. Ferreira¹* *1. Spintronics, International Iberian Nanotechnology Laboratory, Braga, Portugal*
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10:00

- FD-07. Enabling synthetic antiferromagnets in nanoscale domain wall devices.** *D. Giuliano^{1,2}, Y. Canvel³, Y. Li³, A. Palomino Lopez³, G. Talmelli³, R. Carpenter³, S. Rao¹, C. Fleischmann³, K. Wostyn³, K. Temst², V. Nguyen³ and S. Couet³* *1. MADE, Imec, Leuven, Belgium; 2. Department of Physics and Astronomy, KU Leuven, Leuven, Belgium; 3. Imec, Leuven, Belgium*
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10:15

- FD-08. Control of the Moving Direction of Magnetic Domain Walls by Surface Acoustic Waves.** *A. Rivelles¹, R. Guedas², R. Yanes³, L. Torres³, R. Izquierdo¹, M.C. Maicas¹, M. Sanz¹, J. Pedrós¹, F. Calle¹, J. Prieto¹ and L. Lopez-Diaz³* *1. ISOM-Universidad Politécnica de Madrid, Madrid, Spain; 2. CEA-SPINTEC, Grenoble, France; 3. Universidad de Salamanca, Salamanca, Spain*
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10:30

- FD-09. Multifunctional In-Sensor Computing Based on Phase-Change Controlled Magnetic Tunnel Junction.** *C. Lv^{1,2}, X.L. Lin^{1,2} and W. Zhao^{1,2}* *1. National Key Lab of Spintronics, Institute of International Innovation, Beihang University, Hangzhou, China; 2. Fert Beijing Institute, MIIT Key Laboratory of Spintronics, Beihang University, Beijing, China*
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Session FE

LINEAR MACHINES AND FIELD MODULATING MACHINES

Jonathan Bird, Co-Chair
Portland State University, Portland, OR, United States
Kenji Nakamura, Co-Chair
Tohoku University, Sendai, Japan
Chinweze Ubadigha, Co-Chair
National Cheng Kung University, Tainan, Taiwan

8:30

- FE-01. Air-cored Linear Motor: Design and Operating Behavior.** *T. Hofmann¹, D. Radeck¹ and A. Jocher¹ 1. Department of Aerospace and Geodesy, Technical University of Munich, Garching bei München, Germany*
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8:45

- FE-02. Torque-to-Weight Ratio Improvement and Permanent Magnet Usage Reduction in Large-Scale Magnetic Gears for Wind Power Generation.** *T. Sumi¹, A. Okazaki¹, K. Nakamura¹, T. Shinji² and K. Takeda² 1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. TDK Corporation, Tokyo, Japan*
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9:00

- FE-03. Design of a linear motor: An optimization approach considering motor and inverter losses with different voltage waveforms.** *A.A. Espindola^{1,2}, M. Lungareze Neto², N.J. Batistela¹ and N. Sadowski¹ 1. Department of Electrical Engineering, UFSC, Florianópolis, Brazil; 2. Research and Development, Nidec GA, Joinville, Brazil*
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9:15

- FE-04. Harnessing Magnetic-Field Driven Actuation for Microscale Motion in MEMS-Inspired Device.** *L. Cestarollo¹ and A. El-Ghazaly² 1. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, United States; 2. Department of Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States*
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9:30

- FE-05. **Real-time identification of the impact frequency in a DTH electric drilling rig through time-frequency analysis of the motor current.** *D. Brito¹, Y. Millalonco¹, S. Vergara¹ and G. Ramírez¹* *I. Departamento de Ingenieria Electrica, Universidad Católica de la Santísima Concepción, Concepción, Chile*
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9:45

- FE-07. **A planar ironless permanent magnet generator for inertial sea wave energy conversion.** *M. Trapanese¹* *I. Dipartimento di Ingegneria, Università di Palermo, Palermo, Italy*
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10:00

- FE-08. **Magnetic and Thermal Modelling of Hollow Conductors for Improved Cooling and Force Density of Coreless Linear Motors.** *S. Geelen¹, M. Curti¹ and E. Lomonova¹* *I. Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*
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10:15

- FE-09. **Prototype Verification Cross-pole shape Flux Reversal Motor.** *Y. Yu¹* *I. Graduate School of Engineering, Tohoku University, Sendai, Japan*
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EUROPA II

Session FF

TOPOLOGICAL INSULATORS, WEYL AND DIRAC SEMIMETALS

Jiadong Zang, Co-Chair

University of New Hampshire, Durham, NH, United States

Hao Zeng, Co-Chair

University of Buffalo, Buffalo, NY, United States

8:30

- FF-01. **Weyl semimetal based spin-orbit torque and energy harvesting devices.** *(Invited)* *G. Shi¹, Y. Liu¹, F. Wang¹, D. Kumar¹ and H. Yang¹* *I. National University of Singapore, Singapore*
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- FF-02. Room temperature field-free switching of CoFeB/MgO heterostructure based on large-scale few-layer WTe₂.** X. Wang¹, H. Wu², R. Qiu¹, X. Huang¹, J. Zhang³, J. Long⁴, Y. Yao¹, Y. Zhao¹, Z. Zhu⁴, J. Wang³, S. Shi¹, H. Chang² and W. Zhao¹ *1. Beihang University, Beijing, China; 2. Huazhong University of Science and Technology, Wuhan, China; 3. Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, Suzhou, China; 4. ShanghaiTech University, Shanghai, China*
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9:15

- FF-03. Spin and Orbital Moments of Magnetic Topological Insulator MnBi₂Te₄ Epitaxial Thin Films.** J. Sun^{1,2}, S. Liu^{3,4}, F. Xiu^{3,4} and W. Liu^{1,5} *1. Department of Electronic Engineering, Royal Holloway University of London, Egham, United Kingdom; 2. Beijing Superstring Academy of Memory Technology, Beijing, China; 3. State Key Laboratory of Surface Physics and Department of Physics, Fudan University, Shanghai, China; 4. Institute for Nanoelectronic Devices and Quantum Computing, Fudan University, Shanghai, China; 5. Department of Electrical Engineering and Electronics, University of Liverpool, Liverpool, United Kingdom*
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9:30

- FF-05. Spin-Orbit Torque Switching of Mn₃Sn in Configuration II.** Z. Xu¹, X. Zhang¹, Y. Qiao¹, G. Liang^{2,3}, S. Shi⁴ and Z. Zhu¹ *1. School of Information Science and Technology, ShanghaiTech University, Shanghai, China; 2. Department of Electrical and Computer Engineering, National University of Singapore, Singapore; 3. Industry Academia Innovation School, National Yang-Ming Chiao Tung University, Hsinchu City, Taiwan; 4. Fert Beijing Institute, MIIT Key Laboratory of Spintronics, School of Integrated Circuit Science and Engineering, Beihang University, Beijing, China*
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9:45

- FF-06. Graphene intercalation in topological insulator/ferromagnet heterostructures for efficient spin orbit torques.** T. Guillet¹, V. Zlatko¹, R. Galceran², J. Sierra¹ and S.O. Valenzuela^{1,3} *1. Catalan Institute of Nanoscience and Nanotechnology, Barcelona, Spain; 2. Universitat de Barcelona, Barcelona, Spain; 3. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*
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10:00

- FF-07. Highly Efficient Spin-Orbit Torque Switching in Bi₂Se₃/Fe₃GeTe₂ van der Waals Heterostructures. (Invited)** C. Li¹ *1. Naval Research Lab, Washington, DC, United States*
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- FF-08. Efficient spin to charge current conversion using the Topological Insulator BiSb.** S. Massabeau¹, L. Vicente Arche¹, N. Figueiredo-Prestes¹, D. She^{1,2}, G. Patriarche², A. Lemaitre², M. Morassi², F. Bertran³, P. Le Fevre⁴, S. Dhillon⁵, N. Reyren¹, M. Bibes¹, R. Lebrun¹, H. Jaffrès¹ and J. George¹ *1. Laboratoire Albert Fert, Centre National de la Recherche Scientifique, Palaiseau, France; 2. Université Paris-Saclay, CNRS, Centre de Nanosciences et de Nanotechnologies, CNRS, Palaiseau, France; 3. Synchrotron SOLEIL, L'Orme des Merisiers, Saint Aubin, France; 4. Institut de Physique de Rennes, CNRS, Rennes, France; 5. Laboratoire de Physique de l'Ecole Normale Supérieure, ENS, CNRS, Paris, France*
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- FF-09. Interaction Effects in a 1D Flat Band at a Topological Crystalline Step Edge.** S. Das¹, F. Kuester¹, P. Sessi¹ and S. Parkin¹ *1. NISE, Max Planck Institute of Microstructure Physics, Halle, Germany*
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EUROPA IV

Session FG

MAGNETO-CALORIC MATERIALS AND DEVICES

Ekkes Brück, Co-Chair
 TU Delft, Delft, Netherlands

Fanny Béron, Co-Chair
 Universidad Estadual de Campinas, Campinas, Brazil

- FG-01. First-order phase transition kinetics on magnetocaloric materials - a chicken and egg tale. (Invited)** A. Beleza¹, R. Almeida¹, B. Beckmann², A. dos Santos⁴, P. Álvarez-Alonso³, J.P. Araújo¹, M. Frontzek⁴, J.L. Sanchez Llamazares⁵, J. Amaral⁶, O. Gutfleisch², K. Skokov², A.M. Abeykoon⁷ and J.H. Belo¹ *1. Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto, IFIMUP, Porto, Portugal; 2. TU Darmstadt, Darmstadt, Germany; 3. Departamento de Física, Universidad de Oviedo, Oviedo, Spain; 4. Neutron Scattering Division, Oak Ridge National Laboratory, Oak Ridge, TN, United States; 5. Instituto Potosino de Investigación Científica y Tecnológica A.C., San Luis Potosí, Mexico; 6. Department of Physics and CICECO, University of Aveiro, Aveiro, Portugal; 7. National Synchrotron Light Source II, Brookhaven National Laboratory, Upton, NY, United States*
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- FG-02. Phase Shift in AC Magnetocaloric Effect Measurements as an Indicator of the Order of Magnetic Phase Transitions.** *A. Aliev¹, A. Gamzatov¹ and Z. Alisultanov^{2,3}*
1. Laboratory of Low Temperature Physics and Magnetism, Amirkhanov Institute of Physics of Dagestan Federal Research Centre of RAS, Makhachkala, Russian Federation;
2. Amirkhanov Institute of Physics of Dagestan Federal Research Centre RAS, Makhachkala, Russian Federation;
3. Abrikosov Center for Theoretical Physics, MIPT — Moscow Institute of Physics and Technology, Dolgoprudnyi, Russian Federation
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9:15

- FG-03. Hysteresis and Kinetics of the First-Order Phase Transition: Losses in Magnetocaloric Effect Illustrated on the Ni-Mn-Ga-Cu.** *E. Dilmieva¹, Y. Koshkid'ko², A.P. Kamantsev³, D. Zhao⁴, J. Liu⁵ and S. Krämer⁶*
1. High Field Magnet Laboratory, Radboud University, Nijmegen, Netherlands;
2. Institute of Low Temperature and Structure Research of Polish Academy of Sciences, Wroclaw, Poland;
3. Kotelnikov Institute of Radioengineering and Electronics of Russian Academy of Sciences, Moscow, Russian Federation;
4. Hebei Key Laboratory of Photophysics Research and Application, College of Physics, Hebei Normal University, Shijiazhuang, China;
5. CAS Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China;
6. Laboratoire National des Champs Magnétiques Intenses, CNRS, Univ Grenoble Alpes, Univ Toulouse, Grenoble, France
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9:30

- FG-04. Reducing Energy Waste by Tuning Martensite in Heusler Alloys.** *A.A. Mendonça¹, L. Ghivelder², P. Bernardo³, L.F. Cohen⁴ and A. Gomes²*
1. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil;
2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil;
3. Instituto de Física, Universidade Estadual Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes, Brazil;
4. Department of Physics, Imperial College London, London, United Kingdom
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9:45

- FG-05. Simultaneous Multi-Property Analysis of Magneto-Structural Transitions at ESRF ID12.** *A. Aubert¹, K. Skokov¹, G. Gomez^{2,3}, F. Wilhelm², H. Wende³, A. Rogalev², K. Ollefs³ and O. Gutfleisch¹*
1. Technische Universität Darmstadt, Darmstadt, Germany;
2. ESRF, Grenoble, France;
3. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany
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- FG-06. Long-time aging of $\text{La(Fe,Si,Mn)}_{13}\text{H}_2$ microparticles using different fluids for magnetic refrigeration systems.** A.M. Döring^{2,1}, D.D. Reif², M.A. Rosa³, *G. Fidelis Peixer*³, F. Maccari¹, K. Skokov¹, O. Gutfleisch¹, P.A. Wendhausen³, J.A. Lozano³, J. Riso Barbosa Jr.³ and C.D. Teixeira²
1. TU Darmstadt, Darmstadt, Germany; 2. Universidade Federal de Santa Catarina, Blumenau, Brazil;
3. Universidade Federal de Santa Catarina, Florianópolis, Brazil
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- FG-07. Design of Magnetic Circuits for Magnetocaloric Refrigeration via Topology Optimization.** L.P. Cattelan¹, *G. Fidelis Peixer*¹, M. da Luz², J. Riso Barbosa Jr.¹ and J.A. Lozano¹ *1. Department of Mechanical Engineering, Federal University of Santa Catarina, Polo, Florianópolis, Brazil; 2. Department of Electrical Engineering, Federal University of Santa Catarina, Florianópolis, Brazil*
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- FG-08. Performance Evaluation of TRL-6 Magnetic Refrigeration Prototypes.** *G. Fidelis Peixer*¹, A.T. Dias Nakashima¹, N. Maleski de Sá¹, Y. Azeredo¹, A. Lorenzoni¹, G. Melo da Luz¹, R. Sawaya Sucaria¹, A. Marciel Döring², P. Vitor de Faria¹, B. Peressoni Vieira¹, C. Silva Teixeira², J.A. Lozano¹ and J. Riso Barbosa Jr.¹ *1. Department of Mechanical Engineering, Federal University of Santa Catarina, Polo, Florianópolis, Brazil; 2. Department of Materials Engineering, Federal University of Santa Catarina, Lab3M, Blumenau, Brazil*
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- FG-09. Magnetic and Calorimetric Properties in EuSe and $\text{EuSe}_{0.93}\text{S}_{0.07}$ Compounds.** *J. Caro Patiño*¹, D. Neto² and A. Gomes² *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil*
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- FG-10. On the magnetic and magnetocaloric features of $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$ -based materials: from bulk to nano.** *M. Balli*^{1,2}, O. Chdil¹, M. Abbasi² and P. Fournier²
1. International University of Rabat, Rabat, Morocco;
2. Institut Quantique, Université de Sherbrooke, Sherbrooke, QC, Canada
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- FG-11. Topological Nernst effect of Skyrmions in the Filled β -Mn-type $\text{Fe}_{2-x}\text{Pd}_x\text{Mo}_3\text{N}$ Chiral Magnetic Epitaxial Thin Films.** *B. Qiang*¹, K. Yamamoto¹, H. Asano¹, T. Miyamachi¹ and M. Mizuguchi¹ *I. Nagoya University, Nagoya, Japan*
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OCEANIA IV & V

Session GA**MAGNETIC SENSOR STANDARDIZATION**

Philip Keller, Chair

Metrolab Technology S.A., Plan-les-Ouates, Switzerland

2:00

- GA-01. Withdrawn**

2:00

- GA-02. Low-field, small footprint field magnetoresistive sensors compatible with large scale process integration. (Invited)** *S. Cardoso de Freitas*^{1,2}, R. Macedo¹, P. Araujo^{1,2}, E. Bastiana², M. Silva^{1,2} and P. Freitas^{1,2}
1. INESC Microsistemas e Nanotecnologias, Lisboa, Portugal; 2. Department of Physics, Instituto Superior Tecnico/Universidade de Lisboa, Lisboa, Portugal
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2:30

- GA-03. Magnetic measurement system and environmental magnetic field compensation at CEM. (Invited)** *S. Moltó González*¹, Y.A. Sanmamed¹ and J. Díaz de Aguilar¹
1. Department of Electricity and Energy, Centro Español de Metrología, Tres Cantos, Spain
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3:00

- GA-04. Tunable TMR sensors with magnetically-engineered – order/disorder – sensing layers. (Invited)** *M. Rasly*^{1,2,3}, T. Nakatani¹ and Y. Sakuraba¹ *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Nano-scale Electron Devices Lab, Electronics for Informatics, Hokkaido University, Sapporo, Japan; 3. Electronic and Magnetic Materials Department, Central Metallurgical Research and Development Institute, Helwan, Egypt*
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3:30

- GA-05. **Flexible, printed and eco-sustainable magnetic field sensors. (Invited)** *Y. Zabala¹, L. Guo¹, E. Oliveros-Mata¹, R. Xu¹ and D. Makarov¹ 1. HZDR, Dresden, Germany*
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4:00

- GA-06. **Characterisation of Magnetic Sensors for Space Applications – an NMI Perspective. (Invited)** *S. Harmon¹, G. Finch¹ and A. Wilson¹ 1. National Physical Laboratory, Teddington, United Kingdom*
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OCEANIA VI & VII

Session GB MULTILAYERS, SURFACE AND INTERFACE PHENOMENA

Kleber Pirota, Chair
University of Campinas, Campinas, Brazil

2:00

- GB-01. **Doped surfaces: a synthetic route to low damping in ferromagnetic transition metal thin films. (Invited)** *S. Azzawi^{1,2}, A. Umerski³, L. Sampaio⁴, S. Bunyayev⁵, G.N. Kakazei⁵ and D. Atkinson¹ 1. Durham University, Durham, United Kingdom; 2. Meters and Custody Transfer Department, Technical Directorate, Ministry of Oil, Baghdad, Iraq; 3. School of Mathematics and Statistics, Open University, Milton Keynes, United Kingdom; 4. Centro Brasileiro de Pesquisas Físicas (CBPF), Rio de Janeiro, Brazil; 5. IFIMUP/Department of Physics and Astronomy, Universidade do Porto, Porto, Portugal*
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2:30

- GB-03. **The impact of Fe²⁺ and Fe³⁺ segregation on the structural and magnetic properties of ZnO/Fe multilayers deposited via sputtering: a study using EELS and EDS.** *R. Checca¹, D. Franceschini², E.M. Saitovitch¹ and Y. Xing² 1. Brazilian Center for Research in Physics, Rio de Janeiro, Brazil; 2. Instituto de Física, Universidade Federal Fluminense, Niteroi, Brazil*
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- GB-04. Thermal stability of FeCo-Ag multilayer thin films for use in magnetoelectric heterostructures.** *T.R. Mion¹, M. Staruch², K. Bussmann² and P. Finkel²* *1. Nova Research, Alexandria, VA, United States; 2. Material Science & Technology Division, US Naval Research Laboratory, Washington, DC, United States*
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3:00

- GB-05. Antiferromagnetic Interlayer Exchange Coupled Multilayers.** *E. Darwin¹, R. Tomasello², P. Shepley³, N. Satchell⁴, M. Carpentieri², G. Finocchio⁵, B.J. Hickey³ and H.J. Hug^{1,6}* *1. EMPA, Zurich, Switzerland; 2. Politecnico di Bari, Bari, Italy; 3. University of Leeds, Leeds, United Kingdom; 4. Texas State University, San Marcos, TX, United States; 5. Università di Messina, Messina, Italy; 6. University of Basel, Basel, Switzerland*
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3:15

- GB-06. Magnetic Properties Dependence on Geometrical Parameters of Electroless-plated Ni-based Rhombohedral Nanotubes.** *F. Muench¹, S. Schaefer¹, M. Mendez², J. Fernández-Roldán², A.S. Gonzalez², V. Vega², U. Kunz¹, W. Ensinger¹, J. Garcia² and V.M. Prida²* *1. Technical University of Darmstadt, Darmstadt, Germany; 2. Departamento Física, Universidad de Oviedo, Oviedo, Spain*
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3:30

- GB-07. Comparison of techniques for the quantitative determination of the interfacial Dzyaloshinskii-Moriya interaction in ultrathin magnetic films. (Invited)** *M. Kuepferling¹, C.H. Back², A. Casiraghi¹, L. Chen², A. Di Pietro^{1,3}, G. Durin¹, F. García Sánchez⁴, B.J. Hickey⁵, C. Hwang⁶, G. Jakob⁷, M. Kläui⁷, M. Madami⁸, A. Magni¹, C. Marrows⁵, H. Nembach^{11,9}, V. Puliafito¹⁰, J.M. Shaw⁹, G. Soares¹, S. Tacchi¹² and G. Carlotti⁸* *1. INRIM, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Technische Universität München, Garching, Germany; 3. Politecnico di Torino, Torino, Italy; 4. Departamento de Física Aplicada, Universidad de Salamanca, Salamanca, Spain; 5. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 6. KRISS, Korea Research Institute of Standards and Science, Daejeon, The Republic of Korea; 7. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 8. Dipartimento di Fisica e Geologia, University of Perugia, Perugia, Italy; 9. Applied Physics Division, National Institute of Standards and Technology, Boulder, CO, United States; 10. Dipartimento di Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Bari, Italy; 11. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 12. CNR, Istituto Officina dei Materiali, Perugia, Italy*
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4:00

- GB-08. Bridging Simulation and Experiment: Tuning Dimensional Order in FeCo Magnetic Nanostructures.** *Y. Chen¹, H. Zhang² and A. El-Ghazaly³ 1. Department of Materials Science and Engineering, Cornell University, Ithaca, NY, United States; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY, United States; 3. Department of Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States*
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4:15

- GB-09. Electronic and magnetic properties of atomically-thin epitaxially-grown van der Waals ferromagnet Cr₂Te₃. (Invited)** *S. Mo¹ 1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
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OCEANIA IX & X

Session GC

HIGH FREQUENCY, MICROWAVE AND MILLIMETER WAVE MATERIALS AND DEVICES

Andrei Slavin, Co-Chair

Oakland University, Rochester Hills, MI, United States

Alexey Ustinov, Co-Chair

St. Petersburg Electrotechnical University, St.Petersburg, Russian Federation

2:00

- GC-01. Low-moment Ferrimagnets for Spintronic Devices for Operation in the High-GHz and THz Frequency Ranges. (Invited)** *P.S. Stamenov¹, J. Coey¹ and K. Rode¹ 1. School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland*
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2:30

- GC-02. IoT-Oriented Single-Transmitter Multiple-Receiver Wireless Charging Systems Using Hybrid Multi-Frequency Pulse Modulation.** *Y. Gong¹, Z. Zhang^{1,2}, Y. Wu¹ and Y. Gu¹ 1. School of Electrical and Information Engineering, Tianjin University, Tianjin, China; 2. International Institute for Innovative Design and Intelligent Manufacturing of Tianjin University, Shaoxing, China*
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2:45

- GC-03. Self-induced magnetic anisotropy in 3D printed ferromagnetic composites.** A. Le Saos-Kauten^{1,2}, A. Chevalier¹, A. Maalouf¹, A. Hoez¹, J. Ville², J. Mattei¹ and V. Laur¹ *1. Lab-STICC / University of Brest, Brest, France; 2. IRDL / University of Brest, Brest, France*
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3:00

- GC-04. Magnonic Physical Reservoir Computing. (Invited)** M. Kostylev¹ and S. Watt¹ *1. University of Western Australia, Crawley, WA, Australia*
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3:30

- GC-10. Complex permeability of noise suppression sheets up to 40 GHz evaluated with the improved shielded loop coil type permeameter.** T. Nakamura¹, Y. Sato¹, A. Itagaki¹, Y. Miyazawa², S. Yabukami³ and M. Yamaguchi²
1. R&D Department, Ryowa Electronics Inc., Sendai, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan; 3. Department of Biomedical Engineering, Tohoku University, Sendai, Japan
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3:45

- GC-07. Realization of a Current-Controlled Magnonic Physical Reservoir.** A.B. Ustinov¹, R.V. Haponchyk¹ and M. Kostylev²
1. Dept. of Physical Electronics and Technology, St. Petersburg Electrotechnical University, St.Petersburg, Russian Federation; 2. Department of Physics, University of Western Australia, Perth, WA, Australia
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4:00

- GC-08. Tri-layered Nanohollowspheres: An Interesting Approach to Superior Electromagnetic Wave Absorption.** A. Gorai¹ and K. Mandal¹ *1. Department of Condensed Matter and Materials Physics, Satyendra Nath Bose National Centre for Basic Sciences, Kolkata, India*
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4:15

- GC-09. Ka to V Microwave band tunable Barium Hexaferrite based Band-Stop Notch Filter.** V. Sharma¹ and B.K. Kuanr²
1. Department of Physics, Northeastern University, Boston, MA, United States; 2. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India
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- GC-05. Parallel line type permeameter for thick magnetic material to reduce the error of demagnetizing field.** *S. Yabukami*^{1,2}, A. Mashiko¹ and K. Okita² *1. Tohoku University, Sendai, Japan; 2. Tohoku-TMIT, Sendai, Japan*
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OCEANIA I & II

Session GD

ANTIFERROMAGNETIC SPINTRONICS WITH SKYRMIONS AND TEXTURES

Kun-Rok Jeon, Chair

Chung-Ang University (CAU), Seoul, The Republic of Korea

2:00

- GD-01. Progress and Perspectives on Silicon-compatible Antiferromagnetic Memory Devices. (Invited)** *P. Khalili*¹
1. Northwestern University, Evanston, IL, United States
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2:30

- GD-02. From Magnetostatics to Topology: Antiferromagnetic Vortex States in NiO-Fe Nanostructures.** *M. Slezak*¹, T. Wagner², O. Gomonay², V. Bharadwaj², A. Koziol Rachwal¹, T.O. Montes³, A. Locatelli³, M. Zajac⁴, D. Wilgocka-Slezak⁵, P. Drozd⁶ and T. Slezak¹ *1. AGH University of Science and Technology, Krakow, Poland; 2. Institute of Physics, Johannes Gutenberg-University, Mainz, Germany; 3. Elettra - Sincrotrone Trieste S.C.p.A., Basovizza, Trieste, Italy; 4. National Synchrotron Radiation Centre SOLARIS, Jagiellonian University, Krakow, Poland; 5. Jerzy Haber Institute of Catalysis and Surface Chemistry PAS, Krakow, Poland; 6. Institute of Physics, Maria Curie-Skłodowska University, Lublin, Poland*
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2:45

- GD-03. Antiferromagnetic exchange coupling across transition metal films alloyed with ferromagnetic elements.** *D. Legut*^{1,2}, S. Arapan¹, K. Winther³, Z.R. Nunn³, J. Lisik³, F. Schulz⁴, E. Goering⁴, T. Mckinnon³, S. Myrtle³ and E. Girt³
1. IT4Innovations, VSB - Technical University of Ostrava, Ostrava, Czechia; 2. Charles University in Prague, Prague, Czechia; 3. Simon Fraser University, Burnaby, BC, Canada; 4. Max Planck Institute for Intelligent Systems, Stuttgart, Germany
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- GD-04. Electrical full switching of non-collinear antiferromagnetic order. (Invited)** K. Kondou¹, T. Higo², T. Nomoto², M. Shiga³, S. Sakamoto³, X. Chen³, D. Nishio-Hamane³, R. Arita², Y. Otani³, S. Miwa³ and S. Nakatsuji² *1. RIKEN, Wako, Japan; 2. The University of Tokyo, Bunkyo-ku, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan*
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- GD-05. Antiferromagnetic Spin Structures beyond Skyrmions: antiferromagnetic merons and antimerons in synthetic antiferromagnets.** M. Bhukta¹, T. Dohi^{1,2}, V. Bharadwaj¹, R. Zarzuela¹, M. Syskaki¹, M. Foerster³, M. Angel³, J. Sinova¹, R. Frömter¹ and M. Kläui¹ *1. Universität Mainz, Mainz, Germany; 2. RIEC, Tohoku University, Sendai, Japan; 3. ALBA, Barcelona, Spain*
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- GD-06. Anomalous Hall effect in Altermagnetic RuO₂ Thin Films.** R.D. Gonzalez Betancourt^{1,2}, T. Tschirner^{1,3}, P. Kessler^{3,4}, T. Kotte⁵, D. Kriegner^{2,6}, B. Buchner^{1,3,6}, J. Dufouleur¹, M. Kamp⁸, V. Jovic⁹, L. Smejkal^{2,7}, J. Sinova^{2,7}, R. Claessen^{3,4}, T. Jungwirth^{2,10}, S. Moser^{3,4}, H. Reichlova^{2,6} and L. Veyrat^{1,3,4} *1. Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 2. Institute of Physics of the Czech Academy of Sciences, Prague, Czechia; 3. Würzburg-Dresden Cluster of Excellence ct.qmat, Würzburg, Germany; 4. Physikalisches Institut, Universität Würzburg, Würzburg, Germany; 5. HLD-EMFL, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 6. Institute of Solid State and Materials Physics, Technische Universität Dresden, Dresden, Germany; 7. Johannes Gutenberg Universität of Mainz, Mainz, Germany; 8. Physikalisches Institut, Universität Würzburg, Würzburg, Germany; 9. Earth Resources and Materials, Institute of Geological and Nuclear Science, Lower Hutt, New Zealand; 10. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*
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- GD-07. Narrowband THz Emission from a Single Antiferromagnetic Cycloid BiFeO₃ Thin Film.** S. Massabeau¹, A. Abdelsamie^{1,2}, P. Dufour¹, A. Finco², M. Viret³, K. Bouzehouane¹, V. Jacques², J. Chauleau³, J. George¹, H. Jaffrès¹, S. Fusil¹, R. Lebrun¹ and V. Garcia¹ *1. Laboratoire Albert Fert, CNRS, University of Paris-Sud, Paris, France; 2. Laboratoire Charles Coulomb, Université de Montpellier, CNRS, Montpellier, France; 3. SPEC, CEA, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France*
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- GD-08. Anomalous Nernst effect of altermagnetic Mn_5Si_3 .**
*A. Badura*¹, *W. Campos*², *V. Bharadwaj*², *J. Rial*³, *I. Kounta*⁴,
*L. Michez*⁴, *J. Zemen*⁵, *F. Krizek*¹, *S. Sailler*⁶, *M. Leiviskä*¹,
*V. Baltz*³, *D. Kriegner*¹, *T. Jungwirth*¹, *L. Smejkal*²,
*S. Goennenwein*⁶ and *H. Reichlova*¹ *1. Institute of Physics*
ASCR, v. v. i., Prague, Czechia; 2. Institut für Physik,
Johannes Gutenberg Universität, Mainz, Germany;
3. Univ. Grenoble Alpes, CNRS, CEA, Grenoble INP, Spintec,
Grenoble, France; 4. Aix-Marseille University, CNRS,
CINaM, Marseille, France; 5. Faculty of Electrical
Engineering, Czech Technical University, Prague, Czechia;
6. Universität Konstanz, Fachbereich Physik, Konstanz,
Germany
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- GD-09. Antiferromagnetic Skyrmions: from enhancing deterministic motion control to boosting thermal skyrmion diffusion.** *M. Kläui*¹, *T. Dohi*^{1,2}, *M. Bhukta*¹,
*F. Kammerbauer*¹, *M. Syskaki*¹, *K. Raab*¹, *M. Weissenhofer*³,
*S. Wintz*⁴, *R. Frömter*¹, *G. Jakob*¹ and *U. Nowak*³
1. Universität Mainz, Mainz, Germany; 2. RIEC, Tohoku
University, Sendai, Japan; 3. University of Konstanz,
Konstanz, Germany; 4. HZB, Berlin, Germany
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- GD-10. First-Order Reversal Curve (FORC) Features of Ferrimagnetic and Antiferromagnetic Coupled Skyrmions.** *L.S. Palhares*^{1,2}, *J. Brandao*² and *F. Béron*¹
1. Instituto de Física Gleb Wataghin, Universidad Estadual
de Campinas, Campinas, Brazil; 2. Laboratório Nacional de
Luz Síncrotron, Centro Nacional de Pesquisa em Energia e
Materiais, Campinas, Brazil
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Session GE
**PERMANENT MAGNET, HIGH-SPEED,
 WOUND-FIELD, INDUCTION AND
 RELUCTANCE MACHINES**

Min-Fu Hsieh, Co-Chair
 National Cheng Kung University, Tainan, Taiwan

Po-Wei Huang, Co-Chair
 National Cheng Kung University, Tainan, Taiwan

2:00

GE-02. Relationship between Temperature Control and Iron Loss Reduction by Secondary Current Heating Method.

Y. Tsuchida¹ and T. Yano¹ 1. Oita University, Oita, Japan

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2:15

GE-05. Transverse Flux Topology for High Efficiency Solutions.

C. Schmitz¹ and D. Schmitz¹ 1. Research and Product Development – R&D, WEG, Jaraguá do Sul, Brazil

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2:30

GE-08. Design and Analysis of a High-Speed Slotless Permanent Magnet Synchronous Motor Considering Air-Gap Airflow.

M. Guo¹, G. Cao¹, H. Hu¹, S. Huang¹, H. Wang¹ and J. He² 1. Guangdong Key Laboratory of Electromagnetic Control and Intelligent Robots, College of Mechatronics and Control Engineering, Shenzhen University, Shenzhen, China;

2. Department of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, United States

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2:45

GE-09. Development of Magneto-Thermo-Mechanical Analytical Models for High-Speed Induction Machine.

L. Dahnoun^{1,2}, J. Fontchastagner¹, C. Viguier² and N. Takorabet¹

1. GREEN, Université de Lorraine, Nancy, France;

2. Safran Tech, Magny-lès-Hameaux, France

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- GE-11. Hybrid Three-Layer Sub-Harmonic Synchronous Machine using Consequent Pole Permanent Magnets.** S. Rafin¹, Q. Ali², F. Zhao³ and O.A. Mohammed¹
1. Department of Electrical and Computer Engineering, Florida International University, Miami, FL, United States; 2. Department of Electrical Engineering, Sukkur IBA University, Sukkur, Pakistan; 3. School of Mechanical Engineering and Automation, Harbin Institute of Technology, Shenzhen, China
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EUROPA II

Session GF
AMORPHOUS AND NANOCRYSTALLINE SOFT
MAGNETIC MATERIALS

Massimo Pasquale, Chair
 INRIM, Torino, Italy

2:00

- GF-01. Impact of conventional and ultra-rapid annealing on microstructure and coercivity of Ni-rich nanocrystalline Fe-Ni-Nb-B alloys. (Invited)** I. Skorvanek¹, J. Marcin¹, B. Kunca¹ and P. Svec² *1. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia; 2. Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia*
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2:30

- GF-02. The Effects of B/Si Ratio on the Surface Crystals and Magnetic Properties of $\text{Fe}_{80}(\text{B}_a\text{Si}_b)_{15}\text{C}_1\text{Cu}_1\text{Nb}_3$ Nanocrystal Soft Magnetic Alloys.** S. An^{1,2}, H. Im^{1,2}, K. Kim¹, S. Yang¹, J. Lee² and J. Jeong¹ *1. Metal Powder Department, Korea Institute of Materials Science, Changwon, The Republic of Korea; 2. Department of Materials Science and Engineering, Pusan National University, Pusan, The Republic of Korea*
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2:45

- GF-03. Effect of Nb/ Zr co-adding on the microstructures and soft magnetic properties of $\text{Fe}_{77.5}\text{Si}_{11.5}\text{B}_7\text{Nb}_x\text{Zr}_{3-x}\text{Cu}_1$ nanocrystalline Alloys.** H. Im^{1,2}, S. An^{1,2}, J. Lee², K. Kim¹, S. Yang¹ and J. Jeong¹ *1. Korea Institute of Materials Science, Changwon-si, The Republic of Korea; 2. Pusan National University, Pusan, The Republic of Korea*
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3:00

- GF-04. Magnetic and structural properties of nanocrystalline FeCuNbSiB thin films.** *J.M. Alves¹, N. Checca¹, D. Gonzalez-Chavez¹, B.G. Silva¹ and R.L. Sommer¹*
1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil
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3:15

- GF-05. Local Magnetization Processes at Constricted Regions in Amorphous Fe₈₀B₂₀ Stripes with Nanometric Thicknesses.** *J.M. González¹, U. Urdirroz¹, M. Alonso¹, F. Palomares¹, R. Fernandez-Jimenez¹, J. Soler-Morala¹, F. Cebollada², M. Sánchez-Agudo², A. Gómez³, M. Magaz³, I. Soldatov⁴ and R. Schäffer⁴*
1. Nanoscience and Nanotechnology, ICMM-CSIC, Madrid, Spain; 2. POEMMA-CEMDATIC, ETSIT-UPM, Madrid, Spain; 3. Centro de Astrobiología, CSIC-INTA, Torrejón de Ardoz, Spain; 4. Leibniz Institute for Solid State and Materials Research (IFW), Dresden, Germany
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3:30

- GF-06. Effect of Magnetostatic Interaction on the Single Domain Wall Propagation in Magnetic Microwires.** *P. Corte-Leon^{1,2,3}, A. Gonzalez Villegas^{1,2,3}, J. Blanco^{2,3}, V. Zhukova^{1,2,3}, M. Ipatov^{1,2} and A. Zhukov^{1,4,2}*
1. Dept. Polymers and Advanced Materials, University of Basque Country, UPV/EHU, San Sebastian, Spain; 2. Dept. Applied Physics, University of Basque Country, EIG, UPV/EHU, San Sebastian, Spain; 3. EHU Quantum Center, University of the Basque Country, UPV/EHU, San Sebastian, Spain; 4. Ikerbasque, Basque Foundation for Science, San Sebastian, Spain
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3:45

- GF-07. Measurement of Magnetic Barkhausen Noise on Alloy Foils Used for Inductor Core in Power Electronics Applications.** *S. Tamaru¹ and T. Yamazaki²*
1. RCECT, Sangyo Gijutsu Sogo Kenkyujo Tsukuba Chuo, Tsukuba, Japan; 2. Department of Materials Science and Technology, Tokyo University of Science, Katsushika, Japan
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4:00

- GF-08. The Study the Characteristics the Magnetic Response of Microspirals Made of an Amorphous Magnetic Alloy.** *L. Shendrikova¹, Y. Alekhina¹, A. Shalygin¹ and N.S. Perov¹*
1. Lomonosov Moscow State University, Moscow, Russian Federation
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- GF-10. Magnetic Properties of Amorphous Fe-Si-Cr-B-C Alloy by Melt-spinning and Selective Laser Melting for Electrical Machines.** *P. Tiberto*¹, *P. Sharangi*¹, *G. Barrera*¹, *E. Ferrara*¹, *A. Ghavimi*², *R. Busch*², *I. Gallino*^{3,2}, *M. Rodriguez*⁴, *M. Perez Prado*⁴, *L. Thorsson*⁵ and *H. Wachter*⁵ *1. INRIM, Torino, Italy; 2. Saarland University, Saarbrücken, Germany; 3. TU Berlin, Berlin, Germany; 4. IMDEA, Madrid, Spain; 5. AMLOY GmbH, Karlstein, Germany*
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- GF-11. Effect of heavy metal (HM) stacking on magnetic anisotropy of HM/CoFeB/MgO structures.** *S. Ahn*¹
1. POSTECH, Pohang, The Republic of Korea
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EUROPA IV

Session GG

THIN FILMS AND SURFACE EFFECTS

Juliano Denardin, Chair
 Universidad de Santiago, Santiago, Chile

- GG-01. Voltage-controlled Spintronics Heterostructures for Magnetoelectric Memory and Stochastic Computing Applications. (Invited)** *K. Wang*^{1,2} *1. Department of Electrical and Computer Engineering, University of California, Los Angeles, Los Angeles, CA, United States; 2. Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA, United States*
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- GG-02. Engineering nanocolumnar magnetic films with temperature.** *M. Garrido-Segovia*^{1,2}, *E. Navarro*^{2,3}, *A. Espinosa*⁴ and *J. García-Martín*¹ *1. Instituto de Micro y Nanotecnología, CSIC, Tres Cantos, Spain; 2. Física de Materiales, Universidad Complutense de Madrid, Madrid, Spain; 3. Instituto de Magnetismo Aplicado, Las Rozas, Spain; 4. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*
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- GG-03. Room Temperature Covalent 2D Magnet FeSe_x.** C. Huai¹, M. Bian¹, R. Sabirianov² and H. Zeng¹ *1. Department of Physics, University at Buffalo, Buffalo, NY, United States; 2. Department of Physics, University of Nebraska-Omaha, Omaha, Omaha, NE, United States*
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- GG-04. Direct Observation of Domain Configurations in Elongated Antidots Lattices at Different Applied Fields.** J.L. Palma^{1,6}, A. Pereira², R. Alvaro³, S. Michea⁴, J. Garcia-Martin³ and J. Escrig^{5,6} *1. Engineering School, Universidad Central de Chile, Santiago, Chile; 2. Universidad Adolfo Ibañez, Santiago, Chile; 3. IMN-CNM, Instituto de Micro y Nanotecnología, Madrid, Spain; 4. Institute of Applied Sciences, Universidad Autónoma de Chile, Santiago, Chile; 5. Departamento de Física, Universidad de Santiago, Santiago, Chile; 6. CEDENNA, Center for the Development of Nanoscience and Nanotechnology, Santiago, Chile*
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- GG-05. Magnetic and transport properties in ion-irradiated Cr₂AlC.** J. Salgado Cabaco^{1,2}, U. Kentsch¹, F. Long¹, F. Ganss¹, J. Lindner¹, J. Fassbender^{1,3}, C. Leyens², R. Bali¹ and R. Boucher² *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Dresden, Institute of Materials Science, Dresden, Germany; 3. Technische Universität Dresden, Institute of Solid State and Materials Physics, Dresden, Germany*
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- GG-06. Hard-axis collapse and recoil-curve overshoot in thin magnetic films.** A. M. H. de Andrade¹, L. F. S. Azeredo^{1,2}, H. Acosta¹ and J. Geshev¹ *1. Institute of Physics, UFRGS, Porto Alegre, Brazil; 2. Instituto Federal Sul-rio-grandense, Santana do Livramento, Brazil*
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- GG-07. Monitoring Iron Oxide Thin Film Growth by Plasma Emission Spectrometry in Reactive Sputtering Process.** R. Minami¹, E. Kita¹, S. Sharmin¹ and H. Yanagihara^{1,2} *1. University of Tsukuba, Tsukuba, Japan; 2. Tsukuba Research Center for Energy Materials Science (TREMS), University of Tsukuba, Tsukuba, Japan*
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- GG-08. Structural and magnetic properties of ultrathin films calculated from first-principles.** J.N. Rychly-Gruszecka¹, J. Marciniak¹, J. Snarski-Adamski¹, J. Meixner¹, W. Marciniak¹, J. Rusz² and M. Werwinski¹ *1. Department of Theory of Nanostructures and Quantum Materials, Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*
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- GG-09. Thin film epitaxial [111] Co₅₀Pt₅₀: structure, magnetization, and spin polarization.** N. Satchell^{1,2}, S. Gupta², M. Maheshwari², P. Shepley², M. Rogers², O. Cespedes² and G. Burnell¹ *1. Department of Physics, Texas State University, San Marcos, TX, United States; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*
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- GG-11. Spin-triplet supercurrent optimization in ferromagnetic Josephson junctions.** R.M. Klaes¹ and N.O. Birge¹ *1. Department of Physics and Astronomy, Michigan State University, East Lansing, MI, United States*
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Session VP1

FIELD MODULATED MACHINES (Poster Virtual Session)

Mohamed Ibrahim, Co-Chair
 University of Ghent, Gent, Belgium

Metin Aydin, Co-Chair
 Kocaeli University, Umuttepe, Izmit, Turkey

- VP1-01. Research on Stator Loss Suppression of a Dual-Rotor Flux-Modulated PM Motor based on Harmonic Directional Reduction.** Z. Xiang¹ and H. Qian¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP1-02. A New Dual Stator Field Modulation Machine with Tangential Excitation Permanent Magnet.** F. Bian¹, M. LI¹ and Z. Li¹ *1. Zhongyuan University of Technology, Zhengzhou, China*
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- VP1-03. A New Radial Hybrid Consequent-Pole Permanent Magnet Vernier Machine.** R. Yao¹, H. Wang¹, Y. Sha¹, Y. Xu¹ and C. Feng¹ *1. Nanjing Normal University, Nanjing, China*
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- VP1-04. Improvement of Torque and Loss Characteristics for an In-Wheel Permanent Magnet Motor Based on Featured-Airgap-Harmonic.** J. Ren¹, L. Quan¹ and Z. Xiang¹ *1. Department of Electrical Engineering, School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP1-05. Design and Analysis of a High Torque Performance Dual-Side PM Vernier Motor with Synergetic Modulation Enhancement.** Z. Xiang¹ and S. Gui¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP1-06. Torque Quality Improvement Design and Analysis of Bi-Directional Magnetic Field Modulation PM Motor By Multi-Harmonic Flux-Barrier Modulator.** H. Tian¹, D. Fan¹, X. Zhu¹, W. Shan¹ and Z. Xiang¹ *1. Jiangsu University, Zhenjiang, China*
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- VP1-07. Comparative analysis Between Split Stator Permanent Magnet Machine and Flux Reverse Machine.** C. Zhang¹, H. Wang¹ and C. He¹ *1. Nanjing Normal University, Nanjing, China*
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- VP1-08. A Multi-Modular Magnetic Millirobot with a Variable Equilibrium Posture Capability.** Y. Lee¹, J. Lee¹ and S. Jeon^{1,2} *1. MESL, Department of Mechanical and Automotive Engineering, Kongju National University, Cheonan, The Republic of Korea; 2. GITECH, Cheonan, The Republic of Korea*
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- VP1-09. Parametric Sensitivity Analysis and Efficiency improvement of Electromagnetic Repulsion Mechanism based on Orthogonal Experiment Design.** W. Yang¹, F. Meng¹ and D. Wu¹ *1. Harbin Institute of Technology, Harbin, China*
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- VP1-10. Research on the Performance of Bidirectional Field Modulation Machine with Separated Type PM Excitation with Different slot-pole Combinations.** Y. Zhang¹, H. Wang¹, C. He¹ and H. Zhu² *1. Nanjing Normal University, Nanjing, China; 2. State Grid Anqing Power Supply Company, Anqing, China*
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- VP1-11. A Flux Reversal Permanent Magnet Motor with Uneven Magnetomotive Force Shift.** H. Chen¹, F. Xiao¹, Y. Du¹ and X. Zhu¹ *1. Jiangsu University, Zhenjiang, China*
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- VP1-12. Performance Improvement of Five-Phase Hybrid Excited Flux Switching Machine using Dual Stator Configuration.** S. Bukhari¹, M. Ali², J. Ikram², U. Bin Farooq² and S. Abbas²
1. Department of Electrical Engineering, Tampere University, Tampere, Finland; 2. COMSATS Institute of Information Technology, Islamabad, Pakistan
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- VP1-13. Design of Winding Configuration for E-Core FSPM Motor Based on Synthesis EMF Vectors.** Y. Mao¹, F. Xiao¹, Y. Du¹, X. Zhu¹, L. Quan¹ and C. Zhang¹ *1. Jiangsu University, Zhenjiang, China*
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- VP1-14. Power factor Improvement Design and Investigation of V-Shaped PM Vernier Motor by Multiple Flux Modulation.** D. Pang¹, X. Zhu¹ and D. Fan¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP1-15. Analysis of Air-gap Field Modulation in Asymmetric Stator Tooth Bilateral-Excitation Flux Modulation Machine.** F. Zhao¹, K. Yang¹, R. Liu¹, J. Yu¹, S. Rafin², Q. Ali⁴ and D. Chen³ *1. Harbin Institute of Technology, Shenzhen, China; 2. Florida International University, Miami, FL, United States; 3. Shenyang University of Technology, Shenyang, China; 4. Sukkur IBA University, Sukkur, Pakistan*
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Session VP2

HARD MAGNETIC MATERIALS IV (Poster Virtual Session)

Imants Dirba, Chair
TU Darmstadt, Darmstadt, Germany

- VP2-01. Efficient Grain Boundary Diffusion Technology in Sintered Nd-Fe-B Magnets: Nano-TbF₃ Powders Electrophoretic Suspension Preparation via Sand-Milling.** M. Ji¹, W. Liu¹, Z. Wang¹, H. Wu¹, Y. Li¹, D. Zhang¹ and M. Yue¹ *1. Beijing University of Technology, Beijing, China*
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- VP2-02. Preparation of Nd-Fe-B films via a low-temperature process.** K. Higashi¹, G. Tahara¹, I. Fukuda¹, A. Yamashita¹, T. Yanai¹, H. Fukunaga¹, K. Nagai², T. Shinshi² and M. Nakano¹ *1. Nagasaki University, Nagasaki City, Japan; 2. Tokyo Institute of Technology, Tokyo, Japan*
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- VP2-03. Optimization of the Performance of Permanent Magnet Motor by Selected Grain Boundary Diffusion with Different Dy and Tb Ratio.** X. Lu¹, W. Li¹, L. Zeng² and R. Pei^{1,2} *1. Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China; 2. Suzhou Inn-mag New Energy Ltd., Suzhou, China*
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- VP2-04. Short-time annealing enhancing the magnetic properties and microstructure uniformity of melt-spun (Nd,Pr)-Fe-B ribbons.** *L. Liu¹, Y. Li¹, J. Wang¹, L. Liu¹, M. Bian¹, H. Zhang¹ and M. Yue¹ 1. Beijing University of Technology, Beijing, China*
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Session VP3

**HIGH-SPEED, WOUND-FIELD, INDUCTION AND
RELUCTANCE MACHINES II
(Poster Virtual Session)**

Shuangxia Niu, Chair

The Hong Kong Polytechnic University, Kowloon, Hong Kong

- VP3-01. Analysis of Air-gap Field Modulation Effect on Torque for 6-Slot 4-Pole High-Speed Permanent Magnet Machine.** *K. Li¹, C. Wang^{1,2}, Y. Li³ and Z. Zhang⁴ 1. School of Electrical Engineering, Anhui Polytechnic University, WuHu, China; 2. Aote Langbo Elevator Co., Ltd, Huzhou, China; 3. School of Electrical Engineering and Automation, Anhui University, Hefei, China; 4. College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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- VP3-02. Electromagnetic Vibration Improvement for a High-Speed Flat Wire PM Motor based on Optimal Magnetic-Pole-Boundary.** *J. Bai¹, X. Zhu¹ and Z. Xiang¹ 1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP3-03. Design Considerations of High-speed PMSM with Nonuniform Two-Segment Halbach Magnet Array.** *X. Xie¹, C. Liao¹ and Z. Zhang¹ 1. Department of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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- VP3-04. Novel Self-Excited Brushless Topology for Wound Field Vernier Machine.** *S. Bukhari¹ 1. Department of Electrical Engineering, Tampere University, Tampere, Finland*
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- VP3-05. Design and Analysis of New Beveling Consequent Pole Hybrid Magnet Dual Stator Machines.** *Y. Sha¹, H. Wang¹, R. Yao¹, Y. Xu¹ and J. Yang¹ 1. Nanjing Normal University, Nanjing, China*
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- VP3-06. Analysis and Comparison between Pole-Changing and Hybrid-Excited Flux Switching Motors.** *Z. He¹, F. Xiao¹, Y. Du¹ and X. Zhu¹ 1. Jiangsu University, Zhenjiang, China*
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- VP3-07. Performance Improvement of the Brushless Wound-Rotor Vernier Machine by One-Fourth Sub-Harmonic Components of the Frequency.** *S. Bukhari*¹, *U. Bin Farooq*², *J. Ikram*², *L. Khan*² and *T. Bashir*² *1. Department of Electrical Engineering, Tampere University, Finland, Tampere, Finland; 2. COMSATS Institute of Information Technology, Islamabad, Pakistan*
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- VP3-08. Performance Analysis of Axial Flux Brushless Wound Rotor Synchronous Machine Utilizing Third Harmonic.** *S. Bukhari*¹, *S. Abbas*², *J. Ikram*², *Z. Ayub*² and *A. Khan*² *1. Department of Electrical Engineering, Tampere University, Finland, Tampere, Finland; 2. COMSATS Institute of Information Technology, Islamabad, Pakistan*
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- VP3-09. Rotor Inter-Turn Short Detection Based on the Stator Current Vector Modulus of the Excitation Machine.** *L. Shi*¹, *Z. Zhang*¹, *J. Ma*¹, *W. Li*¹, *R. Li*¹, *X. Wu*¹ and *X. He*¹ *1. School of Electrical and Mechanical Engineering, Xuchang University, Xuchang, China*
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- VP3-10. Rotor Barrier Shape Design Optimization of a Novel Synchronous Reluctance Machine with Grain-Oriented Electrical Steel.** *S. Zhang*¹, *C. Liu*¹, *Y. Wang*¹ and *J. Zhu*² *1. Hebei University of Technology, Tianjin, China; 2. University of Sydney, Sydney, NSW, Australia*
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- VP3-11. Research on the Relationship between the Distribution of High-Permeability Materials in Rotor and Characteristics of Magnetic Field in Machines.** *X. Liang*¹, *M. Wang*¹, *Y. Liu*¹, *P. Zheng*¹ and *W. Li*¹ *1. Harbin Institute of Technology, Harbin, China*
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- VP3-12. Suppression of External Alternating Field of HTS Excitation Coil in Homopolar Inductor Machine.** *Y. Pan*¹, *J. Yang*¹, *Q. Li*¹, *S. Huang*¹ and *J. Ma*² *1. Hunan University, Changsha City, China; 2. University of Bristol, Bristol, United Kingdom*
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- VP3-13. Analysis Method of Squirrel Cage Induction Motor for Traction Applications considering Slot Harmonics.** *C. Song*¹, *D. Park*¹ and *M. Lim*¹ *1. Hanyang University, Seoul, The Republic of Korea*
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- VP3-14. A Two-State Autonomous Resonant Coordinated Electromagnetic Speed Limiting System for Wind Power.** *J. Ma*¹, *Z. Zhang*¹, *L. Shi*¹, *W. Li*¹, *X. Wu*¹ and *Y. Liang*¹ *1. School of Electrical and Mechanical Engineering, Xuchang University, Xuchang, China*
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- VP3-15. Advanced Lumped Parameter Thermal Network for Modeling of Cooling Solutions in Electric Vehicle Motor Applications.** *A.J. Bourgault¹, O. Taqavi¹, Z. Li¹, G. Byczynski² and N. Kar¹* *1. Department of Electrical Engineering, University of Windsor, Windsor, ON, Canada; 2. Nemak, Windsor, ON, Canada*
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- VP3-16. Performance Improvement of Brushless Exciter for Aircraft Wound Rotor Synchronous Machine Based on Magnetic Slot Wedge.** *W. Bian¹, Z. Zhang¹, L. Li¹, J. Li¹ and Y. Li¹* *1. College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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Session VP4

INTERDISCIPLINARY TOPICS IN MAGNETICS II (Poster Virtual Session)

Bruno Silva, Chair

Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil

- VP4-01. Local adjustment of the mechanical properties of a magnetically controlled airway stent by laser powder bed fusion.** *K. Schäfer^{1,2}, M. Lutzi^{1,2}, M. Khan^{1,2}, L. Schäfer^{1,2}, I. Dirba^{1,2}, S. Bruns^{3,2}, I. Valizadeh^{4,2}, O. Weeger^{4,2}, C. Hartmann⁵, M. Kupnik⁵, E. Adabifiroozjaei⁶, L. Molina-Luna⁶, K. Skokov^{1,2} and O. Gutfleisch^{1,2}*
1. Functional Materials, TU Darmstadt, Darmstadt, Germany; 2. Additive Manufacturing Center, Darmstadt, Germany; 3. Physical Metallurgy, Darmstadt, Germany; 4. Cyber-Physical Simulation, Darmstadt, Germany; 5. Measurement and Sensor Technology Group, Darmstadt, Germany; 6. Advanced Electron Microscopy, Darmstadt, Germany
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- VP4-02. Magnetic Nanoparticles (MNPs) Based 2-Phase Memory Devices.** *R.A. Mendonsa¹, S. Liang² and J. Wang^{1,2}*
1. Department of Electrical Engineering, University of Minnesota, Edina, MN, United States; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States
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- VP4-03. Magnetization mechanisms for the non-destructive evaluation of early-stage low temperature thermal oxidation in low-carbon steels.** *A. Mongshi¹, Y. Tene Deffo¹, N. Mary², P. Tsafack¹, J. Mognotte^{3,4} and B. Ducharne^{3,5}*
1. Laboratory of Electrical Engineering and Computing (LEEC), University of Buea, P.O. Box 63, Buea, Cameroon, Buea, Cameroon; 2. Univ Lyon, INSA Lyon, UCBL1, CNRS, MATEIS UMR5510, F-69621 Villeurbanne, France, Villeurbanne, France; 3. Univ Lyon, INSA Lyon, LGEF EA682, 69621 Villeurbanne, France, Villeurbanne, France; 4. Hybria Institute of Business and Technologies, Ecully CAMPUS, 69130 Ecully, France, Ecully, France; 5. Univ Lyon, INSA Lyon, Centrale Lyon, UCBL1, Tohoku University, ELYTMaX IRL3757, Sendai 980-8577, Japan, Sendai, Japan
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- VP4-04. Dynamics of the Shape of Magnetic Fluid Droplets under the Influence of a Magnetic Field: Experiment and Lattice Boltzmann Simulation.** *D. Kalyuzhnaya¹, E. Sokolov¹, A. Pribylov¹, G. Zhukov¹, R. Politov¹ and P. Ryapolov¹*
1. Southwest State University, Kursk, Russian Federation
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- VP4-05. Calculation of Mutual Inductance between Trapezoidal and Rectangular Coils with Angular Misalignment.** *D. Kim¹, S. Lee¹ and D. Kim¹* *1. Department of Automotive Engineering, Yeungnam University, Gyeongsan, The Republic of Korea*
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- VP4-06. Wave-Driven Magnetic Levitation-Based Energy Harvesting.** *J. Park¹, Y. Choi¹, N. Wereley¹ and A. Flatau¹*
1. Department of Aerospace Engineering, University of Maryland at College Park, College Park, MD, United States
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- VP4-07. Research on Wireless Power Transfer Coil for Real-Time Body Temperature Telemetry System.** *T. Omori¹, F. Sato¹, Y. Furuya² and S. Sasaki²* *1. Graduate School of Engineering, Tohoku-Gakuin University, Tagajo, Japan; 2. Hikaridenshi Co., Ltd., Osaki, Japan*
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- VP4-08. A Comprehensive Study of Structural, Magnetic and Dielectric Properties in Fe³⁺ and Y³⁺ Substituted NiCr₂O₄.** *J. Barman¹, S. Verma¹ and S. Ravi¹* *1. Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India*
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- VP4-09. Comparative study of structural and magnetic properties of Nd₂CoMnO₆ compound.** *N. Nayak¹ and S. Ravi¹*
1. Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India
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- VP4-10. Lateral modulation of magnetic anisotropy in multilayer by grayscale lithography followed by ion irradiation.** *D. Oshima² and T. Kato^{2,1}* *1. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan; 2. Department of Electronics, Nagoya University, Nagoya, Japan*
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- VP4-11. Energy of a Fully Spin-Polarized Two-Dimensional Electron Gas Separated from its Jellium Neutralizing Background.** *O. Ciftja*¹ 1. *Department of Physics, Prairie View A&M University, Prairie View, TX, United States*
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- VP4-13. Field-induced self-assembly and subsequent disaggregation of superparamagnetic iron oxide nanoparticles: insights from an image-based experimental approach.** *S. Ciannella*¹, *B. Dodge*¹, *K. Wu*², *J. Wang*³ and *J. Gomez-Pastora*¹ 1. *Department of Chemical Engineering, Texas Tech University, Lubbock, TX, United States;* 2. *Department of Electrical and Computer Engineering, Texas Tech University, Lubbock, TX, United States;* 3. *Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*
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- VP4-14. The Critical Behavior of Magnetization near the Curie Temperature in Highly Spin-Polarized Heusler Alloy Co₂TiGa_{0.3}Sn_{0.7}.** *H. Aoshima*¹, *I. Shigeta*¹, *A. Nomura*², *K. Yubuta*², *T. Yamauchi*³, *R. Umetsu*², *T. Kanomata*⁴ and *M. Hiroi*¹ 1. *Department of Physics and Astronomy, Kagoshima University, Kagoshima, Japan;* 2. *Tohoku University, Sendai, Japan;* 3. *The University of Tokyo, Kashiwa, Japan;* 4. *Tohoku Gakuin University, Tagajo, Japan*
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- VP4-16. Restoration of Magnetic Order in Heavy Metal Doped Spin Glass.** *S. Samatham*¹, *A.K. Patel*⁴, *P. Khandelwal*², *S. Shravan Kumar Reddy*¹, *G. Babbadi*⁵, *C.S. M*¹, *M. Patwari*³ and *K. G. Suresh*² 1. *Department of Physics, Chaitanya Bharathi Institute of Technology, Hyderabad, Hyderabad, India;* 2. *Department of Physics, Indian Institute of Technology Bombay, Mumbai, India;* 3. *Department of Chemistry, Chaitanya Bharathi Institute of Technology, Hyderabad, India;* 4. *Research Centre for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan;* 5. *Department of Physics, Government College (Autonomous), Rajahmundry, India*
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- VP4-17. Magnetic Properties of Fe-doped MnO Nanoparticles.** *A. Soares de Brito*¹, *M. Valerio-Cuadros*¹, *A. Alves Oliveira*¹, *L. Felipe Silva Tupan*¹, *R. Barco*¹, *F. Ivashita*¹, *J. de Araújo*², *M. Morales Torres*² and *A. Paesano Jr*^{2,1} 1. *Universidade Estadual de Maringá, Assis Chateaubriand, Brazil;* 2. *Universidade Federal do Rio Grande do Norte, Natal, Brazil*
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- VP4-18. Relating structural sensitivities and helical magnetic order of MnSi.** *S. Samatham*¹, *A.K. Patel*², *S. Kumar A*¹, *A. K. Sinha*³, *M. Singh*³, *S. Shravan Kumar Reddy*¹, *N. Gandla*¹ and *K. G. Suresh*⁴ 1. *Department of Physics, Chaitanya Bharathi Institute of Technology, Hyderabad, India;* 2. *Research Centre for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan;* 3. *Synchrotrons Utilization Section, Raja Ramanna Center for Advanced Technology, Indore, India;* 4. *Department of Physics, Magnetic Materials Laboratory, Indian Institute of Technology Bombay, Mumbai, India*
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VP4-19. Magnetic Hysteresis Models for 3D Printed Composite Materials. M. Ralchev¹, V. Mateev¹ and I. Marinova¹
1. Department of Electrical Apparatus, Technical University of Sofia, Sofia, Bulgaria
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VP4-20. Effect of oxygen vacancies on the structural and magnetic properties of Fe-doped ITO studied by first-principles DFT calculations. C.A. Vilca Huayhua¹ *1. Instituto de Física, Universidade de Brasília, Brasília, Brazil*
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Session VP5

LINEAR MACHINES AND MAGNETIC GEARING (Poster Virtual Session)

Noureddine Takorabet, Chair

Université de Lorraine, Vandoeuvre-lès-Nancy, France

VP5-01. Cycloidal Magnetic Gear Utilizing Magnetic Repulsion Characteristics. P. Liao¹, H. Lu², M. Tsai¹, P. Huang² and T. Chang² *1. Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; 2. Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan*
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VP5-02. A Novel Continuously Variable Magnetic Geared Dual Stator Hub-Motor for an E-Bike. S.K. Warsi¹ and S. Sampathirao¹ *1. School of Electrical Sciences, Indian Institute of Technology Goa, Ponda, India*
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VP5-03. An Energy-saving Series Elastic Actuator with Variable Torque-speed Characteristics Using Reconfigurable Epicyclic-Driven Actuation. T. Wang^{1,2}, Z. Dong^{1,2}, H. Wen^{1,2}, B. Zhang^{1,2} and C. Liu^{1,2} *1. Shenzhen Research Institute, City University of Hong Kong, Shenzhen, China; 2. School of Energy and Environment, City University of Hong Kong, Hong Kong*
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VP5-04. Suppressing the Three-Phase Flux Linkage Asymmetry of Modular Flux-Switching Permanent-Magnet Linear Machine by Rearranging Windings. Z. Ke¹, H. Lin¹ and J. Xu² *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Naval University of Engineering, Wuhan, China*
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VP5-05. Optimization Design of Tubular Permanent Magnet Synchronous Linear Motors Considering Machining and Assembly Errors. Q. Wu¹, G. Yang¹ and W. Li¹
1. Nanjing University of Science and Technology, Nanjing, China
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- VP5-06. A Tubular Flux-Reversal Transverse Flux Permanent Magnet Linear Generator Used in Direct Drive Wave Energy Converter.** *M. Chen^{1,2}, L. Huang², Y. Li², G. Meng¹ and T. Xia¹* 1. Nanjing Institute of Technology, Nanjing, China; 2. Southeast University, Nanjing, China
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- VP5-07. Vibration Analysis of Permanent Magnet Linear Synchronous Motor Considering Force-Magnetic Coupling.** *B. Ji¹, B. Zhang¹, T. Dong¹, R. Fu¹ and W. Feng¹* 1. Shenyang University of Technology, Shenyang, China
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- VP5-08. Effect of Magnetostriction on the Vibrations of Permanent Magnet Linear Synchronous Motors.** *R. Fu¹, B. Zhang¹, T. Dong¹, W. Feng¹ and B. Ji¹* 1. Shenyang University of Technology, Shenyang, China
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- VP5-09. Sensorless Magnetization Current Control for Stable Connection and Separation of Electropermanent Magnet.** *M. Kato¹ and F. Kitayama¹* 1. Ibaraki University, Hitachi-shi, Japan
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- VP5-10. Design and Quantitative Analysis of Asymmetric Flux Reversal Permanent Magnet Linear Machine with Reduced Leakage Flux.** *Z. Chen¹, Z. Li³ and Y. Shen²* 1. College of Electrical Engineering, Zhejiang University, Hangzhou, China; 2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore; 3. KTH Royal Institute of Technology, Stockholm, Sweden
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Session VP6 MAGNETIZATION DYNAMICS AND MICROMAGNETICS II (Poster Virtual Session)

Myoung-Woo Yoo, Chair

University of Illinois Urbana-Champaign, Champaign, IL, United States

- VP6-02. Anisotropy Dependent Spin-Orbit-Torque Switching in Crystalline Ferromagnetic Semiconductor.** *A.K. Jana¹ and S. Lee¹* 1. Department of Physics, Korea University, Seoul, The Republic of Korea
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- VP6-04. Development of a TR-MOKE Setup for the Investigation of Ultrafast Magnetization Dynamics in Magnetic Thin Films.** *C. Dolai¹, D. Ghosh¹, S.S. Bodra¹, B. Nayak², P. Sahoo² and P. Datta²* 1. Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur, India; 2. Materials Science Centre, Indian Institute of Technology, West Bengal, India
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- VP6-05. Study on the effect of structural scale of hollow particles and core-shell particles on the properties of magnetorheological fluids.** *W. Shun*^{1,2}, *W. Han*^{1,2} and *B. He*^{1,2} 1. *Institute of Launch Dynamics, Nanjing University of Science and Technology, Nanjing, China*; 2. *National Key Laboratory of Complex Multibody Systems Dynamics, Nanjing University of Science and Technology, Nanjing, China*
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- VP6-06. Skyrmion generation from domain wall dynamics.** *S. Jeong*³, *D. Jung*³, *H. Han*¹, *G. Kim*³, *M. Im*⁴ and *K. Lee*^{3,2} 1. *Department of Materials Science and Engineering, Korea National University of Transportation, Chungju, The Republic of Korea*; 2. *Graduate School of Semiconductor Materials and Devices Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, The Republic of Korea*; 3. *Department of Materials Science and Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, The Republic of Korea*; 4. *Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
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- VP6-07. Static and Dynamic Magnetic Properties in Layered Synthetic Antiferromagnets.** *Y. Rong*^{1,2}, *L. Sun*^{1,2}, *F. Liu*^{1,2}, *T. Wu*^{1,2} and *Y. Yang*^{1,2} 1. *School of Information Science and Technology, ShanghaiTech University, Shanghai, China*; 2. *Shanghai Engineering Research Center of Energy Efficient and Custom AI IC, ShanghaiTech University, Shanghai, China*
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- VP6-08. Investigation of the dynamic magnetic properties in RuO₂/Co-Fe-B stack film.** *T. Nguyen*^{1,2}, *Y. Saito*², *H. Naganuma*^{2,3,4}, *S. Ikeda*^{2,1} and *T. Endoh*^{2,1,5} 1. *Tohoku University, CSIS, Sendai, Japan*; 2. *Tohoku University, CIES, Sendai, Japan*; 3. *Nagoya University, NAIAS, Nagoya, Japan*; 4. *Nagoya University, IMaSS, Nagoya, Japan*; 5. *Tohoku University, ECEI, Sendai, Japan*
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- VP6-09. Study of Curvature Effects in Corrugated Nanostrips.** *J. Fernandez-Roldan*¹, *S. Shakeel*¹, *M. Quintana*^{1,2}, *O.M. Volkov*¹, *O. Pylypovskyi*¹, *E. Oliveros-Mata*¹, *F. Kronast*³, *M. Mohamad-Assaad*³, *C. Abert*⁴, *D. Suess*⁴, *D. Erb*¹ and *D. Makarov*¹ 1. *Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany*; 2. *CIC nanoGUNE BRTA, Donostia—San Sebastián, Spain*; 3. *Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany*; 4. *University of Vienna, Vienna, Austria*
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- VP6-10. Variations in Spin Seebeck Voltage in Polycrystalline Bulk Y₃Fe₅O₁₂ Due to Diverse Annealing Processes.** *H. Ok*¹ and *K. Lee*¹ 1. *Ulsan National Institute of Science and Technology (UNIST), Ulsan, The Republic of Korea*
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- VP6-11. Micromagnetic aspects of the magneto-impedance response of the FM-I-NM-I-FM multilayer film driven by a high-frequency current.** *G.D. Demin*¹, *A.D. Fedina*¹ and *N.A. Djuzhev*¹ 1. *R&D Center “MEMSEC”, National Research University of Electronic Technology (MIET), Moscow, Russian Federation*
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Session VP7
MAGNETORESISTANCE AND RELATED
PHENOMENA II
(Poster Virtual Session)

Jakub Zelezny, Chair

FZU - Institute of Physics, Czech Academy of Sciences,
Prague, Czechia

- VP7-01. High-Resolution Flaw Detection Using Eddy-Current Probe Array Based on Giant Magnetoresistance Sensors.** *L. Bui¹, J. Jeng¹, H. Huang¹, H. Nguyen², V. Doan³ and T. Nguyen¹* *1. National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan; 2. Thai Nguyen University of Technology, Thai Nguyen, Vietnam; 3. University of Technology and Education, The University of Danang, Da Nang, Vietnam*
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- VP7-02. Enhanced Electrical Modelling of Spin Transfer Torque Magnetic Tunnel Junctions with Temperature Dependent Magnetic Parameters.** *A.C. Venu¹ and N. Kumar¹*
1. Department of Electronics and Communications Engineering, National Institute of Technology Calicut, Calicut, India
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- VP7-03. Effect of Deposition Parameters on the Performances of Magnetic Tunnel Junction Multilayer Structure.** *C. Ghemes¹, O.G. Dragos-Pinzaru¹, M. Tibu¹, G. Stoian¹, G. Ababei¹, N. Lupu¹ and H. Chiriac¹* *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*
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- VP7-04. Investigation of Partially Oxidized Cu Capping Effect on CoFeB/Pt/CuO_x Multilayers by Electrical and Optical Methods.** *Y. Ma^{1,2}, N. Zhang^{1,3}, H. Xie¹, L. Ke³ and Y. Wu^{1,2}*
1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore; 2. National University of Singapore (Chong Qing) Research Institute, Chongqing, China; 3. Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore
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- VP7-05. Efficient spin-orbit torque magnetization switching with low current density in crystalline ferromagnetic semiconductor.** *K. Lee¹, S. Lee¹, X. Liu², M. Dobrowolska² and J. Furdyna²* *1. Department of Physics, Korea University, Seoul, The Republic of Korea; 2. Department of Physics, University of Notre Dame, Notre Dame, IN, United States*
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- VP7-06. Robust Field-Free Current-Induced Magnetization Switching via Oscillatory Interlayer Dzyaloshinskii–Moriya Interaction.** *C. Lin¹, P. Wang¹, Y. Huang¹, W. Liao¹, M. Song², X. Bao² and C. Pai¹* 1. Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; 2. Corporate Research, Taiwan Semiconductor Manufacturing Company, Hsinchu, Taiwan
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- VP7-09. Ferromagnetism of Cobalt Intercalated Molybdenum Ditetelluride.** *W. Kim^{1,2}, Y. Shin³ and W. Yu³* 1. Department of Semiconductor and Display Engineering, Sungkyunkwan University, Suwon, The Republic of Korea; 2. Semiconductor R&D Center, Samsung Electronics, Hwaseong, The Republic of Korea; 3. Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, The Republic of Korea
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- VP7-10. Nanoribbon of Zigzag Silicene for Spin Field Effect Transistor with Low Voltage Bias.** *A. Shah¹ and A. Kashyap²* 1. SCEE, IIT Mandi, Mandi, India; 2. SPS, IIT Mandi, Mandi, India
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- VP7-11. Improvement of SP Decoding Considering the Influence of Recording Patterns by Neural Network in SMR.** *M. Nishikawa¹, Y. Nakamura¹, Y. Kanai² and Y. Okamoto¹* 1. Ehime University, Matsuyama, Japan; 2. Niigata Institute of Technology, Kashiwazaki, Japan
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- VP7-12. A Study of Iterative Signal Processing Schemes for Double-Layered Bit-Patterned Recording.** *A. Khametong¹ and C. Warisarn¹* 1. College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang (KMUTL), Bangkok, Thailand
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- VP7-13. Magnetic random-access memory based physical unclonable functions.** *J. Lee¹, J. Kwon¹, S. Noh¹, H. Lee¹, Y. Kim¹, J. Kang², D. Han², S. Lee², B. Park² and C. Park³* 1. Hyundai Motor Company, Hwaseong-si, The Republic of Korea; 2. Korea Advanced Institute of Science and Technology (KAIST), Daejeon-si, The Republic of Korea; 3. Applied Materials, Inc., Santa Clara, CA, United States
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- VP7-14. MTJ Based NV-SRAM Macro with Enhanced Read Margin and Low Static Power in FDSOI process.** *J. Su¹ and H. Cai¹* 1. Southeast University, Nanjing, China
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- VP7-15. Electrical Manipulation of Noncollinear Antiferromagnetic State via Orbital Hall Effect.** *H. Xie¹, N. Zhang^{1,2}, Y. Ma^{1,3}, X. Chen¹, L. Ke² and Y. Wu^{1,3}* 1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore; 2. Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; 3. National University of Singapore (Chong Qing) Research Institute, Chongqing, China
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- VP7-16. Thickness Dependence of Unidirectional Magnetoresistance in Co₂MnGa Films.** *B. Rong^{1,6}, L. Ren², H. Zheng^{1,6}, L. Liu^{3,4,5} and Y. Yang^{1,6}* 1. School of Information Science and Technology, ShanghaiTech University, Shanghai, China; 2. Department of Electrical and Computer Engineering, National University of Singapore, Singapore; 3. Key Laboratory of Artificial Structures and Quantum Control (Ministry of Education), TD Lee institute, School of Physics and Astronomy, Shanghai Jiao Tong University, Shanghai, China; 4. Hefei National Laboratory, Hefei, China; 5. Shanghai Research Center for Quantum Sciences, Shanghai, China; 6. Shanghai Engineering Research Center of Energy Efficient and Custom AI IC, ShanghaiTech University, Shanghai, China
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- VP7-17. Characterization of transition metal alloys-based trilayers for magnetic field sensors.** *A. Lo Giudice^{1,2}, A. Román^{1,2} and L. Steren^{1,2}* 1. Instituto de Nanociencia y Nanotecnología CNEA/CONICET - Constituyentes, General San Martín, Argentina; 2. Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina
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- VP7-18. Withdrawn**
- VP7-19. A Random Number Generator Based on a Spin-orbit Torque Device with Magnetic Entropy.** *M. Yang¹, H. Chang¹ and C. Yang¹* 1. Department of Materials Science and Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan
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- VP7-20. Enhancement of Voltage-Controlled Magnetic Anisotropy in Orthogonally-Magnetized CoFeB/MgO/CoFeB.** *P. Huang¹, A. Chen², X. Cai¹, D. Wu³, X. Zhang² and X. Kou¹* 1. ShanghaiTech University, Shanghai, China; 2. King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia; 3. Suzhou Inston Technology Co. Ltd., Suzhou, China
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Session VP8 MOTOR DRIVES, BEARING, TESTING AND CONTROL (Poster Virtual Session)

Zhu Ke, Chair
China Three Gorges University, Hubei, China

- VP8-01. A Novel Hierarchical Controller for Enhanced Responsiveness in Robotic Electric Actuators.** *G. Zhao¹, R. Huang¹ and C. Liu¹* 1. School of Energy and Environment, City University of Hong Kong, Hong Kong, China
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- VP8-02. Measurement of magnetization curves of soft magnetic materials in the highly saturated state by the pulsed magnetic field method.** X. Zhao^{1,2}, Y. Jiang^{1,2}, D. Wang^{1,2} and J. Chen^{1,2} *1. Naval University of Engineering, Wuhan, China; 2. National Key Laboratory of Electromagnetic Energy, Wuhan, China*
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- VP8-04. Flux Waveforms Control Using Fuzzy Neural Network PID for Magnetic Measurement Under Arbitrary Magnetization.** L. Chen¹, X. Liu¹, T. Ben¹, D. Yan¹ and X. Zhang² *1. China Three Gorges University, Yichang, China; 2. Hebei University of Technology, Tianjin, China*
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- VP8-06. Design and Analysis of Levitation Region of Fixed-bias Modular Bearingless Motor for Ultra Clean Application.** S. Noh¹, H. Muhammad², J. Park¹, D. Lee² and H. Cho^{2,1} *1. Department of Convergence System Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Department of Electrical, Electronics, and Communication Engineering Education, Chungnam National University, Daejeon, The Republic of Korea*
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- VP8-07. Differential Model based Parameter Estimation of IPMSMs from Multi-state Measurements.** H. Cheng¹, U. Deshpande² and N. Kar¹ *1. University of Windsor, Windsor, ON, Canada; 2. D&V Electronics Ltd, Toronto, ON, Canada*
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- VP8-08. Effect of Tube Thicknesses on Electromagnetic Drag and Guidance Forces for Hyperloop with HTS Magnets.** S. Choi¹, Y. Oh¹, C. Lee¹ and J. Choe¹ *1. Korea Railroad Research Institute, Uiwang, The Republic of Korea*
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Session VP9

MULTI-FUNCTIONAL MAGNETIC MATERIALS AND APPLICATIONS II (Poster Virtual Session)

Alberto Mendonça, Co-Chair
Universidade Estadual de Campinas, Campinas, Brazil

Jia-Yan Law, Co-Chair
University of Seville, Seville, Spain

- VP9-01. On the saturation of the magnetocaloric effect in $\text{Ni}_{37}\text{Co}_{13}\text{Mn}_{34.5}\text{Ti}_{15.5}$ all-d Heusler alloys.** B. Beckmann¹, A. Taubel¹, T. Gottschall², L. Pfeuffer¹, D. Koch¹, F. Scheibel¹, K. Skokov¹ and O. Gutfleisch¹ *1. Institute of Materials Science, Technical University of Darmstadt, Darmstadt, Germany; 2. Dresden High Magnetic Field Laboratory, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Dresden, Germany*
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- VP9-02. Magnetocaloric effect of uniformly packed ferromagnetic Gd nanoparticle clusters.** *A.S. Freitas², C.M. Souza³, A.L. Dantas^{1,2} and A.S. Carriço³* 1. *Department of Science and Technology, State University of Rio Grande do Norte, Natal, Brazil;* 2. *Department of Physics, State University of Rio Grande do Norte, Mossoro, Brazil;* 3. *Department of Physics, Federal University of Rio Grande do Norte, Natal, Brazil*
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- VP9-03. Electronic Structure and Magnetic Properties of the Full Heusler Alloys Mn_2YAl ($Y = Fe, Co, Ni$).** *E.D. Chernov¹ and A.V. Lukoyanov^{1,2}* 1. *M.N. Miheev Institute of Metal Physics UB of RAS, Ekaterinburg, Russian Federation;* 2. *Ural Federal University named after the first President of Russia, B. N. Yeltsin, Ekaterinburg, Russian Federation*
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- VP9-04. Magnetically Actuated Compliant Soft Robotic Gripper for Grasping Delicate Food Items.** *Y. Choi¹, C. Hartzell¹ and N. Wereley¹* 1. *University of Maryland at College Park, College Park, MD, United States*
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- VP9-05. Theoretical Study of the AFM-FM Transition in $GdNiSi_{1-x}Al_x$.** *R.D. Mukhachev¹ and A. Lukoyanov^{1,2}* 1. *Metal Optics Laboratory, M.N. Mikheev Institute of Metal Physics of Ural Branch of Russian Academy of Sciences, Yekaterinburg, Russian Federation;* 2. *Institute of Physics and Technology, Ural Federal University, Yekaterinburg, Russian Federation*
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- VP9-06. Voltage-Controlled Anisotropic Magnetoresistance in Ferromagnetic-Piezoelectric Heterostructures.** *Y. Wang^{1,2,3}, M. Du^{1,2,3}, J. Li^{1,2,3}, D. Luo¹ and T. Wu^{1,2,3}* 1. *ShanghaiTech University, Shanghai, China;* 2. *Shanghai Institute of Microsystem and Information Technology, Shanghai, China;* 3. *University of Chinese Academy of Sciences, Beijing, China*
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- VP9-07. Measurement and Analysis of Magnetostriction of Electrical Steel Sheet Considering Grain Structure.** *T. Chen^{1,2}, Q. Yang^{1,2}, C. Zhang^{1,2}, Y. Li^{1,2}, Y. Dou^{1,2} and X. Liu^{1,2}* 1. *State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China;* 2. *Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China*
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- VP9-08. Influence of trace rare earth elements Pr and annealing process on texture evolution and magnetostriction behavior of $Fe_{81}Al_{19}$ alloys.** *W. Li^{1,2,3}* 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. *State Key Laboratory of Baiyunobo Rare Earth Resource Researches and Comprehensive Utilization, Baotou Research Institute of Rare Earths, Baotou, China*
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- VP9-09. Impact of Ho-doping on the magnetic and electrical properties of $Y_{3-x}Ho_xFe_5O_{12}$ ($x=0, 0.1, 0.5, 0.7$) ceramics.** *O. Morán¹ I. Department of Physics, National University of Colombia, Medellin, Colombia*
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Session VP10

**NUMERICAL, SEMI-ANALYTICAL AND
ANALYTICAL ANALYSIS METHODS III
(Poster Virtual Session)**

Abdelmounaim Tounzi, Co-Chair
Univ. Lille, Arts et Metiers Institute of Technology,
Villeneuve d'Ascq, France
Smail Mezani, Co-Chair
Université de Lorraine, Vandoeuvre lès Nancy, France

- VP10-01. An Accurate Multi-objective Optimization Strategy for Surface-Mounted Permanent-Magnet Machines Based on Nonlinear Finite-Permeability Subdomain Model.** *C. Sun¹, Y. Fang¹ and P. Pfister¹ I. Zhejiang University, Hangzhou, China*
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- VP10-02. Modeling of hysteresis motors based on equivalent circuit.** *Y. Du¹, L. Yuan¹ and F. Xiao¹ I. Jiangsu University, Zhenjiang, China*
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- VP10-03. Analytical Optimization and Comparison of Internal and External Rotor Permanent Magnet Motors by Coupled Electromagnetic-Thermal Model for Robotics Application.** *A. Liu¹, X. Huang¹ and Z. Chen¹ I. Zhejiang University, Hangzhou, China*
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- VP10-04. Analytical Calculation Model for Inductance of Brushless DC Motor under Bearing Fault.** *G. Chen¹, B. Zhang¹, T. Dong¹, S. Ma² and H. Huang³ I. School of Electrical Engineering, Shenyang University of Technology, Shenyang, China; 2. School of Information Technology, Shenyang Institute of Engineering, Shenyang, China; 3. State Grid Corporation of China, Anshan, China*
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- VP10-05. Parameter Estimation Method for Dual Stator Permanent Magnet Synchronous Motor based on Incremental Inductance.** *C. Song¹, J. Lee¹ and M. Lim¹ I. Hanyang University, Seoul, The Republic of Korea*
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- VP10-06. Real-Time Current Monitoring for the Diagnosis of Faults in Fixed Geometry Thrust Bearing: A Rigorous Quantitative Approach.** *B. Guan¹, S. Wang¹, Q. Zhu² and X. Bao¹ I. School of Electrical Engineering and Automation, Hefei University of Technology, Hefei, China; 2. Hefei Hengda Jianghai Pump Industry Co., Ltd., Hefei, China*
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- VP10-07. The Harmonic-Balanced Finite Element Method With Laplace Transform for Transient State Nonlinear Problems.** *S. Gao*^{1,2}, *X. Zhao*¹, *Y. Gao*², *K. Muramatsu*³ and *T. Todaka*² *1. North China Electric Power University, Baoding, China; 2. Oita University, Oita, Japan; 3. Saga University, Saga, Japan*
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- VP10-08. Comparison of Wideband Loss Separation Technology Considering the Impact of Skin Effect.** *L. Chen*¹, *Z. Zhang*¹, *T. Ben*¹, *X. Wen*¹ and *C. Liu*² *1. China Three Gorges University, Yichang, China; 2. Hebei University of Technology, Tianjin, China*
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- VP10-09. Air-gap Region Topology Optimization of a Hairpin PM Motor for Electromagnetic Vibration Reduction.** *J. Wu*¹ and *X. Zhu*¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP10-10. Loss Analysis in Spoke Dual-Stator Permanent Magnet Vernier Machine Considering Stator Mutual Effect.** *W. Mi*^{1,2}, *J. Yu*¹, *F. Zhao*¹, *Z. Cai*¹ and *H. Zhao*² *1. Harbin Institute of Technology, Shenzhen, China; 2. The Hong Kong University of Science and Technology, Guangzhou, China*
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- VP10-11. Design Study on Consequent Pole Motor for Mitigation of Shaft Voltage Considering Shaft Leakage Flux.** *H. Yoon*¹, *S. Jun*⁴, *J. Lee*², *Y. Kim*³, *S. Jung*¹ and *S. Jung*¹ *1. Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, The Republic of Korea; 2. Department of Electrical Engineering, Chonnam National University, Gwangju, The Republic of Korea; 3. Department of Electrical Engineering, Chosun University, Gwangju, The Republic of Korea; 4. Hyundai Motor Company, eP System Engineering Design Team, Hwaseong, The Republic of Korea*
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- VP10-12. A Simple PM Eddy Current Loss Model for Axial Flux Permanent Magnet Machine.** *Y. Liu*^{2,1}, *C. Wang*^{2,1}, *D. Chen*³ and *G. Li*³ *1. School of Electrical Engineering, Anhui Polytechnic University, Wuhu, China; 2. Key Laboratory of Electric Drive and Control of Anhui Province, Wuhu, China; 3. Hangzhou Zonhow Electric Technologies Co., Ltd., Hangzhou, China*
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- VP10-13. Analysis of Axial Flux Generator Losses and Thermal Management Based on Mixed Flow Fan.** *Y. Li*¹, *L. Huang*¹, *M. Chen*¹ and *M. Hu*¹ *1. Southeast University, Nanjing, China*
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- VP10-14. Variable Cross-Section End-transposed Rectangular Windings Based on Additive Manufacturing Technology for AC Loss Suppression in Electrical Machines.** *J. Zhang*¹, *X. Gui*¹, *Q. Deng*¹, *J. He*¹, *Z. Zhu*¹ and *Z. Zhang*¹ *1. Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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- VP10-15. Multi-Objective Optimization Design of a Five-Phase Flux-Intensifying Fault-Tolerant Permanent Magnet Motor Based on Influence of Inverse-Salient Characteristic.** *X. Li¹, L. Zhang¹, S. Deng¹, C. Zhang¹ and Y. Wang²* *1. Jiangsu University, Zhengjiang, China; 2. State Grid Zhenjiang Power Supply Company, Zhenjiang, China*
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- VP10-16. Design and Analysis of a Partitioned-Stator Hybrid Excited Permanent Magnet Arc Motor.** *Z. Pan¹, J. Zhao¹, S. Fang², Z. Yu¹ and P. Xu³* *1. School of Electrical Engineering and Automation, Hefei University of Technology, Hefei, China; 2. School of Electrical Engineering, Southeast University, Nanjing, China; 3. Department of Motor Technology, Whirlpool (China) Co., Ltd, Hefei, China*
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- VP10-17. Design and Analysis of a Novel Asymmetric PM-Assisted Synchronous Reluctance Machine Used for Electric Vehicles.** *W. Wang¹, S. Wang¹, L. Zhu¹, X. Zhao¹ and J. Wei¹* *1. College of Computer and Control Engineering, Northeast Forestry University, Harbin, China*
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- VP10-18. Harmonic-Oriented Design and Analysis of a Dual-Air-Gap Flux-Modulated Permanent Magnet Motor for Torque Improvement.** *X. Cai¹, X. Zhu¹ and D. Fan¹* *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP10-19. Multi-Material Topology Optimization of Permanent Magnet Synchronous Motor Considering Manufacturing Constraints.** *M. Xia¹, J. Li¹ and S. Yang²* *1. Hangzhou City University, Hangzhou, China; 2. Zhejiang University, Hangzhou, China*
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- VP10-20. Comparative Analysis of a Novel Flux-Switching Arc Permanent Magnet Machine With Flux-Reversal Effect.** *X. Lin¹ and S. Fang¹* *1. School of Electrical Engineering, Southeast University, Nanjing, China*
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- VP10-21. An Improved Machine Design Method Considering Armature Reaction and Comparison with Conventional Method.** *X. Liang¹, M. Wang¹, P. Zheng¹, Y. Liu¹ and J. Gao¹* *1. Harbin Institute of Technology, Harbin, China*
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- VP10-22. Two-Reaction Theory Analysis of Homopolar Inductor Machine With Rotor Tooth Offset at any Angle.** *Q. Li¹, J. Yang¹, Y. Pan¹ and S. Huang¹* *1. Hunan University, College of Electrical and Information Engineering, Changsha, China*
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- VP10-23. Multi-Operated Points Optimization of Interior Permanent Magnet Synchronous Machine Considering Driving Cycle.** *Q. Zhou¹, Y. Li¹, S. Ding¹, J. Hang¹ and W. Li¹* *1. School of Electrical Engineering and Automation, Anhui University, Hefei, China*
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- VP10-24. Torque Ripple Reduction of New Dual-Stator Machines Using Squirrel Stator Teeth in Uneven Distribution.** R. Yao¹, H. Wang¹, Y. Xu¹, Y. Sha¹ and C. Feng¹
1. Nanjing Normal University, Nanjing, China
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- VP10-25. Effect of deep-sea high-pressure environments on iron loss in motors.** Y. Xu¹, J. Huang¹, L. Xiao¹, G. Yu¹ and J. Zou¹
1. Harbin Institute of Technology, Harbin, China
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- VP10-26. Withdrawn**
- VP10-27. Structural Design and Thermal Management Efficiency Study of a High-Stability Doubly-Excited Synchronous Generator.** D. Li¹, Y. Cao¹ and W. Liu² *1. Northeast Forestry University, Harbin, China; 2. Tsinghua University, Beijing, China*
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- VP10-28. MMF Harmonic Analysis of Multi-M-Phase Fractional-Slot Permanent-Magnet Machines With Partial Operating Winding Sets.** W. Wang¹ and L. Wu¹ *1. Zhejiang University, Hangzhou, China*
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- VP10-29. The Scalable Analytical Model for Predicting the Performance of SPM Machine with Arbitrary Magnet Shape.** Z. Li^{1,2}, B. Liu², P. Fransson² and L. Peretti¹
1. KTH Royal Institute of Technology, Stockholm, Sweden; 2. ABB Corporate Research, Vasteras, Sweden
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- VP10-30. Determination Method of Nonlinear Reluctance Matrix Considering Saturation Differences for Three-phase Transformers.** Y. Wang¹, Z. Liang¹ and B. Jin¹
1. School of Mechanical and Electrical Engineering, China University of Mining and Technology, Beijing, Beijing, China
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- VP10-31. Flux-driven Nonlinear Transient Model for Single Phase Transformers.** Y. Wang¹, J. Yu¹, B. Jin¹ and Z. Liang¹
1. School of Mechanical and Electrical Engineering, China University of Mining and Technology, Beijing, Beijing, China
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- VP10-32. An Improved Analytical Model for the Novel Counter-Rotating Axial-Flux Hybrid-Excitation Permanent Magnet Machine.** K. Huang¹, Y. Feng¹, C. Xia¹, B. Long¹, Y. Gao¹ and S. Huang¹ *1. Hunan University, Changsha, China*
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Session VP11
PERMANENT MAGNET MACHINES II
(Poster Virtual Session)

Konstantin Boynov, Chair
 Eindhoven University of Technology, Eindhoven, Netherlands

- VP11-01. Comparative Analysis of Dual-Stator Permanent Magnet Machines With Inner Stator Teeth Designed in Hypotenuse for Electric Vehicle.** Y. Xu¹, H. Wang¹, Y. Sha¹ and R. Yao¹ *1. School of Electrical and Automation Engineering, Nanjing Normal University, Nanjing, China*
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- VP11-02. Research on Air-gap Field Modulation Effect of Torque Enhanced Hybrid Permanent Magnet Motor.** Y. Chen¹, X. Zhou¹, M. Lu¹ and Z. Li¹ *1. Yangzhou University, Yangzhou, China*
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- VP11-03. Influence of Stator Core Manufacturing Displacement on the Electromagnetic Performance of Modular Permanent Magnet Machine.** H. Liu¹, J. Yang¹, J. Yu¹ and S. Huang¹ *1. College of Electrical and Information Engineering, Hunan University, Changsha, China, Changsha, China*
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- VP11-04. Electromagnetic Field Analysis and of Axial Flux Permanent Magnet Motor Considering Slotting Effect Based on Three-Dimensional Analytical Approach.** M. Koo¹, H. Shin² and H. Lee³ *1. Automotive Materials & Components R&D Group, Korea Institute of Industrial Technology, Gwangju, The Republic of Korea;*
2. Smart Agricultural Machinery R&D Group, Korea Institute of Industrial Technology, Gimje, The Republic of Korea;
3. H&A Fundamental Technology R&D Lab, LG Electronics, Seoul, The Republic of Korea
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- VP11-05. Partial Demagnetization Fault Diagnosis Method for Permanent Magnet Synchronous Machines Considering Topology Structures.** S. Ding¹, Z. Wu¹, Y. Li¹, J. Hang¹ and W. Li¹ *1. School of Electrical Engineering and Automation, Anhui University, Hefei, China*
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- VP11-06. Design of a Novel Transverse Flux Machine with Axial-Radial Permanent Magnet.** B. Zhang^{1,2}, R. Huang^{1,2}, Y. Liu^{1,2} and C. Liu^{1,2} *1. Shenzhen Research Institute, City University of Hong Kong, Shen Zhen, China;*
2. School of Energy and Environment, City University of Hong Kong, Kowloon Tong, Hong Kong
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- VP11-07. Design and Analysis of a New Consequent-Pole Hybrid Excited Permanent Magnet Machine with DC-biased Current.** G. Qu¹, J. Yu¹, Y. Liu¹ and W. Liu¹ *1. College of Nuclear Technology and Automation Engineering, Chengdu University of Technology, Chengdu, China*
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- VP11-08. Fast Prediction of No-Load Back EMF in IPMSMs Based on Small-Sample Surrogate Model.** W. Jiang¹, S. Liu¹ and L. Bai¹ *1. Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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- VP11-09. Design of a New Consequent-Pole Hybrid Excited Machine with Segmented Stator.** G. Qu¹, Y. Liu¹, J. Yu¹ and W. Liu¹ *1. College of Nuclear Technology and Automation Engineering, Chengdu University of Technology, Chengdu, China*
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- VP11-10. Performance Analysis of Single-Phase Inverter-Fed Permanent Magnet Synchronous Motor with Ladder-Connected Winding.** M. Kato¹ and K. Ito¹ *1. Ibaraki University, Hitachi-shi, Japan*
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- VP11-11. Design of Radial Flux C-Gen Machine with Interior Permanent Magnets.** H. Guo¹, R. Huang¹, B. Zhang¹ and C. Liu¹ *1. School of Energy and Environment, City University of Hong Kong, Hong Kong*
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- VP11-12. High-Efficiency-Region Broadening Design and Analysis of a Variable-Leakage-Flux Permanent Magnet Motor from the Perspective of Losses Replacement.** M. Jiang¹ and X. Zhu¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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Session VP12

PERMANENT MAGNET MACHINES III (Poster Virtual Session)

Yukihiro Yoshida, Co-Chair
Akita University, Akita, Japan

Sho Sakurai, Co-Chair
Akita University, Akita, Japan

- VP12-01. AC Loss Analysis and Suppression of a Flat-Wire Permanent Magnet Motor Based on Slot-Leakage-Flux Variation Improvement.** X. Wang¹, L. Quan¹ and Z. Xiang¹ *1. Department of Electrical Engineering, School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP12-02. Low Vibration Research and Design of In-Wheel V-shaped PM Motor from the Perspective of Winding Magnetomotive Force.** T. Liu¹, L. Quan¹ and X. Zhu¹ *1. Department of Electrical Engineering, School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP12-03. Low Loss design method based on response surface algorithm considering multi-operation states.** L. Yin², Y. Wang², R. Sun², L. Wu² and X. Xu¹ 1. *Nanjing University of Posts and Telecommunications, Nan Jiang, China;* 2. *Lianyungang Power Supply Company, Lianyungang, China*
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- VP12-04. Virtual Shorted Coil Model for Six-Phase PMSM Inter-Turn Short Fault Detection.** Z. Yuan¹, M. Wang^{2,1}, W. Liu¹, M. Wang¹ and P. Zheng¹ 1. *Harbin Institute of Technology, Harbin, China;* 2. *State Key Laboratory of Robotics and Systems (HIT), Harbin, China*
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- VP12-05. Withdrawn**
- VP12-06. Analysis of the Overload Capability of Shaftless Propulsion Motor for Autonomous Underwater Vehicle with Wide Speed Range.** X. Jiang^{1,2,3}, Y. Jiang^{2,3}, H. Wang^{2,3}, S. He^{2,3} and J. Chen^{2,3} 1. *School of Electrical Engineering, Southeast University, Nanjing, China;* 2. *Naval University of Engineering, Wuhan, China;* 3. *National Key Laboratory of Electromagnetic Energy, Wuhan, China*
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- VP12-07. Analysis of Output Characteristics According to IPMSM Lightweight Design by Pole/Slot Combination.** J. Choi^{1,2}, K. Lee¹, J. Lee¹, J. Park³ and J. Lee² 1. *Intelligent Mechatronics Research Center, Korea Electronics Technology Institute, Gyeonggi-do, The Republic of Korea;* 2. *Department of Electrical Engineering, Hanyang University, Seoul, The Republic of Korea;* 3. *Power Control System Research Center, Korea Electronics Technology Institute, Gyeonggi-do, The Republic of Korea*
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- VP12-08. Characterization of Permanent Magnet Demagnetization in Surface-mounted Synchronous Motors Based on the Stator Current Vector Modulus.** W. Li^{1,3}, X. Lu¹, Y. Li¹, L. Zeng² and R. Pei^{1,2} 1. *Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-mag New Energy Ltd., Suzhou, China;* 3. *School of Electrical and Mechanical Engineering, XuChang University, XuChang, China*
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- VP12-09. Deep Transfer Learning-Based Performance Prediction Method of Outer Rotor IPMSM Considering Axial Leakage Flux and Overhang Effect according to Design Variables.** M. Sung¹, K. Cha², S. Park³, Y. Jung⁴, J. Sim⁵, S. Kwon² and M. Lim¹ 1. *Hanyang University, Seongdong-gu, The Republic of Korea;* 2. *Advanced Mobility Group, Korea Institute of Industrial Technology, Daegu, The Republic of Korea;* 3. *Dongguk University, Seoul, The Republic of Korea;* 4. *Yeungnam University, Gyeongsan, The Republic of Korea;* 5. *LG Electronics, Seoul, The Republic of Korea*
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- VP12-10. Two-Stage Optimal Design of Concentric Ferrite PM layer IPMSM for Micro-EV Traction Considering Driving Characteristics.** K. Kim¹, D. Park¹, S. Im¹, Y. Choi² and M. Lim¹ 1. *Automotive Engineering, Hanyang University, Seoul, The Republic of Korea*; 2. *Drivetech, Bucheon, The Republic of Korea*
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- VP12-11. Research on Power Factor Improvement of a Variable-Leakage-Flux PM Motor based on Regulated-Flux-Barrier Topology.** W. Zhu¹, X. Zhu¹ and Z. Xiang¹ 1. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
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- VP12-12. Design of a Novel Simplified Modular Flux Switching Permanent Magnet Resolver.** W. Mi^{1,2}, J. Yu¹, F. Zhao¹, Z. Cai¹ and H. Zhao² 1. *Harbin Institute of Technology, Shenzhen, China*; 2. *The Hong Kong University of Science and Technology, Guangzhou, China*
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- VP12-13. A Novel Speed Estimation Algorithm for a Permanent Magnet Linear Synchronous Motor Using Extended Kalman Filter with Multiple Fading Factors.** X. Liu¹, J. Zhang¹, H. Xie¹ and C. Hu² 1. *College of Electrical and Information Engineering, Hunan University, Changsha, China*; 2. *State Grid Ningbo Power Supply Company, Ningbo, China*
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- VP12-14. A Novel Counter-rotating Axial-flux Permanent Magnet Memory Machine with Dual-rotor.** C. Xia¹, Y. Feng¹, Y. Gao¹ and S. Huang¹ 1. *Hunan University, Changsha, China*
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- VP12-15. A Novel Axial-field Juxtaposed Magnetic Circuit Variable Flux Memory Machine.** Y. Gao¹, Y. Feng¹, C. Xia¹, B. Long¹ and S. Huang¹ 1. *College of Electrical and Information Engineering, Hunan University, Changsha, China*
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- VP12-16. Position Estimation Method of a Permanent Magnet Synchronous Motor Based on Moving Horizon Estimation EKF algorithm.** G. Cao¹, H. Zhou¹, S. Huang¹, H. Hu¹ and J. He² 1. *Guangdong Key Laboratory of Electromagnetic Control and Intelligent Robots, Shenzhen University, Shenzhen, China*; 2. *Department of Electrical and Computer Engineering, University of Kentucky, Lexington, KY, United States*
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- VP12-17. Design Optimization of Spoke-type Flux-intensifying PM Motor with Asymmetric Rotor Configuration for Improved Performance.** M. Hsieh¹, A.T. Huynh^{2,1}, V. Do¹, D. Gerada² and C. Gerada² 1. *Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan*; 2. *Power Electronics and Machines Centre, Faculty of Engineering, University of Nottingham, Nottingham, United Kingdom*
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VP12-18. Comparative Study on Litz Wire and Hairpin Windings of 1MW Class Permanent Magnet Machines for Aircraft Propulsion Applications. *A.T. Huynh¹, J. Jiang¹, H. Huang¹, D. Gerada¹ and C. Gerada¹* *1. Power Electronics and Machines Centre, Faculty of Engineering, University of Nottingham, Nottingham, United Kingdom*
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VP12-19. Investigation of High Torque Density Yokeless-Rotor PMSM with Large Diameter to Axial Length Ratio for Aircraft Propulsion. *Q. Lin¹, Z. Zhang¹, H. Xue¹ and H. Gao¹* *1. Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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VP12-20. Analysis of Dual-Airgap Yokeless-Stator Permanent Magnet Motor With Non-Oriented or Grain-Oriented Steels for Aircraft Propulsion. *H. Xue¹, Z. Zhang¹, Y. Liu², H. Gao¹ and Q. Lin¹* *1. College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China; 2. Nanjing Normal University, Nanjing, China*
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VP12-21. A Control Strategy Minimizing PM Loss of Phase-Shifted Dual-Winding PMSM for Aviation Electric Propulsion Application. *Y. Zhu¹, Z. Zhang¹, J. Lu¹ and H. Xue¹* *1. Nanjing University of Aeronautics and Astronautics, Nanjing, China*
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Session VP13

SENSORS AND HIGH-FREQUENCY DEVICES II (Poster Virtual Session)

Yajie Chen, Chair

Rogers Corp., Burlington, MA, United States

VP13-01. Localization of a crack in moving cylindrical ferromagnetic rods by measuring the Fourier coefficients of the leakage magnetic flux. *K. Shiku¹, M. Kuromizu², Y. Gotoh² and T. Nara¹* *1. The University of Tokyo, Bunkyo-ku, Japan; 2. Oita University, Oita, Japan*
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VP13-02. CO₂ Detector Powered by a Rectenna. *Ú.C. Resende¹, F. Fernandes dos Santos Ramalho¹, T.H. Mello¹ and I.O. Souza¹* *1. Electrical Engineering, Centro Federal de Educação Tecnológica de Minas Gerais, Belo Horizonte, Brazil*
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- VP13-03. The effect of CoFeB Electrodes Compositions on Bias Voltage Dependence of Sensitivity in Tunneling Magnetoresistance Sensors.** *P. Wisniowski¹, L. Fusnik¹, S. Cardoso de Freitas², P. Freitas² and J. Wrona³*
1. Department of Electronics, AGH University of Krakow, Krakow, Poland; 2. INESC Microsystems and Nanotechnologies and IN, Lisbon, Portugal; 3. Singulus Technologies AG, Kahl am Main, Germany
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- VP13-04. Bright Envelope Solitons in a Double Negative Medium Based on Nonlinear Ferromagnetic Metamaterial Layer.** *M. Amelchenko¹, S.V. Grishin¹ and F. Ogrin^{2,3}*
1. Institute of Physics, Saratov State University, Saratov, Russian Federation; 2. School of Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 3. MaxLLG Ltd., Exeter, United Kingdom
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- VP13-05. Analysis of Inductive Angular Position Sensor Considering the Effect of Air Gap.** *D. Xu¹, Y. Zhao¹, S. Fang¹, F. Zeng² and S. Hwang³*
1. School of Mechatronic Engineering and Automation, Shanghai University, Shanghai, China; 2. Shanghai Zenidrive Technology Co., Shanghai, China; 3. Engineering School of Mechanical System Design, Pusan National University, Busan, The Republic of Korea
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- VP13-06. Study and Development of a Sensor for Touchless Capacitive Computer Interface.** *G. Bacon Carvalho¹ and G.A. Pizo¹*
1. Faculdade do Gama, Universidade de Brasília, Guarã I, Brazil
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- VP13-07. Defect Evaluation in Mild Steel Plate Using Harmonic Ratio Induced by Square Wave Excitation Field and Nonlinear Magnetization.** *M. Saari^{1,2}, M. Zaini¹, M. Sulaiman¹, A. Samsudin³ and T. Kiwa⁴*
1. Faculty of Electrical & Electronics Engineering Technology, Universiti Malaysia Pahang Al-Sultan Abdullah, Pekan, Malaysia; 2. Centre for Advanced Industrial Technology, Universiti Malaysia Pahang Al-Sultan Abdullah, Pekan, Malaysia; 3. Faculty of Industrial Sciences and Technology, Universiti Malaysia Pahang Al-Sultan Abdullah, Kuantan, Malaysia; 4. Graduate School of Interdisciplinary Science and Engineering in Health System, Okayama University, Okayama, Japan
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- VP13-08. Investigation of the Efficiency of Large Area and Low Aspect Ratio GMR Sensors in Biomedical Diagnostics: A Simulation Study.** *R.A. Mendonsa¹, S. Liang², D. Tonini¹ and J. Wang^{1,2}*
1. Department of Electrical Engineering, University of Minnesota, Edina, MN, United States; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States
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- VP13-09. THz Sensor Design with Graphene Infused Metamaterial for Material Analysis.** A. Eroglu¹ and T. Islam²
1. ECE, University of Massachusetts Boston, Boston, MA, United States; 2. ECE, North Carolina A&T State U, Greensboro, NC, United States
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- VP13-10. Angle-Dependent In-Plane Magnetic Field Detection by MEMS Resonant Sensor.** Y. Wang^{1,2,3}, M. Du^{1,2,3}, J. Li^{1,2,3}, D. Luo¹ and T. Wu^{1,2,3} *1. Shanghaitech University, Shanghai, China; 2. Shanghai Institute of Microsystem and Information Technology, Shanghai, China; 3. University of Chinese Academy of Sciences, Beijing, China*
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- VP13-11. Design of Magnetic Material Constituted Pyramidal Absorber for 5G Applications Using Chaos Game Optimization.** R.P. Bhadoriya¹, V. Bajaj¹ and R. Panwar²
1. Department of Electronics & Communication Engineering, PDPM IITDM Jabalpur, Jabalpur, India; 2. High-Frequency Structures and Materials Laboratory, School of Material Science and Technology, Indian Institute of Technology (BHU), Varanasi, India
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- VP13-12. Wireless Power Transmission Using an Intelligent Metamaterial Array and Resonant Coils.** I.O. Souza¹, Ú.C. Resende¹ and M.D. Almeida¹ *1. Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG), Belo Horizonte, Brazil*
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- VP13-13. Study on Using Magnetodielectric Ferrite for Impedance Matching to Improve the Transmission-Range of Implantable Antenna.** Y. Li¹ and Q. Feng¹
1. Southwest Jiaotong University, Chengdu, China
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Session VP14 SOFT MAGNETIC MATERIALS (Poster Virtual Session)

Samuel Dobák, Chair
 P. J. Šafárik University, Kosice, Slovakia

- VP14-01. Improved 2-D Magnetic Properties Measurement of Silicon Steel Based on a Novel B-H Sensor.** J. Zhou^{2,1}, Y. Li^{2,1}, S. Yue^{2,1} and Z. Li^{2,1} *1. Province-Ministry Joint Key Laboratory of EFEAR, Hebei University of Technology, Tianjin, China; 2. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China*
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- VP14-02. Estimation of core loss in Fe-Ni powder cores.** *M. Nguyen*⁵, *S. Yoshida*¹, *S. Okamoto*^{1,2,3}, *T. Miyazaki*⁴ and *Y. Endo*^{5,2}
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 2. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 3. National Institute for Material Science (NIMS), Tsukuba, Japan; 4. Faculty of Engineering, Tohoku University, Sendai, Japan; 5. Department of Electrical Engineering, Tohoku University, Sendai, Japan
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- VP14-03. Evolution of crystallographic texture and its impact on magnetic losses of non-oriented electrical steel.** *M.B. Alvim*^{1,2}, *L.C. Matos*¹, *M.P. Arruda*² and *D.L. Rocco*¹
1. Programa de Pós-Graduação em Engenharia de Materiais, Centro Federal de Educação Tecnológica de Minas Gerais (CEFET-MG), Timóteo, Brazil; 2. Usiminas Research and Development Center, Usiminas, Ipatinga, Brazil
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- VP14-04. Effect of binder content on structure and magnetic properties of Fe-Si powder cores.** *M. Nguyen*¹, *S. Yoshida*², *S. Okamoto*^{2,3,4}, *T. Miyazaki*⁵ and *Y. Endo*^{1,3} *1. Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 3. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 4. National Institute for Materials Science (NIMS), Tsukuba, Japan; 5. Faculty of Engineering, Tohoku University, Sendai, Japan*
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- VP14-05. Coercive force as an indicator of structural changes in the heat treatment of amorphous and nanocrystalline alloys on the example of fast-quenched Fe-Cu-Nb-Si-B tapes.** *I. Sapovskii*¹, *N. Ilyin*¹, *G. Krainova*¹, *T. Rakhmatullaev*¹ and *V. Plotnikov*¹ *1. General and Experimental Physics, Far Eastern Federal University, Vladivostok, Russian Federation*
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- VP14-06. Additive Manufacturing for High-Inductance Power Inductor.** *T. Chang*¹, *P. Huang*¹, *C. Shih*¹, *A. Hung*¹, *C. Wang*², *H. Ko*² and *M. Tsai*^{3,1} *1. Electric Motor Technology Research Center, National Cheng Kung University, Tainan, Taiwan; 2. Chung Yo Materials Co., Ltd., Kaohsiung, Taiwan; 3. Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan*
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- VP14-07. Investigation of Structural, Magnetic and Complex Impedance studies of High Entropy Garnet Ceramics.** *S. Verma*¹ and *S. Ravi*¹ *1. Department of Physics, Indian Institute of Technology, Guwahati, Guwahati, India*
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- VP14-08. Comprehensive Investigation on Iteration Algorithms for Solving Nonlinear Magnetic Field Problems.** *J. Yin*¹, *Y. Li*¹ and *S. Yue*¹ *1. Hebei University of Technology, Tianjin, China*
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- VP14-09. Study of High-Speed Motor Rotors Based on the Local Carburization Strengthening Mechanism of Non-Grain Oriented Silicon Steel.** *Y. Li¹, C. Sun³, A. Wang¹, Y. Li³ and R. Pei^{1,2}* 1. *Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-mag New Energy Ltd., Suzhou, China;* 3. *Ansteel Iron & Steel Research Institute, Ansteel, Anshan, Liaoning Province, China*
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- VP14-10. Analysis of Magneto-Mechanical Properties at the Tooth-Yoke Embedding Position in Grain-Oriented Electrical Steel Electric Motors.** *Z. Li¹, Y. Li¹, Y. Qin¹, L. Zeng², J. Li¹ and R. Pei^{1,2}* 1. *Department of Electric Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-mag New Energy Ltd., Suzhou, China*
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- VP14-11. Effect of Cutting Process on the Magnetic Properties of Electrical Steels with Different Si Contents.** *D. Ma¹, B. Tian¹, L. Zeng² and R. Pei^{1,2}* 1. *Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-Mag New Energy Ltd., Suzhou, China*
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- VP14-12. Research on Magnetic-thermal Coupling of High Permeability Soft Magnets in SynRM.** *J. Li¹, J. Ge¹, Y. Li¹, Z. Li¹, L. Zeng² and R. Pei^{1,2}* 1. *Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-Mag New Energy Ltd., Suzhou, China*
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- VP14-13. Effect of Si Content on Magnetostrictive properties of Electrical Steel Sheet Considering Tensile Stress.** *D. Ma¹, B. Tian¹, L. Zeng² and R. Pei^{1,2}* 1. *Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-Mag New Energy Ltd., Suzhou, China*
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- VP14-14. Magnetic Measurement and Analysis of Nanocrystalline Laminates with Different Dimensions by An Improved Tester.** *W. Meng¹, C. Zhang¹, Y. Li¹, H. Sun¹ and Z. Wan¹* 1. *Hebei University of Technology, Tianjin, China*
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- VP14-15. Characteristic Analysis and Motor Application of Continuous Casting Slab with High Saturation Magnetic Flux Density.** *Y. Li¹, C. Yan¹, S. Xie², L. Zeng³ and R. Pei^{1,3}* 1. *Department of Electrical Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Shagang Iron & Steel Ltd, Suzhou, China;* 3. *Suzhou Inn-Mag New Energy Ltd., Suzhou, China*
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- VP14-16. Iron Core Loss Calculate Method for Soft Magnetic Materials by Physics-Informed Neural Networks.** *Z. Li¹, Y. Qin¹, Y. Li¹, R. Pei^{1,2}, J. Li¹, J. Li¹ and L. Zeng²* 1. *Department of Electric Engineering, Shenyang University of Technology, Shenyang, China;* 2. *Suzhou Inn-Mag New Energy Ltd., Suzhou, China*
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- VP14-17. Dependence of the cut region on the magnetic losses of a non-grain-oriented Fe-Si steel.** *J.C. Ferreira¹, L.C. Matos¹, T. Pereira de Abreu¹, E.M. Alves², G.A. Mendonça², L. Muniz Meireles¹, A.S. Neto¹, D.L. Rocco¹ and L.F. Costa¹*
1. CEFETMG, Timóteo, Brazil; 2. Aperam, Timóteo, Brazil
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- VP14-18. Augmented Exchange Bias and Interfacial Pinning in FeCo alloy Nanoparticles.** *V. Rajeevan¹, L.S. Billgates¹ and R. Joseyphus¹*
1. Department of Physics, National Institute of Technology, Tiruchirappalli, India
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Session VP15 **TRANSFORMERS AND WIRELESS POWER TRANSFER** **(Poster Virtual Session)**

Sandro Rubino, Chair
 Politecnico di Torino, Torino, Italy

- VP15-01. Research on Low-frequency Electromagnetic Transient Model of Shell-Type Transformers Based on Dynamic Jiles-Atherton Hysteresis Model.** *Y. Ren¹ and Y. Wang¹*
1. Hebei University of Technology, Tianjin, China
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- VP15-04. A Multi-Output Wireless Power Transfer System with Non-Overlapping Self-Decoupling Magnetic Couplers.** *W. Pan¹, R. Xie¹, Y. Zhuang¹, X. Mao¹ and Y. Zhang¹*
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- VP15-09. Fundamental study on cancellation coil system design for application to infrastructure.** M. Yokosawa¹, F. Sato¹, S. Miyahara¹, H. Matsuki⁴, K. Inada², T. Abe² and S. Sasaki³
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- VP15-10. The Vibration Calculation Method For Gapped Cores Based On The Electric-magnetic-mechanical Coupling Model.** H. Li¹, X. Zhao¹, J. Zhang¹, Y. Yu¹, L. Liu² and Z. Du²
1. Department of Electrical Engineering, North China Electric Power University, Baoding, China; 2. Hebei Provincial Key Laboratory of Electromagnetic and Structural Performance of Power Transmission and Transformation Equipment, Baoding, China
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- VP15-11. Investigation of Vibration and Noise of High-frequency Transformer Cores of Different Shapes Under Non-Sinusoidal Excitation.** Y. Li^{1,2}, X. Liu^{1,2}, Y. Dou^{1,2} and T. Chen^{1,2} *1. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China; 2. Province-Ministry Joint Key Laboratory of EFEAR, Hebei University of Technology, Tianjin, China*
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Butera, A. (CQ-06)	59
Butera, A. (EG-10)	98
Butzek, M. (CE-07)	50
Buyanova, I.A. (AS-05)	21
Buyanova, I.A. (CQ-01)	59
Byczynski, G. (DP-08)	78
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Cabrera-Pasca, G.A. (BR-03)	38
Cabrera-Pasca, G.A. (CS-11)	63
Cabrera-Pasca, G.A. (DR-13)	82
Cagnon, L. (BG-01)	34
Caha, I. (FD-05)	110
Cai, H. (VP7-14)	142
Cai, K. (AD-02)	7
Cai, W. (BQ-01)	36
Cai, X. (VP7-20)	143
Cai, X. (VP10-18)	148
Cai, Z. (VP10-10)	147
Cai, Z. (VP12-12)	153
Calderón, J.A. (AQ-04)	17
Calderón, J.A. (BP-03)	35
Calderón, J.A. (CQ-05)	59
Calle, F. (FD-08)	110
Camarero, J. (AC-02)	4
Camerini, C. (AS-07)	21
Campos, W. (GD-08)	124
Camsari, K. (DA-01)	64
Canvel, Y. (FD-07)	110
Cao, G. (CE-08)	50
Cao, G. (GE-08)	125
Cao, G. (VP12-16)	153
Cao, K. (AD-05)	7
Cao, K. (BQ-01)	36
Cao, K. (ER-01)	101
Cao, Y. (VP10-27)	149
Cao, Z. (DC-04)	67
Capua, A. (BD-02)	28
Capua, A. (FB-05)	106
Capua, A. (FD-03)	109
Carbonari, A.W. (AS-03)	21
Carbonari, A.W. (BQ-10)	38
Carbonari, A.W. (BR-03)	38
Carbonari, A.W. (BR-07)	39
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Carbonari, A.W. (DR-13)	82	Chang, J. (FC-05)	108
Carbonio, R. (CS-05)	62	Chang, S. (AR-12)	20
Cardias Alves		Chang, S. (AR-13)	20
de Almeida, R. (DG-09)	76	Chang, S. (AR-14)	20
Cardias Alves		Chang, S. (BS-01)	40
de Almeida, R. (ER-07)	101	Chang, S. (DP-01)	77
Cardoso de Freitas, S. (GA-02)	117	Chang, T. (VP5-01)	138
Cardoso de Freitas, S. (VP13-03)	155	Chang, T. (VP14-06)	157
Cardoso de Oliveira, R. (BC-05)	26	Chang, W. (AD-06)	8
Cardoso de Oliveira, R. (BC-09)	27	Chang, W. (CC-02)	46
Cardoso, C.E. (BA-01)	22	Chang, W. (CG-09)	56
Cardoso, J.R. (EC-02)	87	Chao, W. (AP-03)	15
Cardoso, J.R. (EC-04)	88	Charalampidis, I. (BP-07)	35
Carlotti, G. (GB-07)	119	Charlier, J. (CG-04)	55
Carlstet, N. (FC-06)	108	Charlier, J. (CP-12)	58
Caro Patiño, J. (DR-10)	81	Chatterjee, R. (CC-02)	46
Caro Patiño, J. (FG-09)	116	Chatterjee, S. (FC-10)	109
Carpenter, R. (AC-09)	6	Chaudhary, V. (CS-16)	64
Carpenter, R. (AD-02)	7	Chauleau, J. (GD-07)	123
Carpenter, R. (AD-08)	8	Chaves Pereira, E. (BC-05)	26
Carpenter, R. (BP-02)	35	Chaves Pereira, E. (BC-09)	27
Carpenter, R. (FD-07)	110	Chaves Pereira, E. (DF-11)	74
Carpentieri, M. (AA-06)	2	Chaves, D. (AQ-07)	17
Carpentieri, M. (AD-04)	7	Chdil, O. (FG-10)	116
Carpentieri, M. (AG-01)	13	Checca, N. (GF-04)	127
Carpentieri, M. (CC-06)	46	Checca, R. (CS-06)	62
Carpentieri, M. (EG-11)	98	Checca, R. (GB-03)	118
Carpentieri, M. (GB-05)	119	Cheeran, M.C. (DD-07)	70
Carranza-Célis, D. (BQ-09)	37	Chen, A. (VP7-20)	143
Carré, E. (CP-12)	58	Chen, C. (AR-05)	19
Carreira, S. (AQ-16)	18	Chen, C. (DG-06)	76
Carriço, A.S. (AP-12)	16	Chen, D. (VP1-15)	132
Carriço, A.S. (VP9-02)	145	Chen, D. (VP10-12)	147
Caruana, A. (CS-04)	62	Chen, G. (EB-04)	86
Carva, K. (DG-08)	76	Chen, G. (VP10-04)	146
Carvalho, R. (CG-06)	55	Chen, H. (BA-06)	23
Carvalho, V. (CB-04)	44	Chen, H. (CC-10)	47
Casiraghi, A. (GB-07)	119	Chen, H. (CD-07)	48
Cassoret, B. (BE-10)	31	Chen, H. (VP1-11)	131
Castro Nunes, W. (BR-09)	39	Chen, J. (AD-03)	7
Cattelan, L.P. (FG-07)	116	Chen, J. (AD-11)	8
Cattoni, A. (CB-07)	44	Chen, J. (AR-12)	20
Cattoni, A. (DB-07)	66	Chen, J. (DP-01)	77
Cazor, X. (AB-01)	2	Chen, J. (EB-04)	86
Cebollada, F. (GF-05)	127	Chen, J. (EC-03)	88
Cecchi, B.M. (BF-10)	33	Chen, J. (FC-04)	108
Cela, D. (CF-02)	52	Chen, J. (VP8-02)	144
Celano, U. (AD-08)	8	Chen, J. (VP12-06)	152
Celegato, F. (BF-04)	32	Chen, L. (GB-07)	119
Cely Orjuela, I.G. (BR-15)	40	Chen, L. (VP8-04)	144
Cely Orjuela, I.G. (DP-05)	77	Chen, L. (VP10-08)	147
Centala, G. (DB-02)	65	Chen, M. (VP5-06)	139
Cepeda-Arancibia, M. (CA-01)	42	Chen, M. (VP10-13)	147
Cesar, M.M. (CS-15)	63	Chen, T. (CG-11)	56
Céspedes, E. (AB-09)	4	Chen, T. (VP9-07)	145
Céspedes, O. (GG-09)	130	Chen, T. (VP15-11)	160
Cestarollo, L. (AF-07)	12	Chen, T. (VP15-13)	161
Cestarollo, L. (FE-04)	111	Chen, W.M. (AS-05)	21
Ceylan, D. (CE-05)	50	Chen, W.M. (CQ-01)	59
Ceylan, D. (DC-03)	67	Chen, X. (DG-01)	75
Cezar, J.C. (AG-02)	13	Chen, X. (GD-04)	123
Cezar, J.C. (AQ-07)	17	Chen, X. (VP7-15)	142
Cezar, J.C. (BF-05)	32	Chen, X. (VP15-05)	159
Cezar, J.C. (DQ-05)	79	Chen, X. (VP15-06)	160
Cezar, J.C. (DQ-07)	79	Chen, Y. (AC-10)	6
Cezar, J.C. (FB-02)	105	Chen, Y. (DD-04)	69
Cha, K. (VP12-09)	152	Chen, Y. (GB-08)	120
Chabour, F. (BE-05)	30	Chen, Y. (VP11-02)	150
Chabour, F. (CE-03)	49	Chen, Z. (VP5-10)	139
Chan, J. (CC-01)	45	Chen, Z. (VP10-03)	146
Chanda, A. (ED-05)	90	Cheng, C. (AD-06)	8
Chang, H. (BQ-08)	37	Cheng, C. (CG-09)	56
Chang, H. (FC-05)	108	Cheng, H. (VP8-07)	144
Chang, H. (FF-02)	113	Cheng, J. (CG-03)	54
Chang, H. (VP7-19)	143	Cheng, K. (VP15-03)	159
Chang, J. (AE-08)	10	Cherif, R. (EQ-02)	99
Chang, J. (EB-05)	86	Chérif, S. (BG-01)	34

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Chevallier, L. (EQ-02)	99	Corte-Leon, P. (DF-08)	74
Cheynis, F. (CD-08)	49	Corte-Leon, P. (GF-06)	127
Chikaki, S. (DD-09)	70	Cortés-Ortuño, D.I. (CA-01)	42
Chiriac, H. (CS-01)	62	Cortés-Ortuño, D.I. (CF-12)	53
Chiriac, H. (DS-10)	83	Cosset-Cheneau, M. (BP-01)	35
Chiriac, H. (EP-07)	99	Cosset-Cheneau, M. (CD-08)	49
Chiriac, H. (VP7-03)	141	Cosset-Cheneau, M. (ER-02)	101
Chirkova, A. (DR-03)	80	Cosset-Cheneau, M. (ER-05)	101
Cho, H. (VP8-06)	144	Costa Carvalho, P. (AG-02)	13
Cho, S. (AR-06)	19	Costa Carvalho, P. (DQ-01)	78
Choe, J. (VP8-08)	144	Costa, C.A. (AE-03)	9
Choi, C. (ED-09)	91	Costa, C.A. (CQ-03)	59
Choi, D. (BS-03)	41	Costa, D. (AC-02)	4
Choi, G. (EA-03)	84	Costa, L.F. (AR-01)	19
Choi, J. (ED-03)	90	Costa, L.F. (VP14-17)	159
Choi, J. (VP12-07)	152	Costa, M. (DG-09)	76
Choi, S. (VP8-08)	144	Costa, M.S. (BR-03)	38
Choi, Y. (EA-03)	84	Côté, M. (CP-09)	58
Choi, Y. (VP4-06)	136	Cotón, N. (EG-08)	97
Choi, Y. (VP9-04)	145	Couet, S. (AC-09)	6
Choi, Y. (VP12-10)	153	Couet, S. (AD-02)	7
Chollet, M. (CF-02)	52	Couet, S. (AD-08)	8
Chopin, C. (AE-07)	10	Couet, S. (BP-02)	35
Chopin, C. (CC-09)	47	Couet, S. (FD-07)	110
Chopin, C. (CF-08)	53	Croes, B. (CD-08)	49
Chouhan, A. (CD-05)	48	Cros, V. (AC-05)	5
Chrissekos, J. (DD-05)	69	Cros, V. (CD-06)	48
Chshiev, M. (BG-01)	34	Cros, V. (EG-02)	96
Chshiev, M. (BG-10)	35	Cruz, N. (BF-10)	33
Chshiev, M. (CP-05)	57	Csaba, G. (CB-07)	44
Chshiev, M. (CP-10)	58	Cubukcu, M. (DG-04)	76
Chuang, K. (CG-03)	54	Cui, J. (EE-01)	92
Chugh, V.K. (DD-07)	70	Cui, J. (EE-06)	93
Chumak, A. (BB-03)	24	Cui, J. (EF-07)	96
Chumak, A. (CB-09)	45	Cui, S. (VP15-02)	159
Chumak, A. (DB-06)	66	Culot, M. (BP-01)	35
Chumak, A. (DB-08)	66	Culot, M. (CD-08)	49
Chumak, A. (EG-09)	97	Culot, M. (ER-02)	101
Chumak, A. (FA-02)	104	Cunha, G. (AS-02)	21
Ciannella, S. (VP4-13)	137	Curti, M. (FE-08)	112
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Ciubotaru, F. (BF-03)	32		
Ciubotaru, F. (BF-06)	32		
Claessen, R. (GD-06)	123		
Claro, M. (FD-05)	110		
Cocconcilli, M. (CB-07)	44		
Coelho, R.A. (EC-02)	87		
Coelho, R.A. (EC-04)	88		
Coey, J. (FD-02)	109		
Coey, J. (GC-01)	120		
Cohen, L.F. (FG-04)	115		
Coisson, M. (BF-04)	32		
Collin, S. (AC-05)	5		
Collin, S. (CD-06)	48		
Collin, S. (CP-10)	58		
Conde Garrido, J.M. (BE-09)	30		
Conde Garrido, J.M. (DF-06)	73		
Copie, O. (AP-10)	15		
Cornelio Palma, J.G. (DQ-01)	78		
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Correa, E.L. (CS-11)	63		
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Correa, M.A. (CG-05)	55		
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Sales, T. (CS-11)	63
da Silva, E.F. (EG-06)	97
da Silva, R.B. (BR-01)	38
da Silva, R.B. (CQ-09)	60
da Silva, V.R. (EE-05)	92
Dabrowski, M. (BD-04)	28
Dabrowski, M. (DG-04)	76
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Das, P.T. (EB-10)	87	Denardin, J.C. (CQ-13)	60
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de Barros, A. (BE-07)	30	Di Pietro, A. (GB-07)	119
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De Boeck, J. (AD-02)	7	Dias, J. (AR-01)	19
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Deenen, A.J. (BB-10)	25	Dong, T. (VP15-12)	160
Deenen, A.J. (DB-03)	65	Dong, T. (VP15-13)	161
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Parker, D. (EE-01)	92	Petroff, F. (CG-04)	55
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Pavlidis, V. (BP-07)	35	Pirota, K.R. (BF-10)	33
Paz, E. (CF-06)	53	Pirota, K.R. (BQ-04)	37
Paz, E. (EB-06)	86	Pirota, K.R. (BR-12)	39
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Paz, E. (FD-05)	110	Pirro, P. (CF-05)	52
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Pereira, G. (AS-07)	21	Prenat, G. (CD-08)	49
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Schulz, F. (FB-09)	107	Shin, H. (VP11-04)	150
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Serga, A.A. (BB-04)	24	Silva, B.G. (GF-04)	127
Serha, R. (AG-05)	14	Silva, D.A. (ES-05)	103
Serha, R. (BB-03)	24	Silva, G.S. (BR-10)	39
Serha, R. (DB-06)	66	Silva, G.S. (BR-12)	39
Serha, R. (EG-09)	97	Silva, J. (ER-07)	101
Serpico, C. (EG-02)	96	Silva, M. (GA-02)	117
Sessi, P. (FF-09)	114	Silveira, C.C. (CS-15)	63
Sgarro, P. (BP-01)	35	Silveyra, J.M. (BE-09)	30
Sgarro, P. (CD-08)	49	Silveyra, J.M. (DF-06)	73
Sgarro, P. (ER-02)	101	Sim, J. (VP12-09)	152
Sgarro, P. (ER-05)	101	Simões e Silva, W. (CP-09)	58
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Sha, Y. (VP3-05)	133	Singer, A. (CF-02)	52
Sha, Y. (VP10-24)	149	Singh, H. (BD-03)	28
Sha, Y. (VP11-01)	150	Singh, M. (VP4-18)	137
Shabalin, A. (CF-02)	52	Singh, S. (EP-01)	98
Shah, A. (VP7-10)	142	Sinnecker, J.P. (CB-08)	45
Shahee, A. (CP-02)	57	Sinnecker, J.P. (CQ-07)	60
Shakeel, S. (VP6-09)	140	Sinnecker, J.P. (EC-05)	88
Shalygin, A. (GF-08)	127	Sinova, J. (GD-05)	123
Shan, W. (VP1-06)	131	Sinova, J. (GD-06)	123
Sharafullin, I.F. (DQ-09)	79	Sisniega Soriano, B. (AF-10)*	13
Sharangi, P. (GF-10)	128	Sitnikov, M. (EQ-03)	100
Sharma, A. (CC-08)	47	Skokov, K. (DE-02)	71
Sharma, R. (AB-02)	2	Skokov, K. (DR-03)	80
Sharma, V. (GC-09)	121	Skokov, K. (DR-05)	81
Sharmin, S. (GG-07)	129	Skokov, K. (DR-11)	82
Shaw, J.M. (GB-07)	119	Skokov, K. (EE-02)	92
She, D. (FF-08)	114	Skokov, K. (ES-01)	102
Shen, Y. (VP5-10)	139	Skokov, K. (FG-01)	114
Shendrikova, L. (GF-08)	127	Skokov, K. (FG-05)	115
Sheng, R. (AR-05)	19	Skokov, K. (FG-06)	116
Shenoi, R. (DC-05)	68	Skokov, K. (VP4-01)	135
Shepley, P. (GB-05)	119	Skokov, K. (VP9-01)	144
Shepley, P. (GG-09)	130	Skorvanek, I. (GF-01)	126
Shi, G. (CB-01)	43	Skourski, Y. (ES-01)	102
Shi, G. (FF-01)	112	Skowronski, W. (BG-05)	34
Shi, J. (AD-04)	7	Slavin, A.N. (CC-03)	46

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Slezak, T. (GD-02)	122	Stamenov, P.S. (BD-05)	29
Smejkal, L. (GD-06)	123	Stamenov, P.S. (GC-01)	120
Smejkal, L. (GD-08)	124	Stankovic, I. (AQ-06)	17
Smith, D. (CC-05)	46	Stark, A. (AD-08)	8
Snarski-Adamski, J. (EE-09)	93	Staruch, M. (GB-04)	119
Snarski-Adamski, J. (GG-08)	130	Stashkevich, A.A. (DS-07)	83
Soares de Brito, A. (VP4-17)	137	Stavila, C. (EP-07)	99
Soares, C.C. (AQ-07)	17	Steblii, M. (CF-06)	53
Soares, G. (GB-07)	119	Stehr, J. (AS-05)	21
Soares, G.K. (BQ-09)	37	Steinbauer, M.K. (AF-05)	12
Soares, G.K. (CR-08)	61	Steinhorst, S. (CE-10)	51
Soares, J. (BR-01)	38	Stenning, K.D. (AA-01)	1
Sobucki, K. (BB-07)	25	Stepien, M. (AR-03)	19
Sobucki, K. (CF-01)	51	Stepien, M. (CE-01)	49
Socolovsky, L.M. (BR-15)	40	Stepney, S. (AA-01)	1
Socolovsky, L.M. (DP-05)	77	Steren, L. (AQ-03)	16
Soejima, Y. (DD-08)	70	Steren, L. (AQ-16)	18
Sokolov, E. (VP4-04)	136	Steren, L. (CG-02)	54
Soldatof, I. (GF-05)	127	Steren, L. (EG-10)	98
Soler-Morala, J. (GF-05)	127	Steren, L. (VP7-17)	143
Solis, L.M. (CG-02)	54	Stiles, M.D. (AA-03)	1
Solozabal Azcarate, I. (BC-03)	26	Stoian, G. (CS-01)	62
Solozabal Azcarate, I. (ED-02)	90	Stoian, G. (ES-10)	103
Sommer, R.L. (AQ-01)	16	Stoian, G. (VP7-03)	141
Sommer, R.L. (BB-11)	25	Strom, D. (DR-02)	80
Sommer, R.L. (CB-08)	45	Su, G. (CG-03)	54
Sommer, R.L. (CQ-09)	60	Su, J. (VP7-14)	142
Sommer, R.L. (CR-07)	61	Suess, D. (AB-11)	4
Sommer, R.L. (EG-06)	97	Suess, D. (AE-09)	10
Sommer, R.L. (GF-04)	127	Suess, D. (AG-05)	14
Song, C. (CP-04)	57	Suess, D. (DB-06)	66
Song, C. (DP-09)	78	Suess, D. (EB-02)	85
Song, C. (VP3-13)	134	Suess, D. (EC-08)	88
Song, C. (VP10-05)	146	Suess, D. (EG-09)	97
Song, M. (VP7-06)	142	Suess, D. (VP6-09)	140
Song, P. (BS-09)	41	Sugahara, K. (BE-04)	30
Song, P. (DP-08)	78	Suguihiro, N.M. (EP-06)	99
Song, P. (EQ-06)	100	Sulaiman, M. (VP13-07)	155
Song, S. (BS-02)	40	Sullivan, C. (CC-10)	47
Song, X. (DD-02)	69	Sullivan, C. (EF-12)	95
Song, X. (ES-14)	104	Sumi, T. (FE-02)	111
Soni, S. (CC-04)	46	Sun, C. (VP10-01)	146
Soong, W. (DC-04)	67	Sun, C. (VP14-09)	158
Soulan, S. (DD-03)	69	Sun, H. (VP14-14)	158
Soumah, L. (AA-03)	1	Sun, H. (VP15-15)	161
Sousa, L.R. (BA-01)	22	Sun, J. (FF-03)	113
Sousa, M.A. (BR-05)	38	Sun, J.Z. (DA-02)	64
Sousa, R. (AA-03)	1	Sun, L. (VP6-07)	140
Souza, A.M. (AS-06)	21	Sun, N.X. (EC-06)	88
Souza, C.M. (VP9-02)	145	Sun, Q. (CA-05)	43
Souza, E. (BQ-05)	37	Sun, Q. (ES-11)	104
Souza, E. (CG-10)	56	Sun, Q. (ES-14)	104
Souza, E. (CR-04)	61	Sun, R. (VP12-03)	152
Souza, I.O. (VP13-02)	154	Sundaram, P. (ED-06)	91
Souza, I.O. (VP13-12)	156	Sung, M. (VP12-09)	152
Souza, I.O. (VP15-08)	160	Surdin, O. (DE-07)	72
Souza, J.C. (CP-09)	58	Suresh, K.G. (DQ-08)	79
Souza, K.S. (AS-03)	21	Suto, H. (AD-10)	8
Souza, K.S. (BR-07)	39	Svec, P. (GF-01)	126
Souza, R.D. (ES-02)	102	Swindells, C. (AA-01)	1
Souza, S.M. (ES-02)	102	Swindells, C. (CS-04)	62
Souza, S.M. (ES-03)	102	Syed, A.R. (CQ-09)	60
Souza, S.M. (ES-05)	103	Syskaki, M. (GD-05)	123
Souza, S.M. (ES-12)	103	Syskaki, M. (GD-09)	124
Spetzler, B. (DS-06)	83	Szilva, A. (ER-07)	101
Spetzler, B. (EB-07)	86	Szulc, K. (CB-06)	44
Spetzler, E. (BF-01)	31	Szulc, K. (CF-01)	51
Spetzler, E. (DS-06)	83	Szulc, K. (DB-05)	66
Spetzler, E. (EB-07)	86		
Srikanth, H. (CG-01)	54		
Srikanth, H. (ED-05)	90		
Srinivasan, K. (EB-01)	85		
Srivastava, A. (CP-01)	56		
Stadler, B. (DD-04)	69		
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T.S. Barthem, V.M. (AQ-11)	18
Tabata, J. (DD-08)	70
Tabata, T. (EF-09)	95
Tabata, T. (EF-10)	95

Tacchi, S. (CB-07)	44	Tonini, D. (VP13-08)	155
Tacchi, S. (DB-01)	65	Tonthat, L. (AF-02)	11
Tacchi, S. (GB-07)	119	Tonthat, L. (EP-05)	99
Tahara, G. (VP2-02)	132	Tonyushkin, A. (DD-05)	69
Tai, C. (EP-02)	98	Torrao Victor, R. (CR-03)	61
Takahashi, Y. (AD-09)	8	Torrao Victor, R. (DG-03)	75
Takahashi, Y. (AF-01)	11	Torres, L. (FD-08)	110
Takayama, J. (CQ-01)	59	Torres, T.E. (CQ-06)	59
Takeda, K. (FE-02)	111	Torres, T.E. (DD-01)	68
Takinami, A.H. (CE-06)	50	Tortarolo, M. (BF-09)	33
Takorabet, N. (EQ-14)	100	Tozman, P. (EE-02)	92
Takorabet, N. (GE-09)	125	Tozman, P. (ES-01)	102
Talanov, A.V. (CB-05)	44	Trajano Ribeiro, P. (BQ-05)	37
Talantsev, A. (EB-06)	86	Trampert, A. (DG-06)	76
Talatchian, P. (AA-03)	1	Trapanese, M. (FE-07)	112
Talatchian, P. (BP-08)	36	Trevillian, C. (AF-04)	12
Talmelli, G. (AD-02)	7	Trevillian, C. (DB-09)	67
Talmelli, G. (BP-02)	35	Trodahl, J. (AD-01)	6
Talmelli, G. (FD-07)	110	Troncoso, R. (CB-04)	44
Tamaru, S. (GF-07)	127	Tsafack, P. (VP4-03)	136
Tan, A. (FB-07)	106	Tsai, H. (DG-01)	75
Tan, T. (CE-07)	50	Tsai, M. (BQ-03)	37
Tanaka, K. (CE-11)	51	Tsai, M. (VP5-01)	138
Tanaka, K. (DG-01)	75	Tsai, M. (VP14-06)	157
Tancredi, P. (BR-11)	39	Tsakaloudi, V. (EF-01)	94
Tancredi, P. (BR-15)	40	Tsao, M. (CC-05)	46
Tang, P. (BB-01)	24	Tschirner, T. (GD-06)	123
Tang, W. (EE-06)	93	Tschudin, M. (DG-02)	75
Taniwaki, M. (AP-11)	16	Tseng, Y. (AD-06)	8
Tapia, I. (AB-01)	2	Tseng, Y. (CC-02)	46
Taqavi, O. (DP-08)	78	Tseng, Y. (CG-09)	56
Taqavi, O. (EQ-06)	100	Tsuchida, Y. (BS-10)	41
Taqavi, O. (VP3-15)	135	Tsuchida, Y. (GE-02)	125
Tarazona, H.S. (AP-10)	15	Tsunegi, S. (FC-03)	107
Tashli, M. (ED-06)	91	Tsunoda, M. (DS-09)	83
Tataryn, N. (AS-11)	22	Tulapurkar, A.A. (CD-05)	48
Taubel, A. (VP9-01)	144	Tumelero, M. (BQ-07)	37
Tchernyshyov, O. (FD-01)	109	Tumelero, M. (DR-12)	82
Teixeira, A.C. (EP-06)	99	Tyberkevych, V. (AF-04)	12
Teixeira, C.D. (FG-06)	116	Tyberkevych, V. (CC-03)	46
Temst, K. (AC-09)	6	Tyberkevych, V. (DB-09)	67
Temst, K. (BP-02)	35	Tzschaschel, C. (EG-01)	96
Temst, K. (FD-07)	110		
Tene Deffö, Y. (VP4-03)	136		
Terada, S. (EF-09)	95		
Terada, S. (EF-10)	95		
Terán, C.L. (AQ-04)	17		
Tereshina, I. (DE-07)	72		
Teresi, S. (BP-01)	35		
Teresi, S. (CD-08)	49		
Teresi, S. (ER-02)	101		
Tergolina Salton, A. (DP-03)	77		
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Ternero, P. (BC-06)	27		
Tetienne, J. (FB-06)	106		
Thakur, I. (AB-05)	3		
Tham, K. (BP-09)	36		
Thomson, T. (DQ-03)	79		
Thormählen, L. (BF-01)	31		
Thorsson, L. (GF-10)	128		
Tian, B. (VP14-11)	158		
Tian, B. (VP14-13)	158		
Tian, C. (EG-07)	97		
Tian, H. (VP1-06)	131		
Tian, S. (DB-08)	66		
Tiberto, P. (BF-04)	32		
Tiberto, P. (GF-10)	128		
Tibu, M. (VP7-03)	141		
Tikhonov, Y. (CA-04)	43		
Todaka, T. (VP10-07)	147		
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Tomasello, R. (AG-01)	13		
Tomasello, R. (EG-11)	98		
Tomasello, R. (GB-05)	119		
Tomiatto, L. (BR-14)	39		
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Urbánek, M. (BB-08)	25
Urbánek, M. (CB-09)	45
Urbánek, M. (DB-08)	66
Urbánek, M. (EG-09)	97
Urcia Romero, S. (AP-02)	15
Urdiroz, U. (GF-05)	127
Urreta, S. (AB-09)	4
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Valadares, M.C. (BA-01)	22
Valdes, D. (DD-01)	68
Valdes, J. (AQ-06)	17
Valença, C.M. (CQ-03)	59
Valença, C.M. (EQ-04)	100
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Wang, Y.A. (DD-07)	70	Wostyn, K. (AD-02)	7
Wang, Z. (VP2-01)	132	Wostyn, K. (FD-07)	110
Wang, Z. (VP15-18)	161	Wrona, J. (BG-05)	34
Warisarn, C. (BP-11)	36	Wrona, J. (VP13-03)	155
Warisarn, C. (VP7-12)	142	Wu, D. (VP1-09)	131
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Wasniewski, E. (DF-03)	73	Wu, H. (FF-02)	113
Wasniewski, E. (EF-05)	94	Wu, H. (VP2-01)	132
Watanabe, T. (AF-03)	11	Wu, J. (VP10-09)	147
Watanabe, T. (DB-04)	66	Wu, K. (BA-04)	23
Watt, S. (GC-04)	121	Wu, K. (DD-07)	70
Weeger, O. (VP4-01)	135	Wu, K. (VP4-13)	137
Wei, C. (BF-07)	33	Wu, L. (VP10-28)	149
Wei, H. (CG-04)	55	Wu, L. (VP12-03)	152
Wei, H. (CP-12)	58	Wu, Q. (VP5-05)	138
Wei, J. (AR-10)	20	Wu, T. (BQ-03)	37
Wei, J. (CE-08)	50	Wu, T. (VP6-07)	140
Wei, J. (VP10-17)	148	Wu, T. (VP9-06)	145
Wei, X. (AR-13)	20	Wu, T. (VP13-10)	156
Wei, Z. (AQ-15)	18	Wu, X. (BF-06)	32
Weickert, F. (DF-09)	74	Wu, X. (VP3-09)	134
Weickert, F. (GA-01)	117	Wu, X. (VP3-14)	134
Weigand, M. (BB-02)	24	Wu, Y. (AD-06)	8
Weigand, M. (FB-09)	107	Wu, Y. (AD-11)	8
Weil, R. (CA-02)	42	Wu, Y. (AR-12)	20
Weiler, M. (CF-05)	52	Wu, Y. (AR-13)	20
Weissenhofer, M. (GD-09)	124	Wu, Y. (AR-14)	20
Wellens, P. (DC-05)	68	Wu, Y. (AR-15)	20
Wen, H. (VP5-03)	138	Wu, Y. (BS-01)	40
Wen, X. (VP10-08)	147	Wu, Y. (CG-09)	56
Wende, H. (DR-03)	80	Wu, Y. (DP-01)	77
Wende, H. (EE-04)	92	Wu, Y. (EC-03)	88
Wende, H. (FG-05)	115	Wu, Y. (GC-02)	120
Wendhausen, P.A. (DE-06)	71	Wu, Y. (VP7-04)	141
Wendhausen, P.A. (DE-09)	72	Wu, Y. (VP7-15)	142
Wendhausen, P.A. (ES-02)	102	Wu, Z. (DR-11)	82
Wendhausen, P.A. (ES-03)	102	Wu, Z. (VP11-05)	150
Wendhausen, P.A. (ES-04)	103	Wysocka, D. (BF-03)	32
Wendhausen, P.A. (ES-05)	103		
Wendhausen, P.A. (ES-06)	103		
Wendhausen, P.A. (ES-12)	103		
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Wereley, N. (VP9-04)	145		
Werwinski, M. (EE-09)	93		
Werwinski, M. (GG-08)	130		
Weßels, T. (EE-04)	92		
Westerström, R. (BC-06)	27		
Wiegand, P. (EB-07)	86		
Wiekhorst, F. (AB-06)	3		
Wijshoff, M. (BP-02)	35		
Wilgocka-Slezak, D. (GD-02)	122		
Wilhelm, F. (DR-03)	80		
Wilhelm, F. (FG-05)	115		
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Wilson, A. (DF-09)	74		
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Wintz, S. (FB-09)	107		
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Wisniowski, P. (VP13-03)	155		
Wissman, M. (CD-08)	49		
Wittrock, S. (EG-02)	96		
Wojewoda, O. (AS-12)	22		
Wojewoda, O. (BB-08)	25		
Wojewoda, O. (CB-09)	45		
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Xia, M. (VP10-19)	148
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Xiao, R. (BQ-01)	36
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Xie, H. (VP12-13)	153
Xie, R. (EE-04)	92
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Xiu, F. (FF-03)	113	Yang, W. (VP1-09)	131
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