

ISAMMA 2026

2026 INTERNATIONAL SYMPOSIUM ON
ADVANCED MAGNETIC MATERIALS
AND APPLICATIONS

6.28 SUN – 7.2 THU, 2026

Hanwha Resort Haeundae, Busan, Korea



Session Timetable

June 29 (Mon)

	Monterosso Lobby B1F	Monterosso B1F	Forum 1 3F	Forum 2 3F	Forum 3 3F
09:00-10:30	Poster Session (09:30-10:30)		08. Quantum and Correlated Magnetism	06. Magnetization Dynamics	12. Special Session: Altermagnetism
10:30-10:50	Coffee Break				
10:50-12:30		Opening Ceremony Plenary Sessions: Teruo Ono, Diery Bernard			
12:30-14:00	Lunch				
14:00-16:00		05. Spintronics	08. Quantum and Correlated Magnetism	06. Magnetization Dynamics	12. Special Session: Altermagnetism
16:00-16:30	Coffee Break				
16:30-18:30		05. Spintronics	08. Quantum and Correlated Magnetism	06. Magnetization Dynamics	11. Special Session: Spin Caloritronics

Poster Session | June 29 (Mon)

01. Electro-Magnetic Energy Conversion Machines
11. Special Session: Spin Caloritronics

05. Spintronics

June 30 (Tue)

	Monterosso Lobby B1F	Monterosso B1F	Forum 1 3F	Forum 2 3F	Forum 3 3F
09:00-10:30		05. Spintronics	08. Quantum and Correlated Magnetism	06. Magnetization Dynamics	11. Special Session: Spin Caloritronics
10:30-10:45	Coffee Break				
10:45-12:15		Plenary Sessions: Hyunsoo Yang, Sang-Wook Cheong			
12:15-13:45	Lunch				
13:45-15:45		05. Spintronics	08. Quantum and Correlated Magnetism	03. Soft Magnetic Materials and Their Applications	13. Special Session: Biomagnetics
15:45-16:15	Coffee Break				
16:15-18:15	Poster Session (17:15-18:15)	05. Spintronics	01. Electro-Magnetic Energy Conversion Machines	03. Soft Magnetic Materials and Their Applications	13. Special Session: Biomagnetics

Poster Session | June 30 (Tue)

04. Magnetic Devices and Applications
08. Quantum and Correlated Magnetism
13. Special Session: Biomagnetics

06. Magnetization Dynamics
12. Special Session: Altermagnetism

July 1 (Wed)

	Monterosso Lobby B1F	Monterosso B1F	Forum 1 3F	Forum 2 3F	Forum 3 3F
09:00-11:00		05. Spintronics	02. Hard Magnetic Materials and Their Applications	03. Soft Magnetic Materials and Their Applications	04. Magnetic Devices and Applications
11:00-11:15	Coffee Break				
11:15-12:00		Plenary Session: Yikun Fang			
12:00-13:30	Lunch				
13:30-15:30		05. Spintronics	02. Hard Magnetic Materials and Their Applications	09. Emerging Magnetic Materials and Devices	07. Magnetic Imaging and Characterization
15:30-16:00	Coffee Break				
16:00-18:00	Poster Session (17:00-18:00)	05. Spintronics	02. Hard Magnetic Materials and Their Applications	09. Emerging Magnetic Materials and Devices	07. Magnetic Imaging and Characterization
18:00-20:30	Banquet				

Poster Session | July 1 (Wed)

02. Hard Magnetic Materials and Their Applications
10. Interdisciplinary

03. Soft Magnetic Materials and Their Applications

July 2 (Thu)

	Monterosso Lobby B1F	Monterosso B1F	Forum 1 3F	Forum 2 3F	Forum 3 3F
09:00-11:00	Poster Session (10:00-11:00)	05. Spintronics	02. Hard Magnetic Materials and Their Applications	09. Emerging Magnetic Materials and Devices	10. Interdisciplinary
11:00-12:30	Lunch				
12:30-17:30	Excursion				

Poster Session | July 2 (Thu)

05. Spintronics
09. Emerging Magnetic Materials and Devices

07. Magnetic Imaging and Characterization

Oral Presentation

MONDAY, JUNE 29

05. Spintronics

MONDAY, JUNE 29

Monterosso (B1F)

Chairs Soobeom Lee (Shinshu University, Japan)
Juyoung Yoon (Kyung Hee University, Korea)

14:00-14:25 Effective Shaping and Probing of Antiferromagnetic Order: Route Toward Energy-Efficient Spintronics

05-1596

INVITED

[Chaoyao Yang](#)

National Yang Ming Chiao Tung University, Taiwan

14:25-14:50 Spin Dependent Transport in Altermagnetic RuO₂

05-1111

INVITED

[JungWoo Yoo](#)

Ulsan National Institute of Science and Technology, Korea

14:50-15:15 Electric Field Switching of Altermagnetic Spin-Splitting in BiFeO₃

05-1834

INVITED

[Xianzhe Chen](#)

Fudan University, China

15:15-15:40 Magnetic Octupole Hall Effect in D-wave Altermagnets

05-7659

INVITED

[HyeWon Ko](#), [KyungJin Lee](#)²

¹Swiss Federal Institute of Technology Zurich, Switzerland, ²Korea Advanced Institute of Science and Technology, Korea

15:40-16:15 Electron Orbital Dynamics: Orbitronics & Altermagnetism

05-3067

KEYNOTE

[Hyunwoo Lee](#)

Pohang University of Science and Technology, Korea

05. Spintronics

MONDAY, JUNE 29

Monterosso (B1F)

Chairs

16:30-16:55 Negligible Orbital Current Torque in Normal Metal/Ferromagnet Bilayers

05-7183

INVITED

[Lijun Zhu](#)

Institute of Semiconductors, Chinese Academy of Sciences, China

16:55-17:20 Unveiling Ultrafast Pathways for Sub-Picoscond Orbital Current Generation in Ferromagnets

05-3174

INVITED

[Kyunsup Lee](#), [Jooyoung Heo](#), [Younghun Kim](#)

Pukyong National University, Korea

17:20-17:45 Spin-charge Interconversion in Topological Material/Ferromagnet Heterostructures

05-3426

INVITED

[Shuyuan Shi](#)

Beihang University, China

- 17:45-18:10 **Disorder-dependent Orbital Hall Effect and Relaxation in Mn Thin Films**
 05-8602 [Min-Gu Kang](#)
 INVITED *Swiss Federal Institute of Technology Zurich, Switzerland*
- 18:10-18:25 **Mn-Based Orbital-Assisted Low-Current Spin Hall Nano-Oscillators**
 05-8990 [Sambit Ghosh](#)¹, [Jong Guk Choi](#)¹, [Utkarsh Shashank](#)¹, [Rahul Gupta](#)¹, [Nilamani Behera](#)²,
[Akash Kumar](#)¹, [Johan Akerman](#)¹
¹*University of Gothenburg, Sweden, ²Indian Institute of Technology Bhubaneswar, India*

08. Quantum and Correlated Magnetism

MONDAY, JUNE 29

Forum 1 (3F)

- Chairs Eun-Gook Moon (Korea Advanced Institute of Science and Technology, Korea)
 Changhee Sohn (Ulsan National Institute of Science and Technology, Korea)
- 09:00-09:35 **Thermodynamic Evidence for Majorana Excitations in Kitaev Spin Liquid Materials**
 08-9395 [Takasada Shibauchi](#)
 KEYNOTE *The University of Tokyo, Japan*
- 09:35-10:00 **Stacking Disorder and Thermal Transport in the Kitaev Quantum Spin Liquid Candidate α -RuCl₃**
 08-7395 [Jiaqiang Yan](#)
 INVITED *Oak Ridge National Laboratory, USA*
- 10:00-10:15 **Nonreciprocal Magnon Dynamics in the Chiral-Polar Antiferromagnet NiCo₂TeO₆**
 08-7555 [Kyung Ik Sim](#), [Jae Hoon Kim](#)
Yonsei University, Korea
- 10:15-10:30 **Fully Generalized Spin Models with Strain Effects of Kitaev Spin Liquid Candidate Materials**
 08-3269 [Pureum Noh](#)¹, [Hyunggeun Lee](#)², [Myung Joon Han](#)¹, [Eun Gook Moon](#)¹
¹*Korea Advanced Institute of Science and Technology, Korea, ²National University of Singapore, Singapore*

08. Quantum and Correlated Magnetism

MONDAY, JUNE 29

Forum 1 (3F)

- Chairs Eun-Gook Moon (Korea Advanced Institute of Science and Technology, Korea)
 Dirk Wulferding (Sejong University, Korea)
- 14:00-14:25 **Terahertz Quantum Spin Dynamics**
 08-3815 [Zhe Wang](#)
 INVITED *Technical University of Dortmund, Germany*
- 14:25-14:50 **Synthesis and Quantum Magnetic Properties of Prototypical Mn₃Sn and Novel Hetero-Kagome Bilayer Zr₃Mn₃Sn₄Ga Antiferromagnets**
 08-5853 [Keeseong Park](#)
 INVITED *Daegu Gyeongbuk Institute of Science and Technology, Korea*

- 14:50-15:05** **Topological Superconductors Hosting Spin-orbital Torque and Spin-triplet Pairing**
 08-2156 ShuanCheng Mai, Danru Qu, [SsuYen Huang](#)
National Taiwan University, Taiwan
- 15:05-15:20** **Spin-Orbit-Induced Instability and Finite-Temperature Stabilization of a Triangular-Lattice Supersolid**
 08-9702 [Seongjun Park](#)¹, [SungMin Park](#)¹, [YunTak Oh](#)², [HyunYong Lee](#)², [EunCook Moon](#)¹
¹*Korea Advanced Institute of Science and Technology, Korea*, ²*Korea University, Korea*
- 15:20-15:45** **Cobalt Oxide Heterostructures for Quantum and Correlated Magnetism**
 08-5639 [Changhee Sohn](#)
INVITED *Ulsan National Institute of Science and Technology, Korea*

08. Quantum and Correlated Magnetism

MONDAY, JUNE 29

Forum 1 (3F)

Chairs MyungJoon Han (Korea Advanced Institute of Science and Technology, Korea)
 Changhee Sohn (Ulsan National Institute of Science and Technology, Korea)

- 16:30-16:55** **Topological Thermal and Spin Transport in Insulating Magnets**
 08-3484 [Joji Nasu](#)
INVITED *Tohoku University, Japan*
- 16:55-17:20** **Quantum Entanglement in a Quasi-1D Spin Chain**
 08-7061 [Dirk Wulferding](#)
INVITED *Sejong University, Korea*
- 17:20-17:35** **Resolving the Yu-Shiba-Rusinov States in Fe Nanostructures on Superconducting Ni-Kagome Monolayer on Pb(111)**
 08-1579 [Nitin Kumar](#)¹, [Raffaele Aliberti](#)², [Yen Hui Lin](#)¹, [Philipp Ruessmann](#)², [Gustav Bihlmayer](#)², [Pin Jui Hsu](#)¹
¹*National Tsing Hua University, Taiwan*, ²*Forschungszentrum Jülich, Germany*
- 17:35-17:50** **Antiferromagnetic Couplings of SrCu₂(BO₃)₂ at High Pressure**
 08-6783 [Mohamed Zayed](#)
Carnegie Mellon University in Qatar, Qatar
- 17:50-18:15** **Quantum and Thermal Melting of Magnetically Ordered Phases**
 08-8762 [Eun Cook Moon](#)
INVITED *Korea Advanced Institute of Science and Technology, Korea*

06. Magnetization Dynamics

MONDAY, JUNE 29

Forum 2 (3F)

Chair June-Seo Kim (Daegu Gyeongbuk Institute of Science and Technology, Korea)

- 09:00-09:25** **Coherent Magnon-Phonon Interconversion in Ferrimagnetic Insulators**
 06-8647 [Kyongmo An](#)
INVITED *Chungbuk National University, Korea*

- 09:25-09:50** **Nonlinear Magnon Mode Hopping and Hysteresis in a Synthetic Antiferromagnet**
 06-6806 [Min Gyu Park](#)¹, Mujin You¹, Moojune Song¹, Jun Seok Seo¹, Donghyeon Lee², Seungha Yoon³,
 INVITED [Daiju Hayashi](#)⁴, Yoichi Shiota⁴, Teruo Ono⁴, Sanghoon Kim², Se Kwon Kim¹, KabJin Kim¹
¹Korea Advanced Institute of Science and Technology, Korea, ²University of Ulsan, Korea,
³Korea Institute of Industrial Technology, Korea, ⁴Kyoto University, Japan
- 09:50-10:15** **Magnetization Dynamics in Magnetic Multilayer Films**
 06-1751 [Dong Hyun Kim](#)
 INVITED *Chungbuk National University, Korea*
- 10:15-10:30** **Magnetization Switching via Dynamic Modulation of Magnetic Anisotropy Induced by Lattice Deformation**
 06-5695 [Heerak Son](#), Ganghwi Kim, Suyeong Jeong, SuMi Lee, KiSuk Lee
Ulsan National Institute of Science and Technology, Korea

06. Magnetization Dynamics

MONDAY, JUNE 29

Forum 2 (3F)

Chair Jaehun Cho (Daegu Gyeongbuk Institute of Science and Technology, Korea)

- 14:00-14:25** **Magnetization Dynamics Induced by the Surface Acoustic Wave**
 06-3569 [Jianbo Wang](#), Huaidong Li, Jiangtao Xue, Meihong Liu, Chenbo Zhao, Qingfang Liu
 INVITED *Lanzhou University, China*
- 14:25-14:50** **Parity-based Measurements for Separation of Spin Swapping Effect and Spin-Orbit Torque**
 06-7069 INVITED [Kitae Kim](#)¹, Wooyoung Shim², Sugbong Choe²
¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Seoul National University, Korea
- 14:50-15:15** **Optical Spin Generation for Spin-Torque-Driven Dynamics of Ferromagnet and Antiferromagnet**
 06-2125 INVITED [Gyungmin Choi](#)
Sungkyunkwan University, Korea
- 15:15-15:30** **High-Frequency Spin Dynamics in Hard Ferrimagnetic Cobalt Ferrite for Terahertz Spintronics**
 06-8244 [Evgeny Gorbachev](#)¹, Liudmila Alyabyeva²
¹Shenzhen MSU-BIT University, China, ²Moscow Institute of Physics and Technology, Russia
- 15:30-15:45** **Delayed Heaviside Step-function Magnetic Aftereffect in GdFeCo/Ir/GdFeCo Synthetic Ferrimagnets**
 06-6979 [Artem Talantsev](#), Roman Morgunov
Federal Research Center of Problems of Chemical Physics and Medicinal Chemistry, Russian Academy of Sciences, Russia
- 15:45-16:00** **Spin-Torque-Driven Magnetization Dynamics of Ferrimagnet Co_{100-x}Gd_x Alloy**
 06-6270 [Hyun Seo Kim](#), Gyung Min Choi
Sungkyunkwan University, Korea

06. Magnetization Dynamics

MONDAY, JUNE 29

Forum 2 (3F)

Chair Duck-Ho Kim (Korea Institute of Science and Technology, Korea)

16:30-16:55 Towards Future Spintronic Devices

06-1571

[Wanjun Jiang](#)

INVITED

Tsinghua University, China

16:55-17:20 Orbital Current Generation Phenomena in Metallic Systems

06-3510

[Kazuya Ando](#)

INVITED

Keio University, Japan

17:20-17:45 Berry-Phase Effect on the Orbital Magnetization in Non-Equilibrium

06-3423

[Dongwook Go](#)¹, [Hojun Lee](#)², [Insu Baek](#)², [Mirco Sastges](#)³, [Yuriy Mokrousov](#)³, [HyunWoo Lee](#)²

INVITED

¹*Korea University, Korea*, ²*Pohang University of Science and Technology, Korea*,
³*Forschungszentrum Jülich, Germany*

17:45-18:00 Surface Roughness Dependence of Anomalous Ferromagnetic Resonance Linewidth Broadening in Fe Thin Films

06-7710

[Seungkeun Baek](#), [Sachio Komori](#), [Tomoyasu Taniyama](#)

Nagoya University, Japan

18:00-18:15 Monte Carlo Simulations of Magnetic and Magnetocaloric Properties of Heusler Alloys in Constant and Alternating Magnetic Fields

06-3760

[Vladimir Sokolovskiy](#)¹, [Adler Gamzatov](#)², [Vasiliy Buchelnikov](#)¹

¹*Chelyabinsk State University, Russia*, ²*Amirkhanov Institute of Physics, Russian Academy of Sciences, Russia*

12. Special Session: Altermagnetism

MONDAY, JUNE 29

Forum 3 (3F)

Chairs Dong-Soo Han (Korea Institute of Science and Technology, Korea)
Sonny H. Rhim (University of Ulsan, Korea)

09:00-09:25 Beyond Altermagnetism: Unconventional Magnetism

12-3309

[Qihang Liu](#)

INVITED

Southern University of Science and Technology, China

09:25-09:50 Unconventional Magnetism in Rare-Earth Compounds

12-6727

[ChangJong Kang](#)

INVITED

Chungnam National University, Korea

09:50-10:15 X-ray Spectroscopies in Altermagnets

12-9545

[Atsushi Hariki](#)

INVITED

Osaka Metropolitan University, Japan

10:15-10:40 **Revisiting Spin Transport in RuO₂: Distinguishing Anisotropic Spin Hall from Altermagnetic Spin Splitting Effects**
12-5697
INVITED [Danru Qu](#)¹, YuChun Wang¹, ChingTe Liao¹, ZheYu Shen¹, ChiaHsi Lin¹, WeiChih Hsu¹, YouSheng Chen¹, YuCheng Tien¹, YiYing Chin², ChienTe Chen³, Akhilesh Singh⁴, WeiLi Lee⁴, SsuYen Huang¹
¹National Taiwan University, Taiwan, ²National Chung Cheng University, Taiwan, ³National Synchrotron Radiation Research Center, Taiwan, ⁴Academia Sinica, Taiwan

12. Special Session: Altermagnetism

MONDAY, JUNE 29

Forum 3 (3F)

Chairs Dong-Soo Han (Korea Institute of Science and Technology, Korea)
Sonny H. Rhim (University of Ulsan, Korea)

14:00-14:25 **Electrical Switching of Altermagnetic MnTe**

12-3167 [Suyoung Lee](#), Changyoung Kim
INVITED *Seoul National University, Korea*

14:25-14:50 **How to Find a Spin-split Antiferromagnet Using ARPES?**

12-3776 [Chang Liu](#)
INVITED *Southern University of Science and Technology, China*

14:50-15:15 **Strain- and Doping-Induced Modifications of Electronic and Magnetic Properties of RuO₂**

12-1240 [Jongseok Lee](#)
INVITED *Gwangju Institute of Science and Technology, Korea*

15:15-15:40 **Novel Properties due to Crystal Symmetry in Altermagnets**

12-1799 [Junwei Liu](#)
INVITED *The Hong Kong University of Science and Technology, China*

15:40-16:05 **Altermagnets: Combining the Best of All Worlds**

12-7398 [Mathias Klauui](#)
INVITED *Johannes Gutenberg University Mainz, Germany*

11. Special Session: Spin Caloritronics

MONDAY, JUNE 29

Forum 3 (3F)

Chair Hyungyu Jin (Pohang University of Science and Technology, Korea)

16:30-17:05 **Magnetic and Electric Polarization Caloritronics**

11-3199 [Gerrit Bauer](#)
KEYNOTE *Tohoku University, Japan*

17:05-17:30 **Magnon Engineering for Thermal Transport Modulation**

11-2263 [Takamasa Hirai](#)
INVITED *National Institute for Materials Science, Japan*

- 17:30-17:55** **Transverse Electron Deflection in Disordered Magnetic Systems Probed by Electrical and Thermal Methods**
11-2230
INVITED Sang Jun Park
National Institute for Materials Science, Japan
- 17:55-18:10** **Observation of Longitudinal Ferron Seebeck Effect**
11-1974 Junseok Kim, Sanghyeon Kim, Daesu Lee, Hyungyu Jin
Pohang University of Science and Technology, Korea
- 18:10-18:25** **Single-Material Anomalous Nernst Heat-Flux Sensor Enabled by Heat-Assisted Magnetization Reversal**
11-8288 Weinan Zhou, Hirofumi Suto, Yuya Sakuraba
National Institute for Materials Science, Japan

Oral Presentation

TUESDAY, JUNE 30

05. Spintronics

TUESDAY, JUNE 30

Monterosso (B1F)

Chair Hyewon Ko (Swiss Federal Institute of Technology Zurich, Switzerland)

09:00-09:25 Topological Insulator-Based Spin-Orbit Torque Magnetic Sensor for 4Tbit/inch²

05-7391 **Magnetic Recording Technology**

INVITED [Pham Nam Hai](#)

Institute of Science Tokyo, Japan

09:25-09:50 ON-OFF Control of Spin-Orbit Torque in an Ionic-Gated Pt/Co/Pt Trilayer

05-4892 [Soobeom Lee](#)¹, [Suhyeok An](#)², [Eunchong Baek](#)², [Jaeyong Cho](#)², [Dongryul Kim](#)²,

INVITED [Chun Yeol You](#)²

¹Shinshu University, Japan, ²Daegu Gyeongbuk Institute of Science and Technology, Korea

09:50-10:15 Nanosecond Scale Phase Ordering in Ultralarge Spin Hall Nano-Oscillator Networks

05-4466 [Avinash Kumar Chaurasiya](#)

INVITED

University of Gothenburg, Sweden

10:15-10:40 Spintronics for Unconventional Computing beyond Binary Technologies:

05-1087 **From Materials to Applications**

INVITED [JaeChun Jeon](#)

Max-Planck Institute for Microstructure Physics, Germany

05. Spintronics

TUESDAY, JUNE 30

Monterosso (B1F)

Chairs

13:45-14:10 Electrical Control of Noncollinear-antiferromagnetic Heterostructures

05-8138 [Juyoung Yoon](#)¹, [Shunsuke Fukami](#)²

INVITED

¹Kyung Hee University, Korea, ²Tohoku University, Japan

14:10-14:35 Emergent Inductance in Magnetic Nanostructures

05-8405 [Junichi Ieda](#)

INVITED

Japan Atomic Energy Agency, Japan

14:35-14:50 Electric Reactance Emerging from Spin Dynamics in Magnetic Heterostructures

05-3672 [Yasufumi Araki](#), [Jun Ichi Ieda](#)

Japan Atomic Energy Agency, Japan

- 14:50-15:05 **Investigating Stability of Fe/MgO(001) Interfaces during Monolayer Growth via Machine Learning-Assisted Ab Initio Relaxation**
05-8045 Andi Muhammad Nur Fitrash Syamsul, Kohji Nakamura
Mie University, Japan
- 15:05-15:20 **Time-Resolved Measurement of Long-Range Orbital Diffusion Driven by Ultrafast Demagnetization**
05-4342 Sumin Kim, GyungMin Choi
Sungkyunkwan University, Korea
- 15:20-15:45 **Interferometric Evidence of Nonvolatile Anomalous Phase Shifts in Exchange-Spin-Split Josephson Supercurrent Diodes**
05-5804 KunRok Jeon
Chung-Ang University, Korea

05. Spintronics

TUESDAY, JUNE 30

Monterosso (B1F)

Chairs

- 16:15-16:50 **Novel Spintronic Functions in Group IV Semiconductor**
05-6373 Masashi Shiraishi
KEYNOTE *Kyoto University, Japan*
- 16:50-17:15 **High-Order Spin-Dependent Transport Properties in Single-Crystalline Magnetic Thin Films**
05-1492 Haoran Chen, Lean Li, Chen Yue, Zhe Yuan, Yizheng Wu
INVITED *Fudan University, China*
- 17:15-17:40 **Observation of the Crossover from Quantum Fluxoid to Half-Quantum Fluxoid in a Chiral Superconducting Device**
05-6225 Yasuhiro Niimi
INVITED *The University of Osaka, Japan*
- 17:40-18:05 **Spin Transport at Organic Molecule/Metal Interface**
05-4561 Kouta Kondou
INVITED *The University of Osaka, Japan*
- 18:05-18:20 **Bilinear Magnetoresistance by Spin Hall Effect**
05-5388 DongJun Kim¹, KyoungWhan Kim², KyungJin Lee¹, Hyunsoo Yang³
¹*Korea Advanced Institute of Science and Technology, Korea*, ²*Yonsei University, Korea*, ³*National University of Singapore, Singapore*
- 18:20-18:35 **Antiferromagnetic Domain Wall in Ferrimagnetic Bilayers Controlled by Magnetic Spin Hall Effect**
05-1728 San Ko¹, Hyunjin Kim¹, Donghyeon Han², Jaimin Kang³, Phuoc Cao Van⁴, Wonyeong Choi⁵, Sanghoon Kim⁵, JongRyul Jeong⁴, ByongGuk Park¹, AlbertMinGyu Park¹, KyoungWhan Kim⁶, KabJin Kim¹
¹*Korea Advanced Institute of Science and Technology, Korea*, ²*Korea Research Institute of Standards and Science, Korea*, ³*Northwestern University, USA*, ⁴*Chungnam National University, Korea*, ⁵*University of Ulsan, Korea*, ⁶*Yonsei University, Korea*

08. Quantum and Correlated Magnetism

TUESDAY, JUNE 30

Forum 1 (3F)

Chairs MyungJoon Han (Korea Advanced Institute of Science and Technology, Korea)
Eun-Gook Moon (Korea Advanced Institute of Science and Technology, Korea)

09:00-09:25 Dft+Dmft Study of Novel Magnetic and Strong Correlated Materials

08-8948 [Hyowon Park](#)

INVITED *University of Illinois Chicago, USA*

09:25-09:50 DFT+DMFT Study of 5f Covalency and Localization in Uranium Intermetallics

08-8735 [Atsushi Hariki](#)

INVITED *Osaka Metropolitan University, Japan*

09:50-10:05 First-Principles Studies of Helimagnetic Materials

08-5697 [Kesong Yang](#)

University of California San Diego, USA

10:05-10:20 Exchange-Correlation Driven Polymorphism in Ni-Mn-Ti All-d Heusler Alloys

08-2729 [Danil Baigutlin](#), Vladimir Sokolovskiy

Chelyabinsk State University, Russia

08. Quantum and Correlated Magnetism

TUESDAY, JUNE 30

Forum 1 (3F)

Chairs Hyowon Park (University of Illinois Chicago, USA)
Bongjae Kim (Kyungpook National University, Korea)

13:45-14:10 Lattice Effects on Multipolar Phenomena in Mott Insulators

08-7212 [Naoya Iwahara](#)

INVITED *Chiba University, Japan*

14:10-14:35 Unravelling Exotic Quantum Phases and Entanglement via Resonant Inelastic X-Ray Scattering

08-2878 [Beom Hyun Kim](#)

INVITED *Seoul National University, Korea*

14:35-15:00 Magnetic Force Theory in Action: From Quantum Frustration to Emergent Topological Spin Textures

08-6018 [MyungJoon Han](#)

Korea Advanced Institute of Science and Technology, Korea

15:00-15:15 Designing XXZ Anisotropy by Trigonal Crystal Fields in Co-Based Triangular Lattice Antiferromagnets for Spin Supersolids

08-6743 [Ryota Ono](#)¹, Junichi Ieda¹, Michiyasu Mori¹, Sadamichi Maekawa²

¹Japan Atomic Energy Agency, Japan, ²RIKEN, Japan

01. Electro-Magnetic Energy Conversion Machines

TUESDAY, JUNE 30

Forum 1 (3F)

Chairs MinRo Park (Soonchunhyang University, Korea)
Kyunghun Shin (Changwon National University, Korea)

16:15-16:50 **Artificial Intelligence-Assisted Design and Fault Diagnosis of Electric Motors for Green Transportation**
01-1862

KEYNOTE Min Fu Hsieh
National Cheng Kung University, Taiwan

16:50-17:15 **Design Strategies for Next-Generation Electric Machines: Transitioning to Heavy Rare-Earth-Free and Rare-Earth-Free Electric Machines**
01-5687

INVITED Kyunghun Shin¹, Jangyoung Choi²
¹Changwon National University, Korea, ²Chungnam National University, Korea

17:15-17:40 **Research Trends in Motor Design Based on Soft and Hard Magnetic Materials**
01-8298

INVITED MinRo Park
Soonchunhyang University, Korea

17:40-17:55 **Radial Electromagnetic Force-Based Low-Vibration Design of a Variable Leakage Flux Permanent Magnet Motor under Multiple Operating Conditions**
01-6537

KyeongWon Kwak¹, HyeonJae Shin², MinMo Koo², JangYoung Choi¹
¹Chungnam National University, Korea, ²Korea Institute of Industrial Technology, Korea

17:55-18:10 **Surrogate-Assisted Multi-Objective Optimizaion of an Induction Machine with Post-Optimization Output Power Matching**
01-9894

TaeSeong Kim¹, HwiRang Ban¹, SeokHyeon Eom¹, JunWon Yang¹, KyungHun Shin², JangYoung Choi¹
¹Chungnam National University, Korea, ²Changwon National University, Korea

18:10-18:25 **Performance Analysis of a Wound Field Synchronous Starter–Generator Incorporating Six-Phase Winding Architectures**
01-2594

Shu An Chin, Min Fu Hsieh
National Cheng Kung University, Taiwan

06. Magnetization Dynamics

TUESDAY, JUNE 30

Forum 2 (3F)

Chair Soong-Geun Je (Chonnam National University, Korea)

09:00-09:25 **Interaction Between Magnons in Magnetic Thin Films**
06-9266

INVITED Guoqiang Yu
Institute of Physics, Chinese Academy of Sciences, China

09:25-09:50 **Propagating Antiferromagnetic Magnons in Synthetic Antiferromagnets**
06-6824

INVITED Yoichi Shiota
Kyoto University, Japan

09:50-10:15 Coherent and Nonlinear Dynamics in Magnon-Based Hybrid Systems

06-4765

[KabJin Kim](#)

INVITED

Korea Advanced Institute of Science and Technology, Korea

10:15-10:30 Phonon-Induced Regeneration of Low-Damping Propagating Spin Waves

06-6040

Kab Jin Kim¹, Albert Min Gyu Park¹, Jong Ryul Jeong², Byong Guk Park¹, Jinhyun Baek¹, Phuoc Cao Van², Moojune Song¹, [Youngseon Soon](#)¹

¹*Korea Advanced Institute of Science and Technology, Korea*, ²*Chungnam National University, Korea*

03. Soft Magnetic Materials and Their Applications

TUESDAY, JUNE 30

Forum 2 (3F)

Chairs

Jae Won Jeong (Korea Institute of Materials Science, Korea)

Young-tae Kwon (Korea Institute of Materials Science, Korea)

13:45-14:20 Ultra-Low Iron Loss in Soft Magnetic Ribbons by Controlling Magnetic Domain

03-5258

Structure and Magnetization Process

KEYNOTE

[Satoshi Okamoto](#)

Tohoku University, Japan

14:20-14:45 Impact of Ultra-Rapid Annealing on the Soft Magnetic Properties and Microstructure of FeNi- and FeCo-Based Nanocrystalline Alloys

03-8479

INVITED

[Ivan Skorvanek](#)¹, Branislav Kunca¹, Jozef Marcin¹, Felix Roemer², Parthiban Ramasamy³, Peter Svec Jr.⁴, Peter Svec⁴

¹*Institute of Experimental Physics, Slovak Academy of Sciences, Slovakia*, ²*Technical University of Leoben, Austria*, ³*Erich Schmid Institute of Materials Science, Austria*, ⁴*Institute of Physics, Slovak Academy of Sciences, Slovakia*

14:45-15:00 Magnetic Properties and Electronic Structure of FeRhSb_{1-x}Z_x (Z= As, Sn, Ge, Al, Si, Ga) Alloys

03-9618

[Oksana Pavlukhina](#), Vasily Buchelnikov, Vladimir Sokolovskiy

Chelyabinsk State University, Russia

15:00-15:15 Influence of Annealing Temperature on Soft Magnetic Fe-Si-B Films with Various Thicknesses

03-2016

[Saijian Aija](#), Keisuke Saito, Takamichi Miyazaki, Sho Muroga, Yasushi Endo

Tohoku University, Japan

15:15-15:30 Impact of Cerium Single-Atom Anchoring on the Magnetism and Photocatalytic Behavior of TiO₂

03-7531

[Lin ZongHan](#)¹, Chen PoChun¹, Cheng ChinMing¹, Chen ShihYun¹, Lo FangYuh²

¹*National Taiwan University of Science and Technology, Taiwan*, ²*National Taiwan Normal University, Taiwan*

15:30-15:45 Defect-Driven Magnetic Enhancement in La/Y-Doped CeO₂ via Na-Chitosan Modification

03-2522

Chen-Yun Yu, [Po-Chun Chen](#), Yu-Kai Zhou, Chih-Chia Cheng, Shih-Yun Chen

National Taiwan University of Science and Technology, Taiwan

15:45-16:00 **Magnetic Damping Constant, Exchange Stiffness, and Magneto-Transport Properties of**
03-1052 **Co₂Mn_{0.5}Fe_{0.5}Ge (CMFG) Half-Metallic Heusler Alloy**
Woonjae Won, Yuta Sasaki, Yukiko Takahashi, Hirofumi Suto
National Institute for Materials Science, Japan

03. Soft Magnetic Materials and Their Applications

TUESDAY, JUNE 30

Forum 2 (3F)

Chairs Jae Won Jeong (Korea Institute of Materials Science, Korea)
Young-tae Kwon (Korea Institute of Materials Science, Korea)

16:15-16:40 **Innovative Soft Magnetic Material HLMET® for High-Efficiency Motors:**
03-4943 **From Material Design to EV Applications**

INVITED Takeshi Tachibana¹, Yohei Suzuki², Takeshi Yamamoto¹, Yoshiaki Kano³, Hirokazu Kanekiyo¹
¹*Next Core Technologies Inc., Japan*, ²*Komatsuseiki Kosakusyo Co., Ltd., Japan*, ³*Daido University, Japan*

16:40-17:05 **Effect of Residual Stress on the Magnetic Properties of Motor Cores with PWM Inverter**
03-6686 **Excitation**

INVITED Kyyoul Yun
Otemon Gakuin University, Japan

17:05-17:30 **A Various Research about EMI/EMC Soft Magnetic Materials**

03-7148 Alex Hong
INVITED *TDG Holding Co., Ltd., China*

17:30-17:45 **Microwave-Assisted Phase Transformation Pathways in Fe₃O₄ Nanostructures and Their**
03-9597 **Impact on Hyperthermia Performance**

Bintang Surya Bhakti¹, Hsuan Lin¹, Hsuan Li¹, Chien Shiun Liao¹, Sea Fue Wang²,
An Cheng Sun¹
¹*Yuan Ze University, Taiwan*, ²*National Taipei University of Technology, Taiwan*

17:45-18:00 **Effects of Ultra-low Substrate Bias on Surface Modification and Magnetic Properties of**
03-9724 **Fe₃O₄ Thin Films**

Li Hsuan¹, Liu Ting Yu¹, Bhakti Bintang Surya¹, Liao Chien Shiun¹, Sea Fue Wang²,
Sun An Cheng Aidan¹
¹*Yuan Ze University, Taiwan*, ²*National Taipei University of Technology, Taiwan*

18:00-18:15 **Thermomagnetic and Mechanical Properties of all-d-Metal Ni-Co-Mn-Ti-Based**
03-9131 **Polycrystalline Alloys**

Alexander Kamantsev¹, Dmitry Kuznetsov¹, Anton Nesolenov¹, Oleg Kovalev²,
Roman Safonov², Aleksay Golovchan², Irek Musabirov³
¹*Kotel'nikov Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia*,
²*Galkin Donetsk Institute for Physics and Technology, Russia*, ³*Institute for Metals Superplasticity Problems, Russian Academy of Sciences, Russia*

11. Special Session: Spin Caloritronics

TUESDAY, JUNE 30

Forum 3 (3F)

Chair Sang Jun Park (Narcotics Information Management System, Japan)

09:00-09:25 Unconventional Magnetic Phase Transition in Mixed-Phase (110)-Oriented Ferri Films on Al₂O₃ Substrates via the Anomalous Nernst Effect
11-7531

INVITED SangKwon Lee, Jaewon Choi, Gilsung Kim, Jungmin Cho, Nowon Park, Yunho Kim
Chung-Ang University, Korea

09:25-09:50 The Spin Seebeck Effect Induced by the Crystal Field Excitations in Rare-Earth Ion Garnet
11-4029

INVITED Mori Michiyasu¹, Tomasello Bruno², Ziman Timorhy³
¹Japan Atomic Energy Agency, Japan, ²University of Catania, Italy, ³Institut Laue Langevin, France

09:50-10:15 Giant Spin Seebeck Effect in Vanadium Based 2D Altermagnets

11-8082 Jisang Hong, Abdullah Abdullah

INVITED Pukyong National University, Korea

10:15-10:30 Sign Reversal of Anomalous Nernst Effect in D03-ordered (Fe-Mn)₃Si Composition-Spread Thin Film
11-6174

Ao Nakagawa¹, Satoki Tazawa¹, Nanhe Kumar Gupta², Nattamon Suwannaharn², Takamasa Hirai², Keisuke Masuda², Taisuke Sasaki², Kenichi Uchida², Yuya Sakuraba²
¹National Institute for Materials Science, Japan, ²University of Tsukuba, Japan

13. Special Session: Biomagnetics

TUESDAY, JUNE 30

Forum 3 (3F)

Chairs Ju Hun Lee (Hanyang University ERICA, Korea)
Bumchul Park (Korea University, Korea)

13:45-14:20 Magneto-Mechanical Stimulation of Cells: A Novel Approach in Cancer Therapy
13-3809

KEYNOTE Patricia Obeid¹, Andrea Visona², Robert Morel², Alice Nicolas³, Helene Joisten², Francois Berger⁴, Bernard Dieny²
¹BIOMICS, France, ²SPINTEC, France, ³Laboratoire des Technologies de la Microélectronique, France, ⁴Braintech, France

14:20-14:45 Magnetically Actuated Functional Materials for Intelligent Systems

13-6417 Yoonseok Park

INVITED Kyung Hee University, Korea

14:45-15:10 Magnetic Implants for Wireless Biosensing

13-1739 Mengdi Han

INVITED Peking University, China

15:10-15:35 Iron Oxide Crystallization for Biomagnetic Applications

13-1849 Bumchul Park

INVITED Korea University, Korea

15:35-16:00 **Microneedle-Mediated Delivery of Anti-CD3 Magnetic Nanoparticle Conjugates**
13-3845 [Sang Suk Lee](#)¹, Jong Gu Choi¹, Sang Heon Choi¹, Mahbub Hasan², Sang Wook Park¹
INVITED ¹*Sangji University, Korea*, ²*Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Bangladesh*

13. Special Session: Biomagnetics

TUESDAY, JUNE 30

Forum 3 (3F)

Chairs Jinmyoung Joo (Ulsan National Institute of Science and Technology, Korea)
Yoonseok Park (Kyung Hee University, Korea)

16:15-16:40 **Highly Susceptible Superparamagnetic Nanoclusters for Rapid Separation and Enrichment of Biological Substances under Continuous Flow**
13-4146 [Jinmyoung Joo](#)
INVITED *Ulsan National Institute of Science and Technology, Korea*

16:40-17:05 **Magnetically Driven Ingestible Soft Microrobots for Targeted Theranostics in the Gut**
13-4326 [Junghwan Byun](#)
INVITED *Korea Institute of Science and Technology, Korea*

17:05-17:20 **Bioresorbable Magnets for Motion Immune Wireless Sensing of Biomechanics**
13-2018 [Zhongyi Nie](#), Mengdi Han
Peking University, China

17:20-17:35 **Compressed Sensing MP2RAGE for Rapid and Accurate Brain T1 Mapping: Phantom and In Vivo Validation**
13-5519 In Woo Kim¹, Joon Bong Shin², [Min Gu Kim](#)¹, Ji Young Kim¹, In Seong Kim³
¹*Chung-Ang University Hospital, Korea*, ²*Kangnam National University Hospital, Korea*,
³*Siemens Healthineers, Korea*

Oral Presentation

WEDNESDAY, July 1

05. Spintronics

WEDNESDAY, July 1

Monterosso (B1F)

Chair Kyusup Lee (Pukyong National University, Korea)

09:00-09:25 Spin-orbitronic Devices as Energy Efficient Electronic Components in the Post-Moore Era
05-1967 [Alexander Samardak](#)

INVITED *Far Eastern Federal University, Russia*

09:25-09:50 Ultra-Low Switching Current Density and Robust Thermal Stability in W-alloy Based
05-9540 **SOT Devices**

INVITED [Chih Huang Lai](#)

National Tsing Hua University, Taiwan

09:50-10:15 Control of Anomalous Nernst Effect in Magnetic Nanostructures

05-2352 [Mizuguchi Masaki](#)

INVITED *Nagoya University, Japan*

10:15-10:30 Field-Free Spin-Orbit Torque Switching in Perpendicularly Magnetized
05-9738 **CoFeB/MgO-Based Synthetic Antiferromagnetic Structures**

[YongJin Kim](#), Gyuyoung Park, Deok Hyun Yun, Hanwool Seong, DongSoo Han, OukJae Lee
Korea Institute of Science and Technology, Korea

10:30-10:55 Magnetic Circular Dichroism as a Spectroscopic Bridge from Electronic Structure to
10-2979 **Catalysis, Dynamic Polarization Control, and CISS Phenomena**

INVITED [Hua Shu Hsu](#)

National Pingtung University, Taiwan

05. Spintronics

WEDNESDAY, July 1

Monterosso (B1F)

Chairs

13:30-13:55 All-Optical Helicity-Dependent Magnetization Reversal in Ferromagnetic Metals

05-2263 [Kihiro Yamada](#)

INVITED *Institute of Science Tokyo, Japan*

13:55-14:20 A Magnetic Skyrmion Neuron Device with Built-in Homeostasis

05-7350 [Seungmo Yang](#)

INVITED *Korea Research Institute of Standards and Science, Korea*

- 14:20-14:45** **Spin-polarised Surface Plasmon Polaritons Generated at an Oxide/Metal Interface**
 05-5523 A Yong Lee¹, Hiroki Koizumi¹, Elisabeth Moedl², Daigo Oue³, Mamoru Matsuo⁴,
INVITED [Atsufumi Hirohata](#)¹
¹Tohoku University, Japan, ²RWTH Aachen University, Germany, ³RIKEN, Japan, ⁴Chinese Academy of Sciences, China
- 14:45-15:00** **Opto-Thermal Activation of Domain-Wall Motion via Laser-Induced Thermal Gradients**
 05-3756 [Hiroyuki Awano](#)
Toyota Technological Institute, Japan
- 15:00-15:15** **Evaluating Dielectric Suitability for VCMA Devices through Capacitance–Voltage Analysis**
 05-8427 [Ji Hyeon Yun](#)¹, Kyumin Sim², Yeon Su Park³, In Kook Hwang¹, Sang Ho Lim⁴,
 Byong Guk Park³, Hamin Park², Seung Heon Baek¹
¹Korea Institute of Science and Technology, Korea, ²Kwangwoon University, Korea, ³Korea Advanced Institute of Science and Technology, Korea, ⁴Korea University, Korea
- 15:15-15:30** **Superconducting Spintronics with Ferromagnetic Insulators**
 05-9425 [Hisakazu Matsuki](#)
Kyoto University, Japan

05. Spintronics

WEDNESDAY, July 1

Monterosso (B1F)

Chairs

- 16:00-16:35** **Chirospintronics: Chiral Ferromagnetic Nanohelices for Spin-Selective Transport**
 05-7605 Yoo Sang Jeon, Eunjin Jeong, [Young Keun Kim](#)
KEYNOTE *Korea University, Korea*
- 16:35-17:00** **Dzyaloshinskii-Moriya Interaction: First-principles Calculations, Materials, and Its Application for MRAM**
 05-8532 **INVITED** [Hongxin Yang](#)
Zhejiang University, China
- 17:00-17:25** **Spin Polarization Driven by Molecular Vibrations Leads to Chirality-induced Spin Selectivity at the Molecule-Metal Interface**
 05-1646 **INVITED** [Shinji Miwa](#)
The University of Tokyo, Japan
- 17:25-17:40** **Real-Space Mapping of Spin Scattering in Chiral Tellurium with Chirality-Induced Spin**
 05-1720 [Jaehyun Lee](#), Uiseok Jeong, Noejung Park, Seon Namgung
Ulsan National Institute of Science and Technology, Korea
- 17:40-17:55** **Field Driven Skyrmion Generation from Domain Wall Deformation Dynamics**
 05-7920 [Suyeong Jeong](#)¹, DaeHan Jung¹, Ganghwi Kim¹, Myeonghwan Kang¹, Younggun Park¹,
 HeeSung Han², MiYoung Im³, KiSuk Lee¹
¹Ulsan National Institute of Science and Technology, Korea, ²Korea National University of Transportation, Korea, ³Lawrence Berkeley National Laboratory, USA

02. Hard Magnetic Materials and Their Applications

WEDNESDAY, July 1

Forum 1 (3F)

Chair Jihoon Park (Korea Institute of Materials Science, Korea)

09:00-09:35 **Rare-Earth-Free Permanent Magnets: The Past, Present and Future**

02-6066 [J. Ping Liu](#)

KEYNOTE *The University of Texas at Arlington, USA*

09:35-10:00 **Revisiting Coercivity Mechanism in Nd-Fe-B Magnets: A Micromagnetic Study of Grain Alignment Effect**

02-8875 [Anton Bolyachkin](#), Nikita Kulesh, Tang Xin, Hossein Sepehri Amin

National Institute for Materials Science, Japan

10:00-10:15 **AI-Based Design Strategies for Reducing Heavy Rare Earth Content in NdFeB Magnets**

02-5480 MinKyu Kim, [Chunghee Nam](#)

Hannam University, Korea

10:15-10:30 **Digital Microstructures for Simulation-Guided Optimization of Permanent Magnets**

02-8212 [Nikita Kulesh](#)¹, Anton Bolyachkin¹, Hajime Nakamura², Tadakatsu Ohkubo¹,

Hossein SepehriAmin¹

¹National Institute for Materials Science, Japan, ²Shin-Etsu Chemical Co., Ltd., Japan

10:30-10:45 **Tuning Magnetocrystalline Anisotropy in Rare-Earth-Free Ferromagnetic Fe-Ni-N(B) Alloys via Strain**

02-6184 Md Abdul Wahed¹, [Changdong Yeo](#)¹, Yangki Hong², Minyeong Choi³, Shuhui Li²,

Sayem Ul Alam², Seok Bae⁴, Hayan Shin⁵, Hyunkyung Lee⁵, Haein ChoiYim⁵, Wooyoung Lee⁶

¹Texas Tech University, USA, ²The University of Alabama, USA, ³Hyundai Motor Company,

Korea, ⁴LG Innotek, Korea, ⁵Sookmyung Women's University, Korea, ⁶Yonsei University, Korea

02. Hard Magnetic Materials and Their Applications

WEDNESDAY, July 1

Forum 1 (3F)

Chair Anton Bolyachkin (National Institute for Materials Science, Japan)

13:30-14:05 **Development of Iron-Rich Rare-Earth Hard Magnetic Materials**

02-8785 [Jinbo Yang](#)

KEYNOTE *Peking University, China*

14:05-14:30 **Sm-Based Permanent Magnet Process Development**

02-5719 [Yusuke Hirayama](#)

INVITED *National Institute of Advanced Industrial Science and Technology, Japan*

14:30-14:45 **Fabrication and Magnetic Properties of Sintered Mn-Bi/Sm-Fe-N Composite Permanent Magnets**

02-9832 [Youngwoon Song](#)¹, Baochao Zhang¹, Xing Zheng¹, Ki Suk Lee², Chul Jin Choi¹, Jihoon Park¹

¹Korea Institute of Materials Science, Korea, ²Ulsan National Institute of Science and Technology, Korea

14:45-15:00 **Phase Stability and Magnetic Properties of Fe-rich Fe₃Se₄ Nanoparticle**
02-2570 Baochao Zhang, Xing Zheng, Youngwoon Song, Jihoon Park
Korea Institute of Materials Science, Korea

15:00-15:15 **Ionic-Liquid Interlayer Engineering for MnBi Permanent Magnets**
02-3374 Xinyu An, Jong Woo Kim
Korea Institute of Materials Science, Korea

02. Hard Magnetic Materials and Their Applications

WEDNESDAY, July 1

Forum 1 (3F)

Chair Tae-Hoon Kim (Chonnam National University, Korea)

16:00-16:35 **Advanced Metrology for Permanent Magnets: From Material Characterization to Industrial Component Testing**
02-3308

KEYNOTE Jürgen Klinkhammer
MAGNET-PHYSIK Dr. Steingroever GmbH, Germany

16:35-17:00 **Development of High-Performance Nd-Fe-B Based Magnets**

02-9108 Xin Tang, J.S. Zhang, H. Sepehri Amin
INVITED *National Institute for Materials Science, Japan*

17:00-17:15 **Simultaneous Improvement in Coercivity and Remanence of (Nd, Pr)-ultra-saving Ce-substituted RE-Fe-B Sintered Magnets by Grain Boundary Diffusion Process Using Low-Melting Nd-Cu-Al-Ga Alloy**
02-2705

Sujin Lee¹, Sumin Kim¹, Tae Hoon Kim¹, Kyoung Hoon Bae², Dong Hwan Kim², Jung Goo Lee¹
¹*Korea Institute of Materials Science, Korea*, ²*Star Group Ind. Co., Ltd., Korea*

17:15-17:30 **Realization of 2.7 T Coercivity in Nd-Fe-B Sintered Magnets via Heavy Rare-Earth Free Two-Step Grain Boundary Diffusion Using Zr-Cu and Pr-Al-Ga Alloys**
02-5105

Jihyeon An¹, TaeHoon Kim¹, TaeHoon Kim², Seolmi Lee¹, Sumin Kim¹, JungGoo Lee¹
¹*Korea Institute of Materials Science, Korea*, ²*Chonnam National University, Korea*

17:30-17:45 **Coercivity Regeneration of High-Oxygen End-of-Life Nd-Fe-B Magnets via Calciothermic Reduction Process**
02-6926

Seolmi Lee¹, TaeHoon Kim¹, KyoungHoon Bae², DongHwan Kim², Kisuk Lee³, JungGoo Lee¹
¹*Korea Institute of Materials Science, Korea*, ²*Star Group Ind. Co., Ltd., Korea*, ³*Ulsan National Institute of Science and Technology, Korea*

17:45-18:00 **Stacked Grain Boundary Diffusion Bonding Process for Thick Nd-Fe-B Magnets with Improved Magnetic and Electrical Properties**
02-9611

Hyuck Joong Kim¹, Tae Hoon Kim¹, Jae Gyeong Yoo¹, Dong Hyun Lee², Jeongmin Kim², Kyoung Hoon Bae³, Sang Hyub Lee³, Dong Hwan Kim³, Junmin Lee⁴, Sumin Kim¹, Jung Goo Lee¹
¹*Korea Institute of Materials Science, Korea*, ²*Daegu Gyeongbuk Institute of Science and Technology, Korea*, ³*Star Group Ind. Co., Ltd., Korea*, ⁴*Pohang University of Science and Technology, Korea*

03. Soft Magnetic Materials and Their Applications

WEDNESDAY, July 1

Forum 2 (3F)

Chairs Jae Won Jeong (Korea Institute of Materials Science, Korea)
Young-Min Kang (Korea National University of Transportation, Korea)

09:00-09:25 **Advances in Soft Magnetic Measurement: High Field Single Shot vs. Conventional**
03-7104 **Methods**

INVITED Jürgen Klinkhammer
MAGNET-PHYSIK Dr. Steingroever GmbH, Germany

09:25-09:50 **Cross Terms of Iron Loss Harmonics under Multi-frequency Excitation**
03-2044 Takuya Taniguchi

INVITED *Tohoku University, Japan*

09:50-10:15 **Beautiful Effects in Elementary Magnetism of Exchange-biased Films**
03-8816 Artem Talantsev, Roman Morgunov

INVITED *Federal Research Center of Problems of Chemical Physics and Medicinal Chemistry, Russian Academy of Sciences, Russia*

10:15-10:30 **Self-Organization of Magnetic Structures in Various Environments**
03-1818 Nikolai Perov, Margarita Kalandiya, Lyudmila Makarova, Serafima Samchenko, Natalia Perova
Lomonosov Moscow State University, Russia

10:30-10:45 **Interfacial Magnetic Modulation and Magnetically Recoverable Functionality in Fe₃O₄-Carbon Dot Composites**
03-8776 Pei Kai Hsu¹, Po Chun Chen¹, Yu Kai Zhou¹, Jenn Ming Song², Alexandre Gloter³, Shih Yun Chen¹

¹National Taiwan University of Science and Technology, Taiwan, ²National Chung Hsing University, Taiwan, ³National Centre for Scientific Research, France

09. Emerging Magnetic Materials and Devices

WEDNESDAY, July 1

Forum 2 (3F)

Chairs Samuel Manas Valero (University of Valencia, Spain)
Junhyeon Jo (Jeonbuk National University, Korea)

13:30-13:55 **Unveiling the Hidden Source of Magnetic Anisotropy in Cr-Intercalated CrTe₂ Ultrathin Films**
09-1583

INVITED YuHui Tang, YuSheng Tseng, WanSheng Tang
National Central University, Taiwan

13:55-14:20 **Half-metallic Antiferromagnetic 2D Non-layered Cr₂Se₃ Nansheets**
09-5213 Jimin Jang¹, Pawan Kumar¹, Minwoong Joe¹, SoonGil Jung², Tuson Park¹, Youngchan Kim³,
INVITED Changgu Lee¹

¹Sungkyunkwan University, Korea, ²Sunchon National University, Korea, ³Kyungsung University, Korea

- 14:20-14:45** **Magnetic Field Manipulated Evolution of Bubble Domains in 2D Magnetic Material**
 09-9888 **Fe_{3-x}GaTe₂**
 INVITED Wenchin Lin¹, Mingshien Hsu¹, Shaochuan Chang¹, Adam Novotny², Gayathree Mohan¹, Yanru Chu¹
¹National Taiwan Normal University, Taiwan, ²Brno University of Technology, Czech Republic
- 14:45-15:00** **Tunable Colossal Anomalous Hall Conductivity in Half-Metallic CoS²**
 09-8832 Joonyoung Choi¹, JinHong Park², Wonshik Kyung³, Younsik Kim³, Mi Kyung Kim⁴, Junyoung Kwon⁵, Changyoung Kim³, Jun Won Rhim², Se Young Park⁶, Youn Jung Jo¹
¹Kyungpook National University, Korea, ²Ajou University, Korea, ³Seoul National University, Korea, ⁴Yonsei University, Korea, ⁵Pohang University of Science and Technology, Korea, ⁶Soongsil University, Korea
- 15:00-15:15** **Polymorphic Spin Ordering in Co-Doped Fe₃GaTe₂**
 09-3879 Woohyun Cho, Jaehun Cha, Yoon Gu Kang, Jaewhan Oh, Yongsoo Yang, Myung Joon Han, Yeongkwan Kim, Heejun Yang
 Korea Advanced Institute of Science and Technology, Korea
- 15:15-15:30** **Magneto-Optic Characterization of Layer-Resolved Magnetic Phase Transitions in CrSBr**
 09-9424 June Hwang¹, Mingyeom Kim¹, Byung Min Ko^{2,3}, Yue Sun⁴, Fanhao Meng⁴, Jie Yao⁴, Zdenek Sofer⁴, Joseph Orenstein⁴, Changsoo Kim³, Chanyong Hwang³, Suyong Jung³, Changmin Lee¹
¹Hanyang University, Korea, ²Sejong University, Korea, ³Korea Research Institute of Standards and Science, Korea, ⁴Lawrence Berkeley National Laboratory, University of California, Berkeley, USA

09. Emerging Magnetic Materials and Devices

WEDNESDAY, July 1

Forum 2 (3F)

- Chairs Jun Woo Choi (Korea Institute of Science and Technology, Korea)
 JungWoo Yoo (Ulsan National Institute of Science and Technology, Korea)
- 16:00-16:25** **Unveiling the Intrinsic Limit of Tunneling Magnetoresistance in Twist-Angle-Controlled van der Waals Ferromagnetic Tunnel Junctions**
 09-8480 INVITED Suyong Jung
 Korea Research Institute of Standards and Science, Korea
- 16:25-16:50** **Van der Waals Multiferroic Heterostructures and Devices**
 09-1832 Cheng Gong
 INVITED University of Maryland, USA
- 16:50-17:15** **Interface Engineering of the van der Waals Magnet CrSBr for Electrical Readout of Magnetic Devices**
 09-3884 INVITED Junhyeon Jo
 Jeonbuk National University, Korea
- 17:15-17:40** **Emerging Magnetic Properties in Twisted Two-Dimensional Magnets**
 09-7671 Samuel ManasValero
 INVITED University of Valencia, Spain

04. Magnetic Devices and Applications

WEDNESDAY, July 1

Forum 3 (3F)

Chair Sunjong Oh (Korea Institute of Machinery & Materials, Korea)

09:00-09:35 Superparamagnetic Superparticles for Advanced Biomedical Applications:

04-9893 Overcoming the Particle Size Limit

KEYNOTE

ManhHuong Phan

VinUniversity, Vietnam

09:35-10:00 Ultrasensitive Magnetic Sensors for Biomagnetic Signals Detection: Cardiovascular Investigation

04-6719

INVITED

Ferial Terki¹, Quang Hung Tran¹, Trung Kien Nguyen¹, Azzedine Bousseksou²

¹University of Montpellier, France, ²Laboratory of Coordination Chemistry in Toulouse, National Centre for Scientific Research, France

10:00-10:25 Interfacial Magnetic Interactions in Heavy Metal/CoFeB/MgO Trilayer Structures and Voltage-Controlled Magnetoresistance States in Chiral Magnetic Tunnel Junctions

04-2196

INVITED

Shaohai Chen¹, Anuj Kumar², Royston J. J. Lim¹, T. S. Suraj², Buke Xie², Aadi Chaturvedi², Alexander K. J. Toh¹, Jifei Huang², Hang Khume Tan¹, Sherry L. K. Yap¹, Bee Chun Lim¹, Loigen Sodian¹, Pin Ho¹, James Lourembam¹, Anjan Soumyanarayanan²

¹Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore, ²National University of Singapore, Singapore

10:25-10:50 Magnetic Domain Hologram Achieves Light Focusing and Fast Switching for Next-Generation Active Optical Devices

04-7630

INVITED

Taichi Goto

Tohoku University, Japan

10:50-11:15 Nondestructive Magnetic Permeability Evaluation and Demagnetizing Field Suppression Using a Parallel Two-Wire Probe

04-1802

INVITED

Shin Yabukami¹, Yoshihiro Okuyama², Loi Tonthat¹, Kazuhiko Okita², Masahiro Yamaguchi¹

¹Tohoku University, Japan, ²Tohoku Measuring Instrumentation Technologies, Tohoku University, Japan

11:15-11:30 Effect of Boron Doping on the Structural and Functional Properties of Ni₃₅Co₁₅Mn₃₅Ti₁₅ Alloy from First Principles

04-8031

Mariya Matyunina, Vladimir Sokolovskiy, Vasilij Buchelnikov

Chelyabinsk State University, Russia

07. Magnetic Imaging and Characterization

WEDNESDAY, July 1

Forum 3 (3F)

Chairs Sunjae Chung (Korea National University of Education, Korea)
Kyujoon Lee (Korea University, Korea)

13:30-13:55 Optical Manipulation and Imaging of Magnetic Order in Antiferromagnetic CoO and NiO Ultrathin Films

07-4631

INVITED

Robert Hicken

University of Exeter, United Kingdom

- 13:55-14:20 Spin Textures Studied by Soft X-ray Microscopy**
 07-5620 [Mi Young Im](#)
 INVITED *Lawrence Berkeley National Laboratory, USA*
- 14:20-14:45 Experimental Observation of Current-driven (Anti)Skyrmion Movement**
 07-5775 [Ying Zhang](#)
 INVITED *Institute of Physics, Chinese Academy of Sciences, China*
- 14:45-15:00 Enhancing the Resolution of Magneto-Optic Microscopy Using a Solid Immersion Lens**
 07-4670 [Yong Jae Chang](#)¹, Yongmin Seo¹, Taehyun Kim¹, Sejun Yoon¹, Changmin Lee¹, Jun Woo Choi²
¹Hanyang University, Korea, ²Korea Institute of Science and Technology, Korea
- 15:00-15:15 Effects of Jahn-Teller Effect on Mossbauer Spectra of Iron-Doped Manganites**
 07-5362 [Sunghyun Yoon](#)
Kunsan National University, Korea
- 15:15-15:30 Magnetic Thermogravimetry in a Gradient Magnetic Field: An Accessible Quasi In Situ Approach for Optimizing the Synthesis of ϵ -Fe₂O₃ and CoFe₂O₄**
 07-4121 [Yifan Wang](#), Evgeny Gorbachev
Shenzhen MSU-BIT University, China

07. Magnetic Imaging and Characterization

WEDNESDAY, July 1

Forum 3 (3F)

- Chairs Kyujoon Lee (Korea University, Korea)
 Kwanghyo Son (Kongju National University, Korea)
- 16:00-16:25 Artificially Designed Magnetic Atomic Structures on Superconducting Surfaces**
 07-3522 [Howon Kim](#)
 INVITED *Institute for Basic Science, Korea*
- 16:25-16:50 Nitrogen-Vacancy Scanning Imaging of a Room-Temperature Skyrmion Lattice in the van der Waals Ferromagnet Fe₃-xGaTe₂**
 07-9551 [YoungGwan Choi](#)
 INVITED *University of Ulsan, Korea*
- 16:50-17:15 Probing Nuclear Spin Dynamics in a Single-Atom Magnet Using Landau-Zener Transitions**
 07-5596 [WonJun Jang](#)
 INVITED *Center for Quantum Nanoscience, Institute for Basic Science, Korea*
- 17:15-17:40 Room-Temperature Magnon Crystallization: Real-Space Imaging of a Hexagonal Quantum Lattice**
 07-8105 [Byung Cheol Park](#)
 INVITED *Sungkyunkwan University, Korea*
- 17:40-17:55 Reversibility of the Magnetocaloric Effect in the Ni_{36.5}Co_{13.5}Mn₃₅Ti₁₅ Alloy during Direct Martensitic Transition**
 07-8024 [Adler Gamzatov](#)¹, Anvar Kadirbardeev¹, Vladimir Sokolovskiy², Kaiming Qiao³, Hu Zhang³
¹Amirkhanov Institute of Physics, Russian Academy of Sciences, Russia, ²Chelyabinsk State University, Russia, ³University of Science and Technology Beijing, China

Oral Presentation

THURSDAY, July 2

05. Spintronics

THURSDAY, July 2

Monterosso (B1F)

Chair Mingu Kang (Tohoku University, Japan)

09:00-09:15 Electrical Tuning of Spin Alignment Angles and Compensation Temperature in
05-6153 Exchange Coupled Multilayers of Pt/IrMn₃/Ferrimagnet CoGd

WonChang Choi, TaeBo Sim, TaeHwan Kim, KwonJin Park, JungIl Hong
Daegu Gyeongbuk Institute of Science and Technology, Korea

09:15-09:30 Controllable Synchronization in Nanogap Spin Hall Nano-Oscillators

05-8410 Minseok Kang¹, Jongguk Choi², Johan Akerman², Byongguk Park¹

¹Korea Advanced Institute of Science and Technology, Korea, ²University of Gothenburg, Sweden

09:30-09:55 Spin-based Neuromorphic Computing: Challenges and Developments

05-6088 SN Piramanayagam, Subhakanta Das, Bilal Jamshed, Badsha Sekh, Ramu Maddu,

INVITED Sabpreet Bhatti, Hasibur Rahaman

Nanyang Technological University, Singapore

09:55-10:20 From Magnons to Ferrons: Toward a Quasiparticle for Electric-Dipole Transport

10-2965 Ping Tang

INVITED *Tohoku University, Japan*

10:20-10:35 Spintronic Hodgkin-Huxley Neuron Model Based on the Nonlinear GMI Effect in
05-7955 Multilayer Magnetic Nanostructure with a Dielectric Spacer

Gleb Demin

National Research University of Electronic Technology, Russia

02. Hard Magnetic Materials and Their Applications

THURSDAY, July 2

Forum 1 (3F)

Chairs

09:00-09:25 Lattice Dynamics and Intrinsic Magnetic Properties of Sm-based Permanent Magnets
02-9665 from First Principles

INVITED Guangzong Xing¹, Ruiwen Xie², Fengyang Liu¹, Renjie Chen¹, Hongbin Zhang², Aru Yan¹

¹Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, China, ²Technical University of Darmstadt, Germany

- 09:25-09:50** Exchange-coupled Sm-Co/Fe Nanocomposite Particles Prepared by Thermal Plasma and Physical Vapor Deposition Process
02-1193
INVITED [Kwangjae Park](#), Zheng Liu, Yusuke Hirayama
National Institute of Advanced Industrial Science and Technology, Japan
- 09:50-10:05** Effects of Magnetic Field Waveforms on Powder Alignment in the Fine-Particle to Magnet (F2M) Process for Nd-Fe-B Magnets
02-4184
[SeongJun Yun](#), SoYeon Kim, TaeHoon Kim, JungGoo Lee, Sumin Kim
Korea Institute of Materials Science, Korea
- 10:05-10:20** Advanced Fine-Particle to Magnet (F2M) Process Using Lubricant-Coated Powders to Enhance Magnetic Properties in Nd-Fe-B Sintered Magnets
02-6146
[SoYeon Kim](#)¹, [SeongJun Yun](#)¹, [TaeHoon Kim](#)¹, [KiSuk Lee](#)², [Sumin Kim](#)¹, [JungGoo Lee](#)¹
¹*Korea Institute of Materials Science, Korea*, ²*Ulsan National Institute of Science and Technology, Korea*
- 10:20-10:35** Optimization of Rare-Earth Content in Nd-Ce-Fe-B Hot-Deformed Magnets Manufactured from Amorphous Precursors
02-6183
[Sehoon Seo](#)¹, [SeongJun Yun](#)¹, [Sumin Kim](#)¹, [HeeRyung Cha](#)¹, [Jong Wook Roh](#)², [JungGoo Lee](#)¹
¹*Korea Institute of Materials Science, Korea*, ²*Kyungpook National University, Korea*

09. Emerging Magnetic Materials and Devices

THURSDAY, July 2

Forum 2 (3F)

Chairs Dongwook Go (Korea University, Korea)
 Kysup Lee (Pukyong National University, Korea)

- 09:00-09:25** Smart Insulation Superconducting Magnet Study for Commercialization
09-7841
[Youngsik Jo](#), Hyungwook Kim, Seogwhan Kim
INVITED *Korea Electrotechnology Research Institute, Korea*
- 09:25-09:50** Gilbert Damping in Low-Dimensional Magnetic Systems: Quantum Oscillations and Symmetry Control
09-5196
INVITED [Zhe Yuan](#)
Fudan University, China
- 09:50-10:15** Light-Controlled Nanomagnetic Logic
09-9198
[Paolo Vavassori](#), Ignacio Radic, Mikel Anzola, Yoav Urbina
INVITED *CIC nanoGUNE, Spain*
- 10:15-10:30** Magnetic Phase Engineering of ALD-Grown Cobalt Thin Films via Thermodynamic and Field-Assisted Annealing
09-1884
[Jihyeon Yun](#)¹, [Joonho Moon](#)², [Sung Min Jung](#)², [Chanyoung Yoo](#)², [Kiyoung Lee](#)²,
[Seunghoon Baek](#)¹
¹*Korea Institute of Science and Technology, Korea*, ²*Hongik University, Korea*
- 10:30-10:45** Study of Structural and Magnetic Properties of Manganese Vanadium Oxide Spinel Materials $Mn_3V_3O_8$
09-2051
[Jia Yen Chen](#)¹, [Wu Gee Wei](#)², [Chin Wei Wang](#)³, [Chun Chuen Yang](#)¹
¹*National Central University, Taiwan*, ²*National Cheng Kung University, Taiwan*, ³*National Synchrotron Radiation Research Center, Taiwan*

10. Interdisciplinary

THURSDAY, July 2

Forum 3 (3F)

Chair Sunjae Chung (Korea National University of Education, Korea)

09:00-09:25 Magnetic Photothermal Membrane Fe₃O₄@CDs: Synthesis and Applications

10-4704 [Tuan Tu Le](#)¹, Minh Hoang Nguyen², Thi Bich Ngoc Nguyen³

INVITED ¹Vietnam National University, Hanoi, Vietnam, ²Vietnam Military Medical University, Vietnam, ³Phenikaa University, Vietnam

09:25-09:50 Beyond Weak Magnetic Signal Detection: Advancing Planar Hall Sensors for Nanomagnetism and Biomedicine

10-4390

INVITED [Quang Hung Tran](#)¹, Ferial Terki¹, Azzedine Bousseksou²

¹University of Montpellier, France, ²Laboratory of Coordination Chemistry in Toulouse, National Centre for Scientific Research, France

09:50-10:15 Application of Electromagnetic Nondestructive Testing Method for the Detection of Cracks and Local Wall Thickness in Stainless Steel Structures

10-6713

INVITED [Chandra Sekhar Angani](#), Ravikumar Gurazada

GITAM Deemed to be University, India

10:15-10:40 Design, Simulation, and Fabrication of Non-Spiral Based Fluxgate Sensor on a Printed Circuit Board (PCB)

10-6681

INVITED Srinibash Behera, [Pratap Kollu](#)

University of Hyderabad, India

10:40-10:55 Low-Noise Three-Axis Magnetic Sensing for Geomagnetic Field Mapping in Robotics and Autonomous Vehicles

10-1369

[Bibhutibhusan Nayak](#)¹, Chagyeop Jeon², Mijin Kim², Giseop Kim¹, CheolGi Kim¹

¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Korea Institute of Machinery & Materials, Korea

10:55-11:10 Inkjet-Printed Superparamagnetic Nanocomposites for Hysteresis-Free 3D Magnetic Vector Sensing

10-2151

[Changyeop Jeon](#)¹, Sunjong Oh¹, Mijin Kim¹, Youngdo Jung¹, CheolGi Kim²

¹Korea Institute of Machinery & Materials, Korea, ²Daegu Gyeongbuk Institute of Science and Technology, Korea

Poster Presentation

09:30-10:30, MONDAY, June 29

01. Electro-Magnetic Energy Conversion Machines

MONDAY, JUNE 29

Monterosso Lobby (B1F)

Chairs

- 01-1042 **Positional-Symmetry Conditions for Electromagnetic Uniformity in Parallel-Path Hairpin Windings for EV Traction Motors**
KyungTae Jung, SunByoung Park, HyeYong Shin
BorgWarner DTC Inc., Korea
- 01-1159 **Improved Method for PMSM Sensorless Control with Adaptive Sliding Mode Observer**
Donghyeok Son¹, Yunhyun Cho²
¹SANSYSTECH, Korea, ²Dong-A University, Korea
- 01-2140 **Slot Harmonic-Based Frequency Scaling Method for Efficient Core Loss Calculation in Induction Motors**
DuHa Park, MyungSeop Lim, JaeHyun Kim
Hanyang University, Korea
- 01-4411 **Design Approach for AC Loss Reduction in PCB AFPM Stators Based on Asymmetric Turn Distribution under Identical Series Turns**
Subin Jeon¹, Narim Jo¹, Jiwon Moon¹, Donghoon Jung², Wonho Kim¹
¹Gachon University, Korea, ²Gyeongkuk National University, Korea
- 01-4902 **AC Loss Reduction Design for a Multi-Module Coreless PCB Axial Flux Traction Motor for Electric Vehicles**
DoHyeon Choi¹, SeungHoon Ko¹, SeongHyeon Choi¹, KwangSoo Kim², WonHo Kim¹
¹Gachon University, Korea, ²Gyeongkuk National University, Korea
- 01-5600 **Hexagon-Shaped Rotor Magnet Geometry Design for AC Loss Reduction in PCB-Stator Axial Flux Motors.**
HyungSub Han¹, SooBum Kim¹, SaeHyun Park¹, SeungJoo Kim², WonHo Kim¹
¹Gachon University, Korea, ²Korea Testing Certification Institute, Korea
- 01-5759 **Experimental Evaluation of Multiple Wireless Power Receivers under Different Shielding Barriers for Electron Quench Detector Device Module in Super High Field Magnet System**
Yoon Do Chung¹, Ji Seong Kim², Yong Chu³
¹Suwon Science College, Korea, ²Korea Advanced Institute of Science and Technology, Korea, ³Korea Institute of Fusion Energy, Korea
- 01-5974 **Design of a Non Rare Earth Axial Flux Double Stator PCB Motor for Electric Water Pump Applications**
Chiwon Lee¹, DoHyeon Choi¹, Subin Jeon¹, Donghoon Jung², Wonho Kim¹
¹Gachon University, Korea, ²Gyeongkuk National University, Korea

- 01-6317 **Counter-Torque Reinforcement in Axial-Flux Block-Coil Wind Generators Considering Manufacturability**
HyoGu Kim¹, SeungHeon Lee¹, ChiWon Lee¹, KwangSoo Kim², Wonho Kim¹
¹Gachon University, Korea, ²Gyeongbuk National University, Korea
- 01-6376 **Analysis of Current Imbalance in Parallel Battery Systems during Regenerative Braking of Induction Motor Drives**
DongYoun Shin¹, MinKi Hong², JongHyun Kim¹, DongHoon Jung³, WonHo Kim¹
¹Gachon University, Korea, ²Hanyang University, Korea, ³Gyeongbuk National University, Korea
- 01-6703 **A Study on the Design Optimization of an Electromagnetic Brake Using a Kriging-Based NSGA-II Algorithm**
DongHyeon Kim, SeungMi Oh, SuJin Song, JinIl Namgung, HoJoon Lee
Dankook University, Korea
- 01-6879 **Torque Enhancement Mechanism in Vernier Permanent Magnet Synchronous Motors**
WonSeok Cha, YeongJin Hong, MyungSeop Lim
Hanyang University, Korea
- 01-6955 **Design of Magnetizer for Axial Rotor with Halbach Magnet Array**
JungHoon Lee¹, SeongKyun Lee¹, YeRin Lim¹, SeungJoo Kim², WonHo Kim¹
¹Gachon University, Korea, ²Korea Testing Certification Institute, Korea
- 01-7096 **Hybrid Permanent Magnet Structure Design for Improving Torque Density in Axial Flux Permanent Magnet Motors**
Yerin Lim¹, HyoGu Kim¹, HyeonSeo Bae¹, KwangSoo Kim², WonHo Kim¹
¹Gachon University, Korea, ²Gyeongbuk National University, Korea
- 01-7225 **Asymmetrical Rotor Design for Magnet-Axis-Shifting Effect in Permanent Magnet-Assisted Synchronous Reluctance Motors**
Hanbin Yu¹, JunBeom Park¹, KyungHun Shin², JangYoung Choi¹
¹Chungnam National University, Korea, ²Changwon National University, Korea
- 01-7847 **A Comparative Study on the Electromagnetic Characteristics of IPMSM for Marine EGR Blower According to Rotor Shape Variations**
WonYoung Jo, YunHyun Cho
Dong-A University, Korea
- 01-7948 **Influence of Pole-Slot Combinations on Electromagnetic Performance in an Axial Flux Permanent Magnet Motor**
SeungMi Oh, Donghyeon Kim, Sujin Song, KunHoo Park, HoJoon Lee
Dankook University, Korea
- 01-8055 **High-Efficiency Slotless Axial Flux Permanent Magnet Motor Using Halbach Magnetization**
JiWon Moon¹, YeSeo Lee¹, HyungSub Han¹, KwangSoo Kim², WonHo Kim¹
¹Gachon University, Korea, ²Gyeongbuk National University, Korea
- 01-8339 **Evaluation of High-Speed Efficiency and Loss Characteristics of an Aircraft Propulsion Motor with an Fe-Co Core under a Reverse-Order Design Process**
Sujin Song, HoJoon Lee, DaeYeong Ji, SeungMi Oh, HyunWoo Kim
Dankook University, Korea

- 01-9047 **Design of Asymmetric Slit Structures for Efficiency Improvement in Interior Permanent Magnet Synchronous Motors**
JunBeom Park¹, Hanbin Yu¹, JangYoung Choi¹, KyungHun Shin²
¹Chungnam National University, Korea, ²Changwon National University, Korea
- 01-9566 **A Study on the Shape of Axial Flux Motor for Collaborative Robot Joints to Improve Output**
Minki Hong¹, DongYoun Shin², Junghoon Lee², DongHoon Jung³, WonHo Kim²
¹Hanyang University, Korea, ²Gachon University, Korea, ³Gyeongbuk National University, Korea

05. Spintronics

MONDAY, JUNE 29

Monterosso Lobby (B1F)

Chairs

- 05-1654 **Stress-Induced Magnetic Stratification in TmIG Thin Films Probed by Energy-Resolved MCD Spectroscopy**
Wei Hsiang Liao, Yu Hui Xue, Pin Qian Yang, Yu Ying Chang, Hua Shu Hsu
 National Pingtung University, Taiwan
- 05-2667 **Aspect-Ratio-Driven Transition from Thermal-Assisted Switching to Spin-Orbit-Torque-Induced Non-Thermal Switching in Mn₃Sn**
Eungyu Jeon¹, Siha Lee¹, Eunji Im¹, Geon Woo Baek², Seungmo Yang³, Kab Jin Kim², Sanghoon Kim¹
¹University of Ulsan, Korea, ²Korea Advanced Institute of Science and Technology, Korea, ³Korea Research Institute of Standards and Science, Korea
- 05-2679 **Lateral Oxidation Enables Spin-Orbit Torque Switching Near Magnetic Compensation in GdCo**
Seyeob Jeong, San Ko, Donghyeon Han, Byong Guk Park, Kab Jin Kim
 Korea Advanced Institute of Science and Technology, Korea
- 05-2816 **Role of Proximity-Modified Andreev Bound States in Phase-Sensitive Cooper-Pair Transport in Vertical Josephson Junctions**
KwonNeong Jung¹, SeungGi Lee¹, JaeChun Jeon², JiHo Yoon², Stuart Parkin², KunRok Jeon¹
¹Chung-Ang University, Korea, ²Max Planck Institute, Germany
- 05-3013 **Exchange Bias Governed by Cation Exchange-Induced CoMn₂O₄ Interphase in Mn₂O₃@Co₃O₄ Core-Shell Nanocomposite**
Naveen Yadav, Jang Weon Jun, Akshay Kumar, Shivang Saxena, Seok Hwan Huh, Bon Heun Koo
 Changwon National University, Korea
- 05-3251 **Spin and Orbital Accumulation Coefficients in Centrosymmetric Systems**
Jinseob Lim, KyungJin Lee
 Korea Advanced Institute of Science and Technology, Korea
- 05-3334 **Field-Free Spin-Orbit Torque Switching in Mn₃Sn via Interfacial Symmetry Breaking**
Siha Lee¹, Geon Woo Baek², Kab Jin Kim², Seungmo Yang³, Sanghoon Kim¹
¹University of Ulsan, Korea, ²Korea Advanced Institute of Science and Technology, Korea, ³Korea Research Institute of Standards and Science, Korea

- 05-3671 **Magnetic Skyrmions in a van der Waals Ferromagnet**
Yubin Ji¹, Seungmo Yang¹, Mi Young Im², Kab Jin Kim³, Chanyong Hwang¹
¹Korea Research Institute of Standards and Science, Korea, ²Lawrence Berkeley National Laboratory, USA, ³Korea Advanced Institute of Science and Technology, Korea
- 05-3854 **Role of Orbital-to-Spin Conversion in Unidirectional Magnetoresistance in Ir-Based Heterostructures**
Daeun Woo¹, Sungyoon Lee², San Ko³, Seongjong Yoon¹, Gunwoo Jung¹, Hongwon Jeon¹, Heungrae Cho¹, Hyeon Choi¹, Yerin Hwang¹, Kabjin Kim³, Byongguk Park³, Jongill Hong², Soogil Lee¹
¹Gachon University, Korea, ²Yonsei University, Korea, ³Korea Advanced Institute of Science and Technology, Korea
- 05-3978 **Field-Free Spin-Orbit Torque Switching in La_{0.66}Sr_{0.33}MnO₃ Based Trilayer**
Heungrae Cho, Hongwon Jeon, Seongjong Yoon, Gunwoo Jung, Daeun Woo, Hyeon Choi, Yerin Hwang, Kitae Eom, Soogil Lee
Gachon University, Korea
- 05-4873 **Bio-Resorbable Applications of Magnetic Tunnel Junctions**
DongJun Kim¹, ByongGuk Park¹, Hyunsoo Yang²
¹Korea Advanced Institute of Science and Technology, Korea, ²National University of Singapore, Singapore
- 05-6216 **Temperature Dependence of Superconducting Diode Effect in Pt/Fe/Pt-inserted Nb/V/Ta Superlattices**
Fugo Tokoro, Hisakazu Matsuki, Susumu Hirata, Tetsuma Mandokoro, Ryo Iijima, Ryusuke Hisatomi, Shutaro Karube, Yoichi Shiota, Teruo Ono
Kyoto University, Japan
- 05-6278 **Spin-Orbit Torque in Ir-Based Heterostructures via Orbital-To-Spin Conversion**
Seongjong Yoon¹, Hongwon Jeon¹, Gunwoo Jung¹, Heungrae Cho¹, Daeun Woo¹, Hyeon Choi¹, Yerin Hwang¹, Jongill Hong², Kabjin Kim³, Byongguk Park³, Soogil Lee¹
¹Gachon University, Korea, ²Yonsei University, Korea, ³Korea Advanced Institute of Science and Technology, Korea
- 05-7292 **Enhanced Spin Hall-Induced Anomalous Hall Effect and Its Influence on Spin-Orbit Torque Quantification**
Do Kyeong Nam, San Ko, Geon Woo Baek, Byong Guk Park, Albert Min Gyu Park, Kab Jin Kim
Korea Advanced Institute of Science and Technology, Korea
- 05-7662 **Ferromagnetic Resonance Characterization of Andreev Bound States and the Superconducting Coherence Peak in Nb/Ferromagnet Bilayers**
DongHyun Kim¹, Eunmo Lee¹, Tomoyasu Taniyama², Stuart S.P. Parkin³, Sachio Komori², KunRok Jeon¹
¹Chung-Ang University, Korea, ²Nagoya University, Japan, ³Max Planck Institute of Microstructure Physics, Germany
- 05-7806 **Colossal Spin Hall Conductivity in (012) Oriented Bi_{1-x}Sb_x Topological Semimetals**
HyeongJun Son¹, Seungwon Rho², Youngmin Lee¹, Dameul Jeong³, Jaehan Park¹, Jaeseok Huh¹, Dowoo Pyeon¹, YoungKyun Kwon³, Mannho Cho¹
¹Yonsei University, Korea, ²National University of Singapore, Singapore, ³Kyung Hee University, Korea

- 05-7855 **Spin-Orbit Torque in IrPt Alloy/Ferromagnet Bilayers**
Gunwoo Jung¹, Hongwon Jeon¹, Sungyoon Lee², San Ko³, Daeun Woo¹, Seongjong Yoon¹, Heungrae Cho¹, KabJin Kim³, ByongGuk Park³, Jongill Hong², Kitae Eom¹, Soogil Lee¹
¹Gachon University, Korea, ²Yonsei University, Korea, ³Korea Advanced Institute of Science and Technology, Korea
- 05-8523 **Interplay of Surface and Bulk Spin-to-Charge Conversion in Cr-Doped Bi₂Te₃ Probed by THz Emission**
Jaeseok Huh¹, Seungwon Rho², Hyeong-Jun Son¹, Dowoo Pyeon¹, Jaehan Park¹, Mann-Ho Cho¹
¹Yonsei University, Korea, ²National University of Singapore, Singapore
- 05-8550 **Magnetization Reversal and Anisotropy Modification in Trapezoidal Permalloy Microstructures**
Dongyoung Han¹, Junghyun Lee¹, Yonghwan Jo², Jaeho Lee², Mingu Kim², Kungwon Rhie², Kyujoon Lee², Kwanghyo Son¹
¹Kongju National University, Korea, ²Korea University, Korea
- 05-9822 **Twist-Angle Independent and Negligible Non-Reciprocal Supercurrents in Twisted NbSe₂/NbSe₂ Vertical Josephson Junctions**
Seung Gi Lee¹, Kwon Neong Jung¹, Jae Kuen Kim², Jae Chun Jeon³, Ji Ho Yoon³, Stuart Parkin³, Kun Rok Jeon¹
¹Chung-Ang University, Korea, ²University of Seoul, Korea, ³Max Planck Institute of Microstructure Physics, Germany
- 05-9841 **Evaluation of Critical Current Density for Spin-Orbit Torque-Induced Magnetization Switching in Co/Gd Multilayers**
Shoko Yoshida, Dongchan Jeong, Yoichi Shiota, Hisakazu Matsuki, Ryusuke Hisatomi, Shutaro Karube, Teruo Ono
Kyoto University, Japan

11. Special Session: Spin Caloritronics

MONDAY, JUNE 29

Monterosso Lobby (B1F)

Chairs

- 11-1571 **Synergistic Enhancement of the Spin Seebeck Effect via Plasmonic Spin Currents and the Thermal Fin Effect in Au-Embedded Pt/YIG**
Jaehyeon An¹, Cuong Truong Hong¹, Hieu Nguyen Nguyen², Phuoc Cao Van¹, Jongryul Jeong¹
¹Chungnam National University, Korea, ²Phenikaa University, Vietnam
- 11-2104 **Thermally Induced Inverse Spin Hall Effect in Ferromagnetic Ni₈₀Fe₂₀/YIG Bilayers**
Hyeonjin Lee, Narim Park, Yunho Kim, Jungmin Cho, Juntae Choi, Yuna Kim, Lynn Namkoong, Sangkwon Lee
Chung-Ang University, Korea
- 11-4692 **Crystalline Orientation-Driven Altermagnetism in RuO₂ Thin Films**
Hong Cuong Truong, Jae Hyeon An, Minh Duc Truong, Jong Ryul Jeong
Chungnam National University, Korea

- 11-7106 **Thermal Spin–Charge Conversion via the Longitudinal Spin Seebeck Effect in Pt/FeRh Heterostructures**
JungMin Cho, Jae Won Choi, Gangmin Park, Jiyn Kim, ChaeWon Youn, KyuHo Moon, SangKwon Lee
Chung-Ang University, Korea
- 11-7543 **The YIG Film Fabrication via MOD, Annealing at High Temperature Using Microwave Oven and Magnetic Properties Evaluation**
Taek Min Kim, Jae Hyun An, Hong Cuong Truong, Minh Duc Truong, Jong Ryul Jeong
Chungnam National University, Korea
- 11-7803 **Study of Thickness Dependence and Optimization in YIG/Pt/YIG Magnon Valves**
Duc Trung Minh, Cuong Truong Hong, Jae Hyun An, Taek Min Kim, Jong Ryul Jeong
Chungnam National University, Korea
- 11-7806 **Seebeck and Anomalous Nernst Effects in FeCoNi-Based Ferromagnetic High-Entropy Alloys**
Hironari Isshiki, Kazuya Suzuki, Masaki Imai, Ryota Ono, Michiyasu Mori, Hiroyuki Chudo, YoshiChika Otani, Koki Takanashi, Junichi Ieda
Japan Atomic Energy Agency, Japan
- 11-8235 **Microstructure Dependence of the Spin Seebeck Voltage in Chemically Synthesized YIG–Pt Granular Films**
Keisuke Yamada¹, Hideki Matsui¹, Tomonori Arakawa²
¹*Gifu University, Japan*, ²*National Institute of Advanced Industrial Science and Technology, Japan*
- 11-8545 **Isolation of Pure Spin-Seebeck-Induced Thermoelectric Signals in Pt/Ni₈₀Fe₂₀/Al₂O₃ Thin-Film Systems**
Sang Kwon Lee, Sang Jun Jeon, No Won Park, Gil Sung Kim, Seong Joon Won, Dong Hoon Jang, Eun Seong Cho
Chung-Ang University, Korea
- 11-9303 **Engineering Rare-Earth Iron Garnet Heterostructures for High Spin Seebeck Efficiency**
Minh Duc Truong, Hong Cuong Truong, Jae Hyeon An, Taek Min Kim, Jong Ryul Jeong
Chungnam National University, Korea

Poster Presentation

17:15-18:15, TUESDAY, June 30

04. Magnetic Devices and Applications

TUESDAY, June 30

Monterosso Lobby (B1F)

Chairs

- 04-3443 **Magnetic Flexible Tactile Sensor System with Force-Decoupled Normal and Shear Sensing**
Mijin Kim¹, Sunjong Oh¹, Youngdo Jung¹, BoYeon Lee¹, Cheolgi Kim², Changyeop Jeon¹
¹Korea Institute of Machinery & Materials, Korea, ²Daegu Gyeongbuk Institute of Science and Technology, Korea
- 04-4388 **Enhanced Magnetoimpedance in Geometry-Engineered Planar Sensors Integrated with Microfluidic Systems**
Tam Ho Anh¹, Thuc Vu Nguyen¹, Duc Nguyen Huu¹, Lich Le Van², Tuan Nguyen Van³, Giang Do Thi Huong¹
¹Vietnam National University, Hanoi, Vietnam, ²VinUniversity, Vietnam, ³Le Quy Don Technical University, Vietnam
- 04-5285 **Impact of Sputtering Energy on the PMA Characteristics of Perpendicular Magnetic Tunnel Junctions**
Heonhwan Yeo¹, Yohan Choi¹, Sangmin Kim¹, Yeonsoo Shin¹, Taehun Shim², Jinsub Park¹, Jeagun Park¹
¹Hanyang University, Korea, ²Advanced Semiconductor Materials and Device Development Center, Korea
- 04-5771 **Development and Characteristics of a Portable Spatial Pulse Wave Velocity Monitoring Device Composed of MPG and PPG**
Jong Gu Choi, Il Ho Son, Sang Suk Lee
Sangji University, Korea
- 04-5787 **Strategic Application of Co/Pt Multilayers with PMA for X-Band Radar Absorption in Defense Systems**
Kisu Lee, Sanghyuk An, Wook Ki Jung
Agency for Defense Development, Korea
- 04-6190 **Design Considerations of High Efficiency for Fast Wireless Power Charging Module Combined with Supercapacitor Unit and Photovoltaic Energy in the Hyperloop Train**
Yoon Do Chung¹, YongSoo Yoon², Homin Kim³
¹Suwon Science College, Korea, ²Shin Ansan University, Korea, ³Jeju National University, Korea
- 04-6847 **Composition-Engineering of W Type Hexaferrites for Enhanced Electromagnetic Wave Absorption at Reduced Matching Thickness**
JaeHee Heo¹, JiHyeong Jeong¹, YoungMin Kang², YounKyoung Baek¹
¹Korea Institute of Materials Science, Korea, ²Korea National University of Transportation, Korea

- 04-7143 **Hybrid Permanent Magnet Variable-Flux Brake for Mobile Robot Platforms**
Hyojun Kim, Junyeung Bae
Maxmag Inc., Korea
- 04-7873 **Novel Approach to Post-Assembly Magnetization of Spoke-Type Motor Rotors**
Hyojun Kim¹, Junyeung Bae¹, Myunghwan Yoon², Hyesu Kim³, Wooyoung Lee³
¹Maxmag Inc., Korea, ²Korea Electronics Technology Institute, Korea, ³Yonsei University, Korea
- 04-9601 **Effects and Analysis of Curved Surfaces on Yokes and Specimens in Magnetic Measurements**
Hibiki Saito, Haruto Chiba, Hiroaki Kikuchi
Iwate University, Japan
- 04-9866 **Magnetoimpedance Characteristics in Thin-film Element under Solely Joule Heating**
Shuto Kawasaki, Hiroaki Kikuchi
Iwate University, Japan
- 04-9904 **Non-Invasive Diagnosis Based on Resistance and Compliance of Coronary Artery Derived Using Magnetoplethysmogram (MPG)'s Pulse Waves**
 Seog San Hyeon¹, Dae Woong Choi¹, YuSik Hong², Sang Suk Lee², Byoung Kwon Lee³
¹IRUMEDI Co., Ltd., Korea, ²Sangji University, Korea, ³Yonsei University, Korea
- 04-9922 **Detection Sensitivity of Magnetic Nanoparticles for Medical Imaging and Sentinel Lymph Node Diagnosis**
Hayato Yanagawa¹, Suko Bagus Trisnanto², Satoshi Ota³, Takashi Yoshida⁴, Yasushi Takemura¹
¹Yokohama National University, Japan, ²Saitama Medical University, Japan, ³Shizuoka University, Japan, ⁴Kyushu University, Japan

06. Magnetization Dynamics

TUESDAY, June 30

Monterosso Lobby (B1F)

Chairs

- 06-1392 **Anisotropy of Dzyaloshinskii-Moriya Interaction and SOT Efficiency in Pt/Co System on the Miscut Sapphire Substrate**
Jungwon Kim, Soojung Kim, Jaeyong Cho, Dongryul Kim, Jaehun Cho, ChunYeol You
Daegu Gyeongbuk Institute of Science and Technology, Korea
- 06-1392 **Temperature-dependent Raman Study of Mechanically Exfoliated 2D Van der Waals CrBr₃**
Priyanka Das, Anabil Gayen, Ikhwan Nur Rahman, Hyun Seok Lee, Dong Hyun Kim
Chungbuk National University, Korea
- 06-2076 **Magnon Creation-Annihilation Magnetoresistances in Synthetic Antiferromagnet**
Hojeong Oh, Juha Do, ChunYeol You
Daegu Gyeongbuk Institute of Science and Technology, Korea
- 06-2900 **Inequality of Ultrafast Magneto-optical Kerr Signals Induced by Quasi-static Strain**
 Yooleemi Shin¹, SeongHyub Lee², Duckho Kim², Jiwan Kim¹
¹Kunsan National University, Korea, ²Korea Institute of Science and Technology, Korea

- 06-3379 **Effect of Spin Dissipation on Magnetic Dynamics of Mn₃Sn/Co Bilayer**
Jinju Pi¹, Siha Lee¹, Eunji Im¹, Thi Thanh Huong Nguyen¹, Jungmin Park², Sanghoon Kim¹
¹University of Ulsan, Korea, ²Daejeon University, Korea
- 06-3564 **Effect of Local Gallium-doping in Epitaxial Thulium Iron Garnet Thin Film**
Soojung Kim¹, Soobeom Lee², Jaehun Cho¹, Naoto Yamashita³, Chun Yeol You¹
¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Shinshu University, Japan,
³Kyushu University, Japan
- 06-3988 **Magnetic-Field-Controlled Vertical Biasing of Spin Waves in Artificial Domain-Wall Ring Resonators**
Li Huiting, Zhang Xue Feng, Shim Je Ho, Piao Hong Guang
 Yanbian University, China
- 06-4021 **Current-Induced Skyrmion Motion under Local Magnetic Anisotropy Modulation**
Donghyeon Han, Seungmo Yang, Kyoungwoong Moon, Chanyong Hwang
 Korea Research Institute of Standards and Science, Korea
- 06-4149 **Modification of Interlayer Exchange Coupling via Post Annealing-Induced Asymmetric Crystallization in Ta/CoFeB/MgO/CoFeB/MgO Heterostructures**
Taehwan Kim, Juneseo Kim, Jaehun Cho, Soojung Kim, Jungil Hong
 Daegu Gyeongbuk Institute of Science and Technology, Korea
- 06-5261 **Comparative Analysis of Energy Dissipation Equations in Micromagnetics**
Younggun Park, Myeonghwan Kang, Hyejin Ok, Sumi Lee, KiSuk Lee
 Ulsan National Institute of Science and Technology, Korea
- 06-6310 **Ferromagnetic Resonance Splitting Due to Higher-Order Spin Wave Modes in a NiFe Strip**
Shunsuke Yamaguchi, Takashi Kimura
 Kyushu University, Japan
- 06-7034 **THz Magnons in Ferrimagnetic Yttrium-Iron Garnet Film Revealed by Magneto-Raman Spectroscopy**
Fathiya Rahmani¹, Anabil Gayen¹, Qoimatul Mustaghfiroh¹, Priyanka Das¹, Jong-Ryul Jeong², Chuyang Liu³, Yujing Zhang⁴, Kwanghyo Son⁵, Hyun Seok Lee¹, Dong-Hyun Kim¹
¹Chungbuk National University, Korea, ²Chungnam National University, Korea, ³Nanjing University of Aeronautics and Astronautics, China, ⁴Nanjing University of Science and Technology, China, ⁵Kongju National University, Korea,
- 06-7219 **Simulation of Magnetization Switching Dynamics Considering Practical Distributions of Internal Bias and Coercive Fields in Magnetic Tunnel Junction for Stochastic Computing**
Cheol Jun Kim, Oukjae Lee, Ki Hyuk Han, Jeong Ung Ahn, Hyun Cheol Koo
 Korea Institute of Science and Technology, Korea
- 06-7842 **Observation of Current-Assisted Transverse Magnetic Domains and Enhanced Magnetoimpedance Response**
 Hoang Dang Huy¹, Binh Nguyen Khac¹, Vuong Pham Minh¹, Thuc Vu Nguyen¹,
Tam Ho Anh¹, Duc Nguyen Huu¹, Tuan Nguyen Van², Huong Giang Do Thi¹
¹Vietnam National University, Hanoi, Vietnam, ²Le Quy Don Technical University, Vietnam

- 06-7963 **Perpendicular Standing Spin Wave Excitation and Evaluation of Optical Torque in Ferromagnetic Metal Thin Films with Heavy Metal Layer**
Yuta Sasaki¹, Woonjae Won¹, Yuma Ando², Satoshi Iihama², Shinji Isogami¹, Hirofumi Suto¹, Yukiko Takahashi¹
¹National Institute for Materials Science, Japan, ²Nagoya University, Japan
- 06-8803 **The Magnetic Properties of CoFe Thin Film on the Crystallized Pt Layer**
Jaehun Cho, June Seo Kim
 Daegu Gyeongbuk Institute of Science and Technology, Korea
- 06-9282 **Spin Nernst Effect Driven by Octupolar Antiferromagnetic Order in Mn₃Sn Based Heterostructures**
Asif Ullah, Siha Lee, Wonyeong Choi, Sanghoon Kim
 University of Ulsan, Korea

08. Quantum and Correlated Magnetism

TUESDAY, June 30

Monterosso Lobby (B1F)

Chairs

- 08-2077 **Machine-Learning Initialization for Robust Bath Fitting in HD-DMFT**
Taeung Kim, Ara Go
 Chonnam National University, Korea
- 08-3214 **Magnetic Proximity Effects Induced by Fermi Level Pinning in Sb₂Te₃/Cr₂Te₃ Heterostructures**
Tzu Tai Huang¹, Shu Hsuan Su¹, Pei Yu Chuang², Cheng Chun Chi¹, Jung Chung Andrew Huang¹
¹National Cheng Kung University, Taiwan, ²National Synchrotron Radiation Research Center, Taiwan
- 08-3567 **AL-ATCI Impurity Solver for Full Five-Orbital 3d-Shell DMFT: Two-Sublattice CuAl₂O₄**
Jeongmoo Lee, Ara Go
 Chonnam National University, Korea
- 08-9417 **Adaptive Parallel Tempering for Frustrated Classical Heisenberg Systems via Exchange Probability and Round-trip Time Control**
Munjun Jang, Ara Go
 Chonnam National University, Korea
- 08-8377 **Electronic and Magnetic Phases of Directionally Strained La_{3/4}Ca_{1/4}MnO₃**
Ju Hyeon Lee¹, Beom Hyun Kim², Bongjae Kim¹
¹Kyungpook National University, Korea, ²Seoul National University, Korea
- 08-3609 **Terahertz Spectroscopic Study of the Pyrite Antiferromagnet MnS₂**
Jieun Seok, Hanyeop Kim, KyungIk Sim, Jae Hoon Kim
 Yonsei University, Korea
- 08-4437 **Superconductivity in Altermagnetic RuO₂ Thin Film toward Zero-Field Superconducting Diode Effect**
Cyehyeon Kim¹, Yungi Jeong², Changyoung Kim², Joonho Jang², Changhee Sohn¹
¹Ulsan National Institute of Science and Technology, Korea, ²Seoul National University, Korea

- 08-6673 **Benchmarking DFT Approaches for the Electronic Structure and Magnetism of SrFeO₃**
Hyoin Eo, Bongjae Kim
Kyungpook National University, Korea
- 08-6805 **Ferromagnetic Proximity-Tuned Néel Temperature in Honeycomb Cobaltate Thin Films: Signatures from Spin Hall Magnetoresistance**
Miju Park, Changhee Sohn
Ulsan National Institute of Science and Technology, Korea
- 08-6937 **Terahertz Probing of Proximity-Induced Superconductivity in Bi₂Se₃/Nb Heterostructures**
Bumchan Park, Jaehyeon Shin, Jaehan Park, MannHo Cho, Jaehoon Kim
Yonsei University, Korea
- 08-7420 **Electronic Structure and Polaron Formation in Ni_{1-x}Cu_xWO₄**
Seyeon Park, Bongjae Kim
Kyungpook National University, Korea
- 08-7724 **QTSpin: A Computational Framework for Quantum Spin Systems**
Taehyeon Kim, Ara Go
Chonnam National University, Korea
- 08-1534 **Tailoring Entanglement Trajectories Near the Boundary via RKKY Interaction**
ChingRay Chang¹, SonHsien Chen², SengGhee Tan³
¹Chung Yuan Christian University, Taiwan, ²University of Taipei, Taiwan, ³Chinese Culture University, Taiwan

12. Special Session: Altermagnetism

TUESDAY, June 30

Monterosso Lobby (B1F)

Chairs

- 12-1638 **Large Spin Splitting in Itinerant Altermagnet CaFe₄Al₈**
Hong Suk Choi, Kwan Woo Lee
Korea University, Korea
- 12-2395 **Synthesis and Characterization of Single-crystalline Altermagnets**
Choongjae Won¹, Sangwook Cheong²
¹Korea Foundation for Max Planck POSTECH Korea Research Initiative, Center for Artificial Low Dimensional Electronic Systems, Institute for Basic Science, Korea, ²Keck Center for Quantum Magnetism, Rutgers University, USA
- 12-2445 **Leveraging Strain-Induced Staggered Dzyaloshinskii-Moriya Interaction for Altermagnetic Néel Vector Control**
JaeHun Sim¹, ChangJong Kang², SoongGeun Je¹
¹Chonnam National University, Korea, ²Chungnam National University, Korea
- 12-3048 **RuO₂-Based Altermagnetic Tunnel Junctions with Process/Material Modifications for TMR Improvement**
Minseok Moon, Jungwoo Yoo, Seunghyeon Noh, Jiyeon Lee, Jiyeop Kim, Gyehyeon Kim, Uihyeon Seo
Ulsan National Institute of Science and Technology, Korea

- 12-3219 **Symmetry-controlled Hall and Kerr Responses in Collinear Altermagnetic α -Fe₂O₃**
Minjae Yoo, Guihyun Han, Sonny H. Rhim
University of Ulsan, Korea
- 12-3375 **Coexistence of Chirality, Polarity and Ferro-rotation in (Ni,Co)₃TeO₆**
Choongjae Won¹, Sangwook Cheong²
¹*Korea Foundation for Max Planck POSTECH Korea Research Initiative, Center for Artificial Low Dimensional Electronic Systems, Institute for Basic Science, Korea*, ²*Keck Center for Quantum Magnetism, Rutgers University, USA*
- 12-7615 **Emergent Transport Phenomena in 2D D-Wave Altermagnets with Orbital Degrees of Freedom**
Junyeong Choi, KyoungWhan Kim
Yonsei University, Korea
- 12-8649 **Superconducting Properties in Altermagnet/Superconductor Junctions**
Akihiro Yamada, Shutaro Karube, Yuma Inaoka, Tetsuma Mandokoro, Fugo Tokoro, Susumu Hirata, Hisakazu Matsuki, Ryusuke Hisatomi, Yoichi Shiota, Teruo Ono
Kyoto University, Japan
- 12-8780 **Néel Vector Dependent Magneto-Optical Kerr Effect and Spin Splitting of RuO₂**
Guihyun Han¹, Minkyu Park², S. H. Rhim¹
¹*University of Ulsan, Korea*, ²*Korea Research Institute of Standards and Science, Korea*
- 12-9602 **Enhanced TMR in RuO₂-Based Altermagnetic Tunnel Junctions**
Jiyeon Lee, SeungHyeon Noh, GyeHyeon Kim, MinSeok Moon, UiHyeon Seo, JiYeop Kim, Jungwoo Yoo
Ulsan National Institute of Science and Technology, Korea

13. Special Session: Biomagnetics

TUESDAY, June 30

Monterosso Lobby (BIF)

Chairs

- 13-3322 **Ferromagnetic Resonance Detection of GDF15 Protein Using Magnetic Nanoparticles with a Coplanar Waveguide**
Ryoya Masui, Toru Murayama, Toshiyuki Endo, Loi Tonthat, Hanae Aoki, Akihiro Kuwahata, Shin Yabukami
Tohoku University, Japan
- 13-7145 **Antibody-Binding Magnetic Nanoparticle Therapy to Suppress T-Cell-Mediated Inflammation**
Sang Heon Choi, Jong Gu Choi, Sang Suk Lee
Sangji University, Korea

Poster Presentation

17:00-18:00, WEDNESDAY, July 1

02. Hard Magnetic Materials and Their Applications

WEDNESDAY, July 1

Monterosso Lobby (B1F)

Chairs

- 02-1139 **Coercivity Enhancement in α' -Fe₁₆N₂ Microparticles through Microstructure-tailored Aerosol Synthesis**
Jihyeong Jeong¹, Hyejin Park¹, Hyeyoung Koo¹, Dohoon Kim², Jiyun Kim³, Youn Kyoung Baek¹
¹Korea Institute of Materials Science, Korea, ²Hyundai Motor Company, Korea, ³Ulsan National Institute of Science and Technology, Korea
- 02-2336 **Effect of Additive Elements on the Structure and Magnetic Properties for Sm(Fe-Co)₁₂-B Thin Films**
Taiga Sato, Yuichi Mori, Masaaki Doi, Toshiyuki Shima
Tohoku Gakuin University, Japan
- 02-2437 **Enhancement of Magnetic Properties in Nd-Fe-B Sintered Magnet by Grain Boundary Diffusion Process with Tb-La-Cu-Al**
Seong Chan Kim¹, Dong Hyun Lee², Hyeonjong Jeong¹, Juyoung Baek¹, TaeYoung Yun¹, Jong Tae Kim¹, SeokHwan Chung¹, Donghwan Kim³, Sang Hyub Lee³, Jong Wook Roh², Dong Hwan Kim¹, Jeongmin Kim¹
¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Kyungpook National University, Korea, ³Star Group Ind. Co., Ltd., Korea
- 02-2693 **Conversion of M-Type Hexaferrite Nanoparticles into High-Coercivity ϵ -Fe₂O₃**
Jingtong Duan, Evgeny Gorbachev
Shenzhen MSU-BIT University, China
- 02-3107 **Preparation and Magnetic Properties of Mn_xZnSb Alloys**
Nakahiro Matsumoto, Toshiyuki Shima, Masaaki Doi
Tohoku Gakuin University, Japan
- 02-4045 **Preparation and Magnetic Properties of Mn_xGa_{1-y}Al_yGe Alloys**
Gen Watanabe, Toshiyuki Shima, Masaaki Doi
Tohoku Gakuin University, Japan
- 02-4660 **Enhancement of Magnetic Anisotropy in FeNi Thin Films by Introducing Ag Buffer Layer**
Yuto Yamazaki, Yuto Miura, Masaaki Doi, Toshiyuki Shima
Tohoku Gakuin University, Japan
- 02-4755 **Low-Temperature High-Energy Ball Milling for Enhanced Magnetic Properties of Sm₂Fe₁₇N₃ Powders**
Hye Su Kim, Jaehyuk Kim, Wooyoung Lee
Yonsei University, Korea

- 02-5165 **From Magnet Sludge to SH-Grade Nd-Fe-B Magnets: Reduction-Diffusion Recycling with Controlled Ball Milling**
Vitalii Galkin¹, Jong Wook Roh², Dong Hwan Kim¹, Dongsoo Kim³, Jeongmin Kim¹
¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Kyungpook National University, Korea, ³Korea Institute of Materials Science, Korea
- 02-5443 **Single-Phase γ -Fe₄N by De-nitridation: A Scalable Precursor for Iron Nitride Phase Control**
Hojeong Kim¹, Hyojin Choi¹, Seung Yong Lee¹, Dohoon Kim², Taegwan Heo², Jisung Lee², JungSuk Lee³, Kyu Hyoung Lee¹, Wooyoung Lee¹
¹Yonsei University, Korea, ²Hyundai Motor Company, Korea, ³Hyundai Motor Group, Korea
- 02-5733 **Analysis of Reversed Domain Nucleation Energy Barrier in Grain Boundary Diffusion Nd-Fe-B Magnets via Geodesic Nudged Elastic Band Method**
Ganghwi Kim¹, TaeHoon Kim², JungGoo Lee², KyoungHoon Bae³, DongHwan Kim³, KiSuk Lee¹
¹Ulsan National Institute of Science and Technology, Korea, ²Korea Institute of Materials Science, Korea, ³Star Group Ind. Co., Ltd., Korea
- 02-5775 **Coercivity and Thermal Stability Enhancement in Nd-Fe-B Magnets through Grain Boundary Diffusion with Dy-LRE-Zn-Cu Low-Melting Diffusion Sources**
Hyeonjong Jeong¹, Dong Hyun Lee², Seong Chan Kim¹, Jung Woo Ha¹, Beom Sik Lim², Juyoung Baek¹, TaeYoung Yun¹, Jong Tae Kim¹, SeokHwan Chung³, Donghwan Kim⁴, Sang Hyub Lee⁴, Vitalii Galkin², Dong Hwan Kim¹, Jeongmin Kim¹
¹Daegu Gyeongbuk Institute of Science and Technology, Korea, ²Kyungpook National University, Korea, ³Daegu University, Korea, ⁴Star Group Ind. Co., Ltd., Korea
- 02-6168 **Fabrication of Ultra-Fine Grained SmFe₁₁Ti Sintered Magnets via Reduction-Diffusion-Derived Powder and Spark Plasma Sintering**
Kyung Shik Yoon, Jeong Hyun Kim, Hee Yeon Jeon, Hyeon Seong Kim, Jae Min Park, Yu Na Kim, Jung Taek Heo, Young In Lee
 Seoul National University of Science and Technology, Korea
- 02-6542 **Grain Boundary Engineering via La-Assisted Diffusion Channel Design in Nd-Lean Ce-Fe-B Magnets**
Kyungmi Lee, Ye Ryeong Jang, Wooyoung Lee
 Yonsei University, Korea
- 02-6741 **Coercivity Enhancement in Sintered Nd-Fe-B Magnets via Two-Step HRE-Free Grain Boundary Diffusion Using a Low-Melting Non-Rare-Earth Metal**
Yujin Lee¹, Chaemin Seol¹, Jihyeon An¹, Kyounghoon Bae², Taehoon Kim¹,
¹Chonnam National University, Korea, ²R&D Center, Star Group Co., Ltd., Korea
- 02-6747 **Oxygen-Controlled Synthesis of Single-Crystalline Nd₂Fe₁₄B Powders from High-Oxygen Sludge via Hydrogen Pretreatment-Assisted Reduction-Diffusion Process**
Jeong Hyun Kim¹, Kyung Shik Yoon¹, Hyeon Seong Kim¹, Hee Yeon Jeon¹, Jung Taek Heo¹, Tae Hoon Kim², Young In Lee¹
¹Seoul National University of Science and Technology, Korea, ²Korea Institute of Materials Science, Korea

- 02-6817 **Analysis of Densification and Microstructural Evolution in Nd-Hydride Modified MQ Magnets via Spark Plasma Sintering as a PBF Process Emulator**
Yu Na Kim, Jeong Hyun Kim, Hee Yeon Jeon, Kyung Shik Yoon, Hyeon Seong Kim, Jae Min Park, Jung Taek Heo, Young In Lee
Seoul National University of Science and Technology, Korea
- 02-7018 **Analysis of GBDP Effects According to Coating Methods of Fine Tb₇₀Cu₃₀ Powders Synthesized by Reduction-Diffusion Process**
Hyeonseong Kim, Jeonghyun Kim, Heeyeon Jeon, Kyungshik Yoon, Jaemin Park, Yuna Kim, Jungtaek Heo, Youngin Lee
Seoul National University of Science and Technology, Korea
- 02-7116 **Low-Temperature Hydrogenation Pre-Treatment to Improve Pr-Based HRE-Free Grain Boundary Diffusion Efficiency in Nd-Fe-B Magnets**
Seong Min Choi, Wooyoung Lee
Yonsei University, Korea
- 02-7742 **Magnetic and Millimeter-Wave Absorption Properties of Al-, Cr-, and Mn-Substituted Strontium Hexaferrite Nanoparticles Obtained via Glass Crystallization**
Lev Trusov¹, Jianing Chen², Haochen Wei¹, Liudmila Alyabyeva³, Evgeny Gorbachev¹
¹Shenzhen MSU-BIT University, China, ²Lomonosov Moscow State University, Russia, ³Moscow Institute of Physics and Technology, Russia
- 02-7752 **Lifetime Prediction and Reliability Assessment of Sintered NdFeB Based on Accelerated Degradation Test Data**
Kehan Ren¹, Xiangming Lu¹, Shengzhi Dong²
¹Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, China, ²Central Iron and Steel Research Institute, China
- 02-8137 **Microstructural Evolution and Magnetic Properties of 2:17-Type Sm-Co Permanent Magnets during Slow Cooling Process**
Seungil Park¹, Sanghyeon Lee¹, Sungjun Cho¹, Kyoungsoon Bae², Taehoon Kim¹
¹Chonnam National University, Korea, ²R&D Center, Star Group Co., Ltd., Korea
- 02-9262 **Micromagnetic Origins of Exchange Coupling and Energy Product Enhancement in Core-Shell Nanomagnets**
Tuan Nguyen Van¹, Tam Ho Anh², Binh Nguyen Khac², Duc Nguyen Huu², Lich Le Van³, Giang Do Thi Huong²
¹Le Quy Don Technical University, Vietnam, ²Vietnam National University, Hanoi, Vietnam, ³VinUniversity, Vietnam
- 02-9472 **Single-Domain Substituted SrFe_{12-x}MxO₁₉ (M = Mn, Al, Cr) Hexaferrites with Tailored Hard Magnetic and Millimeter-Wave Performance**
Lev Trusov¹, Jianing Chen²
¹Shenzhen MSU-BIT University, China, ²Lomonosov Moscow State University, Russia
- 02-9858 **Zn-Assisted Two-Step Grain Boundary Diffusion Using Pr₇₀Cu₂₀Al₁₀ for Nd-Fe-B Magnets**
Jaehyuk Kim, Ye Ryeong Jang, Seong Min Choi, Wooyoung Lee
Yonsei University, Korea

03. Soft Magnetic Materials and Their Applications

WEDNESDAY, July 1

Monterosso Lobby (B1F)

Chairs

- 03-1192 **Phase-Controlled Magnetic Properties and Microwave Absorption of Sr–Ca–Zn–Co Hexagonal Ferrites**
Young Min Kang, Yun Je Lee, Do Hwan Kim, Ha Won Shin
Korea National University of Transportation, Korea
- 03-2720 **Synthesis and Magnetic Properties of Spherical Z-Type Ferrites via Na-Free Process**
Young Han Kim, Jung Hun Lee, In Bo Shim
Kookmin University, Korea
- 03-2764 **Composition Design of Amorphous and Nanocrystalline Fe-Based Alloys for Improved Soft-Magnetic Properties**
Haein Yim, Harang Lee
Sookmyung Women's University, Korea
- 03-3089 **Influence of Annealing Conditions on Nanocrystallization and Magnetic Performance of Cu-Added Amorphous Ribbons**
Jongil Lee, Seonghoon Yi
Kyungpook National University, Korea
- 03-3381 **Yttrium-substituted Magnetically Reactive Prussian Blue for Radioactive Cesium Removal**
HyeJin Ok^{1,2}, KiSuk Lee^{1,2}
¹*Ulsan National Institute of Science and Technology, Korea*, ²*Blue-Magnet Co., Ltd., Korea*
- 03-3476 **Mixing-Ratio-Dependent Magnetic Properties of Bimodal Fe-Based Amorphous Alloy Powder/CIP Composite Powder Cores**
Jung Hun Lee, In Bo Shim
Kookmin University, Korea
- 03-3754 **Magnetic Softness and Hyperthermia Efficiency of SiO₂ Coated Fe₃O₄-Au Hybrid Nanoparticles**
Wendell Manuel¹, Elnaz Jaberolanzar², Hariharan Srikanth², Manh Huong Phan², Marienette Vega¹
¹*University of the Philippines Diliman, Philippines*, ²*University of South Florida, USA*
- 03-4217 **Comparative Study of Magnetic Properties in Co-free and Co-containing Fe-Ti-Zr-B Amorphous Alloys upon Annealing**
Haein Yim, Yoojin Choi
Sookmyung Women's University, Korea
- 03-4565 **Magnetocaloric Effect of Fe-Doped Nd_{0.6}Sr_{0.4}MnO₃ Perovskite Manganites**
T. Long Phan¹, D. Thanh Tran², Dong Hyun Kim³, T. H. My Kim¹, Anabil G³
¹*Vietnam National University, Hanoi, Vietnam*, ²*Vietnam Academy of Science and Technology, Vietnam*, ³*Chungbuk National University, Korea*

- 03-4903 **Study on Magnetic Properties of Annealed 10 μm -thick Fe Ribbons with Various Purities**
Ma Xiaotong¹, Aija Sajjian¹, Muroga Sho¹, Miyazaki Takamichi¹, Mikami Shintaro², Hiraki Tomohiro², Endo Yasushi¹
¹Tohoku University, Japan, ²TOHO ZINC CO., LTD, Japan
- 03-5221 **Simultaneous Electromagnetic Wave Absorption and Shielding in Sr-Ca W-Type Hexaferrite/Sendust Bilayer Structures**
 Young Min Kang, Sun Woong Kim, Jae Hyeop Song
 Korea National University of Transportation, Korea
- 03-6062 **Study on High-frequency Magnetic Properties of Submicron Sized Fe₅₀Ni₅₀ Particles**
Haodong Liu, Sajjian Aija, Takamichi Miyazaki, Sho Muroga, Yasushi Endo,
 Tohoku University, Japan
- 03-6085 **Generative Machine Learning Frameworks for the Design of Fe-based Metallic Glasses**
MinKyu Kim, Chunghee Nam
 Hannam University, Korea
- 03-6506 **Exchange Interactions and Spin-Wave Stiffness in Ni-, Cu-, and Mo-Doped Yttrium Iron Garnets**
Duong Nguyen, Nguyet Dao, Loan To
 Hanoi University of Science and Technology, Vietnam
- 03-6658 **Microalloying Effects of Nb and C on Crystallization Behavior and Soft Magnetic Properties of Fe-Based Amorphous Ribbons**
Hyunkyung Lee, Haein Yim
 Sookmyung Women's University, Korea
- 03-7800 **Development of High-Frequency Inductors via Paste Processing of Soft Magnetic Amorphous Powders**
Jangseon Hwang, Kwangyong Jeong, Insung Cho, Hearan Kim, Jaeyeon Lee, Dongsup Lee
 Achromat, Korea
- 03-8379 **Fabrication of Fe-P-C-Based Amorphous Soft Magnetic Materials for Wireless Electric Vehicle Charging Pads**
Hayan Shin, Hyunkyung Lee, Haein Yim
 Sookmyung Women's University, Korea
- 03-8589 **Zeolitic Imidazolate Framework -8 (ZIF-8) and Magnetite (Fe₃O₄) Heterojunction for Cadmium Detection and Analysis Using Small-angle X-ray Scattering (SAXS)**
Earl Conan Garcia Casalme, Rey Ralph Virtucio, Mariennete Vega, Arnel Salvador
 University of the Philippines Diliman, Philippines
- 03-9611 **Soft Magnetic Properties of High-C Amorphous Alloys after Heat Treatment**
Mingyo Jeong, Moosung Kim, Seonghoon Yi
 Kyungpook National University, Korea
- 03-9790 **Enhancement of Magnetostriction in Tb-Fe Multilayers by Combining Layers with Different Easy Axes of Magnetization**
Shuto Shishido, Masaaki Doi, Toshiyuki Shima
 Tohoku Gakuin University, Japan

03-9838 **Correlation between Thermal Stability and Soft Magnetic Properties of Fe-Based Amorphous Alloys with Cu Addition**
Juhyeok Lee, Seongjun Kim, Seonghoon Yi
Kyungpook National University

10. Interdisciplinary

WEDNESDAY, July 1

Monterosso Lobby (B1F)

Chairs

- 10-1030 **Surface Plasmon Resonance of Fe₃O₄-Au Core-Shell Nanoparticles for SERS Application by Transfer Matrix Element Method**
Joven Paolo Angeles, Marienette Morales Vega
University of the Philippines Diliman, Philippines
- 10-1162 **Synthesis and Analysis of 21113V Fe-Based Superconductors, Polycrystalline Sr₂V_{1-x}Ti_xFeAsO₃ Samples**
Aurelien Antunez, Haruyoshi Suzuki, Takato Ueno, Masanori Matoba, Yoichi Kamihara
Keio University, Japan
- 10-5298 **Shape Anisotropy-Induced Local Incoherent Magnetization: Implications for Magnetic Sensor Tuning**
Byeonghwa Lim, Jinwoo Kim
Andong National University, Korea
- 10-6797 **Iron-Exchanged Philippine Natural Zeolites as a Regenerable Adsorbent for Organic Dye and Nitrate Removal from Wastewater Effluents**
Joybelle Lopez, Joven Paolo Angeles, Kloudene Salazar, Marienette Morales Vega
University of the Philippines Diliman, Philippines

Poster Presentation

10:00-11:00, THURSDAY, July 2

05. Spintronics

THURSDAY, July 2

Monterosso Lobby (B1F)

Chairs

- 05-1606 **Structural and Electrical Transport Properties of Dual-Bath Electrodeposited Pt/CoPt Multilayer Nanowires**
Rio Kawana¹, Daiki Oshima², Mikiko Saito³, Takayuki Homma³, Takeshi Kato², Teruo Ono⁴, Mutsuhiro Shima¹, Keisuke Yamada¹
¹Gifu University, Japan, ²Nagoya University, Japan, ³Waseda University, Japan, ⁴Kyoto University, Japan
- 05-1640 **Magnetic Spin Hall Effect in a Single Ferromagnetic Layer**
Ki Hyuk Han, Deok Hyun Yun, Jeong Ung Ahn, YoungJun Nah, YongJin Kim, Cheol Jun Kim, ByoungChul Min, Hyun Cheol Koo, OukJae Lee
Korea Institute of Science and Technology, Korea
- 05-1701 **Demonstration of Bit-Shifting in Vertical Domain Wall Motion Memory**
Dongchan Jeong¹, Feifan Ye¹, Yoichi Shiota¹, Ryusuke Hisatomi¹, Shutaro Karube¹, Satoshi Sugimoto², Shinya Kasai², Teruo Ono¹
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- 05-2445 **Anatomy of the Modern Theory of Orbital Magnetism from First-Principles: Term-by-Term Analysis in the Gauge-Covariant Formalism**
Hojun Lee¹, Insu Baek¹, Mirco Sastges², Yuriy Mokrousov², Hyunwoo Lee¹, Dongwook Go³
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- 05-2852 **Strong Orbital Torque in Ti/Co_{1-x}Pt_x Bilayer**
Hyunwoo Kim, Jonghyuk Chae, Gyungmin Choi
Sungkyunkwan University, Korea
- 05-3656 **Observation of Planar Hall Conductivity in MgO/FePt L1₀ Thin Films via Terahertz Spectroscopy**
Seongbin Seo, Hyeon Gi Park, Eunji Im, TeunTeun Kim, Sanghoon Kim
University of Ulsan, Korea
- 05-4030 **Stabilization of Remanent Skyrmions at Room Temperature**
SuMi Lee, Myeonghwan Kang, HyeJin Ok, KiSuk Lee
Ulsan National Institute of Science and Technology, Korea

- 05-4321 **Analysis of Anomalous Hall Effect in a Ferrimagnetic GdFeCo/Pt: Intrinsic Contribution from the Pt Layer**
Seong Tae Kim¹, Jun Young Chang², Yun Chae Jeong¹, Minhwan Kim², Ah Yeon Lee³, Jisung Lee³, Yeon Suk Choi³, Seung Young Park³, Sug Bong Choe², Kyoung Whan Kim⁵, Duck Ho Kim⁴, Soong Geun Je¹
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- 05-4950 **Spin-to-Charge Conversion via Rashba–Dirac Hybridization in Bi/Bi₂Te₃ Heterostructures**
Shu Hsuan Su¹, Cheng-Maw Cheng², Jung-Chun Andrew Huang¹
¹National Cheng Kung University, Taiwan, ²National Synchrotron Radiation Research Center, Taiwan
- 05-5236 **Field-Free Switching of Perpendicular Magnetization Driven by Orbital Torque from Ti**
HyeongJoo Seo, So Y. Shin, ByongGuk Park
 Korea Advanced Institute of Science and Technology, Korea
- 05-5277 **Magnetic Circular Dichroism Properties of NiCo₂O₄ Thin Films**
Yu Hui Xue, Yi Xuan Wu, Yi Zhen Chen, Li Zhen Chen, Pin Xuan Sung, Pattita Juntori, Hua Shu Hsu
 National Pingtung University, Taiwan
- 05-5356 **Magnetic Structure and Magnetoresistance of Bisegmented Jellyfish Nanowires**
Kirill Rogachev, Mukhammad Sobirov, Mikhail Bazrov, Temur Rakhmatullaev, Igor Sapovsky, Aleksey Samardak, Aleksander Samardak
 Far Eastern Federal University, Russia
- 05-5428 **Modulation of the RKKY Interaction by the Rashba Effect in Pt/Co-Based Synthetic Antiferromagnets (SAFs)**
Wonyeong Choi, Eungyu Jun, Sanghoon Kim
 University of Ulsan, Korea
- 05-5557 **Investigation of SOT in Multilayer Co-Tb Ferrimagnetic Structures**
Zhimba Namsaraev, Mikhail Bazrov, Mikhail Letushev, Valery Antonov, Alexander Samardak, Maksim Steblii
 Far Eastern Federal University, Russia
- 05-5848 **Enhanced Magnetization Switching Efficiency via Orbital-Current-Induced Torque in Ti/Ta (Pt)/CoFeB/MgO Structures**
Soyoung Shin¹, Donghyeon Han², Soogil Lee³, Byong Guk Park¹
¹Korea Advanced Institute of Science and Technology, Korea, ²Korea Research Institute of Standards and Science, Korea, ³Gachon University, Korea
- 05-6227 **Berry Phase Contribution for Chiral Induced Orbital Selectivity in C40 Semiconductors**
Insu Baek¹, Hojun Lee¹, Mirco Sastges², Yuriy Mokrousov², Hyun Woo Lee¹, Dongwook Go³
¹Pohang University of Science and Technology, Korea, ²Jülich Aachen Research Alliance, Forshungszentrum Julich, Germany, ³Korea University, Korea
- 05-6327 **Anomalous Damping Like-Torque Behavior in Ni–Co Alloy Films Revealed by the Loop-Shift Method**
WonTaek Jang, JaeYong Cho, ChunYeol You
 Daegu Gyeongbuk Institute of Science and Technology, Korea

- 05-7285 **Dzyaloshinskii-Moriya Interaction in Monolayer Fe₃GeTe₂/PtTe₂ Heterostructures**
Bomin Kim, Sonny H. Rhim
University of Ulsan, Korea
- 05-7422 **Combined Contributions of Spin and Orbital Hall Effects to Spin–Orbit Torques in Pt–Ir Alloys**
SeungJin Kang¹, WonYoung Choi¹, JaeHyun Ha¹, HeonJin Choi², DongSoo Han¹
¹*Korea Institute of Science and Technology, Korea*, ²*Yonsei University, Korea*
- 05-7464 **Finite-Element Analysis of Mechanical-Resonance-Assisted SAW Spin Current Generators**
 Yuga You, Yamanoi Kazuto, Nozaki Yukio
Keio University, Japan
- 05-7558 **Fundamentally Distinct Mechanisms of Magnetic Spin and Orbital Hall Effects in Centrosymmetric Ferromagnets**
JaeGwang Jang¹, Jung Hyun Oh¹, KyoungWhan Kim², KyungJin Lee¹
¹*Korea Advanced Institute of Science and Technology, Korea*, ²*Yonsei University, Korea*
- 05-7572 **Finite-Boundary Effects on Spin Accumulation in Confined-Channel Spin Transistor**
 Taira Abe, Soobeom Lee
Shinshu University, Japan
- 05-7835 **Enhanced Non-volatile Fermi Level Tuning in PZT/Graphene Heterostructure for Spin-Charge Conversion**
Doyoung Kim, Seunghyun Lee, Jungwoo Yoo
Ulsan National Institute of Science and Technology, Korea
- 05-7872 **Scattering-Based Analysis of Orbital Selectivity in Chiral Crystal**
Gwangil Baek, Dongwook Go
Korea University, Korea
- 05-8223 **Nonlocal Magnon Transport Modulated by Supercurrent**
Tetsuma Mandokoro, Shiota Yoichi, Matsuki Hisakazu, Hisatomi Ryusuke, Karube Shutaro, Ono Teruo
Kyoto University, Japan
- 05-8332 **Spin Hall Conductivity in 5d Elemental Metals and High-Entropy Alloys: Influence of Lattice Structures and Atomic Arrangements**
Yuki Ohnishi¹, Yosephine Novita Apriati^{1,2}, Tadashi Kai², Kohji Nakamura¹
¹*Mie University, Japan*, ²*Tohoku University, Japan*
- 05-8500 **Thickness Dependence of Field-Free Spin-Orbit Torque Switching Polarity in Magnetic Trilayers**
Jaegeon Kim, Daekyu Koh, ByongGuk Park
Korea Advanced Institute of Science and Technology, Korea
- 05-8567 **Enhancement of Intrinsic Spin Hall Conductivity in W_{1-x}Mo_x Alloys**
Hyunju Lee¹, Thi Quynh Anh Nguyen², S. H. Rhim¹
¹*University of Ulsan, Korea*, ²*Korea Research Institute of Standards and Science, Korea*
- 05-9714 **Orbital Pumping in Altermagnet**
Myeonil Choj, Dongwook Go
Korea University, Korea

- 05-9873 **Unconventional Chiral Interaction in a Van der Waals Magnetic Heterostructure**
Hanwool Seong¹, ByeongGwon Kim¹, Eujung Ko², Wonyoung Choi¹, Fabian Kammerbauer³, Hyejin Ryu¹, KyoungWhan Kim⁴, YoungSang Yu⁵, Mathias Klau³, Changgu Lee⁶, Taeon Park¹, Seyoung Park², Kiyoung Lee¹, Dongsoo Han¹
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07. Magnetic Imaging and Characterization

THURSDAY, July 2

Monterosso Lobby (B1F)

Chairs

- 07-2073 **Fourier-Based Magnetization Reconstruction from NV Center Stray-Field Imaging**
Haneul Kim¹, Yeon Woo Seok¹, Hwijun Ko¹, Ji Won Joung¹, Chae Wook Lee¹, Uri Vool², Sanghoon Kim¹, Young Gwan Choi¹
¹University of Ulsan, Korea, ²Max Planck Institute for Chemical Physics of Solids, Germany
- 07-6531 **Magneto-Optical Investigation of Annealing-Driven Crystallization Effects in FeCoNiSiNbB Amorphous Ribbons**
Natalia Perova, Serafima Samchenko, Aleksei Komlev, Sergey Kostylev
Lomonosov Moscow State University, Russia
- 07-9300 **Vector Magnetization Analysis of Exchange-Coupled Magnetic Bilayers with Orthogonal Anisotropies**
Sebin Jung, Yanagihara Hideto
University of Tsukuba, Japan

09. Emerging Magnetic Materials and Devices

THURSDAY, July 2

Monterosso Lobby (B1F)

Chairs

- 09-1136 **90-twsited Epitaxy and In-plane Anomalous Hall Effect in Oxide Thin Films**
Lin Hao
High Magnetic Field Laboratory, Chinese Academy of Sciences, China
- 09-1259 **Electrical Control of Phase Transition in Co-Doped Fe₃GaTe₂ for Multi-Level State Memory Applications**
Su Bin Im¹, Hyo Bin Ahn², Hyun Jong Lim³, Jae Won Roh⁴, Seok Min Hong¹, Chang Gu Lee³, Tae Eon Park¹
¹Korea Institute of Science and Technology, Korea, ²Argonne National Laboratory, USA, ³Sungkyunkwan University, Korea, ⁴Yonsei University, Korea
- 09-1702 **Synthesis and Characterization of PANI/Fe₃O₄ Core-Shells via Two-Pot Method**
James Patrick Gabriel, Marienette Vega
University of the Philippines Diliman, Philippines

- 09-3688 **Application of Artificial Intelligence for the Search and Development of New Thermoelectric and Caloric Materials in the Heusler Alloy System**
Mariia Orshulevich¹, Marina Utarbekova¹, Sergey Taskaev¹, Danil Baigutlin¹, Zhang Hu², Vasily Buchelnikov¹
¹Chelyabinsk State University, Russia, ²University of Science and Technology Beijing, China
- 09-4730 **Bilinear Magnetoelectric Resistance in Strong Spin–Orbit Systems**
Jeong Ung Ahn¹, Ki Hyuk Han¹, Cheol Jun Kim¹, Seongbeom Kim², Eunsu Lee², Gyu Chul Yi², Hyun Cheol Koo¹
¹Korea Institute of Science and Technology, Korea, ²Seoul National University, Korea
- 09-5284 **Mössbauer Studies for Multiferroic Manganese-Substituted Yttrium Orthoferrite YFe_{1-x}Mn_xO₃**
Hyun Ho Ahn, Gyeong Tae Lee, Sung Baek Kim
Konyang University, Korea
- 09-6502 **Mn Antisite–Induced Valence Evolution and Magnetic Phase Competition in Mn_xSb₂Te₄**
Youyoung Kim, MyungHwa Jung
Sogang University, Korea
- 09-6759 **Fundamental Magnetic Behavior and Segment-Dependent Reversal Processes in Compositionally Segmented Co/Ni/Co Nanowires**
Mukhammad Sobirov, Kirill Rogachev, Temur Rakhmatullaev, Igor Sapovskii, Nikita Ilin, Aleksei Samardak, Alexander Samardak
Far Eastern Federal University, Russia
- 09-7546 **Local Pressure-Induced Modulation of Perpendicular Magnetic Anisotropy in Van der Waals Ferromagnetic Fe₃GaTe₂ Flakes Using Atomic Force Microscopy**
HsinSung Chen, YanRu Chu, JinChuan Hsu, WenChin Lin
National Taiwan Normal University, Taiwan
- 09-8470 **Experimental Study of the Magnetocaloric Effect in Ni-Co-Mn-Ti Heusler Alloys and Prospects for Their Application**
Marina Utarbekova¹, Mariya Orshulevich¹, Sergey Taskaev¹, Hu Zhang², Vasily Buchelnikov¹
¹Chelyabinsk State University, Russia, ²University of Science and Technology Beijing, China
- 09-9904 **Study on the Nuclear and Magnetic Structures and Spin Gap of Spinel Compound Fe_{2.98}V_{2.78}O₈**
MingHsuan Liao¹, ChiaChi Lu², YuHsien Lin², ChinWei Wang³, Shinichiro Yano³, YuTing Lee², ChunChuen Yang¹
¹National Central University, Taiwan, ²Chung Yuan Christian University, Taiwan, ³National Synchrotron Radiation Research Center, Taiwan