Oral Sessions

High field magnet / Cooling system

Chairpersons: Kazuhiro Kajikawa (Kyushu University) and Hiroshi Ueda (Okayama University)

AP1-1-INV 9:30–10:00

Development of high field cryogen-free superconducting magnets at Tohoku University - 25T-CSM and future prospect –

*Satoshi Awaji

High Field Laboratory for Superconducting Materials, IMR, Tohoku University

AP1-2 10:00–10:15

A 9.4 T 64 mm Bore Conduction-Cooled All-HTS Magnet

Jaemin Kim[1], Seungyoung Hahn[2], Kang Hwan Shin[1], Sangwon Yoon[1], *Kyekun Cheon[1], Young Jin Hwang[3], Jae Young Jang[3], SangGap Lee[3], Hankil Yeom[4], Hunju Lee[1], Seung-Hyun Moon[1]

1. SuNAM Co., LTD; 2. National High Magnetic Field Laboratory; 3. Korea Basic Science Institute; 4. Korea Institute of Machinery and Materials

AP1-3 10:15–10:30

Comparison of Simulated and Experimental Results of Temperature Distribution in a Closed Two-Phase Thermosyphon Cooling System

*Erasmus Shaanika, Ken Nishimura, Kota Yamaguchi, Motohiro Miki, Tetsuya Ida, Mitsuru Izumi

Tokyo University of Marine Science and Technology

HTS magnet / Magnetic bearing

Chairpersons: Satoshi Awaji (Tohoku University) and Kyekun Cheon (SuNAM)

AP2-1-INV 10:45–11:15

Development of REBCO Magnet for MRI

*Shoichi Yokoyama[1], Masayoshi Oya[1], Tetsuya Matsuda[1], Tatsuya Inoue[1], Ryo Eguchi[1], Toshinari Nagahiro[1], Hajime Tanabe[1], Akihiro Daikoku[1], Taketsune Nakamura[2], Yasuyuki Shirai[2], Daisuke Miyagi[3], Makoto Tsuda[3]

1. Mitsubishi Electric Corporation; 2. Kyoto University; 3. Tohoku University

AP2-2-INV 11:15–11:45

Reduction of Screening-Current-Induced Fields by Applying Shaking Fields

*Kazuhiro Kajikawa

Kyushu University

AP2-3-INV 11:45–12:15

Electromagnetic Analysis on Screening-Current-Induced Magnetic Field in REBCO Coil

*Hiroshi Ueda

Okayama University

AP2-4 12:15–12:30

Load test of Superconducting Magnetic Bearing for MW-class Flywheel Energy Storage System

*Shinichi Mukoyama[1], Kengo Nakao[1], Hisaki Sakamoto[1], Ken Nagashima[2], Masafumi Ogata[2], Tomohisa Yamashita[2], Kazufumi Miyazaki[3], Hideki Shimizu[4], Hidetsugu Sawamura[4]

1. Furukawa Electric: 2. Railway Technical Research Institute; 3. Yamanashi Prefectural; 4. Mirapro

AP2-5 12:30–12:45

Vibrational characteristics of a superconducting magnetic bearing employed for a prototype polarization modulator

*Yuki Sakurai[1], Tomotake Matsumura[2], Hajime Sugai[1], Nobuhiko Katayama[1], Hiroyuki Ohsaki[3], Yutaka Terao[3], Yusuke Terachi[3], Hirokazu Kataza[2], Shin Utsunomiya[1], Ryo Yamamoto[2]

1. Kavli IPMU, The University of Tokyo; 2. ISAS/JAXA; 3. Graduate School of Frontier Sciences, The University of Tokyo

Lunch Break 12:45–14:00

Generator / Power grid

Chairpersons: Antonio Morandi (University of Bologna) and Minwon Park (Changwon National University)

AP3-1-INV 14:00–14:30

SUPRAPOWER Project: Towards a 10 MW MgB_2 Wind Power Generator

*Santiago Sanz[1], Gustavo Sarmiento[1], José Mari Merino[1], Ainhoa Pujana[1], Jiuce Sun[2], Victor Zermeño[2], Holger Neumann[2], Matteo Tropeano[3], Davide Nardelli[3], Gianni Grasso[3], Tupac Canosa[4], Iker Marino[1]

1. TECNALIA. Parque Tecnológico de Bizkaia, Spain; 2. Institute for Technical Physics Karlsruhe Institute of Technology, Germany; 3. Columbus Superconductors SpA. Via delle Terre Rosse, Italy; 4. Solute Ingenieros, Spain

AP3-2-INV 14:30–15:00

Current Status of HTS Power Applications in Korea

*Minwon Park

Changwon National University

AP3-3 15:00–15:15

Hardware integration and performance analysis of a 10 kW HTS wind power generator with brushless exciter

*Hae-Jin Sung[1], Byeong-Soo Go[1], Minwon Park[1], Olly Pantoja[2], Zhenan Jiang[2], Rodney Badcock[2], In-Keun Yu[1]

1. Changwon National University; 2. Robinson Research Institute, Victoria University of Wellington

AP3-4 15:15–15:30

HTS Materials for Large-Scale Applications as possible drivers to integrate Superconducting Devices in conventional Electric Power Grids

*Yutaka Yamada[1], Giuliano Angeli[2], Marco Bocchi[2], Luciano Martini[2]

1. Shibaura Institute of Technology, SIT; 2. RSERicerca sul Sistema Energetico – RSE S.p.A.

Magnetic field applications

Chairpersons: Shigehiro Nishijima (Osaka University) and Satoshi Fukui (Niigata University)

AP4-1-INV 15:45–16:15

Saturated induction heating of magnetic metals: concepts and possible implementation

*Antonio Morandi, Massimo Fabbri, Pier Luigi Ribani

University of Bologna - DEI, Dep. of Electrical, Electronic and Information Engineering

AP4-2 16:15–16:30

Volume Reduction of Cesium Contaminated Soil by High Gradient Magnetic Separation Using Superconducting Magnet

*Shigehiro Nishijima[1], Kazuki Yukumatsu[1], Hiroki Horie[1], Naoki Nomura[1,4], Yoko Akiyama[1], Fumihito Mishima[2], Tomio Sekiyama[3], Seiichiro Mitsui[3], Mitsugu Kato[3]

1. Graduate School of Engineering, Osaka University; 2. Department of Nuclear Technology Application, Fukui University of Technology; 3. Japan Atomic Energy Agency (JAEA); 4. Life Environment Division, Fukushima Prefecture

AP4-3 16:30–16:45

Study on Volume Reduction of Cesium Contaminated Soil by Magnetic Separation ~Pretreatment of Soil Organic Matter~

*Hiroki Horie[1], Kazuki Yukumatsu[1], Fumihito Mishima[2], Yoko Akiyama[1], Shigehiro Nishijima[1]

1. Osaka University; 2. Fukui University of Techology

AP4-4 16:45–17:00

SEPARATION OF FLAME AND NONFLAME-RETARDANT PLASTICS

UTILIZING MAGNETO-ARCHIMEDES METHOD

*Kohei Misawa[1], Takayuki Kobayashi[1], Tatsuya Mori[1], Fumihito Mishima[2], Yoko Akiyama[1], Shigehiro Nishijima[1]

1. Osaka University; 2. Fukui University of Technology

AP4-5 17:00–17:15

The separation of structural isomer using Magneto-Archimedes method

*Tatsuya Mori[1], Takayuki Kobayashi[1], Fumihito Mishima[2], Yoko Akiyama[1], Shigehiro Nishijima[1]

1. Graduate School of Engineering, Osaka University; 2. Fukui University of Technology

AP4-6 17:15–17:30

Influence of Food Elements by Superconducting Wireless Power Transfer System via Strong Electromagnet Resonance Coupling

*Yoon Do CHUNG[1], Young Gun PARK[2], Bong Soo NOH[3], Eun Young PARK[4]

1. Suwon Science College; 2. Yonsei University; 3. Seoul Women's University; 4. Korea Christian University