

J-Physics 2018: International Workshop on New Materials and Crystal Growth

June 28 – 30, 2018

Awaji Yumebutai International Conference Center

1 Yumebutai, Awaji, Hyogo 656-2306, Japan

June 28 (Thu)

Opening

9:00 – 9:10 Hisatomo Harima Opening remarks
Kobe, Japan

Exotic Superconductors 1

Chair: Minoru Nohara

9:10 – 9:40 Paul Canfield Discovery of spin-vortex-crystal magnetic order in Ni- and Co-doped $\text{CaKFe}_4\text{As}_4$
Ames, USA

9:40 – 10:10 Yoshikazu Mizuguchi New strategies for designing bismuth chalcogenide layered superconductors
TMU, Japan

10:10 – 10:40 Coffee Break

Exotic Superconductors 2

Chair: Shigeo Ohara

10:40 – 11:10 Yasuyuki Nakajima Tunable superconductivity and magnetism in topological semimetal candidate $R\text{PdBi}$
Central Florida, USA

11:10 – 11:30 Kazutaka Kudo Superconductivity and polymorphism in hexagonal BaPtAs with an ordered honeycomb network
Okayama, Japan

11:30 – 11:50 Yoshiki J. Sato Superconducting properties and anisotropic superconducting gap of CeIr_3 single crystal
Tohoku, Japan

11:50 – 13:30 Lunch

Exotic Materials 1

Chair: Yoshikazu Mizuguchi

13:30 – 14:00 Eric D. Bauer Novel topological phases in strongly correlated d - and f -electron materials
LANL, USA

14:00 – 14:30 Swee Kuan Goh Quasilinear quantum magnetoresistance in pressure-induced nonsymmorphic superconductor chromium arsenide
Hong Kong, China

14:30 – 15:00 Moise Tchoula Tchokonte Magnetocaloric effect and its implementation in critical behavior study of the ferromagnet $\text{Nd}_2\text{Pt}_2\text{In}$
Western Cape, South Africa

15:00 – 15:20 Hisashi Kotegawa Quantum criticality of antiferromagnet Mn_3P under pressure
Kobe, Japan

15:20 – 15:50 Coffee Break

Kondo Materials

Chair: Hideki Tou

15:50 – 16:20 Christoph Geibel New puzzling results on the valence, the magnetism, and the superconductivity in Kondo lattice systems
MPI Dresden, Germany

16:20 – 16:50 Dariusz Kaczorowski Coexistence of superconductivity and antiferromagnetism in heavy-fermion systems with multiple Kondo sites
Wroclaw, Poland

16:50 – 17:20 Tatsuma D. Matsuda Unusual heavy electron state in Sm- and Yb-based compounds
TMU, Japan

17:20 – 17:40 Yu Yamane Single-site non-Fermi liquid behaviors in a diluted Pr system $\text{Y}_{1-x}\text{Pr}_x\text{Ir}_2\text{Zn}_{20}$
Hiroshima, Japan

17:40 – 18:00 Hiraku Saito Current-induced magnetization on Ce-based antiferromagnetic metals
KEK, Japan

18:00 – 18:20 Chihiro Tabata X-ray crystal analysis of toroidally ordered system UNi_4B
KEK, Japan

June 29 (Fri)

Exotic Materials 2**Chair: Kaya Kobayashi**

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| 9:00 – 9:30 | Kosmas Prassides
Tohoku, Japan | Carbon-based molecular materials as new electronic materials platforms |
| 9:30 – 10:00 | Yoshihiko Okamoto
Nagoya, Japan | Crystal growth of 5d transition metal compounds: β -pyrochlore oxide CsW_2O_6 and one-dimensional telluride Ta_4SiTe_4 |
| 10:00 – 10:30 | Hiroyuki Yoshida
Hokkaido, Japan | Material development towards the perfect frustration on kagome antiferromagnet |
| 10:30 – 11:00 | Coffee Break | |

Actinide Materials 1**Chair: Dai Aoki**

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| 11:00 – 11:30 | M. Brian Maple
UC San Diego, USA | Novel electronic phases and competing interactions in the correlated <i>f</i> -electron compound URu_2Si_2 |
| 11:30 – 11:50 | Taisuke Hattori
JAEA, Japan | Strong Ising anisotropy of URu_2Si_2 probed by ^{29}Si NMR on the superconducting state |
| 11:50 – 12:10 | Shin-ichi Fujimori
JAEA, Japan | Electronic structures of strongly correlated uranium compounds studied by three-dimensional ARPES |
| 12:10 – 14:00 | Group Photo and Lunch | |

14:00 – 16:00 Poster Session**Actinide Materials 2****Chair: Tatsuma D. Matsuda**

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| 16:00 – 16:30 | Jiří Pospíšil
Charles Univ., Czech Republic | Magnetism throughout the UCoGe - URhGe - UIrGe system studied on alloy single crystals |
| 16:30 – 16:50 | Ai Nakamura
Tohoku, Japan | Single crystal growth and Fermi surface properties in thorium compounds |
| 17:30 – 18:00 | Japanese puppet show | |
| 18:00 – 20:00 | Banquet | |

June 30 (Sat)

Crystal Growth**Chair: Yasuyuki Nakajima**

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| 9:00 – 9:30 | Arumugam Thamizhavel
Tata Institute, India | Crystal growth of compounds that contain high vapor pressure element as one of the constituents |
| 9:30 – 10:00 | Jiaqiang Yan
Oak Ridge, USA | Flux growth in a horizontal configuration: an analog to vapor transport growth |
| 10:00 – 10:30 | Yoshichika Ōnuki
Ryukyus, Japan | High-quality single crystal growth in heavy fermion compounds |
| 10:30 – 10:50 | Toshiro Takabatake
Hiroshima, Japan | Crystal growth and physical properties of Kondo semiconductors |
| 10:50 – 11:10 | Break | |

Chiral Materials**Chair: Hiroshi Amitsuka**

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| 11:10 – 11:40 | Yusuke Kousaka
Okayama, Japan | Homo-chiral crystallization and helimagnetic chirality in inorganic chiral magnetic compounds |
| 11:40 – 12:10 | Shigeo Ohara
Nagoya Inst. Tech., Japan | Flux growth and characterization of new ytterbium intermetallic compounds: chiral magnetism and Kondo-lattice properties |

Poster Award and Closing

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| 12:10 – 12:30 | Presentation of poster award and closing remarks |
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Poster Session (June 29, 14:00 – 16:00)

- P01 Hu Yajian
Hong Kong, China
Extremely large magnetoresistance and the complete determination of the Fermi surface topology in the semimetal ScSb
- P02 Nonoka Higa
JAEA, Japan
NMR studies of the incommensurate helical antiferromagnet EuCo_2X_2 ($\text{X} = \text{As}, \text{P}$)
- P03 Rajib Mondal
Tata Institute, India
Structural, magnetic and electrical transport properties of single crystalline CeTAs_2 ($T = \text{Cu}, \text{Ag}$)
- P04 Alexander Breindel
UC San Diego, USA
Quantum oscillations in $\text{PrT}_2\text{Cd}_{20}$ ($T = \text{Ni}, \text{Pd}$) compounds
- P05 Maria Szlawska
Wroclaw, Poland
Magnetic ordering in single-crystalline CeAgAs_2
- P06 Yoshiaki J. Sato
Tohoku, Japan
Superconducting properties and anisotropic superconducting gap of CeIr_3 single crystal
- P07 Arvind Maurya
Tohoku, Japan
Single crystal growth and Fermi surface properties of non-centrosymmetric $\text{U}_3\text{Ni}_3\text{Sn}_4$
- P08 Yuma Umimoto
Tokyo, Japan
A new way to control magnetism in Y-type hexaferrite
- P09 Hideki Tou
Kobe, Japan
NMR evidence for anomalous magnetic ground state in field-insensitive heavy fermion system $\text{SmTa}_2\text{Al}_{20}$
- P10 Minoru Nohara
Okayama, Japan
Giant phonon softening and enhancement of superconductivity induced by copper/phosphorus doping of BaNi_2As_2
- P11 Qun Niu
Hong Kong, China
Nonsaturating large magnetoresistance in high carrier density nonsymmorphic metal CrP
- P12 Hiroyuki Hidaka
Hokkaido, Japan
Low-energy phonon and f electronic state in the cage-structured compound MBe_{13}
- P13 Yoshiaki Kuwata
Kobe, Japan
The ground states of the materials with similar zigzag structure to RuAs
- P14 Tsuyoshi Omi
Tokyo, Japan
Strong magnetoelastic coupling in multiferroic $\text{CaBaCo}_4\text{O}_7$
- P15 Shingo Araki
Okayama, Japan
Antiferromagnetic quantum criticality and anomalous transversal resistivity in CeRh_2Si_2
- P16 Rikako Yamamoto
Hiroshima, Japan
Crystalline electric field ground state and antiferromagnetic order of $\text{NdT}_2\text{Zn}_{20}$ ($T = \text{Co}, \text{Rh}$)
- P17 Yuichiro Noma
Kobe, Japan
 ^{73}Ge -NQR studies under pressure on magnetic fluctuations of ferromagnetic superconductor UGe_2
- P18 Yuri Fujima
Tokyo, Japan
Effects of uniaxial stress on skyrmion-lattice host GaV_4Se_8
- P19 Ryuto Nakanishi
Hyogo, Japan
Microscopic evidence for the dual Kondo temperatures in YbXCu_4 ($\text{X} = \text{Cu}, \text{Ag}$)
- P20 Takashi Matsui
Kobe, Japan
NMR study on rattling properties of tetrahedrite $\text{Cu}_{12}\text{Sb}_4\text{S}_{13}$
- P21 Yuka Kusanose
Hiroshima, Japan
Non-magnetic ground state doublet in a cubic Pr-based compound PrMgNi_4
- P22 Dai Aoki
Tohoku, Japan
Single crystal growth of uranium based heavy fermion compounds
- P23 Kaya Kobayashi
Okayama, Japan
Superconductivity in trilayer $(\text{PbSe})_n(\text{TiSe}_2)_m$ misfit compound
- P24 Tetsuya Takeuchi
Osaka, Japan
Spin-glass behavior in the flux-grown single crystal EuCu_2Si_2

- P25 Katsuhiko Suzuki Superconducting gap anisotropy in BiS₂ layered superconductors
Ritsumeikan University, Japan
- P26 Tetsuro Kubo NMR studies on magnetic fluctuations at low temperatures in PrT₂Al₂₀ (T = Nb, Ta)
Okayama Univ. of Science, Japan
- P27 Tatsuki Sato Magnetoelectric effect in a newly synthesized helical magnet Ni₂In_{1-x}A_xSbO₆ (A_x = Cr_{0.1}, Fe_{0.05})
Tokyo, Japan
- P28 Tatsuya Yanagisawa Anisotropic elastic response in the hidden order phase of URu₂Si₂ under high magnetic fields
Hokkaido, Japan
- P29 Akinari Kohriki Magnetization measurement of Ce(Ru_{1-x}Rh_x)₂Al₁₀ (x = 0, 0.05) under electric current
Hokkaido, Japan
- P30 Raquel A Ribeiro Superconductivity and structural phase transition in BaBi₃ under pressure
UFABC, Brazil / Iowa, USA
- P31 Fuminori Honda Single crystal growth and magnetic properties of non-centrosymmetric compound UIrSi₃
Tohoku, Japan
- P32 Jiří Pospíšil Magnetism throughout the UCoGe-URhGe-UIrGe system studied on alloy single crystals
Charles Univ., Czech Republic
- P33 Noriaki Kimura Orbital Crossing on Split Fermi Surfaces in Noncentrosymmetric Yb₄Sb₃
Tohoku, Japan