Oral Sessions

New materials

Chairpersons: Kenya Ohgushi (Tohoku University) and Ryotaro Arita (RIKEN)

PC1-1-INV 9:15–9:40

New Iron-Based Superconductors AeAFe$_4$As$_4$ (Ae = Ca, Sr, Eu, A = K, Rb, Cs)

*Akira Iyo[1], Kenji Kawashima[1,2], Tatsuya Kinjo[1,3], Taichiro Nishio[1,3], Shigeyuki Ishida[1], Hiroshi Fujihisa[1], Yoshito Gotoh[1], Kunihiro Kihou[1], Hiroshi Eisaki[1], Yoshiyuki Yoshida[1]

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

PC1-2 9:40–9:55

New iron-based superconducotor (Eu,La)FeAs$_2$

*Hiraku Ogino[1,2], Alberto Sala[1], Hayato Tanaka[2], Kohji Kishio[2], Yoshito Goto[1], Kunimitsu Kataoka[1], Akira Iyo[1], Hiroshi Eisaki[1]

1. AIST; 2. University of Tokyo

PC1-3 9:55–10:10

Enhanced superconductivity at the structural phase boundary of $Sr_{1-x}Ba_xNi_2P_2$

Kazutaka Kudo, Yutaka Kitahama, Keita Iba, Masaya Takasuga, *Minoru Nohara

Okayama University

PC1-4 10:10–10:25

The Electronic Phase Diagram of Superconductor $BaTi_2(Sb_{1-x}Bi_x)_2O$

*Wataru Ishii, Takeshi Yajima, Zenji Hiroi

ISSP, University of Tokyo

PC1-5 10:25–10:40

Superconductivity of Transition Metal Dichalcogenides Co-Intercalated with Alkali Metal and Organic Molecules

*Kazuki Sato, Takashi Noji, Takehiro Hatakeda, Takayuki Kawamata, Masatsune Kato, Yoji Koike

Department of Applied Physics, Graduate School of Engineering, Tohoku University

Iron-based superconductors

Chairpersons: Minoru Nohara (Okayama University) and Hiraku Ogino (AIST)

PC2-1-INV 10:55–11:20

Superconductivity in Fe-based ladder material $BaFe_2S_3$

*Kenya Ohgushi

Tohoku University

PC2-2-INV 11:20–11:45

First-principles Study of the Iron-based Ladder Superconductor $BaFe_2S_3$

*Ryotaro Arita

RIKEN CEMS

PC2-3 11:45–12:00

Origin of 44 K Superconductivity in $K_xFe_{2-y}Se_2$ with Nano-Scale Phase Separation

*Masashi Tanaka[1], Yusuke Yanagisawa[1,2], Hiroyuki Takeya[1], Yoshihiko Takano[1,2]

1. MANA, Natinal Institute for Materials Science; 2. Tsukuba Univ.

PC2-4 12:00–12:15

Non-magnetic Nematic Quantum Criticality In $FeSe_{1-x}S_x$ Superconductors

*Suguru Hosoi[1], Kohei Matsuura[1], Kosuke Ishida[1], Hao Wang[1], Yuta Mizukami[1], Tatsuya Watashige[2], Shigeru Kasahara[2], Yuji Matsuda[2], Takasada Shibauchi[1]

1. Department of Advanced Materials Science, University of Tokyo; 2. Department of Physics, Kyoto University

PC2-5 12:15–12:30

Transport properties of MBE grown NdFeAs(O,F) thin films

*Takahiro Urata, Taito Ohmura, Yousuke Ishimasa, Takafumi Hatano, Kazumasa Iida, Hiroshi Ikuta

Department of Crystalline Materials Science, Nagoya University

Lunch Break 12:30–13:45

Unconventional superconductors

Chairpersons: Takasada Shibauchi (The University of Tokyo) and Carsten Putzke (University of Bristol)

PC3-1-INV 13:45–14:10

Electronic Structure of Iron-Based High-T_c Superconductors

*Kosuke Nakayama

Department of Physics, Tohoku University

PC3-2-INV 14:10–14:35

Electrochemical etching induced high temperature superconductivity in FeSe electric double layer transistors

*Junichi Shiogai, Tomoki Miyakawa, Yukihiro Ito, Tsutomu Nojima, Atsushi Tsukazaki

Institute for Materials Research, Tohoku University

PC3-3 14:35–14:50

Critical temperature variation with a thickness tuned by electrochemical etching in $FeSe_{1-x}Te_x$ thin film on various substrates

Shunsuke Kohno, Daisuke Asami, Fuyuki Nabeshima, Yoshinori Imai, Atsutaka Maeda, *Kazunori Ueno

Department of Basic Science, University of Tokyo

PC3-4 14:50–15:05

Searching for Gap Nodes in the Heavy-fermion Superconductor $CeCu_2Si_2$ from Specific-heat Measurement

*Shunichiro Kittaka[1], Yuya Aoki[1], Yasuyuki Shimura[1], Toshiro Sakakibara[1], Silvia Seiro[2,3], Christoph Geibel[2], Frank Steglich[2], Yasumasa Tsutsumi[4], Hiroaki Ikeda[5], Kazushige Machida[5]

1. Institute for Solid State Physics, University of Tokyo; 2. Max Planck Institute for Chemical Physics of Solids, Germany; 3. Department of Chemistry and Physics of Materials, University of Salzburg, Austria; 4. Department of Basic Science, University of Tokyo; 5. Department of Physics, Ritsumeikan University

PC3-5 15:05–15:20

Fully-gapped s_{++}-wave Pairing in the Heavy-Fermion Superconductor $CeCu_2Si_2$

*Takaaki Takenaka[1], Takuya Yamashita[2], Yoshifumi Tokiwa[2], Joe A Wilcox[3], Yuta Mizukami[1], Daiki Terazawa[2], Yuichi Kasahara[2], Marcin Konczykowski[4], Silvia Seiro[5], Hirale S Jeevan[5], Christoph Geibel[5], Carsten Putzke[3], Takafumi Onishi[2], Hiroaki Ikeda[6], Antony Carrington[3], Yuji Matsuda[2], Takasada Shibauchi[1]

1. University of Tokyo; 2. Kyoto University; 3. University of Bristol; 4. Ecole Polytechnique; 5. Max Planck Institute for Chemical Physics of Solids; 6. Ritsumeikan University

Vortex physics 1

Chairpersons: Shuuichi Ooi (NIMS) and Takekazu Ishida (Osaka Prefecture University)

PC4-1-INV 15:35–16:00

Vortex Studies on a Hybrid Superconducting/Magnetic Spin Ice System

*Wai-Kwong Kwok[1], Yonglei Wang[1,2], Jing Xu[3], Zhili Xiao[1,3], Alexey Snezhko[1], Leo E Ocola[4], Ralu Divan[4], John E Pearson[1], George W Crabtree[1,5]

1. Materials Science Division, Argonne National Laboratory, USA.; 2. Department of Physics, University of Notre Dame, USA.; 3. Department of Physics, Northern Illinois University, USA.; 4. Center for Nanoscale Materials, Argonne National Laboratory, USA.; 5. Departments of Physics, Electrical and Mechanical Engineering, University of Illinois at Chicago, USA

PC4-2 16:00–16:15

Effects of Proton Irradiation on Pinning and Dynamics of Vortices in Isovalently Substituted $BaFe_2(As,P)_2$ Single Crystals

*Tsuyoshi Tamegai[1], Akiyoshi Park[1], Sunseng Pyon[1], Ivan Veshchunov[1], Hisashi Kitamura[2]

1. Department of Applied Physics, The University of Tokyo; 2. National Institute of Radiological Sciences

PC4-3 16:15–16:30

Shape dependence of effects of twin boundaries on half-quantized vortices in d-dot

*Norio Fujita, Masaru Kato, Takekazu Ishida

Osaka Prefecture University

PC4-4 16:30–16:45

Thin Film Growth of Doped NEG-123 Superconductor on STO Substrate by PLD

Shiv Jee Singh[1], *Paolo Mele[1], Miryala Muralidhar[2]

1. Muroran Institute of Technology; 2. Shibaura Institute of Technology

PC4-5 16:45–17:00

High critical current density and pinning potential in YBCO films with synergetic pinning centres

*Adrian Crisan[1], Ion Ivan[1], Alina M Ionescu[1], Lucica Miu[1], Van-Son Dang[2], Paolo Mele[3], Jesus Mosqueira[4]

1. National Institute for Materials Physics Bucharest, Romania; 2. Nano and Energy Center, VNU Hanoi University of Science, Hanoi, Vietnam; 3. Muroran Institute of Technology, Materials Science Research Unit, Muroran, Japan; 4. University of Santiago de Compostela, Department of Condensed Matter Physics, Santiago de Compostela, Spain

Vortex physics 2

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

PC5-1-INV 17:00–17:25

Vortex states in micron-sized crystals

*Shuuichi Ooi, Takashi Mochiku, Minoru Tachiki, Kazuto Hirata

National Institute for Materials Science

PC5-2 17:25–17:40

Physics of Lorentz Force on Supercurrent

*Takafumi Kita, Hikaru Ueki, Wataru Kohno

Department of Physics, Hokkaido University

PC5-3 17:40–17:55

Memory Formation in the Transient State of a Periodically Driven Vortex System

*Mihaly Dobroka, Yasuki Kawamura, Tetsuya Kaji, Koichiro Ienaga, Shin-ichi Kaneko, Satoshi Okuma

Department of Physics, Tokyo Institute of Technology

PC5-4 17:55–18:10

Study of microwave-induced phase switches from the finite voltage state in $Bi_2Sr_2CaCu_2O_y$ intrinsic Josephson junctions

*Haruhisa Kitano, Ayami Yamaguchi, Yusaku Takahashi, Daiki Kakehi, Shin-ya Ayukawa

Department of Physics and Mathematics, Aoyama Gakuin University

PC5-5 18:10–18:25

Investigation of the flux lines motion in superconductors in a longitudinal magnetic field by the computer simulation using the Time-Dependent Ginzburg-Landau equations

*Kento Adachi, Yusuke Ichino, Yuji Tsuchiya, Yutaka Yoshida

Nagoya University