

2023 IEEE International Magnetic Conference - Short Papers (INTERMAG Short Papers 2023)

**Sendai, Japan
15-19 May 2023**

Pages 1-650



**IEEE Catalog Number: CFP23EZ8-POD
ISBN: 979-8-3503-3837-9**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***** *This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23EZ8-POD
ISBN (Print-On-Demand):	979-8-3503-3837-9
ISBN (Online):	979-8-3503-3836-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ADVANCES IN MAGNETIC CHARACTERIZATION I

Room-Temperature Magnetic Antiskyrmions and Anisotropic Fractal Magnetic Domain Textures in (Fe,Ni,Pd)3P with S4 Symmetry	1
<i>Kosuke Karube, Licong Peng, Jan Masell, Victor Uklev, Jonathan S. White, Mamoun Hemmida, Hans-Albrecht Krug Von Nidda, István Kézsmárki, Xiuzhen Yu, Fumitaka Kagawa, Yoshinori Tokura, Yasujiro Taguchi</i>	
New Versatile Instruments to Measure Element-Specific and Macroscopic Hysteresis at ID12 of the ESRF	3
<i>Alex Aubert, Gabriel Gomez, Konstantin Skokov, Fabrice Wilhelm, Heiko Wende, Andrei Rogalev, Oliver Gutfleisch, Katharina Olles</i>	
Analysis of Magnetization Reversal Process of Non-Oriented Electromagnetic Steel Sheet by Extended Landau Free Energy Model	5
<i>Michiki Taniwaki, Foggiatto Lira Alexandre, Chiharu Mitsumata, Takahiro Yamazaki, Ippei Obayashi, Yasuaki Hiraoka, Yasuhiko Igarashi, Yuta Mizutori, Sepehri Amin Hossein, Tadakatsu Ohkubo, Masato Kotsugi</i>	
Switching Dynamics of In-Plane Magnetized Spin-Orbit Torque Devices	7
<i>Paul S. Keatley, Thomas H. J. Loughran, Goran Mihajlovic, Lei Wan, Young-Suk Choi, Jordan A. Katine, Robert J. Hicken</i>	

ADVANCES IN MAGNETIC CHARACTERIZATION II

Atomic Scale Visualization of Magnetic Coupling at Individual Defects in Functional Materials by Spatially Resolved Electron Magnetic Circular Dichroism.....	9
<i>Xiaoyan Zhong, Zhuo Li</i>	
Magnetic Imaging by the Anomalous Nernst Effect Using Atomic Force Microscopy	11
<i>Nico Budai, Hironari Isshiki, Ryota Uesugi, Zheng Zhu, Tomoya Higo, Satoru Nakatsuji, Yoshichika Otani</i>	
Optical Profiling of Surface-Acoustic-Wave Absorption Due to Elastically Driven Ferromagnetic Resonance in Nickel.....	13
<i>Kazuki Maezawa, Shun Fujii, Kazuto Yamanoi, Yukio Nozaki, Shinichi Watanabe</i>	
Topological Spin Memory of Antiferromagnetically Coupled Skyrmions	15
<i>Xuemei M. Cheng</i>	
Simulations of Magnetic Bragg Scattering in Transmission Electron Microscopy	17
<i>Justyn Snarski-Adamski, Alexander Edström, Paul Zeiger, José Ángel Castellanos-Reyes, Keenan Lyon, Mirosław Werwinski, Ján Rusz</i>	

ADVANCES IN MAGNETIC CHARACTERIZATION III

Ac Susceptibility Measurement Using a Vibrating Sample Magnetometer.....	19
<i>Muftah Al-Mahdawi, Mikihiko Oogane</i>	

High-Frequency Magnetic Field Energy Imaging of Magnetic Recording Head by Alternating Magnetic Force Microscopy with Superparamagnetic Tip.....	21
<i>Marina V. Makarova, Kaichi Suzuki, Hiroshi Sonobe, Toru Matsumura, Hitoshi Saito</i>	

Polarized Neutron Transmission Spectroscopy on an Ultrafine Grained Steel.....	23
<i>Hiroaki Mamiya, Yojiro Oba, Noriki Terada, Kosuke Hiroi, Takenao Shinohara</i>	

AI/ML APPROACHES FOR THE DEVELOPMENT AND DISCOVERY OF FUTURE MAGNETIC MATERIALS

Magnetic Materials Prediction, High Through Put, Artificial Intelligence Versus Materials Intuition.....	25
<i>Claudia Felser, Maia Vergniry, Yang Zhang, Yan Sun, Jonathan Noky</i>	

ALL OPTICAL SWITCHING AND ULTRAFAST MAGNETISM

All Optical Switching in Transition Metal Synthetic Ferrimagnetic Multilayer Systems with Enhanced Interlayer Exchange Coupling	27
---	----

Connor R. J. Sait, Maciej Dabrowski, Jade N. Scott, William R. Hendren, David G. Newman, Alpha T. N'Diaye, Christoph Klewe, Padraic Shafer, Gerrit Van Der Laan, Paul S. Keatley, Robert M. Bowman, Robert J. Hicken

All-Optical Switching in a 2D Van Der Waals Magnet CrI ₃	29
<i>Maciej Dabrowski, Shi Guo, Mara Strunaru, Paul S. Keatley, Freddie Withers, Elton J. G. Santos, Robert J. Hicken</i>	

Sub-Picosecond Magnetization Reversal in Fully Ferromagnetic Spin Valves	31
<i>Junta Igarashi, Wei Zhang, Quentin Remy, Eva Diaz, Jun Xiao Lin, Julius Hohlfeld, Michel Hehn, Stéphane Mangin, Jon Gorchon, Grégory Malinowski</i>	

Ultrafast Time-Resolved Spectroscopy of Spin Precession by an Asynchronous Optical Sampling Based on a Dual-Comb System	33
<i>Daichi Nishikawa, Kazuki Maezawa, Shun Fujii, Makoto Okano, Shinichi Watanabe</i>	

Application of All-Optical Switching for a High-Speed Optical Memory. Proposed Scheme of High-Speed Demultiplexing	35
<i>Vadym Zayets, Iryna Serdeha, Valerii Grygoruk</i>	

ANALYTICAL, SEMI-ANALYTICAL AND NUMERICAL MODELLING FOR DESIGN AND ANALYSIS OF ELECTRICAL MACHINES I

Novel Stator Slot Opening to Reduce Electrical Machine Bearing Currents	37
<i>Daniele De Gaetano, Wenjun Zhu, Xiangyu Sun, Xiao Chen, Antonio Griffó, Geraint W. Jewell</i>	

High-Speed Iron Loss Calculation of Permanent Magnet Synchronous Motor Combining Reluctance Network Analysis and One-Dimensional Magnetic Circuit Models Considering Dynamic Hysteresis Behavior	39
<i>Yoshiki Hane, Kenji Nakamura</i>	

3-D Stray Loss Evaluation of Structural Component Under Harmonic and DC-Biased Magnetization by Harmonic-Balanced Method.....	41
<i>Shengze Gao, Xiaojun Zhao, Lanrong Liu, Kazuhiko Muramatsu, Yanhui Gao, Behzad Forghani</i>	

Semi-Analytical Modeling for Linear Motors with Conductive Media in High-Dynamic Applications.....	43
<i>A. Desikan, D. C. J. Krop, B. J. H. De Bruyn, E. A. Lomonova</i>	

Stator Optimization for a Novel Magnetic Levitation Actuator	46
<i>Gerlof Zuidema, Dave C. J. Krop, Elena A. Lomonova</i>	

Analytical Model for Electromagnetic Field in Permanent Magnet Synchronous Motor Considering Stator Slotting and Rotor Eccentricity.....	48
<i>Qi Wei, Wanyou Li, Zhijun Shuai, Depeng Zeng</i>	

Approximation of Nonlinear Properties of Soft-Magnetic Materials with Bézier Curves	50
<i>Ermin Rahmanovic, Martin Petrun</i>	

ANALYTICAL, SEMI-ANALYTICAL AND NUMERICAL MODELLING FOR DESIGN AND ANALYSIS OF ELECTRICAL MACHINES II

Performance Prediction of a FMaSynRM Considering MTPA, FW, and MTPV Operating Conditions Using Open-Source FEA	52
<i>Chong Di, Xiaohua Bao, Wei Jiang</i>	

Analytical Calculation and Experiment of 3-D Electromagnetic Force of Permanent Magnet Electrodynami c Suspension System	54
<i>Fanqi Bu, Jie Xu, Junquan Chen</i>	

Study of Levitation Characteristic Against Vertical Displacement at Minimum Levitation Velocity in the Electrodynami c Suspension System with Damper Coils.....	56
<i>Shunya Higashiike, Ryo Yamamoto, Shunsuke Ohashi</i>	

Electromagnetic Performance Analysis of a Bearingless Permanent Magnet Synchronous Motor by Model Order Reduction.....	58
<i>Kai Xu, Youguang Guo, Gang Lei, Jianguo Zhu, Xiaodong Sun</i>	

Calculation of Iron Loss in Permanent Magnet Synchronous Motors Based on PSO-RNN	60
<i>Kai Xu, Youguang Guo, Gang Lei, Lin Liu, Jianguo Zhu</i>	

Investigation of the Excess Loss of the Grain-Oriented Steel Sheets in a High-Frequency Range Considering Skin Effect.....	62
<i>Long Chen, Xin Wen, Tong Ben, Peng Wei, Xian Zhang</i>	

Multiphysics Modeling and Optimization of PMSM for High Speed Operation	64
<i>Thomas Marcand, Charles-Henri Bonnard, Smail Mezani, Noureddine Takorabet</i>	

ANTIFERROMAGNETIC SPINTRONICS

Algebraic Decay of Non-Local Spin Transport in NiO	66
<i>Itaru Sugiura, Yuta Kobayashi, Koki Sugi, Ryusuke Hisatomi, Yoichi Shiota, Teruo Ono, Takahiro Moriyama</i>	

The Transition from Soft to Hard Exchange Bias and Oscillation of Biassing Field with the Variation of IrMn Thickness	68
<i>Ajin Joy, Soubhik Kayal, P. S. Anil Kumar</i>	

Vertical Long Pillar Magnetic Memory with Two Magnetic Junctions	70
<i>Syuta Honda, Yoshiaki Sonobe</i>	

Spin Hall Magnetoresistance in Antiferromagnetic Insulators	72
<i>Stephan Geprägs, Matthias Opel, Johanna Fischer, Philipp Schwenke, Matthias Althammer, Hans Huebl, Rudolf Gross</i>	

APPLICATIONS TO "INTERNET OF THINGS" (IOT)

Vehicle Detection Using 2-Axis MI Sensors Based on Moving Vehicle Magnetic Field Simulation	74
<i>Ruixuan Yao, Tsuyoshi Uchiyama</i>	
An Inductive Power Transfer System with Multiple Receivers Utilizing Diverted Magnetic Field and Two Transmitters for IoT-Level Automatic Catering Vehicles	76
<i>Heshou Wang, Jinhong Sun, Ka Wai Eric Cheng</i>	
Multiband Periodic Metamaterial Antenna Design for Radar Sensor Application	78
<i>Brinta Chowdhury, Abdullah Eroglu</i>	

BIOMAGNETICS I: THERAPY AND DIAGNOSTICS

MagPure Chip: A Microfluidic Device to Isolate Viable Circulating Tumor Cells	80
<i>Lucie Descamps, Jessica Garcia, David Barthelemy, Emmanuelle Laurenceau, Sophie Cavassila, Lea Payen, Anne-Laure Deman, Damien Le Roy</i>	
Ultrafast Heating Rate of Ultrasmall Gold-Coated Iron Oxide Magnetic Nanoparticles by Ferromagnetic Resonance	82
<i>Loi Tonthat, Akihiro Kuwahata, Tomoyuki Ogawa, Shin Yabukami</i>	
Iron Oxide Nanoparticles as a New Tool for Treating Cardiovascular Diseases	84
<i>David Cabrera, Jacob Ranjbar, Antonio Santana-Otero, Maneea E. Sharifabad, Daniel Ortega, Neil D. Telling, Alan Harper</i>	
Effect of Substitution in the Heating Efficiency of CuFe ₂ O ₄ Nanoparticles for Magnetic Hyperthermia Application	86
<i>Gongotree Phukan, J. P. Borah</i>	
Exchange Bias, Magnetic Fluid Hyperthermia, and Cellular Uptake by Endothelial Cells in Core-Shell Fe@Fe ₃ O ₄ Nanoparticles	88
<i>K. Riahi, I. Dirba, Y. Ablets, S. N. Sultana, E. Adabifiroozjaei, A. Filatova, L. Molina-Luna, U. Nuber, O. Gutfleisch</i>	
From Thermographical Data to 2D Temperature Maps: How to Evaluate Performance for Magnetic Hyperthermia Experiments in Phantoms	90
<i>D. P. Valdés, T. E. Torres, A. C. Moreno Maldonado, G. Urretavizcaya, M. S. Nadal, M. Vasquez Mansilla, R. D. Zysler, G. F. Goya, E. De Biasi, E. Lima</i>	

BIOMAGNETICS II: SENSORS AND DEVICES

Glioblastoma Cancer Cells Destruction by Mechanical Stimulation Using Magnetic Particles: In Vitro Versus in Vivo Assays and Investigations in 3D Gels	92
<i>C. Naud, C. Thébault, A. Visonà, H. Joisten, F. Berger, M. Carrière, Y. Hou, A. Nicolas, B. Dieny, R. Morel</i>	
Giant Magnetoresistive Biosensing Platform for Point-Of-Care Gene Expression Analysis	94
<i>Ana Sofía De Olazarra, Shan X. Wang</i>	

Wireless Magnetoelectric Neural Interfaces	96
<i>Elric Zhang, Mostafa Abdel-Mottaleb, Jonathan Shulgach, Manuel A. Campos, Max Murphy, Brayan Navarrete, Shawnus Chen, Victoria Andre, Max Shotbolt, Darcy Griffin, Douglas Weber, Ping Liang, Sakhrat Khizroev</i>	
Factors Affecting Magnetic Particle Imaging: Frequency-Sustained Hysteresis and Dipole-Dipole Interactions. Challenges and Solutions.....	98
<i>Gabriele Barrera, Paolo Allia, Paola Tiberto</i>	
Proposal of a Method for Estimating the Position of Ferromagnetic Markers Under Magnetization Conditions	100
<i>Yoshihiko Inoue, Shinichi Chikaki, Motofumi Fushimi, Yingyi Xiao, Akihiro Kuwahata, Moriaki Kusakabe, Masaki Sekino</i>	
High Gradient Magnetic Separator Design with Hybrid Poles and Increased Efficiency	102
<i>Chun Li, Helen King, Alana Toy, Yakov Kanevskiy, Ivan Ambriz, Percy Paiz</i>	
An MRI-Compatible Implantable Magnet Design with Self-Realigning Orientation	104
<i>Bo Zhang, Ahmet Hirka, Yakov Kanevskiy</i>	

BIOMEDICAL DIAGNOSTICS AND IMAGING

Dynamic Magnetization and Specific Loss Powers of Commercial Magnetic Nanoparticles.....	106
<i>Hiroki Obana, Satoshi Ota, Seiji Takeuchi, Suko Bagus Trisnanto, Yasushi Takemura</i>	
Magnetic Resonance Imaging Using a Magnetoresistive Sensor with a Flux Transformer	108
<i>Daisuke Oyama, Yoshiaki Adachi, Naohiro Tsuyuguchi</i>	
Dynamics of Magnetization Under Spin-Lock Pulse with T1 Relaxation.....	110
<i>Hiroyuki Ueda, Yosuke Ito</i>	
Magnetic Nanowires Versus Nano/Micro-Particles for Cancer Cell Destruction by Magneto-Mechanical Actuation.....	112
<i>Horia Chiriac, Anca Emanuela Minuti, Cristina Stavila, Nicoleta Lupu</i>	
High Efficiency Magnetic Induction System Development with Synchronous MPI Imaging	114
<i>Shi Bai, Xiaodan Zhang, Yuqi Zou, Zhiyao Liu, Yuxi Lin, Ping Huang, Takashi Yoshida</i>	

BIOMEDICAL SENSORS AND DEVICES

Human Skull Implantable Wireless Power Transfer System	116
<i>Úrsula C. Resende, Mauricio D. Almeida, Ícaro V. Soares</i>	
Simplified Magnetic Flux Density Measurement for Local Resolution Analysis of Transcranial Magnetic Stimulation	118
<i>Tetsuya Torii, Hideo Sakamoto, Aya Sato</i>	
Dry-Type Phantom Emulating Quadrupole-Like Magnetic Field Distribution for Evaluation of Magnetoneurography.....	120
<i>Yoshiaki Adachi, Daisuke Oyama, Gen Uehara, Shigenori Kawabata</i>	
Effects of Magnetic Field and Magnetic Force on Proliferation and Differentiation of Osteoblast Cells.....	122
<i>Sachiko Yamaguchi-Sekino, Masaki Sekino</i>	

Hybrid Transcranial Magnetic Stimulation and Deep Brain Stimulation in the Presence of an Implantable Pulse Generator	124
<i>Aryan Mhaskar, Mohannad Tashli, Kathryn L. Holloway, Ravi L. Hadimani</i>	
Human Error Verification During ELF Stimuli: Retinal Receptivity of ELF-Inducing Phosphenes.....	126
<i>Hidenori Nakagawa, Shoogo Ueno</i>	
Shape Observation by Local Illumination Using Reflected Light from Magnetically Controlled Guanine Crystal Platelet.....	128
<i>Hironori Asada, Etsuhiro Muneyama, Masaru Kurahashi, Kaito Takeuchi, Masakazu Iwasaka</i>	
An ELF Magnetic Control Study of Metamorphic Qualities in T4-Administrated Axolotls (Ambystoma Mexicanum).....	130
<i>Hidenori Nakagawa, Mitsuhiro Fujimoto, Takashi Tadokoro</i>	
Investigation of EEG Functional Connectivity Relationship with TMS Response in Mild Traumatic Brain Injury Patients.....	132
<i>Mishal Z. Hussain, Asif Jamil, Laura M. Franke, Ravi L. Hadimani</i>	

CHIRALITY DRIVEN PHENOMENA IN NON-COLINEAR ANTIFERROMAGNETS

Unconventional Octupole Dynamics of a Non-Collinear Antiferromagnet Driven by Spin-Orbit Torque.....	134
<i>Ju-Young Yoon, Pengxiang Zhang, Chung-Tao Chou, Yutaro Takeuchi, Tomohiro Uchimura, Justin T. Hou, Jiahao Han, Shun Kanai, Hideo Ohno, Shunsuke Fukami, Luqiao Liu</i>	
Tunneling Magnetoresistance in Noncollinear Antiferromagnetic Tunnel Junctions	136
<i>Jianting Dong, Meng Zhu, Evgeny Y. Tsymbal, Jia Zhang</i>	
Mn _{4-x} GaxN Thin Films for Ferrimagnetic Spintronics	138
<i>Lucy Prendeville, Yangkun He, Pilar Jiménez Cavero, Simon Lenne, J. M. D. Coey, Karsten Rode</i>	

COHERENT MAGNON INTERACTIONS

Design of K-Space Magnon Dynamics by Machine Learning	140
<i>György Csaba, Ádám Papp, Horváth András, Joo-Von Kim, Maryam Massouras, Abdelmadjid Anane, Massimiliano D'Aquino, Salvatore Perna, Claudio Serpico</i>	

COMPLEX MAGNETIC OXIDES/INSULATORS

Antiferromagnetic Domains Distribution Carried by Stoichiometry.....	142
<i>Anna Mandziak, Juan De La Figuera, Jose Emilio Prieto, Adrian Quesada, Cecilia Granados Miralles, Alba Berja, Lucia Aballe, Michael Foerster, Miguel Angel Nino, Pawel Nita</i>	
Resonant Microwave Absorption in Mo-Doped LaMnO ₃ Investigated Using a Vector Network Analyzer	144
<i>Yong Heng Lee, Ramanathan Mahendiran</i>	
Strain Effects on the Magnetic Ordering in A-Type Antiferromagnetic Pr _{0.5} Sr _{0.5} MnO ₃ Films.....	146
<i>You-Sheng Chen, Jauyn Grace Lin</i>	

Experimental and Theoretical Investigation of Cation Site Occupation and Magnetic Ordering in Co-Ferrite Spinels.....	148
<i>Ying Fang, Suraj Mullurkara, K. M. Taddei, G. Wang, P. Ohodnicki</i>	

EMERGING AND INTERDISCIPLINARY TOPICS IN MAGNETISM I

Magnetic Bionic Hair Array for Sliding Tactile Sensing and Object Recognition	150
<i>Jiandong Man, Zhenhu Jin, Jiamin Chen</i>	
Thermal Noise Magnetometry as an Emerging Magnetic Characterization Technique.....	152
<i>Katrijn Everaert, Bartel Van Waeyenberge, Frank Wiekhorst, Jonathan Leliaert</i>	
Magnetic-Field-Assisted Photocatalysis of N-TiO ₂ Nanoparticles.....	154
<i>Laura Cervera-Gabalda, Eneko Garaio, Juan Jesús Beato-López, José Ignacio Peréz-Landazábal, Cristina Gómez-Polo</i>	
Prediction of Magnetocrystalline Anisotropy Constant in FeCoNi Alloys Using Machine Learning	156
<i>Ren Sudo, Mikihiko Oogane</i>	
Influence of Magnetic Field on Evaporation of Water and Ionic Solutions.....	158
<i>J. M. D. Coey, Luke Coburn-Moran, Jennifer Quirke</i>	
An Electroplated Magnetic NiFe Film Based Electromagnetic Targeting for Interlocking-Nail Broken-Bone Surgery.....	160
<i>Mayank Kohli, Tzu-Lin Chai, I-Lun Chen, Tze-Hong Wong, Wensyang Hsu, Tien-Kan Chung</i>	
Spin Revolution Breaks Time Reversal Symmetry of Rolling Magnets	162
<i>Elena Y. Vedmedenko, Roland Wiesendanger</i>	
Holding Performance of an Adaptive Magnetorheological Fluid-Based Robotic Claw.....	164
<i>Young T. Choi, Christine M. Hartzell, Wereley M. Wereley</i>	
Design and Performance of a Compact 3D-Printed Magnetorheological Fluid Damper	166
<i>Jungjin Park, Young T. Choi, Alison B. Flatau, Norman M. Wereley</i>	

EMERGING AND INTERDISCIPLINARY TOPICS IN MAGNETISM II

Effect of Instability of Ferrofluid for Enhanced EMI Shielding in Ku-Band	168
<i>Yan-Hom Li, Huan-Kuang Kuan, Hsin-Chieh Hsieh</i>	
Spin-Current Driven Magnetic Meta-Atoms for Time-Varying Permeability	170
<i>Renya Shimizu, Toshiyuki Kodama, Nobuaki Kikuchi, Satoshi Okamoto, Seigo Ohno, Satoshi Tomita</i>	
Emergent Magneto-Inductance Effect in Ni45Fe55 Thin Films on Polycarbonate Substrates.....	172
<i>Zijing Zhang, Yu Matsushima, Yuri Ohashi, Mizuki Matsuzaka, Hideo Kaiju</i>	
Application of Oleic Acid Functionalized Fe ₃ O ₄ Magnetic Nanoparticles for Adsorption of Oil from Emulsified Solutions.....	174
<i>Glemarie C. Hermosa, Li-Hsing Fang, Chien-Shiun Liao, Chiung-Fang Chang, Yen-Ling Chiu, Chih-Hung Chang, Sea-Fue Wang, Aidan An-Cheng Sun</i>	
Magnetite/Copolymer Nanosphere Added Soft-Magnetic Carbonyl Iron Based Magnetorheological Fluid and Its Damping Performance.....	176
<i>Wen Jiao Han, Guo Ping Wang, Fu Feng Yang</i>	

Enhancement of Non-Destructive Evaluation by Combining Induction Thermography and Eddy Current Testing Techniques <i>Weiyi Cheng</i>	178
Magnetic MXene: A Machine Learning Model with Small Data <i>Yogesh Khatri, Vaidehi Atapdakar, Aashi Agarwal, Arti Kashyap</i>	180
Transmission Spectra of Magnetic Fluids with Magnetite Nanoparticles in the Visible and near-IR Regions <i>Constantine Yerin, Victoria Vivchar</i>	182
Electride and Magnetic Properties of Ternary Intermetallic Compounds LaTMSi <i>Alexey A. Dyachenko, Alexey V. Lukoyanov, Vladimir I. Anisimov</i>	184
A New Observation System for Nonlinear Localized Oscillation Using Commercially Available Magnet <i>Yasuhiro Mogi, Masayuki Kato</i>	186
Monitoring Ionic Diffusion from CoB in Molecular Layers <i>Daniel Roe, Andrew Caruana, Sean Langridge, Christian Kinane, Oscar Cespedes</i>	188
<u>ENERGY HARVESTING AND LINEAR MACHINES</u>	
Switchable Frequency Response Based on Electropermanent Magnet Actuator for Wide-Range Operation of Electromagnetic Devices <i>Masayuki Kato, Fumiya Kitayama</i>	190
Design and Analysis of Wide-Bandwidth Actuator for Haptic Controller with Novel Magnetic Circuit <i>Zhixiong Jiang, Jihun Park, Sangmoon Hwang</i>	192
A Study of Stable Levitation Conditions Considering Propulsion of a Carrier in the Magnetically Levitated Conveyance System Using the Linear Stepper Motor <i>Shota Mitsui, Kazuhiro Taniguchi, Shunsuke Ohashi</i>	194
Study on Smoothing Generated Voltage in the Vertical Linear Vibration Generator <i>Hodaka Kojima, Taichi Maruyama, Yusuke Koyanagi, Eiji Shirahama, Shunsuke Ohashi</i>	196
Simple Design for Magnetic Field Energy Harvesting <i>Kunihisa Tashiro</i>	198
Effects of the External Disturbances on Rotational Stability of the HTS Magnetic Bearings <i>Keigo Yagi, Rento Taniguchi, Shuto Ishida, Shunsuke Ohashi</i>	200
Development Acoustic Device Using Giant Magnetostrictive Material: Fundamental Consideration on Output Performance Due to Differences in Material Properties <i>Taro Kato, Hayata Okazaki, Takuya Kitamura, Fumiya Maehara, Ikkei Kobayashi, Jumpei Kuroda, Daigo Uchino, Kazuki Ogawa, Keigo Ikeda, Ayato Endo, Hideaki Kato, Takayoshi Narita, Mitsuaki Furui</i>	202
Analysis and Modeling of a Flux-Switching Transverse-Flux Permanent Magnet Tube Linear Motor <i>Dongshan Fu, Kangyi Wu, Xiangrui Wang, Xiaojie Wu</i>	204

Experimental Verification of Torque Ripple Suppression Method Using Coriolis Force Generated by Electromagnetic Oscillatory Actuator.....	206
<i>Daiki Naganuma, Masayuki Kato</i>	
An Evolutionary Computation Approach for the Electromagnetic Field Assessment of Eddy Current Motion Dampers.....	208
<i>A. A. Adly, S. K. Abd-El-Hafiz</i>	
<u>ENERGY-ASSISTED RECORDING, DOMAIN WALL DEVICES, NEUROMORPHIC AND UNCONVENTIONAL COMPUTING</u>	
Demonstration of Pavlov Associative Memory by Implementation of Rate Coding Using Magnetic Tunnel Junction Neurons.....	210
<i>Jaewon Jang, Wanjun Park</i>	
Antiferromagnetic Artificial Neuron Modeling of Biological Neural Networks.....	212
<i>Hannah Bradley, Lily Quach, Steven Louis, Vasyl Tyberkevych</i>	
Control of Information Flow in Arrays of Spin-Torque Oscillators	214
<i>Tsubasa Ise, Simon John Greaves, Yoichiro Tanaka</i>	
Effect of C Replacement on Magnetic Properties and Nanostructure of FePt-Nitride Granular Film for HAMR Media	216
<i>Kim Kong Tham, Ryosuke Kushibiki, Shin Saito</i>	
Resistance-Sum Architecture for Voltage-Controlled SOT-MRAM Based Computing-In-Memory with Hybrid References	218
<i>Cancheng Xiao, Yuxuan Ma, Dingsong Jiang, Guiping Ji, Hao Gu, Yuejie Zhang, Jianshi Tang, Huaqiang Wu, Tianxiang Nan</i>	
Blocking Phenomenon of Hard/Soft Bilayer FePt Grains in Granular Film	220
<i>Daiki Isurugi, Takashi Saito, Kim Kong Tham, Tomoyuki Ogawa, Yoichiro Tanaka, Simon John Greaves, Shin Saito</i>	
Atomistic Simulations on the Effects of Grain Size in HAMR	222
<i>David R. Papp, Richard F. L. Evans, Roy Chantrell</i>	
Modelling In-Device Inference and Classification of Binary Digits Using Nonlinear Dynamics of Spin Hall Oscillator	224
<i>John Rex Mohan, Chisato Yamanaka, Ryoyan Feng, Arun Jacob Mathew, Yoji Nakamura, Rohit Medwal, Surbhi Gupta, Rajdeep Singh Rawat, Yasuhiro Fukuma</i>	
A Multi-State Memory Device Based on the Manipulation of a Single Skyrmion Using Spin-Polarized Current.....	226
<i>W. Al Saidi, R. Sbiaa, Stan Laurel, N. Tiercelin</i>	
Discrete Anomalous Hall Resistance-Based Quantized Convolutional Neural Network.....	228
<i>Aijaz H. Lone, Xuecui Zou, Hanrui Li, Nazek El-Atab, Hossein Fariborzi</i>	

FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA

Microstructure and Electron Magnetic Circular Dichroism of Antiphase Boundaries in Magnetic Oxides.....	230
<i>Zhuo Li, Xiaoyan Zhong</i>	

Anisotropic Magnetoresistance Effect in Bulk Single-Crystal Half-Metallic Heusler Alloys.....	232
<i>Takahiro Tanaka, Takahide Kubota, Satoshi Kokado, Rie Y. Umetsu</i>	
Magnetic Anisotropy Studies of FeyN Nanocrystals Embedded in GaN	234
<i>Katarzyna Gas, Andrea Navarro-Quezada, Tia Truglas, Viola Bauernfeind, Margherita Matzer, Dominik Kreil, Andreas Ney, Heiko Groiss, Alberta Bonanni, Maciej Sawicki</i>	
Valence Band Dispersion in Mn, Bi and in Doped GaAs.....	236
<i>Nataliia Tataryn, Oksana Yastrubchak, Tadeusz Wosinski, Janusz Sadowski, Maciej Sawicki, Sergii Mamykin, Olga Kondratenko, Volodymyr Romanyuk, Olena Fedchenko, Dmitry Vasilyev, Sergey Babenkov, Hans-Joachim Elmers, Katerina Medjanik, Gerd Schönhense</i>	
Effect of Crystallinity on Magnetic Properties in Manganese-Doped Indium Tin Oxide Films.....	238
<i>Saiki Kitagawa, Toshihiro Nakamura</i>	
Study of Interplay Between Magnetic/Electric Fields and Cr-Doped Effect in Mo _{1-x} Cr _x Se ₂ (x=0, 0.5) Nanosheet.....	240
<i>Yu-Ting Lee, Tung-Chi Tsai, Chun-Chuen Yang, Yung-Hsiang Tung, Kuen-Song Lin</i>	
Band Engineering of Magnetic Semiconductors by Phosphorus Doping	242
<i>Oksana Yastrubchak, Logan Riney, William Powers, Nataliia Tataryn, Sergii Mamykin, Olga Kondratenko, Volodymyr Romanyuk, Lyudmyla Borkovska, Oleksandr Kolomys, Larysa Khomenkova, Jiashu Wang, Xinyu Liu, Jacek K. Furdyna, Badih A. Assaf, Olena Fedchenko, Dmitry Vasilyev, Sergey Babenkov, Hans-Joachim Elmers, Katerina Medjanik, Gerd Schönhense</i>	
Field-Induced Spin Nematic Phase of a Magnet on the Shastry-Sutherland Lattice with the Anisotropic Ferromagnetic Interaction.....	244
<i>Toru Sakai</i>	
Structure, Magnetism and Electrical Transport of Electron Doped SrCo _{0.5} Nb _{0.5} O ₃	246
<i>Mahima M. Kurian, P. Neenu Lekshmi, P. N. Santhosh</i>	

FUNDAMENTALS OF MAGNETIC NANOPARTICLES: RECENT INSIGHTS IN STRUCTURE-PROPERTY RELATIONS

High-Throughput Determination of Structure-Property Relationships of Magnetic Nanoparticles Using a Multi-Detector Chromatographic Approach.....	248
<i>Norbert Löwa, Amani Remmo, Frank Wiekhorst</i>	
Magnetic Nanoparticles: From the Nanostructure to the Physical Properties	250
<i>Xavier Batlle, Carlos Moya, Mariona Escoda-Torroella, Óscar Iglesias, Arantxa Fraile Rodriguez, Amílcar Labarta</i>	
Quantifying the Magnetic Anisotropy of Individual Nanomagnets Embedded in Biological Entities	252
<i>Lourdes Marcano, Iñaki Orue, David Gandia, Ana García-Prieto, María Luisa Fdez-Gubieda, Sergio Valencia</i>	
Functional Magnetic Nanoparticles: From Synthesis Design to In-Depth Characterization and Nano-Labelling for Ultrasensitive Magnetic Biosensing	254
<i>Rebecca Sack, Mayiz Zgheib, Mohammad Suman Chowdhury, Yihao Wang, Frank Ludwig, Meinhard Schilling, Thilo Viereck, Aidin Lak</i>	

HARD MAGNETIC MATERIALS I

- Understanding the Coercivity of Ga-Containing Nd-Fe-B Sintered Magnets from Feature Extraction and Selection of X-Ray Diffraction Patterns by Dimension Reduction and Sparse Modelling 256

Keisuke Ishigami, Tomoyuki Onuma, Akira Kato, Masao Yano, Tetsuya Shoji, Tetsuya Nakamura, Satoshi Okamoto

- Development of Dy-Free Sintered NdFeB Magnet Through Grain Boundary Engineering by Diffusion of PrCu Alloys 258

Wei Tang, Gaoyuan Ouyang, Jing Wang, Harika Dasari, Matthew J Kramer, Jun Cui, Iver E Anderson

- Nd-Fe-B Hydrogenation-Disproportionation-Dehydrogenation-Recombination (HDDR) Magnet for Variable Magnetic Flux Motor 260

Keiji Takeda, Shota Miyazaki, Tomohiro Kajita, Yasushi Enokido

- Achieving 2.8 T Coercivity in Nd-Fe-B Sintered Magnets Subjected to DyCu and PrCu Grain Boundary Diffusion Process 262

Zexuan Wang, Taisuke Sasaki, Yasuhiro Une, Tadakatsu Ohkubo, Kazuhiro Hono

HARD MAGNETIC MATERIALS II

- Development of TbCu7-Type Sm-Fe-N Anisotropic Magnet Powder by Low-Temperature Build-Up Process Using Molten Salt 264

Suguru Sato, Eri Node, Shusuke Okada

- Influence of Filler Fraction and Morphology on Magnetic Performance of Polymer Bonded Magnets Produced by Laser Powder Bed Fusion 266

Kilian Schäfer, Tobias Braun, Stefan Riegg, Jens Musekamp, Oliver Gutfleisch

- Magnetic Properties and Phase Transformation of Sm-Fe-Co-X (X = Ga, V, B, Si, and Ti) Permanent Magnetic Materials 268

Chul-Jin Choi, Tian Hong Zhou, Jong-Woo Kim, Jihoon Park

- Microstructural Features of Strip-Cast Nd(Fe,Mo)12 Based Alloys 270

Sorana Luca, Camille Flament, Ryan Sedek, Patricia De Rango

- Restricted Grain Growth and Role of Nb Precipitates in Nd-Fe-Nb-B Melt Spun Ribbon 272

M. B. Siva Kumar, D. Prabhu, M. Sadhasivam, K. G. Pradeep, G. Sundararajan, R. Gopalan

- Modeling the Impact of Laser Powder Bed Fusion on Nd-Fe-B Permanent Magnets 274

Juliane Thielsch, Florian Bittner, Welf-Guntram Drossel

- Development of Recycling Friendly Coatings for Nd-Fe-B Magnets 276

Benjamin Podmiljšak, Laura Grau, Carlo Burkhardt, Spomenka Kobe

HARD MAGNETIC MATERIALS III

- Direct Consolidation of Sm₂Fe₁₇N₃ Magnet and Coercivity Improvement by Severe Plastic Deformation 278

Akihide Hosokawa, Yusuke Hirayama

Preparation of Sm-Fe-N Hard Magnetic Nanopowder from Micron-Sized Sm-H and Fe Mixed Powder.....	280
<i>Yusuke Hirayama, Zheng Liu, W. Yamaguchi, Kenta Takagi, Kimihiro Ozaki</i>	
Development of Sm ₂ Fe ₁₇ N ₃ Magnetic Powder Doped with La, W, and Ti.....	282
<i>Hisashi Maehara, Michiya Kume</i>	
Evaluation of Practicality for Fully Dense Isotropic Sm-Fe-N Magnets Made by Shock-Wave Consolidation Method.....	284
<i>Shinobu Takagi, Koichi Morii, Takahiko Iriyama, Koji Tominaga, Naoyuki Wada, Eiji Hida, Yoshinori Yamada</i>	
Heat Treatment Effect on Magnetic Properties of Sm-Co Nanopowder Prepared by Induction Thermal Plasma Process.....	286
<i>Kwangjae Park, Yusuke Hirayama</i>	
Effects of Nb and B Addition on Intrinsic Magnetic Properties and Phase of TbCu ₇ -Type Sm-Fe-Co-Nb-B Alloys.....	288
<i>Naoki Kurokawa, Masashi Matsuura, Shinya Sakurada, Satoshi Sugimoto</i>	
Anomalous Reduction in Magnetization of Sm ₂ Fe ₁₇ N ₃ Anisotropic Sintered Magnets During Pressure Current Sintering.....	290
<i>Wataru Yamaguchi, Akihide Hosokawa, Kenta Takagi</i>	

HARD MAGNETIC MATERIALS IV

Experimental Determination of Anisotropy Fields, First and Second Anisotropy Constants, and Remanent Magnetizations in Self-Polarized Zn-Ti and Co-Ti Equally Co-Substituted BaM Ferrites	292
<i>Antoine Hoez, Alexis Chevalier, Jean-Luc Mattei</i>	
Magnetic Properties of α'' -Fe ₁₆ N ₂ Nanopowder	294
<i>Tetsuji Saito, Hitoshi Yamamoto</i>	
BH Curves of Anisotropic Alnico Magnets.....	296
<i>Anar Ibrayeva, Emil Lind, Marcelo De Silva, Sagar Ghorai, Sandra Eriksson</i>	
Magnetic, Physical and Chemical Properties of Consolidated Mn-Al-C Bulk Magnets.....	298
<i>Semih Ener, Ulysse Rocabert, Fernando Maccari, Alex Aubert, Guixiang Qin, Andres Martin-Cid, Alberto Bollero, Oliver Gutfleisch</i>	
Fabrication of L10-FeNi from Compositional Optimized Amorphous Alloys	300
<i>Yaocen Wang, Yan Zhang, Ziyan Hao, Chongde Cao</i>	
Optimisation of Ga-Doped τ -MnAl for Use as a Permanent Magnetic Material.....	302
<i>Elizabeth Davis-Fowell, Nicola Morley, Daniel Allwood, Russell Goodall</i>	
Exploration of Functional Properties of All-3d Transition Metal Heusler Alloys	304
<i>Madhura Marathe, Heike C. Herper</i>	
Magnetic Properties of Monoclinic Fe ₃ Se ₄ Doped with Transition Metals.....	306
<i>Ahmad Alsaad, Nabil Al Aqtash, Hao Zeng, Renat F. Sabirianov</i>	
Generalised Form of the Magnetic Anisotropy Field in Micromagnetic and Atomistic Spin Models.....	308
<i>Jack B. Collings, Ricardo Rama-Eiroa, Sarah Jenkins, Rubén M. Otxoa, Richard F. L. Evans, Roy W. Chantrell</i>	

HARD MAGNETIC MATERIALS V

Contribution of Nd-Rich Alloys to the Multi-Main-Phase LaCe-Based Sintered Magnets with High Coercivity	310
<i>Hao Chen, Weiqiang Liu, Yuqing Li, Hongguo Zhang, Ming Yue</i>	
Effect of Phosphate Treatment on Corrosion Resistance of Nd-Fe-B Anisotropic Magnetic Powder.....	312
<i>K. Shimba, M. Yamazaki, S. Sugimoto, H. Mitarai</i>	
DEM Simulation of the Single-Directional Pressed and Double-Directional Pressed Nd-Fe-B Compacts.....	314
<i>Kunyuan Zhu, Xiaoqian Bao, Jiheng Li, Shengen Guan, Xuexu Gao</i>	
The Effect of Annealing Temperature on Grain Boundary Structure and Magnetic Properties of Nd-Ce-Gd-Fe-B Sintered Magnet.....	316
<i>Haijun Yu, Xiaoqian Bao, Shengen Guan, Jiheng Li, Xuexu Gao</i>	
PLD-Fabricated (Nd Or Pr)-Fe-B Thick-Film Magnets Applied to Small Stepping Motors	318
<i>Kazuki Kono, Masahiro Sakuragi, Akihiro Yamashita, Takeshi Yanai, Hirotoshi Fukunaga, Masaki Nakano</i>	

HARD MAGNETIC MATERIALS VI

Effect of Cu Addition on Magnetic Properties and Microstructures of SmFe ₁₁ Ti Alloys Prepared by Melt-Spinning.....	320
<i>Hansol Lee, Jongryoul Kim</i>	
Effect of Isothermal Aging Process on the Microstructure of Grain Boundary Regions in Sm(Co, Fe, Cu, Zr) _z Magnets.....	322
<i>Chuanghui Dong, Lei Liu, Bo Zhou, Yingli Sun, Yong Ding, Aru Yan</i>	
Enhancement of Maximum Energy Product by α -Fe Coating on the Side of Rectangular Sm(Fe _{0.8} Co _{0.2}) ₁₂ Nanoparticles	323
<i>Ryusei Uda, Kunihiro Koike, Nobuyuki Inaba, Hiroaki Kato, Masaru Itakura, Masaki Nakano, Susumu Okubo, Hitoshi Ohta</i>	

HARD MAGNETIC MATERIALS VII

Switching Field Distributions and Magnetocrystalline Anisotropy Fields in Zn-Ti and Co-Ti Equally Co-Substituted BaM Ferrites.....	325
<i>Antoine Hoez, Alexis Chevalier, Jean-Luc Mattei</i>	
Demagnetization of Nd-Fe-B Sintered and Ferrite Magnets Derived from Magnetic Measurements.....	327
<i>Yutaka Matsuura</i>	
Magnetic Properties of Co-Zr-Si-B Melt-Spun Ribbons	329
<i>Masahiro Tanaka, Tetsuji Saito</i>	
Formation of Bct Structure and High Magnetic Anisotropy in Fe-Co Films with Added V and C Elements	331
<i>Takashi Hasegawa, Taito Nishikawa</i>	

Generation Probability of Point Defects Considering Microscopic Elastic Scattering Cross-Sections in Rare-Earth Permanent Magnets Via First-Principles Calculations	333
<i>Fumiko Akagi, Ryoma Suzuki, Tomoe Yayama</i>	
High Saturation Magnetization and High Coercivity of Co Substituted Orthoferrite.....	335
<i>Atsushi Sawamoto, Xiaoxi Liu</i>	
Microstructural and Magnetic Properties of Low-Energy Ball Milled LTP-MnBi Powders Via Melt-Spinning and Gas-Atomization	337
<i>Minkyu Kang, Jongryoul Kim</i>	
High Coercive Force Sm ₂ Fe ₁₇ N ₃ Magnetic Materials by Phosphate Surface Modification	339
<i>Shuichi Tada, Satoshi Yamanaka, Kenta Iwai, Masahiro Abe</i>	
Study of Recycle Process of Sm ₂ Fe ₁₇ N ₃ Bonded Magnet.....	341
<i>Muneo Yamamoto, Takahiro Sasaki, Kuniyasu Kawamura, Takayuki Yamashita</i>	
Synthesis of Hexaferrite-Based SrFe ₁₂ O ₁₉ /Fe-Co Nanocomposites	343
<i>Yui Okawa, Shinya Okada, Saeki Yamamuro</i>	
Effect of Cu Addition on the Crystal Structure and Magnetic Properties for Mn-Ga Thin Films	345
<i>Y. Miura, M. Doi, T. Shima</i>	

HIGH FREQUENCY DEVICES & WIRELESS POWER TRANSMISSION I

Toroidal Nanocrystalline Powder Core with Trapezoidal Cross Section.....	347
<i>Xinru Li, Zhichao Luo, Luke Shillaber, Borong Hu, Chaoqiang Jiang, Teng Long</i>	
A Novel Planar Magnetic Flux Concentrator and Its Application in Wireless Power Transfer	349
<i>Junwei Lu, Xiaokun Li</i>	
Semi-Analytical Non-Linear Physical Model of the Core Losses in Ferrite Ring Cores	351
<i>Théophane Dimier, Jürgen Biela</i>	
Analysis of Cross-Coupling Effect for Multi-Objective Wireless Power Transfer.....	353
<i>Hongliang Pang, K. T. Chau, Zhichao Hua, Tengbo Yang</i>	
Minor Loop Position and Area Measurement of Inductors for DC-DC Converter Considering Excitation Process	355
<i>Kosuke Oda, Koushi Takano, Keiji Wada</i>	
Hysteresis Effect Induced Inductance Change and Power Loss for Boost Converter During the Voltage Conversion	357
<i>Jian-Hsing Lee, Ching-Ho Li, Chih-Cherng Liao, Ting-Wei Liao, Karuna Nidhi, Ke-Horng Chen</i>	
Inductive Heating Based on VHF-ISM Radio Band Frequencies as Technology Platform for Efficient Heating of Metallic Micro-Scaled Bonding Layers in MEMS Packaging.....	359
<i>Christian Hofmann, Martin Kroll, Sushant Panhale, Maik Wiemer, Andreas Kunke, Karla Hiller, Harald Kuhn</i>	
Downsizing of High-Power Open-End Coil with Pure Water	361
<i>Itsuki Masuda, Mayu Fukuoka, Manabu Ishitobi</i>	
Optimum Air Gap Selection in Powder Core Inductors	363
<i>Luigi Solimene, Davide Cittanti, Fabio Mandrile, Carlo Stefano Ragusa, Radu Bojoi</i>	

HIGH FREQUENCY DEVICES & WIRELESS POWER TRANSMISSION II

3D Wireless Power Transfer System with Three-Phase Skewed Cylindrical Coil	365
<i>Hikari Taga, Fumiya Tanaka, Yuki Sato, Hirokazu Matsumoto</i>	
Modeling and Experimental Validation of Voltage Distribution in MFTs with Foil Windings	367
<i>Kohsuke Iwai, Siamak Pourkeivannour, Mitrofan Curti, Elena A. Lomonova</i>	
Application of Magnetic Composite Materials in Windings to Reduce Alternating-Current Resistance in Leakage Transformers	369
<i>Kazuhiro Shimura, Shigeki Kobayashi, Mitsuhide Sato, Tsutomu Mizuno</i>	
Fabrication of Planar Power Inductor for Beyond 10 MHz Using Fe-Based Composite Magnetic Core	371
<i>Ryohei Miyata, Soichi Kimura, Nanami Kawada, Takatoshi Minamisawa, Makoto Sonehara, Kousuke Miyaji, Toshiro Sato</i>	
Propulsion and Control of Microrobot Using a Multiple Wireless Power Transfer Coil.....	373
<i>Dongwook Kim</i>	
Study on Magnetic Properties of Toroidal Cores Composed by Electrolytic Iron Powder with Different Shapes	375
<i>Yudai Kodama, Phuong Nguyen, Takamichi Miyazaki, Yasushi Endo</i>	
Magnetic Analysis and Control of Three-Phase Wireless EV Charging System Based on Quasi Z- Source NPC Inverter.....	377
<i>Yuxin Liu, Zhiping Dong, Senyi Liu, Bowen Zhang, Hao Wen, Chunhua Liu</i>	
Ferrite Pads Gap Thermal-Magnetic Evaluation and Mitigation for 11.1-KW Wireless Power Transfer	379
<i>Xian Zhang, Chengming Hao, Runtian Dou, Pengcheng Zhang, Zhaoyang Yuan, Qingxin Yang</i>	
A Novel Hybrid Shielding Method with Single-Source Active Topology and Efficiency Stability for Wireless Power Transfer.....	381
<i>Xian Zhang, Shiqi Liu, Runtian Dou, Fengxian Wang, Pengcheng Zhang, Zhaoyang Yuan, Qingxin Yang</i>	
Metal Influence Suppression Method for Rotating Wireless Power Transfer System Based on Toroidal Double-D Coil.....	383
<i>Wenjiang Yuan, Xian Zhang, Lin Sha</i>	
A Data-Driven Inductor Modeling Technique Using Parametric Circuit Simulation and Deep Learning	385
<i>Takehiro Motomatsu, Takahiro Koga, Noritaka Shigei, Masahiro Yamaguchi, Atsushi Itagaki, Yoichi Ishizuka</i>	
Fundamental Study of Magnetic Particle Composite Core Made by Fused Deposition Modeling Method	387
<i>Shinji Ikeda, Aoi Honda, Natsuro Kita</i>	

HIGH FREQUENCY, MICROWAVE AND MILLIMETER WAVE MATERIALS AND DEVICES I

Sub-Harmonic Excitation in Passive Spintronic Diodes Based on Magnetic Tunnel Junctions.....	389
<i>Andrea Grimaldi, Eleonora Raimondo, Anna Giordano, Riccardo Tomasello, Mario Carpentieri, Giovanni Finocchio</i>	
High-Frequency Magnetic Properties of Novel Sm–Mo–Fe Phosphate-Coated Fe–X (X = Ni and Mn) Magnetic Powder Cores.....	391
<i>Ryoya Okazaki, Jun Nishitaji, Satoshi Abe, Jun Akamatsu, Nobuyoshi Imaoka, Michiya Kume, Yoshinaka Kawakami, Hiroyuki Hosokawa, Kimihiro Ozaki</i>	
High-Frequency Magnetic Properties of Nd ₂ Fe ₁₇ N ₃ Magnetic Powders with Nano- α -Fe Phase-Separated Surface Layers	393
<i>Jun Akamatsu, Satoshi Abe, Nobuyoshi Imaoka</i>	
Magnetic Properties of Soft Magnetic Powder/Epoxy Composite Sheet	395
<i>Hideki Oyama, Nanami Kawada, Toshiro Sato</i>	
Evaluation of Noise Suppression Sheet Embedded in Printed Circuit Boards	397
<i>Ken'ichi Chata'Ni, Toshiyuki Igarashi, Masashi Ikeda</i>	
Microwave Absorption Properties of Fe/Fe ₁₆ N ₂ Nanoparticles Prepared from Iron Oxide.....	399
<i>Saijian Ajia, Mitsuharu Sato, Masashi Matsuura, Satoshi Sugimoto</i>	
Estimation of Material Characteristics of Film-Type Noise Suppressor Using Equivalent Circuit Modeling and Genetic Algorithm	401
<i>Takahiro Mikami, Sho Muroga, Motoshi Tanaka</i>	
Electromagnetic Field Analysis on Ringing Phenomenon of Inductor Driven by Inverter Considering Stray Capacitance.....	403
<i>Xuanda Hou, Kazuya Kawai, Hiroshi Dozono, Kazuhiro Muramatsu, Norihiro Ogishima, Nguyen Gia Minh Thao, Keisuke Fujisaki, Yanhui Gao, Weimin Guan, Cuihua Tian, Jiaxin Yuan, Baichao Chen</i>	
A Compact and Integrated Magnetic Coupler Design with Cross-Coupling Elimination Utilizing LCC-LCC/S Compensation Network for Building Attached Photovoltaic Systems	405
<i>Heshou Wang, Jinhong Sun, Ka Wai Eric Cheng</i>	
Optimization of Magnetic Coating for Improved Electromagnetic Wave Absorption in Bi-Layered Nano-Hollow Spheres	407
<i>Anupam Gorai, Kalyan Mandal</i>	

HIGH FREQUENCY, MICROWAVE AND MILLIMETER WAVE MATERIALS AND DEVICES II

Magnetodielectric Material for VHF Antenna Devices Tunable by a Low DC Magnetic Field.....	409
<i>Alexis Chevalier, Hanadi Breiss, Antoine Hoez, Jean-Luc Mattei</i>	
An Estimation Method of Magnetic Coupling Coefficient Between Two Microstrip Lines Using Machine Learning of Near Field Information.....	411
<i>Yusuke Sato, Sho Muroga, Hidefumi Kamozawa, Motoshi Tanaka</i>	

Preparation of Fe-B/Epoxy Composite Films by the LbL-Assisted Composite Plating Method Using Epoxy-Coated Fe-B Fine Particles.....	413
<i>Chihiro Masumoto, Yushi Kumauchi, Atsushi Yokoi, Wai Kian Tan, Hiroyuki Muto, Yasushi Endo, Naoyuki Fujita</i>	
Microstructure of Nd ₂ Fe ₁₇ N ₃ Magnetic Powder Surface with Nano- α -Fe Phases Separated Surface Layer.....	415
<i>Satoshi Abe, Jun Akamatsu, Nobuyoshi Imaoka</i>	
Application of Fe-Based Alloy Powder to Noise Suppression Sheet for GHz-Band.....	417
<i>Toshiyuki Igarashi, Akira Urata, Miho Chiba</i>	
Analysis on New Electromagnetic Shielding Structure and Shielding Effectiveness of Electric Vehicle Wireless Charging System.....	419
<i>Lihua Zhu, Zhongying Tian, Yuan Li, Xian Zhang, Qingxin Yang</i>	
Conformally Conical Coil Design in Wireless Power Transfer for Emerging Unmanned Electric Vessels	421
<i>Heshou Wang, Ka Wai Eric Cheng</i>	

INTERACTING MAGNETIC NANOPARTICLES

Electrodeposited CoPt Multilayered-Nanowire for 3D Memory Device	423
<i>Md. Mahmudul Hasan, Tongshuang Huang, Mikiko Saito, Yota Takamura, Daiki Oshima, Takeshi Kato, Takayuki Homma</i>	
Magnetic Study of Cobalt Three Dimensional Nanonetworks: First Order Reversal Curves, Hysteresis Loops and First Magnetization Curves	425
<i>Alejandra Ruiz-Clavijo, Olga Caballero-Calero, David Navas, Carolina Martín-Rubio, Ruy Sanz, Marisol Martín-González</i>	
Flexible Thermoelectrics Based on 3D Interconnected Magnetic Nanowire Networks.....	427
<i>T. Da Camara Santa Clara Gomes, N. Marchal, F. Abreu Araujo, L. Piraux</i>	
Ultrasmall Fe ₃ O ₄ @Au Composite Nanoparticles with Different Sizes of Fe ₃ O ₄ for Magnetic Hyperthermia.....	429
<i>Loi Tonthat, Tomoyuki Ogawa, Shin Yabukami</i>	

LATEST ADVANCES IN MAGNETIC NANOTECHNOLOGY

Skyrmion Dynamics and the Skyrmion-Excited Spin Wave Fractal Network	431
<i>Dustin A. Gilbert</i>	
Machine Learning Quantum Systems with Magnetic P-Bits.....	433
<i>Shuvro Chowdhury, Kerem Y. Camsari</i>	

LINEAR MOTORS / ACTUATORS

3D Modeling of High-Temperature Superconducting Rotating Field Electrodynamic Maglev Motor	435
<i>Wei Qin, Yuhua Ma, Gang Lv</i>	
Design and Analysis of a Double Layer Coils Linear Motor with Series Magnetic Circuit Structure Using for Linear Dynamic Loading Platform.....	437
<i>Junren Mu, He Zhang, Yuexuan Lou, Ye Zhao</i>	

A Rare-Earth-Free Linear Motor Replacing Coreless Linear Motors with Neodymium Sintered Magnets	439
<i>Terukazu Akiyama, Satoshi Imamori</i>	

Design of Wrist Rehabilitation Exoskeleton Device with Magnetic Serial Elastic Actuator.....	441
<i>Li-Wei Cheng, Zhi-Yong Chen, Jen-Yuan Chang</i>	

Design of a Reaction Wheel with MRF-Encapsulated Magnetic Ball.....	443
<i>Hong-Siang Chen, Kai-Yang Peng, Kwun-Yao Ho, Jen-Yuan Chang</i>	

MAGNETIC FIELD SENSORS (NON-RECORDING) I

Feasibility Investigation on Sinusoidal-Reluctance Rotor Contour in Variable Reluctance Resolver.....	445
<i>Wenyuan Mi, Jincheng Yu, Zheng Cai, Hang Zhao, Fei Zhao, Yixiao Luo</i>	

Development of Optically Pumped Magnetometers Towards Next Generation Biomagnetic Neuroimaging	447
<i>Tetsuo Kobayashi</i>	

Analysis of Eddy Current Testing Signals' Frequency Responses for Conductivity-Invariant Crack Sizing.....	449
<i>Weiyi Cheng</i>	

Comparison of Fractional and Integral Slot Winding Configurations on the Position Error for a Conventional Wound-Rotor Resolver.....	451
<i>Murat Onsal, Yucel Demir, Metin Aydin</i>	

Spin-Dependent Photocarrier Generation Dynamics in Electrically Detected Nitrogen-Vacancy-Based Quantum Sensor.....	453
<i>Hiroki Morishita, Naoya Morioka, Tetsuri Nishikawa, Hajime Yao, Shinobu Onoda, Hiroshi Abe, Takeshi Ohshima, Norikazu Mizuochi</i>	

High Resolution Enlarged Open-Bore Narrow-Band Magnetic Particle Imaging Based on Double-Layer Linear Scanning Structure.....	455
<i>Shi Bai, Tianshu Li, Kewen Li, Ping Huang, Zhongzhou Du, Takashi Yoshida, Min Zhang</i>	

A Variable-Reluctance Based Wireless Sensing Module for Intraoral Pressure Measurement.....	457
<i>Mayank Kohli, Chin-Chung Chen, Li-Fang Hsu, Chung-Chen Jane Yao, Tien-Kan Chung</i>	

MAGNETIC FIELD SENSORS (NON-RECORDING) II

Experimental Assessment of the Performances of an Anisotropic Magnetoresistive Sensor After Exposure to Strong Magnetic Fields.....	459
<i>Céline Vergne, Hugo Nicolas, Morgan Madec, Simone Hemm, Raphael Guzman, Joris Pascal</i>	

Improved Detectivity in Tunnel Magnetoresistance Sensors by Controlling Free Layer Thickness and Annealing Process.....	461
<i>Murali Krishnan M, Prabhanjan D. Kulkarni, Tomoya Nakatani, Hitoshi Iwasaki, Hirofumi Suto, Yuya Sakuraba</i>	

Spatial Resolution and Sensitivity of GMR Sensors with Magnetic Flux Concentrators Used for Magnetic Field Microscopes	463
<i>Akira Kikitsu, Yoshihiro Higashi, Yoshinari Kurosaki, Satoshi Shirotori, Kazuhiro Suzuki, Yuji Terui</i>	

Low-Coercivity Perpendicular Spin Transfer Torque Magnetic Tunnel Junctions as Nanoscale Magnetic Sensors	465
<i>Hugo Nicolas, Ricardo C. Sousa, Ariam Mora-Hernández, Ioan-Lucian Prejbeanu, Luc Hebrard, Jean-Baptiste Kammerer, Joris Pascal</i>	
Magnetic Hammer Testing with Tunnel Magnetoresistive Sensors.....	467
<i>Jun Ito, Muftah Al-Mahdawi, Mikihiko Oogane</i>	
A Novel Comb-Shaped Magnetoresistive Sensor with Magnetic Flux Concentrators for Improved Sensitivity.....	469
<i>Prabhanjan D. Kulkarni, Hitoshi Iwasaki, Tomoya Nakatani</i>	
 <u>MAGNETIC FIELD SENSORS (NON-RECORDING) III</u>	
Variable Cross-Section FeGa/Quartz Composite Magnetic Field Sensor.....	471
<i>Dongyu Chen, Yumei Wen, Xiaopeng Yang, Ping Li, Yao Wang</i>	
Dual Induction Eddy Current Probe for Vibration Noise Reduction	473
<i>Daigo Kosaka, Yuji Kumakura, Fumio Kojima</i>	
Examination of Thinning Inspection Method for Ferromagnetic Steel Tubes Using Velocity Effect of Static Magnetic Field	475
<i>Makoto Tohara, Yuji Gotoh</i>	
Thickness Measurement of Nickel Plating on the Back Side Using a Combined Magnetic Field with AC of Two Different Frequencies.....	477
<i>Kohei Kawada, Syunsuke Mio, Yuji Gotoh</i>	
Realization of Different Anisotropy Direction for Each Thin-Film Magnetoimpedance Element on the Same Substrate	479
<i>Hiroaki Kikuchi, Akitsugu Ueno, Masaru Tanii</i>	
Estimation of Anomalous Portion in Gray Cast Iron Using Non-Contacting Electromagnetic Sensor	481
<i>Syunsuke Mio, Kohei Kawada, Yukihisa Okumura, Yuji Gotoh</i>	
Development of a Flexible Sensor Focusing on the Excitation and Search Characteristics of Planar Coils	483
<i>Saijiro Yoshioka, Shun Yamamura</i>	
Frequency Characteristics Analysis of Remote Field Eddy Current Testing on Ferromagnetic Pipes	485
<i>Kai Komatsubara, Yanhui Gao, Yuji Gotoh, Weimin Guan, Kazuhiro Muramatsu</i>	
Detection of Metal Surface and Back Surface by Rectangular Wave Eddy Current Testing with Magneto Resistive Sensor	487
<i>Ziwei Guo, Teruyoshi Sasayama</i>	
AC Magnetic Field Detection of Coplanar Line Type Thin Film Magnetic Field Sensor with Optimized Narrow Slits	489
<i>Ryota Suzuki, Masaya Sakamoto, Tomoya Ishihara, Junichi Honda, Shin Yabukami</i>	
Wireless Inductive Displacement Sensor 3D Printed Using Additive Technology	491
<i>Milica Kisic, Kalman Babkovic, Mirjana Damjanovic</i>	

MAGNETIC LOGIC, DOMAIN WALL DEVICES, ENERGY-ASSISTED RECORDING

A Complete Optomagnetic Logic Set.....	493
<i>Anton Kolosvetov, Alexander Chernov</i>	

MAGNETIC LOGIC, DOMAIN WALL DEVICES, ENERGY-ASSISTED RECORDING

Effect of Film Thickness on Microwave Assisted Switching Behavior	495
<i>Nobuaki Kikuchi, Katsunari Sato, Masatoshi Hatayama, Takehito Shimatsu, Satoshi Okamoto</i>	

MAGNETIC NANOPARTICLES AND NANOWIRES

Structure and Magnetic Properties of Mn–Pt and Mn–Pt–B Melt-Spun Ribbons	497
<i>Mayu Mitsue, Iwao Sasaki, Yicheng Zhang, Tatsuya Tokunaga, Toshifumi Ogawa</i>	

Magnetic Nanopillars in Self-Organized Magneto-Dielectric Nanocomposite Thin Films.....	499
<i>Hanae Kijima-Aoki, Hiroshi Masumoto, Yasushi Endo</i>	

Compositional Dependence of Structure, Magnetic and Electrical Conduction Properties of CoxPt1-X Alloy Nanowires Fabricated by Electrodeposition into Nanoporous Templates	501
<i>Natsuko Ohguchi, Syunpei Matsuoka, Shinya Kasai, Satoshi Sugimoto, Mikiko Saito, Takayuki Homma, Teruo Ono, Mutsuhiro Shima, Keisuke Yamada</i>	

Evaluation of Magnetization Response of Magnetic Nanoparticles Internalized into Cultured Adherent Cells.....	503
<i>Minoru Nishida, Masato Futagawa, Yasushi Takemura, Satoshi Ota</i>	

Characterization and Magnetic Properties for Room Temperature Synthesis of Ni-Doped Fe ₃ O ₄ /ZnS Core-Shell Nanoparticles	505
<i>Veena Nivetha Mary Arockia Doss, Deng-Shiang Shiu, Kao-Fan Lai, Yang-Wei Lin, Lance Horng</i>	

Characterization of Néel Relaxation Time in Multicore Magnetic Nanoparticles.....	507
<i>Haruki Goto, Masato Futagawa, Yasushi Takemura, Satoshi Ota</i>	

Electric Potential-Induced Localized Surface Plasmon Resonance of Fe ₃ O ₄ /Ag Composite Magnetic Nanoparticles.....	509
<i>Muhammad Riswan, Nanang Adrianto, Ilyas M. Yahya, Nurul I. Istiqomah, Andi M. Panre, Juharni Juharni, Sari Wahyuni, Muhammad Arifin, Iman Santoso, Daiki Oshima, Takeshi Kato, Edi Suharyadi</i>	

Magnetic Properties and XAFS Analysis of PEG-Coated Gd-Doped ZnO Magnetic Nanoparticles	511
<i>Kazune Nii, Kentaro Ohara, Kenta Nakazawa, Takeshi Sakamoto, Tomomasa Moriwaki, Yohei Fujita, Hiroki Amano, Ikumi Kawaguchi, Shuta Kobayashi, Taishu Shimohama, Yuko Ichiyanagi</i>	

MAGNETIC NANOPARTICLES: THEORY, SYNTHESIS AND CHARACTERIZATION

Permeability of Clustered Soft Magnetic Narrow Strips Controlled by a Surface Normal Magnetic Field.....	513
<i>Tomoo Nakai</i>	

Soft Magnetic Properties of Agglomerates of Fe Nanoparticles Fabricated by Cold Spray Technique	515
<i>Eiji Watanabe, Yuhei Kurumiya, Tomoyuki Ogawa, Hiroaki Kura, Hiroki Saito, Yuji Ichikwa, Kazuhiro Ogawa</i>	

MAGNETIC RECORDING: MEDIA, HEADS & MODELS I

Mode Hopping Impact on NFT Protrusion Measurement in HAMR	517
<i>Aiko Sakoguchi, Masaru Furukawa, Shuji Nishida, Ryo Nishikura, Kenji Tasaka</i>	
Identification of Nonlinear Reader Distortion in Magnetic Recording	519
<i>Bogdan Valcu, Roger Wood, Steve Granz</i>	
An Adaptive Minimum-Frame-Error-Rate BCJR Detector for Magnetic Recording.....	521
<i>Yucheng Zhang, Shanwei Shi, John R. Barry</i>	
Data-Driven Optimization of FePt Heat-Assisted Magnetic Recording Media Accelerated by Deep Learning TEM Image Segmentation	523
<i>Nikita Kulesh, Anton Bolyachkin, Ippei Suzuki, Yukiko K. Takahashi, Hossein Sepehri-Amin</i>	
A Hybrid Simulation for Smear Growth on HAMR Heads.....	525
<i>Roshan Mathew Tom, Qilong Cheng, David B. Bogy</i>	
SNR Impact of Magnetic Capping Layer in Granular FePt-L10 Media.....	527
<i>Jian-Gang Jimmy Zhu, Lei Zhang, Kenji Shimizu</i>	

MAGNETIC RECORDING: MEDIA, HEADS & MODELS II

A Study on Accelerating SP Decoding by Neural Network in SMR System	529
<i>Madoka Nishikawa, Yasuaki Nakamura, Yasushi Kanai, Yoshihiro Okamoto</i>	
Simulation Analysis of Thermal Decay and Read-Write Characteristics Depending on the Structure of Sputtered Tape Media.....	531
<i>Ikuya Tagawa, Satoshi Kodama, Junichi Tachibana, Takashi Aizawa, Minoru Yamaga</i>	
Challenge of Media Noise Suppression with Oxygen Control in Granular Structure for CoPtCr- Based Sputtered Tape Towards 400 Gb/In2.....	533
<i>Junichi Tachibana, Hiroyuki Kobayashi, Teruo Sai, Satoshi Kodama, Takashi Aizawa, Atsushi Yamaguchi, Shin Saito</i>	
Design of Non-Isolated Modulation Code with Minimum Hamming Distance of 3 for Bit-Patterned Media Recording Systems	535
<i>Thien An Nguyen, Jaejin Lee</i>	
Multitrack Recording and Two-Stage Decoding Schemes for Heated Dot Magnetic Recording with Double-Layered Bit Patterned Media.....	537
<i>Hidetoshi Saito</i>	
Feasibility Study of Reduction in Sound-Pressure Induced Vibration in Hard Disk Drives Using an Adaptive Feed-Forward Control.....	539
<i>Shinji Koganezawa, Kensei Funai, Hiroshi Tani, Renguo Lu, Shohei Kawada</i>	

MAGNETIC SEMICONDUCTORS AND METALS

Enhanced Anomalous Hall and Negative Anisotropic Magnetoresistance Effects Driven by P-D Hybridization with Carbon	541
<i>Shinji Isogami, Yohei Kota, Hideyuki Yasufuku, Keiji Oyoshi, Masahiko Tanaka, Yukiko K. Takahashi</i>	
A New Class of Ferromagnetic Semiconductors and Quantum Heterostructures	543
<i>Le Duc Anh, Kosuke Takiguchi, Takahiro Chiba, Masaaki Tanaka</i>	
Machine Learning Study of Highly Spin-Polarized Heusler Alloys at Finite Temperature.....	545
<i>Ivan Kurniawan, Yoshio Miura, Kazuhiro Hono</i>	
Putative Quantum Critical Point in Doped Skyrmion Binary Alloys	547
<i>S. Shanmukhara Samatham, S. Shravan Kumar Reddy, Akhilesh Kumar Patel, K. G. Suresh</i>	
Magnetotransport Properties of Mn ₂ CoSb.....	549
<i>Marina Seredina, Dmitry Karpenkov, Aleksei Bogach, Sergey Taskaev, Rie Y. Umetsu, Xiaoguang Xu, Vladimir Khovaylo</i>	
Magnetic Order in Wurtzite (Ga,Mn)As.....	551
<i>Katarzyna Gas, Janusz Sadowski, Maciej Sawicki</i>	

MAGNETIC TEXTURES I

Current-Induced Nonreciprocal Dynamics and Nonlinear Hall Effect of a Magnetic Hopfion.....	553
<i>Yizhou Liu, Hikaru Watanabe, Naoto Nagaosa</i>	
Dynamics of an Antiferromagnetic Bloch Line Driven by Spin Current.....	555
<i>R. V. Ovcharov, B. A. Ivanov, J. Åkerman, R. S. Khymyn</i>	
Resonant Magnetoelastic Coupling Between Magnetic Vortex and Lattice Breathing Modes.....	557
<i>Artem Bondarenko, Marios Kounalakis, Silvia Viola Kusminskiy, Gerrit Bauer, Yaroslav M. Blanter</i>	
Dynamic Properties of Magnetic Hopfions	559
<i>K. Sobucki, M. Krawczyk, O. Tartakivska, P. Graczyk</i>	
External Bias Field Control of Skyrmion Dynamics in a Magnetic Nanotrack.....	561
<i>Hari Prasanth Perumal, Syamlal S K, B. Priyanka, Jaivardhan Sinha</i>	

MAGNETIC TEXTURES II

Skyrmion Vs. Antiskyrmion Hall Angles	563
<i>Bom Soo Kim</i>	
Magnon Dynamics in a Skyrmion-Textured Domain Wall of Antiferromagnets.....	565
<i>Seungho Lee, Kouki Nakata, Oleg Tchernyshyov, Se Kwon Kim</i>	
Frequency Sensing and Detection Using Granular Vortex MTJ Nano Oscillator.....	567
<i>S. Shreya, A. Jenkins, T. Böhnert, R. Ferreira, F. Moradi, H. Farkhani</i>	
Tunable Creation of Bimerons in Confined Circular Nanodots.....	569
<i>B. Priyanka, Syamlal S K, Hari Prasanth Perumal, Jaivardhan Sinha</i>	

MAGNETICALLY GEARED AND VERNIER MACHINES I

Investigation of Maximum Torque of Interior Permanent Magnet Type Magnetic-Geared Generator Based on Magnetic Interaction	571
<i>Boqun Dai, Koki Ito, Kenji Nakamura</i>	
A Novel Magnetic-Geared Motor Combining Magnetic Gear and SR Motor.....	573
<i>Keigo Iwaki, Koki Ito, Kenji Nakamura</i>	
Experimental Verification of Increasing Torque Density by Magnetic Interaction in 500 N•m Class IPM-Type Magnetic-Geared Motor	575
<i>Keigo Iwaki, Koki Ito, Kenji Nakamura</i>	
Design and Analysis of a Novel Double-Stator Hybrid Flux Machine for Direct-Drive Electric Traction	577
<i>Zaixin Song, Bowen Zhang, Wusen Wang, Yuxin Liu, Dianxun Xiao</i>	
An Integrated Axial-Flux Magnetic-Geared Double-Rotor Machine Using Harmonic Current Injection Method for HEVs	579
<i>Jiewen Lang, Chengde Tong, Jingang Bai, Jiaqi Liu, Guopeng Liu, Ping Zheng</i>	
Investigation on Inclination Angle of Inserted Permanent Magnets in Double-Stator Vernier Machines	581
<i>Zheng Cai, Jincheng Yu, Kuang Yang, Wenyuan Mi, Zaixin Song, Yixiao Luo</i>	

MAGNETICALLY GEARED AND VERNIER MACHINES II

High Torque Density Toroidal Winding Permanent Magnet Vernier Machine with Dual Rotor	583
<i>Bo Wang, Rongxin Wang, Ming Cheng, Zheng Wang</i>	
Design and Analysis of Multiport Field Modulated Axial Flux Generator for Wave Power Generation	585
<i>Yuan Li, Lei Huang, Minshuo Chen, Minqiang Hu</i>	
Quantitative Analysis and Comparison of In-Wheel Outer Rotor Consequent-Pole Flux-Switching Permanent Magnet Machines with Different Magnet Arrangements	587
<i>Yanding Bi, Weinong Fu, Shuangxia Niu</i>	
Design and Analysis of Magnetic Gear-Axial Flux Generator for Wave Power Generation Based on Halbach Magnetic Circuit.....	589
<i>Yuan Li, Lei Huang, Minshuo Chen, Minqiang Hu</i>	
Additional Magneto Motive Force of Spoke-Type Vernier Permanent-Magnet Machines	591
<i>Yang Liu, Bao Song, Xiaoqi Tang</i>	
Design and Analysis of Magnetic Geared Permanent Magnet Machine to Improve Electromagnetic Performance.....	593
<i>Ju-Hyeong Lee, Soyoung Sung, Jang-Young Choi, Kyung-Hun Shin</i>	
Dynamic Performance Analysis of the Variable Speed Ratio Magnetic Gear	595
<i>Yong Xiao, Meng Lu, Xiao Liu</i>	
Effects of the Rotor Mechanical Offset Angle on the Electromagnetic Performance of Dual Stator Wound-Field Flux Switching Machines	597
<i>Udochukwu B. Akuru, Wasiq Ullah, Faisal Khan, Lesedi Masisi</i>	

Improvement of Transmission Torque Characteristics of Strain Wave Gear with Magnets	599
<i>F. Kitayama, R. Kondo, R. Endo</i>	

MAGNETIZATION DYNAMICS AND DAMPING I

Nonlinear Multi-Magnon Scattering in Ensembles of Nanomagnets	601
<i>Sergi Lendinez, Mojtaba T. Kaffash, Olle G. Heinonen, Sebastian Gliga, Ezio Iacocca, M. Benjamin Jungfleisch</i>	
Epitaxial Co ₂ FeSi/LiNbO ₃ Multiferroic Heterostructures with a Low Damping Constant.....	603
<i>Shinya Yamada, Takamasa Usami, Sachio Komori, Sekai Nagata, Yukio Nozaki, Tomoyasu Taniyama, Kohei Hamaya</i>	
Ferromagnetic Resonance Hysteresis in Hybrid Magnetic Trilayers with Combined In-Plane and Perpendicular Magnetic Anisotropies.....	605
<i>Daniel Markó, David S. Schmool, Kilian Lenz, Javier Díaz, Carlos Quirós, Aurelio Hierro-Rodríguez, María Vélez, José Ignacio Martín, Luis Manuel Álvarez-Prado</i>	
Spin Dynamics with Inertia in Ferromagnetic Thin Films	607
<i>Anulekha De, Akira Lentfert, Laura Scheuer, Benjamin Stadtmüller, Philipp Pirro, Georg Von Freymann, Martin Aeschlimann</i>	
Permeability Control of Ferromagnetic Wires for Time-Varying Spintronic Metamaterials	609
<i>Toshiyuki Kodama, Nobuaki Kikuchi, Satoshi Okamoto, Seigo Ohno, Satoshi Tomita</i>	
Magnetization Dynamics of [Co ₆₀ Fe ₄₀ /Pt]5 Multilayers Synthesized Over Varying Pt Buffer Structures.....	611
<i>Franklin M. Matinaga, Mariana A. B. Tavares, Alisson C. Krohling, Gustavo F. M. Gomes, Luis E. Fernandez-Outon, Maximiliano D. Martins, Leandro H. F. Andrade, Prabandha Nakarmi, Tim Mewes</i>	
Impact of Pulse Amplitude on Voltage-Driven Precessional Switching Dynamics Using Macrospin Modeling	613
<i>D. Favaro, W. Kim, M. Gama Monteiro, S. Rao, R. Carpenter, J. Van Houdt, K. Temst, S. Couet</i>	

MAGNETIZATION DYNAMICS AND DAMPING II

Magnetization Process of Stadium-Shaped Magnetic Tunnel Junction Cells for Artificial Spin Ice.....	615
<i>Hitoshi Kubota, Sumito Tsunegi, Kay Yakushiji, Tomohiro Taniguchi, Shingo Tamaru, Tatsuya Yamamoto, Atsushi Sugihara, Hikaru Nomura, Yoshishige Suzuki</i>	
Magnetization Reversal and Gilbert Damping in Co ₂ FeAl0.5Si0.5 (CFAS) Quaternary Heusler Alloy.....	617
<i>Lanuakum A Longchar, Mainur Rahaman, M. Manivel Raja, V. Raghavendra Reddy, S. N. Kaul, S. Srinath</i>	
Temperature-Dependent Spin Dynamics in WSe ₂ /Pt/CoFe Trilayers.....	619
<i>Ziyang Li, Yu Zhang, Jingying Zhang, Yiwen Song, Siwei Zhang, Qingyuan Jin, Zongzhi Zhang</i>	
Spin Waves Softening in Thin Films with Perpendicular Anisotropy	621
<i>Nikodem Lesniewski, Paweł Gruszecki</i>	

MAGNETIZATION DYNAMICS AND MICROMAGNETICS

Design of Two-Dimensional Magnonic Crystals Using Yttrium Iron Garnets and Non-Magnetic Metals	623
<i>Kanta Mori, Takumi Koguchi, Toshiaki Watanabe, Mitsuteru Inoue, Kazushi Ishiyama, Taichi Goto</i>	
Micromagnetics Simulation of Highly Efficient Oscillation of Magnetization in a Ferromagnetic Local Areas Via Spin Waves Induced by Spin-Orbit Torque.....	625
<i>Tetsunori Koda, Sho Muroga, Yasushi Endo</i>	
Accessing Ultrafast Demagnetization Rates of Ferrimagnetic Thin Films Through THz Emission Spectroscopy	627
<i>Guillermo Nava Antonio, Quentin Remy, Michel Hehn, Stéphane Mangin, Chiara Ciccarelli</i>	
Interpretation of Spin-Wave Modes in Co/Ag Nanodot Arrays Probed by Broadband Ferromagnetic Resonance.....	629
<i>Daniel Markó, Rajgowrav Cheenikundil, Julien Bauer, Kilian Lenz, Wan-Chen Chuang, Ko-Wei Lin, Jong-Ching Wu, Massimiliano D'Aquino, Riccardo Hertel, David S. Schmool</i>	
Spin-Wave Dynamics in the Multi-Layered Ferromagnetic Crescent-Shaped Nanorod	631
<i>Hanna Reshetniak, Nikodem Lesniewski, Uladzislau Makartsov, Mateusz Golebiewski, Paweł Gruszecki, Maciej Krawczyk</i>	
Global Biasing Using a Hardware-Based Artificial Zeeman Term in Spinwave Ising Machines.....	633
<i>Victor González, Artem Litvinenko, Roman Khymyn, Johan Åkerman</i>	

MAGNETOCALORIC MATERIALS

Martensite Transition and Room Temperature Magnetocaloric Effect in Ag Doped Ni ₅₀ Mn ₃₇ In ₁₃ Alloy	635
<i>Swathi S, Arun K, Remya U D, Athul S R, Andrea Dzubinska, Marian Reiffers, Nagalakshmi R</i>	
Large Magnetocaloric Effect of PrNi Compound at Liquid-Hydrogen Temperatures.....	637
<i>Yawei Gao, Xinqi Zheng, Hu Zhang, Dingsong Wang, Baojie Jin, Hao Liu, Shanshan Zhen, Jiahao Gao, Yang Pan, Lei Xi, Shouguo Wang, Baogen Shen</i>	
Study the Optimal Duty Cycle of a Coaxial Magnet for a Rotary Type Magnetic Refrigerator.....	639
<i>Chih-Hao Lee, Pai-Hsiang Cheng, Keh-Chyang Leou, Chih-Ming Hsieh, Yu-Chuan Su</i>	
Reactive Single-Step Hot-Pressing and Magnetocaloric Performance of Polycrystalline Fe ₂ Al _{11.15} -XB ₂ GexGax (x = 0, 0.05) MAB Phases.....	641
<i>Benedikt Beckmann, Tarek A. El-Melegy, David Koch, Ulf Wiedwald, Michael Farle, Fernando Maccari, Joshua Snyder, Konstantin P. Skokov, Michel W. Barsoum, Oliver Guttleisch</i>	
Electronic Structure and Curie Temperature Change in Ti Or Al Doped GdFeSi Compound.....	643
<i>Roman D. Mukhachev, Alexey V. Lukoyanov, Sergey P. Platonov, Anatoly G. Kuchin, Aleksey S. Volegov, Vasili S. Gaviko, Mary Yu. Yakovleva</i>	
Entropy Change and the Magnetocaloric Effect in R ₂ Cu ₂ Cd.....	645
<i>Julieth Caro Patiño, Nilson Antunes De Oliveira</i>	
Magnetic and Magnetocaloric Properties of Arc-Melted and Melt-Spun TbNi _{1.5} Fe _{0.5}	647
<i>Mitali Madhusmita Prusty, K. N. R. Tejaswi, J. Arout Chelvane, R. Nirmala</i>	

MAGNETOELECTRONIC MATERIALS AND PHENOMENA I

Growth and Magnetoelectric Effect of Epitaxial Co ₃ Mn Films on Piezoelectric Pb(Mg _{1/3} Nb _{2/3})O ₃ -PbTiO ₃ (001)	649
<i>Yuichi Murakami, Takamasa Usami, Yu Shiratsuchi, Yuya Sanada, Shinya Yamada, Ryoichi Nakatani, Kohei Hamaya</i>	
Spin Pumping with Heavy Metals, Topological Insulators and Antiferromagnets	651
<i>Subhankar Bedanta</i>	
Mechanical, Electrical and Optical Control of Magnetization Reversals and Spin Dynamics in Extrinsic Multiferroics.....	653
<i>Matthieu Liparo, Jean-Philippe Jay, Matthieu Dubreuil, Alain Fessant, Walaa Jahjah, Yann Le Grand, Charles Sheppard, Aletta R. E. Prinsloo, Bénédicte Warot-Fonrose, Gaëlle Simon, Vincent Vlaminck, Vincent Castel, Loïc Temdje-Kom, Guillaume Bourcin, David Spenato, David T. Dekadjevi</i>	
Magnetic Properties of Magnetoelectric Nanoparticles with Varying Core-Shell Ratios and Their Effects on in Vitro Neuron Stimulation	655
<i>Shawnus Chen, Elric Zhang, Brayan Navarrete, Yagmur Akin Yildrim, Mostafa Abdel-Mottaleb, Manuel Alberteris Campos, Isadora T. Smith, Ping Liang, Sakhrat Khizroev</i>	

MAGNETOELECTRONIC MATERIALS AND PHENOMENA II

Magnetic Domains and Flexomagnetism in Cr ₂ O ₃	657
<i>Oleksandr V. Pylypovskiy</i>	
Inductance and Capacitance Emerged from Topological Electromagnetism.....	659
<i>Yasufumi Araki, Jun'Ichi Ieda</i>	
Effect of B-Site Substitution Element and Substitution Amount on Magnetic Properties in (Bi,La)(Fe ₁ -Y _M)O ₃ (M = Co, Ni) Ferromagnetic and Ferroelectric Thin Films.....	661
<i>Yuta Suzuki, Takumi Ozeki, Genta Egawa, Satoru Yoshimura</i>	
Development of BiFeO ₃ -Based Multiferroic Thin Films with Excellent Magnetic Properties and Investigation of Their Etching Resistance for Magnetic Nano Device Applications.....	663
<i>Soumyaranjan Ratha, Riku Suzuki, Daichi Yamamoto, Kotaro Takeda, Munusamy Kuppan, Genta Egawa, Satoru Yoshimura</i>	

MAGNETOELECTRONIC MATERIALS AND PHENOMENA III

Enhanced Tunneling Electroresistance Effect by Interface Engineering.....	665
<i>Leina Jiang, Y. Zhu, B. Y. Chi, X. F. Han</i>	
Effect of Ar-N ₂ Sputtering Gas on Structure and TMD Effect in Co-(Si-N) Nanogranular Films	667
<i>T. Uchiyama, Y. Cao, H. Kijima-Aoki, K. Ikeda, N. Kobayashi, S. Ohnuma, H. Masumoto</i>	
Electric Field Modulation of Spin-Flop Behaviors in Co/Ru/Co/PMN-PT(011) Artificial Multiferroic Heterostructures	669
<i>Yuichi Hisada, Sachio Komori, Keiichiro Imura, Tomoyasu Taniyama</i>	

MAGNETO-OPTIC, MAGNETOELASTIC AND MAGNETOCALORIC MATERIALS I

Magnetic Properties of Co ₂ MnSi-Based Heusler Alloy Glass-Coated Microwires	671
<i>Mohamed Salaheldeen, Valentina Zhukova, Paula Corte-Leon, Mihail Ipatov, Arcady Zhukov</i>	
Giant Magnetocaloric Effects of 2nd Order Phase Transition Utilized for Liquefaction of Hydrogen Near 20 K	673
<i>Wei Liu, Konstantin Skokov, Tino Gottschall, Alex Aubert, Franziska Scheibel, Oliver Gutfleisch</i>	
Large Low Field Magnetocaloric Effect in Laves Phase Intermetallic Compounds R'0.33Ho0.33Er0.33Al2 (R' = Gd, Tb and Dy) and Gd0.33Dy0.33Ho0.33Al2	675
<i>P. K. Jesla, J. Arout Chelvane, R. Nirmala</i>	
Giant Magnetocaloric Effect by Low Magnetic Field Metamagnetic Transition in Eu ₄ Ga ₈ Ge ₁₆ Compound	677
<i>Seung Hun Cha, Pooja Rawat, Jin Hee Kim, Jae-Hyun Yun, Jong-Soo Rhyee</i>	
RF Signal Processing with Magneto-Acoustic Devices	679
<i>Pallavi Dhagat, Vikrant Gokhale, Albrecht Jander, Brian Downey, Carson Rivard, Shawn Mack, D. Scott Katzer, Jason Roussos, David Meyer</i>	

MAGNETO-OPTIC, MAGNETOELASTIC AND MAGNETOCALORIC MATERIALS II

NV Center-Coupled Magnetoelastic Waves: Modelling and Experiment	681
<i>Adi Jung, Samuel Margueron, Ausrine Bartasyte, Sayeef Salahuddin</i>	
Efficient Modeling of Magneto-Elastic Media Using the Feedback Preisach Model.....	683
<i>A. A. Adly</i>	
Magneto optics of Higher Order in Magnetization.....	685
<i>Jaroslav Hamrle</i>	
Development of Magneto-Optical Diffractive Deep Neural Network.....	687
<i>Hotaka Sakaguchi, Takumi Fujita, Jian Zhang, Satoshi Sumi, Hiroyuki Awano, Hirofumi Nonaka, Takayuki Ishibashi</i>	
Design of Microscale Magnetic Controls for Magnetic-Field Driven Actuation.....	689
<i>Ludovico Cestarollo, Rodolfo Cantu, Karthik Srinivasan, Amal El-Ghazaly</i>	
Temperature Dependence of Magnetic Anisotropy and Domain Wall Width Tuning in a BaTiO ₃ (111)/CoFeB Heterostructure	691
<i>R. G. Hunt, K. J. A. Franke, P. S. Keatley, P. M. Shepley, T. A. Moore</i>	
Broadband Integrated Magneto-Optical Isolators on Silicon Nitride Platforms.....	693
<i>Wei Yan, Di Wu, Yucong Yang, Zixuan Wei, Jun Qin, Longjiang Deng, Lei Bi</i>	
Characterization and Multiscale Modeling of the Magneto-Elastic Behavior of Galfenol.....	695
<i>Mathieu Domenjoud, Alexis Pecheux, Laurent Daniel</i>	

MAGNETO-OPTIC, MAGNETOELASTIC AND MAGNETOCALORIC MATERIALS III

Characterization of the Magnetostrictive and Elastic Properties of Polycrystalline Co70Fe30 Alloy.....	697
<i>Masahito Watanabe, Kiyoshi Urakawa, Tsukasa Kida, Motohiro Kasuya, Masaki Chiba, Kiyoshi Kanie, Takenori Tanno, Maho Abe, Shuichiro Hashi, Kazushi Ishiyama, Shigeru Suzuki</i>	
Development of an Optical Probe Current Sensor for Local and Narrow Area Measurement Using Magnetic Domain Reversal in Bi-Substituted Rare-Earth Iron Garnet Crystal.....	699
<i>Satoshi Sue, Mitsunori Miyamoto, Toshiya Kubo, Makoto Sonehara, Toshiro Sato</i>	
Application of Various Materials with Negative Saturation Magnetostriction to Vibration Power Generation	701
<i>Taichi Sugiyama, Taku Okada, Shun Fujieda, Satoshi Seino, Takashi Nakagawa, Yuji Ohishi, Hiroaki Muta</i>	
Boron-Induced Magneto-Optical Kerr Spectra and Dielectric Tensors in Ferrimagnetic Antiperovskite Thin Films.....	703
<i>Hotaka Sakaguchi, Shinji Isogami, Makoto Niimi, Takayuki Ishibashi</i>	
The Role of Heat Capacity Anomaly on the Magnetocaloric Effect	705
<i>Anna Kosogor, Victor A. L'Vov</i>	
Realization of Large Magneto-Optical Effect by Diagonal Permittivity Change in Epsilon-Near- Zero Materials	707
<i>Kenji Ikeda, Tianji Liu, Yasutomo Ota, Satoshi Iwamoto, Nobukiyo Kobayashi</i>	
Chemical Order, Unit Cell Volume, and Spontaneous Magnetization in Vapor-Quenched Single Crystalline Fe0.6Al0.4 Alloy Thin Film.....	709
<i>Kentaro Toyoki, Daigo Kitaguchi, Yu Shiratsuchi, Ryoichi Nakatani</i>	
Thermo-Elastic Martensitic Transformation in Off-Stoichiometric Co2Fe0.5Ti0.5Si Quaternary Heusler Alloy Thin Films	711
<i>Mainur Rahaman, Lanuakum A Longchar, Rajeev Joshi, R. Rawat, M. Manivel Raja, S. N. Kaul, S. Srinath</i>	
Study on Magnetic Properties of La-Doped Fe-Ga Polycrystalline Films	713
<i>Ryuya Nishina, Takamichi Miyazaki, Yasushi Endo</i>	

MAGNETORESISTANCE IN HETEROSTRUCTURES I

Theory for Temperature Dependence of Tunnel Magnetoresistance: Crucial Role of Interfacial S-D Exchange Interaction	715
<i>Keisuke Masuda, Terumasa Tadano, Yoshio Miura</i>	
Negative Spin Polarization of Mn2VGa Heusler Alloy Thin Film Studied in Current-Perpendicular- To-Plane Giant Magnetoresistance Devices	717
<i>Hirofumi Suto, Vineet Barwal, Zehao Li, Keisuke Masuda, Taisuke Sasaki, Yuya Sakuraba</i>	

MAGNETORESISTANCE IN HETEROSTRUCTURES II

Prediction of High Tunnel Magnetoresistance Ratios in (111)-Oriented Junctions with a SrTiO ₃ Barrier.....	719
Keisuke Masuda, Hiroyoshi Itoh, Yoshiaki Sonobe, Hiroaki Sukegawa, Seiji Mitani, Yoshio Miura	
Room-Temperature Magnetoresistance in Nanojunctions Consisting of C8-BTBT Molecules Sandwiched Between Two Magnetic Thin-Film Edges.....	721
Mizuki Matsuzaka, Yuma Sasaki, Kyohei Hayashi, Takahiro Misawa, Takashi Komine, Tomoyuki Akutagawa, Masaya Fujioka, Junji Nishii, Hideo Kaiju	
Large Tunnel Magnetocapacitance Effect in FeCo/MgAlO/FeCo(001) Magnetic Tunnel Junctions	723
Yuto Shibata, Kenta Sato, Hiroaki Sukegawa, Hideo Kaiju	
Crystal Direction Dependences of Anisotropic Magnetoresistance Effects in Co ₂ MnGa and Co ₂ MnAl Heusler Alloy Epitaxial Thin Films.....	725
Takashi Sato, Satoshi Kokado, Masahito Tsujikawa, Hikari Shinya, Tomoyuki Ogawa, Satoru Kosaka, Atsushi Miura, Masafumi Shirai, Masakiyo Tsunoda	
Optimisation of Perpendicular Magnetic Tunnel Junction Structures Using Scanning Transmission Electron Microscopy	727
Meg Smith, Charlotte Bull, Matthew C. Spink, Paul Nutter, Christopher S. Allen, David Hopkinson, Tom Thomson	
Extraordinary Magnetoresistance in a 2-Terminal Structure	729
Jérémie Létang, Stefano Lumetti, Perla Malagò, Stefan Dan Costea, Wolfgang Hauer, Jürgen Kosel, Michael Ortner	

MAGNONICS, INSULATRONICS, AND HEULSER ALLOYS

Finite Size Effect and Dimensional Crossover in Antiferromagnetic Epitaxial Cr ₂ O ₃ Thin Films	731
Hiroki Sameshima, Kakeru Ujimoto, Rou Tsutsumi, Kentaro Toyoki, Ryoichi Nakatani, Yu Shiratsuchi	

MICROMAGNETICS AND HYSTERESIS MODELING I

Modeling of Multi-Level Spin-Orbit Torque-MRAM: Scalability, Stochasticity, and Variations	733
Zihan Tong, Shun Kong Cheung, Zheyu Ren, Pengkun Yang, Qiming Shao	
Tuning the Coercivity of Permanent Magnets by the Combined Effect of Field Angle and Defect Thickness.....	735
Qais Ali, Johann Fischbacher, Alexander Kovacs, Harald Oezelt, Markus Gusenbauer, Thomas Schrefl	
Micromagnetic Simulations of CoFeB/MgO Perpendicular Stacks for Sensor Applications.....	737
Pedro Santos, Pedro Araujo, Daniel Sørensen, Francisco Matos, Susana Cardoso	
Electronic Structure and Exchange Bias of a Compensated Ferrimagnet Mn ₂ PtAl.....	739
Alexey V. Lukoyanov, S. Shanmukhara Samatham, Akhilesh Kumar Patel, P. D. Babu, K. G. Suresh	

Hybrid Precorrected FFT - Poisson Solver Method for the Magnetostatic Field in Finite Element Micromagnetic Modeling	741
<i>Jiawei Duan, Vitaliy Lomakin</i>	

MICROMAGNETICS AND HYSTERESIS MODELING II

FEA Verification and Analyses for the Attraction Cases Between Magnetic Like Poles.....	743
<i>Shijie Ran, Min Zou, George Mizzell, Christina H Chen</i>	
Control of Magnetization Precession Frequency Using Current Density of Spin-Orbit Torque Applied to Local Area	745
<i>Tetsunori Koda, Ao Nakagawa, Sho Muroga, Yasushi Endo</i>	
Is There Theoretical Upper Limit of Coercivity?	747
<i>Chiharu Mitsumata, Masaki Mizuguchi, Masato Kotsugi</i>	
Analytical Inverse Preisach Model and Its Comparison with Inverse J-A Model in Terms of Accuracy and Computational Efficiency	749
<i>Ren Liu, Chaoyang Gu, Jiangdong Sun, Bo Tang</i>	
An Experimental-Numerical Approach for Energy Loss Separation of Grain-Oriented Electrical Steels	751
<i>Hamed Hamzebahmani, Taketo Shibauchi, Yanhui Gao, Weimin Guan, Kazuhiro Muramatsu</i>	

MODELING, DESIGN, CONSTRUCTION AND ANALYSIS OF ELECTRICAL MACHINES FOR SUSTAINABLE APPLICATIONS

3D Printing of Multipolar Bonded SmCo Permanent Magnets	753
<i>Alexandre Vucemilovic, Maxime Savary, Christophe Espanet</i>	
Improving Repeatability of Tests for Iron Loss Prediction and Electrical Machines Model Calibration.....	755
<i>Juliette Soulard, Edward Griffin, Xi-Yun Ma, Benjamin Silvester</i>	
Fast and Accurate Modelling of Laminated Cores in Electrical Machines Using Homogenization and Neural Networks.....	757
<i>Florent Purnode, François Henrotte, Gilles Louppe, Christophe Geuzaine</i>	
Robust Design of Permanent Magnet Motors for Electric Traction Applications	759
<i>Georgios K. Sakkas, Antonios G. Kladas</i>	
Permanent Magnet Linear Machines with Asymmetrical Tooth Tip	761
<i>Qinfen Lu, Mengfei Zheng, Yanxin Li</i>	

MRAM & RELATED DEVICES I

Dipolar Core-Shell Cells with Enhanced Write Speed and Reduced Cross-Talk of Perpendicular Shape Anisotropy MRAM	763
<i>Nuno Caçoilo, Ricardo Sousa, Bernard Dieny, Liliana Buda-Prejbeanu, Olivier Fruchart, Lucian Prejbeanu</i>	
Reduced Switching Current with a Light Metal in a Tri-Layer Spin-Orbit Torque Device.....	765
<i>Yu-Hui Wu, Chih-Wei Cheng, Yu-Lon Lin, Min-Cheng Chen, Yuan-Chieh Tseng</i>	

Importance of SAF Stability Against Temperature and Magnetic Field in Automotive-Grade-1 STT-MRAM Wafer Electrical Testing	767
<i>Meike Hindenberg, Johannes Müller, Christoph Durner, Tatiana Gurieva, Hongsik Yoon, Aleksandra Titova, Georg Wolf, Yuichi Otani, Maik Wagner-Reetz</i>	
FePd Single Layer and Synthetic Antiferromagnet with Low Damping and Crystalline Perpendicular Magnetic Anisotropy on Amorphous Si/SiO ₂ Wafers	769
<i>Deyuan Lyu, Jena E. Shoup, Dingbin Huang, Xiaojia Wang, Daniel B. Gopman, Jian-Ping Wang</i>	
Impact of SOT & STT Stress on MTJ Degradation in SOT-MRAM	771
<i>Simon Van Beek, Vaishnavi Kateel, Kaiming Cai, Nico Jossart, Siddharth Rao, Sébastien Couet</i>	
Achieving Uniaxial In-Plane Magnetocrystalline Anisotropy to Enable Scalable SOT-MRAM Devices	773
<i>Shreyes Nallan, Jian-Gang Zhu</i>	
High-Performance Type-Y Spin-Orbit Torque MRAM Devices	775
<i>Hongchao Zhang, Shiyang Lu, Kaihua Cao, Hongxi Liu, Weisheng Zhao</i>	
Automated Characterization of Time-Resolved Switching Dynamics in MRAM Magnetic Tunnel Junctions Writing Operation	777
<i>Quentin Stainer, Steven Lequeux, Anthony Bussiere, Kevin Garello, Siamak Salimy</i>	
Spacer-Less Free-Layer for High-TMR Double Magnetic Tunnel Junction MRAM	779
<i>R. Carpenter, S. Rao, M. Gama Monteiro, S. Van Beek, N. Jossart, S. Kundu, S. H. Sharifi, Sébastien Couet</i>	

MRAM & RELATED DEVICES II

PAC Code Construction for Spin-Torque Transfer Magnetic Random Access Memory	781
<i>Bin Dai, Zhen Mei, Kui Cai, Lingjun Kong, Xingwei Zhong</i>	
Dynamical Switching Properties and Downsize Scalability in Perpendicular Shape Anisotropy MTJ	783
<i>Nuno Caçoilo, Bruno Teixeira, Ricardo Sousa, Bernard Dieny, Liliana Buda-Prejbeanu, Olivier Fruchart, Lucian Prejbeanu</i>	

NANOCRYSTALLINE AND AMORPHOUS SOFT MAGNETS I

Novel FeCoBPSiCr Amorphous Alloy Powder with High Bs of 1.61 T and High Corrosion Resistance	785
<i>H. Matsumoto, A. Hasegawa, Y. Kajura, M. Hosono, K. Yoshidome, H. Ohkubo, M. Arata, M. Asai, H. Eda, S. Otsuka</i>	
Synchrotron Radiation X-Ray Diffraction Study on Nucleation and Growth of Nanocrystalline Phase in Fe-Si-B-P-Cu-C Amorphous Alloys	787
<i>Shozo Hiramoto, Jun Uzuhashi, Tadakatsu Ohkubo, Akihiko Toda, Chikako Moriyoshi, Yoshihiro Kuroiwa</i>	
Effect of Applied Stress on Magnetostriction of Amorphous Magnetic Microwires	789
<i>Valentina Zhukova, Margarita Churyukanova, Sergei Kaloshkin, Paula Corte-Leon, Mihail Ipatov, Arcady Zhukov</i>	

Comparative Study of the Magnetic and Magnetotransport Properties of FINEMET Thin Magnetic Wires	791
<i>Sorin Corodeanu, Costica Hlensi, Horia Chiriac, Tibor-Adrian Óvári, Nicoleta Lupu</i>	
Near Zero Magnetostrictive Nanocrystalline Fe-Si-B-Cu-Nb Alloys with a High Heating Rate Annealing	793
<i>Kotoba Toyonaga, Yuichi Ogawa, Naoki Ito</i>	
Improved High Permeability CoZrTaB Laminated Thin Films with Novel CMOS Compatible Dielectric Material.....	795
<i>Guannan Wei, Rajasree Das, Daniel Lordan, Ranajit Sai, Mike Hayes, Marek Lorenc, Barry Clarke, David Hurley, Paul McCloskey</i>	
<u>NANOCRYSTALLINE AND AMORPHOUS SOFT MAGNETS II</u>	
Heat and Current Annealing Effects on Magnetic Properties of Fe-Rich Glass-Coated Amorphous Microwires with Different Radius	797
<i>Álvaro González, Paula Corte-León, Valentina Zhukova, Alfonso García-Gómez, Mihail Ipatov, Julian María González, Juan María Blanco, Arcady Zhukov</i>	
Scaling the Manufacturing of Soft Magnetic Inductor Cores for Power Conversion Applications from 8-Inch to 12-Inch Wafers	799
<i>Claudiu V. Falub, Xue Zhao, Jan H. Richter, Hartmut Rohrmann, Maurus Tschirky, Marco Padrun</i>	
Microstructure and Magnetic Characterization on Ball-Milled Fe-Based Nanocrystalline Alloy Sheet.....	801
<i>Satoshi Nagata, Yoichi Horibe, Shozo Hiramoto, Hiroyuki Narahara, Naoki Mori, Iwao Sasaki, Masaaki Takezawa, Yoshito Ando, Toru Shikayama, Shinichiro Mukai, Shuhei Maeda, Shuhei Sakima, Takaaki Ishii, Satoshi Motozuka</i>	
Fabrication of Fe-Based Nanocrystalline Powder-Pressed Magnetic Core with Low Coercivity and Small Iron Loss	803
<i>Takanori Kanaya, Ryosuke Ohta, Makoto Sonehara, Toshiro Sato</i>	
Magnetic Domain Observation of Milled Nanocrystalline Alloy Powder.....	805
<i>Masaaki Takezawa, Tomoya Nagaki, Satoshi Motozuka, Iwao Sasaki, Yoshito Ando, Hiroyuki Narahara, Naoki Mori, Toru Shikayama, Shinichiro Mukai, Shuhei Maeda, Shuhei Sakima, Takaaki Ishii</i>	
Giant Magnetoimpedance Effect at GHz Frequencies in Amorphous Microwires.....	807
<i>Arcady Zhukov, Mihail Ipatov, Paula Corte-León, Juan María Blanco, Valentina Zhukova</i>	
Structural Phase Transformation and Magnetic Properties Induced by Thermal Analysis with Different Gaseous Environments in Iron-Doped Manganese Oxide Nanoparticles	809
<i>Li-Huai Huang, Ying-Zhen Chen, Zi-Hao Huang, Pei-Ying Chuang, Aleksandr Spivakov, Chun-Rong Lin</i>	
Anomalous Magnetic Anisotropy Behaviour in Co-Rich and Fe-Rich Glass-Coated Microwires Under Applied Stress.....	811
<i>Alfonso García-Gómez, Juan M. Blanco, Paula Corte-León, Mihail Ipatov, Álvaro González, Julián González, Arkady Zhukov, Valentina Zhukova</i>	
FeNi-Based Nanocomposite Soft Magnetic Alloy Magnetic and Mechanical Property Tailoring Through Flash Annealing	813
<i>Lauren Wewer, Kevin Byerly, Samuel Kernion, Paul Ohodnicki</i>	

Fast Propagation and Merger of Magnetic Domain Walls in Low Magnetostrictive Amorphous Submicrometric Wires	815
<i>Sorin Corodeanu, Costica Hlensi, Cristian Rotarescu, Horia Chiriac, Nicoleta Lupu, Tibor-Adrian Óvári</i>	

NEUROMORPHIC AND UNCONVENTIONAL COMPUTING

Physical Reservoir Computing Utilizing Voltage Controlled Magnetic Anisotropy Effect.....	817
<i>Tomohiro Taniguchi, Sumito Tsunegi, Yasuhiro Utsunomiya</i>	
A Single Magnetic Tunnel Junction for the Implementation of a Spiking Neuron.....	819
<i>Davi R. Rodrigues, Rayan Moukhader, Adrien Pontlevy, Abbass Hamadeh, Zhongming Zeng, Mario Carpentieri, Giovanni Finocchio</i>	
Demonstration of Synaptic Behaviour in a Spintronic Device for On-Chip Learning in Long Short Term Memory (LSTM) Networks	821
<i>Ram Singh Yadav, Pankhuri Gupta, Aniket Sadashiva, Pranaba K. Muduli, Debanjan Bhowmik</i>	
Using Magnetic Tunnel Junctions as Unconventional Computing Devices	823
<i>Andrea Grimaldi, Luciano Mazza, Pietro Tullo, Davi Rodrigues, Vincenza Crupi, Mario Carpentieri, Vito Puliafito, Giovanni Finocchio</i>	
Power-Aware Quantization Circuits in Analog In-Memory Computing with STT-MRAM Macro.....	825
<i>Mingyang Zhou, Yanan Guo, Jiawei Fu, Hao Cai</i>	

NEW APPROACHES IN COMPUTATIONAL MAGNETISM

A Path Integral Method for Numerical Simulations of Spin Dynamics	827
<i>Thomas Nussle, Joseph Barker</i>	
Physics-Informed Neural Networks for Solving Two-Dimensional Magneto-Static Fields.....	829
<i>Zhi Gong, Yang Chu, Shiyou Yang</i>	
Frequency Demultiplexing of Spin Waves by Inverse-Designed Magnetization Patterns, Experimentally Realized by FIB Irradiation.....	831
<i>Martina Kiechle, Adam Papp, Levente Maucha, Simon Mendisch, Johannes Greil, Valentin Ahrens, Gyorgy Csaba, Markus Becherer</i>	

NEW DESIGNS AND DEVELOPMENTS IN SOFT MAGNETIC MATERIALS AND MAGNETIC CORES FOR POWER ELECTRONICS TECHNOLOGY NEEDED FOR CARBON NEUTRAL SOCIETY

Passive Components for Advancement of Power Electronics	833
<i>Toshihisa Shimizu</i>	
Challenges to High Magnetic Flux Density and Low Loss Magnetic Materials and Devices for Next-Generation Power Electronics	835
<i>Satoshi Okamoto, Nobuhisa Ono, Tomoyuki Onuma, Zhenzhuang Li, Yuji Uehara, Anton Bolyachkin, Hossein Sepehri-Amin, Tadakatsu Ohkubo</i>	

Energy Loss and Constitutive Equation of Soft Magnetic Materials for Broadband Applications in Power Electronics.....	837
<i>Carlo Ragusa, Luigi Solimene, Salvatore Musumeci, Olivier De La Barrière, Cinzia Beatrice, Enzo Ferrara, Fausto Fiorillo</i>	
Development of Anisotropic Nanocrystalline Ribbon Core and Powdered Core for High Frequency Transformers and Inductors.....	839
<i>Toshiro Sato, Tomoya Tada, Takanori Kanaya, Makoto Sonehara, Tsutomu Mizuno</i>	
Skin Effect in Iron-Silicon Steel Sheets: From Low Inductions to Saturation	841
<i>O. De La Barrière, E. Ferrara, A. Magni, A. Sola, C. Ragusa, C. Appino, F. Fiorillo</i>	

NONLINEAR AND FUNDAMENTAL MAGNONICS PHENOMENA

Distant Excitation of Spin-Waves—How Electromagnetic Cross-Talk Impacts on Hybrid Magnonic Devices	843
<i>Johannes Greil, Matthias Golibrzuch, Martina Kiechle, Adam Papp, György Csaba, Markus Becherer</i>	
Non-Linearities in Driven Spin-Wave Active Ring Oscillator	845
<i>Anirban Mukhopadhyay, Anil Prabhakar</i>	
Theoretical Demonstration of the Electron Spin Wave Filter in Semiconductor Two-Dimensional Electron Gas	847
<i>K. Kikuchi, K. Nakajima, S. Karube, C. Zhang, M. Kohda</i>	
Temperature Dependent Spin Gap in Multiferroic 2D-XY Antiferromagnet Ba ₂ CoGeO ₇ Under Applied Magnetic Field	849
<i>Rajesh Dutta, Henrik Thoma, Bertrand Roessli, Vilmos Kocsis, Yusuke Tokunaga, Yasujiro Taguchi, Yoshinori Tokura, István Kézsmárki, Vladimir Hutani</i>	
Quantified Spin-Wave Symmetry in Rectangular Permalloy Microstrips Investigated Using TR-STXM, FMR and Mumax3	851
<i>Santa Pile, Andreas Ney, Kilian Lenz, Ryszard Narkowicz, Jürgen Lindner, Sebastian Wintz, Johannes Förster, Sina Mayr, Markus Weigand</i>	
Spin Wave Decoherence in the Presence of Dispersive Shock Waves	853
<i>Cameron McEleney, Robert E. Camley, Rair Macêdo</i>	
Numerical and Micromagnetic Investigation of Strong Magnon-Magnon Coupling in Magnetic Insulator Bilayers	855
<i>Jiacheng Liu, Qiming Shao</i>	

PERMANENT MAGNET MACHINES I

An Inductance Testing Method of Dual Three-Phase Permanent Magnet Synchronous Machines Using Equivalent Electromagnetic Field Analysis	857
<i>Depeng Zeng, Qiang Zhang, Jibin Zou, Yongxiang Xu, Hailang Pan</i>	
Axial Force Negative Stiffness in Axial-Flux Electric Machines.....	859
<i>Wen L. Soong, Emad Roshandel, Zhi Cao, Amin Mahmoudi, Solmaz Kahourzade</i>	

PERMANENT MAGNET MACHINES II

Investigation of Fault-Tolerant Performance and Inductance in a Modular Permanent Magnet In-Wheel Motor.....	861
<i>Yue Tang, Feng Chai, Ying Xie, William Cai</i>	
Analysis and Monitoring Method for Inter-Turn Short Circuit Fault for PMSM	863
<i>Chengsi Liu, Jibin Zou, Yongxiang Xu, Shaobin Li</i>	
A Novel Rotor-Step Skewing Method for Vibration Mitigation in Interior Permanent Magnet Synchronous Motor	865
<i>Daolu Li, Ying Xie, Fei Liu, Wei Cai, Fan Yang</i>	
Analytical Calculation and Low-Order Component Optimization of Axial Electromagnetic Force for an Axial Flux Motor.....	867
<i>Fei Zhao, Zhengchao Shao, Hua Fan</i>	
Design Optimization Using Asymmetric Rotor in IPMSM for Torque Ripple Reduction Considering Forward and Reverse Directions	869
<i>Jin-Cheol Park, Jae-Hyun Kim, Soo-Hwan Park, Ki-O Kim, Moo-Hyun Sung, Myung-Seop Lim</i>	
Effects of High-Pressure Environment on Deep-Sea Fe-Co-V Alloys Permanent Magnet Synchronous Motors.....	871
<i>Guodong Yu, Juyan Huang, Yongxiang Xu, Lijun Xiao, Jibin Zou</i>	
Comparative Study of Mechanical and Electrical Characteristics on High-Strength Steel and Conventional Steel for EV Traction High-Speed Multilayer IPMSM Using Rare-Earth Free PM	873
<i>Ki-O Kim, Young-Hoon Jung, Jin-Cheol Park, Myung-Seop Lim</i>	
A Low-Cost Segment Method to Reduce PM Eddy-Current Loss in Axial Flux PM Wheel Motor	875
<i>Wang Chen, Liu Yunpeng, Jian Huang, Chen Dong, Zhang Zhuoran</i>	

PERMANENT MAGNET MACHINES III

Computationally Efficient Estimation of PWM-Induced Iron Loss of PMSM Using Deep Transfer Learning	877
<i>Soo-Hwan Park, Ki-O Kim, Myung-Seop Lim</i>	
Dynamic Magnetic Network Modeling and Electromagnetic Analysis of an External Rotor PMSM for Electric Hub System	879
<i>Likun Wang, Fengyu Shen, Fabrizio Marignetti, Qichuang Li, Nicola Bianchi</i>	
Research and Analysis of Toroidal and Conventional Windings in Permanent Magnet Synchronous Machine	881
<i>Xiaoyu Liang, Mingqiao Wang, Ping Zheng, Jialin Gao, Wanquan Li</i>	
A Study on the Shape of a Small Wind Turbine with Fractional Slot Concentrated Winding to Realize Zero Cogging Level.....	883
<i>Junho Kang, Jungwon Kim, Dong-Hoon Jung, Kwang-Soo Kim, Chang-Hyun Kim, Ju Lee</i>	

PERMANENT MAGNET MACHINES IV

Design Optimization of Rotor Bridge and Fixing Hole for Spoke-Type PMSM.....	885
<i>Ye Liu, Kang Ma, Jialong Xu</i>	
Heat Magnetizing Method for High-Performance Neodymium Magnets for EV and HEV Motors	887
<i>Michitaka Hori, Naoya Tomita, Junpei Hinata</i>	
Development of High Efficiency PMSG with Extremely Thin Stator Lamination Materials for Electric-Propulsion UAV	889
<i>Liqiang Li, Zhuoran Zhang, Weixiao Bian, Jincai Li, Yanhui Li</i>	
Effect of Radial and Axial Magnet Segmentation on PM Eddy Current Losses for Brushless Synchronous Motors.....	891
<i>Y. Demir, M. Onsal, M. Aydin</i>	
Impact of Soft Magnetic Material on Electromagnetic Force and Vibration of Permanent Magnet Electrical Machines	893
<i>Bo Li, Jianguo Zhu, Chengcheng Liu, Gang Lei, Yongjian Li</i>	
Study on Electromagnetic Vibration Characteristics in Fractional Slot Permanent Magnet Synchronous Motor	895
<i>Lei Bai, Wenyang Jiang, Liqiang Li</i>	
A Novel Double Stator Hybrid-Excited Flux Reversal Permanent Magnet Machine with Halbach PM Arrays	897
<i>Shichao Ning, Pattasad Seangwong, Apirat Siritaratiwat, Pirat Khunkitti</i>	
3D-Printed Magnetic Iron Material Modeling for High Speed Actuators	899
<i>Maria Sofia C. Pechlivanidou, Antonios G. Kladas</i>	

PERMANENT MAGNET MACHINES V

Analysis of a New Bidirectional Field Modulation Machine with Separated Type PM Excitation.....	901
<i>Haitao Wang, Yu Zhang, Ye Liu, Chao He, Heng Zhu</i>	
Comparative Analysis of Dual-Stator Permanent Magnet Machines with Squirrel Stator Teeth Designed in Hypotenuse.....	903
<i>Haitao Wang, Yuanjing Xu, Ye Liu, Jiquan Yang, Dong Wang</i>	
Parameter Analysis and Multilevel Design Optimization of a Permanent Magnet Claw Pole Machine with Hybrid Cores	905
<i>Hongming Zhang, Chengcheng Liu, Shiwei Zang, Gang Lei, Youhua Wang</i>	
Magnetic Properties Evaluation of a Compacted Soft Magnetic Composite Core for Permanent Magnet Claw Pole Machine	907
<i>Handong Du, Chengcheng Liu, Shipu Wu, Shiwei Zhang, Youhua Wang</i>	
Axis-Shifted Machines with Hybrid Rotors Considering Forward and Reverse Operations.....	909
<i>Li Shihao, Di Chong, Bao Xiaohua</i>	
Design Optimization of an Interior Permanent Magnet Synchronous Machine with Asymmetric and Auxiliary Slot Structure.....	911
<i>Hongming Zhang, Chengcheng Liu, Shiwei Zang, Gang Lei, Youhua Wang</i>	

Improvement Torque Ripple Characteristics of Dual-Winding Square Wave Brushless DC Motor with Phase Difference Drive..... <i>Shunsuke Noguchi</i>	913
Comparison Between Novel Pole-Changing and Conventional Flux Switching Permanent-Magnet Motors <i>Yi Mao, Feng Xiao, Yi Du, Zhuofan He, Xiaoyong Zhu, Li Quan</i>	915
Rotor Position Estimation for PMSM Based on Hall Interval Angle Compensation and Phase-Tracking..... <i>Kun Li, Jian Gao, Litao Dai, Shoudao Huang, Yuguang Feng</i>	917
Rotor Auxiliary Slot Design Optimization for Permanent Magnet Synchronous Motor with Double-Layer Rotor Structure for Electric Vehicle <i>Hongming Zhang, Chengcheng Liu, Shiwei Zang, Gang Lei, Youhua Wang</i>	919
Performance Improvement of Rare-Earth Free High-Speed Multilayer IPMSM Using Dual-Phase Magnetic Material <i>Young-Hoon Jung, Kio Kim, Myung-Seop Lim</i>	921
Investigation on Wide-Speed Operation of a New Five-Phase Fault-Tolerant Interior Permanent Magnet Motor from Perspective of Flux-Intensifying Effect <i>Sisi Deng, Li Zhang, Dong Shen</i>	923
Influence of Additional Air Gaps Between Stator Tooth and Back-Iron on Acoustic Performance of Spoke-Type Permanent Magnet Synchronous Motor <i>Chang Liu, Xin Qiu, Kai Zhou, Jianfei Yang</i>	925
<u>PERMANENT MAGNET MACHINES VI</u>	
Influence of Phase Shift Angle on Performance of PMSM with Dual Three-Phase Star and Delta Connection..... <i>Jianzong Yu, Jiangtao Yang, Shoudao Huang</i>	927
Axial Flux Permanent Magnet Electrical Machine with High Torque Density: Research on the Influence of Combined-Halbach Array on YASA Machine..... <i>Yang Lu, Yang Kai, Sun Songjun, Luo Yixiao</i>	929
Thermal Characteristics and Cooling Methods of a Permanent Magnet Synchronous Motors with High Flux Density <i>Mao Jian, Pei Yingchen, Takashi Yoshida</i>	931
A Dimension Reduction Transformation Method for the Hybrid Axial-Radial Machine..... <i>Zhihan Chen, Songjun Sun, Baichuan Xu, Yi Wang, Kai Yang, Yixiao Luo</i>	933
Comparative Study of Field Modulation Effects on Consequent-Pole PM Machines with Different Stator Slot Configurations <i>Ya Li, Heyun Lin, Hui Yang, Zhen Zhao</i>	935
Investigation on the Influence of Eccentricity on the AC Copper Loss of High Speed Slotless Permanent Magnet Motor..... <i>Shaoren Dai, Jiangtao Yang, Shoudao Hang</i>	938
Modeling of Wind Turbine Drive Trains for Finite Element Analysis <i>Akhyurna Swain, Chunhua Liu, Philip W. T. Pong</i>	940

Torque Ripple Optimization of the Interior Permanent Magnet Motor for Electric Vehicles.....	942
<i>Yu-Hsun Chen, Hao-Run Chang, Guan-Chen Chen</i>	

Influence Studies of the Flux-Barriers and PM Arrangements on High-Speed Flux-Intensifying Interior Permanent Magnet Motor Performance.....	944
<i>Thanh-Anh Huynh, Min-Fu Hsieh, Mi-Ching Tsai, Po-Wei Huang, Zhen Lee</i>	

POWER APPARATUSES I

A Topological Design Optimization Approach for Winding Oil Flow Paths in ONAN Transformers Based on a Fluidic-Thermal Coupled Model.....	946
<i>Longnv Li, Gaojia Zhu, Zhe Wang, Shiyou Yang</i>	

Noninvasive Sensor Patch for Internal Magnetic Core Characterization	948
<i>Sorelle H. Nguedjang Kouakeuo, Aurélie Solignac, Ruth V. Sabariego, Laurent Morel, Marie-Ange Raulet, Borel Toutsop, Pierre Tsafack, Benjamin Ducharne</i>	

Stray Loss Evaluation of Power Transformers Using Simplified Air-Core Model with Tank and Frame.....	950
<i>Botao Liu, Yasuhito Takahashi, Koji Fujiwara, Satoshi Imamori</i>	

Basic Characteristics of Orthogonal-Core-Type Variable Inductor with Permanent Magnets.....	952
<i>Shota Aizu, Kenji Nakamura, Takashi Ohinata, Kenji Arimatsu</i>	

Coupled Field–Circuit Modeling and Analysis for Interturn Short-Circuit Faults in an Onboard Traction Transformer.....	954
<i>Chenguang Yan, Weixiang Wang, Peng Zhang, Zhangheng Liu, Jin Shu, Baohui Zhang</i>	

Influence of Thickness on Eddy Current Losses in Materials Used as Clamping Structures in High-Power Electrical Machines	956
<i>W. M. A. Mohand Oussaid, A. Tounzi, R. Romary, A. Benabou, D. Laloy, W. Bougħanmi</i>	

POWER APPARATUSES II

Eddy-Current Reduction Structure of Copper Foil Winding for Medium-Frequency Transformer in DC-Grid Applications.....	958
<i>Naoyuki Kurita, Yuichirou Tanaka</i>	

Soft-Landing Mechanism Design Driven by Electromagnetic Repulsion Force with Application to Bypass Switch	960
<i>Wenying Yang, Fansong Meng, Xuanming Huang, Guofu Zhai</i>	

QUANTUM AND HYBRID MAGNONICS

Model of a Magnetic Waveguide for a Neural Network.....	962
<i>Aleksei A. Nikitin, Erkki Lähderanta</i>	

Spin Diode Effect in Extended Magnetic Insulating Films	964
<i>Ryuhei Kohno, Nicolas Thiery, Eric Clot, Richard Schlitz, Kyongmo An, Vladimir Naletov, Laurent Vila, Nathan Beaulieu, Jamal Ben Youssef, Hugo Merbouche, Vincent Cros, Abdelmadjid Anane, Thomas Hauet, Vlad Demidov, Sergej Demokritov, Grégoire De Loubens, Olivier Klein</i>	

Universal Set of Magnon-Mediated Quantum Gates.....	966
<i>Cody Trevillian, Vasyl Tyberkevych</i>	
Measuring Spatially Resolved Phase of Nanoscale Spin Waves	968
<i>Ondřej Wojewoda, Filip Ligmajer, Martin Hrton, Jan Klíma, Meena Dhankhar, Kristýna Davídková, Michal Stano, Jakub Holobradek, Jakub Zlámal, Tomáš Šikola, Michal Urbánek</i>	
<u>SENSORS (NOT OF MAGNETIC FIELDS)</u>	
Magnetization State and Magnetic Structure of Wiegand Wire Evaluated by External Magnetic Field Measurement	970
<i>Guorong Sha, Yuya Kita, Hiroki Shigeta, Tomoaki Nakamura, Chao Yang, Zenglu Song, Yasushi Takemura</i>	
Magnetic Relaxation Effects on Magnetoelastic Resonance Sensors.....	972
<i>Beatriz Sisniega, Jon Gutiérrez, José Manuel Barandiaran, Alfredo García-Arribas</i>	
<u>SKYRMION DETECTION, CONTROL, AND COMPUTING</u>	
Electrical Detection of Magnetic Skyrmions in a Magnetic Tunnel Junction	974
<i>Yao Guang, Giovanni Finocchio, Xiufeng Han, Guoqiang Yu</i>	
Non-Conventional Computing Using Thermal and Driven Skyrmion Dynamics	976
<i>Maarten A. Brems, Klaus Raab, Jakub Zázvorka, Grischa Beneke, Thomas Winkle, Jan Rothörl, Fabian Kammerbauer, Peter Virnau, Johan H. Mentink, Mathias Kläui</i>	
Demonstration of Weighted Sum Using Electrical Manipulation and Detection of Magnetic Skyrmions.....	978
<i>Tristan Da Câmara Santa Clara Gomes, Yanis Sassi, Sachin Krishnia, Dedalo Sanz-Hernandez, Nicolas Reyren, Marie-Blandine Martin, Pierre Seneor, Tanvi Bhatnagar-Schöffmann, Dafiné Ravelosona, Damien Querlioz, Liza Herrera-Diez, Julie Grollier, Vincent Cros</i>	
Experimental Demonstration of Skyrmionic Magnetic Tunnel Junction and Its On-Chip Learning Application	980
<i>Sai Li, Ao Du, Yadong Wang, Xinran Wang, Shuang Liu, Zhongkui Zhang, Biao Pan, Wang Kang, Zhaozhao Wang, Zhipeng Hou, Weisheng Zhao</i>	
<u>SKYRMION MATERIALS AND DEVICES</u>	
Logic Operations of Magnetic-Skyrmion Chirality Via a Branched Nanowire.....	982
<i>Yoshinobu Nakatani, Keisuke Yamada, Atsufumi Hirohata</i>	
Realization of Zero-Field Skyrmions in a Magnetic Tunnel Junction	984
<i>B. He, Y. Hu, J. W. Zhang, Y. Peng, X. F. Han, G. Q. Yu</i>	
Mechanisms and Control of Inter-Skyrmion Attractions.....	986
<i>Mai Kameda, Koji Kobayashi, Yuki Kawaguchi</i>	
Precise Transport of Skyrmions by Surface Acoustic Waves	988
<i>Jintao Shuai, Luis Lopez-Diaz, John E. Cunningham, Thomas A. Moore</i>	
Topology-Dependent Brownian Gyromotion of a Single Skyrmion	990
<i>Le Zhao, Zidong Wang, Xichao Zhang, Xue Liang, Yan Zhou, Wanjun Jiang</i>	

Overlapping-Skyrmions Based Racetrack Memory	992
<i>Taichi Nishitani, Syuta Honda, Hiroyoshi Itoh</i>	

SOFT MAGNETIC ALLOYS AND OXIDES I

Accuracy Investigation of High-Frequency Core Loss Measurement for Low-Permeability Magnetic Materials.....	994
<i>Yuki Sato, Yuji Uehara, Satoshi Okamoto, Shigeyoshi Yoshida, Yasushi Endo, Nobuhisa Ono, Nobuto Misono, Hirokazu Matsumoto</i>	
Effect of Helical Anisotropy on Magnetic Losses in Stacked Cores of Grain-Oriented and Non-Oriented Steels	996
<i>Samuel Dobák, Ján Füzer, Ivan Petryshynets, Peter Kollár, František Kováč</i>	
Increase of Saturation Magnetization Flux Density in Nitrogen Defective Fe16Nx	998
<i>Yusuke Asari, Tomohiro Tabata, Masafumi Noujima, Matahiro Komuro, Shohei Terada</i>	
Effect of YIG Nanoparticles Addition on the Magnetic Properties of Manganese Ferrite	1000
<i>Shenglei Che, Jiawei Feng, Yao Ying</i>	
Evaluation of Microstructure and Magnetic Performance of Fe- 6.5 Wt% Si Soft Magnetic Powder Core	1002
<i>Mai Phuong Nguyen, Shigeyoshi Yoshida, Satoshi Okamoto, Takamichi Miyazaki, Yasushi Endo</i>	
Realization of Soft Magnetic Properties in Precipitation Hardening Stainless Steel.....	1004
<i>Takenobu Sato, Tatsuya Naruse, Takashi Ebata, Shin Saito</i>	
The Effect of Temperature on the Magnetic Properties of Fe/SiO ₂ /Ferrite Soft Magnetic Composites	1006
<i>Ján Füzer, Sviatoslav Vovk, Samuel Dobák, Peter Kollár, Radovan Bureš, Mária Fáberová</i>	
Temperature Dependence of Wideband Losses in Fe-Co and Fe-Si Steel Sheets	1008
<i>N. Banu, E. Ferrara, L. Rocchino, F. Fiorillo, M. Pasquale, D. Brunt, A. Wilson, S. Harmon</i>	
Growth-Induced Order by Site-Preference in Anisotropic Mixed Rare-Earth Iron Garnet Thin Films.....	1010
<i>Allison Kaczmarek, Ethan Rosenberg, Yixuan Song, Aubrey Penn, Geoffrey Beach, Caroline Ross</i>	

SOFT MAGNETIC ALLOYS AND OXIDES II

PLD-Fabricated Fe-Co Films Prepared by Using Different Spot Size of Laser Beam.....	1012
<i>Akihiro Yamashita, Hibiki Kaku, Takeshi Yanai, Masaki Nakano, Hirotoshi Fukunaga</i>	
Measurement and Evaluation of Magnetic Barkhausen Noise of Oriented Silicon Steel Sheet Under Mechanical Stress.....	1014
<i>Yitong Yao, Lin Li</i>	
Crossed Anisotropy Multilayered Nanogranular Films Combining High Permeability, Ferromagnetic Resonance Frequency, and Resistivity	1016
<i>Masayuki Naoe, Makoto Sonehara, Kousuke Miyaji, Toshiro Sato, Yasushi Endo, Nobukiyo Kobayashi, Ken-Ichi Arai</i>	

Cold Workability and Magnetic Properties of FeCo-V Alloys with the Addition of a Small Amount of Aluminum.....	1018
<i>Kiyoshi Urakawa, Motohiro Kasuya, Shigeo Sato, Kiyoshi Kanie, Naoyuki Owari, Takashi Ebata, Shigeru Suzuki</i>	
Synthesis and Characterization of Single Phase γ -Co47Ni22Al31 Heusler Alloy Nanoparticles	1020
<i>Debraj Mahata, Ananthakrishnan Srinivasan</i>	
Effect of Annealing Temperature on Structure and Magnetic Properties of Ultra-Thin High-Purity Iron Ribbons	1022
<i>Xiaotong Ma, Rie Umetsu, Takamichi Miyazaki, Shintaro Mikami, Tomohiro Hiraki, Yasushi Endo</i>	
Feature Analysis on B-H Curves of Dust Cores Under the Application of DC Bias Field.....	1024
<i>Tomoyuki Onuma, Zhenzhuang Li, Satoshi Okamoto</i>	
Anisotropic FMR Peak Widths in Fe-Co Single Crystal Thin Films.....	1026
<i>Shohei Umetsu, Mutsuki Sato, Yutaka Takahashi, Nobuyuki Inaba, Fumiyoji Kirino, Mitsuru Otake, Masaaki Futamoto</i>	

SPECIAL MACHINES AND RELUCTANCE MACHINES

Electromagnetic Design and Analysis of Low Speed High Torque Motor with Composite Rotor and Double Stator.....	1028
<i>Shuaishuai Wang, Shi Jin, Siyang Yu, Zhaoyu Zhang</i>	
Design and Performance Analysis of a New Synchronous Reluctance Machine with Hybrid Cores.....	1030
<i>Shiwei Zhang, Chengcheng Liu, Gang Lei, Youhua Wang, Jianguo Zhu</i>	
Effective Performance Improvement Designs of a Hybrid Permanent-Magnet-Assisted Synchronous Reluctance Motor.....	1032
<i>Cheng-Tsung Liu, Wei-Lin Chen, Sheng-Chan Yen, Yu-Wei Hsu, Pei-Chun Shih, Ta-Yin Luo</i>	
Analysis and Comparison of Novel Yokeless Double Rotor Mutually Coupled Switched Reluctance Motor.....	1034
<i>Dongshan Fu, Zhiyuan Lv, Hongyu Si, Yue Liu, Xiaojie Wu</i>	
Novel Slot-Opening-PM Variable Reluctance Machine with High-Order-Harmonic Winding.....	1036
<i>Feifan Ni, Shuangxia Niu, Zhenghao Li, Xing Zhao</i>	
Analysis and Magnetic Field Calculation Method for Motor with Saliency	1038
<i>Xiaoyu Liang, Mingqiao Wang, Ping Zheng, Jialin Gao, Wanquan Li</i>	
Analysis of Aluminum Eddy Current Effect for Planar Switched Reluctance Motors.....	1040
<i>Jun-Di Sun, Zhengyou He, Guang-Zhong Cao, Su-Dan Huang, Jiangbiao He, Qing-Quan Qian</i>	
Effect of Cross-Saturation on the Performance of Synchronous Reluctance Machine Operating as Autonomous Generator	1042
<i>Y. Djouadi, A. Tounzi, K. Ididarene</i>	

SPECIAL MACHINES I

Enhanced Tunneling Performance of Magnetic Helical Robots Utilizing Pecking Motion Generated by Alternating Rotating Magnetic Field	1044
<i>Junhyoung Kwon, Junchi Sa, Daehee Lee, Gunhee Jang</i>	
Influence of Air Gaps Between Grain-Oriented Steel Sheets on Losses in the Magnetic System.....	1046
<i>A. Giraud, Y. V. Serdyuk, T. Thiringer</i>	
Axial Flux Switched Reluctance Machine Modelling by a Quasi-3D Reluctance Network	1048
<i>Mostafa Hatoum, Salim Asfirane, Georges Barakat, Yacine Amara</i>	

SPECIAL MACHINES II

Automatic MTPA Control Method for Magnetic-Geared Motor Using Sensorless Control Based on Extended Electromotive Force Model.....	1050
<i>Noboru Niguchi, Katsuhiro Hirata, Junka Okamoto</i>	
Design of a Novel Modular Flux Switching Permanent Magnet Resolver.....	1052
<i>Wenyuan Mi, Jincheng Yu, Zaixin Song, Kuang Yang, Zheng Cai, Hang Zhao</i>	
Surrogate-Based Modeling of Induction Machines to Reduce the Computational Burden of Robust Multi-Objective Optimization	1054
<i>Omolbanin Taqavi, Areej Fatima, Alexandre Bourgault, Ze Li, Glenn Byczynski, Jimi Tjong, Narayan C. Kar</i>	
Winding Magnetization Design of Single-Phase Capacitor-Run Induction Motor for Submersible Pump Application	1056
<i>Cheng-Tsung Liu, Huang-Zhih Chen, Peng-Yu Wu, Pei-Yu Chao</i>	
Multi-Mode Excitation Analysis and Design of a New Hybrid Excited Modular Stator Permanent Magnet Switched Reluctance Machine	1058
<i>Lei Xu, Danchen Xu, Xiaoyong Zhu, Chao Zhang, Xiaohua Zang</i>	
Analysis of Efficiency Maps of Synchronous Machines	1060
<i>Haidar Diab, Salim Asfirane, Yacine Amara</i>	

SPECIAL MACHINES III

A Novel Consequent-Pole Contra-Rotating Machine with Zero-Sequence Current Excitation	1062
<i>Mingyuan Jiang, Shuangxia Niu</i>	
Magnetic Properties of Wound Laminated Cores for a Dual-Axial Gap Induction Motor Under PWM Excitation	1064
<i>Mohachiro Oka, Masato Enokizono, Daisuke Wakabayashi, Hirofumi Kiyotake, Naoya Soda, Mitsuru Takai, Tsuyoshi Kajiya</i>	
A Novel Speed-Sensorless Wireless Universal Motor with Bidirectional Movement.....	1066
<i>Hui Wang, K. T. Chau, Wei Liu, Stefan M. Goetz</i>	
Research on a Transverse-Dislocated Magnetic-Field Modulated Brushless Contra-Rotating Machine Adopting Different Core Material Combinations	1068
<i>Yutao Wang, Yi Sui, Guopeng Liu, Xiaoyu Liang, Ping Zheng</i>	

A Brushless Hybrid Excited Motor Based on Field Modulation Theory.....	1070
<i>Yi Du, Xiaoxiao Wang, Feng Xiao, Zhuofan He, Xiaoyong Zhu</i>	
A Built-In Integrated Magnetorheological Fluid Brake Permanent Magnet Synchronous Motor	1072
<i>Youkang Hu, Wei Xu</i>	
Sub-Harmonic Synchronous Machine Using a Dual Inverter and a Unique Three-Layer Stator Winding	1074
<i>S M Sajjad Hossain Rafin, Osama A. Mohammed</i>	

SPECIAL MACHINES IV

Analysis and Optimization of Asymmetric Multi-Layer Barrier Permanent Magnet Synchronous Motor for Electric Vehicles.....	1076
<i>Li Facheng, Shi Liwei, Xiao Dong, Qiao Zhiwei, Zhao Xin, Ding Hongshan</i>	
Open-Delta Flux-Modulating Consequent Pole Motors.....	1078
<i>Hiroshi Mitsuda, Tadashi Fukami, Masato Koyama, Toshinori Tanaka</i>	
Model for Angular Dependency of the Intrinsic Coercivity Force of Ferrite Permanent Magnets.....	1080
<i>Marcelo D. Silva, Emil Lind, Anar Ibrayeva, Sagar Ghorai, Sandra Eriksson</i>	
Permanent-Magnet-Free Variable Flux Reluctance Machines: Towards a Nonlinear Magnetodynamic Modeling Framework for Heavy-Duty Applications	1082
<i>Doga Ceylan</i>	
Design and Evaluation of a Linear Permanent Magnet Flux Switching Machine for Use in Dry Gravity Energy Storage	1084
<i>Morris Mugyema, Maarten J. Kamper, Rong-Jie Wang</i>	
Iron Loss Analytical Prediction of IPMSMs Considering Multi-Factor Effects Over the Drive Cycle of Electric Vehicles.....	1086
<i>Lin Liu, Youguang Guo, Gang Lei, Wenliang Yin, Jianguo Zhu</i>	

A Novel Counter-Rotating Axial-Flux Hybrid-Excitation Permanent Magnet Machine with Dual- Rotor.....	1088
<i>Chenxi Xia, Yaojing Feng, Mengfan Jia, Yuan Gao, Shoudao Huang</i>	

Comparison Between Conical and Axial Flux Geometries of High-Speed Permanent Magnets Synchronous Machines.....	1090
<i>Hoda Taha, Georges Barakat, Yacine Amara, Mostafa Hatoum</i>	

Comparative Analysis of Noise and Vibration for Dual Three-Phase IPMSM Under Healthy and Multi-Phase Open-Circuit Fault Operations.....	1092
<i>Pengzhao Song, Wenlong Li, Ze Li, Narayan C. Kar</i>	

SPECIAL MACHINES V

Initial Rotor Position Estimation for an Ultra-Low Inductive Saliency Machine Based on Eddy Current Loss	1094
<i>Henghong Wang, Wei Xu, Zhen Jin</i>	
Toroidal Field Excitation for Axial-Field Double-Rotor Flux-Reversal DC Motors with Magnetic Differential	1096
<i>Tengbo Yang, K. T. Chau, Zhichao Hua, Hongliang Pang</i>	

Torque Performance Enhancement for Hybrid PM Motor Considering Magnet Characteristic Difference and Variation.....	1098
<i>Yunyun Chen, Xin Zhou, Ziyin Li, Xiaoyong Zhu</i>	
Loss Model of Interior Permanent Magnet Synchronous Machine with Series Iron-Loss Resistance	1100
<i>Yilin Ma, Hao Yuan, Wei Yin, Huan Yang, Rongxiang Zhao</i>	
Multi-Objective Design Optimization of an IPMSM Drive System Based on Loss Minimization Control Strategy	1102
<i>Lin Liu, Youguang Guo, Gang Lei, Wenliang Yin, Jianguo Zhu</i>	
Novel Electrically Excited Doubly Salient Variable Reluctance Machine with High-Order-Harmonic Winding	1104
<i>Feifan Ni, Shuangxia Niu, Zhenghao Li, Xing Zhao</i>	
Principle and Analysis of Structure of Low-Speed High-Torque Gear Meshing Motor Driven by Radial Force	1106
<i>Yu Guodong, Sun Shuqi, Xiaolijun Xiaolijun, Zhang Wentao, Bai Xudong, Xu Yongxiang</i>	
Novel Stator Multi-Tooth Hybrid Permanent Magnet Memory Motor	1108
<i>Linna Wang, Wei Xu</i>	
Influence of Split Ratio on Field Modulation Effect in Consequent-Pole Permanent Magnet Machine	1110
<i>Ya Li, Heyun Lin, Hui Yang, Zhen Zhao</i>	
Equivalent Magnetic Network Modeling of Grain-Oriented Silicon Steel Sheets Permanent Magnet Linear Synchronous Motors	1112
<i>Ting Dong, Ziyan Gao, Bo Zhang, Renjie Fu</i>	
<u>SPIN CURRENTS, SPIN PUMPING, SPIN HALL, AND RELATED EFFECTS I</u>	
Power and Phase Profiles in Nano-Constriction Based Synchronized Spin Hall Nano-Oscillators Near Threshold Current	1114
<i>William Ronayne, Arindam Samanta, Andreas Amann, Saibal Roy</i>	
Control of Spin Currents and Antiferromagnetic Moments Via Topological Surface States for Ultralow Energy Consumption	1116
<i>Xianzhe Chen, Hua Bai, Yuchen Ji, Xufeng Kou, Feng Pan, Cheng Song</i>	
Spin-Fluctuation Induced Enhancement for Pure Spin Current	1118
<i>Po-Hsun Wu, Danru Qu, Yen-Chang Tu, H. -L. Liang, Yin-Ze Lin, S. F. Lee, C. L. Chien, Ssu-Yen Huang</i>	
State Tomography for Magnetization Dynamics and Coherence Anomaly in Y ₃ Fe ₅ O ₁₂	1120
<i>Tomosato Hioki, Takahiko Makiuchi, Hiroki Shimizu, Koujiro Hoshi, Mehrdad Elyasi, Kei Yamamoto, Naoto Yokoi, Gerrit E. W. Bauer, Eiji Saitoh</i>	
Significant Effect of Carrier Concentration on Spin Lifetime at Low Temperatures in Strained Si _{0.1} Ge _{0.9}	1122
<i>K. Kawashima, T. Naito, M. Yamada, T. Okada, Y. Wagatsuma, K. Sawano, K. Hamaya</i>	
Nonreciprocal Parametric Magnon Excitation by Surface Mode	1124
<i>Sohei Horibe, Hiroki Shimizu, Koujiro Hoshi, Tomosato Hioki, Eiji Saitoh</i>	

Ultra-Low-Current Spin Hall Nano-Oscillators	1126
<i>Nilamani Behera, Avinash Kumar Chaurasiya, Victor H. González, Lakan Bainsla, Akash Kumar, Ahmad A. Awad, Himanshu Fulara, Johan Åkerman</i>	
Spin Voltage Gradient is the Driving Force for Ultrafast Demagnetization and Terahertz Spin Transport.....	1128
<i>Reza Rouzegar, Liane Brandt, Lukáš Nádvorník, David A. Reiss, Alexander L. Chekhov, Oliver Gueckstock, Chihun In, Martin Wolf, Tom S. Seifert, Piet W. Brouwer, Georg Woltersdorf, Tobias Kampfrath</i>	
<u>SPIN CURRENTS, SPIN PUMPING, SPIN HALL, AND RELATED EFFECTS II</u>	
Scalable Spin-To-Charge Conversion Effect in the Inverse Spin Hall Nanodevice	1130
<i>Yu-Lon Lin, Tzu-Chuan Hsin, Yu-Hui Wu, Jack Yuan-Chen Sun, Yuan-Chieh Tseng</i>	
High Spin-Charge Conversion Efficiency of Co ₃ Sn ₂ S ₂ Promoted by Transition from Paramagnetic to Ferromagnetic Phase	1132
<i>Takeshi Seki, Yong-Chang Lau, Junya Ikeda, Kohei Fujiwara, Akihiro Ozawa, Satoshi Iihama, Kentaro Nomura, Atsushi Tsukazaki</i>	
<u>SPIN CURRENTS, SPIN PUMPING, SPIN HALL, AND RELATED EFFECTS III</u>	
Single Layer Spin-Orbit Torque in Mn ₂ Ru _{0.9} Ga.....	1134
<i>Simon Lenne, Gwenaël Atcheson, Ross Smith, Plamen Stamenov, Karsten Rode</i>	
Spin-Gapless Semiconducting Properties in a Polycrystalline CoCrFeAl Heusler-Alloy Film.....	1136
<i>Tiffany Sarfo, Atsufumi Hirohata</i>	
Nonreciprocal Magnon Hanle Effect in Antiferromagnetic α -Fe ₂ O ₃	1138
<i>Janine Gückelhorn, Sebastián De-La-Peña, Monika Scheufele, Matthias Grammer, Matthias Opel, Stephan Geprägs, Juan Carlos Cuevas, Rudolf Gross, Hans Huebl, Akashdeep Kamra, Matthias Althammer</i>	
<u>SPIN CURRENTS, SPIN PUMPING, SPIN HALL, AND RELATED EFFECTS IV</u>	
Spin Current Generation in Highly Conductive Ru/Cu Epitaxial Heterostructures.....	1140
<i>Zhenchao Wen, Jieyuan Song, Cong He, Thomas Scheike, Hiroaki Sukegawa, Tadakatsu Ohkubo, Yukio Nozaki, Seiji Mitani</i>	
Spin Swapping Effect of Band Structure Origin in Centrosymmetric Ferromagnets	1142
<i>Hyeon-Jong Park, Hye-Won Ko, Gyungchoon Go, Jung Hyun Oh, Kyoung-Whan Kim, Kyung-Jin Lee</i>	
Spin-Pump-Induced Spin Transport in a Thermally Evaporated Naphthyl Diamine Derivative Film	1144
<i>Eiji Shikoh, Yuichiro Onishi, Yoshio Teki</i>	
Independent Control of Spin-Orbit Torque.....	1146
<i>Seong-Hyub Lee, Jung-Hyun Park, Minhwan Kim, Myeonghoe Kim, Ji Ho Shin, Sug-Bong Choe</i>	
Atomic Layer Deposition of Perpendicularly Magnetized Co Layers Showing Current-Induced Domain Wall Motion	1148
<i>Masaki Kado, Yoshinori Tokuda, Yasuaki Ootera, Nobuyuki Umetsu, Michael Quinsat, Hiroyuki Fukumizu, Tsuyoshi Kondo</i>	

Spin-Orbit Torques in Co ₂ MnGa Magnetic Weyl Semimetal Thin Films.....	1150
<i>Lakhan Bainsla, Yuya Sakuraba, Ahmad A. Awad, Akash Kumar, Nilamani Behera, Roman Khymyn, Saroj P. Dash, Johan Åkerman</i>	

SPIN CURRENTS, SPIN PUMPING, SPIN HALL, AND RELATED EFFECTS V

Magneto-Electric Signal Due to Microwave Heating in Ferromagnetic/Nonmagnetic Bilayer System	1152
<i>Sora Obinata, Riku IImori, Tomoya Tanaka, Ren Kajima, Takashi Kimura</i>	
Generation of Spin-Wave Soliton Using Magnetostatic Surface Mode.....	1154
<i>Tokuya Iwata, Takuro Eguchi, Koji Sekiguchi</i>	
Mechanical Spin Current Generation Via Intrinsic Spin-Orbit Interaction with Spatial Inversion Symmetry	1156
<i>Yuuki Ogawa, Hiroshi Kohno</i>	
Electrical Determination of Magnetization Switching in In-Plane Anisotropy Spin-Orbit Systems	1158
<i>Yu-Han Huang, Yu-Lon Lin, Yu-Hui Wu, Yuan-Chieh Tseng</i>	
A New Method for Emitting Spin-Polarized Electron.....	1160
<i>Yu-Ting Chow, Shou-Yen Chao, Pei-Cheng Jiang, Chung-Tzu Chang, Cheng-Hsun-Tony Chang</i>	
Experimental and Theoretical Evaluation for Pressure Effects on Spin Hall Effect in Pt	1162
<i>Riku IImori, Sora Obinata, Taishiro Yamazaki, Akihiro Mitsuda, Takashi Kimura</i>	

SPIN ORBITRONICS I

Current-Induced Magnetization Switching in Magnetic Multilayers with Interlayer Exchange Coupling by Dual Spin-Orbit Torque	1164
<i>Hiroto Masuda, Yuta Yamane, Takeshi Seki, Klaus Raab, Takaaki Dohi, Rajkumar Modak, Ken-Ichi Uchida, Jun'Ichi Ieda, Mathias Kläui, Koki Takanashi</i>	
Spin Hall Switching Enabled by Uniaxial In-Plane Magnetocrystalline Anisotropy	1166
<i>Shreyes Nallan, Jian-Gang Zhu</i>	
Intrinsic Orbital and Spin Hall Effect in Bismuth Semimetal	1168
<i>Guanxiong Qu, Gen Tatara</i>	
Fabrication and Evaluation of Fully Sputtered Topological Insulator/Perpendicularly Magnetized CoFeB/MgO Multilayers for SOT-MRAM Application.....	1170
<i>Zhang Ruixian, Takanori Shirokura, Tuo Fan, Pham Nam Hai</i>	
Large Interfacial Rashba Interaction and Resultant Dominating Field- Like Torque in Atomically Thin Metallic Heterostructures.....	1172
<i>Sachin Krishnia, Nicolas Sebe, Yanis Sassi, Fernando Ajejas, Nicolas Reyren, Sophie Collin, Thibaud Denneulin, András Kovács, Rafal E. Dunin-Borkowski, Albert Fert, Jean-Marie George, Henri Jaffres, Vincent Cros</i>	

SPIN ORBITRONICS II

Field-Free Switching Enabled by Interplay of Spin-Orbit Torque and Interlayer Dzyaloshinskii-Moriya Interaction.....	1174
<i>Wenqing He, Caihua Wan, Xiufeng Han</i>	
Enhancement of Damping-Like Spin-Orbit-Torque Efficiency in Synthetic Antiferromagnetic System Using Pt-Cu Alloy.....	1176
<i>Yoshiaki Saito, Shoji Ikeda, Hirofumi Inoue, Tetsuo Endoh</i>	
Emergent Inductance in Ferromagnetic Nanostructures.....	1178
<i>Jun 'Ichi Ieda</i>	

SPIN ORBITRONICS IV

Improvement of Spin-Orbit Torque Efficiency for High Speed Operation of Tb/Co-Based Skyrmioms.....	1180
<i>Kazuhiko Tokunaga, Yuichiro Kurokawa, Lin Zhang, Ryuta Satone, Hiromi Yuasa</i>	
Microscopic Calculation of Dzyaloshinskii-Moriya Interaction in a Rashba Ferromagnet.....	1182
<i>Yuto Hayakawa, Yusuke Imai, Hiroshi Kohno</i>	
Spin-Orbit Torque Induced Magnetization Switching in Perpendicularly Magnetized MnGa/Fe Bilayer Grown on GaAs	1184
<i>Mineto Ogawa, Takuya Hara, Shun Hasebe, Michihiko Yamanouchi, Tetsuya Uemura</i>	

SPIN TORQUES IN ANTIFERROMAGNETS

Electrical Switching of Insulating Antiferromagnet/Heavy Metal Bilayers	1186
<i>Christin Schmitt, Hendrik Meer, Olena Gomonay, Rafael Ramos, Adithya Rajan, Felix Schreiber, Grischa Beneke, Aditya Kumar, Tobias Sparmann, Beatrice Bednarz, Michael Foerster, Miguel Angel, Jairo Sinova, Eiji Saitoh, Mathias Kläui</i>	
Current-Induced Néel Order Switching Facilitated by Magnetic Phase Transition.....	1188
<i>Hao Wu, Hantao Zhang, Baomin Wang, Yaqin Guo, Ran Cheng, Kang L. Wang</i>	
Prediction of Tunneling Magnetoresistance and Spin-Transfer Torque Effects in Antiferromagnetic Tunnel Junctions.....	1190
<i>Ding-Fu Shao, Shu-Hui Zhang, Yuan-Yuan Jiang, Jun Ding, Evgeny Y. Tsymbal</i>	
Demonstration of PtMn-Based Field-Free Switching SOT MRAM	1192
<i>Chia-Ping Lin, Chih-Hsiang Tseng, Yu-Shen Yen, Chih-Huang Lai, Kai-Shin Li, Jia-Min Shieh, Jack Yuan-Chen Sun, Jeng-Hua Wei, Denny D. Tang</i>	
Tuning Spin-Orbit Torque Generation Via Seed/Heavy Metal Interface Modification	1194
<i>Tianli Jin, Gerard Joseph Lim, Han Yin Poh, Shuo Wu, Funan Tan, Wen Siang Lew</i>	
Effect of an Antiferromagnetic Order on Tailoring Dzyaloshinskii- Moriya Interaction in Pt/Co/IrMn Trilayer	1196
<i>Sheng-Huai Chen, Chao-Yao Yang, Chih-Huang Lai</i>	
Spin-Orbit Torque-Induced Field-Free Switching of a Perpendicular Antiferromagnet.....	1199
<i>Zhengde Xu, Jie Ren, Zhengping Yuan, Yue Xin, Xue Zhang, Zhifeng Zhu</i>	

SPIN-ORBITRONICS III

Spin-Orbit Torques of Three Spin Polarizations in Magnetic Trilayers.....	1201
<i>Jeongchun Ryu, Ryan Thompson, Jae Yeol Park, Seok-Jong Kim, Gaeun Choi, Jaimin Kang, Han Beom Jeong, Makoto Kohda, Jong Min Yuk, Junsaku Nitta, Kyung-Jin Lee, Byong-Guk Park</i>	
Domain-Wall Tilting Angle Dependence on Current Pulse Width	1203
<i>Myeonghoe Kim, Seong-Hyub Lee, Minhwan Kim, Sug-Bong Choe</i>	
Magnetic Switching Properties for Synthetic Antiferromagnetic Layers with Perpendicular Easy Magnetic Anisotropy	1205
<i>N. Tezuka, S. Fujikawa, H. Akatani, M. Matsuura, S. Sugimoto, Y. Saito</i>	
Magneto-Transport Properties and Magnetization Switching in Perpendicular Magnetized Mn-Rich Heusler Alloy Mn _{2.5} CoAl.....	1207
<i>Hongrui Qin, Xupeng Zhao, Rongkun Han, Hongli Sun, Jianhua Zhao</i>	

SPINS IN 2D AND TOPOLOGY MATERIALS

Gate-Controlled Charge Rectification in Elemental Tellurium	1209
<i>Daichi Hirobe, Yoji Nabe, Hiroshi M. Yamamoto</i>	
Unconventional Emergent Hall Effect Phenomena and Its Modification in a Van Der Waals Ferromagnet Fe ₃ GeTe ₂	1211
<i>Rajeswari Roy Chowdhury, Chandan Patra, Samik Duttagupta, Shunsuke Fukami, Ravi Prakash Singh</i>	
Growth and Terahertz Conductivity of Epitaxial Mn ₃ Sn Thin Films.....	1213
<i>Dong Gao, Tianyu Zhang, Tinggui Yin, Fu Tang, Zechuan Bin, Yucong Yang, Weihao Yang, Jun Qin, Shenggang Liu, Longjiang Deng, Min Hu, Lei Bi</i>	

SPINS IN 2D MATERIALS

Proximity Effects in Molecular Beam Epitaxy Grown Van Der Waals Ferromagnet Cr ₂ Te ₃ on Two-Dimensional Layers.....	1215
<i>Quentin Guillet, Hervé Boukari, Libor Vojacek, Djordje Dosenovic, Hanako Okuno, Fatima Ibrahim, Jing Li, Céline Vergnaud, Alain Marty, Frédéric Bonell, Mairbek Chshiev, Matthieu Jamet</i>	
Graphene-Supported Atom-Sized Magnets for Data Storage: What Can We Learn from First-Principles Calculations?	1217
<i>Jan Navrátil, Rostislav Langer, Michal Otyepka, Toma Susi, Piotr Blonski</i>	
Anomalous Zeeman Shift of Defect-Bound States in Epitaxial FeSn Films	1219
<i>Huimin Zhang, Lian Li</i>	
Magnetization and Spin Dynamics in Two-Dimensional Magnets.....	1221
<i>Laith Alahmed, Bhuwan Nepal, Juan Macy, Brian Casas, Arjun Sapkota, Alessandro R Mazza, Matthew Brahlek, Jiajia Wen, Wencan Jin, Steven S.-L. Zhang, Claudia Mewes, Li-Chuan Zhang, Yuriy Mokrousov, Wei Zhang, Young S. Lee, Luis Balicas, Tim Mewes, Xiaoqian Zhang, Peng Li</i>	

Spin Logic and Emergent Spin Phenomena in 2D Materials Heterostructures	1223
<i>Saroj P. Dash</i>	

SPINS IN GRAPHENE AND TOPOLOGICAL MATERIALS

Large Spin Conversion in the Fe/Graphene/Pt Interface	1225
<i>Alberto Anadón, Iciar Arnay, Rubén Guerrero, Adrián Gudín, Sébastien Petit-Watelot, Julio Camarerо, Paolo Perna, Juan-Carlos Rojas-Sánchez</i>	
Helicity-Dependent Terahertz Emission from a Weyl Semimetal Mn ₃ Sn.....	1227
<i>Dominik Hamara, Gunnar Lange, Anastasios Markou, Robert-Jan Slager, Chiara Ciccarelli</i>	

SPINS IN VAN DER WAALS MATERIALS

Thickness-Dependent SOT Effective Fields and Magnetization Control in Topological insulator/2D-Ferromagnet Bi ₂ Te ₃ /Cr _{1+δ} Te ₂ Van Der Waals Heterostructures with PMA	1229
<i>Nicholas Figueiredo-Prestes, Akylas Lintzeris, Polychronis Tsipas, Nicolas Reyren, Henri Jaffréz, Athanasios Dimoulas, Jean-Marie George</i>	
Microscopic Magnetic Properties of Two-Dimensional Magnetic Fe _x GeTe ₂ Films on Graphene	1231
<i>Adriana I. Figueroa, Hua Lv, Jens Herfort, Dietmar Czubak, Eugenio Zallo, Charles Guillemard, Manuel Valvidares, Juan Rubio-Zuazo, Jesús López-Sánchez, Sergio O Valenzuela, Michael Hanke, Manfred Ramsteiner, J. Marcelo J. Lopes</i>	

SWITCHING AND ULTRAFAST SPIN DYNAMICS IN ANTIFERROMAGNETS

Ultrafast Spin-Orbit-Torque-Induced Coherent Magnetization Switching with Picosecond Current Pulses.....	1233
<i>Jeffrey Bokor, Debanjan Polley, Akshay Pattabi, Ashwin Rastogi, Jenny Hong, Kaushalya Jhuria, Eva Diaz, Aristide Lemaitre, Michel Hehn, Jon Gorchon</i>	
Revisiting a Hidden Order at an Ferromagnet/Antiferromagnet Interface and Its Switching Dynamics.....	1235
<i>Chao-Yao Yang, Sheng-Huai Chen, Chih-Huang Lai</i>	
Antiferromagnetic Droplet Soliton in a Nano-Contact Spin-Transfer Torque Oscillator	1238
<i>R. S. Khymyn, R. V. Ovcharov, B. A. Ivanov, J. Åkerman</i>	
Writing Information by Current Pulses in Antiferromagnetic Mn ₂ Au	1240
<i>M. Jourdan, S. Reimers, Y. Lytvynenko, Y. R. Niu, E. Golias, B. Sarpi, L. S. I. Veiga, T. Denneulin, A. Kovács, R. E. Dunin-Borkowski, J. Bläßer, M. Kläui</i>	

THIN FILMS AND SURFACE EFFECTS I

Ferromagnetic Springs in Exchange Biased Trilayers.....	1242
<i>Sapida Akhundzada, Arne Vereijken, Lukas Paetzold, Mitra Varun Vanakalapu, Christian Janzen, Thomas Saerbeck, Arno Ehresmann</i>	
Odd Spin Frustration in Ultrathin Cr(001) Films Studied by Spin-Polarized Scanning Tunneling Microscopy.....	1244
<i>Takeshi Kawagoe, Shigemasa Suga</i>	

Influence of Free Layer Surface Roughness on Tunnel Magnetoresistance in 300 mm CMOS-Compatible MTJ Stacks	1246
<i>Christoph Durner, Maximilian Lederer, Tatiana Gurieva, Johannes Hertel, Meike Hindenberg, Lukas Gerlich, Maik Wagner-Reetz, Stuart Parkin</i>	
Investigating Magnetocrystalline Anisotropy in the System Au/Co-Staircase/Au(788) by Using XMCD	1248
<i>R. J. G. Rosa, R. L. Souza, G. F. M. Gomes, R. M. Paniago, M. D. Martins</i>	
Splinterface Formation of Sexithiophene (6T) on Ferromagnetic Surfaces	1250
<i>Maha Alotaibi, Phillip Bentley, Jack Bradley, Toby Bird, Oskar Fossberg, Gabriele Bertolini, Steve Tear, Ilaria Bergenti, Andrew Pratt</i>	

THIN FILMS AND SURFACE EFFECTS II

Magnetic Structural Analysis of Pt ₃ Fe Antiferromagnet by Single Crystal Neutron Diffraction.....	1252
<i>Ayumi Nakano, Satoru Kobayashi, Yuri Hotta, Satsuki Goto, Terutoshi Sakakura, Hiroyuki Kimura</i>	
Silicide Formation at Lower Temperatures for Cobalt and Nickel on $\sqrt{3} \times \sqrt{3}R30^\circ$ -Ag/Si(111).....	1254
<i>Cheng-Hsun-Tony Chang, Yu-Ting Chow, Pei-Cheng Jiang, Tsu-Yi Fu, Jyh-Shen Tsay</i>	
Synthesis and In-Situ XPS Study of U-Te Thin Films	1256
<i>Evgenia A. Tereshina-Chitrova, Michal Vališka, Frank Huber, Thomas Gouder</i>	
Modeling the Dependence Hysteresis Characteristics of Thin Films Pd/Co/CoO on Cobalt Oxidation.....	1258
<i>Leonid L. Afremov, Vladimir N. Kharitonov, Ilia G. Iliushin, Pavel S. Mushtuk</i>	
Investigation of the Effect of the Oxidation Depth of Co/CoO Films on the Relative Constant of Interfacial Interaction	1260
<i>L. O. Brykin, L. L. Afremov</i>	

THIN FILMS, SURFACE EFFECTS AND MULTI-LAYERED FILMS I

Strain Effects on Magnetic Compensation and Spin Reorientation Transition of Co/Gd Synthetic Ferrimagnets	1262
<i>Giovanni Masciocchi, Pingzhi Li, Thomas J. Kools, Adrien Petrillo, Bert Koopmans, Reinoud Lavrijsen, Andreas Kehlberger, Mathias Kläui</i>	
Magnetic Layer Thickness Influence on the Anisotropy of Magnetoelastic Properties in Co ₂ Fe0.4Mn0.6Si Heusler Alloys Thin Films	1264
<i>Adam Nabialek, Oleksandr Chumak, Tatsuya Yamamoto, Takeshi Seki, Koki Takanashi, Lech T. Baczewski, Henryk Szymczak</i>	
Anomalous Magnetism in Epitaxial Mn ₂ RuxGa Thin Films	1266
<i>Gwenael Atcheson, Jack O'Brien, Aaron Naden, Katarzyna Siewierska, J. M. D. Coey, Karsten Rode, Plamen Stamenov</i>	
Field Angle-Dependent Bubble Lattice Formation in Re/Co/Pt Multilayers.....	1268
<i>S. K. Jena, J. Kisielewski, R. Gieniusz, U. Guzowska, A. Fakhredine, C. Autieri, A. Lynnyk, A. Pietruszak, A. Maziewski, A. Wawro</i>	

Defect-Driven Antiferromagnetic Domain Walls in CuMnAs Films.....	1270
<i>Sonka Reimers, Dominik Kriegner, Olena Gomonay, Dina Carbone, Filip Krizek, Vit Novák, Richard P. Campion, Francesco Maccherozzi, Alexander Björling, Oliver J. Amin, Luke X. Barton, Stuart F. Poole, Khalid A. Omari, Jan Michalicka, Ondrej Man, Jairo Sinova, Tomáš Jungwirth, Peter Wadley, Sarnjeet S. Dhesi, Kevin W. Edmonds</i>	
Enhanced Soft Magnetic Properties in N-Doped Amorphous FeCo Thin Film.....	1272
<i>Rajasree Das, Guan-Nan Wei, Daniel Lordan, Ranajit Sai, Mike Hayes, Barry Clarke, David Hurley, Paul McCloskey</i>	

THIN FILMS, SURFACE EFFECTS AND MULTI-LAYERED FILMS II

Compositionally Magnetostrictive Response of Perpendicularly Magnetized Ta/CoFe(B)/MgO Films.....	1274
<i>Sung-Min Ahn</i>	
Antiferromagnetically Exchange Coupled CoFe/MgO/CoFe Stacks	1276
<i>Sung-Min Ahn</i>	

TOPOLOGICAL AND 3D MAGNONICS

Spin-Wave Frequency Comb and Penrose Superradiance	1278
<i>Zhenyu Wang, Zhejunyu Jin, H. Y. Yuan, Yunshan Cao, Peng Yan</i>	
Reconfigurable Spinwave Dispersion in Continuous Magnetic Layer Induced Via Artificial Spin Ice Based Magnonic Crystal.....	1280
<i>Troy Dion, Jack C. Gartside, Kilian D. Stenning, Alex Vanstone, Daan M. Arroo, Hidekazu Kurebayashi, Will R. Branford, Takashi Kimura</i>	

ULTRAFAST MAGNETISM

Spin Dynamics at Interfaces on Femtosecond Timescales	1282
<i>Andrea Eschenlohr</i>	
Experimental Detection of Magnon Noise Enhancement Near Spin Reorientation in Sm0.7Er0.3FeO3	1284
<i>M. A. Weiss, A. Herbst, J. Schlegel, T. Dannegger, M. Evers, A. Donges, M. Nakajima, A. Leitenstorfer, S. T. B. Goennenwein, U. Nowak, T. Kurihara</i>	
Coherent Magnetization Dynamics in Strongly Quenched Systems	1286
<i>Akira Lentfert, Anulekha De, Laura Scheuer, Benjamin Städtmüller, Burkard Hillebrands, Georg Von Freymann, Martin Aeschlimann, Philipp Pirro</i>	

VOLTAGE-CONTROLLED ANISOTROPY AND SPIN-CURRENTS

Write-Error Rate Estimation of Voltage-Controlled Magnetization Switching in a Magnetic-Topological-Insulator-Based Device	1288
<i>Takashi Komine, Shimon Watahiki, Takahiro Chiba</i>	
Comparative Study on the Origin of Spin Hall Effect in Poly and Single Crystalline α -W in W/CoFeB Bilayers	1290
<i>Talluri Manoj, Zhenchao Wen, Chandrasekhar Murapaka, Seiji Mitani</i>	

Acoustic Spin Transport in S-Wave Superconductors	1292
<i>Takumi Funato, Ai Yamakage, Mamoru Matsuo</i>	
Effect of Sputtering Process Parameters on Tungsten Structural Phases and Its Spin Hall Angle	1294
<i>K. Sriram, Rohiteswar Mondal, Yaswanth Sai Pappu, Jhantu Pradhan, Arabinda Haldar, Chandrasekhar Murapaka</i>	
Single Domain Spin Orbit Torque Enabled Magnetic Field Sensor with Offset Compensation	1296
<i>Sebastian Zeilinger, Johannes Guettinger, Armin Satz, Sabri Koraltan, Dieter Suess</i>	
Voltage Control of Frequency and Effective Damping in Nano-Constriction-Based Spin Hall Nano-Oscillators.....	1298
<i>Victor H. González, Roman Khymyn, Himanshu Fulara, Ahmad A. Awad, Johan Åkerman</i>	
Electrically Controllable Exchange Bias Via Interface Magnetoelectric Effect	1300
<i>Adam B. Cahaya, Ansell Alvarez Anderson, Anugrah Azhar, Muhammad Aziz Majidi</i>	

VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY II

VCMA-MTJ: Towards Ghz Operation Low Power MRAM	1302
<i>Woojin Kim, Robert Carpenter, Kiroubanand Sankaran, Siddharth Rao, Diego Favaro, Nico Jossart, Nathali Franchina Vergel, Davide Crotti, Kurt Wostyn, Gouri Sankar Kar, Sébastien Couet</i>	

WHAT IS THE PLACE OF MAGNETIC MATERIALS IN TOMORROW'S CHIPS?

A Collaboration from High Frequency Soft Magnetic Materials to Integrated Circuit Design for Beyond 10MHz Switching Power Supply.....	1304
<i>Kousuke Miyaji, Makoto Sonehara, Toshiro Sato</i>	
Spintronic Logic: From Transducers to Logic Gates and Circuits	1306
<i>C. Adelmann, F. Ciubotaru, F. Meng, S. Cotofana, S. Couet</i>	
Radio-Frequency Spintronic Neural Networks.....	1308
<i>Andrew Ross, Nathan Leroux, Arnaud De Riz, Daniela Markovic, Dédalo Sanz-Hernández, Juan Trastoy, Paolo Bortolotti, Damien Querlioz, Leandro Martins, Luana Benetti, Marcel S. Claro, Pedro Anacleto, Alejandro Schulman, Thierry Taris, Jean-Baptiste Begueret, Sylvain Saïghi, Alex S. Jenkins, Ricardo Ferreira, Adrien F. Vincent, Alice Mizrahi, Julie Grollier</i>	

Author Index