Oral Sessions

Dec. 3 (Tue.) Plenary Lecture — First Exhibition Hall A

Chairperson: Atsutaka Maeda (The University of Tokyo)

PL1-INV 9:05–9:45

Real space imaging of the superconducting vortex lattice: Recent results and prospects

*Hermann Suderow[1]

Dpto Física de la Materia Condensada, Instituto Nicolás Cabrera, IFIMAC, Universidad Autónoma de Madrid[1]

Chairperson: Naoyuki Amemiya (Kyoto University)

PL2-INV 9:45–10:25

Superconducting Magnet Development for Next-Generation Accelerator Capabilities

*Kathleen M. Amm[1], Ramesh Gupta[1], Piyush Joshi[1], Michael D Anerella[1], Brett Parker[1]

Brookhaven National Lab[1]

Dec. 3 (Tue.) Outreach Session — First Exhibition Hall A

Chairperson: Nao Takeshita (AIST)

OR-1-INV 10:25–10:55

Status of global supply and demand of helium and outlook for the future

*Yoshiki Koizumi[1]

K.K. Gas Review, Japan[1]

Dec. 4 (Wed.) Plenary Lecture **First Exhibition Hall A**

Chairperson: Mutsuo Hidaka (AIST)

PL3-INV 9:00–9:40

Advanced SQUID instruments for mineral exploration

*Ronny Stolz[1], M. Schiffler[1], M. Schmelz[1], V. Zakosarenko[1,2], J. Kunert[1], A. Chwala[1], T. Schoenau[1], M. Schneider[1,2], N. Oukhansky[2], M. Meyer[2]

Leibniz Institute of Photonic Technology, Deptm. Magnetometry, Jena, Germany[1]
Supracon AG, Jena, Germany[2]

Chairperson: Yoshiyuki Yoshida (AIST)

PL4-INV 9:40–10:20

Development of (Ba,K)Fe_2As_2 tapes and wires in Japan

*Hiroaki Kumakura[1]

National Institute for Materials Science[1]

Dec. 5 (Thu.) Plenary Lecture — First Exhibition Hall A

Chairperson: Akihiro Kikuchi (National Institute for Materials Science)

PL5-INV 9:00–9:40

Frontiers of Nb_3Sn wire technology

*Carmine SENATORE[1]

Department of Quantum Matter Physics, University of Geneva, Switzerland[1]

Chairperson: Mitsuho Furuse (AIST)

PL6-INV 9:40–10:20

ISEULT, a Whole Body 11.7 T MRI magnet

*Philippe Fazilleau[1]

CEA Saclay[1]

Dec. 5 (Thu.) Outreach Session — First Exhibition Hall A

Chairperson: Tsunehiro Hato (SUSTERA)

OR-2-INV 10:20–10:50

Development of High-Resolution HTS-SQUID Magnetometer for Observation of Magnetic Signals from Earthquake-Piezomagnetic Effects

*Kan Okubo[1], Yuto Oishi[1], Yuta Katori[1], Shinji Isogami[2], Tsunehiro Hato[3], Akira Tsukamoto[3], Keiichi Tanabe[3], Akira Tsukamoto[3], Nobuhito Ohnishi[4], Chikara Furukawa[4]

Tokyo Metropolitan University, Japan[1]
Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Japan[2]
Superconducting Sensing Technology Research Association, Japan[3]
TIERRA TECNICA Ltd., Japan[4]

Novel materials 1

Chairpersons: Yosuke Goto (Tokyo Metropolitan University) and Swee K. Goh (The Chinese University of Hong Kong)

(Fe-based superconductors I)

PC4-4-INV 11:15–11:45

Spin-orbit coupling and its influence on superconductivity in iron-based superconductors

Jianqing Guo[1], Li Yue[1], Kazuki Iida[2], Kazuya Kamazawa[2], Lei Chen[1], Tingting Han[1], Yan Zhang[1], *Yuan Li[1]

International Center for Quantum Materials, School of Physics, Peking Univ., Beijing, China[1]
Neutron Science and Technology Center, Comprehensive Research Organization for Science and Society (CROSS), Tokai, Ibaraki, Japan[2]

PC1-1-INV

(Moved to December 4 just after the session PC4)

PC1-2-INV 11:45–12:15

Superconductivity and Electronic structure in Ca-intercalated Graphene

*Satoru Ichinokura[1]

Tokyo Institute of Technology[1]

PC1-3 12:15–12:30

Structural quantum criticality, soft phonons and strong-coupling superconductivity in $(Ca_xSr_{1-x})_3Rh_4Sn_{13}$

Yiu Wing Cheung[1], Wing Chi Yu[1], Yajian Hu[1], Paul J. Saines[2], Malte Grosche[3], Satoshi Tsutsui[4], Koji Kaneko[5], Kazuyoshi Yoshimura[6], *Swee K. Goh[1]

The Chinese University of Hong Kong, China[1]
University of Oxford, U. K.[2]
University of Cambrige, U. K.[3]
Japan Synchrotron Radiation Research Institute (JASRI), SPring-8, Japan[4]
Materials Sciences Research Center, JAEA, Japan[5]
Kyoto University, Japan[6]

Novel materials 2

Chairpersons: Satoru Ichinokura (Tokyo Institute of Technology) and Yusuke Iguchi (Stanford University)

PC2-1-INV 13:45–14:15

Superconductivity in layered tin pnictides with a van der Waals-type structure

*Yosuke Goto[1], Yoshikazu Mizuguchi[1]

Tokyo Metropolitan University[1]

PC2-2 14:15–14:30

Superconductivity with strong electron-phonon coupling in noncentrosymmetric W_3Al_2C

*Tianping Ying[1], Yanpeng Qi[2], Hideo Hosono[1]

Tokyo Institute of Technology, Japan[1]
ShanghaiTech University, China[2]

PC2-3 14:30–14:45

Pressure-induced superconductivity and topological quantum phase transitions in topological materials

*Yanpeng Qi[1]

School of Physical Science and Technology, ShanghaiTech University[1]

PC2-4 14:45–15:00

Effective model construction of $LaNiO_2$; a possible nickelate analogue of the cuprate superconductors

*Hirofumi Sakakibara[1], Hidetomo Usui[2], Katsuhiro Suzuki[3], Takao Kotani[1], Hideo Aoki[4,5], Kazuhiko Kuroki[6]

Dept. of Applied Math. and Phys., Tottori Univ., Japan[1]
Dept. of Phys. and Mat. Sci., Shimane Univ., Japan[2]
Research Organization of Sci. and Tech., Ritsumeikan Univ., Japan[3]
AIST, Japan[4]
Dept. of Phys., The Univ. of Tokyo, Japan[5]
Dept. of Phys., Osaka Univ., Japan[6]

Dec. 3 (Tue.) Wires and Bulk **Special Exhibition Hall B**

Recent progress of CC

Chairpersons: Takanobu Kiss (Kyushu University) and Michael J. Wolf (Karlsruhe Institute of Technology)

WB1-1-INV 11:10–11:35

Progress in ultrafast transient liquid assisted growth of high current density superconducting films and coated conductors

*Teresa Puig[1], Laia Soler[1], Julia Jareno[1], Silvia Rasi[1, 2], Juri Banchewski[1], Roger Guzman[1], N. Chamorro[4], Max Sieger[1], Albert Queralto[1], A. Pacheco[1], D. Garcia[1], L. Salvatini[1], K. Gupta[1], S. Ricart[1], J. Farjas[2], P. Roura[2], Cristian Mocuta[3], Ramon Yanez[4], Josep Ros[4], Xavier Obradors[1]

Institut de Ciència de Materials de Barcelona, ICMAB-CSIC Campus de la UAB, Catalonia, Spain[1]
GRMT, Department of Physics, University of Girona, Catalonia, Spain[2]
Diffabs beamline, Soleil Synchrotron, Paris, France[3]
Departament de Química, Universitat Autonoma de Barcelona, Catalonia, Spain[4]

WB1-2 11:35–11:55

Recent results on in-field properties in nanoparticle-doped TFA-MOD $REBa_2Cu_3O_y$ Coated Conductors

*Masashi Miura[1,2], Go Tsuchiya[1], Takeharu Kato[3], Ryoji Yoshida[3], Koichi Nakaoka[4], Teruo Izumi[4], Masaru Kiuchi[5], Teruo Matsushita[5]

Seikei University[1]
Stanford University[2]
Japan Fine Ceramics Center[3]
National Institute of Advanced Industrial Science and Technology[4]
Kyushu Institute of Technology[5]

WB1-3 11:55–12:15

Strongly Enhanced Critical Current in thickened $BaHfO_3$-doped $YBa_2Cu_3O_y$ Coated Conductors prepared by Vapor-Liquid-Solid Growth Technique

*Tomohiro Ito[1], Kento Yasuda[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1], Ataru Ichinose[2], Tatsunori Okada[3], Satoshi Awaji[3]

Nagoya University, Japan[1]
Central Research Institute of Electric Power Industry, Japan[2]
Tohoku University, Japan[3]

WB1-4 12:15–12:35

Effectiveness of flux pinning by ion-beam induced defects at low temperatures

*Nicholas J. Long[1], Nicholas M. Strickland[1], Stuart C. Wimbush[1,2], John V. Kennedy[2,3], Patrick Kluth[4]

Robinson Research Institute, Victoria University of Wellington, Lower Hutt, New Zealand[1]
MacDiarmid Institute for Advanced Materials and Nanotechnology, New Zealand[2]
National Isotope Centre, GNS Science, Lower Hutt, New Zealand[3]
Electronic Materials Engineering, Research School of Physics and Engineering, Australian National University, Canberra, Australia[4]

Nb_3Sn and Iron based superconducting wires

Chairpersons: Carmine Senatore (University of Geneva) and Fumitake Kametani (Florida State University)

WB2-1-INV 13:30–13:55

Recent progress in newly alloyed Nb_3Sn conductors

*Chiara Tarantini[1], Shreyas Balachandran[1], Peter J. Lee[1], Nawaraj Paudel[1], Benjamin Walker[1], William L. Starch[1], David C. Larbalestier[1]

Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State University, USA[1]

WB2-2-INV 13:55–14:20

Recent Progress of Nb_3Sn Wires in Furukawa

*Hisaki Sakamoto[1], Daisuke Asami[1], Masahiro Sugimoto[1], Hideki Ii[1], Hirokazu

Tsubouchi[1], Tomoya Kato[1]

Furukawa Electric Co., Ltd.[1]

WB2-3-INV 14:20–14:45

Recent Progress of Nb_3Sn Wires in KSL/JASTEC

*Shinya Kawashima[1], Takao Kawarada[1], Hiroyuki Kato[2], Yukinobu Murakami[2], Kazuyoshi Saito[2], Michinaka Sugano[3], Toru Ogitsu[3], Hidetoshi Oguro[4], Satoshi Awaji[5]

Kobe Steel, Ltd.[1]
Japan Superconductor Technology[2]
High Energy Accelerator Research Organization[3]
Tokai Universit[4]
Tohoku University[5]

WB2-4-INV

(Moved to December 4 just after the session WB3)

Dec. 3 (Tue.) Electronic Devices — Meeting Room

Sensing 1

Chairpersons: Hsiao-Mei Cho (SLAC National Accelerator Laboratory) and Masashi Ohno (The University of Tokyo)

ED1-1-INV 11:10–11:35

Ultra-light Dark Matter Search Based on RF Quantum Upconverters

*Hsiao-Mei Cho[1], A. Ames[2], D. Aybas[3], S. Carman[2], S. Chaudhuri[2], C. Dawson[2], A. Droster[4], C. FitzGerald[5], P. Graham[2], R. Gruenke[2], S. Kuenstner[2], A. Leder[4], D. Li[1], A. Phipps[2], S. Rajendran[4], A. Sushkov[3], Karl A. van Bibber[4], B. Young[5], C. Yu[2], K. D. Irwin[2]

SLAC National Accelerator Laboratory, Menlo Park, USA[1]
Department of Physics, Stanford University, Stanford, USA[2]
Department of Physics, Boston University, Boston, USA[3]
Department of Nuclear Engineering, University of California at Berkeley, USA[4]
Department of Physics, Santa Clara University, Santa Clara, USA[5]

ED1-2-INV 11:35–12:00

Development of fine-pitch high-resolution hybrid TES microcalorimeter arrays toward the Lynx X-ray microcalorimeter

*Kazuhiro Sakai[1,2], Joseph S. Adams[1,2], Simon R. Bandler[1], Sophie Beaumont[1,2], James A. Chervenak[1], Aaron Datesman[1,3], Fred M. Finkbeiner[1,4], Ruslan Hummatov[1,2], Richard L. Kelley[1], Caroline Kilbourne[1], Antoine Miniussi[1,2], Haruka Muramatsu[1,5], Frederick S. Porter[1], John E. Sadleir[1], Stephen J. Smith[1, 2], Nicholas A. Wakeham[1, 2], Edward J. Wassel[1, 6], Megan Eckart[7], Kevin Ryu[8]

NASA/Goddard Space Flight Center[1]
University of Maryland Baltimore County[2]
Science Systems and Applications, Inc.[3]
Sigma Space Corp.[4]
The Catholic University of America[5]

KBRwyle[6]
Lawrence Livermore National Laboratory[7]
MIT Lincoln Labs[8]

ED1-3 12:00–12:15

The developments of TES array and the detector stage towards the observation from 100 eV to 15 keV for STEM

*Tasuku Hayashi[1], Ryohei Konno[1], Noriko N. Yamasaki[1], Kazuhisa Mitsuda[1], Akira Takano[2], Keisuke Maehata[2], Toru Hara[3]

ISAS/JAXA[1]
Kyushu University[2]
NIMS[3]

ED1-4 12:15–12:30

Understanding the temperature sensitivity and current sensitivity in two-dimensional transition-edge sensor film

*Yu Zhou[1], Wei Cui[1], Felix & T Jackel[2], Dan McCammon[2], Kelsey & M Morgan[3,4], Simon & R Bandler[6], James & A Chervenak[6], Megan Eckart[5], Stephen & J Smith[6]

Tsinghua University, China[1]
University of Wisconsin - Madison, USA[2]
University of Colorado Boulder, USA[3]
National Institute of Standards and Technology, USA[4]
Lawrence Livermore National Laboratory, USA[5]
NASA Goddard Space Flight Center, USA[6]

Sensing 2

Chairpersons: Kazuhiro Sakai (NASA/Goddard Space Flight Center) and Tsunehiro Hato (SUSTERA)

ED2-1-INV 13:30–13:55

Energy-Resolved Neutron Imaging using a Delay Line Current-Biased Kinetic-Inductance Detector

*Hiroaki Shishido[1,2]

Dept. of Physics & Electronics, Graduate School of Engineering, Osaka Prefecture University[1]
NanoSquare Research Institute, Osaka Prefecture University[2]

ED2-2-INV 13:55–14:20

Development of SEM-EDS analyzer utilizing 100-pixel superconducting-tunnel-junction array X-ray detector toward nanometer-scale elemental mapping

*Go Fujii[1], Masahiro Ukibe[1], Shigetomo Shiki[1], Masataka Ohkubo[1]

National Institute of Advanced Industrial Science and Technology[1]

ED2-3-INV 14:20–14:45

HTS-SQUID module with high tolerance to magnetic field and its application

*Akira Tsukamoto[1]

Superconducting Sensing Technology Research Association[1]

ED2-4 14:45–15:00

Development of scanning SQUID microscope system and its applications on geological samples: A case study on marine ferromanganese crust

*Hirokuni Oda[1], Jun Kawai[2], Akira Usui[3], Yuhji Yamamoto[3], Atsushi Noguchi[1,3], Isoji Miyagi[1], Masakazu Miyamoto[2], Junichi Fujihira[4], Masahiko Sato[1,5]

National Institute of Advanced Industrial Science and Technology[1]
Kanazawa Institute of Technology[2]
Kochi University[3]
Fujihira Co. Ltd.[4]
University of Tokyo[5]

Dec. 3 (Tue.) Large Scale System Applications | Special Exhibition Hall A

Magnets 1

Chairpersons: Mark D. Ainslie (University of Cambridge) and Satoshi Awaji (Tohoku University)

AP1-1-INV 11:10–11:35

Portable high-field magnet systems using bulk high-temperature superconductors

*Mark D Ainslie[1], Yeekin Tsui[1], Dominic A Moseley[1], Anthony R Dennis[1], Hiroyuki Fujishiro[2], Vito Cientanni[1], Ewan Laidlaw[1], Keshav Manju[1], Devendra K Namburi[1], Yunhua Shi[1], David A Cardwell[1], John H Durrell[1]

University of Cambridge, UK[1]
Iwate University, Japan[2]

AP1-2-INV 11:35–12:00

A Hybrid Trapped Field Magnet Lens (HTFML): concept and experimental realization

*Hiroyuki Fujishiro[1], Sora Namba[1], Tomoyuki Naito[1], Mark D. Ainslie[2], Keita Takahashi[1], Difan Zhou[3], Yousuke Yanagi[4]

Department of Physical Science and Materials Engineering, Iwate University[1]
Bulk Superconductivity Group, Department of Engineering, University of Cambridge[2]
Department of Physics, Shanghai University[3]
IMRA Material R&D Co., Ltd[4]

AP1-3 12:00–12:15

Upgrade of 25T cryogen-free superconducting magnet to 30T at HFLSM

*Satoshi Awaji[1], Arnaud Badel[1], Tatsunori Okada[1], Kohki Takahashi[1], Hiroshi Miyazaki[2], Satoshi Hanai[2], Sigeru Ioka[2], Shinji Fujita[1,3], Shogo Muto[3], Yasuhiro Iijima[3], Masanori Daibo[3], Kazuhiro Kajikawa[4]

Institute for Materials Research, Tohoku University[1]
Toshiba Energy System & Solutions Corporation[2]

Fujikura Ltd.[3]
Kyusyu University[4]

AP1-4 12:15–12:30

Field and Voltage transient behavior in REBCO HTS coils using single tape or two bundled tapes: Comparison between Experiment and Modelling

*Arnaud Badel[1], Julien Vialle[2], Kohki Takahashi[1], Blandine Rozier[2], Tatsunori Okada[1], Satoshi Awaji[1]

Tohoku University, Japan[1]
Université Grenoble Alpes[2]

Electric aircrafts

Chairpersons: Jean Leveque (University of Lorraine) and Taketsune Nakamura (Kyoto University)

AP2-1-INV 13:55–14:20

Superconducting motors for aircraft propulsion: the Advanced Superconducting Motor Experimental Demonstrator project

*Francesco Grilli[1], Tara Benkel[1], Jens Hänisch[1], Mayraluna Lao[1], Thomas Reis[2], Eva Berberich[2], Simon Wolfstädter[2], Christian Schneider[2], Pail Miller[3], Chloe Palmer[3], Bartek Glowacki[4], Vicente Climente-Alarcon[4], Anis Smara[4], Lukasz Tomkow[4], Johannes Teigelkötter[5], Alexander Stock[5], Johannes Büdel[5], Loïc Jeunesse[6], Martin Staempflin[6], Guillaume Delautre[6], Baptiste Zimmermann[6], Ruud van der Woude[7], Ana Perez[7], Sergey Samoilenkov[8], Alexander Molodyk[8], Enric Pardo[9], Milan Kapolka[9], Huo Li[9], Anang Dadhich[9]

Karlsruhe Institute of Technology[1]
Oswald Elektromotoren[2]
Rolls Royce[3]
University of Cambridge[4]
Hochschule für angewandte Wissenschaften Aschaffenburg[5]
Air Liquide[6]
Demaco[7]
SuperOx[8]
Instituite of Electrical Engineering Bratislava[9]

AP2-2-INV 14:20–14:45

Design and test of a superconducting generator for aircraft application

*Jean LEVEQUE[1], Alexandre COLLE[1], Thierry LUBIN[1], Sabrina AYAT[2], Olivier GOSSELIN[2]

GREEN Lab - University of Lorraine[1]
SAFRAN TECH, Magny-les-Hameaux[2]

AP2-3 14:45–15:00

Electromagnetic Analysis of Fully Superconducting Motor for Electric Aircraft

*John Voccio[1], Quinn Voccio[1]

Wentworth Institute of Technology[1]

Vortex Physics

Chairpersons: Roland Willa (Karlsruhe Institute of Technology) and Shinya Uji (National Institute for Materials Science)

PC3-1-INV 10:30–11:00

Strong pinning theory: a review

*Roland Willa[1]

Karlsruhe Institute of Technology[1]

PC3-2-INV 11:00–11:30

Fulde-Ferrell-Larkin-Ovchinnikov Phases in Layered Organic Superconductors

*Shinya Uji[1], S. Sugiura[1], T. Isono[1], N. Kikugawa[1], T. Terashima[1], H. Akutsu[2], Y. Nakazawa[2], D. Graf[3], P. Day[4]

National Institute for Materials Science, Tsukuba, Japan[1]
Osaka University, Toyonaka, Japan[2]
National High Magnetic Field Laboratory, Tallahassee, Florida, USA[3]
University College London, London, United Kingdom[4]

PC3-3-INV 11:30–12:00

Observation of vortices driven by dc current using scanning tunneling spectroscopy

*Shin-ichi Kaneko[1], Takashi Ogawa[1], Kazuki Tsuchiya[1], Koshiro Kato[1], Koichiro Ienaga[1], Hideaki Sakata[2], Satoshi Okuma[1]

Department of Physics, Tokyo Institute of Technology[1]
Department of Physics, Tokyo University of Science[2]

PC3-4 12:00–12:15

Thermoelectric study of the anomalous metallic state in amorphous superconducting thin films

*Koichiro Ienaga[1], Taiko Hayashi[1], Yutaka Tamoto[1], Shin-ichi Kaneko[1], Satoshi Okuma[1]

Department of Physics, Tokyo Institute of Technology[1]

PC3-5 12:15–12:30

Local Density of States of Quasi-particles around a Vortex Core in a Square Superconducting Plate under Random Impurity Potentials

*Takayuki Tamai[1], Masaru Kato[1]

Department of Physics and Electronics, Osaka Prefecture University, Japan[1]

Fe-based superconductors 1

Chairpersons: Bernd Büchner (IFW Dresden) and Marcin Konczykowski (École Polytechnique)

PC4-1-INV 13:30–14:00

Non-magnetic Pair-breaking Scattering in Iron-based Superconductors

*Ruslan Prozorov[1], Makariy A. Tanatar[1], Kyuil Cho[1], Marcin Kończykowski[2]

Ames Laboratory and Department of Physics & Astronomy, Iowa State University, Ames, USA[1]
Laboratoire des Solides Irradiés, École Polytechnique, Institut Polytechnique de Paris, France[2]

PC4-2-INV 14:00–14:30

Zero-Energy Vortex Bound State in the Topological Superconductor Fe(Se,Te)

*Tadashi Machida[1], Yue Sun[2], Sungseng Pyon[3], Shyun Takeda[4], Ching-Kai Chiu[5], Yuhki Kohsaka[1], Tetsuo Hanaguri[1], Takao Sasagawa[4], Tsuyoshi Tamegai[3]

RIKEN Center for Emergent Matter Science, Japan[1]
Department of Physics and Mathematics, Aoyama Gakuin University, Japan[2]
Department of Applied Physics, The University of Tokyo, Japan[3]
Laboratory for Materials and Science, Tokyo Institute of Technology, Japan[4]
Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, China[5]

PC4-3-INV 14:30–15:00

Quantum critical transport phenomena in the nematic $FeSe_{1-x}S_x$

*Matija Čulo[1], S. Licciardello[1], J. Ayres[1], M. Berben[1], Y.-T. Hsu[1], S. Kasahara[2], Y. Matsuda[2], T. Shibauchi[3], N. Maksimovic[4], J. G. Analytis[4], N. E. Hussey[1]

High Field Magnet Laboratory (HFML-EMFL) and Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands[1]
Department of Physics, Kyoto University, Sakyo-ku, Kyoto, Japan[2]
Department of Advanced Materials Science, University of Tokyo, Kashiwa, Chiba, Japan[3]
Department of Physics, University of California and Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, California, USA[4]

PC4-4-INV

(Moved to December 3 just before the session PC1)

PC4-5 15:00–15:15

Infrared Spectroscopic Studies of the Phonon Dynamics in Iron-based Superconductors

*Xianggang Qiu[1], Run Yang[1], Bing Xu[1]

Institute of Physics, Chinese Academy of Sciences[1]

(Novel materials 1)

PC1-1-INV 15:15–15:45

Scanning SQUID Microscopy on Chiral Superconductor Candidates Sr_2RuO_4 and URu_2Si_2

*YUSUKE IGUCHI[1]

Department of Applied Physics, Stanford University[1]

Fe-based superconductors 2

Chairpersons: Ruslan Prozorov (Iowa State University) and Matija Čulo (Radboud University)

PC5-1-INV 16:00–16:30

Orbitals and Nematicity in La-1111 Single Crystals

*Bernd Büchner[1]

IFW Dresden and University Dresden, Germany[1]

PC5-2-INV 16:30–17:00

Composition - Temperature Phase Diagram of Iron-Based Superconductors Tuned by Disorder

*Marcin Konczykowski[1], Takasada Shibauchi[2], Yuta Mizukami[2], Shigeru Kasahara[3], Yuji Matsuda[3]

Laboratoire des Solides Irradies, CNRS, Ecole Polytechnique, Palaiseau, France[1]
Department of Advanced Materials Science, University of Tokyo, Japan[2]
Department of Physics, Kyoto University, Kyoto, Japan[3]

PC5-3-INV 17:00–17:30

Probing the superconducting gap structure of iron-based superconductors by angle-resolved specific heat measurements

*Yue Sun[1], Shunichiro Kittaka[2], Toshiro Sakakibara[2], Kazushige Machida[3], Tsuyoshi Tamegai[4]

Department of Physics and Mathematics, Aoyama Gakuin University, Japan[1]
Institute for Solid State Physics (ISSP), The University of Tokyo, Japan[2]
Department of Physics, Ritsumeikan University, Japan[3]
Department of Applied Physics, The University of Tokyo, Japan[4]

PC5-4-INV 17:30–18:00

Unique defect structure and advantageous vortex pinning properties in $CaKFe_4As_4$

*Shigeyuki Ishida[1], Akira Iyo[1], Hiraku Ogino[1], Hiroshi Eisaki[1], Nao Takeshita[1], Kenji Kawashima[1,2], Keiichi Yanagisawa[3], Yuuga Kobayashi[3], Koji Kimoto[3], Hideki Abe[3], Motoharu Imai[3], Jun-ichi Shimoyama[4], Michael Eisterer[5]

National Institute of Advanced Industrial Science and Technology[1]
IMRA Materials R&D Co., Ltd.[2]
National Institute for Materials Science[3]
Aoyama Gakuin University[4]
TU Wien[5]

PC5-5 18:00–18:15

Critical Current Density and Its Enhancement by Particle Irradiation in $KCa_2Fe_4As_4F_2$

*Tsuyoshi Tamegai[1], Sunseng Pyon[1], Yuto Kobayashi[1], Teng Wang[2], Gang Mu[2], Satoru Okayasu[3], Ataru Ichinose[4]

Department of Applied Physics, The University of Tokyo[1]
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences[2]
Japan Atomic Energy Agency, Advanced Science Research Center[3]
Central Research Inst. of Electric Power Industry, Electric Power Engineering Research Laboratory[4]

Dec. 4 (Wed.) Wires and Bulk **Special Exhibition Hall B**

HTS cable conductor

Chairpersons: Valery Petrykin (SuperOx) and Yasuhiro Iijima (Fujikura)

WB3-1-INV 10:30–10:55

HTS CroCo - a Strand for High Direct Current Applications

*Michael J Wolf[1], Walter H Fietz[1], Mathias Heiduk[1], Reinhard Heller[1], Christian Lange[1], Alan Preuss[1], Klaus-Peter Weiss[1]

Karlsruhe Institute of Technology (KIT), Germany[1]

WB3-2-INV

(Cancelled)

WB3-3-INV 10:55–11:20

Development and Perspectives of HTS Cable-In-Conduit Conductor with Al-Slotted Core for Fusion Applications

*Antonio della Corte[1], Giuseppe Celentano[1], Andrea Augieri[1], Marcello Marchetti[1], Sandro Chiarelli[1], Luigi Muzzi[1], Federica Pierro[2], Roberto Bonifetto[3], Nadja Bagrets[4], Angelo Vannozzi[1]

ENEA Italian National Agency for New Technologies, Energy and Sustainable Economic Development[1]
Tufts University, Mechanical Engineering Department[2]
NEMO group, Dipartimento Energia, Politecnico di Torino, Torino, Italy[3]
KIT - Institute for Technical Physics[4]

WB3-4-INV 11:20–11:45

Development of Large-Current HTS Conductors for the Next-Generation Helical Fusion Experimental Device

*Nagato Yanagi[1,2], Toshiyuki Mito[1,2], Junichi Miyazawa[1,2], Yuta Onodera[1], Naoki Hirano[1], Yoshiro Narushima[1,2], Shinnosuke Matsunaga[2], Satoshi Ito[3], Hitoshi Tamura[1], Shinji Hamaguchi[1], Hidetoshi Hashizume[3], Kazuya Takahata[1,2]

National Institute for Fusion Science[1]
SOKENDAI (The Graduate University for Advanced Studies)[2]
Tohoku University[3]

(Nb_3Sn and Iron based superconducting wires)

WB2-4-INV 11:45–12:10

Recent research developments of iron-based superconducting wires and tapes

*Yanwei Ma[1]
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China[1]

Recent progress of commercial HTS wires

Chairpersons: Chiara Tarantini (National High Magnetic Field Laboratory/Florida State University) and Nicholas Long (Victoria University of Wellington)

WB4-1-INV 13:30–13:55

Development and production of 2G HTS wires for moderate and strong magnetic field application at SuperOx

*Valery Petrykin[1], Marat Gaifullin[1], Maki Okube[1], Naoyuki Hirata[1], Vladimir Vyatkin[1], Miyuki Nakamura[1], Juhyun Chung[1], Tatsunori Okada[3], Satoshi Awaji[3], Alexander Molodyk[2], Sergey Samoilenkov[2], Sergey Lee[1]

SuperOx Japan LLC, Japan[1]
SuperOx, Russia[2]
Tohoku University, Japan[3]

WB4-2-INV 13:55–14:20

Production and Development of REBCO (2G-HTS) Conductors

*Paul Brownsey[1], Satoshi Yamano[1], Drew Hazelton[1], Yifei Zhang[1], Aarthi Sundaram[1], Shinya Yasunaga[1], Gene Carota[1], Hiroshi Kuraseko[2], Toru Fukushima[1], Hisaki Sakamoto[2], Akinobu Nakai[2]

SuperPower Inc. United States[1]
Furukawa Electric Co., Ltd. Japan[2]

WB4-3-INV 14:20–14:45

Present status of superconducting wire development in China: RE-123 CCs and related applications

*Yutaka Yamada[1,2], Yue Zhao[1,2], Zhiyong Hong[1,2], Zhijian Jin[2]

Shanghai Superconductor Technology Co. Ltd.[1]
Shanghai Jiao Tong University[2]

WB4-4-INV 14:45–15:10

BMO Doped REBCO Coated Conductors with Uniform in-Field Performance and High Growth Rate by Hot-wall PLD Process

*Yasuhiro Iijima[1], Kazuomi Kakimoto[1], Shinji Fujita[1,2], Shogo Muto[1], Tomo Yoshida[1], Wataru Hirata[1], Yutaka Adachi[1], Satoru Hanyu[1], Ryo Kikutake[1], Masanori Daibo[1], Satoshi Awaji[2], Takanobu Kiss[3]

Fujikura Ltd., Japan[1]
Tohoku University, Japan[2]
Kyusyu University, Japan[3]

WB4-5-INV 15:10–15:35

Recent progress on the development of MgB_2 wires in Hitachi

*Hideki Tanaka[1], Motomune Kodama[1], Takaaki Suzuki[1]

Hitachi, Ltd.[1]

Characterization

Chairpersons: Teresa Puig (Institute of Materials Science of Barcelona) and Boris Maiorov (Los Alamos National Laboratory)

WB5-1-INV 15:50–16:15

Recent microstructural understanding to lead further Jc optimization of Bi-2223 tapes

*F. Kametani[1,2], A. Oloye[1], G. Osabe[3], S. Kobayashi[3], J. Jiang[1], E. E. Hellstrom[1,2], D. C. Larbalestier[1,2]

National High Magnetic Field Laboratory, Florida State University[1]
Department of Mechanical Engineering, Florida State University[2]
Sumitomo Electric Industries Ltd, Osaka[3]

WB5-2 16:15–16:35

Local-vs.-Global Current-Voltage Characteristics in HTS Tapes

*Takanobu Kiss[1], Lin Lyu[1], Takumi Suzuki[1], Kohei Higashikawa[1]

Kyushu University[1]

WB5-3 16:35–16:55

Magnetic microscopy for NbTi-Bi2223 superconducting joints impregnated with different PbSn-based solders

*Zeyu Wu[1], Kohei Higashikawa[1], Ryo Matsumoto[2], Yoshihiko Takano[2], Takanobu Kiss[1]

Kyushu University, Japan[1]
National Institute for Materials Science, Japan[2]

WB5-4 16:55–17:15

Nanostructural Characterization of Jointed $GdBa_2Cu_3O_y$ Coated Conductors Using $YBa_2Cu_3O_y$ Intermediate Layer

*Takeharu KATO[1], Ryuji Yoshida[1], Daisaku Yokoe[1], Kotaro Ohki[2], Tatsuoki Nagaishi[2], Yoshinori Yanagisawa[3], Hideaki Maeda[3,4], Tsukasa Hirayama[1], Yuichi Ikuhara[1,5]

Nanostructures Research Laboratory, Japan Fine Ceramics Center[1]
Sumitomo Electric Industries, Ltd.[2]
RIKEN Center for Life Science Technologies[3]
Japan Science and Technology Agency[4]
The University of Tokyo[5]

WB5-5 17:15–17:35

Performance Evaluation of Practical REBCO CC Tapes for Superconducting Coils for Wind Power Application

*Mark A. Diaz[1], Madlene Velasco[1], Michael de Leon[1], Hyung-Seop Shin[1], Satoshi Awaji[2]

Andong National University[1]
IMR Tohoku University[2]

WB5-6 17:35–17:55

Progress in High-Speed Spin Testing of Superconducting Wire and Tapes for High-Field NMR Magnet Qualification

*John Voccio[1], Phillip Curtsmith[1], C J Favazza[1], Josh Boyle[1], Connor Allen[1], Matthew Franchi[1], Nicholas Tetreault[1]

Wentworth Institute of Technology[1]

Dec. 4 (Wed.) Electronic Devices — Meeting Room

Novel device and fabrication

Chairpersons: Peter Schüffelgen (Forschungszentrum Jülich) and Hirotake Yamamori (AIST)

ED3-1-INV 10:35–11:15

Digital Applications with High-T_c Superconductors

*Horst Rogalla[1, 2]

University of Colorado at Boulder, USA[1]
NIST Boulder, USA[2]

ED3-2-INV 11:15–11:40

Topological superconductivity – new materials for novel devices

*Peter Schüffelgen[1], Daniel Rosenbach[1], Tobias W. Schmitt[1], Michael Schleenvoigt[1], Abdur R. Jalil[1], Gregor Mussler[1], Chuan Li[2], Alexander Brinkman[2], Thomas Schäpers[1], Detlev Grützmacher[1]

Peter Grünberg Institute, Forschungszentrum Jülich & JARA Jülich-Aachen Research Alliance, Jülich, Germany[1]
MESA+ Institute, University of Twente, Enschede, The Netherlands[2]

ED3-3-INV 11:40–12:05

Filling and Bridging the THz Gap Using High-T_c Superconducting $Bi_2Sr_2CaCu_2O_{8+\delta}$ Intrinsic Josephson Junction Emitters

*Kazuo Kadowaki[1], Yukie Ono[2], Genki Kuwano[2], Takayuki Imai[2], Yota Kaneko[2], Shungo Nakagawa[2], Shinji Kusunose[2], Takanari Kashiwagi[2,3], Manabu Tsujimoto[2,3], Hidetoshi Minami[2,3], Richard Klemm[4]

ABES Research & Development Center, University of Tsukuba, Tsukuba Ibaraki, Japan[1]
Graduate School of Pure & Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan[2]
Faculty of Pure & Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan[3]
Department of Physics, University of Central Florida, USA[4]

ED3-4-INV 12:05–12:30

Proposal and Fabrication of Hot Electron Bolometer Mixer using a Magnetic Thin

Film

*Akira Kawakami[1], Yoshihisa Irimajiri[1]

National Institute of Information and Communications Technology[1]

Digital circuits

Chairpersons: Coenrad J. Fourie (Stellenbosch University) and Mutsuo Hidaka (AIST)

ED4-1-INV 13:30–13:55

EDA for Superconducting Circuits

*Coenrad J. Fourie[1]

Department of E&E Engineering, Stellenbosch University[1]

ED4-2-INV 13:55–14:20

Superconducting SFQ Circuits Research Progress in China

*Jie Ren[1,2], Ling Xin[1], Liliang Ying[1], Xiaoping Gao[1], Minghui Niu[1], Masaaki Maezawa[1], Lei Chen[1,2], Bo Gao[1,2], Zhen Wang[1,2]

Shanghai Institute of Microsystem and Information Technology[1]
University of Chinese Academy of Science[2]

ED4-3-INV 14:20–14:45

Performance Improvement of Superconducting Circuit by Introducing π-Shifted Josephson Junctions

*Yuki Yamanashi[1]

Yokohama National University[1]

ED4-4 14:45–15:00

Enhanced Voltage Swing of RSFQ Output Amplifiers Equipped with Double-Stack SQUIDs

*Yoshinao Mizugaki[1], Komei Higuchi[1], Hiroshi Shimada[1]

The University of Electro-Communications, Japan[1]

ED4-5 15:00–15:15

Logic Simulation Tool for RSFQ Circuits Accepting Arrivals of Multiple Pulses in a Clock Period

*Nobutaka Kito[1], Shohei Udatsu[1], Kazuyoshi Takagi[2]

Chukyo University[1]
Mie University[2]

ED4-6 15:15–15:30

Design and High-speed Test of an SFQ-based Single-chip FFT Processor

*Fei Ke[1], Yuki Yamanashi[1], Nobuyuki Yoshikawa[1]

Department of Electrical and Computer Engineering, Yokohama National University, Japan[1]

Quantum computing

Chairpersons: Haohua Wang (Zhejiang Univ.) and Yutaka Tabuchi (The Univ. of Tokyo)

ED5-1-INV 16:00–16:25

Deterministic generation of entanglement with up to 20 superconducting qubits

*Haohua Wang[1]

Department of Physics, Zhejiang University, Hangzhou, China[1]

ED5-2-INV 16:25–16:50

Generation and detection of itinerant microwave photons using a superconducting qubit

*Shingo Kono[1], Kazuki Koshino[2], Jesper Ilves[3], Yoshiki Sunada[3], Yutaka Tabuchi[3], Atsushi Noguchi[3], Yasunobu Nakamura[1,3]

Center for Emergent Matter Science (CEMS), RIKEN[1]
College of Liberal Arts and Sciences, Tokyo Medical and Dental University[2]
Research Center for Advanced Science and Technology (RCAST), The University of Tokyo[3]

ED5-3-INV 16:50–17:15

Scalable packaging and wiring for superconducting quantum computers

*Shuhei Tamate[1]

Research Center for Advanced Science and Technology (RCAST), University of Tokyo[1]

ED5-4 17:15–17:30

The Superconducting Flux Qubit for Prime Factorization Utilizing Low Jc Process

*Daisuke Saida[1], Shuichi Nagasawa[1], Mutsuo Hidaka[1], Kunihiro Inomata[1], Kazumasa Makise[1], Hiroki Yamamori[1], Masahiro Ukibe[1], Shiro Kawabata[1], Yuki Yamanashi[2]

The National Institute of Advanced Industrial Science and Technology[1]
Yokohama National University[2]

Dec. 4 (Wed.) Large Scale System Applications | Special Exhibition Hall A

Electric power and industry 1

Chairpersons: Tabea Arndt (Karlsruhe Institute of Technology) and Satoshi Fukui (Niigata University)

AP3-1-INV 10:35–11:00

Large Scale HTS Systems and Value Propositions

*Tabea Arndt[1]

Karlsruhe Institute of Technology KIT, Germany[1]

AP3-2 11:00–11:15

Development of a 20kV/400A Resistive Type DC Superconducting Fault Current Limiting Module

*Tao Ma[1], Shaotao Dai[1], Yuan Cai[2], Lei Hu[1], Bangzhu Wang[1], Teng Zhang[1]

School of Electrical Engineering, Beijing Jiaotong University[1]
Suzhou New Material Research Institute[2]

AP3-3 11:15–11:30

Heat leak of cryogenic pipe for superconducting dc power transmission line

*Sataro Yamaguchi[1], Masae Kanda[1], Yury Ivanov[1]

Chubu University[1]

AP3-4-INV 11:30–11:55

Development of Test Device for Aluminum Metal Melting by Induction Heating Using DC HTS Coils

*Satoshi Fukui[1], Jun Ogawa[1], Tomonori Watanabe[2], Shigeo Nagaya[2], Mitsuho Furuse[3]

Niigata University[1]
Chubu Electric Power Co., Inc.[2]
National Institute of Advanced Industrial Science and Technology[3]

AP3-5 11:55–12:10

Development of the 1 MW Superconducting Induction Heater

*Shaotao Dai[1], Tao Ma[1], Zhiyong Hong[3], Guozhong Jiang[2], Lei Hu[1], Chao Li[4], Bangzhu Wang[1], Teng Zhang[1]

School of Electrical Engineering, Beijing Jiaotong University[1]
Jiangxi Lianchuang Optoelectronic Technology Co., Ltd.[2]
Shanghai Superconductor Technology Co., Ltd.[3]
Western Superconducting Technologies Co., Ltd.[4]

Magnets 2

Chairpersons: Michael Parizh (GE Global Research) and Shun Tonooka (Mitsubishi Electric)

AP4-1-INV 13:30–13:55

Conductor for MRI magnets

*Michael Parizh[1]

GE Global Research[1]

AP4-2-INV 13:55–14:20

Development of A Half Size 3T REBCO Superconducting Magnet for MRI

*Shoichi Yokoyama[1]

Mitsubishi Electric Corp.[1]

AP4-3-INV 14:20–14:45

A Quench of an 800-MHz HTS Insert (H800)

*Yukikazu Iwasa[1], Dongkeun Park[1], Juan Bascuñàn[1], Philip C. Michael[2]

Francis Bitter Magnet Laboratory/Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, U. S. A.[1]
Plasma Science & Fusion Center, Massachusetts Institute of Technology, Cambridge, U. S. A.[2]

IEA special session

Chairpersons: Hiroyuki Ohsaki (The University of Tokyo) and Ataru Ichinose (Central Research Institute of Electric Power Industry)

AP5-1-INV 14:55–15:10

Shingal Project ; The 1st Commercial Application of 23 kV HTS Power Cable System in Korea

*Chulhyu Lee[1], Hyukchan Son[1], Cheol-hwi Ryu[2]

Korea Electric Power Corp. S. Korea[1]
LS Cable & System Ltd. S. Korea[2]

AP5-2-INV 15:10–15:25

ComEd superconductor cable project in Chicago and vision for the technology

*Daniel P Brotzman[1], Jim Maguire[2]

ComEd[1]
AMSC[2]

Panel Discussion (IEA special session) 15:25-16:10

Thema: why utilities chose HTS solutions in the grid?

Panelists:

Chulhyu Lee, Korea Electric Power Corp. S. Korea
Daniel P Brotzman, ComEd. USA
Hideo Ishii, Waseda University Japan
Kazuhiko Hayashi, Sumitomo Electric Industries, Ltd. Japan
*Hiroyuki Ohsaki, The Univesity of Tokyo Japan

*Moderator

Rotating machines 1

Chairpersons: Minwon Park (Changwon National University) and Taketsune Nakamura (Kyoto University)

AP6-0-INV 16:20–16:45

Efficient cryogenic cooling methods for HTS (High Temperature Superconductor)

applications; from stationary cooler to moving HTS coils

*Sangkwon Jeong[1], Bokeum Kim[1]

Cryogenic Engineering Laboratory, Department of Mechanical Engineering, KAIST (Korea Advanced Institute of Science and Technology), Daejeon, Republic of Korea[1]

AP6-1-INV 16:45–17:10

Superconducting Power Generators for Offshore Wind Turbines

*Quan Li[1], Kevin Kails[1], Jacky Hong[1]

University of Edinburgh[1]

AP6-2-INV 17:10–17:35

EcoSwing – Development, test, installation, and commissioning of a 3 MW superconducting wind power generator

*Markus Bauer[1]

THEVA Dünnschichttechnik GmbH[1]

AP6-3-INV 17:35–18:00

Current Status and Future Expectation of HTS Rotating Machines in Korea

*Minwon Park[1]

Changwon National University[1]

AP6-4 18:00–18:15

Development of Hydrogen Supply and Exhaust System for Liquid Hydrogen Cooled Superconducting Rotating Machine

*Yasuyuki Shirai[1], Yoshiki Iwami[1], Shintaro Hara[1], Taito Matsumoto[1], Masahiro Shiotsu[1], Hiroaki Kobayashi[2], Yoshihiro Naruo[2], Satoshi Nonaka[2], Yoshifumi Inatani[2], Hirokazu Hirai[3], Seiichiro Yoshinaga[4], Teiichi Tanaka[5]

Kyoto university[1]
JAXA[2]
Taiyo Nippon Sanso, Ltd.[3]
IHI[4]
National Institute of Technology, Kumamoto College[5]

Dec. 5 (Thu.) Physics and Chemistry | **Large Meeting Room**

Cuprate 1

Chairpersons: ChangQing Jin (Chinese Academy of Sciences) and Kazuhiro Fujita (Brookhaven National Laboratory)

PC6-1-INV 11:00–11:30

Pseudogap and Superconductivity in Cuprate Superconductors Solved by *Ab initio* and Machine Learning Studies

*Masatoshi Imada[1, 2]

Toyota Physical and Chemical Research Institute[1]
Waseda Research Institute for Science and Engineering, Waseda University[2]

PC6-2-INV 11:30–12:00

Exotic electronic properties revealed in a clean CuO_2 sheet of multilayered high-T_c superconductor

*Takeshi Kondo[1]

Institute for Solid State Physics, The University of Tokyo, Japan[1]

PC6-3-INV 12:00–12:30

Visualizing the Cuprate Pair Density Wave State

*Kazuhiro Fujita[1], Zengyi Du[1], Hui Li[1,2], Sanghyun Joo[1,3,4], Elizabeth P. Donoway[1], Jinho Lee[3,4], J. C. Davis[5,6], Ganda D. Gu[1], Peter D. Johnson[1]

Brookhaven National Laboratory[1]
Stony Brook University[2]
Seoul National University[3]
Institute for Basic Science[4]
University College Cork[5]
University of Oxford[6]

Cuprate 2

Chairpersons: Masatoshi Imada (Toyota Physical & Chemical Research Institute/ Waseda University) and Makoto Hashimoto (SLAC National Accelerator Laboratory)

PC7-1-INV 14:00–14:30

ARPES study of high-temperature cuprate superconductor Bi2212 across critical dopings

*Makoto Hashimoto[1]

SLAC National Accelerator Laboratory[1]

PC7-2-INV 14:30–15:00

Superconductivity in a unique type of copper oxides

*ChangQing Jin[1]

Institute of Physics, Chinese Academy of Sciences[1]

PC7-3 15:00–15:15

Electron-doping Effect and the Electronic State in the Undoped (Ce-free) Superconductor T'-$La_{1.8}Eu_{0.2}CuO_{4-\delta}$

*Toshiki Sunohara[1], Takayuki Kawamata[1], Kota Shiosaka[1], Tomohisa Takamatsu[1], Takashi Noji[1], Masatsune Kato[1], Yoji Koike[1]

Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan[1]

PC7-4 15:15–15:30

Rectification by Superconducting Diodes Made of REBCO Films

*Yuji Tsuchiya[1], Keisuke Suzuki[1], Tomohide Hori[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Nagoya University[1]

Dec. 5 (Thu.) Wires and Bulk — Special Exhibition Hall B

Bulk materials and their applications

Chairpersons: John H. Durrell (University of Cambridge) and Hiroshi Ikuta (Nagoya University)

WB6-1-INV 14:00–14:25

Towards Robust High Field Performance in Bulk HTS Magnets

*John H Durrell[1], Danny Huang[1], Devendra Kumar[1], Mark Ainslie[1], Yunhua Shi[1], David Cardwell[1]

University of Cambridge[1]

WB6-2-INV 14:25–14:50

Development of ultra small cryogen-free Superconducting Magnet for High-Resolution NMR

*Takashi Nakamura[1], Mitsuko Nomura[2], Yousuke Yanagi[2], Yoshitaka Itoh[2], Hiroaki Utsumi[3]

RIKEN[1]
IMRA Material Co. Ltd.[2]
JEOL RESONANCE Co. Ltd.[3]

WB6-3 14:50–15:10

Magnetic Flux Trapping and Flux Jumps in Pulsed Field Magnetizing Processes in REBCO and Mg-B Bulk Magnets

*Tetsuo Oka[1], Hayami Oki[2], Kengo Yamanaka[1], Yusuke Hosaka[1], Kouki Shimizu[2], Jun Ogawa[2], Satoshi Fukui[2], Kazuya Yokoyama[3], Naomichi Sakai[1], Muralidhar Miryala[1], Masato Murakami[1]

Shibaura Institute of Technology[1]
Niigata University[2]
Ashikaga University[3]

WB6-4 15:10–15:30

Sm123 bulk superconductors composited by small-sized Sm211 particles formed by homogeneous nucleation catastrophe

*Yiqian Yin[1,2], Yan Liu[1,2], Jun Qian[1,2], Yan Wan[1,2], Simin Huang[1,2], Yanhan Zhu[1,2], Xin Yao[1,2], Pavel Diko[3]

Key Lab of Artificial Structures & Quantum Control (Ministry of Education), School of Physics and Astronomy, Shanghai Jiao Tong University, Shanghai, China[1]
State Key Lab for Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, China[2]
Institute of Experimental Physics, Slovak Academy of Science, Košice, Slovakia[3]

Dec. 5 (Thu.) Electronic Devices — Meeting Room

Microwave

Chairpersons: William W. Brey (NHMFL-Florida State University) and Naoto Sekiya (Yamanashi University)

ED6-1-INV 14:00–14:25

High Sensitivity Nuclear Magnetic Resonance Spectroscopy Using HTS Resonators

*William W. Brey[1]

NHMFL - Florida State University[1]

ED6-2-INV 14:25–14:50

Compact and High Performance Microwave Superconducting Bandpass Filters Using Microstrip Multimode Resonators

*Haiwen Liu[1]

School of Electronics and Information Engineering, Xi'an Jiaotong University, Xi'an, China[1]

ED6-3-INV 14:50–15:15

Development of High-Temperature Superconducting Pick-up Coils for Field-Swept Nuclear Magnetic Resonance

*Atsushi SAITO[1], Kotaro IRIE[1], Shohei ODA[1], Masato TAKAHASHI[2], Techit TRITRAKARN[2], Shota KATO[2], Kazuyuki TAKEDA[3], Kazuhiko YAMADA[4]

Yamagata University, Yonezawa, Japan[1]
RIKEN Yokohama Campus, Yokohama, Japan[2]
Kyoto University, Kyoto, Japan[3]
Kochi University, Nankoku, Kochi, Japan[4]

ED6-4 15:15–15:30

Required Characteristics of YBCO Thin Films to Fabricate High-Q NMR Pickup Coils

*Shigetoshi Ohshima[1]

Graduated School of Science and Engineering, Yamagata University, Yonezawa, Japan[1]

Dec. 5 (Thu.) Large Scale System Applications | Special Exhibition Hall A

Magnet science and technology 1

Chairpersons: Chris Bumby (Victoria University of Wellington) and Tsuyoshi Wakuda (Hitachi)

AP7-1-INV 14:00–14:25

Dynamo-type HTS Flux Pumps: Physics and Applications

*Chris W. Bumby[1], Andres E. Pantoja[1], Ratu C. Mataira[1], Mark D. Ainslie[2], Zhenan Jiang[1], Rodney A. Badcock[1]

Robinson Research Institute, Victoria University of Wellington, New Zealand[1]
Bulk Superconductivity Group, Department of Engineering, University of Cambridge, UK[2]

AP7-2-INV 14:25–14:50

Dynamic resistance in REBCO coated conductors

Zhenan Jiang[1], Chris W. Bumby[1], Rodney A. Badcock[1]

Victoria University of Wellington[1]

AP7-3 14:50–15:05

Quench Analysis of the DEMO CS1 Coil

Aleksandra Dembkowska[1], *Monika Lewandowska[1], Xabier Sarasola[2], Kamil Sedlak[2]

West Pomeranian University of Technology, Szczecin, Poland[1]
École Polytechnique Fédérale de Lausanne (EPFL), Swiss Plasma Center (SPC), Switzerland[2]

AP7-4 15:05–15:20

The world's largest superconducting magnetic bearing for cosmic microwave background polarization experiments

*Yuki Sakurai[1], Peter Ashton[1,2,3], Akito Kusaka[3,4,5,6], Charles Hill[2,3], Kenji Kiuchi[4], Nobuhiko Katayama[1], Osamu Tajima[7]

Kavli Institute for The Physics and Mathematics of The Universe (WPI), The University of Tokyo, Japan[1]
Department of Physics, University of California, Berkeley, USA[2]
Physics Division, Lawrence Berkeley National Laboratory, USA[3]
Department of Physics, The University of Tokyo, Japan[4]
Kavli Institute for the Physics and Mathematics of the Universe (WPI), Berkeley Satellite, The University of California, Berkeley, USA[5]

Research Center for the Early Universe, School of Science, The University of Tokyo, Japan[6]
Department of Physics, Kyoto University, Japan[7]

Dec. 5 (Thu.) Late News **Special Exhibition Hall B**

Late news

Chairperson: Hirofumi Yamasaki (AIST)

LN-1-INV 15:40–16:05

Accessing critical currents in large pulsed fields: challenges and opportunities

*Boris Maiorov[1]

Los Alamos National Laboratory, National High Magnetic Field Laboratory[1]

Poster Sessions

Dec. 3 (Tue.) Physics and Chemistry **First Exhibition Hall B**

Vortex

Chairperson: Tsuyoshi Tamegai (The University of Tokyo)

PCP1-1 15:10–17:10

Spatiotemporal Dynamics of Driven Josephson Junction Networks

*Takaaki Kawaguchi[1]

Department of Physics, Toho University, Japan[1]

PCP1-2 15:10–17:10

Vortex lattice melting transition : Effects of artificial nanorods

*Takashi Kusafuka[1], Masaru Kato[1], Osamu Sato[1,2]

Osaka Pref. Univ.[1]
Osaka Pref. Univ. Col. Tech.[2]

PCP1-3 15:10–17:10

Peculiar vortex states in mesoscopic superconductors with antidots

*Osamu Sato[1], Masaru Kato[2]

Osaka Prefecture University College of Technology[1]
Osaka Prefecture University[2]

PCP1-4 15:10–17:10

Structures of vortices in a superconductor under spatially varying fields

*Hayato Yokoji[1], Masaru Kato[1]

Department of Physics and Electronics, Osaka Prefecture University, Japan[1]

PCP1-5 15:10–17:10

Transition temperature in a dirty mesoscopic superconductor: Transition from localized superconductivity to extended superconductivity

*Masaru Kato[1], Takayuki Tamai[1]

Department of Physics and Electronics, Osaka Prefecture University[1]

PCP1-6 15:10–17:10

Magneto-optical imaging of field profile on niobium surface with microstructures of niobium hydrides and a single grain boundary

*Shuuichi Ooi[1], Minoru Tachiki[1], Akihiro Kikuchi[1], Shunichi Arisawa[1], Taro Konomi[2], Eiji Kako[2], Hiroshi Sakai[2], Kensei Umemori[2]

National Institute for Materials Science[1]
High Energy Accelerator Research Organization[2]

PCP1-7 15:10–17:10

Reversible-Irreversible Transition Induced by Increased Shear Amplitude and Vortex Density

*Shun Maegochi[1], Koichiro Ienaga[1], Kiyoshi Miyagawa[1], Shin-ichi Kaneko[1], Satoshi Okuma[1]

Tokyo Institute of Technology, Japan[1]

PCP1-8 15:10–17:10

(Withdrawn)

PCP1-9 15:10–17:10

Observation of Flux States and Vortex Penetration in Perforated Square Loops of Superconducting Amorphous MoGe Films

*Nobuhito Kokubo[1], Satoru Okayasu[2], Tsutomu Nojima[3]

Dept. of Engineering Science, University of Electro-Communications, Chofu, Tokyo, Japan[1]
Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan[2]
Institute for Materials Research, Tohoku University, Sendai, Japan[3]

PCP1-10 15:10–17:10

Vortex penetration and expulsion in $NbSe_2$ mesoscopic superconductors detected by small tunnel junction method

*Hikari Tomori[1], Naoki Hoshi[1], Dai Inoue[1], Akinobu Kanda[1]

University of Tsukuba[1]

Novel materials 3

Chairperson: Tsutomu Nojima (Tohoku University)

PCP2-1 15:10–17:10

Effects of 800 MeV Xe Irradiation on 2H-NbSe2 Single Crystals

*WENJIE LI[1], Tsuyoshi Tamegai[1], Sunseng Pyon[1], Ayumu Takahashi[1], Daisuke Miyawaki[1], Yuto Kobayashi[1], Ataru Ichinose[2]

Department of Applied Physics, The University of Tokyo, Bunkyo-ku, Tokyo, Japan[1]
Central Research Institute of Electric Power Industry, Yokosuka-shi, Kanagawa, Japan[2]

PCP2-2 15:10–17:10

Spectroscopy of exfoliated $NbSe_2$ thin films using $NbSe_2/MoS_2$ superconductor-semiconductor heterostructures

Hikari Tomori[1], *Akinobu Kanda[1]

Department of Physics, University of Tsukuba, Japan[1]

PCP2-3 15:10–17:10

Intercalation of alkaline earth metals and rare-earth ions into 2H-$NbSe_2$

*Yukinori Yamaguchi[1], T. Nishio[1]

Department of Physics, Tokyo University of Science, Japan[1]

PCP2-4 15:10–17:10

Observation of surface structure in Hf doped $ZrTe_3$ by STM

*Sora Kobayashi[1], Shun Ohta[1], Satoshi Demura[2], Atsushi Nomura[1], Hideaki Sakata[1]

Department of Physics, Tokyo University of Science, Japan[1]
College of Science and Technology, Nihon University, Japan[2]

PCP2-5 15:10–17:10

Evaluation of the physical properties and the real space observation in 2*H*-TaS_2 synthesized with flux method

*Shun Ohta[1], Sora Kobayashi[1], Atsushi Nomura[1], Yuita Fujisawa[2], Satoshi Demura[3], Hideaki Sakata[1]

Department of Physics, Tokyo University of Science[1]
Okinawa Institute of Science and Technology[2]
College of Science and Technology, Nihon University[3]

PCP2-6 15:10–17:10

Synthesis and physical property measurements of misfit transition-metal dichalcogenide (SbS)(TaS_2)

Shun Doyama[1], Shun Ohta[1], Hideaki Sakata[1]

Tokyo university of science[1]

PCP2-7 15:10–17:10

Local Density of States in Two-Dimensional Nano-Structured Superconducting Systems with Superconductor–Normal Metal Interfaces

*Saoto Fukui[1], Zhen Wang[1], Masaru Kato[2]

Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences[1]
Osaka Prefecture University[2]

PCP2-8 15:10–17:10

Angular dependence of the upper critical field in the high-pressure 1T' phase of $MoTe_2$

*Yajian Hu[1], Yuk Tai Chan[1], Kwing To Lai[1], Kin On Ho[1], Xiaoyu Guo[1], Hai-Peng Sun[2,3,4], King Yau Yip[1], Dickon H.L. Ng[1], Hai-Zhou Lu[2,3], Swee Kuan Goh[1]

The Chinese University of Hong Kong, Hong Kong[1]

Southern University of Science and Technology, China[2]
Shenzhen Key Laboratory of Quantum Science and Engineering, China[3]
Department of Physics, Harbin Institute of Technology, China[4]

PCP2-9 15:10–17:10

Bogoliubov–de Gennes Approach to Inhomogeneous Superconducting Gap in Nanowires and Nanotubes

*German E. Lopez[1], Chumin Wang[1]

Instituto de Investigaciones en Materiales, Universidad Nacional Autonoma de Mexico, Mexico City, MEXICO[1]

PCP2-10 15:10–17:10

Crystal growth and conduction properties of Pb substituted La(O,F)BiS_2

*Yuto Nakayama[1], Ryunosuke Shirota[1], Atsushi Nomura[1], Hideaki Sakata[1]

Tokyo University of Science[1]

PCP2-11 15:10–17:10

Synthesis and superconducting property evaluation of Pb-substituted BiS-based superconductor $LaO_{1-x}F_xBiS_2$

*Takahito Fukui[1], Satoshi Demura[1], Yoshiki Takano[1]

College of Science and Technology, Nihon Unibersity Japan[1]

PCP2-12 15:10–17:10

Co-Intercalation of Li and Ethylenediamine into the Bi-based Chalcogenides with the Layered Structure by Solvothermal Technique

*Shota Ueno[1], Takashi Noji[1], Takayuki Kawamata[1], Masatsune Kato[1]

Department of Applied Physics, Tohoku University, Sendai, Japan[1]

Novel materials 4

Chairperson: Takao Sasagawa (Tokyo Institute of Technology)

PCP3-1 15:10–17:10

Synthesis and Physical Properties of New Iridium Oxyfluorides Using Topochemical Reaction Method

*Kenta Kuramochi[1,2], Tomohito Shimano[1,2], Taichiro Nishio[1], Hirotaka Okabe[3], Kazumasa Horigane[4], Jun Akimitsu[4], Tomoki Uchiyama[5], Yoshiharu Uchimoto[5], Hiraku Ogino[2]

Department of Physics, Tokyo University of Science, Tokyo, Japan[1]
Superconducting Electronics Group, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan[2]
Institute of Materials Structure Science/J-PARC Center, High Energy Accelerator Research Organization, Ibaraki, Japan[3]
Research Institute for Interdisciplinary Science, Okayama University, Okayama, Japan[4]
Graduate School of Human and Environmental Studies, Kyoto University, Kyoto, Japan[5]

PCP3-2 15:10–17:10

Exploration of New Superconducting Phases in a Scandium Borocarbide System

*Hiroki Ninomiya[1], Kunihiko Oka[1], Izumi Hase[1], Kenji Kawashima[1,2], Hiroshi Fujihisa[1], Yoshito Gotoh[1], Shigeyuki Ishida[1], Hiraku Ogino[1], Akira Iyo[1], Yoshiyuki Yoshida[1], Hiroshi Eisaki[1]

National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan[1]
IMRA Material R&D Co., Ltd., Kariya, Aichi, Japan[2]

PCP3-3 15:10–17:10

Crystal Growth and Superconducting Properties of a Chiral Compound $TaSi_2$

*Yuta Hoshidoh[1], Kaito Koyanagi[1], Takao Sasagawa[1]

MSL, Tokyo Institute of Technology[1]

PCP3-4 15:10–17:10

Superconductivity in a Topological Dirac Nodal-Line Semimetal

*Masayuki Murase[1], Takao Sasagawa[1]

Laboratory for Materials and Structures[1]

PCP3-5 15:10–17:10

Effect of non-magnetic rare earth substitution for *A*site on mixed anion *APX*superconductors

*Hijiri Kito[1], Kenji Kawashima[1,2], Shigeyuki Ishida[1], Kunihiko Oka[1], Hiroshi Fujihisa[1], Yoshito Goth[1], Akira Iyo[1], Hiraku Ogino[1], Hiroshi Eisaki[1], Yoshiyuki Yoshida[1]

National Institute of Advanced Industrial Science and Technology (AIST)[1]
IMRA Material R&D Co., Ltd[2]

PCP3-6 15:10–17:10

Electronic Structure of novel Superconductor doped-ZrPSe

*Izumi Hase[1], Takashi Yanagisawa[1], Hijiri Kito[1], Kousuke Iwakiri[2], Taichiro Nishio[2], Hiroshi Fujihisa[1], Yoshihisa Gotoh[1], Hiroshi Eisaki[1], Kenji Kawashima[3]

AIST[1]
Tokyo Sci. Univ.[2]
IMRA Material R&D Co. Ltd.[3]

PCP3-7 15:10–17:10

Index theorem, skyrmions and the Witten effect in topological quantum systems

*Takashi Yanagisawa[1]

National Institute of Advanced Industrial Science and Technology[1]

PCP3-8 15:10–17:10

Many-variable variational Monte-Carlo studies of superconductivity with incipient

bands in two-band Hubbard models

*Daichi Kato[1], Kazuhiko Kuroki[1]

Osaka university[1]

PCP3-9 15:10–17:10

Characterization of rice hull magnetic activated carbon and a rotary drum type magnetic separator with ferromagnetic mesh filters

*Tatsuya Shiina[1], Yu Komatsu[1], Osuke Miura[1]

Electrical Engineering and Computer Science, Graduate School of Systems Design, Tokyo Metropolitan University, Japan[1]

Fe-based superconductors 3

Chairperson: Minoru Nohara (Okayama University)

PCP4-1 15:10–17:10

^{31}P NMR studies of an optimally doped superconductor $Ba_{0.5}Sr_{0.5}Fe_2(As_{1-x}P_x)_2$ (x~0.4)

*Yutaka Itoh[1], Seiji Adachi[2]

Kyoto Sangyo University, Japan[1]
Superconducting Sensing Technology Research Association, Japan[2]

PCP4-2 15:10–17:10

Composition dependence of penetration depth in $FeSe_{1-x}Te_x$ films measured by superconducting resonators

*Sota Nakamura[1], Hodaka Kurokawa[1], Naoki Shikama[1], Yuki Sakishita[1], Fuyuki Nabeshima[1], Atsutaka Maeda[1]

Department of Basic Science, the University of Tokyo[1]

PCP4-3 15:10–17:10

Transport properties of electron-doped $FeSe_{1-x}S_x$ and $FeSe_{1-y}Te_y$ films with electric double layer transistor

*Naoki Shikama[1], Yuuki Sakishita[1], Fuyuki Nabeshima[1], Atustaka Maeda[1]

Department of Basic Science, the University of Tokyo, Japan[1]

PCP4-4 15:10–17:10

Effect of in-plane strain on transport properties of FeSe single crystals

*Yuki Ohata[1], Masamichi Nakajima[1], Setsuko Tajima[1]

Department of Physics, Osaka University, Japan[1]

PCP4-5 15:10–17:10

Low-oxygen Annealing Process of FeSe Superconducting Materials

*Botao Shao[1], Shengnan Zhang[1], Jixing Liu[1], Jianqing Feng[1], Chenshan Li[1]

Northwest Institute for Non-Ferrous Metal Research, Xi'an, China[1]

PCP4-6 15:10–17:10

Critical current densities and superconducting properties for Fe $(Te_{1-x}Se_x)_{1-y}S_y$

*Kota Miyaki[1], Osuke Miura[1], Yoshikazu Mizuguchi[2]

Dept. of Electrical Engineering and Computer Science, Tokyo Metropolitan University, Japan.[1]
Department of physics, Tokyo Metropolitan University, Japan[2]

PCP4-7 15:10–17:10

Effects of Point Defects Introduced by Co-doping and Proton Irradiation in $CaKFe_4As_4$

*Yuto Kobayashi[1], Sunseng Pyon[1], Ayumu Takahashi[1], Tsuyoshi Tamegai[1]

Department of Applied Physics, The University of Tokyo[1]

PCP4-8 15:10–17:10

Effects of Splayed Columnar Defects on Critical Current Density in $CaKFe_4As_4$

*Ayumu Takahashi[1], Sunseng Pyon[1], Yuto Kobayashi[1], Tadashi Kambara[2], Atsushi Yoshida[2], Satoru Okayasu[3], Ataru Ichinose[4], Tsuyoshi Tamegai[1]

Department of Applied Physics, The University of Tokyo, Hongo, Bunkyo-ku, Tokyo, Japan[1]
Nishina Center, RIKEN, Hirosawa, Wako, Saitama, Japan[2]
Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan[3]
Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan[4]

Fe-based superconductors 4

Chairperson: Hiraku Ogino (AIST)

PCP5-1 15:10–17:10

Superconductivity in Uncollapsed Tetragonal $LaFe_2As_2$

*Akira Iyo[1], Shigeyuki Ishida[1], Hiroshi Fujihisa[1], Yoshito Gotoh[1], Izumi Hase[1], Yoshiyuki Yoshida[1], Hiroshi Eisaki[1], Kenji Kawashima[1,2]

National Institute of Advanced Industrial Science and Technology (AIST)[1]
IMRA Material R&D Co., Ltd.[2]

PCP5-2 15:10–17:10

Electronic phase diagram of $Sr_2V_{1-x}Sc_xFeAsO_3$

*Masamichi Nakajima[1], Taihei Wakimura[1], Shigeki Miyasaka[1], Setsuko Tajima[1]

Osaka University, Japan[1]

PCP5-3 15:10–17:10

Study of μSR in Iron-Based Superconductor $LaFeAs_{1-x}P_xO_{0.9}F_{0.1}$

*Shinzaburo Sano[1], Dai Tomono[2], Wataru Higemoto[3,4], Tsuyoshi Kawashima[1], Masamichi Nakazima[1], Shigeki Miyasaka[1], Akira Sato[1], Koichiro Shimomura[5], Setsuko Tajima[1]

Department of Physics, Osaka University, Machikaneyama-cho, Toyonaka, Osaka, Japan[1]
Research Center for Nuclear Physics (RCNP), Osaka University, Ibaraki, Osaka, Japan[2]
Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan[3]
Department of Physics, Tokyo Institute of Technology, Ohokayama, Meguro, Tokyo, Japan[4]
Institute of Materials Structure Science, KEK, Oho, Tsukuba, Ibaraki, Japan[5]

PCP5-4 15:10–17:10

Synthesis of the Mother Phase of the Iron-Based Superconductor, SmFeAsO via Low-Temperature Heat Treatment

*Ryosuke Sakagami[1,2], Simon R. Hall[2], Jason Potticary[2], Masanori Matoba[1], Yoichi Kamihara[1,2,3]

Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology, Keio University, Japan[1]
Complex Functional Materials Group, School of Chemistry, University of Bristol, United Kingdom[2]
Center for Spintronics Research Network (CSRN), Keio University, Japan[3]

PCP5-5 15:10–17:10

Fabrication of superconducting NdFeAs(O,H) epitaxial thin films

*Keisuke Kondo[1], Seiya Motoki[1], Takafumi Hatano[1], Takahiro Urata[1], Kazumasa Iida[1,2], Hiroshi Ikuta[1]

Department of Material Physics, Nagoya University, Japan[1]
JST CREST, Japan[2]

PCP5-6 15:10–17:10

New strategies in PLD growth of iron-oxypnictides

*Silvia Haindl[1], Michiko Sato[2], Masato Sasase[2], Hidenori Hiramatsu[2,3], Hideo Hosono[2,3], Erik Kampert[4], Ian MacLaren[5]

Tokyo Tech World Research Hub Initiative (WRHI), Institute of Innovative Research, Tokyo Institute of Technology[1]
Materials Research Center for Element Strategy, Tokyo Institute of Technology[2]
Laboratory for Materials and Structures, Institute of Innovative Research, Tokyo Institute of Technology[3]
Dresden High Magnetic Field Laboratory (HLD-EMFL), Helmholtz-Zentrum Dresden-Rossendorf[4]
School of Physics and Astronomy, University of Glasgow[5]

PCP5-7 15:10–17:10

AC, DC and magnetic relaxation studies of cuprate and pnictide superconducting single crystals exhibiting a second magnetization peak

*Adrian Crisan[1], Lucica Miu[1]

National Institute of Materials Physics Bucharest, Magurele, Romania[1]

Cuprate 3

Chairperson: Hiroshi Eisaki (AIST)

PCP6-1 15:10–17:10

Variational Monte Carlo Study of Excited States in Strongly Correlated Hubbard model

*Hisatoshi Yokoyama[1], Kenji Kobayashi[2], Tsutomu Watanabe[2], Masao Ogata[3]

Department of Physics, Tohoku University, Japan[1]
Department of Natural Science, Chiba Institute of Technology, Japan[2]
Department of Physics, University of Tokyo, Japan[3]

PCP6-2 15:10–17:10

Model Constraction and Fluctuation Exchange Study of a New Cuprate Superconductor $Ba_2CuO_{3+\delta}$

*Kimihiro Yamazaki[1], Masayuki Ochi[1], Kazuhiko Kuroki[1], Hiroshi Eisaki[2], Shinichi Uchida[2,3], Hideo Aoki[2,4]

Department of Physics, Osaka University, Osaka, Japan[1]
National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan[2]
Institute of Physics, Chinese Academy of Science, Beijing, China[3]
Department of Physics, University of Tokyo, Hongo, Tokyo, Japan[4]

PCP6-3 15:10–17:10

Anisotropy in strongly correlated electrons and its relationship with superconductivity

*Kenji Kobayashi[1], Hisatoshi Yokoyama[2]

Department of Natural Science, Chiba Institute of Technology, Japan[1]
Department of Physics, Tohoku University, Japan[2]

PCP6-4 15:10–17:10

Study of Optical Properties in Triple-Layer Cuprate Bi2223

*Yuta Ito[1], Katsuya Mizutamari[1], Masamichi Nakajima[1], Nae Sasaki[2], Shunpei Yamaguchi[2], Takao Watanabe[2], Shigeki Miyasaka[1], Setsuko Tajima[1]

Department of Physics, Osaka University, Osaka, Japan[1]
Graduate School of Science and Technology, Hirosaki University, Hirosaki, Japan[2]

PCP6-5 15:10–17:10

Simulation of THz emission from various shaped intrinsic Josephson junction arrays

Yusuke Fujiki[1], Masaru Kato[1]

Department of Physics and Electronics, Osaka Prefecture University, Japan[1]

PCP6-6 15:10–17:10

Exotic Properties of High Temperature Cuprates Superconductor

*Kazuhisa Nishi[1]

University of Hyogo, Japan[1]

PCP6-7 15:10–17:10

Superconductivity in the heavily Pb-doped Bi-2212 phase of $(Bi,Pb)_2Sr_2CaCu_2O_{8-\delta}$

*Koki Takano[1], Ryohei Ito[1], Takayuki Kawamata[1], Takashi Noji[1], Masatsune Kato[1]

Department of Applied Physics, Tohoku University, Japan[1]

Cuprates 4

Chairperson: Akira Iyo (AIST)

PCP7-1 15:10–17:10

Accurate Determination of Composite Crystal Structure of $Sr_{14-x}Ca_xCu_{24}O_{41}$ Using the Akaike Information Criterion

*Yoshito Gotoh[1]

National Institute of Advanced Industrial Science and Technology (AIST) Japan[1]

PCP7-2 15:10–17:10

Synthesis and Superconductivity in Pb-doped $NbSr_2RECu_2O_z$ ($z\approx8$; RE: rare-earth element)

*Yoshihiro Yamada[1], Tamon Wada[1], Toshihiko Maeda[1]

Kochi University of Technology[1]

PCP7-3 15:10–17:10

Synthesis and Superconductivity of Pb-based "1-2-0-1" Cuprates

*Toshihiko Maeda[1], Ryutaro Koresawa[1], Aoi Sato[1], Tamon Wada[1]

Kochi University of Technology[1]

PCP7-4 15:10–17:10

High-field measurements on bulk $YBa_2Cu_3O_y$ samples prepared by the Infiltration-Growth (IG) technique

*Quentin Nouailhetas[1,2], Michael Koblischka[2,3], Kévin Berger[1], Bruno Douine[1], Anjela Koblischka-Veneva[3], Masato Murakami[3], Namburi Devendra Kumar[5], S Pavan Kumar Naik[4]

GREEN, Université de Lorraine, Faculté des Sciences et Technologies, France[1]
Experimental Physics, Saarland University, Saarbrücken, Germany[2]
Dept. of Materials Science and Engineering, Shibaura Institute of Technology, Toyosu, Japan[3]
Superconducting Electronics Group, Electronics and Photonics Research Institute, National

Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan[4]
Department of Engineering, University of Cambridge, Cambridge, United Kingdom[5]

PCP7-5 15:10–17:10

Advances in Novel $YBa_2Cu_3O_{x-\delta}$ Superconducting Materials

*William Dee Rieken[1], Atit Bhargava[2], Rie Horie[3], Jun Akimitsu[3], Hiroshi Daimon[1]

Graduate School Of Materials Science, Nara Institute Of Science and Technology[1]
Scotch College[2]
Research Institute For Interdisciplinary Science, Okayama University[3]

PCP7-6 15:10–17:10

Properties of electron-doped high temperature superconductor $Nd_{2-x}Ce_xCuO_4$ Films deposited by TFA-MOD

*Keita Sakuma[1], Yoshinori Kamada[1], Syuji Anno[1], Masashi Miura[1]

Seikei University[1]

PCP7-7 15:10–17:10

Enhanced critical current density in TFA-MOD $(Y_{0.77}Gd_{0.23})Ba_2Cu_3O_y$+$BaHfO_3$ films on CeO_2 buffered *R*-Al_2O_3 substrates

*Taiki Furuya[1], Yoshinori Kamada[1], Keita Sakuma[1], Masashi Miura[1]

Seikei University, Japan[1]

Dec. 3 (Tue.) Wires and Bulk **First Exhibition Hall B**

Bulk materials and their applications 2

Chairperson: Atsushi Ishihara (Railway Technical Research Institute)

WBP1-1 15:10–17:10

Improved performance of bulk MgB_2 superconductor produced via combination of in-situ and ex-situ method

*Jun Sugiyama[1], Joseph. L Dadiel[1], Naomichi Sakai[1], Miryala Muralidhar[1], Kazuya Yokoyama[2], Tetsuo Oka[1], Masato Murakami[1]

Shibaura Institute of Technology, Japan[1]
Ashikaga University, Japan[2]

WBP1-2 15:10–17:10

Superconducting Properties of Polycrystalline $Ba_{0.6}K_{0.4}Fe_2As_2$ Bulks Fabricated by a Spark Plasma Sintering Method

*Kohei Nakagawa[1], Tomoyuki Naito[1], Hiroyuki Fujishiro[1]

Faculty of Science and Engineering, Iwate University, Japan[1]

WBP1-3 15:10–17:10

Optimization of Sintering Conditions for Synthesizing Dense Magnesium Diboride Bulk Superconductors via Ex-Situ Spark Plasma Sintering Method

*Longji J Dadiel[1], Pavan K. N Sugali[2], Jun Sugiyama[1], Hiraku Ogino[2], Naomichi Sakai[1], Tetsuo Oka[1], Masato Murakami[1]

Shibaura Institute of Technology, Tokyo, Japan[1]
National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan[2]

WBP1-4 15:10–17:10

Trapped Field Properties of Pulsed Field Magnetization of MgB_2 Bulk with Ti-doped

*Hayami Oki[1], Kengo Yamanaka[2], Satoshi Fukui[1], Kazuya Yokoyama[3], W. Häßler[4], J. Scheiter[4], Masato Murakami[2], Tetsuo Oka[2]

Niigata University, Japan[1]
Shibaura Institute of Technology, japan[2]
Ashikaga University, Japan[3]
IFW Dresden, Germany[4]

WBP1-5 15:10–17:10

Effects of SiC-doping on the trapped field properties of *in-situ* HIP-processed MgB_2 bulks

*Tomoyuki Naito[1], Yuhei Takahashi[1], Hiroyuki Fujishiro[1]

Iwate University[1]

WBP1-6 15:10–17:10

Study on the thermal stability of the NdBCO film in inducing the growth of $REBa_2Cu_3O_x$/Ag superconductor bulks

*Simin Huang[1], Gehai Du[1], Hui Xiang[1], Jun Qian[1], Yan Liu[1], Xin Yao[2]

School Of Physics And Astronomy, Shanghai Jiao Tong University, Shanghai, China[1]
Collaborative Innovation Center Of Advanced Microstructures, Nanjing, China[2]

WBP1-7

(Withdrawn)

WBP1-8 15:10–17:10

Effect of Carbon Nanotube doping on superconducting properties in Y-Ba-Cu-O Bulk Superconductors

*Yohei Udagawa[1], Kazuo Inoue[2], Pavan. K. NAIK[3], Naomichi Sakai[1], Muralidhar Miryala[1], Kazuya Yokoyama[4], Tetsuo Oka[1], Masato Murakami[1]

Shibaura Institute of Technology, Japan[1]
National Institute for Materials Science (NIMS), Japan[2]
National Institute of Advanced Industrial Science and Technology (AIST), Japan[3]
Ashikaga University, Japan[4]

WBP1-9 15:10–17:10

Study on superconducting welding method of Gd-Ba-Cu-O Bulk Superconductors for pulsed field magnetization

*Kimiaki Sudo[1], Rémi Dorget[1,2], Joseph Longji Dadiel[1], Yohei Udagawa[1], Masato Murakami[1], Tetsuo Oka[1], Naomichi Sakai[1]

Shibaura Institute of Technology, Japan[1]
Université de Lorraine, France[2]

WBP1-10 15:10–17:10

Magnetic Field Uniformity on Magnetic Pole of HTS Bulk Magnet System Attached Iron Plates with Holes

*Natsuki Inoue[1], Tetsuo Oka[1], Kazuya Yokoyama[2], Masato Murakami[1], Masato Takahashi[3], Takashi Nakamura[3]

Shibaura Institute of Technology[1]
Ashikaga University[2]
RIKEN[3]

WBP1-11 15:10–17:10

Pulsed field magnetization of GdBCO bulk using a ring-shaped soft-iron yoke

*Kazuya Yokoyama[1], Tetsuo Oka[2]

Ashikaga University[1]
Shibaura Institute of Technology[2]

Nb_3Sn and MgB_2

Chairperson: Hisaki Sakamoto (Furukawa Electric)

WBP2-1 15:10–17:10

The critical current properties of 19-filaments MgB_2 wires by an internal Mg diffusion process

*Guo Yan[1], Fang Yang[2], Xiaomei Xiong[2], Qingyang Wang[2], Jianqing Feng[2], Chengshan Li[2]

Western Superconducting Technologies Co., Ltd.[1]
Northwest Institute for Nonferrous Metal Research[2]

WBP2-2 15:10–17:10

Stability Evaluation of MgB_2 Wire Based on Conduction Cooling

*Yang Gao[1], Yutaka Terao[1], Hiroyuki Ohsaki[1]

The university of Tokyo[1]

WBP2-3 15:10–17:10

Post-Annealing Effects of MgB_2 Thin Film Prepared on Stainless Steel Tape

*Hiroto Kambe[1], Naoya Kitamura[1], Ataru Ichinose[2], Takumu Iwanaka[3], Toshiaki

Kusunoki[3], Toshiya Doi[1]

Graduate School of Energy Science, Kyoto University, Kyoto, Japan[1]
Central Research Institute of Electric Power Industry, Yokosuka, Kanagawa, Japan[2]
Center for Technology Innovation, Hitachi, Ltd., Hitachi, Ibaraki, Japan[3]

WBP2-4 15:10–17:10

Research and Development of the LTS and HTS Superconductors at SC "VNIINM"

ILDAR M. Abdyukhanov[1], Alexander G. Silaev[1], Mikhail M. Potapenko[1], Victor I. Pantsyrny[1], *Maxim V. Alekseev[1], Yuriy V. Karasev[1], Valery A. Drobyshev[1], Marina V. Kravtsova[1], Anastasiia Tsapleva[1], Konstantin A. Mareev[1], Maria V. Krylova[1], Pavel A. Lykianov[1], Maria V. Polikarpova[1], Ilya I. Savelyev[1], Vadim Y. Korpusov[1], Nikolay I. Salunin[1], Igor N. Gubkin[1], Evgeny V. Nikulenkov[1], Anton V. Malchenkov[1], Dmitry N. Rakov[1], Yulia N. Belotelova[1], Pavel V. Konovalov[1], Elena V. Kotova[1]

SC A.A. Bochvar High-Technology Research Institute of Inorganic Materials, Russia[1]

WBP2-5 15:10–17:10

Influence of Hf diffusion for strain effect of Hf doped Nb_3Sn wires

*Masaki Nagasawa[1], Koji Himura[1], Hiroki Onodera[1], Hidetoshi Oguro[1]

Tokai University, Japan[1]

WBP2-6

(Withdrawn)

Bi- and Fe-based Superconductors

Chairperson: Yoshiyuki Yoshida (AIST)

WBP3-1 15:10–17:10

Fabrication and Characterizations of $KCa_2Fe_4As_4F_2$ Superconducting HIP Wires

*Sunseng Pyon[1], Daisuke Miyawaki[1], Tsuyoshi Tamegai[1], Hideki Kajitani[2], Norikiyo Koizumi[2], Satoshi Awaji[3], Hijiri Kito[4], Shigeyuki Yoshida[4], Yoshiyuki Yoshida[4]

Dept. of Appl. Phys., Univ. of Tokyo[1]
Naka Fusion Institute, National Institutes for Quantum and Radiological Science and Technology[2]
High Field Laboratory for Superconducting Materials, Institute for Materials Research, Tohoku University[3]
National Institute of Advanced Industrial Science and Technology[4]

WBP3-2 15:10–17:10

Effect of the metallic oxide mix-doping on the microstructure and superconducting properties of Bi-2223 Ag/tapes

*Xiaoye Lu[1], Danqing Yi[2], Akihiko Nagata[1]

Akita University, Japan[1]
Central South University, China[2]

WBP3-3 15:10–17:10

Bi2212 precursor powder and Bi2212 wires synthesized based on nanospray combustion technology

*Zhenbao Li[1], Guoqing Liu[1], Lihua Jin[1], Chengshan Li[1], Jianqing Feng[1], Shengnan Zhang[1]

Superconducting Materials Research Center, Northwest Institute for Nonferrous Metal Research, Xi'an, Shaanxi, P. R. China[1]

WBP3-4 15:10–17:10

Development of Bi-2223 high temperature superconducting tapes in NIN

*Pingxiang Zhang[1], Shengnan Zhang[1], Xiaobo Ma[1], Lijun Cui[1], Jianqing Feng[1], Chengshan Li[1]

Northwest Institute for Nonferrous Metal Research[1]

WBP3-5 15:10–17:10

Fabrication of (Ba,Na)Fe_2As_2 round wires and tapes using HIP process

*Daisuke Miyawaki[1], Sunseng Pyon[1], Satoshi Awaji[2], Hideki Kajitani[3], Norikiyo Koizumi[3], Hijiri Kito[4], Shigeyuki Ishida[4], Yoshiyuki Yoshida[4], Tsuyoshi Tamegai[1]

The University of Tokyo[1]
Institute for Materials Research, Tohoku University[2]
National Institute for Quantum and Radiological Science and Technology[3]
National Institute of Advanced Industrial Science and Technology[4]

Numerical Modeling

Chairperson: Yasunori Mawatari (AIST)

WBP4-1 15:10–17:10

Evaluation of Critical Current Superconducting Junction with a Crack by Using FEM

*Ruizhe Zhang[1], Yushi Kinoshita[1], Edmund Soji Otabe[1], Tomoyuki Akasaka[2], Atsushi Ishihara[2], Masaru Tomita[2]

Kyushu Institute of Technology, Fukuoka, Japan[1]
Railway Technical Research Institute, Tokyo, Japan[2]

WBP4-2 15:10–17:10

Peculiarities of dissipative phenomena in coated YBCO tapes carrying constant current during flux creep

*Vladimir (Rem) Romanovskiy[1]

National Research Center Kurchatov Institute[1]

WBP4-3 15:10–17:10

Numerical Study on AC Loss Properties of Two-Layer REBCO Power Cable by 3D

Finite Element Method

*Hideki Noji[1]

Department of Electrical and Computer Engineering, NIT, Miyakonojo College, Japan[1]

WBP4-4 15:10–17:10

Evaluation of SUperconductive Assisted Machine (SUAM) with Superconducting Coated Wires using Finite Element Method

*Yushi Kinoshita[1], Ruizhe Zhang[1], Edmund Soji Otabe[1], Keisuke Suzuki[1], Yuki Tanaka[1], Hidetaka Nakashima[1]

Kyushu Institute of Technology, Fukuoka, Japan[1]

WBP4-5 15:10–17:10

3D Numerical Study on Magnetization Losses in Twisted Soldered-Stacked-Square (3S) HTS wires

*Fei Gu[1], Lianhong Zhong[2], Xinhui Duan[2], Meng Song[2], Zhuyong Li[1], Zhiyong Hong[1], and Zhijian Jin[1]

Department of Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China[1]
Guangdong Power Grid Corporation, Guangzhou, China[2]

Dec. 3 (Tue.) Large Scale System Applications | First Exhibition Hall B

Protection and AC loss

Chairperson: Kazuhiro Kajikawa (Kyushu University)

APP1-1

(Moved to AP7-3)

APP1-2 15:10–17:10

One-dimensional quench analyses combined with quench experiments of conduction-cooled RE-123 coated conductors

*Xijie Luo[1], Satoru Inoue[1], Naoyuki Amemiya[1]

Kyoto University, Japan[1]

APP1-3 15:10–17:10

A Study on Temperature Distribution Measurement for a No-Insulation HTS Coil with Encapsulated Optical Fiber Based on Raman-Scattering Technology

*Yingying Lv[1], Junjie Jiang[1], Longbiao Wang[1], Zhuyong Li[1], Zhiyong Hong[1]

Department of Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China[1]

APP1-4 15:10–17:10

Substrate Temperature Dependence of AC Loss in BHO-doped SmBCO films.

*Hiroki Kato[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Nagoya University, Japan[1]

APP1-5 15:10–17:10

AC loss calculations of superferric magnets using HTS coils wound with stacked coated conductors and wound with CORCÒ wires

*Masahiro Yasunaga[1], Yang Li[1], Yusuke Sogabe[1], Yasuhiro Fuwa[2], Yoshihiro Ishi[1], Naoyuki Amemiya[1]

Kyoto University, Japan[1]
J-PARC, Japan[2]

APP1-6 15:10–17:10

Theoretical Evaluation of AC Losses and Screening-Current-Induced Fields in HTS Insert for High Field Magnet

*Hiroki Yokoyama[1], Botao Zhu[1], Kazuhiro Kajikawa[1], Satoshi Awaji[2], Arnaud Badel[2], Kohki Takahashi[2], Tatsunori Okada[2]

Department of Electrical and Electronic Engineering, Kyushu University, Japan[1]
High Field Laboratory for Superconducting Materials, Tohoku University, Japan[2]

APP1-7 15:10–17:10

Finite Element Analysis of Electromagnetic Responses in Pancake Coils for High Field Magnet Wound Using Two-ply Conductors

*Botao Zhu[1], Hiroki Yokoyama[1], Kazuhiro Kajikawa[1], Satoshi Awaji[2], Arnaud Badel[2], Kohki Takahashi[2], Tatsunori Okada[2]

Department Of Electrical And Electronic Engineering, Kyushu University, Japan[1]
High Field Laboratory For Superconducting Materials, Tohoku University, Japan[2]

Rotating machine 2

Chairperson: Zhenan Jiang (Victoria University of Wellington)

APP2-1 15:10–17:10

Novel Performance for WLTC Operation Mode of 50kW Fully Superconducting Motor Drive System

*Masaya Okuno[1], Taketsune Nakamura[1]

Kyoto University, Japan[1]

APP2-2 15:10–17:10

Optimal Design of Air-Core Superconducting Generator Using Simplex Method

Je-Min O[1], Gang-Hyeon Jang[2], Jung-In Lee[2], Tae-Kyoung Bang[2], Kiruba S. Haran[3], *Han-Wook Cho[1]

Dept. of Electrical, Electronics, and Comm. Eng. Edu., Chungnam National University, Daejeon, S. Korea[1]

Dept. of Electrical Engineering, Chungnam National University, Daejeon, S. Korea.[2]
Dept. of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, U.S.[3]

Magnet science and technology 2

Chairperson: Tomonori Watanabe (Chubu Electric Power)

APP3-1 15:10–17:10

Effectiveness of Filter Inductor of Rectifier Transformer Flux Pump in Energizing Multi-Stacked No-Insulation REBCO Pancake Coils

*Takanobu Mato[1], Thomas Kurauchi[1], So Noguchi[1]

Hokkaido University, Japan[1]

APP3-2 15:10–17:10

Experimental investigation of switching to normal state of CC-tapes under the action of magnetic field pulses

*Maxim Osipov[1], Sergey Pokrovskii[1], Dmitriy Abin[1], Irina Anishenko[1], Igor Rudnev[1]

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Russia[1]

APP3-3 15:10–17:10

Switching processes in 2G HTS tape under magnetic field and short current pulses

*Irina V Anischenko[1], Sergei V Pokrovskii[1], Dmitry A Abin[1], Maxim A Osipov[1], Igor A Rudnev[1]

NRNU MEPHI[1]

APP3-4 15:10–17:10

Electromagnetic and Mechanical Properties of Two-ply REBCO Tape double Pancake Coils

*Kohki Takahashi[1], Tatsunori Okada[1], Arnaud Badel[1], Satoshi Awaji[1], Hiroshi Miyazaki[2], Satoshi Hanai[2], Shigeru Ioka[2]

Institute for Materials Research, Tohoku University, Japan[1]
Toshiba Energy Systems & Solutions Corporation, Japan[2]

APP3-5 15:10–17:10

Investigation of current distribution in an HTS twisted stacked-tape cable conductor by self-field measurements

*Tetsuhiro Obana[1], Yoshiro Terazaki[1], Nagato Yanagi[1], Shinji Hamaguchi[1], Hirotaka Chikaraishi[1], Makoto Takayasu[2]

NIFS[1]
MIT[2]

APP3-6 15:10–17:10

Numerical Simulation of a Hybrid Trapped Field Magnet Lens (HTFML) Magnetized by Pulsed Fields

*Motoki Shinden[1], Sora Namba[1], Tatsuya Hirano[1], Hiroyuki Fujishiro[1], Tomoyuki Naito[1], Mark D. Ainslie[2]

Department of Physical Science and Materials Engineering, Faculty of Science and Engineering, Iwate University, Ueda, Morioka, Japan[1]
Department of Engineering, University of Cambridge, Cambridge, United Kingdom[2]

PLD

Chairperson: Takeharu Kato (Japan Fine Ceramics Center)

WBP5-1 11:00–13:00

Effects of growth temperature and laser repetition rate on the shape of nanorods in $BaSnO_3$-doped $SmBa_2Cu_3O_y$ films prepared by pulsed laser deposition method

*Takafumi Yamamoto[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Department of Electrical Engineering, Nagoya University, Japan[1]

WBP5-2 11:00–13:00

Thickening of $YBa_2Cu_3O_y$ coated conductors fabricated by self-heating technique in Pulsed Laser Deposition method and evaluation of the superconducting properties

*Wataru Sato[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Ataru Ichinose[2], Yutaka Yoshida[1]

Department of Electrical Engineering, Nagoya University, Japan[1]
Central Research Institute of Electric Power Industry, Japan[2]

WBP5-3 11:00–13:00

Deposition of thick superconducting YBCO films using the surface laser heating

*Jin Matsuzaka[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Nagoya University[1]

WBP5-4 11:00–13:00

Fabrication of $BaTiO_3/YBa_2Cu_3O_y$ Multi-layered Films for Superconducting Capacitors

*Yoshiyasu Moriguchi[1], Yuji Tuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Nagoya Univ. Japan[1]

WBP5-5 11:00–13:00

The in-field J_c in RTR-PLD $EuBa_2Cu_3O_y$+$BaHfO_3$ coated conductors

*Kenji Miyata[1], Jun Nishimura[1], Shuji Anno[1], Masashi Miura[1], Akira Ibi[2], Teruo Izumi[2]

Seikei University, Japan[1]
AIST,Japan[2]

WBP5-6 11:00–13:00

Effect of laser energy and laser repetition frequency on BHO shape in PLD method

*Taku Hibino[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Department of Electrical Engineering, Nagoya University, Japan[1]

MOD

Chairperson: Ryo Teranishi (Kyushu University)

WBP6-1 11:00–13:00

Improvement of critical current densities for Hf, Ce and La doped Gd123 thin film fabricated by fluorine-free MOD method

*Taishi Hatano[1], Joichiro Fukui[1], Osuke Miura[1], Ryusuke Kita[2]

Electrical Engineering and Computer Science, Tokyo Metropolitan University, Japan[1]
Electrical and Electronic Engineering, Shizuoka University, Japan[2]

WBP6-2 11:00–13:00

Film thickness dependence of in-field J_c in (Y,Gd)BaCuO+$BaMO_3$ (M=Zr, Hf) nanoparticle CCs

*Go Tsuchiya[1], Junya Kawanami[1], Masashi Miura[1], Masaru Kiuchi[2], Teruo Matsushita[2]

Seikei University, Japan[1]
Kyushu Institute of Technology, Japan[2]

WBP6-3 11:00–13:00

The influence of carrier density on the in-field J_c of (Y,Gd)BCO+BZO CCs

*Junya Ohta[1], Kazuki Shimizu[1], Masashi Miura[1], Akira Ibi[2], Koichi Nakaoka[2], Teruo Izumi[2]

Seikei University, Japan[1]
National Institute of advanced Industrial Science and Technology, Japan[2]

WBP6-4 11:00–13:00

Investigation of interim heat treatment process on TFA-MOD method for production of $BaZrO_3$ added $REBa_2Cu_3O_y$ coated conductors with high in-field performance

*Koichi Nakaoka[1], Akira Ibi[1], Takato Machi[1], Yukie Usui[1], Teruo Izumi[1]

National Institute of Advanced Industrial Science and Technology[1]

Flux Pinning and J_c

Chairperson: Kaname Matsumoto (Kyushu Institute of Technology)

WBP7-1 11:00–13:00

Competing flux pinning of columnar defects in different directions for high-T_c superconductors

*Tetsuro Sueyoshi[1], Masahiro Irie[1], Ryusei Enokihata[1], Yuka Hidaka[1], Takanori Fujiyoshi[1], Akane Kitamura[2], Yasuki Okuno[2], Norito Ishikawa[2]

Kumamoto University, Japan[1]
Japan Atomic Energy Agency, Japan[2]

WBP7-2 11:00–13:00

TDGL Simulation of Critical Current Density introducing z axis Anisotropy γ_z

*Rina Yonezuka[1], Yusei Hamada[1], Kazunori Kamiji[1], Edmund Soji Otabe[1], Yasunori Mawatari[2], Tetsuya Matsuno[3]

Kyushu Institute of Technology, Japan[1]
National Institute of Advanced Industrial Science and Technology, Japan[2]
National Institute of Technology Ariake College, Japan[3]

WBP7-3 11:00–13:00

J_C control by hybrid pinning of nanorods and nanoparticles in $YBa_2Cu_3O_{7-x}$ film

*Kenta Torigoe[1], Tomoya Horide[1], Kaname Matsumoto[1], Ryusuke Kita[2], Satoshi Awaji[3]

Kyushu Institute of Technology, Japan[1]
Shizuoka University[2]
Tohoku University[3]

WBP7-4 11:00–13:00

Enhanced pinning properties by refining Gd_2O_3 particles trapped in the $GdBa_2Cu_3O_{7-\delta}$ films via RCE-DR

*Insung Park[1], Won-Jae Oh[1], Jae-Hun Lee[2], Seung-Hyun Moon[2], Sang-Im Yoo[1]

Department of Material Science and Engineering, Research Institute of Advanced Materials (RIAM),Seoul National University, Seoul, Korea[1]
Superconductor, Nano & Advanced Materials Corporation (SuNAM Co.) Ltd, Anseong, Korea[2]

WBP7-5 11:00–13:00

Effect of post-annealing on the pinning properties of $GdBa_2Cu_3O_{7-\delta}$ coated conductors via RCE-DR

*Won-Jae Oh[1], Insung Park[1], Jae-Hun Lee[2], Seung-Hyun Moon[2], Kookchae Chung[3], Sang-Im Yoo[1]

Department of Material Science and Engineering, Research Institute of Advanced Materials (RIAM), Seoul National University, Korea[1]
Superconductor, Nano & Advanced Materials Corporation (SuNAM Co.) Ltd, Korea[2]
Department of Functional Nano Materials, Korea Institute of Materials Science, Korea[3]

WBP7-6 11:00–13:00

Effect of growth condition on lattice strain of $SmBa_2Cu_3O_y$ films induced by $BaHfO_3$ nanorods

*Yusuke Ichino[1], Shun Sato[1], Yuji Tsuchiya[1], Yutaka Yoshida[1]

Department of Electrical Engineering, Nagoya University[1]

WBP7-7 11:00–13:00

Improvement of critical current asymmetricity in $BaHfO_3$-doped $SmBa_2Cu_3O_y$ superconducting films by ion milling etching

*Tomohide Hori[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Department of Electrical Engineering, Nagoya University, Japan[1]

Coated Conductors

Chairperson: Yoshiyuki Yoshida (AIST)

WBP8-1 11:00–13:00

Highly reinforced, low magnetic and biaxially textured super high tungsten Ni-W alloy composite substrates used in coated conductors

*Yaotang Ji[1], Hongli Suo[1], Lin Ma[1], Zili Zhang[2], Min Liu[1], Jin Cui[1], Xinyu Wu[1], Chenxi Zhang[1]

Key Laboratory of Advanced Functional Materials, Ministry of Education, College of Materials Science and Engineering, Beijing University of Technology, Pingleyuan, Beijing[1]
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China[2]

WBP8-2 11:00–13:00

Laser scribing of stacked coated conductors laminated with solder

*Takato Machi[1], Akira Ibi[1], Takanobu Kiss[2], Masataka Iwakuma[2], Teruo Izumi[1]

National Institute of Advanced Industrial Science and Technology[1]
Kyushu University[2]

WBP8-3 11:00–13:00

Fabrication of $YBa_2Cu_3O_y$ coated conductor by Vapor-Liquid-Solid growth technique using Reel-to-Reel system

*Kento Yasuda[1], Tomohiro Ito[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Yutaka Yoshida[1]

Niigata University[1]

WBP8-4 11:00–13:00

Angular dependence of critical current for REBCO coated conductor under various bending strains

*Kazuhiro Hatano[1], Hidetoshi Oguro[1], Masashi Miura[2], Yusuke Ichino[3], Yoichi Kamihara[4]

Tokai University[1]
Seikei University[2]
Nagoya University[3]
Keio University[4]

WBP8-5 11:00–13:00

Study on $(Nd_xSr_{1-x})TiO_3$ thin film as conductive buffer layer for low-cost REBCO wire

*Seiya Inoue[1], Masaki Kabeya[1], Keisuke Ota[1], Ataru Ichinose[2], Toshiya Doi[1]

Kyoto University[1]
Central Research Institute of Electric Power Industry[2]

WBP8-6 11:00–13:00

Influence of Different Narrowing Methods on Critical Current of 1 mm HTS Tapes

*Mengxin She[1], Longbiao Wang[1], Zhuyong Li[1], Zhuyong Hong[1]

Department of Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China[1]

WBP8-7 11:00–13:00

Effect of extra addition of Ba into $YBa_2Cu_3O_{7-\delta}$ coated conductor with $BaHfO_3$

*Shin Yamada[1], Ryo Teranishi[1], Yukio Sato[1], Kenji Kaneko[1], Masayoshi Inoue[2]

Kyushu University, Japan[1]
Fukuoka Institute Of Technology, Japan[2]

WBP8-8 11:00–13:00

Development of artificial cracked RE123-coated conductor for realizing compatibility of critical current improvement and diamagnetism reduction

*Shintetsu Kanazawa[1], Yukihiro Kawamura[1], Chihiro Sekine[1]

Muroran Institute of Technology[1]

Superconducting Joints

Chairperson: Akiyoshi Matsumoto (National Institute for Materials Science)

WBP9-1 11:00–13:00

Study of hetero junction between RE123 and Bi2223 tapes with JIM method

*Shintetsu Kanazawa[1]

Muroran Institute of Technology[1]

WBP9-2 11:00–13:00

(Withdrawn)

WBP9-3 11:00–13:00

Superconducting Joints of *In Situ* PIT and IMD Processed MgB_2 Conductors

*Dipak Patel[1], Akiyoshi Matsumoto[1], Hiroaki Kumakura[1], Su-Hun Kim[2], Minoru Maeda[3], Seyong Choi[3], Jung Ho Kim[4]

National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan[1]
Dept. of Electrical Engineering, Kyungpook National University, Daegu, Republic of Korea[2]
Dept. of Electrical Engineering, Kangwon National University, Kangwon, Republic of Korea[3]
Institute for Superconducting and Electronic Materials, University of Wollongong, North Wollongong, NSW, Australia[4]

WBP9-4 11:00–13:00

The development of superconducting joint technologies for MgB_2 wires

*Akiyoshi Matsumoto[1], Dipak Patel[1], Yuka Hara[1], Toru Hara[1], Hiroaki Kumakura[1]

National Institute for Materials Science[1]

WBP9-5 11:00–13:00

Superconducting Joint Between $Ba_{1-x}K_xFe_2As_2$ Tapes by Using a Cold-press Technique

*Shota Imai[1,2], Shigeyuki Ishida[2], Yoshinori Tsuchiya[2], Akira Iyo[2], Hiroshi Eisaki[2], Taichiro Nishio[1], Yoshiyuki Yoshida[2]

Department of Physics, Tokyo University of Science Japan[1]
National Institute of Advanced Industrial Science and Technology Japan[2]

WBP9-6 11:00–13:00

Fabrication of additional deposited layer of $GdBa_2Cu_3O_{7-\delta}$ on coated conductors for joint

*Shotaro Yasuyama[1], Tomohiro Miyajima[1], Ryo Teranishi[1], Yukio Sato[1], Kenji Kaneko[1], Valery Petrykin[2], Sergey Lee[2], Satoshi Awaji[3], Tatsunori Okada[3], Akiyoshi Matsumoto[4]

Kyushu University, Japan[1]
SuperOx Japan, Japan[2]
Tohoku University, Japan[3]
National Institute For Materials Science, Japan[4]

Dec. 5 (Thu.) Electronic Devices — First Exhibition Hall B

Analog devices

Chairperson: Yoshimi Hatsukade (Kindai University)

EDP1-1 11:00–13:00

A Study of the HTS Josephson Junction Formed by a Ga Focused Ion Beam

*Kanji Hayashi[1], Teppei Ueda[1], Ryo Ohtani[1], Seiichiro Ariyoshi[1], Saburo Tanaka[1]

Toyohashi University of Technology, Toyohashi, Japan[1]

EDP1-2 11:00–13:00

Non-contacting ultrasonic guided wave testing for ferromagnetic pipes using HTS-SQUID gradiometer

*Yoshimi Hatsukade[1], Yuki Azuma[1], Keisuke Watanabe[1]

Kindai University[1]

EDP1-3 11:00–13:00

Performance of Digital SQUID with Sub-Flux Quantum Feedback Resolution fabricated using 10 kA/cm² Nb process

*Kohki Itagaki[1], Itta Oshima[1], Yuichi Hasegawa[1], Ryo Matsunawa[1], Masato Naruse[1],

Tohru Taino[1], Hiroaki Myoren[1]

Saitama University[1]

EDP1-4 11:00–13:00

Implementation of interface circuit for Digital SQUID with sub-Flux Quantum Feedback Resolution

*Ryo Matsunawa[1], Kohki Itagaki[1], Itta Oshima[1], Yuichi Hasegawa[1], Masato Naruse[1], Tohru Taino[1], Hiroaki Myoren[1]

Saitama University[1]

EDP1-5 11:00–13:00

Theory for the Response of a Superconducting Kinetic Inductance Detector to an Electromagnetic Wave Packet

*Tomio Koyama[1], Takekazu Ishida[1,2]

Division of Quantum and Radiation Engineering, Osaka Prefecture University[1]
NanoSquare Research Institute, Osaka Prefecture University[2]

EDP1-6 11:00–13:00

Reduction of the leakage current for embedded STJ

*Yuichiro Ito[1], Masahiro Aoyagi[2], Chiko Otani[3], Masato Naruse[1], Hiroaki Myoren[1], Tohru Taino[1]

Saitama University Japan[1]
AIST Japan[2]
RIKEN Japan[3]

EDP1-7 11:00–13:00

Improvement of spatial resolution using Substrate Absorption type STJ

*Mitsumasa Hoshi[1], Masahiko Sone[1], Yoshiaki Sasaki[2], Chiko Otani[2], Masato Naruse[1], Hiroaki Myoren[1], Tohru Taino[1]

Saitama University Japan[1]
RIKEN Japan[2]

EDP1-8 11:00–13:00

Develipment of STJ with large detection area for neutron detector

*Kai Kudo[1], Masahiro Ukibe[2], Chiko Otani[3], Masato Naruse[1], Hroaki Myoren[1], Tohru Taino[1]

Saitama University Japan[1]
AIST Japan[2]
RIKEN Japan[3]

EDP1-9 11:00–13:00

Development of Superconducting Single-Photon Detector(SSPD) using molybdenum nitride thin film

*Kento Sakai[1], Kou Ohnishi[2], Wakako Nakano[2], Yasutaka Matsuo[2], Daisuke Sakai[1], Hiroyuki Shibata[1]

Kitami Institute of Technology, Japan[1]
Hokkaido University, Japan[2]

EDP1-10 11:00–13:00

Improvement of detection efficiency by reducing shunt resistance of SSPDs

*Kyotaro Ono[1], Issei Kurokawa[1], Kento Sakai[1], Kou Ohnishi[2], Wakako Nakano[2], Daisuke Sakai[1], Hiroyuki Shibata[1]

Kitami Institute of Technology, Hokkaido, Japan[1]
Hokkaido University, Hokkaido, Japan[2]

EDP1-11 11:00–13:00

Iridium-based superconducting optical transition edge sensor for single-photon detection

*Yuki Mitsuya[1], Yoshitaka Miura[1], Masashi Ohno[1], Daiji Fukuda[2], Hiroyuki Takahashi[1]

The University of Tokyo[1]
National Institute of Advanced Industrial Science and Technology[2]

EDP1-12 11:00–13:00

Kinetic inductance neutron detector operated at near critical temperature

*THE DANG VU[1], Kazuma Nishimura[2], Hiroaki Shishido[2,3], Masahide Harada[1], Kenichi Oikawa[1], Shigeyuki Miyajima[4], Mutsuo Hidaka[5], Takayuki Oku[1], Kazuhiko Soyama[1], Kazuya Aizawa[1], Kenji M Kojima[6,7], Tomio Koyama[7], Alex Malins[8], Masahiko Machida[8], Takekazu Ishida[3,7]

Materials and Life Science Division, J-PARC Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan[1]
Department of Physics and Electronics, Osaka Prefecture University, Sakai, Osaka, Japan[2]
NanoSquare Research Institute, Osaka Prefecture University, Sakai, Osaka, Japan[3]
Advanced ICT Research Institute, NICT, Kobe, Hyogo, Japan[4]
National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan[5]
Centre for Molecular and Materials Science, TRIUMF, Vancouver, BC, Canada[6]
Division of Quantum and Radiation Engineering, Osaka Prefecture University, Sakai, Japan[7]
Japan Atomic Energy Agency, Center for Computational Science and e-Systems, Japan[8]

EDP1-13 11:00–13:00

Design and fabrication of Programmable Josephson Voltage Standard Circuit for 100 V ac-voltage standard

*Hirotake Yamamori[1], Michitaka Maruyama[1], Yasutaka Amagai[1], Takeshi Shimazaki[1]

AIST, Japan[1]

EDP1-14 11:00–13:00

Optical Ppulse-Driven Integrated Quantum Voltage Noise Source for Johnson Noise Thermometer

*CHIHARU Urano[1], Tomoya Irimatsugawa[1], Takahiro Yamada[2]

National Metrology Inst. of Japan, National Inst. of Advanced Industrial Science and Technology[1]
Nanoelectronics Research Inst., National Inst. of Advanced Industrial Science and Technology[2]

EDP1-15 11:00–13:00

Investigation of Thermal Resistance in a Cryopackage for Programmable Josephson Voltage Standard Device

*Michitaka Maruyama[1], Takeshi Shimazaki[1], Yasutaka Amagai[1], Hirotake Yamamori[2]

National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology (AIST)[1]
Nanoelectronics Research Institute (NeRI), National Institute of Advanced Industrial Science and Technology (AIST)[2]

EDP1-16 11:00–13:00

Estimation of Electricity Storage Density of Compact SMESs Composed of Si-wafer Stacks Loaded with Superconducting Thin Film Coils in Spiral Trenches under the Constraint of Critical Magnetic Flux Density

*Tomoyoshi Motohiro[1], Minoru Sasaki[2], Joo-Hyong Noh[3]

Institutes of Innovation for Future Society, Nagoya University, Japan[1]
Graduate School of Eng., Toyota Technological Institute, Japan[2]
Mater. & Surf. Eng. Res. Inst., Kanto-Gakuin University, Japan[3]

EDP1-17 11:00–13:00

Evaluation of surface morphology of Pb-In alloy films for superconducting bumps utilized in a three-dimensional packaging structure of X-ray detector

*Yuki Hayashi[1], Hiroshi Nakagawa[2], Masahiro Aoyagi[2], Katsuya Kikuchi[2], Masato Naruse[1], Hiroaki Myoren[1], Tohru Taino[1]

Saitama University Japan[1]
AIST Japan[2]

EDP1-18 11:00–13:00

Micro-Fabrication of NdFeAs(O,F) Thin Films and Evaluation of the Transport Properties for Future Particle-Detector Application

*Yasunari Tsuji[1], Keisuke Kondo[1], Takafumi Hatano[1], Kazumasa Iida[1], Nobuyuki Zen[2], Yasunori Mawatari[2], Hiroshi Ikuta[1]

Department of Materials Physics, Nagoya University, Japan[1]
Nanoelectronics Research Institute, AIST, Japan[2]

EDP1-19 11:00–13:00

Prototyping new type $Bi_2Sr_2CaCu_2O_{8+x}$ devices using a consumer-oriented inkjet printer

*Yasuyuki Yamada[1], Tomoichiro Okamoto[2]

Department of Innovative Electrical and Electronic Engineering, National Institute of Technology, Oyama College[1]

Electrical, Electronics and Information Engineering, Nagaoka University of Technology[2]

EDP1-20 11:00–13:00

Design of High Quality Factor RF Coil Using Superconducting Bulk

Takanori Fujita[1], Naoto Sekiya[1]

University of Yamanashi[1]

EDP1-21 11:00–13:00

Development of Superconducting Filter for Deep Space Exploration Ground Station Receiving System

*Takuma Hayashi[1], Naoto Sekiya[1], Takeshi Ohno[2]

University of Yamanashi (Japan)[1]
Nitsuki (Japan)[2]

Digital devices & qubits

Chairperson: Masamitsu Tanaka (Nagoya University)

EDP2-1 11:00–13:00

Design and Error-Rate Evaluation of RSFQ Logic Gates Comprising a Toggle Storage Loop

*Koki Yamazaki[1], Hiroshi Shimada[1], Yoshinao Mizugaki[1]

The University of Electro-Communications[1]

EDP2-2 11:00–13:00

Single-Flux-Quantum Parallel Multiplier Using Accumulator Unit

*Zongyuan Li[1], Yuki Yamanashi[1], Nobuyuki Yoshikawa[1]

Yokohama National University[1]

EDP2-3 11:00–13:00

Investigation of influence by flux trapping for interconnection of adiabatic quantum-flux-parametron circuits

*Tomoyuki Tanaka[1], Christopher L. Ayala[2], Nobuyuki Yoshikawa[1,2]

Graduate School of Engineering Science, Yokohama National University[1]
Institute of Advanced Sciences, Yokohama National University[2]

EDP2-4 11:00–13:00

Numerical and Experimental Analysis of Influences of 1/*f* noises on Superconducting Integrated Circuits

*Yusuke Tsuna[1], Yuki Yamanashi[1,2], Nobuyuki Yoshikawa[1,2]

Department of Electrical and Computer Engineering, Yokohama National University[1]
Institute of Advanced Sciences, Yokohama National University[2]

EDP2-5 11:00–13:00

Development of Majority-Logic-Based Top-Down Environment for Adiabatic Quantum-Flux-Parametron Circuits

*Ro Saito[1], Christopher L. Ayala[2], Olivia Chen[2], Tomoyuki Tanaka[1], Nobuyuki Yoshikawa[1]

Electrical and Computer Engineering, Yokohama National University[1]
Institute of Advanced Sciences, Yokohama National University[2]

EDP2-6 11:00–13:00

Design and evaluation of multi-bit-input single-flux-quantum autocorrelator system for astronomical data analysis

*Lisa Shirakawa[1], Yuki Yamanashi[1,2], Nobuyuki Yoshikawa[1,2]

Department of Electrical and Computer Engineering, Yokohama National University[1]
Institute of Advanced Sciences, Yokohama National University[2]

EDP2-7 11:00–13:00

Adiabatic Quantum-Flux-Parametron Design-For-Testability Components for Large-Scale Digital Circuits

*Christopher L. Ayala[1], Naoki Takeuchi[1,2], Nobuyuki Yoshikawa[1,3]

Institute of Advanced Sciences, Yokohama National University, Japan[1]
PRESTO, Japan Science and Technology Agency, Japan[2]
Dept. of Electrical Engineering & Computer Engineering, Yokohama National University, Japan[3]

EDP2-8 11:00–13:00

Investigation on the Method to Evaluate the Energy Dissipation of General Adiabatic Quantum-Flux-Parametron Logic Gates

*Taiki Yamae[1], Naoki Takeuchi[2], Nobuyuki Yoshikawa[1,2]

Department of Electrical and Computer Engineering, Yokohama National University, Japan[1]
Institute of Advanced Sciences, Yokohama National University, Japan[2]

EDP2-9 11:00–13:00

Energy Consumption of Half Flux Quantum Circuits Using π-Shifted Josephson Junctions

*Feng Li[1], Yuto Takeshita[1], Daiki Hasegawa[1], Kyosuke Sano[1], Masamitsu Tanaka[1], Taro Yamashita[1,2], Akira Fujimaki[1]

Nagoya University[1]
JST-PRESTO[2]

EDP2-10 11:00–13:00

A Global Routing Method with Wire Length Budgeting for PTL Routing of SFQ Logic Circuits

*Kei Kitamura[1], Kazuyoshi Takagi[2], Naofumi Takagi[1]

Graduate School of Informatics, Kyoto University, Japan[1]
Graduate School of Engineering, Mie University, Japan[2]

EDP2-11 11:00–13:00

Scan Design with Clockless Logic Gates for SFQ Circuits

*Takahiro Kawaguchi[1], Kazuyoshi Takagi[2], Naofumi Takagi[1]

Graduate School of Informatics, Kyoto University, Sakyo-ku, Kyoto, Japan[1]
Graduate School of Engineering, Mie University, Tsu, Mie, Japan[2]

EDP2-12 11:00–13:00

Investigation of the superconducting flux qubit for quantum annealing utilizing multi-layered Nb/AlOx/Nb Josephson junction technology

*Narii Watase[1], Daisuke Saida[1], Yuki Yamanashi[2]

MDR Inc.[1]
Yokohama National University[2]

Dec. 5 (Thu.) Large Scale System Applications | First Exhibition Hall B

Electric power and industry 2

Chairperson: Shinichi Mukoyama (Furukawa Electric)

APP4-1 11:00–13:00

Estimation of Machine Parameters in Superconducting Transformer using Differential Evolution

*Tomohiro Yonenaka[1], Tatsuki Muraoka[1], Yuto Ichiki[1], Edmund Soji Otabe[1], Yoshitaka Tokunaga[2]

Kyushu Institute of Technology Japan[1]
Okayama Prefectural University Japan[2]

APP4-2 11:00–13:00

Development of a High Temperature Superconducting Transformer for a 1 kA - 1 kHz Class Compact Power Supply

*Takahito Yamanishi[1], Nozomu Nanato[1], Masaya Okamoto[1]

Okayama University(Japan)[1]

APP4-3 11:00–13:00

Basic Study for an Air-core Hybrid Bi2223 High Temperature Superconducting Transformer for a Compact Current Source and its Protection System for Normal Transitions

*Shota Tenkumo[1], Nozomu Nanato[1], Kouki Matsuda[1]

Okayama University. of Japan[1]

APP4-4 11:00–13:00

Comparison of several types of fault current limiter introduction into frequency converters of Shinkansen

*Takahiro Akahori[1], Yutaka Terao[1], Hiroyuki Ohsaki[1]

The University of Tokyo[1]

APP4-5 11:00–13:00

Electromagnetic and Thermal Coupled Analysis of an SFCL REBCO Coil Immersed in Liquid Nitrogen Considering Boiling Phenomenon

*Kezhen Qian[1], Yutaka Terao[2], Hiroyuki Ohsaki[2]

Graduate School of Engineering, The University of Tokyo, Japan[1]
Graduate School of Frontier Sciences, The University of Tokyo, Japan[2]

APP4-6 11:00–13:00

An Approach to Development of the HTS Magnet for SMES at JINR

Hamlet Khodzhibagiyan[1], Valeriy Drobin[1], Gennadiy Dorofeev[1], Victor Karpinskiy[1], Alexandr Shurygin[1], *Mikhail Novikov[1], Dmitriy Kashaev[1], Maxim Zaslavskiy[1], George Kachlishvili[1]

Laboratory of High Energy Physics, Joint Institute for Nuclear Research, Dubna, Moscow Region, Russia[1]

APP4-7 11:00–13:00

Theoretical and experimental investigation of R&W and W&R SMES coils wound with large-scale MgB2 Rutherford cables operated around liquid hydrogen temperature

*Moeto Hira[1], Tsuyoshi Yagai[1], Tomoaki Takao[1], Naoki Hirano[2], Takakazu Shintomi[6], Yasuhiro Makida[6], Toshihiro Komagome[3], Taiki Onji[4], Atsushi Ishihara[4], Masaru Tomita[4], Makoto Tsuda[5], Takataro Hamajima[5]

Science and Applied Technology, Sophia University, Tokyo, Japan[1]
NIFS, Toki, Japan[2]
Mayekawa MFG, Moriya, Japan[3]
Railway Technical Research Institute, Kunitachi, Japan[4]
Tohoku University, Sendai, Japan[5]
KEK, Tsukuba, Japan[6]

APP4-8 11:00–13:00

Heat leak measurement of the cryogenic pipe for the superconducting power transmission at different surface temperatures

*Hirofumi Watanabe[1], Toru Takeuchi[1], Katsuya Miyake[1], Satarou Yamaguchi[1]

Chubu University[1]

Magnetic Levitation and bearing

Chairperson: Tetsuo Oka (Shibaura Institute of Technology)

APP5-1 11:00–13:00

Magneto-Archimedes levitation of metals by optimized ferromagnetic cylinder arrays in magnetic fields

*Daiki Yamamoto[1], Yuto Tagawa[1], Osuke Miura[1]

Electrical Engineering and Computer Science, Graduate School of Systems Design, Tokyo Metropolitan University, Japan[1]

APP5-2 11:00–13:00

Localization and Mapping for HTS Maglev Test Vehicle Based on Visual SLAM

Yi Li[1], Zigang Deng[2]

School of Information Science & Technology, Southwest Jiaotong University, Chengdu, China[1]
Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University, Chengdu, China[2]

APP5-3 11:00–13:00

Active Vibration Control of Secondary Suspension Based on High-Temperature Superconducting Maglev System

Qingshu LI[1], Zigang DENG[1], Haitao LI[1]

Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University, Chengdu, China[1]

APP5-4 11:00–13:00

Dynamic modeling of bulk superconductors with different *E-J* relationships for high temperature superconducting Maglev systems

Ye Hong[1], Jun Zheng[1], Zhichuan Huang[1], Hengpei Liao[1]

Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University, Chengdu, P. R. China[1]

APP5-5 11:00–13:00

Simulation Study on Maglev Performance of High Temperature Superconductors in Low Pressure Environment

*Weifeng Zhang[1], Zigang Deng[1], Yu Liu[2]

Southwest Jiaotong University, China[1]
CRRC Tangshan Co., Ltd., China[2]

APP5-6 11:00–13:00

Load characteristics of contactless bearing based on HTSC tape

*Igor Rudnev[1], Maxsim Osipov[1], Aleksander Starikovskii[1], Dmitriy Abin[1], Irina Anischenko[1], Sergey Pokrovsrii[1]

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia[1]

APP5-7 11:00–13:00

Moddeling of thrust magnetic bearings for levitation systems

*Sergei Pokrovskii[1], Irina Anischenko[1], Igor Rudnev[1]

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Russia[1]

Dec. 5 (Thu.) Late News **First Exhibition Hall B**

Late news

Chairperson: Hirofumi Yamasaki (AIST)

LNP-1 11:00–13:00

DESIGN AND MANUFACTURING STATUS OF SUPERCONDUCTING MAGNET FOR MULTI-PURPOSE DETECTOR AT NICA COLLIDER

*N.Emelianov[1], S.Gerasimov[1], G.Kekelidze[1], V.Kekelidze[1], A.Sorin[1], N.Topilin[1], A.Vodopianov[1], R.Marabotto[2], N.Valle[2], A.Capelluto[2], S.Grillo[2], M.Neri[2], R.Repetto[2], D.Ventura[2], E.Koshurnikov[3], O.Kovalchuk[3], V.Ochrimenko[3]

Joint Institute for Nuclear Research[1]
ASG Superconductors[2]
"Neva-Magnet" [3]

LNP-2 11:00–13:00

Complex Research of the Unclosed HTS Shield for Improving Homogeneity of the Magnetic Field

*Evgeny Kulikov[1], Gennady Dorofeev[1,2], Kamil Kozlowski[1,3], Lukasz Tomków[4], Valery Drobin[1]

Joint Institute for Nuclear Research, Veksler and Baldin Laboratory of High Energy Physics, Joliot-Curie 6, Dubna, Russia[1]
National Research Center «Kurchatov Institute, Akademika Kurchatova, Moscow, Russia[2]
GSI Helmholtz Centre for Heavy Ion Research, Planckstraÿe 1, Darmstadt, Germany[3]
Wroclaw University of Technology, Faculty of Mechanical and Power Engineering, Poland[4]

LNP-3 11:00–13:00

First-cut Design of a No-Insulation All-REBCO 7 T Whole-body MRI Magnet

Kibum Choi[1], Jeonghwan Park[1], Jeseok Bang[1], Uijong Bong[1], Seong Hyeon Park[1], Seungyong Hahn[1]

Seoul National University, Seoul, Korea[1]

LNP-4 11:00–13:00

Opportunities and Challenges of No-insulation Winding Technique for Stability Enhancement of Low Temperature Superconductor Magnet

Jeseok Bang[1], Kibum Choi[1], Soobin An[1], Jaemin Kim[1], Seungyong Hahn[1]

Seoul National University, Seoul, Korea[1]

LNP-5 11:00–13:00

Fabrication and Performance Evaluation of a 400-MHz 66-mm Bore All-REBCO Conduction-Cooled NMR Magnet

Jaemin Kim[1, 2], Yungil Kim[1], Young Jin Hwang[3], Jae Young Jang[3], Sunghun Oh[1], Sehwan In[4], Jeseok Bang[2], Hankil Yeom[4], Seunghyun Song[3], Haeryong Jeon[3], Hongmin Yang[5], Myunghwan Ku[1], Kwangmin Kim[6], Kwanglok Kim[6], Yong-Ju Hong[4], Hankil Yeom[4], Min Cheol Ahn[5], Hunju Lee[1], SangGap Lee[3], Seungyoung Hahn[2]

SuNAM, Anseong, Gyeonggi-do, Republic of Korea[1]
Seoul National University, Seoul, Republic of Korea[2]
Korea Basic Science Institute, Daejeon, Republic of Korea[3]
Korea Institute of Machinery and Materials, Daejeon, Republic of Korea[4]
Kunsan National University, Kunsan, Jeollabuk-do, Republic of Korea[5]
National High Magnetic Field Laboratory, Florida State University, Tallahassee, USA[6]

LNP-6 11:00–13:00

Simulation of Superconducting Coplanar Waveguides for Quantum Computing

Seong Hyeon Park[1], Junyoung An[1], Jeseok Bang[1] and Seungyong Hahn[1]

Department of Electrical and Computer Engineering, Seoul National University, Seoul, Korea[1]

LNP-7 11:00–13:00

Comparative Analysis of Superconducting Bulk-type magnet and Wire-type electromagnet Applicable to Mechanical DC Circuit Breakers

Sang-yong Park[1], Hui-Seok Gu[1], Hyo-sang Choi[1]

Department of Electrical Engineering, Chosun University[1]

LNP-8 11:00–13:00

Analysis of the Operating Characteristics of fault Current limited DC Circuit Breaker According to Superconducting Winding Type

Hui-Seok Gu[1], Sang-Yong Park[1], Hyo-Sang Choi[1]

Department of Electrical Engineering, Chosun University[1]

LNP-9 11:00–13:00

The Search of New Superconducting Materials in Ni – N and Ni –H Systems

*Pavel N. Gavryushkin[1,2], Nursultan Sagatov[1,2], Dinara Sagatova[1,2], Maxim V. Banaev[1,2], Katerina G. Donskih[1,2]

Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia[1]
Novosibirsk State University, Novosibirsk, Russia[2]