

**EF-10 MICROFLUXGATES PERFORMANCES**

**11:45 IMPROVEMENT IN MICROT TECHNOLOGY**

Helene Joisten<sup>1</sup>, Bernard Guilhamat<sup>2</sup>, Marcel Audoin<sup>1</sup>, Jean-Michel Leger<sup>2</sup>, Robert Cuchet<sup>1</sup>, Gerard Barrois<sup>1</sup>, Pierre Gaud<sup>1</sup>, Didier Bloch<sup>1</sup>, <sup>1</sup>DIHS/LCFM LETI/CEA-Grenoble, France, <sup>2</sup>DCIS LETI/CEA-Grenoble, France

**EF-11 HIGH SENSITIVE AND HEAT-RESISTIVE**

**12:00 MAGNETIC DISPLACEMENT SENSOR USING MAGNETOSTRICTIVE/PIEZOELECTRIC LAMINATE COMPOSITE**

Toshiyuki Ueno, Toshiro Higuchi, *Dept of Precision Machinery Eng., the Univ. of Tokyo, Japan*

**EF-12 NEW ABSOLUTE ROTOR-POSITION SENSORS FOR**

**12:15 INVERTER-DRIVEN MOTORS**

Li Zhi Sun, Jing Shang, Ji Bin Zou, *Harbin Institute of Technology, China*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EP**

**Advanced Coding and Recording Channels**

**H. Mutoh**

*Fujitsu Ltd.*

**EP-01 REDUCED COMPLEXITY SIGNAL DETECTION AND TURBO DECODING FOR MULTITRACK MAGNETIC RECORDING CHANNELS**

Naveen Mysore, Jan Bajcsy, *Dept. of Electrical and Computer Engineering, McGill University, Canada*

**EP-02 CITI CODE BASED ON PR1 EQUALIZED LEVEL FOR PERPENDICULAR RECORDING**

Yoshitake Kurihara<sup>1</sup>, Mohammed Zaki Ahmed<sup>2</sup>, Hisashi Osawa<sup>3</sup>, Yoshihiro Okamoto<sup>3</sup>, <sup>1</sup>Niihama National College of Technology, Japan, <sup>2</sup>Centre for Research in Information Storage Technology, University of Plymouth, United Kingdom, <sup>3</sup>Faculty of Engineering, Ehime University, Japan

**EP-03 NOISE-PREDICTIVE TURBO EQUALIZATION FOR PARTIAL-RESPONSE CHANNELS**

Sharon Aviran, Paul H. Siegel, Jack K. Wolf, *CMRR and ECE Dept., University of California, San Diego, United States of America*

**EP-04 PERFORMANCE OF BCJR-DFE BASED DETECTORS OVER RECORDING CHANNELS USING PATTERN-DEPENDENT NOISE PREDICTION**

Nitin Nangare<sup>1</sup>, Xue Shi Yang<sup>2</sup>, Erozan Kurtas<sup>2</sup>, Krishna R. Narayanan<sup>1</sup>, <sup>1</sup>Dept. of Electrical Engineering, Texas A&M University, United States of America, <sup>2</sup>Seagate Technology, United States of America

- EP-05 DECODING FOR MAGNETIC RECORDING MEDIA WITH OVERLAPPING TRACKS**  
 Naveen Singla, Joseph A. O'Sullivan, Clayton T. Miller, Ronald S. Indeck, *Department of Electrical and Systems Engineering, Washington University in St. Louis, United States of America*
- EP-06 PERFORMANCE EVALUATION OF LDPC CODES FOR PATTERNED MEDIA**  
 Ioannis Ntoaks<sup>1</sup>, Paul W. Nutter<sup>1</sup>, Barry K. Middleton<sup>1</sup>, C. J. Tjhai<sup>2</sup>, Mohammed Zaki Ahmed<sup>2</sup>, <sup>1</sup>*School of Computer Science, The University of Manchester, United Kingdom*, <sup>2</sup>*School of Computing, Communications and Electronics, University of Plymouth, United Kingdom*
- EP-07 RATES AND EMPIRICAL PROPERTIES OF GOOD CODES FOR PARTIAL RESPONSE CHANNELS**  
 Shao Hua Yang, Bruce Wilson, *Hitachi Global Storage Technologies San Jose Research Center, United States of America*
- EP-08 PARTITION-AND-SHIFT LDPC CODES FOR HIGH DENSITY MAGNETIC RECORDING**  
 Jin Lu, Jose' Moura, *Data Storage Systems Center, Dept. of Electrical & Computer Engineering, Carnegie Mellon University, United States of America*
- EP-09 INTEGRATED INTERLEAVING ECC AND HIGH DIMENSIONAL PARITY CODES**  
 Hiroshi Kamabe, Hironori Katou, *Dept. of Information Science, Gifu University, Japan*
- EP-10 UNIFORM LATIN SQUARE INTERLEAVING FOR CORRECTING TWO-DIMENSIONAL BURST ERRORS**  
 Keitarou Kondou, Makoto Noda, *Core Technology Development Group, Micro Systems Network Company, Sony Corporation, Japan*
- EP-11 DETECTION OF MEDIA DEFECTS IN PERPENDICULAR RECORDING**  
 Wei Jun Tan<sup>1</sup>, J. R. Cruz<sup>2</sup>, <sup>1</sup>*Storage Division, Agere Systems, United States of America*, <sup>2</sup>*The University of Oklahoma, School of Electrical and Computer Engineering, United States of America*
- EP-12 ON LDPC CODES SATISFYING THE  $(0, k)$  CONSTRAINT**  
 Sharareh Babvey<sup>1</sup>, Steven W. McLaughlin<sup>2</sup>, <sup>1</sup>*Dept. of Compute Science, Georgia State University, United States of America*, <sup>2</sup>*School of Electrical and Computer engineering, Georgia Institute of Technology, United States of America*

**EP-13 A STUDY OF OBSERVATION OF NOISE RELATED TO DECISION ERROR IN PRML SYSTEM**

Yoshihiro Okamoto<sup>1</sup>, Yasuaki Nakamura<sup>1</sup>, Hisashi Osawa<sup>1</sup>, Hiroaki Muraoka<sup>2</sup>, Yoshihisa Nakamura<sup>2</sup>, <sup>1</sup>*Faculty of Engineering, Ehime University, Japan*, <sup>2</sup>*Research Institute of Electrical Communication, Tohoku University, Japan*

**EP-14 ON A METHOD FOR CHARACTERIZING READ SENSOR NONLINEARITY USING READ-BACK SIGNALS**

Bruce A. Wilson, *Hitachi Global Storage Technologies, United States of America*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EQ**

**Current Induced Switching II**

**S. Nakamura**

Corporate R&D center, Toshiba Corporation

**EQ-01 CURRENT INDUCED OSCILLATION OF A SINGLE MAGNETIC DOMAIN WALL**

Eiji Saitoh<sup>1</sup>, Mitsunaga Nozue<sup>1</sup>, Hideki Miyajima<sup>1</sup>, Takehiro Yamaoka<sup>2</sup>, <sup>1</sup>*Dept. of Phys. Keio Univ., Hiyoshi, Yokohama,, Japan*, <sup>2</sup>*SII NanoTechnology, Inc, Japan*

**EQ-02 CRITICAL PARAMETERS FOR CURRENT-INDUCED DOMAIN WALL MOTION**

Mathias Klauel<sup>1</sup>, Pierre-Olivier Jubert<sup>2</sup>, Rolf Allenspach<sup>2</sup>, Carlos Vaz<sup>3</sup>, Giancarlo Faini<sup>4</sup>, Laurent Vila<sup>4</sup>, Ulrich Ruediger<sup>1</sup>, <sup>1</sup>*FB Physik, Universitaet Konstanz, Germany*, <sup>2</sup>*IBM Research, Zurich Research Laboratory, Switzerland*, <sup>3</sup>*Cavendish Laboratory, University of Cambridge, United Kingdom*, <sup>4</sup>*LPN-CNRS, France*

**EQ-03 CURRENT DRIVEN DOMAIN WALL STUDY IN U-SHAPE PERMALLOY WIRE**

Jai-Lin Tsai<sup>1</sup>, K-W Lin<sup>1</sup>, Y-D Yao<sup>2</sup>, S-F Lee<sup>2</sup>, Y Liou<sup>2</sup>, <sup>1</sup>*Department of Materials Engineering, National Chung Hsing University, Taiwan*, <sup>2</sup>*Institute of Physics, Academia Sinica, Taiwan*

**EQ-04 DOMAIN WALL MAGNETORESISTANCE IN PERMALLOY HALF-RING WIRES**

C. Yu<sup>1</sup>, S. F. Lee<sup>1</sup>, E. W. Huang<sup>1</sup>, K. W. Cheng<sup>1</sup>, D. C. Chen<sup>1</sup>, Y. Liou<sup>1</sup>, Y. D. Yao<sup>1</sup>, C. R.Chang<sup>2</sup>, <sup>1</sup>*Institute of Physics, Academia Sinica, Taiwan*, <sup>2</sup>*Dept. of Physics, National Taiwan University, Taiwan*

**EQ-05 CURRENT INDUCED MAGNETIZATION SWITCHING IN MAGNETIC TUNNEL JUNCTION WITH MgO (001) TUNNEL BARRIER**

Hitoshi Kubota<sup>1</sup>, Akio Fukushima<sup>1</sup>, Yuichi Ootani<sup>2</sup>, Shinji Yuasa<sup>1</sup>, Koji Ando<sup>1</sup>, Hiroki Maehara<sup>3</sup>, Koji Tsunekawa<sup>3</sup>, David D. Djayaprawira<sup>3</sup>, Naoki Watanabe<sup>3</sup>, Yoshishige Suzuki<sup>4</sup>, <sup>1</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan, <sup>2</sup>Toho University, Japan, <sup>3</sup>Anelva Corporation, Japan, <sup>4</sup>Graduate School of Engineering Science, Osaka University, Japan

**EQ-06 REDUCTION OF THE SWITCHING SPEED IN CURRENT-INDUCED MAGNETIZATION REVERSAL DUE TO DOMAIN STATES ON APPLYING NANO-SECOND CURRENT PULSES**

Yoshishige Suzuki<sup>1</sup>, Ashwin Tulapurkar<sup>2</sup>, Kojiro Yagami<sup>3</sup>, Akio Fukushima<sup>2</sup>, Thibaut Devolder<sup>4</sup>, P Crozat<sup>4</sup>, Claude Chappert<sup>4</sup>, Shinji Yuasa<sup>2</sup>, <sup>1</sup>Graduate School of Engineering Science, Osaka University, Japan, <sup>2</sup>National Institute of Advanced Industrial Science and Technology (AIST), Japan, <sup>3</sup>SSNC, Semiconductor Technology Development Group, SONY Corp., Japan, <sup>4</sup>Institut d'Electronique Fondamentale, CNRS UMR 8622, Batiment 220, Universite Paris Sud, France

**EQ-07 ANALYTICAL INVESTIGATION OF SPIN TRANSFER DYNAMICS USING A PERPENDICULAR-TO-PLANE POLARIZER**

Kyung-Jin Lee, Olivier Redon, Bernard Dieny, *SPINTEC, URA CEA-CNRS, France*

**EQ-08 TUNNELING CURRENT-INDUCED BUTTERFLY-SHAPED DOMAINS AND MAGNETIZATION SWITCHING IN DOUBLE-BARRIER MAGNETIC TUNNEL JUNCTIONS**

Sufen<sup>1</sup>, Jing Zhao<sup>1</sup>, Zhong Ming Zeng<sup>1</sup>, Xiu Feng Han<sup>1</sup>, Yasuo Ando<sup>2</sup>, Terunobu<sup>2</sup>, <sup>1</sup>State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, China, <sup>2</sup>Dept. of Appl. Phys., Graduate School of Engineering, Tohoku University, Japan, Japan

**EQ-09 MICROMAGNETIC SIMULATION ON DYNAMICS OF SPIN TRANSFER TORQUE MAGNETIZATION REVERSAL**

Kenchi Ito, *Hitachi Cambridge Laboratory, Hitachi Europe, Ltd., United Kingdom*

**Nanocrystalline and Other Materials III****Y. Kitamoto**

Tokyo Institute of Technology

**ER-01 FABRICATION AND STUDY OF  $\text{Ni}_{75}\text{Fe}_{25}\text{-SiO}_2$  GRANULAR FILMS FOR HIGH FREQUENCY APPLICATION**

Shi Hui Ge<sup>1</sup>, Xiao Lin Yang<sup>1</sup>, Kwang Youn Kim<sup>2</sup>, Li Xi<sup>1</sup>, Xiao Ming Kou<sup>1</sup>, Dongsheng Yao<sup>1</sup>, Binsheng Li<sup>1</sup>, Xinwei Wang<sup>1</sup>, <sup>1</sup>Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, China, <sup>2</sup>Advanced Metals Research Center, Korea Institute of Science and Technology, Republic of Korea

**ER-02 THE MAGNETOCALORIC EFFECT IN AMORPHOUS  $\text{Fe}_{80-x}\text{Mn}_x\text{Zr}_{10}$  (x=4,6,8,10) ALLOYS**

Seong-Gi Min<sup>1</sup>, Kyeong-Sup Kim<sup>1</sup>, Seong-Cho Yu<sup>2</sup>, Veeturi Srinivas<sup>2</sup>, <sup>1</sup>Dept. of Physics, Chungbuk Nat'l University, Republic of Korea, <sup>2</sup>Dept. of Physics, Indian Institute of Technology, India

**ER-03 RESISTIVITY AND CORE SIZE DEPENDENCIES OF EDDY CURRENT LOSS FOR Fe-Si COMPRESSED CORES**

Takanobu Saito, Satoshi Takemoto, Takahiko Iriyama, R&D Lab, Daido Steel Co.,Ltd, Japan

**ER-04 ANNEALING CONDITIONS AND HIGH MAGNETIC INDUCTION IN THIN-GAUGED 3% Si-Fe ALLOY STRIPS**

Sang Beom Kim<sup>1</sup>, Kyung Min Park<sup>1</sup>, Seong Soo Cho<sup>1</sup>, Dong Il Lee<sup>2</sup>, Nam Hoe Heo<sup>1</sup>, <sup>1</sup>Advanced Technology Center, Korea Electric Power Research Institute, Republic of Korea, <sup>2</sup>Power Transmission Technology Group, Korea Electric Power Research Institute, Republic of Korea

**ER-05 FeHfN AND FeHfNO SOFT MAGNETIC FILMS FOR RF APPLICATIONS**

Sandrine Couderc<sup>1</sup>, Bernard Viala<sup>2</sup>, Pascal Ancey<sup>1</sup>, Guillaume Bouche<sup>1</sup>, <sup>1</sup>STMicroelectronics, France, <sup>2</sup>CEA-DRT-Leti, Grenoble, France

**ER-06 MAGNETIC PROPERTIES OF  $\text{Fe}_3\text{O}_4$  NANOSTRUCTURES**

Seung Pil Ko, Joon-Young Soh, Young Keun Kim, Division of Materials Science and Engineering, Korea University, Republic of Korea

**ER-07 2-D MAGNETIC ROTATIONAL LOSS OF ELECTRICAL STEEL AT HIGH MAGNETIC FLUX DENSITY**

Keishiro Mori, Shunji Yanase, Yasuo Okazaki, Shuichiro Hashi,  
*Dept. of Electrical & Electronics, Gifu University, Japan*

**ER-08 TRANSPORT AND MAGNETIC PROPERTIES OF ENCAPSULATED Ni-NiO/ZrO<sub>2</sub> NANOSTRUCTURES**

Bibhuti B. Nayak<sup>1</sup>, Satish Vitta<sup>1</sup>, A. K. Nigam<sup>2</sup>, D. Bahadur<sup>1</sup>,  
<sup>1</sup>*Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, India,*  
<sup>2</sup>*Department of Condensed Matter Physics & Materials Science, Tata Institute of Fundamental Research Mumbai, India,*

**ER-09 MAGNETIC PROPERTIES OF COBALT NANO DOTS FABRICATED BY A NEW LASER IRRADIATION METHOD: ENHANCED ANISOTROPY AND SUPERPARAMAGNETISM**

Jung Yup Yang, Kap Soo Yoon, Young Ho Do, Jong Hyun Lee, Chae Ok Kim, Jin Pyo Hong, *Dept. of Physics, Hanyang University, Republic of Korea*

**ER-10 AN ITERATIVE METHOD TO OBTAIN NON-UNIFORM FIELD DISTRIBUTION IN MAGNETIC SUBSTRATES**

Ali Reza V. Farahani, Adalbert Konrad, *Dept. of E.C.E., University of Toronto, Canada*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session ES**

**Clusters and Particles III**

**J.P. Wang**

*University of Minnesota*

**ES-01 SYNTHESIS AND MAGNETIC CHARACTERIZATION OF ZnFe<sub>2</sub>O<sub>4</sub> NANOSTRUCTURES IN AAO TEMPLATE**

Jin-Seung Jung<sup>1</sup>, Y.-K. Jung<sup>1</sup>, E.-M. Kim<sup>1</sup>, S.-H. Min<sup>2</sup>, J.-H. Jun<sup>3</sup>, Leszek Malkinski<sup>4</sup>, Yuri Barnakov<sup>4</sup>, L. Spinu<sup>4</sup>,  
<sup>1</sup>*Department of Chemistry, Kangnung National University, Republic of Korea,* <sup>2</sup>*Department of Metal and Materials Engineering, Kangnung National University, Republic of Korea,* <sup>3</sup>*Department of Applied Chemistry, Konkuk University, Republic of Korea,* <sup>4</sup>*Advanced Materials Research Institute, University of New Orleans, United States of America*

**ES-02 SYNTHESIS AND CHARACTERIZATION OF CORE-SHELL Ag@Fe<sub>3</sub>O<sub>4</sub> NANOPARTICLES**

Chih-Huang Lai, Tsung-Feng Wu, *Dept of Materials Science and Engineering, National Tsing Hua University, Taiwan*

**ES-03 INTERGRANULAR TUNNELING**

**MAGNETORESISTANCE OF MECHANICALLY ALLOYED (Cr-M)O<sub>2</sub> POWDER COMPACTS**

Masakiyo Tsunoda<sup>1</sup>, Tetsuya Sato<sup>1</sup>, Qi Wu Zhang<sup>2</sup>, Balachandran Jeyadevan<sup>3</sup>, Migaku Takahashi<sup>4</sup>, <sup>1</sup>*Dept. of Electronic Engineering, Tohoku Univeristy, Japan*, <sup>2</sup>*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*, <sup>3</sup>*Graduate School of Environmental Studies, Tohoku University, Japan*, <sup>4</sup>*New Industry Creation Hatchery Center, Tohoku University, Japan*

**ES-04 SUPERPARAMAGNETIC BEHAVIOUR OF**

**ANTIFERROMAGNETIC CuO NANOPARTICLES**

Narsinga Rao Gade<sup>1</sup>, Y. D. Yao<sup>1</sup>, J. W. Chen<sup>2</sup>, <sup>1</sup>*Institute of Physics, Academia Sinica, Taiwan*, <sup>2</sup>*Department of Physics, National Taiwan University, Taiwan*

**ES-05 FERROMAGNETIC, TRANSPARENT AND**

**CONDUCTING ITO-Fe-CLUSTER COMPOSITE FILMS**

Dong Liang Peng, Kenji Sumiyama, Noriyuki Nozawa, Takehiko Hihara, *Department of Materials Science and Engineering, Nagoya Institute of Technology, Japan*

**ES-06 PERCOLATION THRESHOLD AND TUNNELING**

**MAGNETORESISTANCE IN Ag/Ni NANOCOMPACTS**

S. Y. Wu, M. T. Liao, P. J. Huang, F. C. Tsao, M. K. Chung, C. C. Yang, W. -H. Li, *Dep. of Physics, National Central University, Taiwan*

**ES-07 FABRICATION OF Fe-Ce-O GRANULAR FILMS BY METAL-OXIDE CO-ELECTRODEPOSITION**

Naoyuki Fujita<sup>1</sup>, Masanobu Izaki<sup>2</sup>, Mitsuteru Inoue<sup>3</sup>, <sup>1</sup>*Dept. of Electrical Engineering, Nara National College of Technology, Japan*, <sup>2</sup>*Osaka Municipal Technical Research Institute, Japan*, <sup>3</sup>*Dept. of Erectrical and Electronic Engineering, Toyohashi University of Technology, Japan*

**ES-08 MAGNETISM OF Fe@C<sub>20</sub>, Fe@C<sub>20</sub>H<sub>20</sub>, AND Fe<sub>2</sub>@C<sub>30</sub>**

Chulsu Jo, Jae Il Lee, *Dept. of Physics, Inha University, Republic of Korea*

**ES-09 MAGNETIC PROPERTIES OF CoSi CLUSTERS**

Chulsu Jo<sup>1</sup>, Dong Chul Kim<sup>2</sup>, Jae Il Lee<sup>1</sup>, <sup>1</sup>*Dept. of Physics, Inha University, Republic of Korea*, <sup>2</sup>*School of Electrical Engineering, Halla University, Republic of Korea*

**Inductors and Transformers**

**S. Okanuma**

Fukushima University

**M. Duffy**

National University of Ireland

**ET-01 OPTIMIZATION ALGORITHM FOR TRANSFORMER ADMITTANCE CURVES**

Edvin Shehu<sup>1</sup>, Adalbert Konrad<sup>1</sup>, Luis Marti<sup>2</sup>, <sup>1</sup>*Dept. of E.C.E., University of Toronto, Canada,* <sup>2</sup>*Hydro One Networks Inc., Canada*

**ET-02 AN IMPROVED METHOD FOR VIRTUAL AIR GAP LENGTH COMPUTATION**

Adalbert Konrad<sup>1</sup>, Jean F. Brudny<sup>2</sup>, <sup>1</sup>*Dept. of E.C.E., University of Toronto, Canada,* <sup>2</sup>*Elec. Eng. Dept., University of Artois, France*

**ET-03 EVALUATION OF HEAT CONDUCTIVITY OF THERMOSENSITIVE FERRITE AS TEMPERATURE DEPENDENCE DEVICE**

Yasuyuki Kakubari<sup>1</sup>, Fumihito Sato<sup>1</sup>, Hidetoshi Matsuki<sup>1</sup>, Tadakuni Sato<sup>2</sup>, <sup>1</sup>*Graduate School of Engineering, Tohoku University, Japan,* <sup>2</sup>*NEC Tokin Corporation, Japan*

**ET-04 CURRENT CONTROLLABILITY OF THE LOW-VOLTAGE 10 kA INVERTER POWERS SOURCE**

Yoshiaki Takasaki<sup>1</sup>, Toshikatsu Sonoda<sup>2</sup>, <sup>1</sup>*College of Computer Engineering, Fukuoka Institute of Technology, Japan,* <sup>2</sup>*School of Humanity-Oriented Science and Engineering, Kinki University, Japan*

**ET-05 IMPROVEMENT OF ZONE CONTROL INDUCTION HEATING EQUIPMENT FOR HIGH-SPEED PROCESSING OF SEMICONDUCTOR**

Daisuke Miyagi<sup>1</sup>, Aisha Saitoh<sup>1</sup>, Norio Takahashi<sup>1</sup>, Naoki Uchida<sup>2</sup>, Kazuhiro Ozaki<sup>2</sup>, <sup>1</sup>*Dept. of Electrical and Electronic Eng., Okayama University, Japan,* <sup>2</sup>*Advanced machinery and Systems Dept. Mitsui Engineering & Shipbuilding Co., Ltd., Japan*

**ET-06 THREE-DIMENTIONAL RELUCTANCE NETWORK ANALYSIS CONSIDERING AN IRON LOSS CHARACTERISTIC FOR AN EIE-CORE VARIABLE INDUCTOR**

Kenji Nakamura<sup>1</sup>, Shuichi Hayakawa<sup>1</sup>, Sigeaki Akatsuka<sup>2</sup>, Takashi Ohinata<sup>2</sup>, Kazuo Minazawa<sup>2</sup>, Osamu Ichinokura<sup>1</sup>, <sup>1</sup>*Graduate School of Engineering, Tohoku University, Japan,* <sup>2</sup>*Tohoku Electric Power Co., Inc., Japan*



**ET-07 WINDING LOSS MECHANISM ANALYSIS AND THE DESIGN FOR A NEW STRUCTURE HIGH-FREQUENCY GAPPED INDUCTOR**

Xing Kui Mao<sup>1</sup>, Wei Chen<sup>2</sup>, <sup>1</sup>*College of Electrical Engineering & Automation, Fuzhou University, China*, <sup>2</sup>*Delta Power Electronics Center, Shanghai, China*

**ET-08 EVALUATION OF EXPERIMENTAL METHODS FOR DETERMINING MAGNETICALLY NONLINEAR CHARACTERISTICS OF ELECTROMAGNETIC DEVICES**

Gorazd Stumberger, Mostjan Polajzer, Bojan Stumberger, Matej Toman, Drago Dolinar, *Faculty of Electrical Engineering and Computer Science, University of Maribor, Slovenia*

**ET-09 DESIGNING OF SUITABLE CONSTRUCTION OF HIGH-FREQUENCY INDUCTION HEATING COIL BY USING FINITE ELEMENT METHOD**

Alexander K. Boadi, Hiroyasu Shimoji, Takashi Todaka, Masato Enokizono, *Department of electrical and electronic engineering, Oita university, Japan*

**ET-10 INFLUENCE OF HYSTERETIC BEHAVIOUR IN FERRORESONANT LCR CIRCUITS**

Oriano Bottauscio<sup>1</sup>, Mario Chiampi<sup>2</sup>, <sup>1</sup>*IEN Galileo Ferraris, Torino, Italy*, <sup>2</sup>*Dept. Ingegneria Elettrica, Politecnico di Torino, Italy*

**ET-11 COMBINED SYSTEM OF AC AND DC ELECTROMAGNETIC FIELD FOR STABILIZED FLOW IN CONTINUOUS CASTING**

Ryu Hirayama, Keisuke Fujisaki, *Environment & Process Technology Center, Nippon Steel Corporation, Japan*

**ET-12 INTEGRATED DESIGN FOR A HIGH SPEED PERMANENT MAGNET AXIAL FLUX GENERATOR**

Patrick C.K. Luk<sup>1</sup>, Tareq S. El-Hasan<sup>2</sup>, <sup>1</sup>*Dept. of Aerospace, Power and Sensors, United Kingdom*, <sup>2</sup>*KADDB, Jordan*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EU**

**Integrated Passives and Devices II**

**M. Yamaguchi**

Tohoku University

**Y. Zhuang**

HiTeC-Dimes, Delft University of Technology

**EU-01 DESIGN OF INDUCTOR OPERATING IN GHz RANGES**

Minsoo Choi, Joohyun Hong, Jong-Ryoul Kim, *Dept. of Material Engineering Science, Hanyang University, Republic of Korea*

- EU-02 INVESTIGATION OF ANOMALOUS LOSSES IN FERROMAGNETIC SPIRAL INDUCTORS USING THICK COPPER TECHNOLOGY**  
 Bernard Viala<sup>1</sup>, Anne Sophie Royet<sup>1</sup>, Sandrine Couderc<sup>2</sup>, <sup>1</sup>CEA-DRT-LETI Grenoble France, France, <sup>2</sup>STMicroelectronics Crolles France, France
- EU-03 RF INTEGRATED INDUCTORS WITH VARIOUS SLIT PATTERNS USING CoFeBN SOFT MAGNETIC FILM**  
 Masahiro Yamaguchi<sup>1</sup>, Ki Hyeon Kim<sup>1</sup>, Takashi Kuribara<sup>1</sup>, Tadahiro Fukushima<sup>1</sup>, Inyoung Kim<sup>2</sup>, Jongryoul Kim<sup>2</sup>, <sup>1</sup>Dept. of Electrical and Communication Engineering, Tohoku University, Japan, <sup>2</sup>Metallurgy and Materials Engineering Department, Hanyang University, Republic of Korea
- EU-04 ON A TRANSMISSION LINE WITH PERIODICALLY LOADED GYRATOR**  
 Kensuke Okubo<sup>1</sup>, Makoto Tsutsumi<sup>2</sup>, <sup>1</sup>Dept. of Communication Engineering, Okayama Prefectural University, Japan, <sup>2</sup>Faculty of Engineering, Fukui University of Technology, Japan
- EU-05 AN INTEGRATED LTCC INDUCTOR**  
 Hee-Jun Kim<sup>1</sup>, Chan-Young Kim<sup>1</sup>, Jong-Ryoul Kim<sup>2</sup>, <sup>1</sup>School of Electrical and Computer Eng., Republic of Korea, <sup>2</sup>Department of Metallurgical and Materials Eng., Republic of Korea
- EU-06 A THIN FILM SPIRAL MICROSTRIP TRANSMISSION-LINE USING CoZrNb SOFT MAGNETIC THIN FILM FOR A QUARTER WAVELENGTH TRANSFORMER**  
 Hirotaka Suzuki<sup>1</sup>, Namie Sugiyama<sup>1</sup>, Toshiro Sato<sup>1</sup>, Kiyohito Yamasawa<sup>1</sup>, Yoshimasa Miura<sup>1</sup>, Yuko Miyake<sup>2</sup>, Masanori Akie<sup>2</sup>, Yuji Uehara<sup>2</sup>, <sup>1</sup>Faculty of Engineering, Shinshu University, Japan, <sup>2</sup>Fujitsu Ltd., Japan
- EU-07 A COPLANAR-COUPLED-LINE COMMON-MODE FILTER USING CoZrNb SOFT MAGNETIC THIN FILM FOR GHz FREQUENCY BAND**  
 Yuuki Sudo<sup>1</sup>, Katsuhiko Watanabe<sup>1</sup>, Toshiro Sato<sup>1</sup>, Kiyohito Yamasawa<sup>1</sup>, Yoshimasa Miura<sup>1</sup>, Yuko Miyake<sup>2</sup>, Masanori Akie<sup>2</sup>, Yuji Uehara<sup>2</sup>, <sup>1</sup>Faculty of Engineering, Shinshu University, Japan, <sup>2</sup>Fujitsu Ltd., Japan
- EU-08 CONTROLLING ELECTROMAGNETIC WAVE ABSORPTION CHARACTERISTICS BY CHANGING MAGNETIC POWDER MIXING RATIOS FOR POWDER-TYPE MAGNETIC WOOD**  
 Hideo Oka<sup>1</sup>, Minekazu Terui<sup>1</sup>, Hiroshi Osada<sup>1</sup>, Fukumori Izumida<sup>2</sup>, Yasuji Namizaki<sup>2</sup>, <sup>1</sup>Dept. of Electrical & Electronic Engineering, Iwate University, Japan, <sup>2</sup>Iwate Industrial Research Institute, Japan

**EU-09 CONDUCTION NOISE ATTENUATION BY IRON PARTICLES-RUBBER COMPOSITES ATTACHED ON MICROSTRIP LINES**

Sun-Tae Kim<sup>1</sup>, Han-Sin Cho<sup>2</sup>, Sung-Soo Kim<sup>1</sup>, <sup>1</sup>*Department of Materials Engineering, Chungbuk National University, Republic of Korea, <sup>2</sup>Ja Wha Electronics Cooperation, Republic of Korea*

**EU-10 GHz RANGE ABSORPTION PROPERTIES OF  $\text{Fe}/\text{Y}_2\text{O}_3$ ,  $\text{FeCo}/\text{Y}_2\text{O}_3$  AND  $\text{Fe}/\text{Fe}_3\text{B}/\text{Y}_2\text{O}_3$  NANOCOMPOSITES**

Ken-ichi Machida<sup>1</sup>, Jiu Rong Liu<sup>1</sup>, Masahiro Itoh<sup>1</sup>, <sup>1</sup>*Center for Advanced Science and Innovation, Osaka University, Japan*

**EU-11 OPERATING MECHANISM OF RF ELECTROMAGNETIC NOISE SUPPRESSION SHEETS**

Kaori Maruta<sup>1</sup>, Masahiro Yamaguchi<sup>1</sup>, Hiroshi Ono<sup>2</sup>, <sup>1</sup>*Tohoku University, Japan, <sup>2</sup>NEC Tokin Co., Japan*

**EU-12 NOISE SUPPRESSOR BY USING NANOGRANULAR Co-Fe-Al-O MULTILAYER FILM WITH DIFFERENT THICKNESS**

Jae Cheon Sohn<sup>1</sup>, Dong Jin Byun<sup>1</sup>, Sang Ho Lim<sup>1</sup>, Suk Hee Han<sup>2</sup>, Masahiro Yamaguchi<sup>3</sup>, <sup>1</sup>*Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea, <sup>2</sup>Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea, <sup>3</sup>Electrical and Communication Engineering, Tohoku University, Sendai, Japan*

**EU-13 A FABRICATION OF DC-DC CONVERTER USING LTCC NiZnCu FERRITE THICK FILMS**

Ki Woong Moon<sup>1</sup>, Seung Hee Hong<sup>1</sup>, Hee Jun Kim<sup>2</sup>, Jongryoul Kim<sup>1</sup>, <sup>1</sup>*Dept. of Materials Engineering Science, Republic of Korea, <sup>2</sup>School of Electrical and Computer Engineering, Republic of Korea*

**EU-14 A WIDEBAND COMMON-MODE NOISE FILTER WITH A Mn-Zn FERRITE AND Cu/POLYIMIDE TAPE WOUND COIL FOR SWITCHING POWER SUPPLIES USED IN ELECTRONIC MEASURING INSTRUMENTS**

Koichi Yanagisawa<sup>1</sup>, Fuchon Zhang<sup>1</sup>, Toshiro Sato<sup>2</sup>, Kiyohito Yamasawa<sup>2</sup>, Yoshimasa Miura<sup>2</sup>, <sup>1</sup>*R&D Dept., HIOKI Electric Corp., Japan, <sup>2</sup>Faculty of Engineering, Shinshu University, Japan*

**EU-15 4-PORT PACKAGE ANALYSIS AND MEASUREMENTS INCLUDING INDUCTIVE AND CAPACITIVE COUPLING BETWEEN LINES AT GHz FREQUENCIES**

Adalbert Konrad<sup>1</sup>, Shinji Tanabe<sup>2</sup>, Junichi Abe<sup>2</sup>, <sup>1</sup>*University of Toronto, Canada, <sup>2</sup>Mitsubishi Electric Corporation, Japan*

**EU-16 TUNABLE WIDEBAND MICROWAVE BAND-STOP AND BAND-PASS FILTERS USING YIG/GGG-GaAs LAYER STRUCTURES**

Chen S. Tsai<sup>1</sup>, G. Qiu<sup>1</sup>, H. Gao<sup>1</sup>, L.W. Yang<sup>2</sup>, G.P. Li<sup>1</sup>, S.A. Nikitov<sup>3</sup>, <sup>1</sup>*Dept. of Elec. Eng.& Comp Sci., University of California, Irvine, United States of America*, <sup>2</sup>*Trans RF Corp., United States of America*, <sup>3</sup>*Radioengineering and Electronics Inst., Russian Academy of Sciences, Russian Federation*

**EU-17 AN EFFICIENT NONLINEAR FREQUENCY MULTIPLICATION MECHANISM IN FERRITE LOADED WAVEGUIDE STRUCTURES**

Martha Pardavi-Horvath<sup>1</sup>, Galina S. Makeeva<sup>2</sup>, Oleg A. Golovanov<sup>3</sup>, <sup>1</sup>*Department of Electrical and Computer Engineering, The George Washington University, United States of America*, <sup>2</sup>*Penza State University, Russian Federation*, <sup>3</sup>*Penza Military Institute of Artillery, Russian Federation*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EV**

**Biomagnetism and Applications I**

**K. Iramina**

*University of Tokyo*

**EV-01 THE REJECTION OF MAGNETIC NOISE FROM THE WIRE USING INDEPENDENT COMPONENT ANALYSIS FOR MAGNETOCARDIOGRAM**

Koichiro Kobayashi<sup>1</sup>, Yoshinori Uchikawa<sup>2</sup>, Takayuki Simizu<sup>3</sup>, Kenji Nakai<sup>4</sup>, Masato Yoshizawa<sup>3</sup>, <sup>1</sup>*Dept. of Welfare Engineering, Iwate University, Japan*, <sup>2</sup>*Dept. of Electronics and Computer Engineering, Tokyo Denki University, Japan*, <sup>3</sup>*Laboratory Medicine, Iwate Medical University, Japan*, <sup>4</sup>*Frontier Materials and Functional Engineering, Iwate University, Japan*

**EV-02 COMPARISON OF CURRENT DISTRIBUTION BASED ON TISSUE IN-HOMOGENEITY IN MAGNETIC STIMULATION FOR TREATMENT OF URINARY INCONTINENCE**

Masato Odagaki, Kazutaka Suga, Tadashi Sasaki, Hidehiro Hosaka, *Graduate school of Science and Engineering, Tokyo Denki University, Japan*

**EV-03 QUANTITATIVE MEASUREMENT OF CREATINE CONTENT IN SKELETAL MUSCLE USING 1H-MRS**

Takako Saotome<sup>1</sup>, Masaki Sekino<sup>1</sup>, Fumio Eto<sup>2</sup>, Shoogo Ueno<sup>1</sup>, <sup>1</sup>*Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*, <sup>2</sup>*Department of Rehabilitation Medicine, Graduate School of Medicine, University of Tokyo, Japan*

**EV-04 STRESS FIBER CONTRIBUTES TO RAT SCHWANN CELL ORIENTATION UNDER MAGNETIC FIELD**

Yawara Eguchi, Shoogo Ueno, *Dept. of Biomedical Engineering, Univ. of Tokyo, Japan*

**EV-05 MAPPING OF STRAIN IN BIOLOGICAL TISSUES USING MAGNETIC RESONANCE**

Masaki Sekino, Akihisa Kaneko, Shoogo Ueno, *Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

**EV-06 SHORT-TERM EPISODIC MEMORY ENCODING IN THE HUMAN BRAIN: A MAGNETOENCEPHALOGRAPHY AND ELECTROENCEPHALOGRAPHY STUDY.**

Klevest Gjini, Takashi Maeno, Keiji Iramina, Shoogo Ueno, *Dept. of Biomedical Engineering, University of Tokyo, Japan*

**EV-07 THE CURRENT SOURCE ESTIMATION OF THE EVENT RELATED FIELD DERIVED FROM VISUAL ATTENTION TO THE HEMI-SPACE.**

Takashi Maeno<sup>1</sup>, Klevest Gjini<sup>1</sup>, Keiji Iramina<sup>1</sup>, Fumio Eto<sup>2</sup>, Shoogo Ueno<sup>1</sup>, *<sup>1</sup>Dept. of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan, <sup>2</sup>Dept. of Rehabilitation, University of Tokyo Hospital, Japan*

**EV-08 MEASUREMENT OF AUDITORY EVOKED MAGNETIC FIELD OF MICE WITH HIGH SPATIAL RESOLUTION**

Keiji Iramina, Shoogo Ueno, *Dept. of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

**EV-09 BIODISTRIBUTION OF CHITOSAN BASED NANO MAGNETITE SUSPENSION FOR TARGETED HYPERTHERMIA**

Dong-Hyun Kim<sup>1</sup>, Se Ho Lee<sup>1</sup>, Kwang-Mahn Kim<sup>1</sup>, Kyoung-Nam Kim<sup>1</sup>, In-Bo Shim<sup>2</sup>, Yong-Keun Lee<sup>1</sup>, *<sup>1</sup>Brain Korea 21 Project for Medical Science, Yonsei University, Republic of Korea, <sup>2</sup>Department of Electronic Physics, Kookmin University, Republic of Korea*

**EV-10 THERMOTHERAPY WITH METALLIC STENT DEPEND ON EXTERNAL EXCITATION**

Hodaka Shoji<sup>1</sup>, Yoshihiro Ozu<sup>1</sup>, Fumihiro Sato<sup>1</sup>, Hidetoshi Matsuki<sup>1</sup>, Yoshihiro Nihei<sup>2</sup>, Yoshimochi Kurokawa<sup>2</sup>, Tadakuni Sato<sup>3</sup>, *<sup>1</sup>Graduate School of Engng., Tohoku Univ., Japan, <sup>2</sup>Graduate School of Medicine, Tohoku Univ., Japan, <sup>3</sup>NEC Tokin Corporation, Japan*

**EV-11 THE EXAMINATION OF THE EXCITATION  
CONDITION FOR THE HIGH TEMPERATURE  
MAGNETIC HYPERTHERMIA**

Yukiko Sawaya<sup>1</sup>, Nobutake Suzuki<sup>1</sup>, Fumihiro Sato<sup>1</sup>, Hidetoshi Matsuki<sup>1</sup>, Tadakuni Sato<sup>2</sup>, <sup>1</sup>*Graduate School of Tohoku University, Japan*, <sup>2</sup>*NEC Tokin Corporation, Japan*

**EV-12 EXAMINATION OF CIRCUIT PARAMETER FOR  
STABLE HIGH EFFICIENCY TESTS FOR THE  
ARTIFICIAL HEARTS**

Shinsuke Arai<sup>1</sup>, Hidekazu Miura<sup>1</sup>, Fumihiro Satou<sup>1</sup>, Hidetoshi Matsuki<sup>1</sup>, Tadakuni Sato<sup>2</sup>, <sup>1</sup>*Dept. of Electrical and Communication Engineering, Tohoku University, Japan*, <sup>2</sup>*NEC Tokin Corporation, Japan*

**EV-13 BASIC EVALUATION OF SIGNAL TRANSMISSION  
COIL IN TRANSCUTANEOUS MAGNETIC  
TELEMETRY SYSTEM FOR ARTIFICIAL HEART**

Tetsuya Takura<sup>1</sup>, Hirokazu Ishiai<sup>1</sup>, Fumihiro Sato<sup>1</sup>, Hidetoshi Matsuki<sup>1</sup>, Tadakuni Sato<sup>2</sup>, <sup>1</sup>*Dept. of Electrical and Communication Engineering, Tohoku University, Japan*, <sup>2</sup>*NEC Tokin Corporation, Japan*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EW**

**Biomagnetism and Applications II**

**K. Tsukada**

Okayama University

**EW-01 EVALUATE DAMAGE IN DNA MOLECULES  
RESULTING BY VERY-LOW-FREQUENCY MAGNETIC  
FIELDS USING BACTERIAL GENE EXPRESSION  
SYSTEM FOR MUTATION REPAIRING SYSTEM**

Akira Igarashi<sup>1</sup>, Koichiro Kobayashi<sup>1</sup>, Hidetoshi Matsuki<sup>2</sup>, Ginro Endo<sup>3</sup>, Akira Haga<sup>3</sup>, <sup>1</sup>*Faculty of Engineering, Iwate University, Japan*, <sup>2</sup>*Graduate School of Engineering, Tohoku University, Japan*, <sup>3</sup>*Faculty of Engineering, Tohoku Gakuin University, Japan*

**EW-02 EFFECTS ON BACTERIAL CELLS BY EXPOSURE TO  
VLF MAGNETIC FIELDS**

Makiko Kakikawa<sup>1</sup>, Satoshi Tachi<sup>1</sup>, Shoushin Hashimoto<sup>2</sup>, Masayoshi Iwahara<sup>1</sup>, Sotoshi Yamada<sup>2</sup>, <sup>1</sup>*Graduate School of Natural Science and Technology, Kanazawa University, Japan*, <sup>2</sup>*Institute of Nature and Environmental Technology, Kanazawa University, Japan*

**EW-03 EFFECTS OF MAGNETIC STIMULATION ON TUMORS AND IMMUNE FUNCTIONS**

Sachiko Yamaguchi, Mari Ogiue-Ikeda, Masaki Sekino, Shoogo Ueno, *Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

**EW-04 FIREFLY LUCIFERIN-LUCIFERASE LUMINESCENCE BY MILLIGAUSS ULTRA-LOW FREQUENCY PULSED MAGNETIC FIELD APPLIED PURE WATER WITHOUT ATP**

Masanori Fukushima<sup>1</sup>, Takuji Kataoka<sup>2</sup>, Norikazu Sugiyama<sup>2</sup>, Kaneo Mohri<sup>3</sup>, *<sup>1</sup>Translational Research Center, Kyoto University Hospital, Japan, <sup>2</sup>System Division, Hamamatsu Photonics K.K., Japan, <sup>3</sup>Graduate School of Electronics, Nagoya University, Japan*

**EW-05 POWER DEPOSITION INSIDE A PHANTOM FOR TESTING OF MRI HEATING**

Arslan Amjad, R. Kamondetdacha, Alexander Kildishev, Sung-Min Park, John Nyenhuis, *School of Electrical and Computer Engineering, Purdue University, United States of America*

**EW-06 THE EFFECTS OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION ON THE INJURED NEURONS IN RATS**

Hirofumi Funamizu<sup>1</sup>, Mari Ogiue-Ikeda<sup>1</sup>, Suguru Kawato<sup>2</sup>, Shoogo Ueno<sup>1</sup>, *<sup>1</sup>Dep. of Bio. Eng., Tokyo Univ., Japan, <sup>2</sup>Dep. of Bio. Phy., Tokyo Univ., Japan*

**EW-07 MEASUREMENTS OF THE SPIN-SPIN RELAXATION TIME AND THE DEGREE OF ORIENTATION OF MAGNETICALLY ORIENTED COLLAGEN GELS**

Michihiro Takeuchi<sup>1</sup>, Masaki Sekino<sup>1</sup>, Norio Iriguchi<sup>2</sup>, Shoogo Ueno<sup>1</sup>, *<sup>1</sup>Department of Biomedical Engineering Graduate School of Medicine University of Tokyo, Japan, <sup>2</sup>Center for Multimedia and Information Technologies University of Kumamoto, Japan*

**EW-08 AUTOMATIC COMPENSATION OF EARTH MAGNETIC FIELD AND CALIBRATION SYSTEM OF MAGNETOMETERS BELOW 1 mT**

Po Gyu Park<sup>1</sup>, V. Ya. Shifrin<sup>2</sup>, Young Gyun Kim<sup>1</sup>, Mun-Seog Kim<sup>1</sup>, Kyu-Tae Kim<sup>1</sup>, *<sup>1</sup>Electromagnetic Metrology, Korean Research Institute of Standards and Science (KRISS), Republic of Korea, <sup>2</sup>Magnetic Measurements, Mendeleev Institute for Metrology (VNIIM), Russian Federation*

**EW-09 DEVELOPMENT OF REALTIME AND HIGHLY ACCURATE WIRELESS MOTION CAPTURE SYSTEM UTILIZING SOFT FERRITE MAGNETIC CORE**

Shuichiro Hashi<sup>1</sup>, Yuuki Tokunaga<sup>1</sup>, Shin Yabukami<sup>2</sup>, Masaharu Toyoda<sup>1</sup>, Kazushi Ishiyama<sup>2</sup>, Yasuo Okazaki<sup>1</sup>, Ken-ichi Arai<sup>2</sup>, *<sup>1</sup>Dept. of Materials Science & Technology, Gifu University, Japan, <sup>2</sup>Research Institute of Electrical Communication, Tohoku University, Japan*

**EW-10 A NOVEL PORTABLE MATERIAL CHARACTERIZATION SYSTEM USING AC MAGNETIZATION PROBE**

Hisashi Endo<sup>1</sup>, Mitsuharu Shiwa<sup>2</sup>, Toshihiko Abe<sup>1</sup>, Tetsuya Uchimoto<sup>1</sup>, Toshiyuki Takagi<sup>1</sup>, <sup>1</sup>*Institute of Fluid Science, Tohoku University, Japan*, <sup>2</sup>*JAPEIC, Japan*

**EW-11 ANALYTICAL APPROACH FOR FAST COMPUTATION OF MAGNETIC FLUX LEAKAGE DUE TO SURFACE DEFECTS**

Yevgen Melikhov, Seong-Jae Lee, David C. Jiles, Rick Lopez<sup>1</sup>, Lisa Brasche, *Center for Aviation Systems Reliability, Iowa State University, United States of America*

**EW-12 MAGNETIC CHARACTERISTICS OF ARCHITECTURAL MATERIALS FOR NON-MAGNETIC BUILDINGS**

Kazuo Kato<sup>1</sup>, Keita Yamazaki<sup>1</sup>, Koichiro Kobayashi<sup>2</sup>, Akihiko Chiba<sup>2</sup>, <sup>1</sup>*Research and Development Institute, Takenaka Corporation, Japan*, <sup>2</sup>*Dept. of Welfare Engineering, Iwate University, Japan*

**EW-13 GENERATION AND CONFINEMENT OF UNIFORM MAGNETIC FIELDS WITH DISTRIBUTIONS OF SURFACE CURRENTS**

Manlio G. Abele, *New York University, United States of America*

**Apr. 7**

**Event Hall**

**8:30-12:00**

**Session EX**

**Domains & Interdisciplinary Topics**

**H. Miyajima**

Keio University

**EX-01 BULK DOMAIN ANALYSIS IN IRON (111) CRYSTALS**

Rudolf Schaefer, Sabine Schinnerling, *Inst. for Metallic Materials, IFW Dresden, Germany*

**EX-02 DOMAIN EVOLUTION IN PERMALLOY STRUCTURES UNDER THE INFLUENCE OF MAGNETIC FIELD BY CURRENT APPLICATION**

Vivian Ng, Kyaw Oo Aung, Adekunle Olusola Adeyeye, *Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**EX-03 SURFACE MAGNETIC RIPPLES INDUCED BY A LOCAL STRAY FIELD FROM A SCANNING MAGNETIC TIP**

Hsin-I Wu<sup>1</sup>, Ji-Shiuan Chen<sup>1</sup>, Yaun-Ron Ma<sup>1</sup>, Yuang Liou<sup>2</sup>, Yeong-Der Yao<sup>2</sup>, <sup>1</sup>*Dept. Physics, National Dong Hwa University, Taiwan*, <sup>2</sup>*Institute of Physics, Academia Sinica, Taiwan*



**EX-04 LOW-FIELD MAGNETIC EFFECT IN  $\text{Pr}_{1-x}\text{Pb}_x\text{MnO}_3$  ( $0.1 < x < 0.5$ ) PEROVSKITES**

Manh-Huong Phan<sup>1</sup>, Seong-Cho Yu<sup>2</sup>, Nguyen Duc Tho<sup>3</sup>,  
Nguyen Chau<sup>3</sup>, <sup>1</sup>*Department of Aerospace Engineering, Bristol University, United Kingdom*, <sup>2</sup>*Department of Physics, Chungbuk National University, Republic of Korea*, <sup>3</sup>*Center for Materials Science, National University of Hanoi, Hanoi, Viet Nam*

**EX-05 A NEW SIMULTANEOUS METHOD OF HALL AND MAGNETORESISTANCE MEASUREMENTS AT LOW AND HIGH MAGNETIC FIELD ON LIQUID AND AMORPHOUS METALS, AND SEMICONDUCTORS**

Masami Ogita<sup>1</sup>, Takanori Ito<sup>1</sup>, Mohd Hafezzullah<sup>1</sup>, Hiroyuki Nonoyama<sup>1</sup>, Masaaki Isai<sup>1</sup>, Iwao Mogi<sup>2</sup>, Satoshi Awaji<sup>2</sup>, Kuniyoshi Yokoo<sup>3</sup>, <sup>1</sup>*Fac. of Eng., Shizuoka University, Japan*, <sup>2</sup>*IMR, Tohoku University, Japan*, <sup>3</sup>*RIEC, Tohoku University, Japan*

**EX-06 NUMERICAL MODELING FOR ACTIVE MAGNETIC REGENERATIVE REFRIGERATION**

Farid Allab, Afef Kedous-Lebouc, Jean Marc Fournier, Jean Paul Yonnet, *Laboratoire d'Electrotechnique de Grenoble, France*

**EX-07 MAGNETIZATION OF COUPLED AND NON-COUPLED SUPERCONDUCTING FILAMENTS WITH DEPENDENCE OF CURRENT DENSITY ON APPLIED FIELD**

Thitipong Satiramatekul, Frederic Bouillault, *LGEP, CNRS UMR 8507, SUPELEC, Paris 6 and Paris 11 Universities, France*

**EX-08 MAGNETORHEOLOGICAL CHARACTERIZATION OF CARBONYL IRON-ORGANOCLAY SUSPENSIONS**

Sung Taek Lim<sup>1</sup>, Hyoung Jin Choi<sup>1</sup>, Myung S. Jhon<sup>2</sup>, <sup>1</sup>*Dept. of Polymer Sci. and Eng., Inha University, Republic of Korea*, <sup>2</sup>*Dept. of Chem. Eng., Carnegie Mellon University, United States of America*

**EX-09 HYSTERESIS IN JOSEPHSON CURRENT BY MAGNETIC FLUX QUANTUM**

Norimichi Watanabe, Akiyoshi Nakayama, Susumu Abe, Kunimori Aizawa, *Faculty of Engineering, Kanagawa University, Japan*

**EX-10 OBSERVATION OF CORRELATION BETWEEN H-R LOOP AND DOMAIN SWITCHING OF MTJ CELLS EMPLOYING MAGNETIC FORCE MICROSCOPE(MFM)**

Jin Hee Heo<sup>1</sup>, Seung Bae Park<sup>1</sup>, Tae Wan Kim<sup>2</sup>, Il Sub Chung<sup>1</sup>, <sup>1</sup>*School of Information and Communications Engineering, Republic of Korea*, <sup>2</sup>*Samsung Advanced Institute of Technology, Republic of Korea*

**EX-11 MAGNETOCALORIC PROPERTIES OF  $Mn_5Sn_{3-x}Ga_x$  ALLOYS**

F. Q. Zhao<sup>1</sup>, W. Dagula<sup>2</sup>, O. Tegus<sup>2</sup>, E. Bruck<sup>2</sup>, K. H. J. Buschow<sup>2</sup>, <sup>1</sup>*Department of Physics, Inner Mongolia Normal University, China,* <sup>2</sup>*Van der Waals-Zeeman Instituut, Universiteit van Amsterdam, Netherlands*

**Apr. 7**

**Reception Hall**

**Session FA  
Physics of Spin Injection**

**J. Inoue**  
Nagoya University

**FA-01 SPIN WAVE INSTABILITY BY SPIN-POLARIZED**

**14:30 CURRENT INJECTION**

Yoshinobu Nakatani<sup>1</sup>, Andre Thiaville<sup>2</sup>, Jacques Miltat<sup>2</sup>, <sup>1</sup>*Dept. of Computer-Science, University of Electro-Communications, Japan,* <sup>2</sup>*CNRS & Universite Paris-sud, Lab. Physique des solides, France*

**FA-02 withdrawn**

**14:45**

**FA-03 SPIN INJECTION FROM THE HEUSLER ALLOY**

**15:00  $Co_2MnGe$  INTO  $Al_{0.1}Ga_{0.9}As/GaAs$  HETEROSTRUCTURES**

Xu Ying Dong<sup>1</sup>, Xiao Hua Lou<sup>2</sup>, Christopher Adelman<sup>1</sup>, Jonathan Strand<sup>2</sup>, Amanda K. Petford-Long<sup>3</sup>, Paul A. Crowell<sup>2</sup>, Chris J. Palmstrom<sup>1</sup>, <sup>1</sup>*Dept. of Chemical Engineering and Materials Science, University of Minnesota, United States of America,* <sup>2</sup>*School of Physics and Astronomy, University of Minnesota, United States of America,* <sup>3</sup>*Dept. of Materials, University of Oxford, United Kingdom*

**FA-04 ELECTRODEPOSITION OF Ni-Si SCHOTTKY**

**15:15 BARRIERS**

Michail E. Kiziroglou<sup>1</sup>, Alexander A. Zhukov<sup>2</sup>, Mamdouh Abdelsalam<sup>3</sup>, Xiao Li Li<sup>1</sup>, Peter A. J. de Groot<sup>2</sup>, Philip N. Bartlett<sup>3</sup>, Cornelis H. de Groot<sup>1</sup>, <sup>1</sup>*School of Electronics and Computer Science, University of Southampton, Southampton, United Kingdom,* <sup>2</sup>*School of Physics and Astronomy, University of Southampton, Southampton, United Kingdom,* <sup>3</sup>*School of Chemistry, University of Southampton, Southampton, United Kingdom*