

Symposium H : Electronic and Magnetic Materials

November 20 (Mon.), 2023

Session Title : Electronic and Magnetic Materials 1

Time : 10:50 - 12:20, Nov. 20

Room # : 303B, 3F

Session Chair : Jihoon Park, Korea Institute of Materials Sciences

10:50 – 11:20 Keynote K-H1111

High-performance Nd-saving hot-deformed permanent magnets

Jung-Goo Lee, Korea Institute of Materials Science, Korea

11:20 – 11:40 Invited I-H1081

Synergistic effects of multiple elements in grain boundary diffusion Nd-Fe-B permanent magnet

Lizhong Zhao, Hangzhou Dianzi University, China

11:40 – 12:00 Invited O-H0174

Substitution and Phase Stabilization Elements Effects on Microstructure and Magnetic Properties of Sm-(Fe-Co) Based Magnets

Jihoon Park, Korea Institute of Materials Sciences, Korea

12:00 – 12:20 Invited I-H

Multidimensional understanding of the effect of iron content on iron-rich 2:17-type SmCo magnets: atomic occupancy, microstructure, and phase

Tianli Zhang, Beihang University, China

Session Title : Electronic and Magnetic Materials 2

Time : 14:00 - 15:25, Nov. 20

Room # : 303B, 3F

Session Chair : Haein Yim, Sookmyung Women's University

14:00 – 14:30 Keynote K-H0582

Study on Static and Dynamic Magnetic Properties of Amorphous Submicron Fe-B Spherical Particles

Yasushi Endo, Tohoku University, Japan

14:30 – 14:50 Invited I-H

THz Spin Dynamics in Ferromagnetic Thin Multilayers

Dong-Hyun Kim, Chungbuk National University, Korea

14:50 – 15:10 **Invited** **I-H1004**
A supercooling solidification technique to achieve Fe-based soft magnetic alloys with enhanced performance

Chen Wu, Zhejiang University, China

15:10 – 15:25 **O-H0986**
Storage and loss characterisations of electromagnetic energy in thin film of the Fe₂₀Ni₈₀ alloy

Desheng Xue, Lanzhou University, China

Session Title : Electronic and Magnetic Materials 3

Time : 16:00 - 18:10, Nov. 20

Room # : 303B, 3F

Session Chair : Sanghoon Kim, University of Ulsan

16:00 – 16:30 **Keynote** **K-H1077**

Current induced dynamics of magnetic skyrmion and its application

Joonyeon Chang, Korea Institute of Science and Technology, Korea

16:30 – 16:50 **Invited** **I-H1084**

Spintronic device based on van der Waals Materials

Guoqiang Yu, Chinese Academy of Sciences, China

16:50 – 17:10 **Invited** **I-H1171**

Giant Field-Like Torque from Bulk Rashba Effect in the Artificial Superlattices

Sanghoon Kim, University of Ulsan, Korea

17:10 – 17:25 **O-H1010**

Atomic-scale Understanding of Periodic Modulation in Heusler Alloy Ni-Mn-Ti

Die Liu, Xi'an Jiaotong University, China

17:25 – 17:40 **O-H0991**

The study of topological skyrmions in Kagome magnets

Ying Zhang, Institute of Physics, Chinese Academy of Science, China

17:40 – 17:55 **O-H0931**

Impression of magnetism, critical behaviour and magnetocaloric effect in FeNi alloy

MOHIT KUMAR SHARMA, Changwon National University, Korea

17:55 – 18:10 **O-H1080**

Oxide Insulated High-performance Soft Magnetic Composites

Xuefeng Zhang, Hangzhou Dianzi University, China

November 21 (Tue.), 2023

Session Title : Electronic and Magnetic Materials 4

Time : 11:20 - 12:30, Nov. 21

Room # : 303B, 3F

Session Chair : Yasushi Endo, Tohoku University

11:20 – 11:40 **Invited**

I-H0459

Designing and characterising Al-Si Phase-Transformation-Induced Superconducting ring devices

Manjith Bose, The University of Melbourne, Australia

11:40 – 12:00 **Invited**

I-H0346

Digital twins of magnetic materials: revealing microstructure-properties correlations

Bolyachikin Anton, National Institute for Materials Science, Japan

12:00 – 12:15

O-H0090

Micromagnetic analysis of stripe domain structure of the permalloy lamination with applied strain

Nam Hoon Goo, Pohang University of Science and Technology, Korea

12:15 – 12:30

O-H0585

Control of the reaction in Mn/Ga diffusion couple by high magnetic field

Yoshifuru Mitsui, Kagoshima University, Japan

Session Title : Electronic and Magnetic Materials 5

Time : 14:00 - 15:25, Nov. 21

Room # : 303B, 3F

Session Chair : Joonyeon Chang, Korea Institute of Science and Technology

14:00 – 14:20 **Invited**

I-H1083

Magnetic-field modulation of topological electronic state and emergent magneto-transport in a magnetic Weyl semimetal

Enke Liu, Chinese Academy of Sciences, China

14:20 – 14:40 **Invited**

I-H1072

Field-free magnetization switching driven by perpendicular spin-polarization at NiO/Pt interface

Xiaoguang Xu, Beijing University of Science and Technology, China

14:40 – 14:55 **O-H1086**

Vegard's law deviating $Ti_2(Sn_xAl_{1-x})C$ solid solution with enhanced properties

Zhihua Tian, Southeast University, China

14:55 – 15:10 **O-H0969**

Magnetocaloric composites with anisotropic structure prepared in an external magnetic field

Yanyan Shao, Nanjing University of Science And Technology, China

15:10 – 15:25 **O-H0600**

Exploration of Oxygen Doping in GeTe for Phase Change Memory Application

Shin Young Kang, Tohoku University, Japan

Session Title : Electronic and Magnetic Materials 6

Time : 16:00 - 18:00, Nov. 21

Room # : 303B, 3F

Session Chair : Yu Shiratsuchi, Osaka University

16:00 – 16:30 **Keynote** **K-H0316**

Processing for IV-VI 2D semiconductors based on thermodynamics

Yoshitaro Nose, Kyoto University, Japan

16:30 – 16:50 **Invited** **I-H0487**

Upcycled Synthesis and Extraction of Carbon-Encapsulated Iron Carbide Nanoparticles for Gap Plasmon Applications in Perovskite Solar Cells

IL JEON, Sungkyunkwan University, Korea

16:50 – 17:10 **Invited** **I-H0279**

Emerging Sb- and Ge- based layered tellurides for electronic device application

Yuta Saito, National Institute of Advanced Industrial Science and Technology, Japan

17:10 – 17:30 **Invited** **I-H0466**

Engineering the filamentary threshold switching response of NbOx

Shimul Kanti Nath, University of New South Wales, Australia

17:30 – 17:45 **O-H0246**

TM-O-Te system for new class of As- and Se-free OTS materials

Shogo Hatayama, National Institute of Advanced Industrial Science and Technology, Japan

17:45 – 18:00 **O-H1087**

One-dimensional core-sheath Sn/SnOx derived from MAX phase for microwave absorption

Feiyue Hu, Southeast University, China

November 22 (Wed.), 2023

Session Title : Electronic and Magnetic Materials 7

Time : 10:50 - 12:20, Nov. 22

Room # : 303B, 3F

Session Chair : IL JEON, Sungkyunkwan University

10:50 – 11:10 **Invited** **I-H0280**

Giant converse magnetoelectric effect in Co₂FeSi/PMN-PT multiferroic heterostructures

Takamasa Usami, Osaka University, Japan

11:10 – 11:30 **Invited** **I-H0577**

Multiscale structural parameters affecting antiferroelectric-ferroelectric phase transition

Teng Lu, The Australian National University, Australia

11:30 – 11:50 **Invited** **I-H1078**

Exotic phase transition mechanisms at ferroic multi-phase points

Xiaoqin Ke, Xi'an Jiaotong University, China

11:50 – 12:05 **O-H0900**

Sensitive magnetoelasticity by engineering nanoprecipitates

Yiqun Zhang, Xi'an Jiaotong University, China

12:05 – 12:20 **O-H0300**

Electrical resistivity and its temperature coefficient in Fe-Mn-Al-Cr-C-based alloys

Nobuaki Takeuchi, Tohoku University, Japan

Session Title : Electronic and Magnetic Materials 8

Time : 14:00 - 15:25, Nov. 22

Room # : 303B, 3F

Session Chair : Takamasa Usami, Osaka University

14:00 – 14:20 **Invited** **I-H0251**

Magnetic interaction between nanoparticles synthesized in the cage protein

Yu Shiratsuchi, Osaka University, Japan

14:20 – 14:40 **Invited** **I-H1082**

Magneto-elastic single crystals with large recoverable strain

Jingmin Wang, Beihang University, China

14:40 – 14:55 **O-H0186**

Microstructure and deformation properties of new Bi-based high temperature solders

LIU BIN, Hiroshima University, Japan

14:55 – 15:10 **O-H0924**

Sn(24-2x)Bi18InxSbx solders designed using a dual-cluster model for eutectics

Zhuang Li, Dalian University Of Technology, China

15:10 – 15:25

O-H0474

Synaptic features of ZnO/TaOx memristor for neuro-inspired computing

Tseung-Yuen Tseng, National Yang Ming Chiao Tung University, Taiwan