Oral Sessions

Dec. 12 (Wed.) Plenary Lecture — Main Convention Hall

Chairperson: Atsutaka Maeda (The University of Tokyo)

PL1-INV 9:30–10:10

10th Anniversary of High Tc Iron-based Superconductors: What we learned

*Hideo Hosono[1]

Tokyo Institute of Technology[1]

Chairperson: Mitsuho Furuse (AIST)

PL2-INV 10:10–10:50

Recent Topics and Future Prospects of Superconducting Joints Connecting HTS Materials

*Jun-ichi Shimoyama[1]

Aoyama Gakuin University[1]

Chairperson: Naoyuki Amemiya (Kyoto University)

PL3-INV 10:50–11:30

Superconducting Technology for Future Aircraft Electric Propulsion

*Hiroyuki Ohsaki[1]

Graduate School of Frontier Sciences, the University of Tokyo, Japan[1]

Dec. 13 (Thu.) Plenary Lecture — Main Convention Hall

Chairperson: Yoshiyuki Yoshida (AIST)

PL4-INV 9:00–9:40

High Temperature Superconductors for High Field Magnets

*David C Larbalestier[1]

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

Chairperson: Naoyuki Amemiya (Kyoto University)

PL5-INV 9:40–10:20

A Snapshot of Superconductivity Activities in the United States

*Bruce P. Strauss[1]

U. S. Department of Energy[1]

Dec. 14 (Fri.) Plenary Lecture — Main Convention Hall

Chairperson: Mutsuo Hidaka (AIST)

PL6-INV 9:00–9:40

Superconducting quantum-classical information processing systems

*Oleg Mukhanov[1,2]

Hypres[1]
SeeQC[2]

Dec. 12 (Wed.) Outreach Session — Room 202

Chairperson: Michiya Okada (AIST)

OR-1-INV 17:00–17:30

Development of metal exploration system using high-Tc SQUID

*Eiichi Arai[1], Satoshi Ueda[1], Masayuki Motoori[1], Kazuo Masuda[1], Akira Tsukamoto[2], Tsunehiro Hato[2], Hidehiro Ishikawa[3], Hidehisa Watanabe[3]

Japan Oil, Gas and Metals National Corporation[1]
Superconducting Sensing Technology Research Association[2]
Mitsui Mineral Development Engineering Co., Ltd[3]

OR-2-INV 17:30–18:00

Economy of thermal energy storage power plant and usage of superconductivity

*Toru Okazaki[1]

The Institute of Applied Energy[1]

Dec. 12 (Wed.) Physics and Chemistry **Room 201**

Vortex physics

Chairpersons: Wai-Kwong Kwok (Argonne National Laboratory) and Yusuke Kato (The University of Tokyo)

PC1-1-INV 12:30–13:00

Guiding Vortex Matter via Magnetic Patterned Structures

*Wai-Kwong Kwok[1], Vitalii K. Vlasko-Vlasov[1], Timothy Benseman[2], Daniel Rosenmann[3], Yong-Lei Wang[1,4], Xiaoyu Ma[5], Jing Xu[1,6], Yangyang Lyu[1,4], Zhi-Li Xiao[1,6], Alexey Snezhko[1], Boldizsar Janko[5], Fabiano Colauto[7], Ralu Divan[3], John E. Pearson[1]

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Department of Physics, University of Notre Dame, Notre Dame, Indiana, USA[5]
Department of Physics, Northern Illinois University, DeKalb, Illinois, USA[6]
Federal University of Sao Carlos, Physics Department, SP, Brazil[7]

PC1-2-INV 13:00–13:30

Theory of Forces on Quantum Vortex in Type II Superconductors

*Yusuke Kato[1], Shunki Sugai[1], Noriyuki Kurosawa[1]

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

PC1-3 13:30–13:45

Competition between dynamic ordering and disordering for vortices under asymmetric periodic drive

*Mihaly Dobroka[1], Koichiro Ienaga[1], Shin'ichi Kaneko[1], Satoshi Okuma[1]

Tokyo Institute of Technology[1]

Novel materials

Chairpersons: Alberto Morpurgo (University of Geneva) and Takashi Uchihashi (NIMS)

PC2-1-INV 13:45–14:15

Vortex dynamics in Noncentrosymmetric 2D Superconductors

Y. Itahashi[1], Y. Saito[1], T. Ideue[1], T. Nojima[2], *Y. Iwasa[1,3]

QPEC & Department of Applied Physics, University of Tokyo, Tokyo, Japan[1]
Institute for Materials Research, Tohoku University, Sendai, Japan[2]
RIEN Center for Emergent Matter Science, Wako, Japan[3]

PC2-2-INV 14:15–14:45

Unconventional gate-induced superconductivity in transition metal dichalcogenides

*Alberto Morpurgo[1]

University of Geneva, Switzerland[1]

PC2-3-INV 14:45–15:15

Superconducting Atomic-layers on Silicon: Superconductivity Meets Surface Science

*Takashi Uchihashi[1]

National Institute for Materials Science, Japan[1]

PC2-4 15:15–15:30

Angular Dependence of Upper Critical Field Enhanced by Spin-Orbit Interaction in Ion-gated $SrTiO_3$

*Takumi Ouchi[1], Sunao Shimizu[2], Yoshihiro Iwasa[2,3], Tsutomu Nojima[1]

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RIKEN Center for Emergent Matter Science, Japan[2]
QPEC and Department of Applied Physics, The University of Tokyo, Japan[3]

PC2-5 15:30–15:45

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

*Yanpeng Qi[1]

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

Dec. 12 (Wed.) Wires and Bulk **Room 102**

Recent progress of CC

Chairpersons: David Larbalestier (Florida State University) and Yasuhiro Iijima (Fujikura)

WB1-1-INV 12:30–12:55

High Performance Coated Conductors for High Magnetic Field Applications

*Venkat Selvamanickam[1]

University of Houston[1]

WB1-2-INV 12:55–13:20

Recent Activities on R&D of coated conductors in AIST

*Teruo IZUMI[1], Takato Machi[1], Akira IBI[1], Koichi NAKAOKA[1], Michio SATO[1], Takeharu KATO[2], Masataka IWAKUMA[3], Masashi MIURA[4], Takanobu KISS[3], Satoshi AWAJI[5]

Advanced Industrial Science and Technology, Japan[1]
Japan Fine Ceramics Center, Japan[2]
Kyushu University, Japan[3]

Seikei University, Japan[4]
Tohoku University, Japan[5]

WB1-3-INV 13:20–13:45

Preparation of YBCO Film on Conductive Nb-doped $SrTiO_3$ and Ni Buffered {100}<001> Cu/SS316 Lamination Tape

*Toshiya Doi[1], Kota Yamaguchi[1], Shigeru Horii[1], Ataru Ichinose[2]

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

WB1-4-INV 13:45–14:10

Electromagnetic loss characterization of a flexible woven HTS Cable

Guy Dubuis[1,2], Zhenan Jiang[1], *Nicholas J Long[1]

Robinson Research Institute, Victoria University of Wellington, Lower Hutt, New Zealand[1]
The MacDiarmid Inst. for Advanced Materials & Nanotechnology, Wellington, New Zealand[2]

WB1-5 14:10–14:30

Asymmetric Critical Current in REBCO Films toward Novel Superconducting Diodes

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

Nagoya University[1]

WB1-6-INV 14:30–14:55

Measurement and analysis of longitudinal I_c variation in long coated conductors fabricated by different processes: IBAD-PLD and ISD-coevaporation methods

*Takanobu Kiss[1], Takumi Suzuki[1], Shohei Noda[1], Yuki Yamauchi[1], Kohei Higashikawa[1], Wataru Hirata[2], Shinji Fujita[2], Yasuhiro Iijima[2], Markus Bauer[3]

Dept. of Electrical Engineering, Kyushu University, Fukuoka, Japan[1]
Fujikura Ltd. Sakura, Japan[2]
THEVA GmbH, Ismaning, Deutschland[3]

WB1-7 14:55–15:15

Characterization of Pinning Center in Zr-doped (Gd,Y)$Ba_2Cu_3O_x$Superconductor Tape by Anomalous Small-Angle X-ray Scattering

*Yojiro Oba[1], Hirokazu Sasaki[2], Satoshi Yamazaki[2], Ryusuke Nakazaki[2], Masato Ohnuma[3]

Japan Atomic Energy Agency[1]
Furukawa Electric Co., Ltd.[2]
Hokkaido University[3]

Dec. 12 (Wed.) Electronic Devices **Room 202**

Sensing

Chairpersons: Xiaoming Xie (SIMIT/Chinese Academy of Sciences) and Hiroyuki Shibata (Kitami Institute of Technology)

ED1-1-INV 12:30–12:55

Superconducting detector technologies for Single Photonics and Quantum Information

*Sae Woo Nam[1]

National Institute of Standards and Technology, U. S. A.[1]

ED1-2-INV 12:55–13:20

Study on Low temperature detectors in INFN

*Flavio Gatti[1, 2]

Department of Physics, University of Genova, Genova, Italy[1]
INFN, Section of Genova, Genova, Italy[2]

ED1-3-INV 13:20–13:45

X-ray Microcalorimeters for High Resolution X-ray Spectroscopy of Astrophysical Plasmas

*Yuichiro Ezoe[1]

Tokyo Metropolitan University[1]

Sensing 2

Chairpersons: Sae Woo Nam (NIST) and Tsunehiro Hato (SUSTERA)

ED2-1-INV 14:00–14:25

Development of Low Tc DC SQUID and its Applications in China

*Xiaoming Xie[1, 2], Y. Zhang[1,2], Z. Wang[1,2], L.L. Rong[1,2], S.L. Zhang[1,2], H. Dong[1,2], L.Q. Qiu[1,2], X.Y. Kong[1,2], L. Chen[1,2]

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Shanghai Inst. of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai, China[2]

ED2-2-INV 14:25–14:50

Vortices in Mesoscopic Superconductors and SQUID microscopy for 3D Imaging

*Takekazu Ishida[1,2], The Dang Vu[3,4,5], Masaki Toji[5], Yoshitdugu Ninomiya[5], Shigeyuki Miyajima[5,6], Thanh Huy Ho[4], Hiroaki Shishido[2,5], Masaru Kato[2,5], Masaaki Maezawa[7], Mutsuo Hidaka[7], Masahiko Hayashi[8]

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National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan[7]
Faculty of Education and Human Studies, Akita University, Akita, Japan[8]

ED2-3-INV 14:50–15:15

Fabrication of MoN Superconducting Single Photon Detector

*Hiroyuki Shibata[1], Naoto Kirigane[1], Kento Sakai[1], Hiromichi Niii[1], Kentaro Fukao[1], Daisuke Sakai[1], Kou Ohnishi[2], Wakako Nakano[2], Yasutaka Matsuo[2]

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

ED2-4 15:15–15:35

Research toward realization of large-scale superconducting nanowire single photon detector system

*Shigehito Miki[1,2], Masahiro Yabuno[1], Shigeyuki Miyajima[1], Fumihiro China[1], Naoki Takeuchi[3], Taro Yamashita[4], Hirotaka Terai[1]

National Institute of Information and Communications Technology[1]
Kobe University[2]
Yokohama National University[3]
Nagoya University[4]

Dec. 12 (Wed.) Large Scale System Applications **Room 101**

Electric aircrafts and motors

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

AP1-1-INV 12:30–12:55

Development of fully-turbo electric propulsion systems for future aircrafts

*Masataka Iwakuma[1], Masataka Komiya[1], Takuya Aikawa[1], Kouichi Yoshida[1], Shun Miura[1], Takashi Yoshida[1], Teruyoshi Sasayama[1], Akira Tomioka[2], Masayuki Konno[2], Yuhji Aoki[3], Kazuhisa Adachi[3], Teruo Izumi[4]

Kyushu University[1]
Fuji Electric Co., Ltd.[2]
SWCC Showa Cable Systems Co., Ltd.[3]
AIST[4]

AP1-2-INV 12:55–13:20

Towards Superconducting Hybrid Electric Aircraft: KIT Research Activities within TELOS and ASuMED

*B. Holzapfel[1], T. Benkel[1], F. Grilli[1], J. Hänisch[1], A. Kudymow[1], M. Lao[1], Y. Liu[1], S. Schlachter[1], S. Strauss[1]

Institute for Technical Physics, Karlsruhe Institute of Technology, Karlsruhe, Germany[1]

AP1-3 13:20–13:40

Conceptual Study on Lighter and More Compact Transmission Cable Systems for More Electric Aircrafts

*Shigeki Isojima[1], Yoshiyuki Yoshida[2], Naoyuki Amemiya[3], Nobuyuki Sadakata[4], Michiya Okada[2], Hiroyuki Ohsaki[5]

Sumitomo Electric Industries,Ltd. Japan[1]
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Kyoto University Japan[3]
Fujikura Ltd. Japan[4]
University of Tokyo Japan[5]

AP1-4-INV 13:40–14:05

Challenging Several Hundred kW class Transportation Equipment Using High Temperature Superconducting Induction/Synchronous Motor

*Taketsune Nakamura[1], Liangliang Wei[1], Fuat Kucuk[1], Kentaro Kuroda[1], Masaaki Yoshikawa[2], Yoshitaka Itoh[2], Toshihisa Terazawa[2]

Kyoto University, Japan[1]
IMRA MATERIAL R&D Co., Ltd, Japan[2]

AP1-5 14:05–14:25

Experimental and Theoretical Discussion on Step Out Characteristics of High Temperature Superconducting Induction/Synchronous Motor

*Taketsune Nakamura[1]

Kyoto University[1]

AP1-6 14:25–14:45

Motor Structure and Output Density of IPM Motor Using Bulk Superconductors as Magnetic Field

*Wataru Akada[1], Yutaka Terao[1], Hiroyuki Ohsaki[1]

University of Tokyo[1]

Fusions

Chairpersons: Joseph Minervini (MIT) and Bruce Strauss (U. S. Department of Energy)

AP2-1-INV 14:55–15:20

Conceptual design of Japan's fusion DEMO reactor JA DEMO with emphasis on superconducting magnet issues

*Kenji Tobita[1], Hiroyasu Utoh[1], Ryoji Hiwatari[1], Yuya Miyoshi[1], Shinsuke Tokunaga[1], Yoshiteru Sakamoto[1], Youji Someya[1], Nobuyuki Asakura[1], Yuki Homma[1], Noriyoshi Nakajima[2]

National Institutes for Quantum and Radiological Science and Technology (QST)[1]

National Institutes for Fusion Science (NIFS)[2]

AP2-2-INV 15:20–15:45

SPARC: An Accelerated Pathway to Fusion Energy Based on High-Field REBCO Superconducting Magnets

*Zachary S. Hartwig[1], Joseph V. Minervini[1], the SPARC team[1,2]

Massachusetts Institute of Technology, USA.[1]
Commonwealth Fusion Systems[2]

AP2-3-INV 15:45–16:10

Development of the HTS Magnet System for the Next Stage of LHD Based on the Reliable 20 Years' Operation

*Toshiyuki Mito[1,2], Yuta Onodera[1,2], Kazuya Takahata[1,2], Nagato Yanagi[1,2], Shinji Hamaguchi[1], Suguru Takada[1]

National Institute for Fusion Science, National Institute of Natural Sciences, Japan[1]
SOKENDAI (The Graduate University for Advanced Studies), Japan[2]

10years commemoration of iron-based superconductors

Chairpersons: Masamichi Nakajima (Osaka University) and Yuta Mizukami (The University of Tokyo)

PC3-1-INV 10:45–11:15

Ultra-high-resolution laser-photoemission spectroscopy on Fe(Se,Te)

*Shik Shin[1]

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

PC3-2-INV 11:15–11:45

Nematicity in heavily hole-doped iron-pnictides $Ba_{1-x}Rb_xFe_2As_2$

*Yuta Mizukami[1]

Department of Advanced Materials Science, University of Tokyo, Japan[1]

PC3-3 11:45–12:00

Pulsed Laser Deposition of Iron Oxypnictide Thin Films

*Silvia Haindl[1], Erik Kampert[2], Kota Hanzawa[3], Masato Sasase[3,4], Hidenori Hiramatsu[3,4], Hideo Hosono[3,4]

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Materials Research Center for Element Strategy, Tokyo Inst. of Technology, Japan[4]

PC3-4 12:00–12:15

Transport Properties of CaFeAsF Single Crystals Under High Magnetic Fields

*Gang Mu[1], Yonghui Ma[1], Xiaoming Xie[1]

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PC3-5 12:15–12:30

Effects of fast neutron irradiation on the doping dependence of the pinning efficiency in K-doped Ba-122 single crystals

*Daniel Kagerbauer[1], Shigeyuki Ishida[2], Ventsislav Mishev[1], Dongjoon Song[2], Hiraku Ogino[2], Hiroshi Eisaki[2], Masamichi Nakajima[3], Akira Iyo[2], Michael Eisterer[1]

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Department of Physics, Osaka University, Toyonaka, Osaka, Japan[3]

10years commemoration of iron-based superconductors 2

Chairpersons: Yuji Matsuda (Kyoto University) and Fuyuki Nabeshima (The University of Tokyo)

PC4-1-INV 13:30–14:00

BCS-BEC crossover in FeSe

*Yuji Matsuda[1]

Department of Physics, Kyoto University, Sakyo-ku, Kyoto, Japan[1]

PC4-2-INV 14:00–14:30

Chemical pressure effects in iron chalcogenide superconductor FeSe

*Fuyuki Nabeshima[1]

The University of Tokyo, Japan[1]

PC4-3 14:30–14:45

Vortex Dynamics in Isovalent Optimally Doped Pnictide Superconductor $BaFe_2(As_{0.68}P_{0.32})_2$ investigated by AC and DC magnetic measurements

*Adrian Crisan[1], Alina M Ionescu[1], Lucica Miu[1]

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

PC4-4 14:45–15:00

Effect of in-plane strain on charge dynamics in FeSe

*Masamichi Nakajima[1], Kazuya Yanase[1], Yuki Senoo[1], Masataka Kawai[2], Tomoya Ishikawa[2], Naoki Shikama[2], Fuyuki Nabeshima[2], Atsutaka Maeda[2], Setsuko Tajima[1]

Osaka University, Japan[1]
The University of Tokyo, Japan[2]

Novel materials 2

Chairpersons: Jianping Hu (IOP/Chinese Academy of Sciences) and Yoshikazu Mizuguchi (Tokyo Metropolitan University)

PC5-1-INV 15:15–15:45

Genes of Unconventional High Temperature Superconductors

*Jiangping Hu[1, 2]

Beijing National Laboratory for Condensed Matter Physics, and Institute of Physics, Chinese Academy of Sciences, Beijing, People's Republic of China[1]
University of Chinese Academy of Science, Beijing, People's Republic of China[2]

PC5-2-INV 15:45–16:15

Superconductivity in $REO_{0.5}F_{0.5}BiS_2$ with high-entropy-alloy-type RE site

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

Tokyo Metropolitan University[1]

PC5-3-INV 16:15–16:45

Exploration for novel superconductors in transition metal compounds

*Zhi An Ren[1]

Beijing National Laboratory for Condensed Matter Physics, and Institute of Physics, Chinese Academy of Sciences, Beijing,China[1]

PC5-4 16:45–17:00

Carrier doping effect on superconductivity of newly synthesized $La_2O_2M_4S_6$-(M=Bi, Ag) type compounds

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

Tokyo Metropolitan University, Hachioji, Tokyo, Japan[1]

PC5-5 17:00–17:15

Quasi-particle evidence for the nematic state above superconductivity in $Sr_xBi_2Se_3$-

*Yue Sun[1], Shunichiro Kittaka[2], Toshiro Sakakibara[2], Tsuyoshi Tamegai[3], Kazushige Machida[4], Jinghui Wang[5], Jinsheng Wen[5]

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Department of Applied Physics, The University of Tokyo, Japan[3]
Department of Physics, Ritsumeikan University, Japan[4]
Department of Physics, Nanjing University, China[5]

PC5-6 17:15–17:30

Determination of the Pairing State in a Superconducting Doped Topological Insulator $Sr_xBi_2Se_3$

*Takaaki Takenaka[1], Yijie Miao[1], Kota Ishihara[1], Yuta Mizukami[1], Marcin Konczykowski[2], Kazumune Tachibana[3], Takao Sasagawa[3], Takasada Shibauchi[1]

University of Tokyo, Japan[1]
Ecole Polytechnique, France[2]
Tokyo Institute of Technology, Japan[3]

PC5-7 17:30–17:45

Discovery of New Pressure-induced Superconductors Explored by Data-driven Approach

*Ryo Matsumoto[1,2], Zhufeng Hou[1], Hiroshi Hara[1,2], Masanori Nagao[3], Shintaro Adachi[1], Hiromi Tanaka[4], Tetsuo Irifune[5], Hiroyuki Takeya[1], Kiyoyuki Terakura[1], Yoshihiko Takano[1,2]

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University of Tsukuba[2]
University of Yamanashi[3]
National Institute of Technology, Yonago College[4]
Geodynamics Research Center, Ehime University[5]

PC5-8 17:45–18:00

Low-Energy Quasiparticle Excitations in Half-Heusler Superconductors with j=3/2 Fermions

*Kota Ishihara[1], Takaaki Takenaka[1], Yijie Miao[1], Yuta Mizukami[1], Orest Pavlosiuk[2], Piotr Wiśniewski[2], Dariusz Kaczorowski[2], Takasada Shibauchi[1]

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Polish Academy of Sciences[2]

Dec. 13 (Thu.) Wires and Bulk — Room 102

Superconducting joints

Chairpersons: Akiyoshi Matsumoto (NIMS) and Teruo Izumi (AIST)

WB2-1-INV 10:45–11:10

Recent Progress in REBCO Coated Conductors and Their Superconducting Joints

*Tatsuoki Nagaishi[1], Kotaro Ohki[1], Takashi Yamaguchi[1], Tatsuhiko Yoshihara[1], Takeharu Kato[2], Daisaku Yokoe[2], Tsukasa Hirayama[2], Yuichi Ikuhara[3], Yoshinori Yanagisawa[4], Renzhong Piao[4], Hideaki Maeda[4]

Sumitomo Electric Industries, Ltd.[1]
Japan Fine Ceramics Center[2]
University of Tokyo[3]
RIKEN[4]

WB2-2-INV 11:10–11:35

Superconducting Joint between BSCCO and NbTi using Bi-Pb-Sn Solder

*Yoshihiko Takano[1,2], Ryo Matsumoto[1,2], Gen Nishijima[1]

National Institute for Materials Science (NIMS), Tsukuba, Japan[1]
University of Tsukuba, Tsukuba, Japan[2]

Recent progress of commercial HTS wires

Chairpersons: Venkat Selvamanickam (University of Houston) and Nick Long (Victoria University of Wellington)

WB3-1-INV 13:00–13:25

Development of BMO Doped REBCO Coated Conductors by Productive Hot-Wall PLD Process

*Yasuhiro Iijima[1], Kazuomi Kakimoto[1], Shinji Fujita[1], Shogo Muto[1], Wataru Hirata[1], Tomo Yoshida[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]
Kyushu University, Japan[3]

WB3-2-INV 13:25–13:50

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

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

SuperPower Inc. at United states of America[1]
Furukawa Electric Co., Ltd. at Japan[2]

WB3-3-INV 13:50–14:15

Recent Progress on Manufacturing of Coated Conductors

*Markus Bauer[1]

THEVA Dünnschichttechnik GmbH, Germany[1]

WB3-4-INV 14:15–14:40

Recent Progress on the Development of RE-123 CCs in SuNAM

*Seung-Hyun Moon[1]

SuNAM Co. Ltd., Anseong, Korea[1]

WB3-5-INV 14:40–15:05

2G HTS Wire Production Status by the SuperOx Group of Companies

*Valery Petrykin[1], Sergey Lee[1], Alexander Molodyk[2], Sergey Samoilenkov[2]

SuperOx Japan LLC, Sagamihara, Kanagawa, Japan[1]
SuperOx, Moscow, Russia[2]

WB3-6-INV 15:05–15:30

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., Shanghai, P.R.C[1]
Shanghai Jiao Tong University, Shanghai, P.R.C[2]

WB3-7-INV 15:45–16:10

Recent Developments of DI-BSCCO

*Soichiro Takeda[1], Shin-ichi Kobayashi[1], Goro Osabe[1], Masashi Kikuchi[1], Satoru Yamade[1], Takayoshi Nakashima[1], Tomoyuki Okada[1], Kenta Niki[1], Kazuhiko Hayashi[1], Takeshi Kato[1]

Sumitomo Electric Industries, Ltd., Osaka Japan[1]

WB3-8-INV 16:10–16:35

Recent progress on the development of MgB_2 wires in Hitachi

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

Hitachi, Ltd.[1]

Recent progress of iron-based superconductors

Chairpersons: Yoshihiko Takano (NIMS) and Takanobu Kiss (Kyushu University)

WB4-1-INV 16:45–17:10

Recent Progress of Iron Based Superconducting Round Wires

*Sunseng Pyon[1], Tsuyoshi Tamegai[1], Katsutoshi Takano[2], Hideki Kajitani[2], Norikiyo Koizumi[2], Satoshi Awaji[3]

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High Field Laboratory for Superconducting Materials, Inst. for Materials Research, Tohoku Univ., Japan[3]

WB4-2-INV 17:10–17:35

How good are the grain boundaries in Iron-based superconductors to be practical?

*F. Kametani[1,2], Y. Collantes[1], Y. Su[1], T. Shelby[1], A. Oloye[1], C. Pak[1], G. Bovone[1], C. Tarantini[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]

WB4-3 17:35–17:55

Slow Vortex Creep Induced by Grain Boundary Pinning in Advanced Ba122 Superconducting Tapes

*Chiheng Dong[1], He Huang[1,2], Yanwei Ma[1,2]

Inst. of Electrical Engineering, Chinese Academy of Sciences, Beijing, People's Republic of China[1]
University of Chinese Academy of Sciences, Beijing, People's Republic of China[2]

Dec. 13 (Thu.) Electronic Devices **Room 202**

Novel device & fabrication

Chairpersons: William D. Oliver (MIT) and Hirotake Yamamori (AIST)

ED3-1-INV 10:45–11:10

RF Waveform Synthesizers with quantum-based accuracy for communications metrology

*Manuel A. Castellanos Beltran[1], Justus A. Brevik[1], Christine A. Donnelly[1], Anna E. Fox[1], David I. Olaya[1,2], Adam Sirois[1], Paul D. Dresselhaus[1], Peter Hopkins[1], Samuel P. Benz[1]

NIST[1]
University of Colorado Boulder[2]

ED3-2-INV 11:10–11:35

High-Transition Temperature Josephson Junctions

*Shane Cybart[1]

Dept. of Mechanical Engineering, Materials Science and Engineering Program, University of California Riverside, U.S. A.[1]

ED3-3 11:35–11:55

Transport Properties and Pinning Analysis for Co-doped $BaFe_2As_2$ Thin Films on Metal Tapes and Single Crystal Substrates

*Zhongtang Xu[1], Yanwei Ma[1,2]

Key Laboratory of Applied Superconductivity, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, People's Republic of China[1]
University of Chinese Academy of Science, Beijing, People's Republic of China[2]

ED3-4 11:55–12:15

TiN coplanar waveguide resonators fabricated on Si (100) substrates

*Hirotaka Terai[1], Wei Qiu[1]

National Institute of Information and Communications Technology, Japan[1]

Quantum computing

Chairpersons: Oleg Mukhanov (Hypres) and Shigeo Sato (Tohoku University)

ED4-1-INV 13:30–13:55

Quantum Engineering of Superconducting Qubits

*William D. Oliver[1,2]

Massachusetts Institute of Technology, USA[1]
MIT Lincoln Laboratory, USA[2]

ED4-2-INV 13:55–14:20

Coherent quantum quantum phase slip effect in nano-wires from ultrathin niobium-nitride films

*O. V. Astafiev[1,2,3]

Royal Holloway, University of London, Egham, Surrey, United Kingdom[1]
National Physical Laboratory, Teddington, United Kingdom[2]
Moscow Institute of Physics and Technology, Dolgoprudny, Russia[3]

ED4-3-INV 14:20–14:45

Quantum hybrid system with a superconducting qubit and surface acoustic waves

*Atsushi Noguchi[1, 2]

Research Center for Advanced Science and Technology (RCAST), The Univ. of Tokyo, Japan[1]
PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan[2]

ED4-4-INV 14:45–15:10

Scalable superconducting quantum annealer based on 2.5D packaging technology and application specific architecture

*Shiro Kawabata[1]

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

ED4-5 15:10–15:30

Principle Verification of the Superconducting Flux Qubit Cell Toward the Quantum Sampling Approach for Training of Deep Neural Networks

*Daisuke Saida[1], Hayato Ariyoshi[2], Yuki Yamanashi[2]

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

Digital circuits

Chairpersons: Manuel A. Castellanos Beltran (NIST) and Mutsuo Hidaka (AIST)

ED5-1-INV 15:45–16:10

Implementation of a Synchronous Front-end and Addressing Circuit for Using in Superconducting Stripline Detector Arrays

Eren Can Aydogan[1], Kubra Usenmez[1], Sasan Razmkhah[1], *Ali Bozbey[1], Akira Fujimaki[2]

TOBB Univ. of Economy and Technology, Dept. of Electrical and Electronics Engineering, Ankara, Turkey[1]
Department of Quantum Engineering, Nagoya University, Nagoya, Japan[2]

ED5-2-INV 16:10–16:35

Development of an extremely energy-efficient AQFP microprocessor

*Christopher L. Ayala[1], Olivia Chen[1], Ro Saito[2], Tomoyuki Tanaka[3], Naoki Takeuchi[1], Yuki Yamanashi[1,3], Nobuyuki Yoshikawa[1,3]

Institute of Advanced Sciences, Yokohama National University, Japan[1]
Dept. of Information Media and Environment Sciences, Yokohama National Univ., Japan[2]
Dept. of Electrical Engineering and Computer Engineering, Yokohama National Univ., Japan[3]

ED5-3 16:35–16:55

Numerical Analysis of Low-Power Half Single Flux Quantum Circuits Based on 0-π SQUIDs

*Masamitsu Tanaka[1], Yuta Yoshinomoto[1], Tomohiro Kamiya[1], Kyosuke Sano[1], Taro Yamashita[1,2], Akira Fujimaki[1]

Nagoya University, Japan[1]
JST-PRESTO, Japan[2]

Medical applications

Chairpersons: Michael Sumption (Ohio State University) and Naoyuki Amemiya (Kyoto University)

AP3-1-INV 10:45–11:10

Ultra-High Field NMR Magnet Development at Bruker BioSpin

*Patrick Wikus[1]

Bruker BioSpin[1]

AP3-2-INV 11:10–11:35

Development of HTS high stable magnetic field magnet system for MRI

*Shoichi YOKOYAMA[1], Tetsuya MATSUDA[1], Hideaki MIURA[1], Yusuke MORITA[1], Syunsuke OTAKE[1], Ryo EGUCHI[1], Tatsuya INOUE[1], Shinji SATO[1], Takanobu KISS[2], Makoto TSUDA[3], Taketsune NAKAMURA[4], Yasuyuki SHIRAI[4]

Mitsubishi Electric Corporation, JAPAN[1]
Kyusyu University, JAPAN[2]
Tohoku University, JAPAN[3]
Kyoto University, JAPAN[4]

AP3-3-INV 11:35–12:00

Progress of Superconductors and Medical Applications in the US

*Mike Sumption[1]

CSMM, Materials Science Department, The Ohio State University, U. S. A.[1]

AP3-4-INV 12:00–12:25

Progress of S-Innovation project on cryocooler-cooled HTS accelerator magnet: beam-guiding and beam-injection tests of an HTS magnet on HIMAC beam line

*Naoyuki Amemiya[1], Shigeki Takahama[2], Tsutomu Kurusu[2], Toru Ogitsu[3], Yoshiyuki Iwata[4], Koji Noda[4], Masahiro Yoshimoto[5]

Kyoto University[1]
Toshiba Energy Systems & Solutions Corporation[2]
High Energy Accelerator Research Organization[3]
National Institute of Radiological Sciences[4]
Japan Atomic Energy Agency[5]

Electric power applications and cables

Chairpersons: Michal Vojenciak (Institute of Electrical Engineering SAS) and Shinichi Mukoyama (Furukawa Electric)

AP4-1-INV 13:30–13:55

Research of HTS for DC Power Transmission

*Liye Xiao[1,2]

Institute of Electrical Engineering, Chinese Academy of Sciences, China[1]
University of Chinese Academy of Sciences, China[2]

AP4-2-INV 13:55–14:20

Current Status and Future Expectation of Korean Large Scale HTS Power Applications

*Minwon Park[1], Seokju Lee[1]

Changwon National University, school of mechatronics, the dept. of EE, Republic of Korea[1]

AP4-3-INV 14:20–14:45

Recent status of 220kV SFCL project

Mikhail Moyzykh[1], Sergei Samoilenkov[1], *Sergey Lee[2]

SuperOx[1]
SuperOx Japan[2]

AP4-4-INV 14:45–15:10

Cost effective FCL using advanced superconducting tapes for future HVDC grids – overview of European project FASTGRID

Michal Vojenciak[1], Pascal Tixador[2], Guillaume Escamez[3], Cornelia Pop[4], Albert Calleja[5], Markus Bauer[6], Giuliano Angeli[7], Christian Lacroix[8], Amir Saraf[9], Jens Hänisch[10], Bertrand Dutoit[8], Marcela Pekarcikova[1]

Institute of Electrical Engineering SAS, Dubravska cesta 9, Bratislava, Slovakia[1]
University of Grenoble Alpes, CNRS Grenoble-INP, G2Elab, Institut Neel, Grenoble, France[2]
Supergrid Institute, Villeurbanne, France[3]
Institut de Ciència de Materials de Barcelona, ICMAB - CSIC, Bellaterra, Catalonia, Spain[4]
Oxolutia SL, Barbera del Valles, Spain[5]
THEVA Dünnschichttechnik GmbH, Ismaning, Germany[6]
Ricerca sul Sistema Energetico, Milano, Italy[7]
Department of Electrical Engineering, Polytechnique Montréal, Montréal, Canada[8]
School of Physics and Astronomy, Tel Aviv University, Ramat Aviv, Tel Aviv, Israel[9]
Karlsruher Inst. für Technologie (KIT), Inst. für Technische Physik (ITEP), Germany[10]

AP4-5 15:10–15:30

Development of 220kV/1.5kA resistive type superconducting fault current limiter

*Shaotao Dai[1], Lianqi Zhao[2], Yong Huang[2], Tao Ma[1], Lei Hu[1], Xiaofei Xu[2], Linlin Cai[2]

School of Electrical Engineering, Beijing Jiaotong University, Beijing, P. R. China[1]
Jiangsu Zhongtian Technology Co., Ltd, Nantong, P. R. China[2]

AP4-6 15:45–16:05

Thermo-Hydrodynamic Cable Designs for 10km to 100km Superconducting DC Power Transmission Line Using Experimental Data of Ishikari Project

Takao Yamada[1], Takashi Iitsuka[1], Akio Sato[2], Toru Sawamura[3], *Sataro Yamaguchi[4]

JGC Corporation[1]

JFE Steel[2]
Sakura Internet[3]
Chubu University[4]

AP4-7-INV 16:05–16:30

Superconducting feeder cables for railway systems

*Masaru Tomita[1]

Railway Technical Research Institute, Japan[1]

AP4-8-INV 16:30–16:55

Recent Progress of High Temperature Superconducting Cable Project in Japan

*Tomoo Mimura[1], Takato Masuda[2], Hiroharu Yaguchi[3], Hiroyuki Fukushima[4]

Tokyo Electric Power Company Holdings, Inc[1]
Sumitomo Electric Industries, Ltd.[2]
Mayekawa Mfg.[3]
Furukawa Electric Co., Ltd.[4]

AP4-9-INV 16:55–17:20

Development of Hybrid Energy Storage System Using a SMES Coil Cooled by Thermo-Siphon Circulation of Liquid Hydrogen to Compensate for Output Fluctuation of Renewable Energy

*Daisuke Miyagi[1]

Tohoku University, Japan[1]

AP4-10-INV 17:20–17:45

Recent Progress on Applications Using MgB_2 and Nb_3Sn Superconductors at Hyper Tech

*Michael Tomsic[1], Matthew Rindfleisch[1], David Doll[1], Xuan Peng[1], Michael Sumption[2], Michael Martens[3]

Hyper Tech Research Inc., USA.[1]
Ohio State University, USA.[2]
Case Western Reserve University, USA.[3]

Dec. 14 (Fri.) Late News — Room 201

Breaking news

Chairperson: Kazuo Kadowaki (University of Tsukuba)

BN-1-INV 10:10–10:30

Superconductivity above 280 K in superhydrides at megabar pressures

Russell J. Hemley[1], Maddury Somayazulu[1,], Muhtar Ahart[1], Ajay K Mishra[2], Zachary M. Geballe[2], Maria Baldini[2], Yue Meng[3], and Viktor V. Struzhkin[2]

School of Engineering and Applied Science, The George Washington University, USA[1]
Geophysical Laboratory, Carnegie Institution of Washington, Washington DC, USA[2]
HPCAT, X-ray Science Division, Argonne National Laboratory, Argonne, USA[3]

Dec. 14 (Fri.) Physics and Chemistry — Room 201

Novel materials 3 / Cuprate superconductors

Chairpersons: Philipp Werner (University of Fribourg) and Ryusuke Matsunaga (Osaka University)

PC6-1-INV 10:30–11:00

Superconductivity in light-driven materials

*Philipp Werner[1], Yuta Murakami[1], Hugo Strand[2], Shintaro Hoshino[3], Martin Eckstein[4]

Department of Physics, University of Fribourg, Fribourg, Switzerland[1]
Center for Computational Quantum Physics, Flatiron Institute, New York, NY, USA[2]
Department of Physics, Saitama University, Saitama, Japan[3]
Department of Physics, University Erlangen-Nuernberg, Erlangen, Germany[4]

PC6-2

(Moved to EDP2-11)

PC6-3-INV

(Cancelled)

PC6-4-INV 11:00–11:30

Higgs Amplitude Mode in Superconductors Studied by Nonlinear Terahertz Spectroscopy

* Ryusuke Matsunaga[1,2]

The Institute for Solid State Physics, The University of Tokyo, Japan[1]
PRESTO, Japan Science and Technology Agency, Japan[2]

Cuprate superconductors 2

Chairpersons: Johan Chang (University of Zurich) and Eun-Gook Moon (Korea Advanced Institute of Science and Technology)

PC7-1-INV 13:00–13:30

The Renaissance of high-T_c superconductivity–Discovery of undoped cuprate superconductors and revise of the electronic phase diagram

*Michio Naito[1], Yoshiharu Krockenberger[2], Ai Ikeda[2], Hideki Yamamoto[2]

Department of Applied Physics, Tokyo University of Agriculture and Technology[1]
NTT Basic Research Laboratories, NTT Corporation[2]

PC7-2-INV 13:30–14:00

Engineering the Mott State of Cuprates for High-Temperature Superconductivity

O. Ivashko[1], M. Horio[1], W. Wan[2], N. B. Christensen[2], D. E. McNally[3], E. Paris[3], Y. Tseng[3], N. E. Shaik[4], H. M. Rønnow[4], H. I. Wei[5], C. Adamo[6], C. Lichtensteiger[7], M. Gibert[1], M. R. Beasley[6], K. M. Shen[5], J. M. Tomczak[8], T. Schmitt[3], *J. Chang[1]

Physik-Institut, Universität Zürich, Zurich, Switzerland[1]
Department of Physics, Technical University of Denmark, Kongens Lyngby, Denmark[2]
Swiss Light Source, Paul Scherrer Institut, Villigen PSI, Switzerland[3]
Inst. of Physics, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland[4]
Dept. of Physics, Lab. of Atomic and Solid State Physics, Cornell Univ., Ithaca, New York, USA[5]
Department of Applied Physics, Stanford University, Stanford, CA, USA[6]
Department of Quantum Matter Physics, University of Geneva, Geneva, Switzerland[7]
Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria[8]

PC7-3-INV 14:00–14:30

Exotic Z2 Symmetry Breaking Transitions: theory of pseudo-gap transitions

Sangjin Lee[1], Jun Jung[1], Ara Go[2], *Eun-Gook Moon[1]

Department of Physics, KAIST, Daejeon, Korea[1]
Center for Theoretical Physics of Complex Systems, IBS, Daejeon, Korea[2]

PC7-4 14:30–14:45

Spin and Charge Excitations along the Direction Perpendicular to Charge Stripes in Cuprates

*Takami Tohyama[1]

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

PC7-5 14:45–15:00

Three-Dimensional Fermi Surface of Overdoped La-Based Cuprates

*Masafumi Horio[1], Kevin Hauser[1], Yasmine Sassa[2], Zarina Mingazheva[1], Denys Sutter[1], Kevin Kramer[1], Ashely M. Cook[1], Elisabetta Nocerino[3], Ola K. Forslund[3], Oscar Tjernberg[3], Masaki Kobayashi[4], Alla Chikina[4], Niels B. M. Schröter[4], Jonas A. Krieger[4], Thorsten Schmitt[4], Vladimir N. Strocov[4], Sunseng Pyon[5], Tomohiro Takayam[5], Hidenori Takagi[5], O. J. Lipscombe[6], Stephen M. Hayden[6], Motoyuki Ishikado[7], Hiroshi Eisaki[8], Titus Neupert[1], Martin Månsson[3], Christian E. Matt[1], Johan Chang[1]

Univ. of Zurich, Swizerland[1]
Uppsala Univ., Sweden[2]
KTH Royal Inst. of Technology, Sweden[3]
Paul Scherrer Inst., Swizerland[4]
Univ. of Tokyo, Japan[5]
Univ. of Bristol, UK[6]
Comprehensive Research Organization for Science and Society (CROSS), Japan[7]
National Institute of Advanced Industrial Science and Technology, Japan[8]

PC7-6 15:00–15:15

Pressure Effects on RT Measurements in the triple-layered cuprate Bi-2223

*Shintaro Adachi[1], Ryo Matsumoto[1,2], Yoshito Saito[1,2], Hiroshi Hara[1,2], Hiroyuki Takeya[1], Takao Watanabe[3], Yoshihiko Takano[1,2]

MANA, National Institute for Materials Science (NIMS), Tsukuba, Japan[1]
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Graduate School of Science and Technology, Hirosaki University, Hirosaki, Japan[3]

Dec. 14 (Fri.) Wires and Bulk — Room 102

Bulk materials and their applications

Chairpersons: Chan-Joong Kim (Korea Atomic Energy Research Institute) and Hiroyuki Fujishiro (Iwate University)

WB5-1-INV 13:00–13:25

Recent progress in a melt-growth processed YBCO superconductors with interior seeding

Chan-Joong Kim[1], Soon-Dong Park[1], *Byung-Hyuk Jun[1]

Korea Atomic Energy Research Institute[1]

WB5-2-INV 13:25–13:50

Recent topics of iron-pnictide bulk superconductors

*Akiyasu Yamamoto[1,2], Shinnosuke Tokuta[1], Mark Ainslie[3], Jeremy Weiss[4], Anatolii Polyanskii[5], Eric Hellstrom[5], David Larbalestier[5]

Department of Applied Physics, Tokyo University of Agriculture and Technology, Japan[1]
Materials Research Center for Element Strategy, Tokyo Institute of Technology, Japan[2]
Department of Engineering, University of Cambridge, Cambridge, United Kingdom[3]
Department of Physics, University of Colorado, Boulder, Co, USA[4]
Applied Superconductivity Center, National High Magnetic Field Laboratory, Florida State Univ., Tallahassee, FL, USA[5]

WB5-3 13:50–14:10

Growth and Properties of RE123 Bulks for Practical Applications

*Xin Yao[1]

School of Physics and Astronomy, Shanghai Jiao Tong University[1]

WB5-4-INV 14:10–14:35

Mechanical reinforcement of REBaCuO bulk during magnetizing process to achieve higher trapped field without fracture

*Hiroyuki Fujishiro[1], Tomoyuki Naito[1], Yousuke Yanagi[2], Yoshitaka Itoh[2], Takashi Nakamura[3], Mark D. Ainslie[4]

Iwate University, Japan[1]
IMRA Material R&D Co., Ltd, Japan[2]
RIKEN, Japan[3]
University of Cambridge, United Kingdom[4]

WB5-5-INV 14:35–15:00

Pulse Field Magnetization to Bulk Superconductor for Applications

*Tetsuya Ida[1], Masahiro Watasaki[1,2], Koji Shigeuchi[3], Mitsuru Izumi[1]

Tokyo University of Marine Science and Technology, Japan[1]
National Institute of Technology, Hiroshima College, Japan[2]
Chiba University, Japan[3]

WB5-6 15:00–15:20

Generation of Uniform Magnetic Field between Face-to-Face HTS Bulk Magnets

*Tetsuo Oka[1], Kazuya Higa[2], Shunta Tsunoda[2], Jun Ogawa[2], Satoshi Fukui[2], Natsuki Inoue[1], Muralidhar Miryala[1], Masato Murakami[1], Kazuya Yokoyama[3], Takashi Nakamura[4]

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Niigata University[2]
Ashikaga Institute of Technology, Japan[3]
RIKEN[4]

Dec. 14 (Fri.) Electronic Devices **Room 202**

Microwave

Chairpersons: Bin Wei (Tsinghua University) and Naoto Sekiya (Yamanashi University)

ED6-1-INV 13:00–13:25

Recent progress of Chinese high-Tc superconductor filter to practical use

*Bin Wei[1]

State Key Laboratory of Low-Dimensional Quantum Physics, Dept. of Physics, Tsinghua University, Beijin, China[1]

ED6-2-INV 13:25–13:50

Wireless Power Transmission Technology using High-Tc Superconducting Wire

*Yoon Do Chung[1], Chang Young Lee[2], Eun Young Park[3]

Suwon Science College, Korea[1]
Korea Railroad Research Institute, Korea[2]
Korea Christian University, Korea[3]

ED6-3-INV 13:50–14:15

Novel high-Tc superconducting wire for high quality factor at high-frequency and its applications

*Naoto Sekiya[1], Shinya Kobayashi[1]

University of Yamanashi[1]

ED6-4-INV 14:15–14:40

Superconducting submicron-CPW resonators for on-chip THz filterbank

*Masato Naruse[1], Ken'ichi Karatsu[2,3], Alejandro Pascual Laguna[2,3], Ozan Yurduseven[2], David J. Thoen[2,4], Vignesh Murugesan[3], Jochem J. A. Baselmans[2,3], Akira Endo[2,4]

Graduate School of Science and Technology, Saitama University, Japan[1]
Faculty of Electrical Engineering, Mathematics and Computer Science, Delft Univ. of Technology, the Netherlands[2]
SRON-Netherlands Institute for Space Research, the Netherlands[3]
Kavli Inst. of NanoScience, Faculty of Applied Sciences, Delft Univ. of Tech., the Netherlands[4]

Dec. 14 (Fri.) Large Scale System Applications **Room 101**

Fundamental technology and miscellaneous applications

Chairpersons: Tengming Shen (Lawrence Berkeley National Laboratory) and So Noguchi (Hokkaido University)

AP5-1 13:00–13:20

Strain control of HTS superconductors to prevent degradation of superconducting magnets during a quench

*Tengming Shen[1], Xiaorong Wang[1], Shijian Yin[1]

Lawrence Berkeley National Laboratory, Berkeley, CA, USA[1]

AP5-2 13:20–13:40

Unbalanced Torque Simulation on NI REBCO Pancake Coils during Quench

*So NOGUCHI[1], Seungyong HAHN[2], Yukikazu IWASA[3]

Hokkaido University, Japan[1]
Seoul National University, Republic of Korea[2]
Massachusetts Institute of Technology, USA[3]

AP5-3-INV 13:40–14:05

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

*Mark D Ainslie[1], Hiroyuki Fujishiro[2], Devendra K Namburi[1], Sora Namba[2], Yunhua Shi[1], Anthony R Dennis[1], John H Durrell[1]

Department of Engineering, University of Cambridge, UK[1]
Department of Physical Science and Materials Engineering, Iwate University, Japan[2]

AP5-4 14:05–14:25

Removal of Scale from Feed-water in Thermal Power Plant by Magnetic Separation –Composition Analysis of Oxygenated Treatment Scale–

*Mami Hiramatsu[1], Junya Yamamoto[1], Yoko Akiyama[1], Fumihito Mishima[2], Shigehiro Nishijima[2], Hidehiko Okada[3], Noriyuki Hirota[3], Tsuyoshi Yamaji[4], Hideki Matsuura[4], Seitoku Namba[4], Tomokazu Sekine[5]

Osaka Univ., Japan[1]
Fukui Univ. of Technology, Japan[2]
National Inst. for Materials Science, Japan[3]
Shikoku Research Institute Inc., Japan[4]
Ebara Industrial Cleaning Co., Ltd., Japan[5]

AP5-5 14:25–14:45

Remediation of Groundwater Contaminated by Heavy Metals Using Magnetic Separation Technique

*Albino Jose Amosse[1], Yoko Akiyama[1]

Osaka University, Japan[1]

AP5-6 14:45–15:05

Development of a contactless cryogenic rotation mechanism employed for a polarization modulator unit in cosmic microwave background polarization experiments

*Yuki Sakurai[1], Tomotake Matsumura[1], Teruhito Iida[2], Kunimoto Komatsu[3], Nobuhiko Katayama[1,2], Hajime Sugai[1], Hiroyuki Ohsaki[4], Yutaka Terao[4], Yukimasa Hirota[4], Hisashi Enokida[4]

Kavli IPMU, The University of Tokyo[1]
ispace, inc.[2]
Okayama University[3]
Dept. of Advanced Energy, Graduate School of Frontier Sciences, The University of Tokyo[4]

Dec. 14 (Fri.) Late News — Room 102

Late news

Chairperson: Hirofumi Yamasaki (AIST)

LN-1-INV 15:30–15:50

Controlling Hysteresis in Superconducting Weak Links and Nano-Superconducting Quantum Interference Devices

*Nikhil Kumar[1], C.B. Winkelmann[3], H. Courtois[3], Anjan K. Gupta[2]

Department of Physics, DDU Gorakhpur University, Gorakhpur, Uttar Pradesh, India[1]
Department of Physics, Indian Institute of Technology Kanpur, Uttar Pradesh, India[2]
Institute Neel, CNRS and University Joseph Fourier, Grenoble, France[3]

LN-2 15:50–16:05

Fabrication of 4-Superconducting Layers Coated Conductors

*Hongsoo Ha[1], Jaehun Lee[2], Seung-Hyun Moon[2], Sangsoo Oh[1]

Korea Electrotechnology Research Institute, Changwon, Gyeongnam, Korea[1]
SuNAM Co., Anseong, Gyeonggi, Korea[2]

LN-3 16:05–16:20

None s-wave triplet pairing in Superconducting boron doped diamond; a platform for all diamond based quantum information technology

*Somnath Bhattacharyya[1]

University of the Witwatersrand, South Africa[1]

Poster Sessions

Dec. 12 (Wed.) Physics and Chemistry **Multi-Purpose Hall**

Vortex physics 2

Chairperson: Hiroshi Eisaki (AIST)

PCP1-1 16:00–18:00

Negative magnetoresistance due to the depression of Quantum phase slip in NbN nanowires

*Bunju Shinozaki[1], Kazumasa Makise[2], Takayuki Asano[3]

Department of Physics, Kyushu University, Fukuoka, Japan[1]
National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan[2]
Department of Applied Physics, University of Fukui, Fukui, Japan[3]

PCP1-2 16:00–18:00

Detecting Vortex Penetration and Expulsion in Mesoscopic Thin Layered Superconductor $NbSe_2$ Using Small Tunnel Junctions

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

University of Tsukuba, Japan[1]

PCP1-3 16:00–18:00

Evaluation of Layer Thickness Dependence of Critical Current Density Characteristics using Longitudinal Magnetic Field Effect in Superconducting Coated Conductors

*Tomohiro Yonenaka[1], Edmund Soji Otabe[1], Vladimir Vyatkin[2], Sergey Lee[2], Tadahiro Akune[3], Terukazu Nishizaki[3]

Kyushu Institute of Technology Japan[1]
SuperOx Japan[2]
Kyushu Sangyo University Japan[3]

PCP1-4 16:00–18:00

TDGL Simulation on the Angular Dependence of the Critical Current Density in Superconductors with Columnar Defects

*Rina Yonezuka[1], Yusei Hamada[1], Kazunori Kamiji[1], Kenta Tanimura[1], Takaki Yoshihara[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]

PCP1-5 16:00–18:00

Dynamics of a vortex system in a layered high-temperature superconductor under a pulsed current impact

*Igor Rudnev[1], Anastasiia Maksimova[1], Anna Moroz[1], Vladimir Kashurnikov[1]

National Research Nuclear University MEPHI (Moscow Engineering Physics Institute)[1]

PCP1-6 16:00–18:00

Observation of vortex trapping and expulsion in superconducting rings of amorphous MoGe thin films

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

University of Electro-Communications[1]
Japan Atomic Energy Research Institute[2]
Tohoku University[3]

PCP1-7 16:00–18:00

Observation of Fractional Vortices in a Superconducting Double Layer

*Taichiro Nishio[1], Shunichi Arisawa[2], Hirotake Yamamori[3], Takashi Yanagisawa[3], Yasumoto Tanaka[3]

Tokyo University of Science, Japan[1]
National Institute for Materials Science, Japan[2]
National Institute of Advanced Industrial Science and Technology, Japan[3]

PCP1-8 16:00–18:00

Critical states in superconducting plates: Shape dependence

Shinsuke Ooi[1], Masaru Kato[1]

Osaka Pref. Univ. Japan[1]

Vortex physics 3

Chairperson: Takekazu Ishida (Osaka Prefecture University)

PCP2-1 16:00–18:00

Simulation of vortex lattice melting in a dirty superconductor

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

Osaka Pre. Uni.[1]
Osaka Pre. Uni. Collage of Technology[2]

PCP2-2 16:00–18:00

Molecular Dynamics Simulation for Random Organization of Vortex Matter

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

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Osaka Prefecture University College of Technology[2]

PCP2-3 16:00–18:00

Geometrical matching of vortex clusters in micron-sized superconducting regular polygons

*Shuuichi Ooi[1], Minoru Tachiki[1], Takashi Mochiku[1], Kazuto Hirata[1], Kazunori Komori[1], Shunichi Arisawa[1]

National Institute for Materials Science[1]

PCP2-4 16:00–18:00

Detection of the vortex liquid phase in thick superconducting films by Nernst effect

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

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PCP2-5 16:00–18:00

Time evolution of the vortex configuration associated with dynamic ordering by dc drive

*Shun Maegochi[1], Mihaly Dobroka[1], Koichiro Ienaga[1], Shinichi Kaneko[1], Satoshi Okuma[1]

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PCP2-6 16:00–18:00

Clogging in a dc driven vortex system

*Takahide Minemura[1], Koichiro Ienaga[1], Shun Maegochi[1], Shin-ichi Kaneko[1], Satoshi Okuma[1]

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PCP2-7 16:00–18:00

Observation of vortex configurations under dc drives using scanning tunneling spectroscopy

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

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Department of Physics, Tokyo University of Science, Japan[2]

PCP2-8 16:00–18:00

STM and vortex images for Au/*a*-Mo_xGe_{1-x} films

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

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Iron-based superconductors 3

Chairperson: Hiraku Ogino (AIST)

PCP3-1 16:00–18:00

Domain Structures and Spontaneous Abrikosov Vortex-Antivortex Generation in the Ferromagnetic Superconductor $EuFe_2(As_{1-x}P_x)_2$ with x ~ 0.2

*Ivan Veshchunov[1,2], Lev Vinnikov[3], Vasiliy Stolyarov[2,3], Nan Zhou[4], Zhixiang Shi[4], Xiaofeng Xu[5], Sunseng Pyon[1], Wenhe Jiao[6], Guang-Han Cao[6], Dimitri Roditchev[7], Alexander Buzdin[8], Tsuyoshi Tamegai[1]

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Inst. of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Moscow, Russia[3]
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Department of Physics, Zhejiang University, Hangzhou, China[6]
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University Bordeaux, LOMA, F-33405 Talence, France[8]

PCP3-2 16:00–18:00

Effects of Lattice Defects on the Superconducting Properties of Ba122 Polycrystalline Materials Prepared by High Energy Ball-Milling

*Shinnosuke Tokuta[1], Akiyasu Yamamoto[1,2]

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Materials Research Center for Element Strategy, Tokyo Inst. of Technology, Kanagawa, Japan[2]

PCP3-3 16:00–18:00

Unusual Evolution of Nematic fluctuations in $Ba_{1-x}Rb_xFe_2As_2$

*Masaya Tsujii[1], Kousuke Ishida[1], Suguru Hosoi[2], Yuta Mizukami[1], Shigeyuki Ishida[3], Akira Iyo[3], Hiroshi Eisaki[3], Kai Grube[4], Thomas Wolf[4], Hilbert. v. Löhneysen[4], Rafael. M. Fernandes[5], Takasada Shibauchi[1]

University of Tokyo, Japan[1]
Osaka University, Japan[2]
National Institute of Advanced Industrial Science and Technology, Japan[3]
Karlsruhe Institute of Techonology, Germany[4]
University of Minnesota, Unites States of America[5]

PCP3-4 16:00–18:00

Global Phase Diagram of Different Superconducting States in 1111-type Iron Pnictides *R*Fe(As,P/Sb)(O,F/H) Systems (*R*=La and Nd)

*T. Kawashima[1], H. Tsuji[1], M. Uekubo[1], M. Nakajima[1], S. Miyasaka[1], S. Tajima[1]

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PCP3-5 16:00–18:00

Effect of Cr substitution for V in $Sr_{2}VFeAsO_{3}$

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

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PCP3-6 16:00–18:00

Structural and magnetic transitions in 1111-type iron arsenide CaFeAsH

*Yoshinori Muraba[1], Soshi Iimura[2], Satoru Matsuishi[1], Hidenori Hiramatsu[1,2], Takashi Honda[3,4], Kazutaka Ikeda[3,4], Toshiya Otomo[3,4], Hideo Hosono[3,4]

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Inst. of Materials Structure Science, High Energy Accelerator Research Organization (KEK)[3]
J-PARC Center, KEK[4]

PCP3-7 16:00–18:00

Single Crystal Growth, Phase Diagram and Vortex Properties of 4*d* Transition Metal Pd Doped 112-Type Iron Pnictide Superconductors

Xiangzhuo Xing[1], Zhanfeng Li[1], Chunqiang Xu[1], Ivan Veshchunov[2], Tsuyoshi Tamegai[2], *Zhixiang Shi[1]

School of Physics, Southeast University, Nanjing, People's Republic of China[1]
Department of Applied Physics, The University of Tokyo, Tokyo, Japan[2]

PCP3-8 16:00–18:00

Effects of Swift-Particle Irradiations on Critical Current Density in $CaKFe_{4}As_{4}$

*Ayumu Takahashi[1], Sunseng Pyon[1], Satoru Okayasu[2], Shigeyuki Ishida[3], Akira Iyo[3], Hiroshi Eisaki[3], Motoharu Imai[4], Hideki Abe[4], Taichi Terashima[4], Tsuyoshi Tamegai[1]

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National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan[3]
National Institute for Materials Science, Tsukuba, Ibaraki, Japan[4]

PCP3-9 16:00–18:00

Evaluation of Anisotropic Critical Current Density in $CaKFe_{4}As_{4}$

*Tsuyoshi Tamegai[1], Ayumu Takahashi[1], Sunseng Pyon[1], Ivan Veshchunov[1], Shigeyuki Ishida[2], Akira Iyo[2], Hiroshi Eisaki[2], Motoharu Imai[3], Hideki Abe[3], Taichi Terashima[3], Shuuichi Ooi[3], Ataru Ichinose[4]

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National Institute for Materials Science, Japan[3]
Central Research Institute of Electric Power Industry, Japan[4]

Thin films / 2D materials

Chairperson: Tsutomu Nojima (Tohoku University)

PCP4-1 16:00–18:00

On The Growth of Co- and Ni-doped $BaFe_2As_2$ Thin Films on Fluoride Type Substrates

*Marco Langer[1], Sven Meyer[1], Saicharan Aswartham[2], Sabine Wurmehl[2], Jens Hänisch[1], Bernhard Holzapfel[1]

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Leibniz Inst. for Solid State and Materials Research Dresden, Inst. for Solid State Research, Dresden, Germany[2]

PCP4-2 16:00–18:00

Electronic Anisotropy of NdFeAs(O,F) Epitaxial Thin Films Grown on Vicinal-Cut MgO Substrates

*Takuya Matsumoto[1], Keisuke Kondo[1], Takafumi Hatano[1], Takahiro Urata[1], Kazumasa Iida[1], Hiroshi Ikuta[1]

Department of Materials Physics, Nagoya University, Japan[1]

PCP4-3 16:00–18:00

Transport properties of $FeSe_{1-x}S_x$ and $FeSe_{1-y}Te_y$ epitaxial thin films under magnetic fields

*Naoki Shikama[1], Tomoya Ishikawa[1], Fuyuki Nabeshima[1], Atsutaka Maeda[1]

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

PCP4-4 16:00–18:00

Electrical Transport Properties of Iron-Chalcogenide Epitaxial Thin Films Grown via Non-Equilibrium Process under Electric Field

*Kota Hanzawa[1], Masato Sasase[2], Hidenori Hiramatsu[1,2], Toshio Kamiya[1,2], Hideo Hosono[1,2]

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PCP4-5 16:00–18:00

Complex Conductivity of a NbN Film Measured by Dielectric Resonator Technique

*Hodaka Kurokawa[1], Fuyuki Nabeshima[1], Atsutaka Maeda[1]

University of Tokyo[1]

PCP4-6 16:00–18:00

Nernst effect measurements in disordered two-dimensional superconductors at very low temperatures

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

Tokyo Institute of Technology, Japan[1]

PCP4-7 16:00–18:00

Superconductor-insulator transitions and T_c dependence of disorder in superconducting Mo alloy thin films

*Fusao Ichikawa[1], Kazumasa Makise[2], Genki Sawada[3], Yuya Mizokami[3], Sho Maeda[3], Bunju Shinozaki[4]

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National Inst. of Advanced Industrial Science and Tech. (AIST), Tsukuba, Ibaraki, Japan[2]
Physics, GSST, Kumamoto University, Kumamoto, Japan[3]
Department of Physics Kyushu University, Fukuoka, Japan[4]

New materials

Chairperson: Minoru Nohara (Okayama University)

PCP5-1 16:00–18:00

Superconductivity in Weyl Semimetal NbP: Bulk vs. Surface

M. Baenitz[1], M. Schmidt[1], V. Suess[1], C. Felser[1], *K. Lueders[1,2]

Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany[1]
Fachbereich Physik, Freie Universität Berlin, Berlin, Germany[2]

PCP5-2 16:00–18:00

Effect of non-magnetic rare earth substitution for Zr on mixed anion $Zr(P,Se)_2$ superconductors II

*Kosuke Iwakiri[1,2], Taichiro Nishio[2], Kenji Kawashima[3], Shigeyuki Ishida[1], Kunihiko Oka[1], Hiroshi Fujihisa[1], Yoshito Gotoh[1], Yoshiyuki Yoshida[1], Akira Iyo[1], Hiraku Ogino[1], Hiroshi Eisaki[1], Hijiri Kito[1]

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

PCP5-3 16:00–18:00

Enhancement of the superconducting transition temperature and single crystal growth for PbFCl-type mixed anion APX superconductor

*Hijiri Kito[1], Kousuke Iwakiri[1,2], Taichiro Nishio[1,2], Kenji Kawashima[1,3], Shigeyuki Ishida[1], Kunihiko Oka[1], Hiroshi Fujihisa[1], Yoshito Gotoh[1], Akira Iyo[1], Hiraku Ogino[1], Hiroshi Eisaki[1], Yoshiyuki Yoshida[1]

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PCP5-4 16:00–18:00

Synthesis of a non-centrosymmetric superconductor Mg_2Rh_3P

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

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PCP5-5 16:00–18:00

Topochemical Fluorination of Layered Iridium Oxide and Its Physical Properties

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

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PCP5-6 16:00–18:00

STM and STS study on Se doped 1*T*-TaS_2

*Daichi Fujii[1], Yuita Fujisawa[2], Kenta Akiyama[1], Takahiro Iwasaki[1], Satoshi Demura[3], HIdeaki Sakata[1]

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Okinawa Institution of Science and Technology[2]
College of Science and Technology, Nihon University[3]

PCP5-7 16:00–18:00

Microscopic Study of Domain Structure in Charge Density Wave States in 2*H*-$TaS_{2-x}Se_x$

*Shun Ohta[1], Yuita Fujisawa[2], Satoshi Demura[3], Hideaki Sakata[1]

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

PCP5-8 16:00–18:00

Observation of microscopic electronic states in $ZrTe_{3-x}Se_x$ by STM/STS

*Kazuki Miyata[1], Ryota Ishio[1], Satoshi Demura[2], Hideaki Sakata[1]

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College of science and technology, Nihon university, Japan[2]

New materials 2

Chairperson: Takao Sasagawa (Tokyo Institute of Technology)

PCP6-1 16:00–18:00

Influence of Microfabrication on Superconducting Properties of Exfoliated Thin Films of Layered Superconductor $NbSe_2$: Reactive Ion Etching

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

University of Tsukuba, Japan[1]

PCP6-2 16:00–18:00

Real Space Observation of Ag-Intercalated 2*H*-$NbSe_2$ by Scanning Tunneling Microscopy

*Kenta Mogami[1], Kosuke Takahashi[1], Shun Ohta[1], Daichi Fujii[1], Satoshi Demura[2], Hideaki Sakata[1]

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PCP6-3 16:00–18:00

Reduction of *Tc* by Ag intercalation in 2*H*-$NbSe_2$

*Kosuke Takahashi[1], Kenta Mogami[1], Syun Ohta[1], Yuto Sakai[1], Daiti Fujii[1], Satoshi Demura[2], Hideaki Sakata[1]

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PCP6-4 16:00–18:00

Substitution effect in $(La,Sr)O_{0.5}F_{0.5}Bi_{1-x}Pb_xS_2$

*Shotaro Shobu[1], Satoshi Demura[2], Hideaki Sakata[1]

Tokyo University of Science[1]
Nihon University[2]

PCP6-5 16:00–18:00

CDW state in misfit transition-metal dichalcogenide (MS)(TaS2) (M=Bi,Pb,Sb,Sn)

*Shun Doyama[1], Yuta Sugai[1], Shun Ohta[1], Satoshi Demura[2], Hideaki Sakata[1]

Tokyo university of science, Japan[1]
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PCP6-6 16:00–18:00

High pressure synthesis and substitution effect on InTe superconductor

*Masayoshi Katsuno[1], Rajveer Jha[1], Kazuhisa Hoshi[1], Yosuke Goto[1], Yoshikazu Mizuguchi[1]

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

PCP6-7 16:00–18:00

Synthesis, Crystal Structure, and Physical Properties of New Layered Oxychalcogenide Superconductor $La_2O_2Bi_3AgS_6$

*Yudai Hijikata[1], Osuke Miura[1], Yoshikazu Mizuguchi[2]

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Dept. of Physics, Tokyo Metropolitan University, Hachioji, Tokyo, Japan[2]

PCP6-8 16:00–18:00

Measurement of Seebeck coefficient in BiS_2 Based Superconductors

*Ryunosuke Shirota[1], Takahiro Kaneko[1], Shotaro Kawano[1], Yuto Sakai[1], Naoki Ishida[1], Shotaro Shobu[1], Hideaki Sakata[1]

Tokyo univ. of Science, Japan[1]

New materials 3

Chairperson: Akira Iyo (AIST)

PCP7-1 16:00–18:00

Exploration of Topological Superconductors in Layered Compounds with a Bi Square-net

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

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PCP7-2 16:00–18:00

Crystal Growth and Superconducting Properties of Misfit-Layer Bi-Compounds having Strong Spin Orbit Coupling

*Shun Takeda[1], Takao Sasagawa[1]

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PCP7-3 16:00–18:00

Crystal Growth and Superconducting Properties of Quasi-1D Bismuth Compounds

*Keitaro Matsukawa[1], Takao Sasagawa[1]

Tokyo Institute of Technology, Japan[1]

PCP7-4 16:00–18:00

Interplay of Stress and Nematic Superconducting Order: The Case of $Cu_xBi_2Se_3$

*Pye Ton How[1], Sung-Kit Yip[1,2]

Insitute of Physics, Academia Sinica[1]
Institute Of Atomic And Molecular Sciences, Academia Sinica[2]

PCP7-6 16:00–18:00

New Oxide Diluted Magnetic Semiconductor System $La_{1-x}Ca_xCu_{0.9}Mn_{0.1}SO$ with Independent Spin and Charge Doping

*Li Zhang[1], Haoze Chen[1], Linxian Li[1], Yuke Li[2]

China Jiliang University[1]
Hangzhou Normal University[2]

PCP7-7 16:00–18:00

Influence of Microfabrication on Superconducting Characteristics of Exfoliated Thin Films of Layered Superconductor $NbSe_2$: Focused Ion Beam

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

University of Tsukuba, Japan[1]

PCP7-8 16:00–18:00

Transmission EBSD (t-EBSD) as tool to investigate nanostructures in superconductors

*Anjela Koblischka-Veneva[1,2], Michael R Koblischka[1,2], Jörg Schmauch[1,2], Masato Murakami[1]

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Cuprate superconductors 3

Chairperson: Takasada Shibauchi (The University of Tokyo)

PCP8-1 16:00–18:00

Porous high-T_c superconductors: Advantages and applications

*Michael R Koblischka[1], Anjela Koblischka-Veneva[1], S. Pavan Kumar Naik[1], Denis Gokhfeld[2], Masato Murakami[1]

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PCP8-2 16:00–18:00

New Cuprate Superconductor, $(Nb,Pb)Sr_2EuCu_2O_z$ (z~8)

*Yoshihiro Yamada[1], Toshihiko Maeda[1,2]

Kochi University of Technology[1]
Center for Nanotechnology[2]

PCP8-3 16:00–18:00

Effect of co-substitution of Ca for Y and Sr sites in $(Pb,Cu)Sr_2YCu_2O_z$ (z~7)

Keisuke Ozaki[1], Toshihiko Maeda[1,2]

Kochi University of Technology[1]
Center for Nanotechnology[2]

PCP8-4 16:00–18:00

Enhancement of local magnetic moment on Cu ion by excess oxygens in T'-cuplates

*Kunito Yamazaki[1], Hiroki Tsuchiura[1], Pavel Novák[2]

Department of Applied physics, Tohoku University, Japan[1]
Institute of Physics, The Czech Academy of Sciences, Czech Republic[2]

PCP8-5 16:00–18:00

Study of Critical Temperature for Alkali Metal Adsorbed Copper Oxide High-T_c Superconductors

*Chikako Sakai[1], Tsunehiro Takeuchi[2], Sakura N. Takeda[3], Hiroshi Daimon[3]

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Graduate School of Science and Technology, Nara Institute of Science and Technology, Japan[3]

PCP8-6 16:00–18:00

Difference of Local structure between $YBa_2Cu_3O_z$ and $PrBa_2Cu_3O_z$ Compounds

*J. Yu[1,2], C.Y. Zhang[2], C.Q. Guo[2], L. Li[2], H. Zhang[2]

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Materials Physics Laboratory, State Key Laboratory for Mesoscopic Physics, Department of Physics, Peking University, Beijing, China[2]

PCP8-7 16:00–18:00

Uniform hole doping in $HgBa_2Ca_2Cu_3O_{8+\delta}$ studied by ^{63}Cu NMR

*Yutaka Itoh[1], Akihiro Ogawa[2], Seiji Adachi[3]

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Chugoku Electric Power Company Inc. Energia Research Institute, Hiroshima, Japan[2]
Superconducting Sensing Technology Research Association, Yokohama, Kanagawa, Japan[3]

PCP8-8 16:00–18:00

Kinetics of $YbBa_2Cu_3O_Y$ thick film formation on MgO substrates

*Atsuhiko Hattori[1], Muralidhar Miryala[1], Masato Murakmai[1]

Shibaura Institute of Technology[1]

PCP8-9 16:00–18:00

Fabrication of Mesa-like Device on a Bi2212 Cross-Whisker Junction

*Yoshito Saito[1,2], Ryo Matsumoto[1,2], Shintaro Adachi[1], Masanori Nagao[3], Hiroyuki Takeya[1], Yoshihiko Takano[1,2]

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University of Tsukuba, Tsukuba, Japan[2]
University of Yamanashi, Kofu, Japan[3]

PCP8-10 16:00–18:00

Microscopic Theory of Exotic Phases in Superconducting Cuprates

*Kazuhisa Nishi[1]

University of Hyogo[1]

PCP8-11 16:00–18:00

Effects of vicinal substrates on the orientation of $Bi_2Sr_2CaCu_2O_{8+x}$ thin films when the metal-organic decomposition method is used

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

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Electrical, Electronics and Information Engineering, Nagaoka Univ. of Technology, Japan[2]

Theory

Chairperson: Ryotaro Arita (RIKEN)

PCP9-1 16:00–18:00

Variational Approach to Impurity Problem in Hubbard Model---Effects of Short-Range Antiferromagnetic Order and One-Body Screening Projector

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

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Department of Natural Science, Chiba Institute of Technology, Japan[2]

PCP9-2 16:00–18:00

Relationship between superconductivity and anisotropy in two-dimensional Hubbard model

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

Chiba Institute of Technology, Japan[1]
Tohoku University, Japan[2]

PCP9-3 16:00–18:00

The coexisting state of the staggered flux and d-wave superconducting order in a t-J type model

*Shuhei Fukuda[1], Kunito Yamazaki[1], Hiroki Tsuchiura[1], Masao Ogata[2]

Department of Applied Physics, Tohoku University, Japan[1]
Department of Physics, University of Tokyo, Japan[2]

PCP9-4 16:00–18:00

Antiferromagnetism, superconconductivity, renormalization and phase diagram in materials with strong correlation

*Takashi Yanagisawa[1]

National Institute of Advanced Industrial Science and Technology[1]

PCP9-5 16:00–18:00

Electronic Structure of Novel Non-centrosymmetric Superconductor Mg_2Rh_3P

*Izumi Hase[1], Takashi Yanagisawa[1], Akira Iyo[1], Hiroshi Eisaki[1], Kenji Kawashima[2]

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PCP9-6 16:00–18:00

Effect of impurity potential on superconductivity in strongly correlated Hubbard model

*Ryo Sato[1], Hisatoshi Yokoyama[1]

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PCP9-7 16:00–18:00

Nonlinear dynamics of Josephson junction networks driven by external currents with spatiotemporal modulation

*Takaaki Kawaguchi[1]

Toho University, Japan[1]

Dec. 12 (Wed.) Wires and Bulk — Multi-Purpose Hall

PLD, films

Chairperson: Toshiya Doi (Kyoto University)

WBP1-1 16:00–18:00

Improvement of anisotropy of superconducting properties in Y-rich $YBa_2Cu_3O_y$ film in magnetic fields

*Motoki Shiomi[1], Yusuke Ichino[1], Yuji Tsuchiya[1], Ataru Ichinose[2], Yutaka Yoshida[1]

Nagoya Univ.[1]
CRIEPI[2]

WBP1-2 16:00–18:00

Deposition of Ag thin film by reel-to-reel pulsed laser deposition system

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

Nagoya University[1]

WBP1-3 16:00–18:00

Effects of $Sm_{1+x}Ba_{2-x}Cu_3O_y$ films with non-stoichiometric composition fabricated by combinatorial pulsed laser deposition method on the superconducting properties

*Gohki MURASE[1], Yusuke ICHINO[1], Yuji TSUCHIYA[1], Yutaka YOSHIDA[1]

Dept of Electrical Engineering, Nagoya Univ.[1]

WBP1-4 16:00–18:00

Evaluation of superconducting properties for $YBa_2Cu_3O_y$ coated conductors

fabricated by self-heating technique in Pulsed Laser Deposition method

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

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

WBP1-5 16:00–18:00

Liquid phase stabilization and superconducting properties by adding Ag to $SmBa_2Cu_3O_y$ coated conductors fabricated by Vapor-Liquid-Solid growth technique

*Kento Yasuda[1], Tomohiro Ito[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]

WBP1-6 16:00–18:00

Crystallinities and superconducting properties of $SmBa_2Cu_3O_y$ coated conductors using Vapor-Liquid-Solid growth techniques

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

Nagoya Univ.[1]

APC

Chairperson: Kaname Matsumoto (Kyushu Institute of Technology)

WBP2-1 16:00–18:00

The Influence of $BaHfO_3$ nanorods on J_c in the longitudinal magnetic field for PLD $EuBa_2Cu_3O_y$ coated conductors

*Jun Nishimura[1], Kenji Miyata[1], Kota Hirai[1], Masashi Miura[1], Akira Ibi[2], Teruo Izumi[2], Masaru Kiuchi[3], Teruo Matsushita[3]

Seikei University Japan[1]
AIST Japan[2]
Kyushu Institute of Technology Japan[3]

WBP2-2 16:00–18:00

Influence of $BaHfO_3$ nanorods on in-field J_c in $EuBa_2Cu_3O_y$ coated conductors produced by PLD

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

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

WBP2-3 16:00–18:00

Improved pinning in Zn doped $YBa_2Cu_3O_{6+\delta}$ films

*Kai Ackermann[1], Jens Hänisch[1], Bernhard Holzapfel[1]

Karlsruhe Institute Of Technology, Germany[1]

WBP2-4 16:00–18:00

In-Plane Anisotropy of Critical Current Density in $BaTbO_3$-doped $SmBa_2Cu_3O_y$ Films

*Hiroki Kato[1], Yuji Tsuchiya[1], Yusuke Ichino[1], Ataru Ichinose[2], Yutaka Yoshida[1]

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

WBP2-5 16:00–18:00

Improvement of in-field performance for REBCO with heavily doped BMO coated conductors by PLD method

*Akira Ibi[1], Takato Machi[1], Koichi Nakaoka[1], Michio Sato[1], Teruo Izumi[1], Jun Nishimura[2], Masashi Miura[2], Daisaku Yokoe[3], Tomohiro Kato[3], Takeharu Kato[3], Tsukasa Hirayama[3]

National Institute of Advanced Industrial Science and Technology (AIST)[1]
Seikei University[2]
Nanostructures Research Lab. , Japan Fine Ceramics Center (JFCC)[3]

WBP2-6 16:00–18:00

Development of high uniformity multi-filamentary structure long REBCO with BMO coated conductors by plane-plume PLD method

*Akira Ibi[1], Takato Machi[1], Koichi Nakaoka[1], Michio Sato[1], Teruo Izumi[1], Kohei Higashikawa[2], Takanobu Kiss[2]

National Institute of Advanced Industrial Science and Technology (AIST)[1]
Dept. of Electrical Engineering, Kyushu University[2]

MOD

Chairperson: Takato Machi (AIST)

WBP3-1 16:00–18:00

The Effect of the Ba/Y ratio on in-field J_c in TFA-MOD $(Y_{0.77},Gd_{0.23})Ba_2Cu_3O_y$+$BaHfO_3$ CCs

*Kazuki Shimizu[1], Junya Kawanami[1], Masashi Miura[1], Koichi Nakaoka[2], Izumi Teruo[2]

Seikei University[1]
AIST[2]

WBP3-2 16:00–18:00

The effect of $BaZrO_3$ nanoparticles on critical current density in TFA-MOD $(Y_{0.77}Gd_{0.23})Ba_2Cu_3O_y$ films on CeO_2 buffered R-Al_2O_3 substrates

*Yoshinori Kamada[1], Ryota Oku[1], Keita Sakuma[1], Masashi Miura[1]

Seikei University[1]

WBP3-3 16:00–18:00

The influence of an intermediate heat treatment temperature on the in-field J_c of

$BaHfO_3$ doped TFA-MOD $(Y_{0.77},Gd_{0.23})Ba_2Cu_3O_y$ wires

*Junya Kawanami[1], Kazuki Shimizu[1], Masashi Miura[1], Ryuji Yoshida[2], Takeharu Kato[2], Koichi Nakaoka[3], Teruo Izumi[3]

Seikei University, Japan[1]
Nanostructures Research Laboratory, Japan[2]
AIST, Japan[3]

WBP3-4 16:00–18:00

Influence of the twin boundaries on the in-field J_c in $BaZrO_3$ doped TFA-MOD $(Y_{0.77}Gd_{0.23})Ba_2Cu_3O_y$ CCs

*Kenji Miyata[1], Ryota Oku[1], Masashi Miura[1], Masaru Kiuchi[2], Teruo Matsushita[2]

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

WBP3-5 16:00–18:00

Optimization of interim heat treatment condition on TFA-MOD process for fabrication of $Y_{0.77}Gd_{0.23}Ba_2Cu_3O_y$ coated conductors with $BaHfO_3$

*Koichi Nakaoka[1], Ryuji Yoshida[2], Michio Sato[1], Akira Ibi[1], Takato Machi[1], Takeharu Kato[2], Teruo Izumi[1]

National Institute of Advanced Industrial Science and Technology (AIST)[1]
Nanostructures Research Lab., Japan Fine Ceramics Center (JFCC)[2]

WBP3-6 16:00–18:00

Superconducting properties of $(Y_{1-x}Eu_x)Ba_2Cu_3O_y$ coated conductors by TFA-MOD process

*Michio Sato[1], Koichi Nakaoka[1], Akira Ibi[1], Takato Machi[1], Teruo Izumi[1]

National Institute of Advanced Industrial Science and Technology[1]

WBP3-7 16:00–18:00

Film thickness dependence of critical current density in (Y,Gd)BaCuO+$BaZrO_3$ nanoparticle CCs

*Go Tsuchiya[1], Kota Hirai[1], Masashi Miura[1], Masaru Kiuchi[2], Teruo Matsushita[2]

Seikei University[1]
Kyusyu Institute of Technology[2]

WBP3-8 16:00–18:00

The longitudinal magnetic field dependence of critical current density in multilayered TFA-MOD $REBa_2Cu_3O_y$ Coated Conductors

*Keiichi Sato[1], Jun Nishimura[1], Kota Hirai[1], Keita Sakuma[1], Masashi Miura[1], Masaru Kiuchi[2], Teruo Matsushita[2]

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

WBP3-9 16:00–18:00

Comparison of different CSD-grown *RE*BCO (*RE* = Yb, Er, Ho, Y, Dy, Gd, Sm, Nd) compounds with respect to applicability as Coated Conductors

*Manuela Erbe[1], Pablo Cayado[1], Wolfram Freitag[1], Jens Haenisch[1], Bernhard Holzapfel[1]

Karlsruhe Institute Of Technology, Germany[1]

WBP3-10 16:00–18:00

Dominate Effect of Fluorine on Decomposition Phase Evolution towards High Performnce GdBCO Films

*Lihua Jin[1], Yang Bai[1], Chengshan Li[1], Jianqing Feng[1], Pingxiang Zhang[1]

Northwest Institute for Nonferrous Metal Research[1]

WBP3-11 16:00–18:00

Enhancement of critical current densities for Hf and La doped Gd123 films fabricated by fluorine-free MOD method

Joichiro Fukui[1], Takumi Takahashi[1], Osuke Miura[1], Ryusuke Kita[2]

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

WBP3-12 16:00–18:00

Effect of Zirconium Doping Using a New Metal-organic Material on the Fabrication of Fluorine-free MOD-GdBCO Films

*Koyuki Kosugi[1], Ryusuke Kita[1], Joichiro Fukui[2], Osuke Miura[2]

Shizuoka University[1]
Tokyo Metropolitan University[2]

WBP3-13 16:00–18:00

Investigation of temperature and oxygen partial pressure diagram for $LaBa_2Cu_3O_y$ film

*Tomohiro Miyajima[1], Ryo Teranishi[1], Yukio Sato[1], Kenji Kaneko[1]

Kyushu University, Japan[1]

CC

Chairperson: Satoshi Awaji (Tohoku University)

WBP4-1 16:00–18:00

Electron Backscatter Diffraction Study of $EuBa_2Cu_3O_y$ Coated Conductors Fabricated by Pulsed Laser Deposition

Daisaku Yokoe[1], Ryuji Yoshida[1], *Takeharu Kato[1], Akira Ibi[2], Teruo Izumi[2], Tsukasa Hirayama[1]

Nanostructures Research Laboratory, Japan Fine Ceramics Center[1]
Dept. of Energy & Environment, National Inst. of Advanced Industrial Science & Technology[2]

WBP4-2 16:00–18:00

Fatigue Behaviors of Differently Stabilized REBCO Coated Conductor Tapes at 77 K

Mark Angelo Diaz[1], Zherwinjay Bautista[1], *Hyung-Seop Shin[1]

Dept. of Mechanical Design Engineering, Andong National University, Andong, Korea[1]

WBP4-3 16:00–18:00

Dependence of AC Loss in Stacked $REBa_2Cu_3O_y$ Superconducting Tapes on the Interval among Tapes under Perpendicular Magnetic Field

*Hiromasa Sasa[1], Goki Kawasaki[1], Shun Miura[1], Masataka Iwakuma[1], Teruo Izumi[2], Takato Machi[2], Akira Ibi[2]

Institute of Superconductors Science and Systems, Kyushu University, Japan[1]
National Institute of Advanced Industrial Science and Technology, Japan[2]

WBP4-4 16:00–18:00

Electormagnetic coupling of multifilamentary helically-wound superconducting tapes in a rapidly swept magnetic field

*Yoichi Higashi[1], Yasunori Mawatari[1]

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

WBP4-5 16:00–18:00

Fabrication of a Compact High-field Magnet by Coated Conductor Stacks

*Tomohiro Hashimoto[1], Sunseng Pyon[1], Yasuhiro Iijima[2], Shiori Sugiura[3], Sinya Uji[3], Taichi Terashima[3], Tsuyoshi Tamegai[1]

Department of Applied Physics, The University of Tokyo, Japan[1]
Fujikura Ltd., Japan[2]
Reserch Center for Functional Materials Quantum Transport Properties Group, National Institute for Materials Science, Japan[3]

WBP4-6 16:00–18:00

A study on the effect of slitting and packaging processes on the critical current of HTS tapes

Zhuyong Li[1], *Yuqian Li[1], Wenyi Li[2], Zhijian Jin[1], Zhiyong Hong[1], Longbiao Wang[1]

Shanghai Jiao Tong University[1]
Inner Mongolia University of Technology[2]

WBP4-7 16:00–18:00

Influence of the contacting terminal on transport current distributions along the ReBCO tape

*Shinnosuke Matsunaga[1], Tetsuhiro Obana[1,2], Yoshiro Terazaki[2], Nagato Yanagi[1,2]

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

Dec. 12 (Wed.) Large Scale System Applications **Multi-Purpose Hall**

Fusion applications and others

Chairperson: Kazuhiro Kajikawa (Kyushu University)

APP1-1 16:00–18:00

Magnetic field measurements of the JT-60SA CS1 module

*Tetsuhiro Obana[1], Kazuya Takahata[1], Shinji Hamaguchi[1], Hirotaka Chikaraishi[1], Suguru Takada[1], Akifumi Iwamoto[1], Shinsaku Imagawa[1], Toshiyuki Mito[1], Haruyuki Murakami[2], Kyohei Natsume[2], Kaname Kizu[2]

National Institute for Fusion Science[1]
National Institutes for Quantum and Radiological Science and Technology[2]

APP1-2 16:00–18:00

Numerical simulation of the fast processes in HTS tapes under the pulsed current load

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

National Research Nuclear University “MEPHI”(NRNU MEPHI), Russia[1]

APP1-3 16:00–18:00

Observation of a Non-Uniform Current Distribution in Stacked High Temperature Superconducting Tapes

Tim A.J. Meulenbroeks[1], Yoshiro Terazaki[2], Shinnosuke Matsunaga[3], Nagato Yanagi[2,3]

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

APP1-4 16:00–18:00

Analysis of current distribution in a simply-stacked HTS tapes conductor based on an electrical network model

*Shinnosuke Matsunaga[1], Tim A. J. Meulenbroeks[2], Yoshiro Terazaki[3], Yuta Onodera[3], Nagato Yanagi[1,3]

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

APP1-5 16:00–18:00

Transport Current Characteristics of High Temperature Superconducting Busbar

*Yoshiro TERAZAKI[1], Nagato YANAGI[1]

National Institute for Fusion Science[1]

APP1-6 16:00–18:00

Preload Structure Optimization Design and Mechanical Analysis of the CFETR Central Solenoid Model Coil

Dapeng Yin[1,2], Yu Wu[1], Aihua Xu[1,2], Houxiang Han[1,2]

Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China[1]
University of Science and Technology of China, Hefei, Anhui, China[2]

APP1-7 16:00–18:00

Measurement of the critical current for Bi-2212 subcable by using Four Hall Sensor Arrays

W Chen[1], *X S Yang[1], C H Chen[1], Y Zhao[1]

Southwest Jiaotong University, China[1]

Rotating machine

Chairperson: Mark Ainslie (University of Cambridge)

APP2-1 16:00–18:00

Experimental and Analytical Study on Load Characteristics of a 50 kW Class High Temperature Superconducting Induction/Synchronous Motor

*Kentaro Kuroda[1], Taketsune Nakamura[1], Masaaki Yoshikawa[2], Yoshitaka Itoh[2], Ryohei Nishino[1], Takuro Ogasa[1], Toshihisa Terazawa[2], Terazawa Fukui[3], Mitsuho Furuse[4], Yoshimasa Ohashi[5]

Kyoto University, Japan[1]
IMRA MATERIAL R&D Co., Ltd, Japan[2]
Niigata University, Japan[3]
National Institute of Advanced Industrial Science and Technology (AIST), Japan[4]
AISIN SEIKI Co., Ltd, Japan[5]

APP2-2 16:00–18:00

Design of a 750 kW Class HTS Wind Generator with HTS Modules

*Oyunjargal Tuvdensuren[1], Hae-Jin Sung[1], Byeong-Soo Go[1], Minwon Park[1], In-KeunYu[1]

Changwon National University. Republic of Korea[1]

APP2-3 16:00–18:00

Numerical Analysis of AC loss and Power Density of 10 MW Fully Superconducting Generators for Electric Aircrafts from the viewpoint of Armature Winding Configuration

*Masataka Komiya[1], Takuya Aikawa[1], Koichi Yoshida[1], Shun Miura[1], Masataka Iwakuma[1], Takashi Yoshida[1], Teruyoshi Sasayama[1], Akira Tomioka[2], Masayuki Konno[2], Teruo Izumi[3]

Research Inst. of Superconductor Science and Systems, Kyushu University, Fukuoka, Japan[1]
Fuji Electric Co. Ltd., Ichihara-city, Japan.[2]
National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan.[3]

Magnetic levitation

Chairperson: Ken Nagashima (Railway Technical Research Institute)

APP3-1 16:00–18:00

Suspension Stability of Side-Suspended HTS Maglev System in Evacuated Tube

D J Zhou[1], F N Cai[2], L F Zhao[2], Y Zhang[2], *Y Zhao[1,2]

Fujian Normal University[1]
Southwest Jiaotong University[2]

APP3-2 16:00–18:00

Vertical vibration characteristics of HTS Maglev systems under a long term external disturbance

*Shunshun Ma[1]

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

APP3-3 16:00–18:00

Vibration suppression of high-temperature superconducting maglev system via electromagnetic eddy current damper

*Jinbo Yu[1], Haitao Li[1], Shuai Zhang[1], Ruixue Sun[1], Xiaochen Sang[1], Zigang Deng[1]

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

APP3-4 16:00–18:00

Emulation and Analysis of an Axial Superconductor Magnetic Bearing

*Elkin Rodriguez[1,2], Zigang Deng[2]

Laboratory of Applied Superconductivity – LASUP / UFRJ, Rio de Janeiro, Brazil.[1]
Applied Superconductivity Laboratory, State Key Laboratory of Traction Power, Southwest Jiaotong University, P. R. China[2]

APP3-5 16:00–18:00

Energy losses in magnetic contactless bearings on the base of high-Tc superconducting tapes

*Igor Rudnev[1], Dmitriy Abin[1], Maksim Osipov[1], Sergey Pokrovskii[1], Irina Anischenko[1], Alexsey Podlivaev[1]

National Research Nuclear University MEPHI (Moscow Engineering Physics Inst.), Russia[1]

APP3-6 16:00–18:00

Levitation characteristics of superconducting stators with addition of a ring-shaped magnet

*Muneo Futamura[1], Ryo Shindo[1]

Akita Prefectural University[1]

APP3-7 16:00–18:00

Evaluation of loss characteristics of superconducting magnetic bearings for LiteBIRD satellite by three-dimensional finite element method analysis

*Yukimasa Hirota[1], Yutaka Terao[1], Hiroyuki Ohsaki[1], Tomotake Matsumura[2], Yuki Sakurai[2], Hajime Sugai[2], Nobuhiko Katayama[2]

The University of Tokyo, Japan[1]
Kavli IPMU, The University of Tokyo, Japan[2]

Dec. 12 (Wed.) Late News — Multi-Purpose Hall

Late news (Poster 1)

Chairperson: Hirofumi Yamasaki (AIST)

LNP1-1 16:00–18:00

Analysis on DC Circuit Breaker using superconducting coil

I.S.Jeong[1], H.W.Choi[1], S.Y.Park[1], H.S.Gu[1], H.S.Choi[1]

Chosun University, Republic of Korea[1]

LNP1-2 16:00–18:00

Operation characteristics of superconducting coil type DC circuit breaker according to reactance value of superconducting coil using EMTDC/ PSCACD

*Hyewon CHOI[1], Huiseok Gu[1], Hyosang CHOI[1]

Dept. of Electrical Engineering, Chosun University, Dong-Gu, Gwangju, Republic of Korea[1]

Joint

Chairperson: Tatsuoki Nagaishi (Sumitomo Electric Industries)

WBP5-1 10:00–12:00

Study of joint mechanism for superconducting joint of $GdBa_2Cu_3O_y$ coated conductors

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

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

WBP5-2 10:00–12:00

Influence of oxygen diffusion path on superconducting joint property of $GdBa_2Cu_3O_{7-\delta}$ coated conductor with additional deposited layer

*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 Univercity[1]
SuperOx Japan[2]
Tohoku Univercity[3]
National Institute for Materials Science[4]

WBP5-3 10:00–12:00

Superconducting-Joint for REBCO coated conductors by low-temperature reaction using KOH

*Shuhei Funaki[1], Yugo Miyachi[1,2], Yasuji Yamada[1]

Shimane Univ. , Japan[1]
JSPS Research Fellow, Japan[2]

WBP5-4 10:00–12:00

Superconducting Joints between Bi2223 and NbTi Wires by in-situ Sheath-Dissolution Technique

Masachika Shibuya[1], Ryo Matsumoto[1,2], Gen Nishijima[1], Hiroyuki Takeya[1], Hitoshi Kitaguchi[1], Yoshihiko Takano[1,2]

National Institute for Materials Science[1]
University of Tsukuba[2]

MgB_2, Nb_3Sn, IBSs

Chairperson: Yoshiyuki Yoshida (AIST)

WBP6-1 10:00–12:00

Study of the Superconducting Layer Microstructure and $(Nb,ti,Ta)_3Sn$ Bronze Strands Properties

Ildar M. Abdyukhanov[1], Victor I. Pantsyrny[1], Alexander G. Silaev[1], Anastasiia S. Tsapleva[1], *Maxim V. Alekseev[1], Elena A. Dergunova[1], Konstantin A. Mareev[1], Valery A. Drobyshev[1], Marina V. Kravtsova[1], Nadezhda V. Konovalova[1], Mansur N. Nasibulin[1], Pavel A. Lykianov[1]

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

WBP6-2 10:00–12:00

CFETR CSMC Nb_3Sn Coil deformation analyze in Heat Treatment Process and the coil fixture design

Song Jian[1], Wu Yu[1], Qin Jingang[1], Yu Min[1], Li Tong[1], Wang Weijun[1]

Institute of Plasma physics, Chinese Academy of Sciences, China[1]

WBP6-3 10:00–12:00

Preparation of MgB_2 superconductor by the rapid heating and quenching method

Xiaofeng Zou[1], Wenjie Zhang[1], Yong Zhao[2,3], Yong Zhang[1,2]

Key Laboratory of Advanced Technologies of Materials (Ministry of Education of china), and Superconductivity & New Energy R&D Center, Southwest Jiaotong Univ., Chengdu, China[1]
Key Laboratory of Magnetic Levitation Technologies & Maglev Trains (Ministry of Education of China), and School of Electric Engineering, Southwest Jiaotong Univ., Chengdu, China[2]
College of Physics and Energy, Fujian Normal University, Fuzhou, China[3]

WBP6-4 10:00–12:00

Fabrication and properties of 19 cores MgB_2/NbCu/Monel wires with carbon coated boron as precursor powder

*Qingyang Wang[1], Kerong Zhang[2], Fang Yang[1], Xiaomei Xiong[1], Dan Xi[3], Xifeng Pan[3], Guo Yan[3], Chengshan Li[1], Pingxiang Zhang[1,3]

Northwest Institute for non-ferrous Metal Research, Xi'an, China[1]
Xizang Minzu University, School of information technology. Xianyang, China[2]
Western Superconducting Technologies Co. Ltd., Xi'an, China[3]

WBP6-5 10:00–12:00

Development of a Monitor for Parallel-type Superconducting Level Sensor

*Naoki Tanaka[1], Kazuhiro Kajikawa[1], Hidetoshi Oguro[2], Makoto Sugino[3], Tsutomu Nakanishi[3], Itsuo Aoki[3]

Graduate School of Information Science and Electrical Engineering, Kyushu University[1]
School of Engineering, Tokai University[2]
Jecc Torisha Co., Ltd.[3]

WBP6-6 10:00–12:00

Critical Current Properties of Superconducting Joint between $Ba_{1-x}K_xFe_2As_2$ Tapes

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

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

WBP6-7 10:00–12:00

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

*Daisuke Miyawaki[1], Sunseng Pyon[1], Tsuyoshi Tamegai[1], Satoshi Awaji[2], Katsutoshi Takano[3], Hideki Kajitani[3], Norikiyo Koizumi[3]

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

Bulk materials

Chairperson: Tetuo Oka (Shibaura Institute of Technology)

WBP7-1 10:00–12:00

Effects of Nd_2O_3 and TiO_2 addition on the superconducting and microstructure properties of YBCO bulk superconductors fabricated by modified infiltration and growth technique

*Fahad A Alzaid[1], Devendra K Namburi[2], Talal Aljuohani[1], Yunhua Shi[2], Anthony R Dennis[2], Maha M Khayyat[1], Abduljalil S Aljadani[1], Bandar M Alotaibi[1], David A Cardwell[2], John H Durrell[2]

Center of Excellence for Advanced Materials and Manufacturing, King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia[1]
Department of Engineering, University of Cambridge, Cambridge, UK[2]

WBP7-2 10:00–12:00

Fracture strength properties of (Gd,Y)BaCuO large single-grain bulk at liquid nitrogen temperature

*Akira Murakami[1], Akifumi Iwamoto[2]

National Institute of Technology, Ichinoseki College Japan[1]
National Institute for Fusion Science Japan[2]

WBP7-4 10:00–12:00

Optimization of Liquid Phase Mass for the Production of Single Grain IG Processed Bulk $YBa_2Cu_3O_y$ by $YbBa_2Cu_3O_y$+Liquid Phase as a Liquid Source

*Sushma Miryala[1,2], Masato Murakami[1]

Shibaura Institute of Technology, Japan[1]
Seisen, Japan[2]

WBP7-5 10:00–12:00

Optimization of the *Infiltration-Growth Process* for Fabrication of Large Bulk (YEr)$Ba_2Cu_3O_y$ Superconductors

*Kento Takemura[1], Tethuo Oka[1], Muralidhar Miryala[1], Masato Murakami[1]

Shibaura Institute of Technology[1]

WBP7-6 10:00–12:00

Improvement of trapped field of REBCO bulk activated by pulsed field magnetization with a large soft-iron yoke

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

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

WBP7-7 10:00–12:00

Numerical analysis of magnetic trapped fields for bulk superconductor with weak or insulated junctions between multiple-seed-growth domains

*Mitsuru Sawamura[1], Mitsuru Izumi[2]

Steel Research Laboratories, Nippon Steel & Sumitomo Metal Corporation[1]
Tokyo University of Marine Science and Technology (TUMSAT)[2]

WBP7-8 10:00–12:00

Numerical analysis of magnetic levitation forces for bulk superconductors with weak or insulated junctions between multiple-seed-growth domains

*Mitsuru Sawamura[1], Mitsuru Izumi[2]

Steel Research Laboratories, Nippon Steel & Sumitomo Metal Corporation[1]
Tokyo University of Marine Science and Technology (TUMSAT)[2]

Bulk materials 2

Chairperson: Atsushi Ishihara (Railway Technical Research Institute)

WBP8-1 10:00–12:00

Refining effects of B powder on MgB_2 formation and vortex pinning properties in infiltration-reaction processed MgB_2 bulks

*Yuhei TAKAHASHI[1], Tomoyuki NAITO[1], Hiroyuki FUJISHIRO[1]

Faculty of Science and Engineering, Iwate University[1]

WBP8-2 10:00–12:00

Synthesis and trapped field properties of dense MgB_2 bulks by Magnesium Vapor Transportation (MVT) method

*Yu Sanogawa[1], Akiyasu Yamamoto[1,2]

Dept. of Applied Physics, Tokyo University of Agriculture and Technology, Tokyo, Japan[1]
Materials Research Center for Element Strategy, Tokyo Inst. of Tech., Kanagawa, Japan[2]

WBP8-3 10:00–12:00

Trapped Field Properties of Pulsed Field Magnetization (PFM) of MgB_2 Bulk Fabricated by Spark Plasma Sintering (SPS) Method

*Hayami Oki[1], Akira Takeda[1], Tetsuo Oka[2], Satoshi Fukui[1], Jun Ogawa[1], Kazuya Yokoyama[3], Jaques Noudem[4], Kengo Yamanaka[2], Masato Murakami[2]

Niigata University (Japan)[1]
Shibaura Institute Of Technology (Japan)[2]
Ashikaga University (Japan)[3]
Caen University (France)[4]

WBP8-4 10:00–12:00

Flux Pinning and Superconducting Properties of Bulk MgB_2 Using a Small Dy_2O_3 Additions

*Kotaro Kitamoto[1], Muralidhar Miryala[1], Masato Murakami[1]

Shibaura Institute of Technology[1]

WBP8-5 10:00–12:00

FLUX PINNING AND SUPERCONDUCTING PROPERTIES OF Mg-RICH MgB_2

*Sai Srikanth Arvapalli[1], muralidhar miryala[1], masato murakami[1]

Shibaura Institute of Technology[1]

WBP8-6 10:00–12:00

Processing and Characterization of Charcoal Added Bulk MgB_2

*Longji Dadiel[1], Muralidhar Miryala[1], Masato Murakami[1], S Pavan Kumar Naik[1]

Shibaura Institute of Technology, Japan[1]

Dec. 14 (Fri.) Electronic Devices — Multi-Purpose Hall

Analog devices

Chairperson: Yoshimi Hatsukade (Kindai University)

EDP1-1 10:00–12:00

Multipoint measurements of a Pipe Using HTS-SQUID and Magnetostriction-Based Ultrasonic Guided Wave

*Yuki Azuma[1], Yuki Yokouchi[1], Shogo Kubota[1], Tomohiro Terawaka[1], Yoshimi Hatsukade[1], Seiji Adachi[2], Keiichi Tanabe[2]

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

EDP1-2 10:00–12:00

Design and Performance of Digital SQUID Magnetometer using sub-flux quantum feedback

*Kosuke Okabe[1], Ryo Matsunawa[1], Kohki Itagaki[1], Itsuta Oshima[1], Masato Naruse[1], Tohru Taino[1], Hiroaki Myoren[1]

Graduate School of Science and Engineering, Saitama University[1]

EDP1-3 10:00–12:00

Line width dependence of NbN-based microwave kinetic inductance detectors

*Shun Negishi[1], Seiichiro Ariyoshi[1], Satoru Hashimoto[1], Hikaru Mikami[1], Kensuke Nakajima[2], Hirotaka Terai[3], Saburo Tanaka[1]

Toyohashi University of Technology[1]
Yamagata University[2]
National Institute of Information and Communications Technology[3]

EDP1-4 10:00–12:00

Plug-in Wire for 200-pixel Superconducting Tunnel Junction X-ray Detector Array on Helium Three Cryostat

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

National Institute of Advanced Industrial Science and Technology[1]

EDP1-5 10:00–12:00

Ginzburg-Landau Theory for the Operation Principle of Superconducting Delay-Line Induction Detectors

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

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

EDP1-6 10:00–12:00

Temperature dependent characteristics of neutron signals from a current-biased Nb nanowire detector with ^{10}B converter

*The Dang Vu[1], Yuki Iizawa[2], Kazuma Nishimura[2], Hiroaki Shishido[2,3], Kenji M Kojima[4], Kenichi Oikawa[1], Masahide Harada[1], Shigeyuki Miyajima[2,5], Mutsuo Hidaka[6], Takayuki Oku[1], Kazuhiko Soyama[1], Kazuya Aizawa[1], Tomio Koyama[7], and 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 Univ., Sakai, Osaka, Japan[2]
NanoSquare Research Institute, Osaka Prefecture Univ., Sakai, Osaka, Japan[3]
Muon Science Laboratory and Condensed Matter Research Center, Institute of Materials Structure Science, KEK, Tsukuba, Ibaraki, Japan[4]
Advanced ICT Research Institute, NICT, Kobe, Hyogo, Japan[5]
National Inst. of Advanced Industrial Science & Technology (AIST), Tsukuba, Ibaraki, Japan[6]
Divi. of Quantum and Radiation Engineering, Osaka Prefecture Univ., Sakai, Osaka, Japan[7]

EDP1-7 10:00–12:00

Si waveguide-integrated SSPD with AWG cold filter

*Hiromichi Niii[1], Kento Sakai[1], Tatsurou Hiraki[2,3], Tai Tsuchizawa[2,3], Koji Yamada[2,3], Shinji Matsuo[2,3], Daisuke Sakai[1], Hiroyuki Shibata[1]

Electrical and Electronic Engineering, Kitami Institute of Technology, Kitami, Hokkaido.[1]
NTT Device Technology Labs, NTT Corporation, Atsugi, Kanagawa.[2]
NTT Nanophotonics Center, NTT Corporation, Atsugi, Kanagawa.[3]

EDP1-8 10:00–12:00

Reduction of Environmental Magnetic Field Noise for a Small Magnetic Contaminant Detection

*Takao Nishikawa[1], Ken Sakuta[1]

The University of Shiga Prefecture, Japan[1]

EDP1-9 10:00–12:00

Simple photon incidence method from the front side for Superconducting Single-Photon Detector (SSPD) using alignment mark

*Kento Sakai[1], Hiromichi Niii[1], Daisuke Sakai[1], Hiroyuki Shibata[1]

Kitami Institute of Technology, Kitami, Hokkaido, Japan.[1]

EDP1-10 10:00–12:00

Photon-Number Resolving Detector using Series Array of NbN Nanowire Shunted with Ti Resistors

*Satoshi Denda[1], Masato Naruse[1], Tohru Taino[1], Hiroaki Myoren[1]

Graduate School of Science and Engineering, Saitama University, Japan[1]

EDP1-11 10:00–12:00

Development of High Throughput X-ray detectors using Superconducting Tunnel Junctions with a large area size

*Yuichi Fujisawa[1], Go Fujii[2], Masahiro Ukibe[2], Shigetomo Shiki[2], Masato Naruse[1], Hiroaki Myoren[1,2], Tohru Taino[1]

Saitama University[1]
AIST[2]

EDP1-12 10:00–12:00

Hybrid of Single and Double-Component Superconductors

*Y Tanaka[1], H Yamamori[1], T Yanagisawa[1], T Nishio[2], S Ooi[3], M Tachiki[3], S Arisawa[3]

National Institute of Advanced Industrial Science and Technology (AIST), Japan[1]
Department of Physics, Tokyo University of Science, Japan[2]
National Institute for Materials Science, Japan[3]

EDP1-13 10:00–12:00

Design and fabrication of Josephson voltage standard circuit for ac-voltage standard

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

National Institute of Advanced Industrial Science and Technology[1]

EDP1-14 10:00–12:00

Unconventional Josephson effect in two dimensional electron gas-based superconductor-semiconductor Josephson junctions in quantum integrated circuits

*Kaveh Delfanazari[1,2], Pengcheng Ma[2], Ian Farrer[2,3], David Ritchie[2], Hannah J. Joyce[1], Michael J. Kelly[1,2], Charles G. Smith[2]

Engineering Department, University of Cambridge, Cambridge, UK[1]
Department of Physics, Cavendish Laboratory, University of Cambridge, Cambridge, UK[2]
Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, UK[3]

EDP1-15 10:00–12:00

Enhancement of critical current density in $YBa_2Cu_3O_7$ superconducting thin films by changing magnetic environment

*Alaa H. Hammood[1], Antony Jones[1,2], Mustafa M. AL-Qurainy[1], Sergey A. Fedoseev[1], Alexey V. Pan[1]

Institute for Superconducting and Electronic Materials, Univ. of Wollongong, Northfields Avenue, Wollongong, NSW, Australia[1]
CSIRO, Manufacturing, Bradfield Road, West Lindfield, NSW, Australia[2]

EDP1-16 10:00–12:00

Artificial ferromagnetic dot arrays for the critical current enhancement in superconducting $YBa_2Cu_3O_{7-\delta}$ thin films

*Mustafa M. AL-Qurainy[1], Antony Jones[1,2], S. Rubanov[3], Sergey A. Fedoseev[1], Alaa H. Hammood[1], Alexy V. Pan[1]

Institute for Superconducting and Electronic Materials, Univ. of Wollongong, New South Wales, Australia[1]
CSIRO, Manufacturing, Bradfield Road, West Lindfield, NSW, Australia[2]
Electron Microscope Unit, Bio21 Institute, University of Melbourne, VIC, Australia[3]

EDP1-17 10:00–12:00

Estimation of Electricity Storage Capacity of Compact SMESs Composed of Stacks of Si-wafers Loaded with Superconducting Thin Film Coils in Spiral Trenches formed by MEMS Process

Yushi Ichiki[1], Akihisa Ichiki[2], Tatsumi Hioki[1], Minoru Sasaki[3], Joo-Hyong Noh[4], Osamu Takai[4], Hideo Honma[4], *Tomoyoshi Motohiro[1,2]

Graduate School of Engineering, Nagoya University[1]
Institutes of Innovation for Future Society, Nagoya University[2]
Graduate School of Engineering, Toyota Technological Institute[3]

Materials and Surface Engineering Research Institute, Kanto-Gakuin University[4]

EDP1-18 10:00–12:00

Micro-Fabrication of NdFeAs(O,F) Thin Films towards Particle Detector Applications

*Yasunari Tsuji[1], Takuya Matsumoto[1], Takayuki Yamada[1], Takafumi Hatano[1], Yuto Nakamura[2], Kazumasa Iida[1], Hideo Kishida[2], Satoshi Kashiwaya[2], Hiroshi Ikuta[1]

Department of Materials Physics, Nagoya University, Japan[1]
Department of Applied Physics, Nagoya University, Japan[2]

EDP1-19 10:00–12:00

Measurements of phase shifts in YBCO transmission lines for evaluation of kinetic inductances

*Ryo Ishida[1], Takashi Goto[1], Hisashi Shimakage[1], Masanori Takeda[2]

Ibaraki University Japan[1]
Shizuoka University Japan[2]

Digital devices & qubits

Chairperson: Masamitsu Tanaka (Nagoya University)

EDP2-1 10:00–12:00

Area Reduction of Adiabatic-Quantum-Flux-Parametron Register-Files by Using Asymmetric Gates

*Tomohiro Tamura[1], Naoki Takeuchi[2,3], Christopher Ayala[2], Yuki Yamanashi[1], Nobuyuki Yoshikawa[1]

Department of Electrical and Computer Engineering, Yokohama National University[1]
IAS, Yokohama National University[2]
JST-PRESTO[3]

EDP2-2 10:00–12:00

Design and evaluation of a one-instruction-set single-flux-quantum microprocessor for the demonstration of Josephson-CMOS hybrid system

*Yuki Hironaka[1], Yuki Yamanashi[1], Nobuyuki Yoshikawa[1]

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

EDP2-3 10:00–12:00

Design and demonstration of an 8-bit 18-sample/cycle sine code generator using single-flux-quantum circuits

*Fei Ke[1], Yuki Yamanashi[1], Thomas Ortlepp[2], Nobuyuki Yoshikawa[1]

Department of Electrical and Computer Eng., Yokohama National University, Japan[1]
CiS Research Institute for Microsensor Konrad-Zuse-Straße 14, Erfurt, German[2]

EDP2-4 10:00–12:00

Design and measurement of 4-unit 2-bit FPGA using single-flux-quantum circuits

*Mika Araki[1], Yuki Yamanashi[1], Nobuyuki Yoshikawa[1]

Yokohama National University, Japan[1]

EDP2-5 10:00–12:00

Design and Operation of Distributed Double-SQUID Amplifier for RSFQ Circuits

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

The University of Electro-Communications, Japan[1]

EDP2-6 10:00–12:00

Demonstration of 5.6 ps Latency of Adiabatic Quantum Flux Parametron using Delayed Clocking Scheme

*Mai Nozoe[1], Naoki Takeuchi[2,3], Yuki Yamanashi[1,2], Nobuyuki Yoshikawa[1,2]

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

EDP2-7 10:00–12:00

Design of High Timing resolution SFQ Time-to-Digital Converter for Time-Resolving Photon Detection System using SNSPDs

*Ryotaro Kamiya[1], Kota Aita[1], Masato Naruse[1], Tohru Taino[1], HIroaki Myoren[1], Jian Chen[2], Peiheng Wu[2]

Graduate School of Science and Engineering, Saitama University, Japan[1]
Research Institute of Superconductor Electronics, Nanjing University, China[2]

EDP2-8 10:00–12:00

Tunable Microwave Single Photon Source Based on Transmon Qubit with High Emission Efficiency

*Yu Zhou[1,2], Zhihui Peng[2], Yuta Horiuchi[1], Jaw-Shen Tsai[1,2]

Department of Physics, Tokyo University of Science, Kagurazaka, Shinjuku, Tokyo, Japan[1]
Center for Emergent Matter Science, RIKEN, Hirosawa, Wako, Saitama, Japan[2]

EDP2-9 10:00–12:00

A transition edge sensor with broadband optical absorption for biological imaging

*T. Konno[1], S. Takasu[1], R. Kobayashi[1,2], K. Hattori[1], S. Inoue[2], D. Fukuda[1,2]

National institute of advanced industrial science and technology (AIST)[1]
Graduate school of science and technology, Nihon university[2]

EDP2-10 10:00–12:00

Development of a Superconducting Microwave Beam Splitter for Boson Sampling

Experiments

*Julia Zotova[2,1], Yu Zhou[1], Rui Wang[3,1], Oleg Astafiev[2,4], Jaw-Shen Tsai[3,1]

Center for Emergent Matter Science, RIKEN, Japan[1]
Moscow Institute of Physics and Technology, Russia[2]
Tokyo University of Science, Japan[3]
Royal Holloway University of London, United Kingdom[4]

EDP2-11 10:00–12:00

Characterization of C-shunt flux qubit and its further applications in circuit-QED

*Gopika Lakshmi Bhai[1,2], Rui Wang[1,2], Yu Zhou[2], Hasegawa Makoto[1], Jaw-Shen Tsai[1,2]

Tokyo University of Science, Shinjuku, Japan[1]
RIKEN, Wakoshi, Japan[2]

Dec. 14 (Fri.) Large Scale System Applications | Multi-Purpose Hall

Electric power applications and cables 2

Chairperson: Tomoo Mimura (TEPCO)

APP4-1 10:00–12:00

A feasibility study of smart high-temperature superconducting cable to improve stability of KEPCO system

*Sangsoo Seo[1], Seung Ryul Lee[1], Jeonwook Cho[1]

Korea Electrotechnology Research Institute[1]

APP4-3 10:00–12:00

Conceptual design and performance analysis of a multi-layer 3 phase coaxial HTS

*Seong-Yeol Kang[1], Seok-Ju Lee[1], Minwon Park[1],In-Keun Yu[1], Du-YeanWon[2], Hyung-Suk Yang[2]

Changwon National University. Republic of Korea[1]
KOREA, KEPCO Research Institute, Republic of Korea[2]

APP4-4 10:00–12:00

Structural Study on a Single-phase Bi2223 High Temperature Superconducting Transformer for a 1 kHz-1 kA Class Power Supply

*Takafumi Adachi[1], Nozomu Nanato[1], Takahito Yamanishi[1]

Okayama University[1]

APP4-5 10:00–12:00

Design of an Air-core Bi2223 High Temperature Superconducting Transformer with Pancake Structure for a Large AC Current Supply and its Protection System for Normal Transitions

*Mikishi Kondo[1], Nozomu Nanato[1], Hokuto Yamada[1]

Okayama University, Japan[1]

APP4-6 10:00–12:00

Optimum Design of Cryogenic Pump for Circulation Cooling of High Temperature Superconducting Cables

*Kenta TADAKUMA[1], Kazuhiro KAJIKAWA[1], Yasuharu KAMIOKA[2], Atsushi ISHIYAMA[2], Shinsaku IMAGAWA[3], Taketsune NAKAMURA[4], Hirokazu HIRAI[5], Shinsuke OZAKI[5]

Graduate School of Information Science and Electrical Engineering, Kyushu University[1]
Waseda University[2]
National Institute for Fusion Science[3]
Kyoto University[4]
Taiyo Nippon Sanso Corporation[5]

APP4-7 10:00–12:00

Heat Load to the cryogenic system in the 1000 m Class Superconducting DC Power Transmission System

*Hirofumi Watanabe[1], Yury V Ivanov[1], Noriko Chikumoto[1], Satarou Yamaguchi[1], Kotaro Ishiyama[2], Zenji Oishi[2], Michihiko Watanabe[3], Takato Masuda[3]

Chubu University[1]
Chiyoda Corporation[2]
Sumitomo Electric Industries, Ltd.[3]

Magnet protection

Chairperson: Shun Tonooka (Mitsubishi Electric)

APP5-1 10:00–12:00

Early Detection of Normal Transitions in a High Temperature Superconducting Transformer Wound with a Plurality of HTS Tapes Using the Active Power Method

*Hiroki Aoyama[1], Nozomu Nanato[1]

Okayama University[1]

APP5-2 10:00–12:00

Experimental investigation of the processes of degradation and transition to the normal state in CC-tapes under the action of current pulses

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

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

APP5-3 10:00–12:00

Three-Dimensional Electromagnetic and Thermal Coupled Analysis of an SFCL REBCO Coil Immersed in 65 K Liquid Nitrogen

*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]

Magnetic separation

Chairperson: Satoshi Fukui (Niigata University)

APP6-1 10:00–12:00

Recovery of strontium, rubidium and lithium from solution utilizing a rotary type high gradient magnetic separation with rice hull magnetic activated carbon

*Keisuke Ishida[1], Tatsuya Shiina[1], Osuke Miura[1]

Dept. of Electrical and Electronic Engineering, Tokyo Metropolitan University, Japan[1]

APP6-2 10:00–12:00

Levitation properties of valuable metals utilizing magneto-Archimedes effect in a high magnetic field gradient

*Daiki Yamamoto[1], Kenichi Yamagishi[1], Osuke Miura[1]

Tokyo Metropolitan University, Department of Electrical and Electronic Engineering, Japan[1]

APP6-3 10:00–12:00

Enhancement of the magneto-Archimedes levitation force by optimized ferromagnetic materials arrangement in magnetic fields

*Kenichi Yamagishi[1], Daiki Yamamoto[1], Osuke Miura[1]

Dept. of Electrical and Electronic Engineering, Graduate School of Science and Engineering, Tokyo Metropolitan University, Japan[1]

APP6-4 10:00–12:00

Design and Trial Production of Magnetic Filter for Medical Protein Screening System using High Gradient Magnetic Separation

*Masaki Mori[1], Mikihisa Kubota[1], Takuro Abe[2], S.B Kim[1], Hiroshi Ueda[1]

Okayama University Graduate School of Natural Science and Technology[1]
Okayama University Faculty of Engeneering[2]

APP6-5 10:00–12:00

Fundamental Study on Cancer Therapy by Blocking Newborn Blood Vessels Using a Rotating Magnetic Field

*Makoto Kirimura[1], Yoko Akiyama[1]

Div. of Sustainable Energy & Environmental Eng., Graduate School of Eng., Osaka Univ., Japan[1]

Fundamental technology and misc. Applications 2

Chairperson: Shinji Matsumoto (NIMS)

APP7-1 10:00–12:00

Magnetic field design of a cosine-theta superconducting magnet with active shielding for a rotating gantry

*Tetsuhiro Obana[1], Toru Ogitsu[2]

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

APP7-2 10:00–12:00

Measurement of trapped magnetic field in REBCO single-turn loop including a joint

*Shinji MATSUMOTO[1], Gen NISHIJIMA[1], Akinobu NAKAI[2], Hisaki SAKAMOTO[2], Shinichi MUKOYAMA[2], Yasuyuki MIYOSHI[3], Kazuyoshi SAITO[3], Mamoru HAMADA[3]

National Institute for Materials Science, Japan[1]
Furukawa Electric Co., Ltd., Japan[2]
Japan Superconductor Technology, Inc., Japan[3]

APP7-3 10:00–12:00

Three dimensional model for numerical computations of screening currents in REBCO coils

*Philippe J. Fazilleau[1], Guillaume Dilasser[1]

CEA Saclay, France[1]

APP7-4 10:00–12:00

Experimental and Numerical Study on the Stability of a Pancake Coil Wound with a Rutherford-Type MgB_2 Conductor for SMES

Tsuyoshi Yagai[1], *Toru Okubo[1], Moeto Hira[1], Kaoruko Abe[1], Yusuke Kuwahara[1], Masahiro Kamibayashi[1], Mana Jinbo[1], Tomoaki Takao[1], Yasuhiro Makida[2], Takakazu Shintomi[2], Naoki Hirano[3], Toshihiro Komagome[4], Kenichi Tsukada[4], Taiki Onji[5], Yuki Arai[5], Masaru Tomita[5], Atsushi Shigemori[6], Kenichi Nakajima[6], Daisuke Miyagi[7], Makoto Tsuda[7], Takarato Hamajima[4]

Sophia University[1]
High Energy Acceleration Research Organization[2]
Chubu Electric Power[3]
MAYEKAWA MFG. Co., Ltd[4]
Railway Technical Research Institute[5]
Iwatani Corporation[6]
Tohoku University[7]

APP7-5 10:00–12:00

Characterization of conduction-cooled MgB_2 wires

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

Kyoto University[1]

Late news (Poster 2)

Chairperson: Hirofumi Yamasaki (AIST)

LNP2-1 10:00–12:00

The improvement of MgB_2 superconductivity prepared by diffusion method with ultrasonic precursor

*Hong Zhang[1], QI Wang[1], Yong Zhao[1,2], Yong Zhang[1]

Key Laboratory of Maglev Train and Maglev Technology of Ministry of Education, Superconductivity and New Energy R&D Center, Southwest Jiaotong Univ., Chengdu, China[1]
School of Materials Science and Engineering, Univ. of New South Wales, Sydney, Australia[2]

LNP2-2 10:00–12:00

Power Enhancement of the High-T_c Superconducting Terahertz Emitter with a Modified Device Structure

*H. Minami[1,2], Y. Ono[1], K. Murayama[1], Y. Tanabe[1], K. Nakamura[1], S. Kusunose[1], T. Kashiwagi[1,2], M. Tsujimoto[1,2], K. Kadowaki[1,2]

Graduate School of Pure and Applied Sciences, Univ. of Tsukuba, Tsukuba, Ibaraki, Japan[1]
Division of Materials Science, Univ. of Tsukuba, Tsukuba, Ibaraki, Japan[2]

LNP2-3 10:00–12:00

Local Heating Effects on the Radiation Intensity of High-T_c Superconducting Terahertz Emitters

*K. Nakamura[1], H. Minami[1,2], R. Ota[1], K. Murayama[1], Y. Ono[1], S. Kusunose[1], T. Kashiwagi[1,2], M. Tsujimoto[1,2], K. Kadowaki[1,2]

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