

PROGRAM

Forum Bressanone			room Prishna	room Regensburg	room Mantova	room Tirol		
Sunday, Feb 9								
15:30	16:15	Registration						
16:15	16:30	Opening	Welcome and Introduction					
16:30	17:30	Tutorial	J. Sinova (Chair: A. Kimel)					
17:30	17:45	Multisession	Numerical Modeling and Micromagnetics (M. d'Aquino)	Magnetism for Neurom. and Unconv. Computing (O. Gomonay)	Rodrigues	Magnetic Wireless Power Transfer (A. Triviño Cabrera)	Musumeci - Solimene Cardelli - Bertolini Cohen	
17:45	18:00				Schrefl			Riminucci
18:00	18:15				Kim			Khymyn
18:15	18:30				Hertel			Ebels
18:30	18:45							
18:45	19:45	Welcome Reception						

Monday, Feb 10									
08:45	09:00	Multisession	Magnetism for Neurom. and Unconv. Computing (R. Khymyn)	Fukami	Avcı	Zaiets	Artificial Spin Ice Physics and Applications (N. Rougemaille)		
09:00	09:15					Koplak		Nisoli	
09:15	09:30			Åkerman	Johansson	Raghu			Pirota
09:30	09:45				Laterza	Tiberto			Berchiolla
09:45	10:00					Cecchi			
10:00	10:45	Plenary	H. Yang (Chair: R. Tomasella)						
10:45	11:05	Coffee break							
11:05	11:20	Multisession	Altermagnets (M. Carpentieri)	Numerical Modeling and Micromagnetics (R. Hertel)	Vallobrá	Barrera	Slezak		
11:20	11:35				Kimel	Breth		Varvaro	Walker
11:35	11:50				Smejkal	Malagó		Pecheux	Jiang
11:50	12:05				Song	d'Aquino		Pradhan	Barker
12:05	12:20				Grzybowski	Buda-Prejbeanu		Caron	Aqeel
12:20	12:35				Węgrowe			Lalitha R.	
12:35	12:50							Sharma H.	
12:50	13:05								
13:05	15:00	Posters I and Lunch (A. Aqeel, P. Malagó, C. Simonelli)							
15:00	15:15	Multisession	Magnetic Materials for Energy Applications (L. Caron)	Curvilinear and 3D Magnetism (D. Makarov)	Jacobsen	Frandsen	Spin Waves and Magnonics & Antiferro- and Ferri-magnetic Spintronics (D. Petti)		
15:15	15:30				Law	Sevim		Wiekhorst	Bonetti
15:30	15:45				Vinai	Pylypovskiy		Jaufenthaler	Cocconcilli
15:45	16:00				Gal H.	Kiselev		Bugase	Vitali
16:00	16:15				Klinar	Fesenko		Shubbak	Mantion
16:15	16:30				Fournée	Wojewoda		Laurenzana	Mertel
16:30	16:45				Jenuš Belec				Ma S.
16:45	17:00				Zhang B.				
17:00	17:20	Coffee break							
17:20	17:35	Multisession	Spin Waves and Magnonics (K. Schultheiss)	Magnetic Measurements (E. Darwin)	Josteinssos	Waske	Artificial Spin Ice Physics and Applications (D. Lacour)		
17:35	17:50				Solimene	Meo		Ladaski	
17:50	18:05				Petti	Das		Levartoski	
18:05	18:20				Korber	Cugini		Branford	
18:20	18:35				Van Dijken	Nlebedim		Tierno	
18:35	18:50								

Tuesday, Feb 11									
08:45	09:00	Multisession	Opportunities and Challenges in Spintronic Technology (G. Finocchio)	Jué	Gambardella	AI, Machine Learning and Soft Computing for Magnetism (A. Laudani)	Additive Manufacturing of Magnetic Materials (P. Tiberto)		
09:00	09:15			Fagiani	Miranda De Paula	Kulesh		Salazar	
09:15	09:30			Nembach	Skowronski	Schaffer		Franco	
09:30	09:45				Perna	Vishina			
09:45	10:00			Garzon					
10:00	10:45	Plenary	P. Pirro (Chair: S. Van Dijken)						
10:45	11:05	Coffee break							
11:05	11:20	Multisession	Spin Waves and Magnonics (G. Carlotti)	Curvilinear and 3D Magnetism (C. Donnelly)	Dunin-Borkowski	Petelin	Antiferro- and Ferri-magnetic Spintronics (S. Mantion)		
11:20	11:35				Schultheiss	Hierro Rodriguez		Tomc	Bergenti
11:35	11:50				Brevis	Bezsmertna		Almanza	Kolushenkov
11:50	12:05				Lopes Seeger	Butcher		Casadei	Offi
12:05	12:20				Soares	Abert		Poskovic	Prusik
12:20	12:35				Salama	Rybakov		Moreno Ramirez	Sato
12:35	12:50				Bossini			Duan	Wang H.
12:50	13:05								
13:05	15:00	Posters II and Lunch (S. Finizio, E. Garzon, Q. Yi)							
15:00	15:15	Multisession	Antiferro- and Ferri-magnetic Spintronics (A. Brambilla)	Controlling Dzyaloshinskii-Moriya Interaction (M. Kuepferling)	Di Pietro	Gacnik	Magnetic Levitation and Bearings and Electrical Machine Modeling (A. Musolino)		
15:15	15:30				Vedmedenko	Lopes A. C.		Lumetti	Diez Jiménez
15:30	15:45				Lavrijsen	Davino			Chen
15:45	16:00				Pizzini	Chesnel			Pilat
16:00	16:15				Finizio				Gori
16:15	16:30				Lopez Dominguez				Simonelli
16:30	16:45				Janus				
16:45	17:00	Ge							
17:00	17:20	Coffee break							
17:20	17:35	Multisession	Opportunities and Challenges in Spintronic Technology (D. Rodrigues)	Controlling Dzyaloshinskii-Moriya Interaction (M. Madami)	Holt	Ricci			
17:35	17:50				Kuswik	Hughes			
17:50	18:05				Slavin	Gontarz			
18:05	18:20				Finocchio				
18:20	18:35				Bessarab				
18:35	18:50								
20:00		Social Dinner							

Wednesday, Feb 12							
08:45	09:00	Multisession	Skyrmions and Magnetic Textures (C. Psaroudaki)	Magnetic Nanoparticles and Biomedical Applications (M. Coisson)	Albertini	Bertolini	
09:00	09:15				Iglesias	Khatu	
09:15	09:30				Angelakeris	Triviño Cabrera	
09:30	09:45				Gobbo	Delgado	
09:45	10:00						
10:00	10:45	Plenary	N. Dempsey (Chair: F. Albertini)				
10:45	11:05	Coffee break					
11:05	11:20	Multisession	AI, Machine Learning and Soft Computing for Magnetism (A. Kovacs)	Curvilinear and 3D Magnetism (G. Varvaro)	Augustin	Gimaev	
11:20	11:35				Morales Fernández	Hasan	
11:35	11:50				Sanvito	Gubbiotti	
11:50	12:05				Coisson	Gomonay	
12:05	12:20				Pathak	Meda	
12:20	12:35				Pollok		
12:35	12:50				Delin		
12:50	13:20	Closing	Acknowledgements and Awards				


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2025 IEEE Conference on Advances in Magnetism (IEEE AIM 2025)

Bressanone, Italy - 9-12 February 2025

PROGRAM

SUNDAY, FEBRUARY 9th, 2025

15:30	Registration	Forum Bressanone Foyer I
16:15	Opening - Welcome and Introduction Vito Puliafito and Silvia Tacchi , General Chairs of AIM2025	Room Prishna
16:30	TUTORIAL - Chair: Alexey Kimel , Radboud University (The Netherlands) Jairo Sinova , Johannes Gutenberg University of Mainz (Germany), INVITED <i>Unconventional magnetism in spintronics: the emergence of altermagnetism and its new variants</i>	Room Prishna
	SESSION - Numerical Modeling and Micromagnetics Chair: Massimiliano d'Aquino , Università degli Studi di Napoli Federico II (Italy)	Room Prishna
17:30	Thomas Schrefl , University for Continuing Education Krems (Austria), INVITED <i>Extending length scales of micromagnetic simulations</i>	
18:00	Joo-Von Kim , CNRS/Univ. Paris-Saclay (France), INVITED <i>Mode filtering and projection in micromagnetics for studying magnon population dynamics</i>	
18:30	Riccardo Hertel , Université de Strasbourg, CNRS (France) <i>Micromagnetic modeling with tetmag: an open-source finite-element software with GPU acceleration</i>	
	SESSION - Magnetism for Neuromorphic and Unconventional Computing Chair: Olena Gomonay , Johannes Gutenberg University of Mainz (Germany)	Room Regensburg
17:30	Davi Rodrigues , Politecnico di Bari (Italy) <i>Advancing Neural Network Performance through Magnetic Tunnel Junctions implementations</i>	
17:45	Alberto Riminucci , CNR-ISMN Bologna (Italy) <i>Glassy synaptic time dynamics in molecular La0.7Sr0.3MnO3/GaQ3/AlOx/Co spintronic crossbar devices</i>	
18:00	Roman Khymyn , University of Gothenburg (Sweden), INVITED <i>Paving the way towards high-performance spin-wave Ising machines</i>	
18:30	Ursula Ebels , SPINTEC, Université Grenoble Alpes (France) <i>Towards a programmable Ising Machine using a network of coupled vortex spin-torque nano-oscillators</i>	
	SESSION - Magnetic Wireless Power Transfer: Innovations in Materials, Control Algorithms and Modelling Chair: Alicia Triviño Cabrera , University of Málaga (Spain)	Room Mantova
17:30	Salvatore Musumeci - Luigi Solimene , Politecnico di Torino (Italy), INVITED <i>Power Regulation in Inductive Wireless Power Transfer Systems Using a Controlled Variable Inductor</i>	
18:00	Ermanno Cardelli - Vittorio Bertolini , University of Perugia (Italy), INVITED <i>Modelling of Eddy Current Losses in Ferrite Cores</i>	
18:30	Opal Cohen , Israel Institute of Technology (Israel) <i>Design and modelling of higher bending modes in a magnetoelectric device</i>	
18:45	Welcome Reception	Foyer I

MONDAY, FEBRUARY 10th, 2025

SESSION - Magnetism for Neuromorphic and Unconventional Computing		Room Prishna
Chair: Roman Khymyn , University of Gothenburg (Sweden)		
08:45	Shunsuke Fukami , Tohoku University (Japan), INVITED <i>Engineering stochastic magnetic tunnel junction for probabilistic computing</i>	
09:15	Johan Åkerman , Gothenburg University (Sweden), Tohoku University (Japan), INVITED <i>Mutual synchronization of thousands of spin Hall nano-oscillators</i>	

SESSION - Spin-Orbit Torque and Spin-Currents		Room Regensburg
Chair: Christian Rinaldi , Politecnico di Milano (Italy)		
08:45	Can Onur Avci , Institute of Materials Science of Barcelona (Spain), INVITED <i>Spin and orbital torques in Cu-based ferromagnetic heterostructures</i>	
09:15	Annika Johansson , Max Planck Institute of Microstructure Physics (Germany), INVITED <i>Spin, orbital, and magnetotransport in oxide interfaces</i>	
09:45	Simone Laterza , Elettra Sincrotrone Trieste (Italy) <i>Ultrafast spin dynamics across metal/semiconductor interfaces: all-optical injection of spin currents in silicon</i>	

SESSION - Magnetic Measurements		Room Mantova
Chair: Bernardo Tellini , University of Pisa (Italy)		
08:45	Oleksandr Zaiets , IFW Dresden, TU Dresden (Germany) <i>Determination of Magnetic Symmetries by Convergent Beam Electron Diffraction</i>	
09:00	Oksana Koplak , Università degli Studi di Milano-Bicocca (Italy) <i>Tuned deposition parameters for control the magnetic properties of SmCo thick films</i>	
09:15	Athira Raghu , UGC-DAE Consortium For Scientific Research Mumbai Centre (India) <i>Investigating Physical Properties in Tb₂Ni_{1-x}CoxMnO₆ Double Perovskites</i>	
09:30	Paola Tiberto , INRiM Torino (Italy), INVITED <i>Magnetic Characterisation at the Nanoscale: Challenges and Reliability</i>	

SESSION - Artificial Spin Ice Physics and Applications		Room Tirol
Chair: Nicolas Rougemaille , CNRS - Institut Néel (France)		
08:45	Cristiano Nisoli , Los Alamos National Laboratory (USA), INVITED <i>Architecting emergence in nanomagnets: artificial spin ice</i>	
09:15	Kleber Roberto Pirota , State University of Campinas (Brazil) <i>Impacts of multipolar corrections, boundary conditions and cutoff radius on the ground state of artificial kagome spin ice</i>	
09:30	Luca Berchiulla , ETH Zurich - Paul Scherrer Institute (Switzerland) <i>Controlling phase transitions and magnetic order in a ruby artificial spin ice</i>	
09:45	Breno Cecchi , State University of Campinas (Brazil) <i>Effective interaction strengthening and absence of spin fragmentation in connected artificial kagome ice</i>	

PLENARY - Chair: Riccardo Tomasello , Politecnico di Bari (Italy)		Room Prishna
10:00	Hyunsoo Yang , National University of Singapore (Singapore), INVITED <i>Spin-based non-volatile memories, unconventional computing, and energy harvesting</i>	

10:45	Coffee break	Foyer I
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SESSION - Altermagnets		Room Prishna
Chair: Mario Carpentieri , Politecnico di Bari (Italy)		
11:05	Alexey Kimel , Radboud University (The Netherlands), INVITED <i>Ultrafast antiferromagnetism – terra incognita beyond the conventional approximations</i>	
11:35	Libor Smejkal , Max Planck Institute for the Physics of Complex Systems, Dresden (Germany), INVITED <i>Spin group theory of unconventional magnetism: altermagnets and beyond</i>	
12:05	Cheng Song , Tsinghua University (China), INVITED <i>Manipulation of the altermagnetic order via crystal symmetry</i>	
12:35	Michał Grzybowski , University of Warsaw (Poland) <i>Wurtzite MnSe as an altermagnetic candidate</i>	
12:50	Jean-Eric Wegrowe , Ecole Polytechnique, CNRS (France) <i>Power efficiency of Hall-currents in NiFe, GdCo and Si₃Mn₅ altermagnet: a comparative study</i>	

SESSION - Numerical Modeling and Micromagnetics		Room Regensburg
Chair: Riccardo Hertel , Université de Strasbourg, CNRS (France)		
11:05	Pierre Vallobra , Beihang University (China) <i>Generation of topological spin textures using light-induced radially polarized magnetic field</i>	
11:20	Leoni Breth , University for Continuing Education Krems (Austria) <i>Reduced order micromagnetics of permanent magnets</i>	

11:35	Perla Malagò , Silicon Austria Labs (Austria) <i>Magnetic MEMS micromirror with closed-loop control</i>
11:50	Massimiliano d'Aquino , Università degli Studi di Napoli Federico II (Italy) <i>Micromagnetic simulation of inertial magnetization dynamics in ferromagnets</i>
12:05	Liliana Buda-Prejbeanu , Spintec (France), INVITED <i>Dynamics of coupled layers in magnetic tunnel junctions</i>

SESSION - Magnetic Materials for Energy Applications Room Mantova	
Chair: Francesca Casoli , CNR - IMEM Parma (Italy)	
11:05	Gabriele Barrera , INRiM Torino (Italy) <i>Opto-mechanical control over FeGa magnetic properties via liquid crystalline networks</i>
11:20	Gaspere Varvaro , CNR - ISM Roma (Italy) <i>Facile and fast synthesis of highly ordered L10-FeNi nanoparticles from cyano/nitrosyl-metal complexes</i>
11:35	Alexis Pecheux , Université Paris-Saclay, CNRS (France) <i>Study of the laser-induced modulated Antiferromagnetic-Ferromagnetic phase transition in a magnetocaloric FeRh Film</i>
11:50	Gajanan Pradhan , INRiM Torino (Italy) <i>Electric Field Control of Magnetization in FeGa microstructures on PMN-PT</i>
12:05	Luana Caron , Bielefeld University (Germany), INVITED <i>The magneto- and baro-caloric properties of Hf_{0.84}Ta_{0.16}Fe₂</i>
12:35	Nivedita Lalitha Raveendran , Israel Institute of Technology (Israel) <i>Effect of porosity on the magnetic and magnetostrictive properties of Galfenol sputtered on porous silicon</i>
12:20	Hemanita Sharma , University of Trieste, CNR IOM Trieste (Italy) <i>Temperature controlled magnetic modifications in Ni/KNbO₃ artificial multiferroic heterostructures</i>

SESSION - Skyrmions and Magnetic Textures Room Tirol	
Chair: Andrea Meo , Politecnico di Bari (Italy)	
11:05	Michał Ślęzak , AGH University of Krakow (Poland) <i>From magnetostatics to topology: antiferromagnetic vortex states in NiO-Fe nanostructures</i>
11:20	Benjamin Walker , University of Texas at Dallas (USA) <i>Near-landauer pipelined voltage-propagated skyrmion logic</i>
11:35	Sheng Jiang , South China University of Technology (China) <i>Dynamically stabilized synthetic antiferromagnetic skyrmions</i>
11:50	Joseph Barker , University of Leeds (United Kingdom), INVITED <i>Metadynamics calculations of the effect of thermal spin fluctuations on skyrmion stability</i>
12:20	Aisha Aqeel , University of Augsburg (Germany), INVITED <i>Magnetization dynamics of skyrmion lattice in cubic chiral magnets</i>

13:05	POSTER I and LUNCH Foyer I and II
Chairs: Aisha Aqeel , University of Augsburg (Germany), Perla Malagò , Silicon Austria Labs (Austria), Claudia Simonelli , University of Pisa (Italy)	

SESSION - Magnetic Materials for Energy Applications Room Prishna	
Chair: Luana Caron , Bielefeld University (Germany)	
15:00	Jia Yan Law , University of Seville (Spain) <i>Influence of secondary phases on the determination of the order of thermomagnetic phase transitions: model and experiment</i>
15:15	Giovanni Maria Vinai , CNR - IOM Trieste (Italy) <i>Light-induced interfacial oxygen migration in PMN-PT/Fe heterostructures</i>
15:30	Hang Gai , University of Technology Delft (The Netherlands) <i>Room temperature magnetocaloric materials (MnFe) 1.9 (PSi) Fe-rich compounds for heat pump application</i>
15:45	Katja Klinar , University of Ljubljana (Slovenia) <i>From electromagnet to electro-permanent magnet for magnetocaloric heat pumps</i>
16:00	Vincent Fournée , Université de Lorraine, CNRS (France) <i>Structural and magnetocaloric properties in rare-earth free high-entropy alloys</i>
16:15	Petra Jenuš Belec , Jožef Stefan Institute-Ljubljana (Slovenia), INVITED <i>Greener permanent magnets without or with less critical raw materials for electric motor application</i>

SESSION - Curvilinear and 3D Magnetism Room Regensburg	
Chair: Denys Makarov , Helmholtz-Zentrum Dresden-Rossendorf (Germany)	
15:00	Sol Jacobsen , Norwegian University of Science and Technology (Norway), INVITED <i>Controlling superconductivity with curvilinear magnetism</i>
15:30	Semih Sevim , ETH Zurich (Switzerland), INVITED <i>Magnetically Guided Small-Scale Robots for Biomedical Applications</i>
16:00	Oleksandr Pylypovskiy , Helmholtz-Zentrum Dresden-Rossendorf (Germany) <i>Magnetic textures in curvilinear spin chains of constant torsion</i>
16:15	Nikolai Kiselev , Forschungszentrum Jülich (Germany) <i>Hopfion rings</i>

16:30	Oksana Chubykalo-Fesenko , Instituto de Ciencia de Materiales de Madrid (Spain) <i>Current-induced nucleation, propagation and pinning of Bloch-point domain walls in cylindrical nanowires</i>
16:45	Ondřej Wojewoda , Brno University of Technology (Czech Republic) <i>Modeling of the micro-focused Brillouin light scattering signal</i>

SESSION - Magnetic Nanoparticles and Biomedical Applications		Room Mantova
Chair: Makis Angelakeris , University of Thessaloniki (Greece)		
15:00	Cathrine Frandsen , Technical University of Denmark (Denmark), INVITED <i>Measuring the heating power and temperature of magnetic nanoparticles</i>	
15:30	Frank Wiekhorst , Physikalisch-Technische Bundesanstalt (Germany) <i>The perspectives on using magnetorelaxometry imaging in clinical hyperthermia applications</i>	
15:45	Aaron Jaufenthaler , University of Innsbruck (Austria) <i>Developments in human-sized quantitative imaging of magnetic nanoparticles with optically pumped magnetometers</i>	
16:00	Jonas Bugase , University of Kassel (Germany) <i>Controlled transport of magnetic cuboidal particles in dynamic potential energy landscapes for lab-on-chip applications</i>	
16:15	Yahya Shubbak , University of Kassel (Germany) <i>Magnetophoretic distinction of differently surface-functionalized magnetic microparticles by close-to-surface transport in a quiescent liquid</i>	
16:30	Anna Laurenzana , University of Florence (Italy), INVITED <i>Nanoparticle Innovations: Harnessing Magnetic Iron Nanoparticles for Obesity and Hybrid Gold-Iron Nanourchins for Advanced Lung Cancer Therapies</i>	

SESSION - Spin Waves and Magnonics & Antiferro- and Ferri-magnetic Spintronics		Room Tirol
Chair: Daniela Petti , Politecnico di Milano (Italy)		
15:00	Stefano Bonetti , Ca' Foscari University of Venice (Italy) <i>Terahertz charge and spin transport in metallic ferromagnets: The role of crystalline and magnetic order</i>	
15:15	Maria Cocconcelli , Politecnico di Milano (Italy) <i>Fully-integrated self-biased magnonic phase-shifter</i>	
15:30	Matteo Vitali , Politecnico di Milano (Italy) <i>Three dimensional, nanoscale control of magnetism in crystalline yttrium iron garnet for magnonics</i>	
15:45	Sarah Manton , Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay (France) <i>Unraveling spin-wave dynamics in ferro- and antiferro-magnetic insulators</i>	
16:00	Tomaz Mertelj , Jozef Stefan Institute (Slovenia) <i>Anomalous hardening of spin waves in cobalt/molecular-semiconductor heterostructures implying strongly anisotropic spinterface magnetism: a time-resolved MOKE investigation</i>	
16:15	Shuangying Ma , University of Milan (Italy) <i>Organic Molecular Adsorption Promotes Exchange Interactions in Antiferromagnetic Transition Metal Oxide</i>	
16:30	Boyu Zhang , Beihang University (China) <i>Single-Shot Laser-Induced Switching of an Exchange Biased Antiferromagnet</i>	

17:00	Coffee break	Foyer I
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SESSION - Spin Waves and Magnonics		Room Prishna
Chair: Katrin Schultheiss , Helmholtz-Zentrum Dresden-Rossendorf (Germany)		
17:20	Daniela Petti , Politecnico di Milano (Italy), INVITED <i>Controlling and imaging spin waves in 3D</i>	
17:50	Lukas Körber , Radboud University Nijmegen (The Netherlands), INVITED <i>Spin waves in curved magnetic shells</i>	
18:20	Sebastiaan van Dijken , Aalto University (Finland) <i>Magnonic convolutional neural networks</i>	

SESSION - Magnetic Measurements		Room Regensburg
Chair: Emily Darwin , Empa (Switzerland)		
17:20	Björn Josteinsos , QZabre Ltd (Switzerland) <i>Quantum sensing with NV centers: magnetometry and beyond</i>	
17:35	Luigi Solimene , Politecnico di Torino (Italy) <i>Measurement of magnetic losses in soft magnetic materials for power electronics under DC-bias and non-sinusoidal operation</i>	
17:50	Dagmar Franziska Weickert , Physikalisch - Technische Bundesanstalt (Germany), INVITED <i>Primary Tesla standards at the German metrology institute PTB</i>	
18:20	Ikenna Nlebedim , Ames National Laboratory (USA), INVITED <i>Advances and Challenges in Additive Manufacturing of Permanent Magnets</i>	

SESSION -Sensing and Harvesting Devices Employing Multi-Functional Materials		Room Mantova
Chair: Daniele Davino , University of Sannio (Italy)		
17:20	Anja Waske , BAM Berlin (Germany), INVITED <i>Energy harvesting of waste heat using thermomagnetic materials</i>	
17:50	Andrea Meo , Politecnico di Bari (Italy) <i>Coupled magnetic tunnel junctions arrays for sensor applications</i>	

- 18:05 **Proloy Taran Das**, Helmholtz-Zentrum Dresden-Rossendorf (Germany)
High resolution Flexible planar-Hall magnetic field sensors and its applications
- 18:20 **Francesco Cugini**, University of Parma (Italy)
A laboratory-scale prototype of thermomagnetic generator for harvesting of waste heat

SESSION - Artificial Spin Ice Physics and Applications
Chair: **Daniel Lacour**, CNRS – Institut Jean Lamour Nancy, (France)

Room Tirol

- 17:20 **Sam Ladak**, Cardiff University (United Kingdom), INVITED
3D Artificial spin-ice
- 17:50 **Clodoaldo Irineu Levartoski de Araujo**, Universidade Federal de Viçosa (Brazil)
Strategies for degeneracy and monopole mobility in two-dimensional artificial spin ices
- 18:05 **Will Branford**, Imperial College London (United Kingdom)
Spatially ultra-selective all-optical magnetic switching and vortex writing in nanomagnets
- 18:20 **Pietro Tierno**, University of Barcelona (Spain), INVITED
Topological boundaries and geometric constraints in artificial colloidal ice

TUESDAY, FEBRUARY 11th, 2025

SESSION - Opportunities and Challenges in Spintronics Technology		Room Prishna
Chair: Giovanni Finocchio , University of Messina (Italy)		
08:45	Emilie Jué , NIST (USA), INVITED <i>Superconducting artificial synapses integrated into a self-training neuromorphic architecture</i>	
09:15	Federico Fagiani , Politecnico di Milano (Italy) <i>Tuning of ferroelectric Rashba semiconductors via alloying for energy-efficient computing devices</i>	
09:30	Hans Nembach , NIST (USA), INVITED <i>Heisenberg exchange in magnetic thin films</i>	

SESSION - Spin-Orbit Torque and Spin-Currents		Room Regensburg
Chair: Can Onur Avci , Institute of Materials Science of Barcelona (Spain)		
08:45	Pietro Gambardella , ETH Zurich (Switzerland), INVITED <i>Spin or orbital? Torques for efficient manipulation of the magnetization</i>	
09:15	Ivan Miranda De Paula , Linnaeus University (Sweden) <i>Optimal magnetization switching via spin-orbit torque in ferromagnet/topological insulator heterostructures</i>	
09:30	Witold Skowronski , AGH University of Krakow (Poland) <i>Spin-orbit-torque switching in α-W-based magnetic tunnel junction</i>	
09:45	Paolo Perna , IMDEA Nanoscience (Spain) <i>Interfaces with Graphene: an amazing playground for SpinOrbitronics</i>	

SESSION - Artificial Intelligence, Machine Learning and Soft-Computing for Magnetism		Room Mantova
Chair: Antonio Laudani , University of Catania (Italy)		
08:45	Nikita Kulesh , National Institute for Materials Science (Japan), INVITED <i>Realistic micromagnetic modelling of Nd-Fe-B permanent magnets based on FIB-SEM tomography</i>	
09:15	Sebastian Schaffer , University of Vienna (Austria) <i>Constraint Free Physics-Informed Machine Learning for Micromagnetic Energy Minimization</i>	
09:30	Alena Vishina , Uppsala University (Sweden) <i>Data-Mining Search for Rare-Earth-Free Permanent Magnets Among Predicted Crystal Structures</i>	
09:45	Esteban Garzón , University of Calabria (Italy) <i>STT-MRAM technology for energy-efficient 2-D and 3-D associative in-data processing architectures</i>	

SESSION -Additive Manufacturing of Magnetic Materials		Room Tirol
Chair: Paola Tiberto , INRiM Torino (Italy)		
08:45	Antonio Faba , University of Perugia (Italy) <i>Additively manufactured components for passive stabilization of microsatellites</i>	
09:00	Daniel Salazar Jaramillo , BCMaterials (Spain), INVITED <i>Additive manufacturing of magnetic shape memory alloys for solid-state refrigeration</i>	
09:30	Victorino Franco , University of Seville (Spain) <i>The role of the polymer matrix on the manufacturability and properties of soft magnetic filaments for additive manufacturing</i>	

PLENARY - Chair: Sebastiaan van Dijken , Aalto University (Finland)		Room Prishna
10:00	Philipp Pirro , RPTU Kaiserslautern-Landau (Germany), INVITED <i>Magnonic technologies: from linear delay lines for RF signal processing to nonlinear magnonic neurons</i>	

10:45	Coffee break	Foyer I
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SESSION - Spin Waves and Magnonics		Room Prishna
Chair: Giovanni Carlotti , University of Perugia (Italy)		
11:05	Katrin Schultheiss , Helmholtz-Zentrum Dresden-Rossendorf (Germany) <i>Floquet magnons in a periodically-driven magnetic vortex</i>	
11:20	Felipe Brevis , Universidad Técnica Federico Santa María (Chile) <i>The toroidal moment in nanomagnets and its connection with nonreciprocal magnonics</i>	
11:35	Rafael Lopes Seeger , Université Paris-Saclay, CNRS (France) <i>Vortex gyrotropic mode excited by surface acoustic waves</i>	
11:50	Gabriel Soares , SPEC CEA Paris-Saclay (France) <i>Mutual nonlinear interactions between parametrically excited spin-wave modes in a YIG microdisk</i>	
12:05	Sali Salama , University Paris Saclay (France) <i>Nonlinear spin waves processes in a 500nm Bismuth Yttrium Iron Garnet disk</i>	
12:20	Davide Bossini , Konstanz University (Germany), INVITED <i>Dynamical renormalization of the magnon spectrum via nonlinear coherent spin dynamics</i>	

SESSION - Curvilinear and 3D Magnetism		Room Regensburg
Chair: Claire Donnelly , Max Planck Inst. for Chemical Physics of Solids Dresden (Germany)		
11:05	Rafal Dunin-Borkowski , Forschungszentrum Jülich GmbH (Germany), INVITED <i>Progress and challenges in the measurement of three-dimensional magnetization textures using transmission electron microscopy</i>	
11:35	Aurelio Hierro-Rodríguez , Universidad de Oviedo (Spain), INVITED <i>Controlling Bloch point singularities in magnetic systems</i>	
12:05	Olha Bezsmertna , Helmholtz-Zentrum Dresden-Rossendorf (Germany) <i>Magnetic solitons in hierarchical 3D magnetic nanoflower shaped architectures</i>	
12:20	Tim. A. Butcher , Max-Born-Institut (Germany) <i>Three-dimensional magnetic imaging with soft X-ray ptychographic laminography</i>	
12:35	Claas Abert , University of Vienna (Austria) <i>Energy Landscape and Pinning Fields of Bloch-Point Domain Walls in Curved Nanowires</i>	
12:50	Filipp Rybakov , Uppsala University (Sweden) <i>Topological magnetic textures with extreme combinatorial diversity</i>	

SESSION - Magnetic Materials for Energy Applications		Room Mantova
Chair: Giovanni Maria Vinai , CNR - IOM Trieste (Italy)		
11:05	Nada Petelin , University of Ljubljana (Slovenia) <i>Oscillating Gadolinium Thermal Switch for Efficient Heat Flow Management</i>	
11:20	Urban Tomc , University of Ljubljana (Slovenia) <i>Cool Batman project: Digital Microfluidic Magnetocaloric Cooling</i>	
11:35	Morgan Almanza , Université Paris-Saclay-CNRS (France) <i>A thin and light Gd-based thermomagnetic generator</i>	
11:50	Matteo Casadei , University of Bologna (Italy) <i>Fe₂P-based hard magnetic materials for permanent magnets applications</i>	
12:05	Emir Poskovic , Politecnico di Torino (Italy) <i>Soft Magnetic Composite materials based on thermal resistant boron nitride layer</i>	
12:20	Luis M. Moreno-Ramírez , Universidad de Sevilla (Spain) <i>Magnetocaloric effect by micromagnetic simulations based on the Landau–Lifshitz–Bloch equation</i>	
12:35	Zhongxia Duan , Chinese Academy of Sciences, Beijing (China) <i>Preparation and characterization of Mn_xZn_{1-x}Fe₂O₄ nanofibers via a water-assisted solvothermal method</i>	

SESSION - Antiferro- and Ferri-magnetic Spintronics		Room Tirol
Chair: Sarah Manton , Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay (France)		
11:05	Ilaria Bergenti , CNR ISMN Bologna (Italy), INVITED <i>Spin dynamics in an exchange biased heterostructure coupled with a C₆₀ molecular layer</i>	
11:35	Maksim Koliushenkov <i>On the Einstein–de Haas effect in van der Waals microelectromechanical systems</i>	
11:50	Francesco Offi , Università degli Studi Roma Tre (Italy) <i>Structural, electronic and magnetic properties of Fe₃O₄/MgCr₂O₄/Fe₃O₄ trilayers</i>	
12:05	Paulina Prusik , Helmholtz-Zentrum Dresden-Rossendorf (Germany) <i>Domain wall properties, surface states and spin-flop transition in Cr₂O₃</i>	
12:20	Yuma Sato , Tohoku University (Japan) <i>Thermal stability of epitaxial and polycrystalline Mn₃Sn nanoscale single dots</i>	
12:35	Huiwen Wang , Beihang University (China) <i>Field-like Torque Driven Switching in Rare-earth Transition-metal Alloys</i>	

13:05 POSTER II and LUNCH		Foyer I and II
Chairs: Simone Finizio , Paul Scherrer Institut (Switzerland), Esteban Garzon , University of Calabria (Italy), Qiuji Yi , Northumbria University (UK)		

SESSION - Antiferro- and Ferri-magnetic Spintronics		Room Prishna
Chair: Alberto Brambilla , Politecnico di Milano (Italy)		
15:00	Stephane Fusil , Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay (France), INVITED <i>Tailoring spin textures in multiferroic BiFeO₃</i>	
15:30	Paul Lehmann , University of Basel (Switzerland) <i>Nanoscale studies of intrinsic surface magnetism and spin-texture manipulation in a magneto-electric antiferromagnet</i>	
15:45	Anna Kozioł-Rachwał , AGH Univeristy of Krakow (Poland) <i>Transfer of magnetic anisotropy in epitaxial Co/NiO/Fe trilayers</i>	
16:00	Simone Finizio , Paul Scherrer Institut (Switzerland) <i>Imaging of multiferroic coupling in freestanding bismuth ferrite films by means of soft X-ray ptychography</i>	
16:15	Victor Lopez Dominguez , Universitat Jaume I (Spain) <i>Electrically Controlled All-Antiferromagnetic Tunnel Junctions on Silicon with Large Room-Temperature Magnetoresistance</i>	
16:30	Weronika Janus , Institute of Materials Science of Barcelona (Spain) <i>Efficient two-terminal magnetoresistive reading of ferrimagnetic insulators with perpendicular magnetic anisotropy</i>	
16:45	Yuqing Ge , KTH Royal Institute of Technology (Sweden) <i>Magnetic phase transition in van der Waals magnet CrCl₃ induced by pressure</i>	

SESSION - Controlling Dzyaloshinskii-Moriya Interaction		Room Regensburg
Chair: Michaela Kuepferling , INRiM Torino (Italy)		
15:00	Adriano Di Pietro , INRiM Torino (Italy) <i>Domain wall curvature effects on the measurement of the Dzyaloshinskii-Moriya interaction strength in the creep regime</i>	
15:15	Elena Vedmedenko , University of Hamburg (Germany) <i>Recent progress in studies of interlayer Dzyaloshinskii-Moriya interactions</i>	
15:30	Renaud Lavrijssen , Eindhoven University of Technology (The Netherlands), INVITED <i>Controlling and tuning the interfacial Dzyaloshinskii-Moriya interaction: Chiral domain walls, Skyrmions and Merons</i>	
16:00	Stefania Pizzini , CNRS, Institut Néel, Grenoble (France), INVITED <i>Measurement of Dzyaloshinskii-Moriya interaction and its modification by magneto-ionic effects</i>	
16:30	Giovanni Gandini , Politecnico di Milano (Italy) <i>Ferroelectric control of the magnetic properties in the layered multiferroic Co/Hf_{0.5}Zr_{0.5}O₂</i>	
16:45	Fernando Ajejas , IMDEA nanociencia (Spain) <i>Amplitude modulation and sign inversion of the Dzyaloshinskii-Moriya interaction by work function engineering in Co based metallic multilayers</i>	

SESSION - Sensing and Harvesting Devices Employing Multi-Functional Materials		Room Mantova
Chair: Simone Fabbrici , CNR - IMEM Parma (Italy)		
15:00	Darja Gacnik , University of Ljubljana (Slovenia) <i>Magneto-Thermoelectrics in Cryogenic, Room, and High-Temperature Regimes: Material and Device Innovations</i>	
15:15	Ana Caterina Lopes , University of Basque Country (Spain) <i>Self-bias magnetoelastic resonance sensors with improved mass sensitivity performance: The effect of nanocrystallization induction by annealing</i>	
15:30	Stefano Lumetti , Silicon Austria Labs GmbH (Austria) <i>Tracking the 3D motion of a sub-mm magnet for tactile sensing applications: development of a hybrid platform combining a graphene-based Hall sensor with AMR sensor arrays</i>	
15:45	Daniele Davino , University of Sannio (Italy), INVITED <i>Piezo-resistive behaviour of magnetically controlled multifunctional polymeric composite foams</i>	
16:15	Karine Chesnel , Brigham Young University (USA), INVITED <i>Dynamics of magnetic fluctuation in magnetite nanoparticles probed via coherent X-rays</i>	

SESSION - Magnetic Levitation and Bearings and Electrical Machine Modeling		Room Tirol
Chair: Antonino Musolino , University of Pisa (Italy)		
15:00	Efrén Díez Jiménez , Universidad de Alcalá (Spain), INVITED <i>Magnetic Bearings for Space Cryogenic Applications</i>	
15:30	Hao Chen , China University of Mining and Technology (China), INVITED <i>Thermal management study of switched reluctance drive motor and power converter for electric heavy-duty trucks</i>	
16:00	Adam Pilat , AGH University of Krakow (Poland) <i>Study on 3 pole radial Active Magnetic Bearing virtual prototype</i>	
16:15	Nicolò Gori , University of Pisa (Italy) <i>Design of an axial rotary transformer for wound rotor synchronous machines excitation winding feeding</i>	
16:30	Claudia Simonelli , University of Pisa (Italy) <i>Equivalent Network modelling of an Axial Flux Air-Core Compulsator</i>	

17:00	Coffee break	Foyer I
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SESSION - Opportunities and Challenges in Spintronic Technology		Room Prishna
Chair: Davi Rodrigues , Politecnico di Bari (Italy)		
17:20	Andrew Kent , New York University (USA), INVITED <i>Solving Combinatorial Optimization Problems and Generating Random Numbers with Stochastic Magnetic Tunnel Junctions</i>	
17:50	Andrei Slavin , Oakland University (USA), INVITED <i>Nonreciprocity of hybridized surface acoustic/spin waves in a magnetic multilayer containing layers with non-collinear magnetizations</i>	
18:20	Giovanni Finocchio , University of Messina (Italy) <i>Nonlinear amplification of microwave signals in spin-torque oscillators</i>	
18:35	Pavel Bessarab , Linnaeus University (Sweden) <i>Energy-efficient control of magnetic states</i>	

SESSION - Controlling Dzyaloshinskii-Moriya Interaction		Room Regensburg
Chair: Marco Madami , University of Perugia (Italy)		
17:20	Sam Holt , Max Planck Institute for the Structure and Dynamics of Matter Hamburg (Germany) <i>Computational studies of novel Dzyaloshinsky-Moriya interactions</i>	
17:35	Piotr Kuswik , Institute of Molecular Physics, Polish Academy of Sciences (Poland) <i>Tailoring magnetic anisotropy and Dzyaloshinskii-Moriya interaction in a ferromagnetic layer by contact with antiferromagnetic NiO</i>	
17:50	Giovanni Carlotti , University of Perugia (Italy), INVITED <i>Measuring the Dzyaloshinskii-Moriya interaction and the METROSPIN project</i>	
18:20	Christopher Marrows , University of Leeds (UK), INVITED <i>Spin textures in synthetic antiferromagnetic multilayers</i>	

SESSION - Non-Destructive Testing

Room Mantova

Chair: **Stefano Laureti**, University of Calabria (Italy)

17:20 **Marco Ricci**, University of Calabria (Italy), INVITED
Ultrasonic nondestructive evaluation of lithium-ion cells

17:50 **Robert Hughes**, University of Bristol (UK), INVITED
Modes and Fields in Multimodal Resonant Inductor Arrays

18:20 **Szymon Gontarz**, Warsaw University of Technology (Poland)
Analysis of magnetic-mechanical symptoms occurring near the plastic area in order to estimate material effort

20:00 Social Dinner - "Brix01" Bressanone

SESSION - Skyrmions and Magnetic Textures		Room Prishna
Chair: Christina Psaroudaki , Ecole Normale Supérieure in Paris (France)		
08:45	Olivier Boulle , SPINTEC Grenoble (France), INVITED <i>Manipulation of magnetic skyrmions for memory and logic applications</i>	
09:15	Matteo Panzeri , Politecnico di Milano (Italy) <i>Magnetic nanopatterning of skyrmion lattices via direct laser writing</i>	
09:30	Riccardo Tomasello , Politecnico di Bari (Italy) <i>Topological spin-torque diode effect in skyrmion-based magnetic tunnel junctions</i>	
09:45	Xianggang Qiu , Institute of Physics, Chinese Academy of Sciences (China) <i>Visualization of skyrmion-superconducting vortex pairs in a chiral magnet-superconductor heterostructure</i>	
SESSION - Magnetic Nanoparticles and Biomedical Applications		Room Regensburg
Chair: Marco Coïsson , INRiM Torino (Italy)		
08:45	Franca Albertini , CNR - IMEM Parma (Italy) <i>Magnetic Shape-Memory Heuslers Turn to Bio</i>	
09:00	Òscar Iglesias , Universitat de Barcelona (Spain) <i>Understanding magnetic hyperthermia performance within the Brezovich criterion: beyond the uniaxial anisotropy description</i>	
09:15	Makis Angelakeris , Aristotle University Thessaloniki (Greece) <i>Magnetic nanoparticle formulations for early diagnosis of Alzheimer's disease</i>	
09:30	Oliviero Gobbo , Trinity College Dublin (Ireland), INVITED <i>Magnetic nanoparticles and magneto-mechanical effects: A novel approach to preventing adiposopathy</i>	
SESSION - Magnetic Wireless Power Transfer: Innovations in Materials, Control Algorithms and Modelling		Room Mantova
Chair: Fabio Corti , University of Firenze (Italy)		
08:45	Vittorio Bertolini , University of Perugia (Italy) <i>Robust Component Optimization for Multi-Transmitter Wireless Power Transfer Systems</i>	
09:00	Nupur Ninad Khatu , Ca' Foscari University of Venice (Italy) <i>Transient grating investigation of magneto-elastic coupling dynamics in Co78TbxGd22-x thin films</i>	
09:15	Alicia Triviño Cabrera , University of Málaga (Spain) <i>Parasitic capacitance effects in wireless chargers for underwater vehicles</i>	
09:30	Alberto Delgado , Universidad Politécnica de Madrid (Spain), INVITED <i>Design of Inductive link for battery charging for future space rover and drones</i>	
PLENARY - Chair: Franca Albertini, CNR - IMEM Parma (Italy)		Room Prishna
10:00	Nora Dempsey , Institut Néel CNRS (France), INVITED <i>Thin film combinatorial studies of hard magnetic materials</i>	
10:45	Coffee break	Foyer I
SESSION - Artificial Intelligence, Machine Learning and Soft Computing for Magnetism		Room Prishna
Chair: Alexander Kovacs , University for Continuing Education Krems (Austria)		
11:05	Stefano Sanvito , Trinity College Dublin (Ireland), INVITED <i>The AI toolbox for magnetic materials discovery and design</i>	
11:35	Marco Coïsson , INRiM Torino (Italy) <i>Magnetic Particles Imaging: solving the inverse problem with machine learning approaches</i>	
11:50	Swapneel Amit Pathak , Max Planck Institute for the Structure and Dynamics of Matter Hamburg (Germany) <i>Clustering magnetisation vector-fields using unsupervised machine learning</i>	
12:05	Stefan Pollok , Technical University of Denmark (Denmark) <i>Breaking the $O(M \times N)$ scaling in magnetostatic calculations with symmetry-respecting hypernetworks</i>	
12:20	Anna Delin , KTH Royal Institute of Technology (Sweden) <i>Magnetism and spin dynamics in low-dimensional materials</i>	
SESSION - Curvilinear and 3D Magnetism		Room Regensburg
Chair: Gaspere Varvaro , CNR - ISM Roma (Italy)		
11:05	Mathias Augustin , KTH Royal Institute of Technology (Sweden) <i>Estimation of exchange parameters in system deformed by a strain-gradient</i>	
11:20	I. Pamela Morales Fernández , MPI for Chemical Physics of Solids Dresden (Germany), TU Vienna (Austria) <i>Oscillatory dynamics of strongly coupled magnetic domain walls in three-dimensional chiral nanostructures</i>	
11:35	Gianluca Gubbiotti , CNR - IOM Perugia (Italy), INVITED <i>Spin-Wave Edge and Cavity Modes in a Moiré Magnonic Crystals</i>	
12:05	Olena Gomonyay , Johannes Gutenberg University Mainz (Germany), INVITED <i>Nonchiral topologically protected antiferro-(alter)-magnetic textures stabilized by magnetoelastic interactions</i>	

12:35 **Francisco Meda**, INESC Lisboa (Portugal)
Robustness of magnetic skin upon touch assessed with TMR-based magnetic tactile sensors

SESSION - Magnetic Materials for Energy Applications & Additive Manufacturing of Magnetic Materials
Chair: **Victorino Franco**, University of Seville (Spain)

Room Mantova

11:05 **Radel Gimaev**, University of Ljubljana (Slovenia)
Materials for the thermomagnetic energy harvesting technology devices

11:20 **M. Nur Hasan**, Uppsala University (Sweden)
Tuning Magnetic Anisotropy in Fe₃Y: An Ab-Initio High-Throughput Study with Transition Metal Doping

11:35 **Franziska Scheibel**, Technical University of Darmstadt (Germany), INVITED
Additive Manufacturing of magneto- and multicaloric materials – from single particle to processed part

12:05 **Ekkas Brück**, TU Delft (The Netherlands), INVITED
Materials for efficient conversion of low temperature waste heat

12:35 **Norbert Löwa**, Physikalisch-Technische Bundesanstalt Berlin (Germany)
Novel system for ultrasound-assisted mixing of photopolymers with nanoparticles for additive manufacturing of magnetic materials

12:50 Closing - Acknowledgements and Awards
Vito Puliafito and **Silvia Tacchi**, General Chairs of AIM2025

Room Prishna



Poster Sessions

Forum Bressanone - Foyer II

Monday, Feb 10 13:05 - 15:00			
Poster code	Presenting Author		Abstract code
A1	Sharangi	Purbasha	53
A2	Vieira	Gabriel	194
A3	Bertolini	Vittorio	134
A4	Di Pietro	Adriano	149
A5	Laudani	Antonino	238
A6	Chdil	Oumayma	164
A7	Brueckl	Hubert	5
A8	Bramantya	Bramantya	177
A9	Idzikowski	Bogdan	227
A10	Fischbacher	Johann	203
A11	Casoli	Francesca	215
A12	Muzzi	Beatrice	289
A13	Oleksakova	Denisa	129
A14	Majhi	Joydeep	285
A15	Belec	Blaž	25
A16	Kollár	Peter	128
A17	Fabbrici	Simone	204
A18	Lunin	Yevhen	4
A19	Sasi Kumar	Sreejith	60
A20	Gimaev	Radel	173
A21	Malvestuto	Marco	80
A22	Hadadian	Yaser	171
A23	Celegato	Federica	9
A24	Boarino	Luca	200
A25	Liu	Feng	155
A26	Battistini	Giorgia	252
A27	Landi	Giovanni	253
A28	Bukhari	Syed Arslan	254
A29	Pilat	Adam	34
A30	Colombo	Cristian Giovanni	303
A31	Lozito	Gabriele Maria	7
A32	Panigrahy	Sujit	156
A33	Lianeris	Michail	16

Tuesday, Feb 11 13:05 - 15:00			
Poster code	Presenting Author		Abstract code
B1	Sharma	Sanchar	59
B2	Kaneko	Haruna	132
B3	Giordano	Anna	237
B4	Hullahalli	Adarsh	107
B5	Sharma	Bhawna	89
B6	Darwin	Emily	86
B7	Delany Martins	Maximiliano	216
B8	Haidar	Mohammad	88
B9	Álvarez-Prado	Luis	157
B10	Papp	Adam	219
B11	Wiechert	Volker	179
B12	Cui	Qirui	63
B13	Fornari	Riccardo	316
B14	Silvani	Raffaele	400
B15	Zhu	Zhenbin	102
B16	Isber	Samih	97
B17	Trukhanova	Mariia	30
B18	Dutta	Debarghya	286
B19	Pylypovskyi	Oleksandr	76
B20	Brondin	Carlo Alberto	123
B21	P	Athira	136
B22	Stobiecki	Feliks	3
B23	Uchimura	Tomohiro	146
B24	Bilyk	Vladislav	218
B25	Dangoisse	Rémy	28
B26	Rougemaille	Nicolas	31
B27	Nilsson	Stéphane	287
B28	Skowronski	Witold	83
B29	Madami	Marco	235
B30	Meo	Andrea	306
B31	Kumar	Abhishek	206
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2025 IEEE Conference on Advances in Magnetism (IEEE AIM 2025)

Bressanone, Italy - 9-12 February 2025

POSTER SESSIONS

MONDAY, FEBRUARY 10th, 2025

13:05 **POSTER I and LUNCH** Forum Bressanone
Chairs: **Aisha Aqeel**, University of Augsburg (Germany), **Perla Malagò**, Silicon Austria Labs (Austria),
Claudia Simonelli, University of Pisa (Italy) Foyer II

A1	Purbasha Sharangi , INRiM Torino (Italy) <i>Magnetic properties of Fe-Si based amorphous alloy prepared by Selective Laser Melting for soft magnetic applications</i>	ID 53
A2	Gabriel Vieira , Centro de Desenvolvimento da Tecnologia Nuclear (Brasil) <i>Exploring the Incorporation of Recycled Nanocrystalline Powders into Feedstock for 3D Printing of Bonded Nd-Fe-B Magnets</i>	ID 194
A3	Vittorio Bertolini , University of Perugia (Italy) <i>Design of a Neural Network Method for Assessing Magnetic Losses in Nanocrystalline Transformers</i>	ID 134
A4	Adriano Di Pietro , INRiM Torino (Italy) <i>Machine learning enhanced Kerr Microscopy magnetization pattern recognition</i>	ID 149
A5	Antonino Laudani , University of Catania (Italy) <i>Physics-Informed Neural Networks for Magnetism</i>	ID 238
A6	Oumayma Chdil , University of Ljubljana (Slovenia) <i>Advancing Magnetic Refrigeration with Artificial Intelligence</i>	ID 164
A7	Hubert Brueckl , University for Continuing Education Krems (Austria) <i>Machine learning based prediction of mechanical properties of WC-Co cemented carbides from magnetic data only</i>	ID 5
A8	Bramantya Bramantya , University of Warsaw (Poland) <i>Machine Learning-Aided Ab Initio Crystal Structure Prediction of Magnetic Metal-Organic Frameworks</i>	ID 177
A9	Bogdan Idzikowski , Polish Academy of Sciences Poznań (Poland) <i>Novel directions in the search and design of modern materials for sustainable development</i>	ID 227
A10	Johann Fischbacher , University for Continuing Education Krems (Austria) <i>Micromagnetic and reduced-order model simulations of microstructural defects in recycled Nd₂Fe₁₄B magnets</i>	ID 203
A11	Francesca Casoli , CNR - IMEM Parma (Italy) <i>Micromagnetic modeling of Ni₂MnGa thin films</i>	ID 215
A12	Beatrice Muzzi , CNR - ICCOM Firenze (Italy) <i>Aerobic ethanol oxidation by magnetic inductive heating of palladium on nickel foam</i>	ID 289
A13	Denisa Oleksakova , Technical University of Košice (Slovakia) <i>Evaluating the Effect of Surface Treatment on Powder Particles in Soft Magnetic Composites</i>	ID 129
A14	Joydeep Majhi , Indian Institute of Technology Bombay (India) <i>Investigating magnetocaloric properties and Heisenberg exchange interactions in NdMnO₃ perovskite: A computational study</i>	ID 285
A15	Blaž Belec , University of Nova Gorica (Slovenia) <i>Pursuing optimal magnetic properties of recycled SrFe₉O₁₂ through magnetic ordering quenching</i>	ID 25
A16	Peter Kollár , P. J. Šafárik University in Košice (Slovakia) <i>Effect of duration of particles dry coating process on magnetic properties of Fe@Al₂O₃ soft magnetic composites</i>	ID 128
A17	Simone Fabbri , CNR - IMEM Parma (Italy) <i>Simulating the impact of materials' properties on the active magnetocaloric regenerator</i>	ID 204
A18	Yevhen Lunin (Ukraine) <i>Reynolds number in electrofluidics</i>	ID 4
A19	Sreejith Sasi Kumar , Technical University of Denmark (Denmark) <i>Topography-driven pathways to enhance extraordinary magnetoresistive device performance</i>	ID 60
A20	Radel Gimaev , University of Ljubljana (Slovenia) <i>Thermal hysteresis in Ho thin films - experimental results and modeling</i>	ID 173
A21	Marco Malvestuto , Elettra Sincrotrone Trieste (Italy) <i>The MagneDyn beamline at the FERMI free electron laser</i>	ID 80
A22	Yaser Hadadian , Physikalisch-Technische Bundesanstalt Berlin (Germany) <i>Effects of air annealing on magnetic and structural properties of Co_{0.25}Fe_{0.75}Fe₂O₄ nanoparticles: a potential approach for fine-tuning the magnetic properties</i>	ID 171
A23	Federica Celegato , INRiM Torino (Italy) <i>Magneto-polymer supraparticles for rapid and reliable identification tags using Magnetic Particle Spectroscopy</i>	ID 9
A24	Luca Boarino , INRiM Torino (Italy) <i>Urea catalysis by electrodeposited Ni nanostructures</i>	ID 200
A25	Feng Liu , Chengdu University of Information Engineering (China) <i>A novel laser imaging method for real-time inspection of high-speed rails</i>	ID 155
A26	Giorgia Battistini , University of Pisa (Italy) <i>Multi-DoF 3D printed spherical electromagnetic actuator</i>	ID 252
A27	Giovanni Landi , University of Pisa (Italy)	ID 253

	<i>Halbach Array Design for Axial Flux Wind Generators</i>	
A28	Syed Arslan Bukhari , University of Pisa (Italy) <i>Comparative Analysis of Field-Oriented Control and Sliding Mode Control for Linear Induction Machine</i>	ID 254
A29	Adam Pilat , AGH University of Krakow (Poland) <i>Investigation of Active Magnetic Bearing with pole embedded Hall sensors</i>	ID 34
A30	Cristian Giovanni Colombo , Politecnico di Milano (Italy) <i>WPT in Electric Micro-Mobility: Implementation of a Wireless Charging System for Electric Bike-Sharing Service</i>	ID 303
A31	Gabriele Maria Lozito , Università degli Studi di Firenze (Italy) <i>Frequency control for LCC-S wireless power transmission</i>	ID 7
A32	Sujit Panigrahy , Univ. Grenoble Alpes, CEA, CNRS, Grenoble (France) <i>Microwave signal rectification with perpendicular magnetic tunnel junctions</i>	ID 156
A33	Michail Lianeris , Politecnico di Bari (Italy) <i>Spin-torque diode effect driven by magnetization phase-transitions: a theoretical analysis</i>	ID 16

13:05 POSTER II and LUNCH

Forum Bressanone

Chairs: **Simone Finizio**, Paul Scherrer Institut (Switzerland), **Esteban Garzon**, University of Calabria (Italy),
Qiuji Yi, Northumbria University (UK)

Foyer II

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