PROGRAM

Sep. 16/Room A

Symposium "Research trends on zero-magnetostriction electrical steel materials for motor drive systems Co-sponsored by Cooperative Research Committee on Magnetic Materials and Phenomena for High-Frequency Electromagnetic Actuator Systems Aimed at Compact and Lightweight Design" Chief Organizer: M. Ohtake (Yokohama National Univ.)

13:00 〜14:30 Chair: M. Ohtake (Yokohama National Univ.)

16pA-1 [Invited]Great expectations for magnetics in the advent of EV and power electronics society
°K. Fujisaki (Toyota Tech. Inst.)

16pA-2 [Invited]High Si steel sheet contribute to high performance in power electronics
°Y. Oda, T. Okubo, Y. Zaizen (JFE Steel)

14:45 〜16:15 Chair: T. Yamazaki (Tokyo Univ. Sci.)

16pA-3 [Invited]$A2/B2/D0_3$ ordering and phase separation in Fe-Si binary alloys and thermodynamic analysis by CALPHAD method
°I. Ohnuma (NIMS)

16pA-4 [Invited]Theoretical study on iron-rich FeSi alloys by first-principles phase field and SQS methods
°K. Ohno[1,2], R. Sahara[2] ([1]Yokohama National Univ., [2]NIMS)

16pA-5 [Invited]Characterization of Magnetostrictive Properties of Fe-Si and Fe-Al-N Alloys Using Epitaxial Single-Crystalline Thin Films
°K. Imamura, M. Ohtake (Yokohama National Univ.)

16:30 〜17:45 Chair: Y. Asano (Daikin)

16pA-6 [Invited]Preparation of Fe-6.5Si Steel Flake Powder with Texture and its Compaction Process Analysis
°S. Motozuka[1], T. G. Nguyen[3], M. Takeezawa[1], K. Kushimoto[2], J. Kano[2]
([1]Kyushu Inst. Tech., [2]Tohoku Univ., [3]Shimane Univ.)

16pA-7 [Invited]Hysteresis Analysis Technique for Soft Magnetic Materials Based on Magnetic Circuit Method and Its Application to Motors
°Y. Hane[1], K. Nakamura[2] ([1]Toyo University, [2]Tohoku Univ.)

Sep. 16/Room B

Magnetic anisotropy・Magnetostriction **13:00 〜14:30** Chair: H. Yanagihara (Univ. of Tsukuba)

16pB-1 Magnetostrictive properties of polycrystalline tetragonal Cu-Co ferrites under pulsed high magnetic fields
°S. Kosugi[1], M. Hisamatsu[1], S. Fujieda[2], T. Kida[1], M. Hagiwara[1], S. Seino[1], T. Nakagawa[1] ([1]Univ. of Osaka, [2]Shimane Univ.)

16pB-2 Improvement of magnetostriction of Galfenol alloy by La doping and microstructure controlling
°L. Chen[1], M. Sato[2], R. Umetsu[1] ([1]Tohoku Univ., [2]Akita Pref. Univ.)

16pB-3 Effect of in-plane magnetic anisotropy on crystal structure in Cobalt thin films deposited on $LiTaO_3$ substrates
°T. Abe[1], S. Shikano[1], K. Shimamura[2], H. Sugiyama[2], S. Ono[3], M. Shima[1], K. Yamada[1]
([1]Gifu Univ., [2]Kanazawa Univ., [3]Muroran Inst. of Technol.)

16pB-4 Annealing temperature dependence with no magnetic field on induced magnetic anisotropy in NiFeMo films fabricated on polyimide substrates
°S. Awaya, Y. Ashizawa, S. Yazawa (Nihon Univ.)

16pB-5 Strain-dependent X-ray magnetic circular dichroism in GdFeCo perpendicularly magnetized thin film on flexible substrate
°J. Okabayashi[1], Y. Fujii[2], H. Yoshikawa[2], A. Tsukamoto[2] ([1]Univ. of Tokyo, [2]Nihon Univ.)

16pB-6 Prediction of magnetocrystalline anisotropy constant in FeCoNi alloys using density of states features
°R. Sudo[1], T. Ueno[1], S. Yamashita[1,2], M. Oogane[1] ([1]Tohoku Univ., [2]The Max Planck Institute for Chemical Physics of Solids)

Magneto-optics・Magnetic resonance **14:45 〜16:15** Chair: J. Okabayashi (Univ. of Tokyo)

16pB-7 Pure moving-medium effects by composite magneto-chiral metasurfaces
°S. Tomita[1], T. Kodama[1], T. Nakanishi[2], K. Sawada[3] ([1]Tohoku Univ., [2]Kyoto Univ., [3]RIKEN)

16pB-8 Magneto-optical effect in $CoFe_2O_4$-BaF_2 nanogranular films
°K. Ikeda, H. Tanimura, N. Kobayashi (DENJIKEN)

16pB-9 Development of flexible magneto-optical materials based on CoPt alloy nanoparticles
°C. Zhang[1], T. Ishida[1, 2], S. Lee[1], H. Yamane[3], T. Tatsuma[1] ([1]IIS, the Univ. of Tokyo, [2]JST-PREST, [3]AIT)

16pB-10 Experimental evaluation of the dualities of ultrashort-pulse-induced all-optical magnetization switching and effective magnetic circular dichroism in GdFeCo thin films
°T. Wakabayashi, H. Yoshikawa, Y. Kasatani, A. Tsukamoto (Nihon Univ.)

16pB-11 Evaluation of the Debye Temperature via Mossbauer Spectroscopy in the Fe-based High-Tc Superconductor SmFeAsO (Sm1111)
°H. He, Y. Matsuura, Y. Morita, Y. Kamihara (APPI, Keio)

16pB-12 Barnett effect and Berry phase on the magic angle spinning NMR
°H. Chudo[1], N. Yokoi[2], M. Matsuo[3], K. Harii[4], J. Suzuki[5], M. Imai[1], M. Sato[6], S. Maekawa[7], E. Saito[2]
([1]JAEA, [2]Univ. of Tokyo, [3]UCAS, [4]QST, [5]UEC, [6]Chiba Univ., [7]RIKEN)

Sep. 16/Room C

Symposium "The latest development of magnetic particle imaging and medical imaging using magnetic nanoparticles"
Chief Organizer: S. Yabukami (Tohoku Univ.)

13:00 〜14:30 Chair: S. Yabukami (Tohoku Univ.)

16pC-1 [Invited]Potential of magnetic particle imaging (MPI) ~ Current status and future prospects of imaging technology ~
°Y. Ishihara (Meiji Univ.)

16pC-2 [Invited]Characteristic relaxation behavior of magnetic nanoparticles under sinusoidal and pulsed excitations for diagnostic imaging and microenvironmental analysis of cancers
°S. B. Trisnanto[1], S. Ota[2], Y. Takemura[3] ([1]Saitama Med. Univ., [2]Shizuoka Univ., [3]Yokohama National Univ.)

16pC-3 [Invited]Development of high-Tc superconducting MPI system for human body applications
°T. Yoshida[1], T. Nagano[1], S. Inada[1], H. Sasa[1], T. Sasayama[1], Y. Takemura[2] ([1]Kyushu Univ., [2]Yokohama National Univ.)

14:45 〜16:15 Chair: S. Ota (Shizuoka Univ.)

16pC-4 [Invited]Considerations regarding magnetic field configuration and signal processing in MPI equipment
°T. Nakagawa, A. Furukawa, M. Iizuka, Y. Fujii, R. Okamura, S. Seino (Univ. of Osaka)

16pC-5 [Invited]Fabrication of superparamagnetic nanoclusters with excellent magnetic properties at higher harmonics for medical applications
°M. Takahashi[1], S. Shimizu[1], T. Yoshida[2], S. Maenosono[1] ([1]JAIST, [2]Kyushu Univ.)

16pC-6 [Invited]Sentinel lymph node biopsy for breast cancer using magnetic probe and magnetic nanoparticles
°A. Kuwahata[1, 2], M. Sekino[1], M. Kusakabe[1, 3], K. Taruno[4], T. Kurita[5], S. Nakamura[4], H. Takei[5], S. Matsuda[6], T. Nakagawa[1]
([1]Univ. of Tokyo, [2]Tohoku Univ., [3]Matrix cell laboratory, [4]Showa Univ., [5]Nippon Medical School, [6]Keio Univ.)

Sep. 16/Room D

MSJ/TAMT Joint Session **13:00 〜14:30** Chair: Y. Nozaki (Keio Univ.)

16pD-1 Electrically Controlled Optical Chirality in Ferrimagnetic Thin Films
°H. Hsu (National Pingtung Univ.)

16pD-2 Comprehensive study on the spin to charge conversion in rutile RuO_2
°D. Qu[1], Y. Wang[1], C. Liao[1], Z. Shen[1], C. Lin[1], W. Hsu[1], Y. Tien[1], Y. Chin[2], A. K. Singh[3], W. Lee[3], S. Huang[1]
([1]National Taiwan Univ., [2]National Chung Cheng Univ., [3]Academia Sinica)

16pD-3 Photon-helicity induced orbital angular momentum in ferromagnetic metals detected by circularly-polarized laser driven magnetization dynamics measurements
°S. Iihama[1], K. Nukui[2], K. Ishibashi[2], S. Mizukami[2] ([1]Nagoya Univ., [2]Tohoku Univ.)

14:45 〜16:15 Chair: M. Oogane (Tohoku Univ.)

16pD-4 Manipulating Spin Transport Dynamics in Antiferromagnet for Energy-efficient Memory and Logic Device
°C. Yang (National Yang Ming Chiao Tung Univ.)

16pD-5 Spontaneous Hall effect in antiferromagnets with broken time-reversal symmetry
°R. Takagi (Univ. of Tokyo)

16pD-6 Observation of the antiferromagnetic spin-torque diode effect in W/Mn_3Sn bilayers
°S. Sakamoto[1, 2], T. Nomoto[1, 3], T. Higo[1], Y. Hibino[4], T. Yamamoto[4], S. Tamaru[4], Y. Kotani[5], H. Kosaki[1], M. Shiga[1], D. Nishio-Hamane[1], T. Nakamura[2, 5], T. Nozaki[4], K. Yakushiji[4], R. Arita[1, 6], S. Nakatsuji[1, 7], S. Miwa[1]
([1]Univ. of Tokyo, [2]Tohoku Univ., [3]Tokyo Metropolitan Univ., [4]AIST, [5]JASRI, [6]RIKEN, [7]Johns Hopkins Univ.)

Sep. 16/Room E

Antiferromagnetic and ferrimagnetic spintronics **13:00 〜14:15** Chair: Y. Sakuraba (NIMS)

16pE-1 Electromotive force induced by magnetic resonance in FeMn/Pt bilayers
°K. Tada[1], T. Hattori[1], K. Kawagita[2], K. Yabushita[2], K. Hayashi[1], S. Iihama[1], Y. Ishikawa[2], T. Moriyama[1]
([1]Nagoya Univ., [2]Univ. of Fukui)

16pE-2 Investigation of Magnetic Domain Structures in Antiferromagnetic NiO Thin Films Using Birefringence
°F. Ikeda, S. Iihama, K. Hayashi, T. Moriyama (Nagoya Univ.)

16pE-3 Synthetic antiferromagnet for propagating spin-wave based physical reservoir computing
°T. Shinkai, S. Iihama, K. Hayashi, T. Moriyama (Nagoya Univ.)

16pE-4 Field-Free Switching of perpendicularly magnetized Co/Pd synthetic antiferromagnet via Combined Spin-Orbit and Spin- Transfer Torques
°D. Pan, R. Yabushita, D. Oshima, T. Kato (Nagoya Univ.)

16pE-5 Control of a compensation temperature in a ferrimagnetic Heusler alloy
E. Pandey[1], S. Yamashita[1], E. Lesne[1], G. Fecher[1], C. Felser[1], °A. Hirohata[1, 2] ([1]Max Planck Inst., [2]Tohoku Univ.)

Spintronic material and device process **14:30 〜15:30** Chair: A. Hirohata (Tohoku Univ.)

16pE-6 Development of high-throughput exploration method of large anomalous Hall materials based on composition-spread films and machine learning techniques : Application to heavy-element-substituted Fe thin films
R. Toyama, Y. Iwasaki, P. Kulkarni, H. Suto, T. Nakatani, °Y. Sakuraba (NIMS)

16pE-7 Fabrication of ferromagnetic metallic multilayers of Ag/Fe by accumulative roll bonding and evaluation of their magnetic properties
°Y. Yada, T. Miyamachi, M. Mizuguchi (Nagoya Univ.)

16pE-8 Schedule change

16pE-9 Patterning technology beyond the limit of depth of focus for micro/nano-coils
°M. Sasaki[1], K. Kudo[2], Y. Honkura[2] ([1]Toyota Tech. Inst., [2]Magnedesign)

Sep. 16/Poster Room

Poster session Ⅰ

15:45 〜18:00 Chair: K. Yamada (Gifu Univ.)

16pPS-1 Relationship between anomalous Hall effect and the Verwey transition in Fe_3O_4/MgO(001)
°S. Nakagawa, K. Ienaga, K. Ishimatsu, J. Nishiguchi, T. Nagahama (Yamaguchi Univ.)

16pPS-2 Magnetotransport of altermagnetic candidate $Ru_{1-x}Cr_xO_2$ film
°Y. Inaoka[1], S. Karube[1, 2, 3], R. Hisatomi[1, 2, 3], Y. Shiota[1, 2], T. Ono[1, 2] ([1]ICR, Kyoto Univ., [2]CSRN, Kyoto Univ., [3]JST-PRESTO)

16pPS-3 Spin polarization induced by circularly polarized light in nonmagnetic heavy metals
°S. Mochizuki[1], I. Sugiura[2], T. Ono[2], T. Satoh[1], K. T. Yamada[1] ([1]Science Tokyo, [2]Kyoto Univ.)

16pPS-4 Magnetization switching by a laser induced thermo-current
°S. Sumi[1], M. Mohammad[1], K. Tanabe[1], H. Awano[1], Y. Nakatani[2] ([1]Toyota Tech. Inst., [2]UEC)

16pPS-5 Micromagnetic Simulation for the Realization of Multi-Level Grayscale Holographic Display in a Magneto-Optical Spatial Light Modulator Using Voltage-Controlled Magnetic Anisotropy
°M. Kawana, K. Aoshima, K. Machida, N. Funabashi (NHK)

16pPS-6 Electric Field Modulation and Retention Stability of CoFeB Magnetism via AlScN Ferroelectric Capacitor

°Y. Wu[1, 2], K. Onimura[1], H. Kobayashi[2], K. Kakushima[1, 2] ([1]Science tokyo, [2]Sumitomo Chemical Next-Generation Eco-Friendly Devices Collaborative Research Cluster of Science Tokyo)

16pPS-7 Dual engineering of Co/MgO interface using ultrathin heavy metal insertion and post-oxidation for voltage-controlled magnetic anisotropy effect

°H. Nakayama, T. Nozaki, T. Nozaki, S. Yuasa (AIST)

16pPS-8 Electric field effect of anisotropic magnetoresistance at an LSMO/PMN-PT (011) interface

°S. Iwatsubo, S. Komori, T. Taniyama (Nagoya Univ.)

16pPS-9 Spin transport properties in copper-phthalocyanine thin films induced by spin pumping

°S. Yamada, K. Okajima, Y. Matsukawa, E. Shikoh (Osaka Metropolitan Univ.)

16pPS-10 Spin pumping into molecular thin films via an Al oxide thin film

°K. Takamatsu, T. Sano, S. Waki, E. Shikoh (Osaka Metropolitan Univ.)

16pPS-11 Spin Seebeck effect in metallic bilayer

°D. Oda, H. Awano, K. Tanabe (Toyota Tech. Inst.)

16pPS-12 Maximum sensitivity of anomalous Nernst effect heat flow sensor using Pt-doped GdCo thin film

°T. Koizumi, M. Mohammadi, H. Imaeda, H. Awano, K. Tanabe (Toyota Tech. Inst.)

16pPS-13 Fabrication and magnetic properties of cubic- $Fe_3Sn_{1-x}Al_x$ epitaxial films

°S. Egawa, K. Gotan, K. Ienaga, T. Nagahama (Yamaguchi Univ.)

16pPS-14 Compatibility of high coercive force and sensitivity of a heat flux sensor based on anomalous Nernst effect using three-dimensional structure

°H. Imaeda, T. Takeuchi, H. Awano, K. Tanabe (Toyota Tech. Inst.)

16pPS-15 Iron composition dependence of longitudinal spin Seebeck voltage in $Co_{3-X}Fe_XO_4$ films

°K. Hayashi[1, 2], Y. Kurokawa[3], H. Yuasa[3], K. Yamada[2] ([1]Nagoya Univ., [2]Gifu Univ., [3]Kyushu Univ.)

16pPS-16 Spatial mapping of effective magnetic field at the Py/NiO interface

°I. Sugiura[1], Y. Shiota[1, 2], R. Hisatomi[1, 2], S. Karube[1, 2], T. Ono[1, 2], T. Moriyama[3, 4] ([1]ICR, Kyoto Univ., [2]CSRN, Kyoto Univ., [3]JST-PREST, [4]Nagoya Univ.)

16pPS-17 Frequency-domain shape optimization of spin wave demultiplexer

°R. Nagaoka, T. Yamazaki, A. Foggiatto, M. Kotsugi (Tokyo Univ. Sci.)

16pPS-18 Dependence of learning performance on input pulse width in m-VSTO

°K. Horizumi[1], T. Chiba[2], T. Komine[1] ([1]Ibaraki Univ., [2]Yamagata Univ.)

16pPS-19 Exploration of non-linear magnetotransport phenomena in non-collinear Spin Structures

°S. Jung, H. Yanagihara (Univ. of Tsukuba)

16pPS-20 Interface Structure Dependence of the Inverse Spin Hall Effect in Bi_2Te_3/CoFeB

°M. Morota[1], S. Hatayama[1], W. Jevasuwan[2], N. Fukata[2], S. Yuta[1, 3] ([1]AIST, [2]NIMS, [3]Tohoku Univ.)

16pPS-21 PSSW mode in $La_{1-x}Sr_xMnO_3$ thin films under ferromagnetic resonance

°R. Arakawa, S. Komori, T. Taniyama (Nagoya Univ.)

16pPS-22 High Perpendicular Magnetic Anisotropy for Metastable bcc Co-Mn-Fe/Cr Multilayers

°S. Takaoka, M. Ishibashi, D. Kumar, S. Miki, S. Mizukami (Tohoku Univ.)

16pPS-23 Interface roughness dependence of magnetic anisotropy and interlayer exchange coupling in synthetic antiferromagnets

°S. Asai, Y. Hisada, S. Komori, T. Taniyama (Nagoya Univ.)

16pPS-24 Grain size reduction and suppression of *c*-axis in-plane oriented crystal grains in FePt granular thin films by introducing Pt granular buffer layer

°D. Miyazaki[1], K. K. Tham[1], S. Saito[2] ([1]TANAKA, [2]Tohoku Univ.)

16pPS-25 Film thickness dependence of magnetic properties of Fe-Ga-N film

°Y. Mori[1], T. Hino[1], M. Jimbo[1], M. Naoe[2], N. Kobayashi[2], D. Oshima[3], T. Kato[3], Y. Fujiwara[1] ([1]Mie Univ., [2]DENJIKEN, [3]Nagoya Univ.)

16pPS-26 Effects of In-Plane Magnetic Fields and Energy Analysis during the Control of Antiskyrmion Formation

°Y. Machida, M. Taniwaki, A. Foggiatto, M. Kotsugi (Tokyo Univ. Sci.)

16pPS-27 Fabrication of three-dimensional magnetic wires using nanoimprint method

°Y. Ikawa[1], Y. Yasuda[1], Y. Kurokawa[2], H. Awano[1], K. Tanabe[1] ([1]Toyota Tech. Inst., [2]Kyushu Univ.)

16pPS-28 Formation of Ni-Fe Alloy Films by Electroless Plating and Their Application to Beam Materials for Perpendicular Magnetic Field Assisted and Inverse Magnetostrictive Vibration Powered Generators
°H. Kamogawa[1, 2], Y. Nakamura[1], Y. Taguchi[1], K. Imamura[1], M. Ohtake[1] ([1]Yokohama National Univ., [2]Kanto Kasei Co., Ltd.)

16pPS-29 Enhancement of perpendicular magnetic anisotropy in FePt granular thin films by introducing Cu-doped FePt-based ultrathin granular buffer layers
°K. Tham[1], D. Miyazaki[1], S. Saito[2] ([1]TANAKA, [2]Tohoku Univ.)

16pPS-30 Reduction of nodule on the surface of MgO layer by insertion of diffusion stopper layer
°D. Isurugi, F. Chenming, A. Shimizu, S. Hinata, T. Ogawa, S. Saito (Tohoku Univ.)

16pPS-31 Effect of observation conditions on 2D images observed with a scanning magneto-optical microscope
°T. Ebihara, R. Komiya, Y. Nakamura, P. Lim (Toyohashi Univ. Tech.)

16pPS-32 Effect of laser irradiation conditions on coercivity of LIFT-made micromagnets
°H. Ono, G. Tahara, A. Yamashita, T. Yanai, M. Nakano, H. Fukunaga (Nagasaki Univ.)

16pPS-33 Effect of substrate temperature on the magnetic properties of anisotropic Nd-Fe-B film magnets
°Y. Yamada, A. Yamashita, T. Yanai, M. Nakano, H. Fukunaga (Nagasaki Univ.)

16pPS-34 A Study on the Growth Process of $Sm(Fe,Co)_{12}$ Alloy Epitaxial Thin Film
°T. Yoshida, K. Imamura, M. Ohtake (Yokohama National Univ.)

16pPS-35 Formation conditions and magnetic properties of Li^+-doped W-type ferrite
°R. Kinoshita[1], S. Fujieda[2], S. Seino[1], T. Nakagawa[1] ([1]Univ. of Osaka, [2]Shimane)

Sep. 17/Room A

Magnetic beads/Hyperthermia **9:00 〜10:45** Chair: T. Yoshida (Kyushu Univ.)

17aA-1 Concentration-dependence of linear birefringence induced in suspension of magnetic nanoparticle
°M. Suwa, S. Tsukahara (Univ. of Osaka)

17aA-2 Estimation of parameters dependent on static and dynamic magnetization response of magnetic nanoparticles measured in easy axes-oriented sample.
°H. Goto[1], M. Futagawa[1], Y. Takemura[2], S. Ota[1] ([1]Shizuoka Univ., [2]Yokohama National Univ.)

17aA-3 Measurement of magnetization relaxation of magnetic nanoparticles under pulsed fields
°S. Ri[1], S. B. Trisnanto[2], S. Ota[3], Y. Takemura[1] ([1]Yokohama National Univ., [2]Saitama Medical Univ., [3]Shizuoka Univ.)

17aA-4 In situ temperature measurement of cultured cells including magnetic nanoparticles heated by AC magnetic field
°N. Nishino[1], T. Tsuji[2], S. B. Trisnanto[3], S. Ota[4], Y. Takemura[1]
([1]Yokohama National Univ., [2]KIRIN, [3]Saitama Medical Univ., [4]Shizuoka Univ.)

17aA-5 Temperature measurement using magnetic harmonic signals for magnetic hyperthermia
°R. Shinohara, L. Tonthat, A. Kuwahata, S. Yabukami (Tohoku Univ.)

17aA-6 Formation and evaluation of induced shape magnetic anisotropy of magnetic nanoparticles in vivo
°Y. Kamijima, A. Kuwahata, T. Shimano, A. Sukhbaatar, L. Tonthat, T. Kodama, S. Yabukami (Tohoku Univ.)

17aA-7 Fabrication of silica-coated magnetic nanoparticle chain structures under ambient conditions at room temperature
°C. Oka, Y. Onishi, T. Shiojima, J. Sakurai, S. Hata (Nagoya Univ.)

Immunoassay **11:00 〜12:00** Chair: S. Trisnanto (Saitama Medical Univ.)

17aA-8 Development of superparamagnetic nanocluster probes for magnetic particle spectroscopy based immunoassay
°S. Shimizu[1], M. Takahashi[1], T. Yoshida[2], S. Maenosono[1] ([1]JAIST, [2]Kyushu Univ.)

17aA-9 Protein Detection Using Ferromagnetic Resonance of Magnetic Nanoparticles
°R. Masui, T. Murayama, L. Tonthat, H. Aoki, A. Kuwahata, S. Yabukami (Tohoku Univ.)

17aA-10 Quantitative evaluation of identification of magnetic markers' state using harmonic magnetizations
°I. Matsuzaki, M. Soejima, H. Sasa, T. Sasayama, T. Yoshida (Kyushu Univ.)

17aA-11 Effects of the size distribution of magnetic nanoparticles on the precision of magnetically promoted rapid immunoassay
°T. Tanaka (Aichi Univ. Tech.)

Sep. 17/Room B

Surface magnetism and interface magnetism **9:00 〜10:45** Chair: D. Oshima (Nagoya Univ.)

17aB-1 Temperature dependence of magneto-conductance in In-doped SnTe thin films
°R. Uesugi[1], R. Ando[2], M. Mizuno[1], T. Aono[1], T. Chiba[3], T. Komine[1] ([1]Ibaraki Univ., [2]NIT, Ibaraki Coll., [3]Yamagata Univ.)

17aB-2 Growth and tunneling spectra of ultrathin Mn films on Au(001)
°T. Kawagoe[1], T. Miyamachi[2], M. Mizuguchi[2] ([1]Osakakyoiku Univ., [2]IMaSS, Nagoya Univ.)

17aB-3 Multi-method analysis of MnTe epitaxial ultrathin film on Fe(001) utilizing STM/STS, machine learning, and DFT calculation
°H. Seki[1], K. Nawa[2, 3, 4], C. Mitsumata[5], T. Yamada[1, 6]
([1]Chiba Univ., [2]Mie Univ., [3]NIMS, [4]AIST, [5]Univ. of Tsukuba, [6]Chiba Univ. Mol. Chiral. Res.)

17aB-4 Development of Magnetic Imaging Using Spin-Polarized STM and Quantum Spin Microscopy
°M. Niida, Y. Achmad, T. Kashiwagi, H. Seki, T. Yamada (Chiba Univ.)

17aB-5 Identification of magnetic coupling at H_2Pc/Fe_2N organic-inorganic hybrid interface based on the electronic states of nitrogen atoms
°H. Ono[1], Y. Umeda[1], K. Yoshida[1], K. Tsutsui[1], K. Yamamoto[2], O. Ishiyama[2], T. Yokoyama[2], M. Mizuguchi[1], T. Miyamachi[1]
([1]Nagoya Univ., [2]IMS)

17aB-6 Organic-inorganic interfacial magnetic coupling between phenanthroline derivatives and Co nano-islands
°K. Fujimoto[1], H. Ono[1], K. Yoshida[1], K. Tsutsui[1], N. Maejima[3], O. Ishiyama[3], Y. Shyuku[4], K. Awaga[4], T. Ishiyama[3], M. Mizuguchi[1, 2], T. Miyamachi[1, 2] ([1]Graduate School of Engineering, Nagoya University, [2]Institute of Materials and Systems for Sustainability, Nagoya University, [3]IMS, [4]Graduate School of Science, Nagoya University)

17aB-7 Evaluation of Structural Stability at the FeCo Atomic Layer Interface with Nitrogen Surfactant
°A. Iwai[1], H. Ono[1], Q. Shi[1], Y. Umeda[1], N. Maejima[3], O. Ishiyama[3], T. Yokoyama[3], M. Mizuguchi[1, 2], T. Miyamachi[1, 2]
([1]Sch. Eng. Nagoya Univ., [2]IMaSS. Nagoya Univ, [3]IMS)

Fine particles **11:00 〜12:30** Chair: M. Tanaka (Nagoya Inst. Tech.)

17aB-8 Effects of Ternary Element Addition on the Crystal Structure and Magnetic Properties of FeCo Nanomagnets
°E. Hosoda[1], H. Yanagihara[2], Y. Hirayama[3], T. Miyamachi[1], M. Mizuguchi[1] ([1]Nagoya Univ., [2]Univ. of Tsukuba, [3]AIST)

17aB-9 Shell Forming to FeSi Soft Magnetic Micron and Nano Particles by Surface Oxidation under Dry Air Atmosphere
°A. Nishikura, S. Ohnishi, H. Nakashinden, T. Murakami, M. Tobise, S. Saito (Tohoku Univ.)

17aB-10 Fabrication of Fe-B/Epoxy composite films using silica-coated Fe-B particles
°T. Nishii[1], I. Tanigawa[2], W. Tan[3], H. Muto[3], Y. Endo[1], M. Izaki[4], N. Fujita[4]
([1]Tohoku Univ., [2]OKUNO, [3]Toyohashi Univ. Tech., [4]NIT, Nara Coll.)

17aB-11 Dependence of Structure and Magnetic Properties of Submicron Fe-Co-B Particles on Annealing Temperature
°K. Sato, K. Wakabayashi, T. Miyazaki, S. Ajia, S. Muroga, Y. Endo (Tohoku Univ.)

17aB-12 The Effect of magnetostatic interaction on blocking temperature of Fe-based nanoparticles.
°S. Yanagita[1, 2], C. E. Mcnamee[3], S. Yamamoto[2], T. Ogawa[1], S. Saito[1]
([1]Tohoku Univ., [2]Sankei Giken Kogyo Co., Ltd., [3]Kyoto Univ.)

17aB-13 Investigation of moment dynamics in multicore magnetic nanoparticle system in correlation with microwave susceptibility spectra
°S. B. Trisnanto[1], M. Li[2], Y. Endo[3], S. Ota[4], T. Sasayama[5], T. Yoshida[5], Y. Takemura[2]
([1]Saitama Med. Univ., [2]Yokohama National Univ., [3]Tohoku Univ., [4]Shizuoka Univ., [5]Kyushu Univ.)

Sep. 17/Room C

Symposium "Recent progress and perspective for MRAM technology"

Chief Organizer: S. Mizukami (Tohoku Univ.)

9:00 〜10:30 Chair: M. Yoshikawa (Kioxia)

17aC-1 [Invited]STT-MRAM technologies and its technical challenges for a memory product
°M. Hosomi (Sony Semiconductor)

17aC-2 [Invited]Core technology for next generation high performance MRAM
°S. Ikeda, H. Honjo, Y. Saito, T. Endoh (Tohoku Univ.)

17aC-3 [Invited]Spin-Transfer-Torque MRAM for the Next Computing Era
K. Lee, °K. Yamane (Samsung Electronics)

10:45 〜11:45 Chair: H. Tanigawa (Sony)

17aC-4 [Invited]Advanced magnetic tunnel junctions for voltage-controlled MRAM
°S. Yuasa, T. Nozaki, T. Yamamoto, T. Ichinose, H. Nakayama, T. Nozaki, J. Kim, S. Tsunegi, K. Yakushiji, S. Tamaru, H. Kubota (AIST)

17aC-5 [Invited]Reliable memory operation with low read disturb rate in the world smallest 1Selector-1MTJ cell for 64 Gb cross-point MRAM
°K. Sawada[1], H. Aikawa[1], T. Nagase[1], Y. Ito[1], K. Yoshino[1], T. Oikawa[1], K. Hatsuda[2], K. Hoya[2] ([1]Kioxia Korea, [2]Kioxia)

Sep. 17/Room D

Spin caloritronics and metamaterials **9:00 〜10:30** Chair: S. Miki (Tohoku Univ.)

17aD-1 Separation of bulk and interface contributions to the anomalous Nernst effect in Fe_4N/MgO multilayers
°K. Ito[1], T. Yamazaki[1], R. Y. Umetsu[1], M. Mizuguchi[2], K. Takanashi[3], T. Seki[1] ([1]Tohoku Univ., [2]Nagoya Univ., [3]JAEA)

17aD-2 Observation of thermally induced orbital currents in the orbital ferrimagnet
°T. Onuma, H. Yanagihara (Univ. of Tsukuba)

17aD-3 Comprehensive Development of Anomalous Nernst Effect -Based Heat Flux Sensors
°K. Yakushiji[1], A. Fukushima[2], M. Akoshima[1] ([1]AIST, [2]Univ. of Tokyo)

17aD-4 Superconduucting diode effect originated from thermoelectric effect in iron-based superconductor $FeTe_{0.6}Se_{0.4}$
°U. Nagata[1], M. Aoki[1], A. Daido[1], R. Ohshima[1], S. Kasahara[2], Y. Kasahara[1], Y. Ando[1], Y. Matsuda[1], Y. Yanase[1], M. Shiraishi[1] ([1]Kyoto Univ., [2]Okayama Univ.)

17aD-5 Asymmetrical Microwaves Frequency Conversion by Time-varying Permeability Metamaterials
°T. Kodama[1], N. Kikuchi[2], T. Chiba[3], S. Okamoto[1], S. Ohno[1], S. Tomita[1] ([1]Tohoku Univ., [2]Akita Univ., [3]Yamagata Univ.)

17aD-6 Magnon-phonon coupling using metamaterial acoustic resonator
°K. Yamanoi, Y. Nozaki (Keio Univ.)

Spin current・Orbital current **10:45 〜12:30** Chair: K. Ito (Tohoku Univ.)

17aD-7 Probe of angular momentum current in Ni/Cr bilayer via THz emission
°S. Miki, K. Ishibashi, K. Nukui, D. Kumar, M. Ishibashi, L. Wang, H. Morishita, S. Mizukami (Tohoku Univ.)

17aD-8 Evaluation of current induced torque in Pd/Co_2MnGa and Pd/Co_2MnSi perpendicularly magnetized films
°T. Koyama, K. Watanabe, T. Uemura, M. Yamanouchi (Hokkaido Univ.)

17aD-9 Evaluation of spin-current generation in Si/Al multilayered films
°H. Nakayama, K. Yamanoi, Y. Nozaki (Keio Univ.)

17aD-10 Inverse spin Hall effect of Bi-Te/Ru/CoFeB
°F. Sano[1], M. Morota[2], S. Hatayama[2], W. Jevasuwan[3], N. Fukata[3], M. Kim[1], Y. Saito[1,2] ([1]Tohoku Univ., [2]AIST, [3]NIMS)

17aD-11 Electrical detection of a minimal spin accumulation in silicon
°Y. Koshino[1], M. Goto[2], R. Ohshima[3], M. Shiraishi[3], Y. Ando[1] ([1]Osaka Metropolitan Univ., [2]Tokyo Univ. Sci., [3]Kyoto Univ.)

17aD-12 Observation of spin polarization in topological superconductor candidate, FeTe0.6Se0.4
K. Ohnishi[1], R. Ohshima[1,2], Y. Ando[1,2], S. Kasahara[1], Y. Kasahara[1], Y. Matsuda[1], Y. Yanase[1,2], °M. Shiraishi[1,2] ([1]Kyoto Univ., [2]CSRN, Kyoto Univ.)

17aD-13 Spin accumulation-induced magneto-photogalvanic effect in metals
°A. Kamiryo[1], M. Yamamoto[2], T. Nishijima[2], R. Ohshima[2], M. Shiraishi[2], Y. Ando[1] ([1]Osaka Metropolitan Univ., [2]Kyoto Univ.)

Sep. 17/Room E

Molecular magnetism・Superconductivity・Simulation

9:00 〜10:30 Chair: Y. Kamihara (Keio Univ.)

17aE-1 Shapiro response of coupled Josephson junctions indicating superconducting diode effect
°S. Matsuo[1, 2], R. Deacon[1], S. Kobayashi[1, 3], Y. Sato[1], T. Yokoyama[4], T. Lindemann[5], S. Gronin[5], G. Gardner[5], K. Ishibashi[1], M. Manfra[5], S. Tarucha[1] ([1]RIKEN, [2]ISCT, [3]Tokyo Univ. Sci., [4]Univ. of Osaka, [5]Purdue Univ.)

17aE-2 Nonlocal signals induced by vortices in superconductor/ferromagnet stacked device
°T. Kobayashi[1], Y. Yamada[1], Y. Tabata[1], N. Jiang[1], T. Taniguchi[2], K. Watanabe[2], Y. Okada[3], Y. Niimi[1] ([1]Univ. of Osaka, [2]NIMS, [3]OIST)

17aE-3 Ferromagnetism of nitrogen-containing carbon materials formed on copper substrates
°Y. Nakanowatari[1], M. Hagiwara[2], T. Kida[2], Z. Honda[1] ([1]Saitama Univ., [2]Univ. of Osaka)

17aE-4 Simulation of magnetization switching of VC-MRAM in a circular thin film with DMI
°K. Nozuki[1], K. Yamada[2], Y. Nakatani[1] ([1]UEC, [2]Gifu Univ.)

17aE-5 Physics-Informed AI Model for Elucidating the Connection Between Magnetic Structures and Energy
°K. Tsubouchi, R. Nagaoka, M. Taniwaki, Y. Machida, A. Foggiatto, M. Kotsugi (Tokyo Univ. Sci.)

17aE-6 Expression of Initial Magnetic Permeability Using the Landau Model
°C. Mitsumata (Univ. of Tsukuba)

Oxides・Ferrites **10:45 〜12:30** Chair: K. Koike (Yamagata Univ.)

17aE-7 Synthesis of W-type $SrZn_xFe_{18-x}O_{27}$ fine particles synthesized using KBr flux
°A. Hirata, M. Kishimoto, H. Yanagihara (Univ. of Tsukuba)

17aE-8 Angular dependence of coercivity in high angle for sintered Neodymium magnet and Sr ferrite magnets
°H. Yamamoto[1], H. Fukunaga[2] ([1]Neoji-consul, [2]Nagasaki Univ.)

17aE-9 Analysis of Demagnetization Curves of Sr Ferrite Magnets
°T. Kawai[1], H. Yamamoto[2], M. Ohtake[1] ([1]Yokohama National Univ., [2]Neoji-consul)

17aE-10 Angular Dependences of Remanence in Sr-Ferrite and NdFeB Magnets and Their Analysis Using EBSD
°H. Fukunaga[1], H. Yamamoto[2], M. Nakano[1] ([1]Nagasaki Univ., [2]Neoji-consul)

17aE-11 Preparation of M-type ferrite thin film magnets by metalorganic-decomposition method
°K. Sasuga, Y. Yasukawa (Chiba Inst. Tech.)

17aE-12 Magnetic Properties of Magnesium Zinc Ferrite Film prepared by MOD Technique
°N. Adachi, T. Kondo (Nagoya Inst. Tech.)

17aE-13 Effect of post-annealing on uniaxial magnetic anisotropy in La-Co co-substituted $BaFe_{12}O_{19}$
°A. Mulyawan, T. Waki, Y. Tabata, H. Nakamura (Kyoto Univ.)

Sep. 17/Poster Room

Poster session Ⅱ

11:00 〜13:15 Chair: D. Hatanaka (NTT)

17aPS-1 eX-GL based ML analysis of topological magnetic structures under laser excitation
°N. Shimizu, R. Nagaoka, M. Taniwaki, K. Nishioka, Y. Machida, A. Foggiatto, M. Kotsugi (Tokyo Univ. Sci.)

17aPS-2 Analysis of magnetostriction distribution and magnetization reversal mechanism using micro-magnetic simulation
°T. Nozaki, T. Yamazaki, A. Foggiatto, M. Kotsugi (Tokyo Univ. Sci.)

17aPS-3 Persistent Homology-Based Descriptor of Skyrmion Lattice Systems
°M. Taniwaki[1, 2], T. B. Winkler[2, 3], J. Rothorl[2], R. Gruber[2], C. Mitsumata[4], M. Kotsugi[1], M. Klaui[2] ([1]Tokyo Univ. Sci., [2]JGU Mainz, [3]Radboud Univ. Nijmegen, [4]Univ. of Tsukuba)

17aPS-4 Plasmonic Enhancement of Spin Angular Momentum for Light-Induced Magnetization Control
°N. Ichiji, T. Ishida, I. Morichika, T. Tatsuma, S. Ashihara (Univ. of Tokyo)

17aPS-5 Crystallinity-dependent magnetic domain structure in Yttrium Iron Garnet single crystals
°T. Sato[1], X. Liu[2] ([1]Carlit, [2]Shinshu Univ.)

17aPS-6 First-principles calculations of noncollinear magnetic structures in antiferromagnetic manganese alloys
°Y. Kota (NIT, Fukushima Coll.)

17aPS-7 Anisotropic Exchange Stiffness of Perpendicularly Magnetized Co/Pt Multilayer Thin Films

°W. Won[1], Y. Sasaki[1], N. Kikuchi[2], G. Egawa[2], K. Masuda[1], Y. K. Takahashi[1,3], H. Suto[1]

([1]NIMS, [2]Akita Univ., [3]Tohoku Univ.)

17aPS-8 Synthesis of Rare-Earth Fluoride Nanocrystals via Thermal Decomposition of Complexes and Their Magneto-Optical Properties

°A. Kawashima[1], T. Miyawaki[1], T. Ishida[2], T. Tatsuma[2], S. Kohtani[1] ([1]Hyogo Med. Univ., [2]IIS, the Univ. of Tokyo)

17aPS-9 Growth of FeO thin films by reactive RF magnetron sputtering

°R. Waseda, H. Yanagihara, E. Kita (Univ. of Tsukuba)

17aPS-10 In-Plane Magnetic Anisotropy in (110)-Oriented FeAlSi Thin Films

°D. Amiie[1], T. Hojo[1], M. Oogane[1,2] ([1]Graduate School of Engineering, Tohoku Univ., [2]Tohoku Univ. CSIS)

17aPS-11 Characterization of magneto-crystalline anisotropy constant K_1 of Co-based Heusler alloy $Co_2FeAl_xSi_{1-x}$ thin film

°T. Hojo, M. Tsunoda, M. Oogane (Graduate School of Engineering, Tohoku Univ.)

17aPS-12 An investigation on AC loss estimation method based on Lasso regression for toroidal dust cores

°S. Matsumoto, S. Muroga, Y. Kodama, S. Ajia, Y. Endo (Tohoku Univ.)

17aPS-13 Influence of Impact Acceleration on the Output Characteristic of Oblique Magnetic Field Assisted Vibration Powered Generator

°K. Imamura, Y. Nakamura, S. Kamiya, M. Ohtake (Yokohama National Univ.)

17aPS-14 Crystallographic and magnetic properties of Ga substituted Yttrium Iron Garnet single crystal

°T. Sato[1], X. Liu[2] ([1]Carlit, [2]Shinshu Univ.)

17aPS-15 Establishing the relationship between Domain Wall Pinning and Anomalous Eddy Current Losses via Multiscale Magnetic Simulations

°Y. Shima[1], T. Yamazaki[1], S. Tamaru[2], C. Mitsumata[3], A. Foggiatto[1], M. Kotsugi[1]

([1]Tokyo Univ. Sci., [2]AIST, [3]Univ. of Tsukuba)

17aPS-16 Active Seat Suspension for Ultra Compact Vehicle (Basic Study on Thrust Characteristics of Linear Motors)

°S. Kasamatsu[1], M. Ochiai[1], D. Wang[1], R. Katsumata[1], I. Kobayashi[1], W. Wu[1], J. Kuroda[1], A. Endo[2], K. Ikeda[3], T. Kato[4], K. Ogawa[5], T. Narita[1], H. Kato[1] ([1]Tokai Univ., [2]FIT, [3]Hokkaido Univ. of Sci., [4]Tokyo Univ. Tech., [5]Aichi Univ. of Tech.)

17aPS-17 Development of Linear Actuators for High-Speed Reciprocating Motion (Fundamental consideration on the Effect of Stator Shape on Thrust Characteristics)

°R. Ono, J. Kuroda, S. Kasamatsu, W. Wu, I. Kobayashi, T. Narita, H. Kato (Tokai Univ.)

17aPS-18 Ride Comfort Control in Ultra-Compact Mobility Systems Using Linear Motors (Fundamental Consideration on Biological Information of Occupants under Vibration from Road Surface)

°M. Ochiai[1], R. Katsumata[1], D. Wang[1], S. Kasamatsu[1], W. Wu[1], I. Kobayashi[1], J. Kuroda[1], A. Endo[2], K. Ikeda[3], T. Narita[1], H. Kato[1] ([1]Tokai Univ., [2]FIT, [3]Hokkaido Univ. Sci.)

17aPS-19 Improvement of Passenger's Comfortability with Active Seat Suspension for Ultra-Compact Mobility Using Masking (Experimental Consideration on Heart Rate Variability)

°R. Katsumata[1], D. Wang[1], M. Ochiai[1], S. Kasamatsu[1], W. Wu[1], I. Kobayashi[1], J. Kuroda[1], A. Endo[2], K. Ikeda[3], H. Kato[1], T. Narita[1] ([1]Tokai Univ., [2]FIT, [3]Hokkaido Univ. Sci.)

17aPS-20 Magnetic droplet floating movement control using two pulse controlled electromagnets

°T. Nakamura, H. Yanagibashi, D. Oyama, J. Hirama (Kanazawa Inst. Tech.)

17aPS-21 Fabrication of Micro-array TMR Sensors for MEMS Sensor Applications

°J. Ito[1], T. Hojo[1], T. Nakano[1,2], H. Wagatsuma[1,3], K. Fujiwara[3], M. Oogane[1,4]

([1]Tohoku Univ., [2]Tohoku Univ. Green X-tech, [3]Spin Sensing Factory Corp., [4]Tohoku Univ. CSIS)

17aPS-22 Ferromagnetic resonance excitation and electromotive force generation by multiple radio frequency magnetic fields with different frequencies

°K. Tsujii, R. Fujii, Y. Ueda, E. Shikoh (Osaka Metropolitan Univ.)

17aPS-23 Magnetization Distribution Estimation of Thin Ferrite Magnet—3D-Magnetization Distribution of Beginner's Mark—

°K. Kobayashi, Y. Okamoto (Hosei Univ.)

17aPS-24 Study on Coercive Force Estimation Method Using Magnetic Flux Density around Permanent Magnet

°K. Takano, Y. Okamoto (Hosei Univ.)

17aPS-25 Development of Fast Magnetization Estimator for Permanent Magnet Using Deep Neural Networks Based on Training Data Generated by Heisenberg Model

°Y. Hirose, S. Nakanishi, Y. Okamoto (Hosei University)

17aPS-26 Evaluation of magnetic properties under compressive stress using small test pieces of electrical steel sheet and application to motor analysis

°T. Abuyama, S. Noguchi (Kobelco Research Inst.)

17aPS-27 Estimating parameters from magnetic domain images with different imaging scales using machine learning II

°S. Hashimoto[1], Y. Nakatani[2], H. Awano[1], K. Tanabe[1] ([1]Toyota Tech. Inst., [2]UEC)

17aPS-28 Small- and wide-angle neutron scattering instrument BL15 TAIKAN at J-PARC

°K. Hiroi[1], K. Ohishi[2], Y. Kawamura[2], S. Takata[1] ([1]JAEA, [2]CROSS)

17aPS-29 Relationship between Permanent Magnet Configuration and Output Characteristic in Perpendicular Magnetic Field Assisted Impact Powered Generator

°S. Kamiya, K. Imamura, Y. Nakamura, M. Ohtake (Yokohama National Univ.)

17aPS-30 Faraday magnetometer using a magnetic field source composed of permanent magnets

°S. Yamamoto[1], M. Jimbo[1], K. Nishimura[2], Y. Fujiwara[1] ([1]Mie Univ., [2]NIT, Suzuka Coll.)

17aPS-31 Pulse voltage characteristics of NiFe wire under tension

°T. Ito, M. Yanagida, M. Jimbo, Y. Fujiwara (Mie Univ.)

17aPS-32 Study on Spatial Resolution and Sensitivity of a Low-Power Magnetic Particle Imaging System

°R. Okamura, Y. Fujii, S. Seino, T. Nakagawa (Univ. of Osaka)

17aPS-33 A Novel Permanent Magnet Design with Variable Magnetic Field for Hyperpolarized MRI Applications

°R. Kobayashi, Y. Takakusagi (QST)

Sep. 17/Nanka Memorial Hall

Fellow lecture **13:30 〜14:30** Chair: Y. Okada (MITSUBISHI)

17FL-1 40 years with soft magnetic thin films

°M. Jimbo (Toyohashi Univ. Tech., Mie Univ.)

17FL-2 Research and development of rare-earth magnet materials with high iron concentration

°S. Sakurada (Toshiba)

Sep. 18/Room A

Magnetic particle imaging/Sensing **9:00 〜10:30** Chair: A. Kuwahata (Tohoku Univ.)

18aA-1 Phase-contrast magnetic particle imaging under extremely low field gradient for brain diagnostics

°S. B. Trisnanto[1], T. Kasajima[2], T. Shibuya[2], Y. Takemura[3] ([1]Saitama Med. Univ., [2]TDK, [3]Yokohama National Univ.)

18aA-2 Cancelation of excitation magnetic field for magnetic sensor in magnetic particle imaging

°K. Suzaki[1], S. B. Trisnanto[2], T. Kasajima[3], T. Shibuya[3], Y. Takemura[1]
([1]Yokohama National Univ., [2]TDK, [3]Saitama Med Univ.)

18aA-3 Magnetic sensor for detecting magnetic nanoparticles assumed in sentinel lymph node

°A. Tanaka[1], S. B. Trisnanto[2], T. Kasajima[3], T. Shibuya[3], Y. Takemura[1]
([1]Yokohama National Univ., [2]Saitama Medical Univ., [3]TDK)

18aA-4 Investigation of Drying Techniques for PEGylated Iron Oxide Nanoparticles Intended for Intranasal Administration

°S. Seino[1], A. Tanaka[2], T. Furubayashi[2], T. Sakane[2], T. Kiwa[3], M. Washino[4], T. Nakagawa[1]
([1]Univ. of Osaka, [2]Kobe Pharm. Univ., [3]Okayama Univ., [4]MITSUBISHI)

18aA-5 Sensitivity and spatial localization for tumor tissue characterization by measuring magnetic relaxation of magnetic nanoparticles

°C. Suzuki[1], R. Harada[1], M. Futagawa[1], Y. Takemura[2], K. Shimizu[3], S. Ota[1]
([1]Shizuoka Univ., [2]Yokohama National Univ., [3]HUSM)

18aA-6 Magnetization measurement of intracellular magnetic nanoparticles under alternating magnetic field

°K. Yamashita[1], Y. Kurashina[2], M. Futagawa[1], Y. Takemura[3], S. Ota[1] ([1]Shizuoka Univ., [2]TUAT, [3]Yokohama National Univ.)

Biomagnetics/Medical technique **10:45 〜11:45** Chair: S. Seino (Univ. of Osaka)

18aA-7 Non-Invasive Cell Measurement Technology Using Magneto-Impedance Sensors
°J. Ma, N. Ohta, T. Ozaki, S. Moribe, H. Kikuta, Y. Hirata, M. Hirano (TOYOTA Central R&D Labs.)

18aA-8 Dependence of Source Localization Accuracy of Optically Pumped Magnetometer Magnetoencephalography System on the Number of Sensors
°D. Oyama[1], Y. Adachi[1], H. Zaatiti[2] ([1]Kanazawa Inst. Tech., [2]NYU Abu Dhabi)

18aA-9 Development of Non-magnetic modification laser welding for Magnetic Attachments
T. Mitsunaga, E. Kikuchi, °Y. Honkura (Magnedesign)

18aA-10 Reducing MRI Artifacts size by thin type Magnetic Dental Attachments
T. Mitsunaga, E. Kikuchi, °Y. Honkura (Magnedesign)

Magnetic sensor Ⅰ **13:00 〜14:30** Chair: T. Kubota (Tohoku Univ.)

18pA-1 Investigation on the mechanical reversibility in magnetic properties of GdFeCo ferrimagnetic alloy thin film stacked on flexible substrate
°Y. Fujii, H. Yoshikawa, Y. Kasatani, A. Tsukamoto (Nihon Univ.)

18pA-2 Pulse Width Modulation GMR sensors utilizing domain wall displacement technique
°K. Komuro, A. Kawamura, D. Oshima, T. Kato (Nagoya Univ.)

18pA-3 Highly Sensitive Magnetic Sensor Using Superparamagnetic Tunnel Junctions
°R. Hirama[1], T. Kubota[2], M. Endo[2], K. Fujiwara[3], S. Sasaki[4], Y. Higo[4], L. Sakai[4], M. Hosomi[4], M. Oogane[1]
([1]Department of Applied Physics, Graduate School of Engineering,
[2]Department of Advanced Spintronics Medical Engineering, Graduate School of Engineering, Tohoku University,
[3]Spin Sensing Factory Corporation, [4]Sony Semiconductor Solutions)

18pA-4 Thin-film magnetoimpedance properties with only Joule heating
S. Kawasaki, Z. Wang, R. Aihara, °H. Kikuchi (Iwate Univ.)

18pA-5 Magnetoresistive force sensor using a magnetic fluid droplet
°T. Yamamoto, T. Ichinose, H. Yasuga, Y. Okamoto, Y. Takei, T. Nozaki, S. Tamaru, K. Yakushiji, H. Kubota, S. Yuasa (AIST)

18pA-6 Development of GSR sensor excited by GHz pulse current
°Y. Honkura, S. Honkura, M. Hikishima (Magnedesign)

Magnetic sensor Ⅱ **14:45 〜16:15** Chair: Y. Kasatani (Nihon Univ.)

18pA-7 Development of Stainless-Steel Magnets for Magnetic Dental Attachments
°Y. Honkura, S. Honkura, C. Mishima, E. Kikuchi (Magnedesign)

18pA-8 Development of GSR element with narrow pitch coil
°K. Kudo, K. Nakajima, Y. Honkura (Magnedesign)

18pA-9 The development of GSR element formed directly on ASIC substrate
°K. Kudo, K. Nakajima, Y. Honkura (Magnedesign)

18pA-10 Development of XY axis type GSR element formed directly on the ASIC substrate
°K. Kudo, K. Nakajima, S. Honkura, Y. Honkura (Magnedesign)

18pA-11 Development of a current sensor using GSR sensors
°M. Hikishima, S. Honkura, Y. Honkura (Magnedesign)

18pA-12 Development of a gradio-type GSR Sensor
°M. Hikishima, S. Honkura, Y. Honkura (Magnedesign)

Sep. 18/Room B

Magnetization dynamics **9:00 〜10:30** Chair: M. Tsunoda (Tohoku Univ.)

18aB-1 Reducing critical current for spin-transfer-torque-induced magnetization reversal by employing $Co_2FeGa_{0.5}Ge_{0.5}$ Heusler alloy with low damping and high spin polarization
V. Barwal, °H. Suto, Y. Sakuraba (NIMS)

18aB-2 Electric-field modulation of magnetic damping constant in a $Co_2FeSi/LiNbO_3$ multiferroic heterostructure

°S. Yamada[1, 2], T. Usami[1, 2], S. Komori[3], Y. Miura[1, 4, 5], K. Yamanoi[6, 7], Y. Nozaki[6, 7], T. Taniyama[3], K. Hamaya[1, 2]

([1]CSRN The Univ. of Osaka, [2]OTRI-Spin, The Univ. of Osaka, [3]Dept. of Phys. Nagoya Univ., [4]Kyoto Inst. of Tech., [5]NIMS, [6]Dept. of Phys., Keio Univ., [7]Keio Spintronics Center)

18aB-3 Magnetization dynamics modulated by spin currents in α-Fe_2O_3/Pt multilayers

°T. Hattori[1], K. Kawagita[2], K. Yabusita[2], K. Tada[1], K. Hayashi[1], S. Iihama[1], Y. Ishikawa[2], T. Moriyama[1]

([1]Nagoya Univ., [2]Univ. of Fukui)

18aB-4 Modulation of spin dynamics in Fe thin films induced by adjacent Co/Ni multilayers with perpendicular magnetic anisotropy

°S. Baek, T. Izumi, S. Komori, T. Taniyama (Nagoya Univ.)

18aB-5 The effect of non-uniform of magnetic properties of perpendicular magnetization wires on current-driven domain wall motion

°S. Kashiwagi, T. Tanaka (Kyushu Univ.)

18aB-6 Circularly polarized light-induced magnetization reversal in Bi-substituted rare-earth iron garnet thin films

°R. Asatani[1], S. Suzuki[1], M. Md Abdullah Al[1], H. Sakaguchi[1], S. Isogami[2], T. Ishibashi[1] ([1]Nagaoka Univ. Tech., [2]NIMS)

Magnetoresistance effect **10:45 〜 12:30** Chair: S. Yamada (Univ. of Osaka)

18aB-7 NiFeB ferromagnetic electrodes for a free layer of tunnel-magnetoresistance sensor

°S. Takaki, M. Oogane, T. Nakano (Tohoku Univ.)

18aB-8 Bias dependence of the tunnel magnetoresistance oscillation effect

T. Scheike, Z. Wen, K. Masuda, Y. Miura, S. Kasai, S. Mitani, °H. Sukegawa (NIMS)

18aB-9 Theory for the TMR oscillation: microscopic mechanism and considerations on experimental observations

°K. Masuda[1], T. Scheike[1], H. Sukegawa[1], Y. Kozuka[1], S. Mitani[1], Y. Miura[1, 2] ([1]NIMS, [2]Kyoto Inst. of Tech)

18aB-10 Simulation study on the damping dependence of write voltage in voltage-controlled MRAM

°S. Miyazaki[1, 2], H. Arai[1], H. Imamura[1, 2], Y. Yasukawa[2] ([1]AIST, [2]Chiba Inst. Tech.)

18aB-11 Magnetic damping constant and anisotropic magnetoresistance effect of $Co_{2-x}Fe_{1+x}Al$ epitaxial thin films prepared by MBE

Y. Kagamiya[1], S. Kokado[2], R. Tufan[1], M. Shirai[1], M. Oogane[1], °M. Tsunoda[1] ([1]Tohoku Univ., [2]Shizuoka Univ.)

18aB-12 Anisotropic magnetoresistance in half-metallic ferromagnets Co_2MnZ (Z = Si, Ge, Sn)

°G. Mimuro[1], T. Tanaka[1], S. Kokado[2], T. Kubota[1], R. Y. Umetsu[1] ([1]Tohoku Univ., [2]Shizuoka Univ.)

18aB-13 Off-stoichiometric Co-Mn-Al thin films exhibiting giant anomalous Hall effect

M. Krishnan M., R. Toyama, °T. Nakatani, H. Suto, N. Suwannaharn, T. Sasaki, Y. Sakuraba (NIMS)

Symposium "Emerging Unconventional Computing Technologies with Magnetic Garnets"

Chief Organizer: T. Ishibashi (Nagaoka Univ. Tech.)

13:30 〜 15:15 Chair: T. Ishibashi (Nagaoka Univ. Tech.)

18pB-1 [Invited]Physical reservoir computing: Status and perspective from the study on spin-wave device

°R. Nakane (Univ. of Tokyo)

18pB-2 [Invited]Numerical simulation of excitation current density and distance dependence of local magnetization dynamics excited by spin-orbit torque

°T. Koda[1], A. Nakagawa[2], S. Muroga[3], Y. Endo[3], T. Ishibashi[4]

([1]NIT. Tokuyama Col., [2]Oshima Nat. Coll. Tech, [3]Tohoku Univ., [4]Nagaoka Univ. Tech.)

18pB-3 [Invited]Development of Multi-input Logic Devices and Magnonic Crystal Waveguides Using Magnetic Garnets

°T. Goto (Tohoku Univ.)

15:30 〜 17:00 Chair: H. Nomura (Tohoku Univ.)

18pB-4 [Invited]Physical reservoir computing using magnetic garnet spin glass (fluctuation) and stochastic resonance

°H. Tabata (Univ. of Tokyo)

18pB-5 [Invited]Photonic spiking neural network with magneto-optical conversions

°Y. Shoji (Science Tokyo)

18pB-6 [Invited]Development of magneto-optical diffractive deep neural network device

°H. Sakaguchi[1], K. Watanabe[1], S. Sumi[2], H. Awano[2], H. Nonaka[3], C. Z. Fatima[1], T. Ishibashi[1]
([1]Nagaoka Univ. Tech., [2]Toyota Tech. Inst., [3]Aichi Inst. Tech.)

Sep. 18/Room C

Amorphous・Nano crystals **9:15 〜10:45** Chair: S. Saito (Tohoku Univ.)

18aC-1 Complex Permeability of Nanocrystalline Alloy by Heat Treatment in Magnetic Field

°H. Sakuma[1], T. Kobayashi[2], S. Yazawa[2], H. Watanabe[1] ([1]Tohsei, [2]Nihon Univ.)

18aC-2 High frequency magnetic properties of submicron soft magnetic particles with 3D magnetic vortex domain structure

°K. Wakabayashi[1], S. Muroga[1], T. Miyazaki[1], T. Koda[2], Y. Endo[1] ([1]Tohoku Univ., [2]NIT, Tokuyama College)

18aC-3 Fabrication of magnetic cores composed of submicron-sized Fe-B amorphous alloy powder

°S. Ajia, C. Masumoto, Y. Kodama, T. Miyazaki, S. Muroga, Y. Endo (Tohoku Univ.)

18aC-4 Nanocrystallization of Fe-B-N Alloy Films by Annealing and Characterization of their Magnetostrictive Properties

°N. Isogai, K. Imamura, T. Kawai, M. Ohtake (Yokohama National Univ.)

18aC-5 Fe-B-Cu nanocrystalline thin films for magnetic flux concentrators

°Y. Wang, T. Miyaura, T. Nakano, M. Oogane (Tohoku Univ.)

18aC-6 Amorphous Co-Zr-Ta alloy thin films for tunnel-magnetoresistance sensor

°T. Nagareda, T. Nakano, M. Oogane (Tohoku Univ.)

Rare earth magnets **11:00 〜12:00** Chair: T. Hasegawa (Akita Univ.)

18aC-7 Tuning Magnetocrystalline Anisotropy in $SmFe_9$ Through Co Substitution: A Route to Tailored Uniaxial Anisotropy

°H. Singh[1], A. R. Dilipan[2], Y. K. Takahashi[2, 3], S. Thota[1] ([1]Indian Inst. Tech. Guwahati, [2]NIMS, [3]Tohoku Univ.)

18aC-8 Mechanism of continuous intergranular phase formation in $Sm(Fe,Ti,V)_{12}$-based sintered magnets by post-sinter annealing

°J. Zhang, X. Tang, T. Ohkubo, K. Hono, H. Sepehri-Amin (NIMS)

18aC-9 Analysis of the magnetization mechanism of Nd-Fe-B bulk magnets

°H. Komura, A. Yamane, K. Hanashima, T. Suzuki, Y. Okawara (MinebeaMitumi)

18aC-10 Prediction of transfer ratio in batch fine magnetic pattern transfer to Nd-Fe-B magnets

°K. Nagai[1], M. Hayase[1], T. Shinshi[2] ([1]Tokyo Univ. Sci., [2]Science Tokyo)

Magnetic recording **13:30 〜15:15** Chair: N. Kikuchi (Akita Univ.)

18pC-1 Thickness dependence of preferred orientation and surface morphology in $L1_0$-FePt with various alloying annealing profiles

°K. Daike, H. Yoshikawa, A. Tsukamoto (Nihon Univ.)

18pC-2 Microstructure and magnetic properties of $L1_0$-FePt-X (X=C and BN) on (Mg,Ti)O underlayer for heat assisted magnetic recording media

°A. Dilipan[1], H. Sepehri-Amin[1], I. Suzuki[1], Y. Takahashi[1, 2]
([1]NIMS, [2]Research Institute of Electrical Communications, Tohoku University)

18pC-3 Microstructure and magnetic properties of FePt-C/Mo-C/FePt-C granular films

°S. Helen[1, 2], A. R. Dilipan[1], D. Ogawa[1], Y. Sasaki[1], S. Kasai[1], Y. K. Takahashi[1, 2, 3] ([1]NIMS, [2]Univ. of Tsukuba, [3]Tohoku Univ.)

18pC-4 Effect of Thermal Conductivity in Heat Sink Layer on Adjacent Track Temperature in 3D Heat-Assisted Magnetic Recording

°S. Uchida (Kogakuin Univ.)

18pC-5 Demonstration of the thermal spin-torque assisted heat-assisted magnetic recording and prospects

°S. Isogami[1], Y. Sasaki[1], F. Yichun[2], Y. Kubota[2], J. Gadbois[2], K. Hono[1], Y. Takahashi[1] ([1]NIMS, [2]Seagate Technology)

18pC-6 Temperature dependence of magnetic anisotropy field and grain size in three-dimensional heat-assisted magnetic recording with a three-layer BPM

°K. Sugawara, F. Akagi (Kogakuin Univ.)

18pC-7 Cubic Anisotropy Media for Microwave Assisted Magnetic Recording

°S. Greaves[1], Y. Kanai[2] ([1]Tohoku Univ., [2]Niigata Inst. Tech.)

Sep. 18/Room D

Symposium "Soft Magnetic Applications for Green Energy -Advanced Motors and Power Electronics-"

Chief Organizer: S. Okamoto (Tohoku Univ.)

9:00 〜9:45 Chair: M. Yamaguchi (Tohoku Univ.)

18aD-1 [Invited, IEEE Magn. Soc. DL Talk]Artificial Intelligence-Assisted Design and Fault Diagnosis of Electric Motors for Green Transportation

°M. Hsieh (National Chen Kung Univ.)

10:00 〜11:45 Chair: T. Sato (Shinshu Univ.)

18aD-2 [Invited]Development of an Automatic Design Algorithm via Deep Generative Models and Topology Optimization

°H. Sasaki (Hosei univ)

18aD-3 [Invited]Design and Development of High-Efficiency Industrial Motors using Low-loss Magnetic Materials

°Y. Enomoto, H. Tokoi, R. Takahata (Hitachi)

18aD-4 [Invited]High-performance techniques for dual three-phase PMSMs

°Y. Miyama (Mitsubishi Electric)

18aD-5 Performance Comparison of Interior Permanent Magnet Synchronous Motors with Amorphous Alloy and Silicon Steel Stator Core

°I. Cirozlar, K. Nakamura (Tohoku Univ.)

12:45 〜15:00 Chair: S. Okamoto (Tohoku Univ.)

18pD-1 [Invited]Present and Future of Soft Magnetic Materials and Components —Provisional Summary of Japanese INNOPEL power electronics roadmap—

°M. Yamaguchi[1, 2], Y. Endo[2] ([1]INNOPEL, [2]Tohoku Univ.)

18pD-2 [Invited]Prospects and Challenges for High-Efficiency Switching Power Supplies Using Wide Bandgap Power Semiconductor Devices

°T. Ibuchi (Univ. of Osaka)

18pD-3 [Invited]Loss evaluation for large size Inductor under power electronics converter excitations

°H. Matsumori (Nagoya Inst. Tech.)

18pD-4 SPICE Modeling of Power Inductor under Pulse-Width Modulation Excitation

°Y. Sato[1], Y. Saito[2], K. Wada[2] ([1]Aoyama-Gakuin Univ., [2]Tokyo Metropolitan Univ.)

18pD-5 Core loss measurements and loss separations of power inductor under triangular excitation

°Y. Uehara[1], Y. Sato[2], S. Okamoto[3], Y. Taniguchi[3], H. Tsukahara[3], N. Ono[3]

([1]Magnetic Device Lab., [2]Aoyama-Gakuin Univ., [3]Tohoku Univ.)

18pD-6 Cross terms of harmonics in iron loss under multi-frequency magnetic field excitation

°T. Taniguchi[1], Y. Uehara[2], N. Ono[1], H. Tsukahara[1], Y. Sato[3], S. Okamoto[1, 4]

([1]Tohoku Univ., [2]Magnetic Device Laboratory Ltd., [3]Aoyama-Gakuin Univ., [4]NIMS)

15:15 〜17:15 Chair: T. Taniguchi (Tohoku Univ.)

18pD-7 [Invited]Development of anisotropic soft magnetic cores for power transformer and inductor

°T. Sato, T. Mizuno (Shinshu Univ.)

18pD-8 [Invited]Suggestion of guidelines for reducing core loss of soft magnetic composite cores by quantitative analysis of factors affecting coercive field.

°T. Takashita[1], T. Hiratani[1], N. Nakamura[2] ([1]JFE Steel, [2]JFE Precision)

18pD-9 Effect of Punching on Iron Loss of Silicon-gradient Electrical Steel

°S. Yoshizaki, Y. Zaizen, T. Okubo, Y. Oda (JFE Steel)

18pD-10 Origin of realizing perpendicular magnetic anisotropy in Fe-enrich soft magnetic ribbons and its influence on core loss

°H. Sepehri-Amin[1, 2], R. Gautam[1], N. Kulesh[1], S. Hiramoto[2], N. Ono[2], T. Taniguchi[2], S. Kobayashi[3], T. Ogasawara[4], H. Mamiya[1], T. Ohkubo[1], S. Okamoto[1, 2] ([1]NIMS, [2]Tohoku University, [3]JASRI/SPring-8, [4]AIST)

18pD-11 Deep Magnetic Structural Analyses within Soft Magnetic Materials Using Neutrons

°H. Mamiya[1], T. Kumada[2], T. Shinohara[2], R. Gautam[1], H. SEPEHRI AMIN[1] ([1]NIMS, [2]JAEA)

18pD-12 Micromagnetic simulation considering magnetostriction effects in nanocrystalline soft magnetic materials
°H. Tsukahara[1,3], K. Suzuki[2], A. Kato[4], K. Ono[3], S. Okamoto[1,4] ([1]Tohoku Univ., [2]Monash Univ., [3]Univ. of Osaka, [4]NIMS)

Sep. 18/Room E

Domain wall of thin films **9:00 〜10:45** Chair: K. Yamada (Science Tokyo)

18aE-1 Spin current measurement using ST-FMR in epitaxial multilayer Fe/Ru/Co
°Y. Suzuki, T. Hattori, K. Hayashi, S. Iihama, T. Moriyama (Nagoya Univ.)

18aE-2 Relationship between FMR Line Widths and Magnetostriction in Fe-Co/GaAs(001) thin films
S. Umetsu[1], Y. Takahashi[1], M. Ohtake[2], °N. Inaba[1] ([1]Yamagata Univ., [2]Yokohama National Univ.)

18aE-3 Temperature dependent x-ray magnetic circular dichroism of all-optical magnetization switching Heusler compounds
°P. D. Bentley[1], S. Li[1], T. Ueno[1,2], R. Itakura[1], K. Amemiya[3], S. Sakai[1] ([1]QST, [2]JASRI/SPring-8, [3]KEK)

18aE-4 Composition and Layer Thickness Dependence of AMR Ratio in CoPt Multilayer Nanowires
°R. Kawana[1], N. Oguchi[1], D. Oshima[2], M. Saito[3], T. Homma[3], T. Kato[2], T. Ono[4], M. Shima[1], K. Yamada[1]
([1]Gifu Univ., [2]Nagoya Univ., [3]Waseda Univ., [4]Kyoto Univ.)

18aE-5 Micromagnetic Simulation-Based Evaluation of the Exchange Stiffness Constant in Magnetic Garnet
°T. Koguchi[1,2], T. Watanabe[3], H. Miyashita[1], K. Ishiyama[1], Y. Nakamura[2], M. Inoue[1], M. C. Onbasli[4], T. Goto[1]
([1]Tohoku Univ. RIEC, [2]Toyohashi Univ. Tech., [3]ShinEtsu, [4]Koc Univ.)

18aE-6 Current-induced domain wall motion in Gd-Fe wires with vertical composition gradient
°J. Mizuno, H. Awano, K. Tanabe (Toyota Tech. Inst.)

18aE-7 Fabrication of a three-dimensional magnetic wires using nanoimprinting and magnetic domain wall motion
°Y. Yasuda[1], Y. Kurokawa[2], H. Awano[1], K. Tanabe[1] ([1]Toyota Tech. Inst., [2]Kyushu Univ.)

Growth & magnetism of thin films Ⅰ **11:00 〜12:30** Chair: S. Yoshimura (Akita Univ.)

18aE-8 Electrodeposited CoPt magnetic wall layers suitable for vertical domain wall motion memory
° K. Shimizu[1], D. Araki[1], Y. Sonobe[2], Y. Takahashi[3,4], H. Yanagihara[5], S. Honda[6], T. Ono[7], T. Homma[1,2]
([1]Waseda Univ., [2]Waseda Res. Org. for Nano & Life Innovation, [3]NIMS, [4]Tohoku Univ.,
[5]Univ. of Tsukuba, [6]Kansai Univ., [7]Kyoto Univ.)

18aE-9 Improvement of perpendicular magnetic anisotropy in PdSb-doped $L1_0$-FePt thin films
°Y. Arai, K. Kamishima, K. Kakizaki (Saitama Univ.)

18aE-10 Development of non-magnetic amorphous alloy films with high crystallization resistance using thermodynamic calculations
°D. Isurugi[1], H. Yakabe[2], D. Kato[2], H. Ogino[2], T. Ogawa[1], S. Saito[1] ([1]Tohoku Univ., [2]Proterial)

18aE-11 Influences of $Gd_3Ga_5O_{12}$ Substrate Orientation on the Growth and the Structural and Magnetic Properties of $Y_3Fe_5O_{12}$ Single-Crystal Thin Films
°R. Yokoyama, K. Imamura, K. Sekiguchi, M. Ohtake (Yokohama National Univ.)

18aE-12 Fabrication of epitaxial $[Ru/Co/Pt]_n$ synthetic antiferromagnets and its magnetic domain structures
°Y. Hisada, S. Komori, T. Taniyama (Nagoya Univ.)

18aE-13 Investigation on local magnetism and transport properties for hexagonal Fe_3Sn and Fe_3Sn_2 alloy films
°M. Tanaka, T. Sugimoto, F. Itoh, K. Mibu (Nagoya Inst. Tech.)

Magnetic anisotropy of thin films **13:30 〜15:00** Chair: K. Hayashi (Nagoya Univ.)

18pE-1 Magnetization transfer method by electric field in multiferroic/metallic magnetic laminated films and the proposal of new operating methods to realize high-performance magnetic devices using this method
°S. Yoshimura (Akita Univ.)

18pE-2 Effect of element substitution at the Fe site on magnetic and dielectric properties in $BiFeO_3$-based ferromagnetic and ferroelectric thin films
°D. Kanari, S. S. Das, Y. Suzuki, T. Ozeki, G. Egawa, S. Yoshimura (Akita Univ.)

18pE-3 Fabrication of HCP-Co based thin films with perpendicular magnetization, low saturation field, and high saturation magnetization for new magnetic field sensors with high sensitivity, high signal output, and low power consumption
°S. Tanaka, G. Egawa, S. Yoshimura (Akita Univ.)

18pE-4 Fabrication of Co/Pd-based perpendicular magnetic multilayer with giant magneto-optical Kerr effect and low saturation field for high-brightness, wide-view, and low-power spatial light modulators
°R. Takiura, S. Tanaka, G. Egawa, S. Yoshimura (Akita Univ.)

18pE-5 Examination of various single crystal substrates and underlayers for high-quality α''-$Fe_{16}N_2$ thin films, (001) orientation, and perpendicular magnetization
°Y. Yoshida, I. Katsuyama, G. Egawa, S. Yoshimura (Akita Univ.)

18pE-6 Influence of hydrogen gas exposure on perpendicular magnetic properties of CoPt thin films
°H. Yamane[1], H. Shibata[1], T. Hasegawa[2] ([1]AITC, [2]Akita Univ.)

Growth & magnetism of thin films Ⅱ **15:15 〜16:45** Chair: S. Isogami (NIMS)

18pE-7 Composition dependence of the magneto-transport properties in ferromagnetic high-entropy alloys
°K. Z. Suzuki[1], H. Isshiki[1, 3], K. Takanashi[1, 2] ([1]JAEA, [2]Tohoku Univ., [3]Univ. of Tokyo)

18pE-8 Low-temperature formation of perpendicularly magnetized Mn-Ga alloy/Ge(001) heterostructures
°M. Nishioka[1], T. Kakutani[1], T. Usami[2, 3], S. Yamada[1, 2, 3], T. Oguchi[2, 3], K. Hamaya[1, 2, 3]
([1]CSES, The Univ. of Osaka, [2]OTRI-Spin, The Univ. of Osaka, [3]CSRN, The Univ. of Osaka)

18pE-9 Molecular beam epitaxy of compensated ferrimagnetic Mn_3Al alloy films
°T. Kakutani[1], M. Nishioka[1], S. Yamada[1, 2, 3], Y. Miura[2, 4, 5], K. Hamaya[1, 2, 3]
([1]GSES, The Univ. of Osaka, [2]CSRN, The Univ. of Osaka, [3]OTRI-Spin, The Univ. of Osaka, [4]Kyoto Inst. of Tech, [5]NIMS)

18pE-10 Reduction of antiphase boundary density of spinel ferrite thin films by oxidation annealing
°K. Takeo, E. Kita, H. Yanagihara (Univ. of Tsukuba)

18pE-11 CoSn kagome metal thin films exhibiting anisotropic electric transport
°T. Nakatani, N. Suwannaharn, T. Sasaki (NIMS)

18pE-12 Uniformity of Thulium Iron Garnet Film Grown by Radio-Frequency Magnetron Sputtering
°N. Yamashita[1], R. Ngaloy[2], Y. Kurokawa[1], H. Yuasa[1], S. P. Dash[2] ([1]Kyushu Univ., [2]Chalmers Univeristy of Technology)

Sep. 19/Room A

High-frequency magnetic properties **9:00 〜10:15** Chair: Y. Endo (Tohoku Univ.)

19aA-1 EMI Shielding Effect for Amorphous-FeSiBNb/ Cu Multilayer
°D. Kato[1], H. Yakabe[1], A. Kikitsu[2], S. Shirotori[2], S. Saito[3] ([1]Proterial, [2]Toshiba, [3]Tohoku Univ.)

19aA-2 Magnetic Field Detection Using a Slit-patterned High-Frequency Driven Thin-Film Magnetic Sensor with Carrier-suppression Circuit
°N. Tazawa, R. Suzuki, J. Honda, L. Tonthat, H. Aoki, A. Kuwahata, S. Yabukami (Tohoku Univ.)

19aA-3 In-Line Permeability Measurement of Thick Samples Using a Microstrip Line-Type Probe
°Y. Imai[1], K. Okita[2], S. Yabukami[1, 2] ([1]Tohoku Univ., [2]Tohoku-TMIT)

19aA-4 High-Sensitivity Permeability Detection by Direct Current Injection into Magnetic Particles
°A. Mashiko[1], L. Tonthat[1], A. Kuwahata[1], S. Yabukami[1], N. Kobayashi[2], S. Sugimoto[1] ([1]Tohoku Univ., [2]DENJIKEN)

19aA-5 Analysis of Amplitude Dependence of High Frequency Iron Loss of Ni-Zn Ferrite in MHz Range
°H. Tanaka, T. Mannen, T. Isobe, E. Kita, H. Yanagihara (Univ. of Tsukuba)

Magnetic imaging **10:30 〜12:00** Chair: H. Yoshikawa (Nihon Univ.)

19aA-6 *In-situ* observation of Particles deposition process on stacked magnetic filters during High Gradient Magnetic Separation
°N. Hirota[1], M. Suda[2], T. Ito[2], T. Ando[2] ([1]NIMS, [2]Nihon Univ.)

19aA-7 Development of alternating magnetic force microscopy for microwave imaging
°R. Abe, M. Makarova, N. Kikuchi, H. Saito (Akita Univ.)

19aA-8 Microwave imaging of hexaferrite magnetic nanoparticles using Alternating Magnetic Force Microscopy
°M. V. Makarova[1], R. Abe[1], P. E. Kazin[2], N. Kikuchi[1], H. Saito[1] ([1]Akita University, [2]Moscow Stat Univ)

19aA-9 Observation of magnetic domains by ellipticity detection using a 16-bit polarization camera
°S. Meguro[1], S. Saito[2] ([1]NEOARK, [2]Tohoku Univ.)

19aA-10 Investigation of local magnetic properties of Alloy 600 using a μ-MOKE microscope
°A. Sato, M. Konta, T. Takase, K. Yamaguchi (Fukushima Univ.)

19aA-11 Evaluation of local magnetic properties of stainless steel after hydrogen embrittlement using magnetic domain observation microscope

°M. Konta, A. Sato, T. Takase, K. Yakaguchi (Fukushima Univ.)

Magnetic sensing Ⅰ **13:15 〜14:45** Chair: H. Kikuchi (Iwate Univ.)

19pA-1 Magnetic signal detection from ingestible integrated circuits using a tunnel magnetoresistance sensor

°T. Kubota[1], H. Wagatsuma[2], K. Fujiwara[2], M. Endo[1], T. Hojo[1], M. Ishida[1], N. Nakasato[1], H. Ono[2], H. Fukushima[2], S. Kumagai[2], H. Matsuzaki[2], K. Yokoi[3], S. Oyagi[3], R. Otsuka[3], I. Yamane[3], D. Canlas[4], J. Komaili[4], S. Pathare[4], J. Withrington[4], T. Thompson[4], J. Jinno[3], K. Onishi[3], Y. Ando[1]

([1]Tohoku Univ., [2]SSF, [3]Otsuka Pharmaceutical, [4]Otsuka Precision Health)

19pA-2 Current measurement system with functional device using magnetic thin film

°H. Tsujimoto[1], F. Nakatsuji[2] ([1]MMD Co., Ltd, [2]SIRC Co., Ltd)

19pA-3 Visualization of Generated Current Flow on a Si Photovoltaic Using Magnetic Microscope System

°A. Kikitsu, Y. Higashi, Y. Kurosaki, S. Shirotori (Toshiba)

19pA-4 Development of 3D Rotating Magnetic Field Magnetizer for Magnetic Particle Testing of Omnidirectional Cracks in Complex-Shaped Portion

°K. Fukuoka (Osaka Sangyo Univ.)

19pA-5 Magnetic sensor detecting sub pT magnetic field from magnetic and other materials

°Y. Kono[1], S. B. Trisnanto[2], T. Kasajima[3], T. Shibuya[3], Y. Takemura[1]

([1]Yokohama National Univ., [2]Saitama Medical Univ., [3]TDK)

19pA-6 Spacial resolution and noise of FM-OFG with a short amorphous wire core

°I. Sasada (Kyushu Univ.)

Magnetic sensing Ⅱ **15:00 〜16:15** Chair: T. Uchiyama (Nagoya Univ.)

19pA-7 Detection sensitivity of magnetic nanoparticles in medical imaging and sentinel lymph node diagnosis

°H. Yanagawa[1], M. Nakayama[1], T. B. Suko[2], S. Ota[3], T. Yoshida[4], Y. Takemura[1]

([1]Yokohama National Univ., [2]Saitama Medical Univ., [3]Shizuoka Univ., [4]Kyushu Univ.)

19pA-8 Induced pulse voltage of twisted Wiegand wire

°H. Suzuki[1], M. Naoe[2], Y. Takemura[1] ([1]Yokohama National Univ., [2]DENJIKEN)

19pA-9 Pulse voltage of Wiegand wire measured at room and low temperatures

°N. Morikawa, Y. Takemura (Yokohama National Univ.)

19pA-10 Development of a rotary encoder using GSR sensors

°M. Hikishima, S. Honkura, Y. Honkura (Magnedesign)

19pA-11 Development of Magnetic Microparticle Detection System

°M. Hikishima, S. Honkura, Y. Honkura (Magnedesign)

Sep. 19/Room B

Motor and Magnetic Circuit **9:00 〜10:45** Chair: Y. Asano (Daikin), Y. Hane (Toyo Univ.)

19aB-1 Experimental Study on High-Speed Hysteresis Analysis for Accelerator Electromagnets Using Reduced Play Model

°H. Kohayakawa[1], Y. Hane[1], K. Sugahara[2] ([1]Toyo Univ., [2]Kindai Univ.)

19aB-2 Basic Study on High-Speed Analysis Method of Magnet Eddy Current Loss Using Cauer Circuit

°W. Lee, Y. Hane (Toyo Univ.)

19aB-3 Proposal for Hybrid Core Material Motor Using Non-Oriented Silicon Steel and Amorphous Alloy for Stator

°R. Osawa, Y. Hane (Toyo Univ.)

19aB-4 Development of Ultra high-speed rotor for smaller motor

M. Chisato, °T. Yoshimatsu, E. Kikuchi, Y. Honkura (Magnedesign)

19aB-5 Development of small size Ultra high-speed motor

M. C. Mishima[1], °T. Yoshimatsu[1], E. Kikuchi[1], Y. Honkura[1], J. Asama[2] ([1]Magnedesign, [2]Shizuoka Univ.)

19aB-6 A Study on Rotor Weight Reduction and Stator Teeth Shape Optimization of Axial Wound Field Flux Switching Motor with Segmental Rotors

°Y. Koishi, H. Goto (Utsunomiya Univ.)

19aB-7 Orientation analysis of ferrite bonded magnets using image processing

A. Kayano, °Y. Takayama (Daikin)

Spin torque **13:00 〜15:00** Chair: T. Nakatani (NIMS)

19pB-1 Simulation of magnetization switching by triangle pulse-driven SOT with tilted perpendicular anisotropy thin film

°K. Harada[1], K. Yamada[2], Y. Nakatani[1] ([1]UEC, [2]Gifu Univ.)

19pB-2 Simulation of SOT magnetization switching in elliptical magnetic thin films

°R. Tsunoda[1], K. Yamada[2], Y. Nakatani[1] ([1]UEC, [2]Gifu Univ.)

19pB-3 Simulation Analysis of Magnetization Switching Error Rate by SST

°T. Watanabe[1], K. Yamada[2], Y. Nakatani[1] ([1]UEC, [2]Gifu Univ.)

19pB-4 Effect of Layer Thickness Gradient on Spin-Orbit-Torque in Gd/FeCo Multilayers

°R. Yabushita, D. Oshima, T. Kato (Nagoya Univ.)

19pB-5 Epitaxial Li-Ti-O thin films with conductivity gradient for spin-orbit torques

°Z. Wen[1], C. He[1], J. Uzuhashi[1], T. Ohkubo[1], Y. Nozaki[2], S. Mitani[1], H. Sukegawa[1] ([1]NIMS, [2]Keio Univ.)

19pB-6 Measurement of spin-orbit torque magnetization switching and critical current density in Co/Gd multilayers

°S. Yoshida, Y. Shiota, R. Hisatomi, S. Karube, T. Ono (Kyoto Univ.)

19pB-7 Modulation of spin-Hall oscillator properties via voltage-controlled magnetic anisotropy

°Y. Hibino, T. Taniguchi, T. Yamamoto, S. Tamaru, H. Kubota, S. Yuasa, K. Yakushiji (AIST)

19pB-8 Enhanced field-free current-induced magnetization switching by two-dimensional metastable MXene

K. Prabhat[1], H. Abe[2], °S. Isogami[1] ([1]NIMS, [2]KEK)

Sep. 19/Room C

Device applications・Fe-Co thin films **9:00 〜10:30** Chair: T. Yanai (Nagasaki Univ.)

19aC-1 Development of Stainless Steel Magnets for MAgnetic Dental Attachments (Part2)

°C. Mishima, T. Mizuno, E. Kikuchi, Y. Honkura (Magnedesign)

19aC-2 Influences of Load Impedance on the Vibrational, Magnetic, and Output Characteristics of Perpendicular Magnetic Field Assisted Vibration Powered Generator

°Y. Sudo, S. Kamiya, K. Imamura, Y. Nakamura, M. Ohtake (Yokohama National Univ.)

19aC-3 Application of Variable Cross-section Soft Magnetic Beam to Perpendicular Magnetic Field Assisted Vibration Powered Generator

°S. Kamiya, K. Imamura, Y. Nakamura, M. Ohtake (Yokohama National Univ.)

19aC-4 Application of Fixed-End Magnetic Flux Return Yoke to Perpendicular Magnetic Field Assisted Vibration Powered Generator

°K. Imamura, S. Kamiya, Y. Nakamura, M. Ohtake (Yokohama National Univ.)

19aC-5 Preparation and Structural Analysis of FeCo/VN Atomic-Scale Multilayer Films on Pd(001) Single-Crystal Underlayers

°S. Tsuneizumi[1], N. Isogai[1], K. Imamura[1], T. Hasegawa[2], M. Ohtake[1] ([1]Yokohama National Univ., [2]Akita Univ.)

19aC-6 Roles of elements V and N in tetragonally distorted Fe-Co-V-N films

°T. Hasegawa[1], C. Murakami[1], K. Imamura[2], Y. Nakamura[2], M. Ohtake[2], H. Yamane[3] ([1]Akita Univ., [2]Yokohama National Univ., [3]AIT)

Fe-based thin films・Nano granular **10:45 〜12:45** Chair: Y. Endo (Tohoku Univ.)

19aC-7 Hard magnetic Fe-Pt films prepared from plating baths containing Na and Cl ions

°T. Yanai, Y. Yamaguchi, A. Hamakawa, S. Koga, A. Yamashita, M. Nakano (Nagasaki Univ.)

19aC-8 Ultra-thin soft magnetic metal ribbons with bilayer structure

°T. Yanai[1], S. Nakashima[1], Y. Ishikawa[2], A. Yamashita[1], M. Nakano[1] ([1]Nagasaki Univ., [2]Nippon Platec)

19aC-9 Electroplating of Fe from gel electrolytes

°T. Yanai, K. Shiraki, M. Tashiro, S. Enokida, R. Kirihara, A. Yamashita, M. Nakano (Nagasaki Univ.)

19aC-10 Fabrication of Hybrid Powder Core with Fe-based Nanocrystalline Plate-shape and Spherical Powders

°Y. Fujita, A. Ogawa, M. Sonehara, T. Sato (Shinshu Univ.)

19aC-11 Fabrication of Hybrid Coupled Inductor with Fe-Based Metal Composite / Nanogranular Magnetic Thin Film for IVR

°K. Nishimuta[1], K. Shirota[1], M. Naoe[2], M. Sonehara[1], T. Sato[1], K. Miyaji[1] ([1]Shinshu Univ., [2]DENJIKEN)

19aC-12 High-frequency permeability and heat resistance of bulky nanogranular materials
°K. Suzuki, T. Iwasa, K. Ikeda, M. Naoe, N. Kobayashi (DENJIKEN)

19aC-13 Fabrication of high-frequency nanogranular films with fluoride matrix by carousel sputtering method
°M. Naoe[1], M. Sato[1], M. Munakata[2], K. Suzuki[1], N. Kobayashi[1] ([1]DENJIKEN, [2]Sojo Univ.)

19aC-14 Iron loss and magnetization dynamics of amorphous and nanocrystalline ribbons with various magnetostriction
°N. Ono[1], T. Ogasawara[2], S. Hiramoto[1], H. Tsukahara[1], T. Taniguchi[1], K. Suzuki[3], S. Okamoto[1, 4]
([1]Tohoku Univ., [2]AIST, [3]Monash Univ., [4]NIMS)

Soft magnetic materials **13:45 〜15:15** Chair: M. Naoe (DENJIKEN)

19pC-1 Quantitative Evaluation of the Reduction Degree of Iron Oxide Particles by Dew Point Measurement during Gas–Solid Reactions
°K. Takahashi, A. Nishikura, H. Nakashinden, S. Saito (Tohoku Univ.)

19pC-2 Synthesis of Fe-M (M: Si, Al) Nanoparticle Clusters by Hydrogen Reduction of Iron Oxide Micron Particles
°A. Nishikura, H. Nakashinden, M. Miyazawa, T. Murakami, M. Tobise, S. Saito (Tohoku Univ.)

19pC-3 Structure and magnetic properties of annealed ultra-thin Fe-1 wt.%Si sheets
°T. Takasu[1], S. Ajia[1], S. Mikami[2], T. Hiraki[2], S. Muroga[1], Y. Endo[1] ([1]Tohoku Univ., [2]Toho Zinc)

19pC-4 Effect of heat-treatment on structure and magnetic properties of Fe-6.5wt%Si sheet
°S. Ajia, S. Muroga, Y. Endo (Tohoku Univ.)

19pC-5 Influence of fabrication conditions on magnetic properties of dust cores with different particle shapes
°Y. Kodama, S. Ajia, T. Miyazaki, S. Muroga, Y. Endo (Tohoku Univ.)

19pC-6 Micromagnetic simulation and Analysis of Initial and Maximum Permeability in 2D-iron powder model under DC field
°Z. Long[1], H. Tsukahara[1], Y. Sato[2], N. Misono[2], T. Taniguchi[1], S. Okamoto[1] ([1]Tohoku Univ., [2]Aoyama-Gakuin Univ.)

Sep. 19/Room D

Symposium "Recent progress of mass information storage technologies"

Chief Organizer: Y. Shimizu (WD)

9:00 〜10:30 Chair: Y. Shimizu (WD)

19aD-1 [Invited]Development of spin-torque oscillators for microwave-assisted magnetic recording
°Y. Nakagawa, M. Takagishi, N. Narita, J. Numata, T. Maeda (Toshiba)

19aD-2 [Invited]Analysis of Jitter Components in Heat-Assisted Magnetic Recording via Spin-Stand Measurements
°M. Matsubara[1], M. Mochizuki[1], C. D. Keener[2], P. Jubert[2] ([1]Western Digital Technologies, [2]Western Digital)

19aD-3 [Invited]A study of SMR system in dual-layer HAMR
°Y. Okamoto, Y. Nakamura, M. Nishikawa (Ehime Univ.)

10:45 〜11:45 Chair: A. Kikitsu (Toshiba)

19aD-4 [Invited]Neural network potential aided analyses of the atomic structures and the stabilities of FePt/MgO interfaces
°T. Saito[1], K. Ochiai[1], S. Shimizu[1], H. Ohashi[2], T. Fukushima[2] ([1]Resonac, [2]Resonac Hard Disk)

19aD-5 [Invited]Recent progress in research on next-generation large-capacity ferroelectric data storage
°Y. Cho (Tohoku Univ.)

Symposium "Magnetic field application for environmental conservation and biological resource utilization"

Chief Organizer: M. Suwa (Univ. of Osaka)

13:00 〜14:30 Chair: N. Hirota (NIMS)

19pD-1 [Invited]Development of new magnetic separation method for environmental remediation
°Y. Akiyama (Univ. of Osaka)

19pD-2 [Invited]Development in material separation and fractionation methods using magnetic force control
°O. Miura (Tokyo Metropolitan Univ.)

19pD-3 [Invited]Development of a microplastic separation system using magnetic force
°F. Mishima, N. Nomura (Fukui Univ. of Tech.)

14:45 〜 16:15 Chair: M. Yamato (Tokyo Metropolitan Univ.)

19pD-4 [Invited]Magnetic Separation of Veterinary Antibiotics as an Environmental Technology

°I. Ihara (Kobe Univ.)

19pD-5 [Invited]Application of Magnetic Fields on Fermentation of Yeasts

°Y. Mitsui[1], R. Kobayashi[2], Y. Sueyoshi[1], Y. Yoshizaki[1], K. Takahashi[3], K. Takamine[1], K. Koyama[1]

([1]Kagoshima Univ., [2]Nit, Kurume Coll., [3]Tohoku Univ.)

19pD-6 [Invited]Magnetically aligned cellulose nanocomposites

°M. Wada, A. Maeda, K. Kobayashi (Kyoto Univ.)

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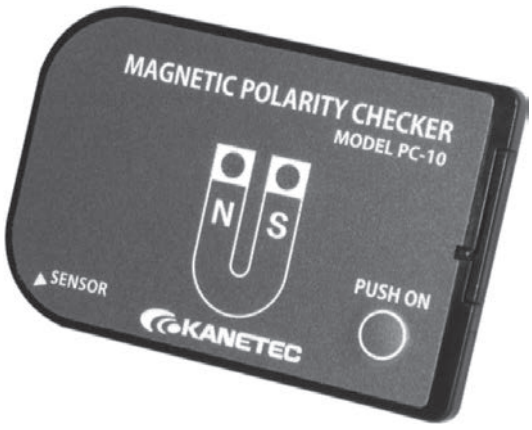

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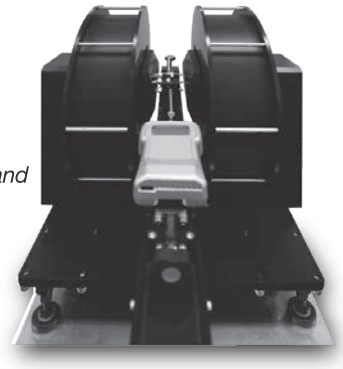
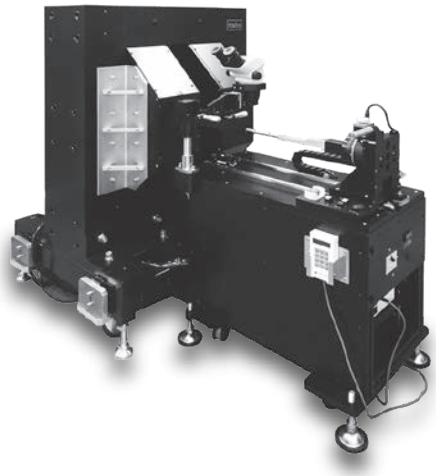


High Sensitivity VNA-FMR Spectrometer



Magnetic Field Prober

Main Model

Omni-Directional magnetic field prober
Vertical magnetic field prober
In-plane magnetic field prober
Rotating magnetic field prober

Prober type

Full-automatic
Semi-automatic
Manual

Furnaces with Magnetic Field

3D Magnetic Field Profiler

Micro Strip Line Probe

Low Residual Field Electromagnets

Electromagnets

Main Products: Helmholtz coil, Solenoid coil, Weiss magnet, Double yoke magnet, Variable gap magnet,Coils for optical research and others.

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- Arガス使用のため、排気ガスの処理不要
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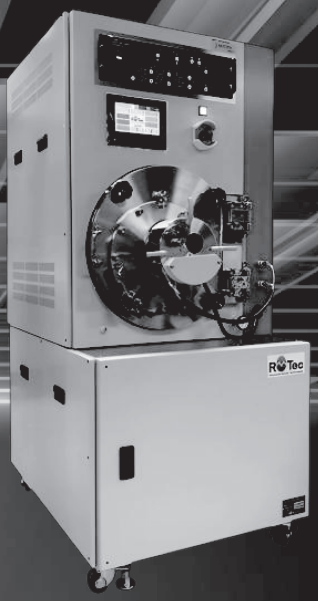

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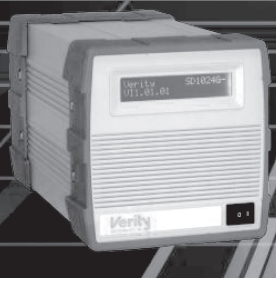
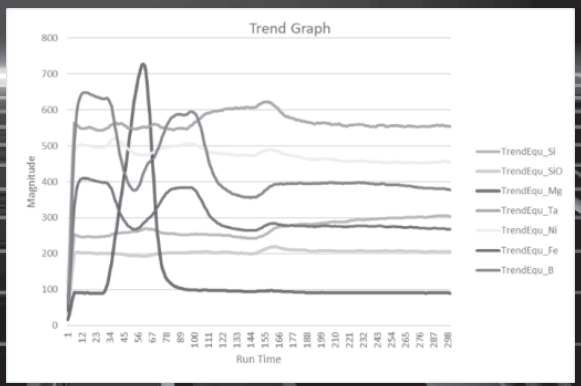
- 深紫外(DUV)高感度特性
- 優れたS/N比
- IBE専用設計
- 製造ラインで信頼を得た終点アルゴリズム





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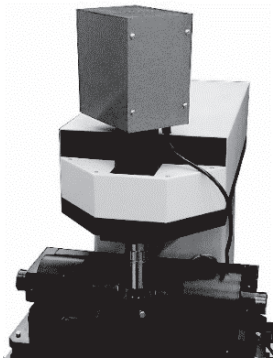
レーザ・光技術への限りなき挑戦

開発中

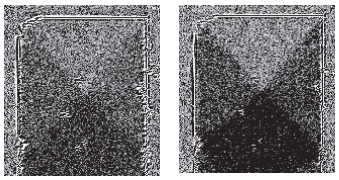
16bit偏光カメラ～偏光角／楕円率検出による磁区観察～

弊社と東北大学 斉藤 伸 教授との共同開発において、対象を直線偏光に限定した場合、2つの偏光成分を検出するだけで偏光角／楕円率角を得られることを見出しました。輝度16bit分解能センサーを2個用いた16bit偏光カメラを開発し、偏光角／楕円率角検出による高品位磁区観察を実現しています。楕円率角検出を可能にしたことにより従来観察困難だった試料の観察が可能となり、光源の光量変動に影響されない安定した磁区観察が期待できます。



＜観察例＞
NiFe薄膜パターン
白色LED光源観察

回転角像　　楕円率像



本学術講演会19aA-9講演予定

－特長－

○照明光の利用効率が高い
○光源の光量変動の影響が小さい
○反射率分布の影響が小さい
○曲面の磁区観察可能
○偏光角/楕円率角検出による広範な観察対象

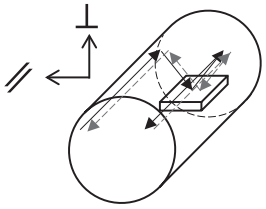
－主な仕様－

○輝度分解能：　16 bit
○画素サイズ：　4.8×4.8 μm
○画素数：　1280×720
○偏光角/楕円率角分解能：　0.002°以下
○PC接続：　USB-3.0

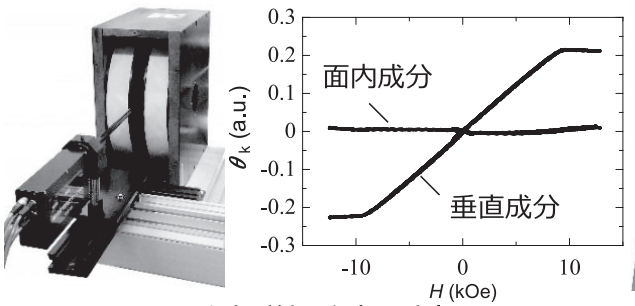
開発中

面内／垂直成分同時測定プローブKerrユニット

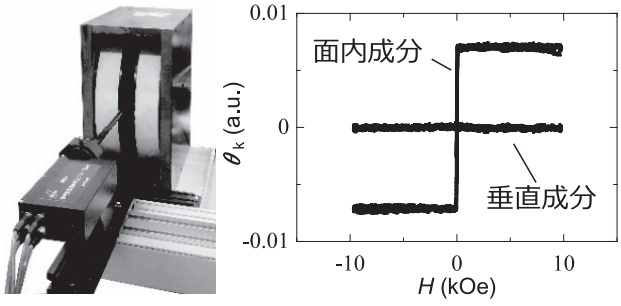
既設の電磁石を活用し、検出部を電磁石磁極間に配置して磁気光学Kerr効果を測定するユニット製品です。
プローブ部の回転により垂直／面内磁場印加によるループ測定を可能としました。逆方向入射光学系による検出と演算処理により面内／垂直成分の同時測定が可能です。



測定例　サンプル：NiFe薄膜



垂直磁場印加測定



面内磁場印加測定

上記以外にも多種多用な製作実績有り！テストのご依頼等ぜひお気軽にお問合せください

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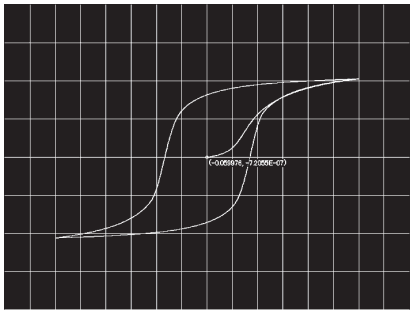

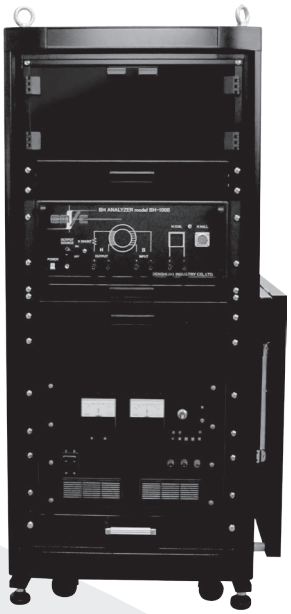

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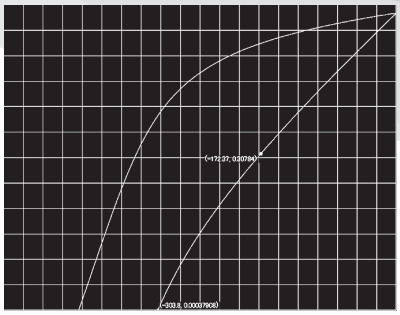

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第244回	2023年9月15日	磁性金属の異常ホール・ネルンスト効果と磁気および熱流センサへの応用
第245回	2023年11月10日	磁気応用のための新奇な微細加工技術
第246回	2024年1月17日	モノづくり分野を支える磁気関連技術の新展開
第247回	2024年3月28日	リサイクル技術やレアアースフリー磁石を中心とした磁石開発の進展
第248回	2024年6月3日	電解質溶液への電磁流体力学効果とその応用
第249回	2024年7月24日	磁場の生体・生命への影響に関する最新動向
第250回	2024年10月9日	次世代ナノテクノロジーを担う磁性理論・計算の新展開
第251回	2024年11月18日	機能性磁気デバイスのための磁性薄膜の成膜技術
第252回	2025年1月29日	キメラ準粒子が切り拓く新物性科学
第253回	2025年3月13日	TMR研究のこれまでとこれから～室温TMR効果の発見から30年～
第254回	2025年5月23日	磁気と光を使ったセンシング技術の新展開
第255回	2025年7月17日	磁性体研究のための新しい光源と理論

日本磁気学会 学術講演会概要集

第46回	2022年9月6日～8日	信州大学
第47回	2023年9月27日～30日	大阪大学
第48回	2024年9月24日～27日	秋田大学

上記資料(～最新号まで)について、ご入用の方はFAXまたはE-mailにより事務局までお問い合わせ下さい。
折り返し、在庫の有無と価格(送料別途実費)をお知らせします。
※代金は先払いです。

日本磁気学会事務局 FAX: 03-5281-0107, E-mail: msj@bj.wakwak.com

Group3社テスラメーター

Group3社は、世界的に高い評価を誇るテスラメーターのメーカーです。24ヵ国に販売実績があり、豊富なテスラメーター関連機器を取り揃えております。

HTM-121テスラメーター

- **丈夫なハンディタイプ**
  持ち運びに便利なハンディタイプながら
  高い耐久性を実現
- **温度安定性に優れたホールプローブ**
  温度変化の影響を最小限に抑えた高安定性
  -5~50℃の広い範囲に対応
- **長寿命バッテリー**
  充電式のバッテリーで、最大20時間連続で使用可能
- **高い測定速度と、広い測定範囲**
  毎秒60回の読み取り回数、最大2.2Tの範囲を測定
- **デモ随時承ります（展示場にてデモ機展示中！！）**

Hakuto イオンビームミリング装置

イオンビームミリング装置は、基板サイズ/材質、加工材料を問わずにご使用いただける、研究開発用に最も適したエッチング装置です。
特に、磁性材料、金属多層膜、各種合金などの
難エッチング材料の加工の実績が多数ございます。

特 徴

- スピントロニクス分野での実績多数
- 真空コンポーネントはPfeiffer Vacuum 社製
  (弊社総代理店)を標準装備
- ご予算に応じた機器構成をご提案
- オプションでスパッタ機構も搭載可能
- 国内デモ随時承ります

ミリング装置
詳細はこちら

テスラメーター
詳細はこちら

お問合せ先

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システムイノベーションカンパニー
半導体・科学ソリューション営業部
【本社】〒160-8910 東京都新宿区新宿一丁目1番13号
TEL: 03-3355-7645　Email: F1@hakuto.co.jp

エヌエフの微小信号測定器

超電導環境下の量子センシングをはじめ、各種信号処理に

雑音に埋もれた微小信号を検出

ロックインアンプ

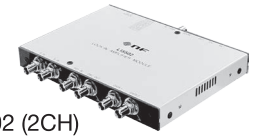
LI5600 シリーズ（全 4 モデル）

＜ LI5660 ＞

- 周波数範囲：0.5Hz ～ 11MHz
- 電圧測定：10nV ～ 10V F.S.
- 電流測定：10fA ～ 1μA F.S.
- ダイナミックリザーブ：100dB

分析器・検査装置への組込みに
ロックインアンプモジュール
LI5501/LI5502

- 広帯域 10mHz ～ 1MHz
- 高感度 10nVrms
- 高速応答 時定数 1μs
- USB、LAN


LI5502 (2CH)

極微小信号を忠実に増幅

低雑音増幅器

SA シリーズ

〈電圧入力〉

- 低ノイズ 0.25nV/√Hz
- 全 11 モデル

〈電流入力〉

- 高利得・広帯域
  （1T V/A、DC ～ 300Hz）
- 全 6 モデル

センサ・デバイスの電源に

低雑音直流電源

LP シリーズ


LP5394

- 低雑音　10μVrms 以下
- 高安定　±10ppm/℃ typ.

株式会社 エヌエフ回路設計ブロック
本社/横浜市港北区綱島東6-3-20 〒223-8508
営業 TEL 045-545-8111 FAX 045-545-8191

詳細はウェブサイトをご覧ください
スマートフォンから▶
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