

## Publications

### < Paper >

- 1 “Pressure-induced coherent sliding-layer transition in the excitonic insulator  $\text{Ta}_2\text{NiSe}_5$ ”, Akitoshi Nakano, Kento Sugawara, Shinya Tamura, Naoyuki Katayama, Kazuyuki Matsubayashi, Taku Okada, Yoshiya Uwatoko, Kouji Munakata, Akiko Nakao, Hajime Sagayama, Reiji Kumai, Kunihisa Sugimoto, Naoyuki Maejima, Akihiko Machida, Tetsu Watanukig and Hiroshi Sawa, *IUCrJ* **5**(2), 158-165 (2018).
- 2 “Converting topological insulators into topological metals within the tetradymite family”, K.-W. Chen, N. Aryal, J. Dai, D. Graf, S. Zhang, S. Das, P. Le Fèvre, F. Bertran, R. Yukawa, K. Horiba, H. Kumigashira, E. Frantzeskakis, F. Fortuna, L. Balicas, A. F. Santander-Syro, E. Manousakis, and R. E. Baumbach, *Phys. Rev. B* **97**, 165112:1-9 (2018).
- 3 “Local spin structure of the  $\alpha\text{-RuCl}_3$  honeycomb-lattice magnet observed via muon spin rotation/relaxation”, Ichihiro Yamauchi, Masatoshi Hiraishi, Hiroataka Okabe, Soshi Takeshita, Akihiro Koda, Kenji M. Kojima, Ryosuke Kadono, and Hidekazu Tanaka, *Phys. Rev. B* **97**, 134410 : 1-10 (2018).
- 4 “Structural Variations and Dielectric Properties of  $(\text{Bi}_{1-x}\text{La}_x)_2\text{SiO}_5$  ( $0 < x < 0.1$ ) Polycrystallines Synthesized by Crystallization of Bi-Si-O and Bi-La-Si-O Glasses”, H. Taniguchi, S. Tatewaki, S. Yasui, Y. Fujii, J. Yamaura, and I. Terasaki, *Phys. Rev. Mat.* **2**, 045603:1-8 (2018).
- 5 “Reduction and oxidation annealing effects on Cu *K*-edge XAFS for electron-doped cuprate superconductors”, S Asano, K M Suzuki, D Matsumura, K Ishii, T Ina, and M. Fujita, *J. Phys.: Conf. Ser.* **969**, 012051:1-5 (2018).
- 6 “Successive Phase Transitions and Magnetic Fluctuation in a Double-Perovskite  $\text{NdBaMn}_2\text{O}_6$  Single Crystal”, S Yamada, H Sagayama, K Sugimoto and T Arima , *Journal of Physics: Conference Series* **969**(1), 12103:1-5 (2018).
- 7 “Control of two-dimensional electronic states at anatase  $\text{TiO}_2$  (001) surface by K adsorption”, R. Yukawa, M. Minohara, D. Shiga, M. Kitamura, T. Mitsuhashi, M. Kobayashi, K. Horiba, and H. Kumigashira, *Phys. Rev. B* **97**, 165428:1-8 (2018).
- 8 “Surface electronic structure of  $\text{SmB}_6$ (111)”, Yoshiyuki Ohtsubo, Kenta Hagiwara, Chengwei Wang, Ryu Yukawa, Koji Horiba, Hiroshi Kumigashira, Wataru Hirano, Fumitoshi Iga, and Shinichi Kimura, *Physica B* **536**, 75-77 (2018).
- 9 “High-pressure Raman study on the superconducting pyrochlore oxide  $\text{Cd}_2\text{Re}_2\text{O}_7$ ”, Y. Matsubayashi, T. Hasegawa, N. Ogita, J. Yamaura, and Z. Hiroi, *Physica B.* **536**, 600-603 (2018).
- 10 “Magnetic excitations in the orbital disordered phase of  $\text{MnV}_2\text{O}_4$ ”, Matsuura, Keisuke; Sagayama, Hajime; Uehara, Amane; Nii, Yoichi; Kajimoto, Ryoichi; Kamazawa, Kazuya; Ikeuchi, Kazuhiko; Ji, Sungdae; Abe, Nobuyuki; Arima, Taka-hisa, *Physica B: Condensed Matter* **536**, 372-376 (2018).
- 11 “Piezoelectricity of strongly polarized ferroelectrics in prototypic organic crystals”, S. Horiuchi, J. Tsutsumi, K. Kobayashi, R. Kumai, and S. Ishibashi, *J. Mater. Chem. C*, **6**, 4714-4719 (2018).
- 12 “Computational findings of metastable ferroelectric phases of squaric acid”, Ishibashi, S. Horiuchi, and R. Kumai, *Phys. Rev. B* **97**, 184102:1-6 (2018).
- 13 “High-density two-dimensional electron system induced by oxygen vacancies in  $\text{ZnO}$ ”,

- T. C. Rödel, J. Dai, F. Fortuna, E. Frantzeskakis, P. Le Fèvre, F. Bertran, M. Kobayashi, R. Yukawa, T. Mitsuhashi, M. Kitamura, K. Horiba, H. Kumigashira, and A. F. Santander-Syro, *Phys. Rev. Mater.* **2**, 051601(R):1-7 (2018).
- 14 “Element Selectivity in Second-Harmonic Generation of  $\text{GaFeO}_3$  by a Soft-X-Ray Free-Electron Laser”, Sh. Yamamoto, T. Omi, H. Akai, Y. Kubota, Y. Takahashi, Y. Suzuki, Y. Hirata, K. Yamamoto, R. Yukawa, K. Horiba, H. Yumoto, T. Koyama, H. Ohashi, S. Owada, K. Tono, M. Yabashi, E. Shigemasa, S. Yamamoto, M. Kotsugi, H. Wadati, H. Kumigashira, T. Arima, S. Shin, and I. Matsuda, *Phys. Rev. Lett.* **120**, 223902:1-5 (2018).
- 15 “Spectroscopic and theoretical investigation of the electronic states of layered perovskite oxy-fluoride  $\text{Sr}_2\text{RuO}_3\text{F}_2$  thin films”, Akira Chikamatsu, Yuji Kurauchi, Keisuke Kawahara, Tomoya Onozuka, Makoto Minohara, Hiroshi Kumigashira, Eiji Ikenaga, and Tetsuya Hasegawa, *Phys. Rev. B* **97**, 235101:1-7 (2018).
- 16 “Semiconductive Single Molecular Bilayers Realized Using Geometrical Frustration”, Shunto Arai, Satoru Inoue, Takamasa Hamai, Reiji Kumai, Tatsuo Hasegawa, *Adv. Mater.*, **30** 1707256:1-7 (2018).
- 17 “Band alignment at  $\beta\text{-(Al}_x\text{Ga}_{1-x})_2\text{O}_3/\beta\text{-Ga}_2\text{O}_3$  (100) interface fabricated by pulsed-laser deposition”, R. Wakabayashi, M. Hattori, K. Yoshimatsu, Koji Horiba, H. Kumigashira, and Akira Ohtomo, *Appl. Phys. Lett.* **112**, 232103:1-4 (2018).
- 18 “Chiral-crystal-structure transformations and magnetic states of  $\text{R}_3\text{Rh}_4\text{Sn}_{13}$  ( $\text{R}=\text{La}$  and  $\text{Ce}$ )”, Kazuya Suyama, Kazuaki Iwasa, Yuka Otomo, Keisuke Tomiyasu, Hajime Sagayama, Ryoko Sagayama, Hironori Nakao, Reiji Kumai, Yoshinori Kitajima, Françoise Damay, Jean-Michel Mignot, Akira Yamada, Tatsuma D. Matsuda, and Yuji Aoki, *Physical Review B* **97**, 235138:1-9 (2018).
- 19 “Spatial coherence of the insulating phase in quasi-two-dimensional  $\text{LaNiO}_3$  flms”, Masato Anada, Kazuhiro Kowa, Hiroki Maeda, Enju Sakai, Miho Kitamura, Hiroshi Kumigashira, Osami Sakata, Yoshinori Nakanishi-Ohno, Masato Okada, Tsuyoshi Kimura, and Yusuke Wakabayashi, *Phys. Rev. B* **98**, 014105:1-8 (2018).
- 20 “Angle-resolved photoemission spectroscopy of the low-energy electronic structure of superconducting  $\text{Pr}_2\text{CuO}_4$  driven by oxygen nonstoichiometry”, M. Horio, Y. Krockenberger, K. Koshiishi, S. Nakata, K. Hagiwara, M. Kobayashi, K. Horiba, H. Kumigashira, H. Irie, H. Yamamoto, and A. Fujimori, *Phys. Rev. B* **98**, 020505(R):1-5 (2018).
- 21 “Observation of a Dirac nodal line in  $\text{AlB}_2$ ”, Daichi Takane, Seigo Souma, Kosuke Nakayama, Takechika Nakamura, Hikaru Oinuma, Kentaro Hori, Kouji Horiba, Hiroshi Kumigashira, Noriaki Kimura, Takashi Takahashi, and Takafumi Sato, *Phys. Rev. B* **98**, 041105(R):1-5 (2018).
- 22 “Electronic correlation in the quasi-two-dimensional electrified  $\text{Y}_2\text{C}$ ”, M. Hiraishi, K. M. Kojima, I. Yamauchi, H. Okabe, S. Takeshita, A. Koda, R. Kadono, X. Zhang, S. Matsuishi, H. Hosono, K. Hirata, S. Otani, and N. Ohashi, *Phys. Rev. B* **98**, 041104(R):1-5 (2018).
- 23 “Giant Rashba splitting of quasi-one-dimensional surface states on  $\text{Bi}/\text{InAs}(110)\text{-}(2\times 1)$ ”, Takuto Nakamura, Yoshiyuki Ohtsubo, Yuki Yamashita, Shin-ichiro Ideta, Kiyohisa Tanaka, Koichiro Yaji, Ayumi Harasawa, Shik Shin, Fumio Komori, Ryu Yukawa, Koji Horiba, Hiroshi Kumigashira, and Shin-ichi Kim, *Phys. Rev. B* **98**, 075431:1-7 (2018).
- 24 “Crystal structure determination under high pressure in the iron-based ladder superconductor  $\text{BaFe}_2\text{S}_3$ ”, K. Kobayashi, S. Maki, Y. Murakami, Y. Hirata, K. Ohgushi, and J. Yamaura, *Superconduct. Sci. Technol.* **31**, 105002:1-6

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- 25 “Local electronic structure of interstitial hydrogen in iron disulfide”,  
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  - 26 “Investigation of the electronic structure and lattice dynamics of the thermoelectric material Na-doped SnSe”,  
P. Wu, B. Zhang, K. L. Peng, M. Hagihala, Y. Ishikawa, M. Kofu, S. H. Lee, H. Kumigashira, C. S. Hu, Z. M. Qi, K. Nakajima, G. Y. Wang, Z. Sun, and T. Kamiyama,  
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  - 27 “Large anisotropic conductivity in  $Ti_2O_3$  films”,  
K. Yoshimatsu, H. Kurokawa, K. Horiba, H. Kumigashira, and A. Ohtomo,  
*APL Materials* **6**, 101101:1-8 (2018).
  - 28 “Growth of antiperovskite oxide  $Ca_3SnO$  films by pulsed laser deposition”,  
Makoto Minohara, Ryu Yukawa, Miho Kitamura, Reiji Kumai, Youichi Murakami, and Hiroshi Kumigashira,  
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  - 29 “Coexistence of two states in optically homogeneous silica glass during the transformation in short-range order”,  
Tomoko Sato, Nobumasa Funamori, Daisuke Wakabayashi, Keisuke Nishida, and Takumi Kikegawa,  
*Phys. Rev. B* **98**, 144111:1-6 (2018).
  - 30 “Structural Insight into Charge Transfer Phase Transition for Unique Iron Mixed-Valence Complex  $(n-C_3H_7)_4N[Fe^{II}Fe^{III}(dto)_3]$  with 2D Honeycomb Network”,  
M. Itoi, A. Okazawa, J. Yamaura, S. Maki, T. Komatsu, N. Kojima, I. Maurien, E. Codjovi, K. Boukheddaden, and F. Varret,  
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  - 31 “Nanoscale ice-type structural fluctuation in spinel titanates”,  
S. Torigoe, T. Hattori, K. Kodama, T. Honda, H. Sagayama, K. Ikeda, T. Otomo, H. Nitani, H. Abe, H. Murakawa, H. Sakai, and N. Hanasaki,  
*Physical Review B* **98**, 134443:1-7 (2018).
  - 32 “Anisotropic Charge Distribution Induced by Spin Polarization in  $La_{0.6}Sr_{0.4}MnO_3$  Thin Films Studied by X-ray Magnetic Linear Dichroism”,  
Goro Shibata, Kohei Yoshimatsu, Keisuke Ishigami, Takayuki Harano, Yukio Takahashi, Shoya Sakamoto, Yosuke Nonaka, Toshiharu Kadono, Mitsuho Furuse, Schuichiro Fuchino, Makoto Okano, Jun-ichi Fujihira, Akira Uchida, Kazunori Watanabe, Hideyuki Fujihira, Seiichi Fujihira, Arata Tanaka, Hiroshi Kumigashira, Tsuneharu Koide, and Atsushi Fujimori,  
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  - 33 “Gapless magnetic excitation in a heavily electron-doped antiferromagnetic phase of  $LaFeAsO_{0.5}D_{0.5}$ ”,  
H. Tamatsukuri, H. Hiraka, K. Ikeuchi, S. Iimura, Y. Muraba, M. Nakamura, H. Sagayama, J. Yamaura, Y. Murakami, Y. Kuramoto, and H. Hosono,  
*Phys. Rev. B.* **98**, 174415:1-6 (2018).
  - 34 “Electronic properties across metal-insulator transition in  $\beta$ -pyrochlore-type  $CsW_2O_6$  epitaxial films”,  
Takuto Soma, Kohei Yoshimatsu, Koji Horiba, Hiroshi Kumigashira, and Akira Ohtomo,  
*Phys. Rev. Mater.* **2**, 115003:1-8 (2018).
  - 35 “Precision Mechanical Design of 900 mm Long Ellipsoidal Neutron-focusing Supermirror for VIN ROSE at J-PARC/MLF”,  
T. Hosobata, M. Hino, H. Yoshinaga, T. Kawai, H. Endo, Y Yamagata, N. L. Yamada, and S. Takeda,  
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  - 36 “Observation of 400-kHz TOF-MIEZE Signals”,  
T. Oda, M. Hino, H. Endo, N. L. Yamada, Y. Kawabata, and H. Seto,  
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  - 37 “Growth and physical properties of  $Ce(O,F)Sb(S,Se)_2$  single crystals with siteselcted chalcogen atoms”,  
Masanori Nagao, Masashi Tanaka, Akira Miura, Miho Kitamura, Koji Horiba, Satoshi Watauchi,

- Yoshihiko Takano, Hiroshi Kumigashira, and Isao Tanaka, *Solid State Comm.* **289**, 38-42 (2019).
- 38 “Crystal Structure in Quadrupolar Kondo Candidate  $\text{PrTr}_2\text{Al}_{20}$  ( $\text{Tr} = \text{Ti}$  and  $\text{V}$ )”, Daisuke Okuyama, Masaki Tsujimoto, Hajime Sagayama, Yasuyuki Shimura, Akito Sakai, Atsushi Magata, Satoru Nakatsuji, and Taku J Sato, *Journal of the Physical Society of Japan* **88**, 15001:1-2 (2018).
- 39 “Fermi surface topology in a metallic phase of  $\text{VO}_2$  thin films grown on  $\text{TiO}_2(001)$  substrates”, Yuji Muraoka, Hiroki Nagao, Yuichiro Yao, Takanori Wakita, Kensei Terashima, Takayoshi Yokoya, Hiroshi Kumigashira, and Masaharu Oshima, *Sci. Rep.* **8**, 17906:1-10 (2018).
- 40 “Origins of Thermal Spin Depolarization in Half-Metallic Ferromagnet  $\text{CrO}_2$ ”, Hirokazu Fujiwara, Kensei Terashima, Masanori Sunagawa, Yuko Yano, Takanobu Nagayama, Tetsushi Fukura, Fumiya Yoshii, Yuka Matsuura, Makoto Ogata, Takanori Wakita, Koichiro Yaji, Ayumi Harasawa, Kenta Kuroda, Shik Shin, Koji Horiba, Hiroshi Kumigashira, Yuji Muraoka, and Takayoshi Yokoya, *Phys. Rev. Lett.* **121**, 257201:1-6 (2018).
- 41 “Atomic ordering, magnetic properties, and electronic structure of  $\text{Mn}_2\text{CoGa}$  Heusler alloy”, Rie Y Umetsu, Masato Tsujikawa, Kotaro Saito, Kanta Ono, Toru Ishigaki, Ryosuke Kainuma and Masafumi Shira, *J. Phys.: Condens. Matter* **31**, 065801:1-10 (2019).
- 42 “Large-Scale Micromagnetics Simulation of Magnetization Dynamics in a Permanent Magnet during the Initial Magnetization Process”, Hiroshi Tsukahara, Kaoru Iwano, Tadashi Ishikawa, Chiharu Mitsumata, and Kanta Ono, *Phys. Rev. Applied* **11**, 014010:1-8 (2019).
- 43 “Metallic spin-liquid-like behavior of  $\text{LiV}_2\text{O}_4$ ”, H. Okabe, M. Hiraishi, A. Koda, K. M. Kojima, S. Takeshita, I. Yamauchi, Y. Matsushita, Y. Kuramoto, and R. Kadono, *Phys. Rev. B* **99**, 041113(R):1-5 (2019).
- 44 “Bottom-current-collector-free thin-film batteries using  $\text{LiNi}_{0.8}\text{Co}_{0.2}\text{O}_2$  epitaxial thin films”, Kazunori Nishio, Koji Horiba, Naoto Nakamura, Miho Kitamura, Hiroshi Kumigashira, Ryota Shimizu, and Taro Hitosugi, *J. Power Source* **416**, 56-61 (2019).
- 45 “Accelerating small-angle scattering experiments on anisotropic samples using kernel density estimation”, Kotaro Saito, Masao Yano, Hideitsu Hino, Tetsuya Shoji, Akinori Asahara, Hidekazu Morita, Chiharu Mitsumata, Joachim Kohlbrecher and Kanta Ono, *Sci. Rep.* **9**, 1526:1-10 (2019).
- 46 “Observation of Chiral Fermions with a Large Topological Charge and Associated Fermi-Arc Surface States in  $\text{CoSi}$ ”, Daichi Takane, Zhiwei Wang, Seigo Souma, Kosuke Nakayama, Takechika Nakamura, Hikaru Oinuma, Yuki Nakata, Hideaki Iwasawa, Cephise Cacho, Timur Kim, Koji Horiba, Hiroshi Kumigashira, Takashi Takahashi, Yoichi Ando, and Takafumi Sato, *Phys. Rev. Lett.* **122**, 076402:1-6 (2019).
- 47 “Emergence of metallic monoclinic states of  $\text{VO}_2$  films induced by K deposition”, D. Shiga, M. Minohara, M. Kitamura, R. Yukawa, K. Horiba, and H. Kumigashira, *Phys. Rev. B* **99**, 125120:1-7 (2019).
- 48 “Anisotropic magnetodielectric coupling in anti-ferromagnet  $\text{Co}_4\text{Nb}_2\text{O}_9$ ”, N. D. Khanh, N. Abe, K. Matsuura, H. Sagayama, Y. Tokunaga, and T. Arima, *Applied Physics Letters* **114**, 102905:1-5 (2019).
- 49 “Automated estimation of materials parameter from X-ray absorption and electron energy-loss spectra with similarity measures”, Yuta Suzuki, Hideitsu Hino, Masato Kotsugi and Kanta Ono, *npj Computational Materials* **5**, 39:1-7 (2019).

## &lt; Conference &gt;

The 16th Korea-Japan meeting on Neutron Science

January 8-10, 2018

Chiba, Japan

- Oral “Structure and Mechanical Properties of Elastomer at Surface-modified Carbon Interface”  
K. Hori, N. L. Yamada, T. Masui, H. Kishimoto, Y. Fujii, H. Seto

International Conference on Synchrotron Radiation Instrumentation (SRI) 2018

June 10-15, 2018

Taipei, China

- Poster “Present Status of wide-energy-range VUV-SX beamline BL-2 MUSASHI at KEK-PF”  
M. Kitamura, K. Horiba, M. Minohara, R. Yukawa, D. Shiga, A. Toyoshima, H. Tanaka, Y. Nagatani, T. Kosuge, K. Amemiya, and H. Kumigashira

14th International Conference on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-14)

October 21-25, 2018

Sendai, Japan

- Oral “In-situ Angle-Resolved Photoemission Studies of the Quasi-Two-Dimensional Electron Liquid States Formed at Anatase TiO<sub>2</sub> (001) Surface by K Adsorption”  
R. Yukawa, M. Minohara, D. Shiga, M. Kitamura, T. Mihashi, M. Kobayashi, K. Horiba, H. Kumigashira
- Oral “Control of the Metal-Insulator Transition in VO<sub>2</sub> Thin Films by K Deposition”  
D. Shiga, M. Minohara, M. Kitamura, R. Yukawa, K. horiba, H. Kumigashira
- Oral “Origin of Interfacial Ferromagnetism Between Perovskite Oxides LaNiO<sub>3</sub> and LaMnO<sub>3</sub>”  
M. Kitamura, K. Horiba, M. Kobayashi, E. Sakai, M. Minohara, R. Yukawa, D. Shiga, K. Amemiya, Y. Nonaka, G. Shibata, A. Fujimori, H. Fujioka, and H. Kumigashira

- Oral “Wide-energy-range synchrotron beamline for spectroscopic analysis of surface and interface, BL-2 MUSASHI”  
K. Horiba, M. Kitamura, M. Minohara, R. Yukawa, D. Shiga, A. Toyoshima, H. Tanaka, Y. Nagatani, T. Kosuge, K. Amemiya, and H. Kumigashira
- Oral “Spatio-temporal Dynamics of Surface States of GaN-based Transistors”  
K. Omika, Y. Tateno, T. Kouchi, T. Komatani, K. Yui, N. Nagamura, K. Horiba, M. Oshima, M. Suemitsu, H. Fukidome, S. Yaegashi and K. Nakata
- Poster “Existence of three-dimensional Dirac-like cone in Ca<sub>3</sub>Pb<sub>1-x</sub>BixO”  
Y. Obata, R. Yukawa, K. Horiba, H. Kumigashira, Y. Kohama, Y. Toda, S. Matsuishi, and H. Hosono
- Poster “Spin-polarized quasi-one-dimensional electronic structure of Bi/InAs(110)-(2 × 1)”  
T. Nakamura, Y. Ohtsubo, Y. Yamashita, K. Yaji, A. Harasawa, S. Shin, F. Komori, R. Yukawa, K. Horiba, H. Kumigashira and S. Kimura

The 8th Indo-Japan Seminar

January 31-February 2, 2019

Tokyo, Japan

- Poster “Inter-valence Charge Transfer in Ru-Doped Cobalt Ferrite CoFe<sub>2</sub>O<sub>4</sub>”  
M. Kobayashi, M. Seki, M. Suzuki, M. Kitamura, A. Fujimori, K. Horiba, H. Kumigashira, M. Tanaka, H. Tabata

The first international workshop on Momentum Microscopy & Spectroscopy for Materials Science

February 22-23, 2019

Okazaki, Japan

- Invited “Synchrotron-based ARPES study at VUV-SX combination beamline KEK-PF BL-2 MUSASHI”  
K. Horib