

## センターからのお知らせ

### 2009 年度共同利用成果

#### <SQUID (片平) >

- Y. Kasahara, T. Kishiume, T. Takano, K. Kobayashi, E. Matsuoka, H. Onodera, K. Kuroki, Y. Taguchi and Y. Iwasa, “Enhancement of Pairing Interaction and Magnetic Fluctuations toward a Band Insulator in an Electron-Doped  $\text{Li}_x\text{ZrNCl}$  Superconductor”, *Phys. Rev. Lett.* **103** (2009) 077004.
- M. Hiraishi, R. Kadono, M. Miyazaki, S. Takeshita, Y. Taguchi, Y. Kasahara, T. Takano, T. Kishiume, and Y. Iwasa, “Anisotropic superconducting order parameter in Li-intercalated layered superconductor  $\text{Li}_x\text{ZrNCl}$ ”, *Phys. Rev. B* **81** (2010) 014525.
- J. T. Ye, S. Inoue, K. Kobayashi, Y. Kasahara, H. T. Yuan, H. Shimotani, and Y. Iwasa, “Liquid-gated interface superconductivity on an atomically flat film”, *Nature Materials* **9** (2010) 125.
- M. Endo, D. Chiba, H. Shimotani, F. Matsukura, Y. Iwasa, and H. Ohno, “Electric double layer transistor with a (Ga,Mn)As channel”, *Appl. Phys. Lett.* **9** (2010) 022515.
- 岩佐義宏, 叶 劍挺, 袁 洪涛, 笠原裕一, 下谷秀和, 「層状窒化物の電界誘起超伝導」, *固体物理* **45** (2010) 91.
- S. Chakraverty, A. Ohtomo, M. Okude, K. Ueno, and M. Kawasaki, “Epitaxial Structure of (001) and (111)-Oriented Perovskite Ferrate Films Grown by Pulsed-Laser Deposition”, *Cryst. Growth Des.* **33** (2010) 157.
- H. Hiraga, T. Fukumura, A. Ohtomo, T. Makino, A. Ohkubo, H. Kimura, and M. Kawasaki, “Optical and magnetic properties of  $\text{CuMnO}_2$  epitaxial thin films with a delafossite-derivative structure”, *Appl. Phys. Lett.* **95** (2010) 032109.
- T. Yamasaki, T. Fukumura, Y. Yamada, M. Nakano, K. Ueno, T. Makino, and M. Kawasaki, “Co-doped  $\text{TiO}_2$  films grown on glass: Room-temperature ferromagnetism accompanied with anomalous Hall effect and magneto-optical effect”, *Appl. Phys. Lett.* **94** (2010) 102515.

- K. Kudo, T. Nishizaki, N. Okumura and N. Kobayashi, “Electronic inhomogeneity in Pb-Substituted  $\text{Bi}_2\text{Sr}_2\text{CuO}_{6+d}$  Studied by STM/STS”, *J. Phys.: Conf. Ser.* **150** (2009) 052133.
- K. Kudo, N. Okumura, Y. Miyoshi, T. Nishizaki, T. Sasaki and N. Kobayashi, “Narrow Carrier Concentration Range of Superconductivity and Critical Point of Pseudogap Formation Temperature in Pb-Substituted  $\text{Bi}_2\text{Sr}_2\text{CuO}_{6+d}$ ”, *J. Phys. Soc. Jpn.* **78** (2009) 084722.
- K. Yubuta, T. Yamamura, D. X. Li, and Y. Shiokawa, “Direct observations of ordered  $\text{R}_2\text{CuSi}_3$  (R= Ce and Nd) cluster glass compounds in real space by HRTEM”, *Solid State Commun.* **149** (2009) 286.
- D. X. Li, T. Yamamura, S. Nimori, and X. Zhao, “Extended short-range ferromagnetic order with cluster-glass behavior in  $\text{Dy}_2\text{AuSi}_3$ ”, *J. Alloys and Compounds* **488** (2009) 558.
- S. Mamishin, H. Kasai, W. X. Xia, Y. Murakami, D. Shindo, S. Mori, and A. Tonomura, “Lorentz Microscopy Study on Magnetization Reversal Process in Single-domain State in Perovskite-type Manganite”, *Jpn. J. Appl. Phys.* **49** (2010) 063003.
- Y. Murakami, H. Kasai, J. J. Kim, S. Mamishin, D. Shindo, S. Mori, and A. Tonomura, “Ferromagnetic Domain Nucleation and Growth in Colossal Magnetoresistive Manganite”, *Nature Nanotechnology* **5** (2010) 37-41.
- X. Xu, W. Ito, R.Y. Umetsu, R. Kainuma, and K. Ishida, “Anomaly of Critical Stress in Stress-induced Transformation of the NiCoMnIn Metamagnetic Shape Memory Alloy”, *Appl. Phys. Lett.* **95** (2009) 181905.
- T. Omori, K. Watanabe, R.Y. Umetsu, R. Kainuma, and K. Ishida, “Martensitic transformation and magnetic field-induced strain in Fe-Mn-Ga shape memory alloy”, *Appl. Phys. Lett.* **95** (2009) 082508.
- K. Ito, W. Ito, R.Y. Umetsu, S. Tajima, H. Kawaura, R. Kainuma, and K. Ishida, “Metamagnetic shape memory effect in polycrystalline NiCoMnSn alloy fabricated by spark plasma sintering”, *Scripta Materialia* **61** (2009) 504-507.

- R.Y. Umetsu, Y. Kusakari, T. Kanomata, K. Suga, Y. Sawai, K. Kindo, K. Oikawa, R. Kainuma, and K. Ishida “Metamagnetic behaviour under high magnetic fields in  $\text{Ni}_{50}\text{Mn}_{50-x}\text{In}_x$  ( $x = 14.0$  and  $15.6$ ) shape memory alloys”, *J. Phys. D: Appl. Physics* **42** (2009) 075003.
- R.Y. Umetsu, W. Ito, K. Ito, K. Koyama, A. Fujita, K. Oikawa, K. Watanabe, T. Kanomata, R. Kainuma, and K. Ishida, “Anomaly in entropy change between parent and martensite phases in the  $\text{Ni}_{50}\text{Mn}_{34}\text{In}_{16}$  Heusler alloy”, *Scripta Materialia* **60** (2009) 25-28.
- M. Saito, K. Ishikawa, S. Konno, K. Taniguchi, and T. Arima, “Periodic rotation of magnetization in a non-centrosymmetric soft magnet induced by an electric field”, *Nature Materials* **8** (2009) 634-638.
- T. Adachi, K. Omori, Y. Tanabe and Y. Koike, “Magnetic-susceptibility and specific-heat studies on the inhomogeneity of superconductivity in the underdoped  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ”, *J. Phys. Soc. Jpn.* **78** (2009) 114707.

#### <SQUID(青葉山)>

- J. Ju, Z. Li, H-H. Wen, K. Sato, M. Watahiki, G. Li, and K. Tanigaki, “A structural study of the hole-doped superconductors  $\text{Pr}_{1-x}\text{Sr}_x\text{FeAsO}$ ”, *New J. Phys.* **11** (2009) 083003.
- X. Zhu, F. Han, G. Mu, P. Cheng, J. Tang, J. Ju, K. Tanigaki, and H-H. Wen, “Superconductivity induced by doping platinum in  $\text{BaFe}_2\text{As}_2$ ”, *Phys. Rev. B* **81** (2010) 104525.
- J. Tang, R. Kumashiro, J. Ju, Z. Li, M. Avila, K. Suekuni, T. Takabatake, F. Guo, K. Kobayashi, and K. Tanigaki, “p- and n-Type  $\text{Ba}_8\text{Ga}_{16}\text{Ge}_{30}$  studied by X-ray photoelectron spectroscopy”, *Chem. Phys. Lett.* **472** (2009) 62.
- F. Kanetake, A. Harada, H. Mukuda, Y. Kitaoka, T. Rachi, K. Tanigaki, K. Itoh, and E. Haller, “ $^{73}\text{Ge}$ - and  $^{135/137}\text{Ba}$ -NMR Studies of Clathrate Superconductor  $\text{Ba}_{24}\text{Ge}_{100}$ ”, *J. Phys. Soc. Jpn.* **78** (2009) 104710.
- J. Tang, Z. Li, J. Ju, R. Kumashiro, M. Avila, K. Suekuni, T. Takabatake, F. Guo, K. Kobayashi, K. Akai, and K. Tanigaki, “Soft x-ray photoelectron spectroscopy study of type-I clathrates”, *Sci. Technol. Adv. Mater.* **9** (2009) 044207.

- Y. Kohama, T. Rachi, J. Jing, Z. Li, J. Tang, R. Kumashiro, S. Izumisawa, H. Kawaji, T. Arake, H. Sawa, Y. Murata, K. Komatsu, and K. Tanigaki, “Rotational and Translational Dynamics of Ortho-Hydrogen in Isotropic Fullerene Cages”, *Phys. Rev. Lett.* **102** (2009) 013001.
- Kotaro Saito, Claire Laulhe, Kazuaki Iwasa, and Youichi Murakami, “Rh-substitution effect on 4f-electron states in multipole ordered phase of  $\text{PrRu}_4\text{P}_{12}$ ”, *J. Phys.: Conf. Ser.* **200** (2010) 012170.
- F. Kikuchi, K. Hara, E. Matsuoka, H. Onodera, S. Nakamura, T. Nojima, K. Katoh, and A. Ochiai, “ $\text{Yb}_2(\text{Pd}_{1-x}\text{Ni}_x)_2\text{Sn}$ : interplay of geometrical frustration and Kondo effect in quantum spin system”, *J. Phys. Soc. Jpn.* **78** (2009) 083708.
- M. Matsunami, H. Okamura, A. Ochiai, T. Nanba, “Pressure Tuning of an Ionic Insulator into a Heavy Electron Metal: An Infrared Study of  $\text{YbS}$ ”, *Phys. Rev. Lett.* **103** (2009) 237202.
- R. Matysiak, G. Kamieniarz, P. Gegenwart, A. Ochiai, “Field-dependent specific heat of  $\text{Yb}_4\text{As}_3$ : Agreement between a spin-1/2 model and experiment”, *Phys. Rev. B* **79** (2009) 224413.
- T. Okane, T. Ohkochi, Y. Takeda, S. I. Fujimori, A. Yasui, Y. Saitoh, H. Yamagami, A. Fujimori, Y. Matsumoto, M. Sugi, N. Kimura, T. Komatsubara, and H. Aoki, “4f-Derived Fermi Surfaces of  $\text{CeRu}_2(\text{Si}_{1-x}\text{Ge}_x)_2$  near the Quantum Critical Point: Resonant Soft-X-Ray ARPES Study”, *Phys. Rev. Lett.* **102** (2009) 216401.
- T. Okane, T. Ohkochi, Y. Takeda, S. I. Fujimori, A. Vasui, Y. Saitoh, H. Yamagami, A. Fujimori, Y. Matsumoto, M. Sugi, N. Kimura, T. Komatsubara, and H. Aoki, “Band structures of  $\text{CeRu}_2(\text{Si}_{1-x}\text{Ge}_x)_2$  studied by resonant soft X-ray ARPES”, *Physica Status Solidi B* **247** (2010) 697-699.
- Y. Matsumoto, N. Kimura, T. Komatsubara, H. Aoki, M. Kimata, T. Terashima, and S. Uji, “Anomalous behavior of the dHvA oscillations in  $\text{Ce}_x\text{La}_{1-x}\text{Ru}_2\text{Si}_2$ ”, *J. Phys.: Conf. Ser.* **200** (2010) 012115.
- S. Tsutsui, H. Uchiyama, J. P. Sutter, A. Q. R. Baron, H. Sugawara, J. Yamaura, Z. Hiroi, A. Ochiai, and H. Sato, “Rare-earth atom motions in  $\text{ROs}_4\text{Sb}_{12}$  ( $R=\text{La, Pr, Nd, Sm}$ )”, *J. Phys.: Conf. Ser.* **200** (2010) 012213.

- A. Ochiai, K. Hara, F. Kikuchi, T. Inukai, E. Matsuoka, H. Onodera, S. Nakamura, T. Nojima, and K. Katoh, “Quantum spin system in *f*-electron compounds -YbAl<sub>3</sub>C<sub>3</sub> and its related compounds-”, J. Phys.: Conf. Ser. **200** (2010) 022040.

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- K. Kudo, T. Nishizaki, N. Okumura, and N. Kobayashi, “Electronic inhomogeneity in Pb-Substituted Bi<sub>2</sub>Sr<sub>2</sub>CuO<sub>6+d</sub> Studied by STM/STS”, J. Phys.: Conf. Ser. **150** (2009) 052133.
- K. Kudo, N. Okumura, Y. Miyoshi, T. Nishizaki, T. Sasaki, and N. Kobayashi, “Narrow Carrier Concentration Range of Superconductivity and Critical Point of Pseudogap Formation Temperature in Pb-Substituted Bi<sub>2</sub>Sr<sub>2</sub>CuO<sub>6+d</sub>”, J. Phys. Soc. Jpn. **78** (2009) 084722.