

Publications

<Paper>

- "Growth of gold nanorods in gelled surfactant solutions", Y. Takenaka, H. Kitahata, N. L. Yamada, H. Seto, and M. Hara, *Journal of Colloid and Interface Science*, **356**, 111-117 (2011).
- "Ba₂IrO₄: A spin-orbit Mott insulating quasi-two-dimensional antiferromagnet", H. Okabe, M. Isobe, E. Takayama-Muromachi, A. Koda, S. Takeshita, M. Hiraishi, M. Miyazaki, R. Kadono, Y. Miyake, and J. Akimitsu, *Phys. Rev. B* **83**, 155118:1-8 (2011).
- "Hydrogen-Bonding Molecular Chains for High-Temperature Ferroelectricity", Horiuchi, R. Kumai, and Y. Tokura, *Adv. Mater.* **23**, 2098-2103 (2011).
- "Co-O-O-Co superexchange pathways enhanced by small charge-transfer energy in multiferroic BiCoO₃", T. Sudayama, Y. Wakisaka, T. Mizokawa, H. Wadati, G. A. Sawatzky, D. G. Hawthorn, T. Z. Regier, K. Oka, M. Azuma, and Y. Shimakawa, *Phys. Rev. B* **83**, 235105:1-5 (2011).
- "Quasi-One-Dimensional Spin Dynamics in d -Electron Heavy-Fermion Metal Y_{1-x}Sc_xMn₂", M. Miyazaki, R. Kadono, M. Hiraishi, T. Masuda, A. Koda, K. M. Kojima, T. Yamazaki, Y. Tabata, and H. Nakamura, *J. Phys. Soc. Jpn.* **80**, 063707:1-4 (2011).
- "Garnet superlattice as a transparent above-room-temperature polar magnet", Y. Krockenberger, J. S. Lee, D. Okuyama, H. Nakao, Y. Murakami, M. Kawasaki, and Y. Tokura, *Phys. Rev. B* **83**, 214414:1-5 (2011).
- "Polarization-analyzed resonant inelastic x-ray scattering of the orbital excitations in KCuF₃", K. Ishii, S. Ishihara, Y. Murakami, K. Ikeuchi, K. Kuzushita, T. Inami, K. Ohwada, M. Yoshida, I. Jarrige, N. Tatami, S. Nioka, D. Bizen, Y. Ando, J. Mizuki, S. Maekawa, and Y. Endoh, *Phys. Rev. B* **83**, 241101:1-4 (2011).
- "Giant Rashba-type spin splitting in bulk BiTeI", K. Ishizaka, M. S. Bahramy, H. Murakawa, M. Sakano, T. Shimojima, T. Sonobe, K. Koizumi, S. Shin, H. Miyahara, A. Kimura, K. Miyamoto, T. Okuda, H. Namatame, M. Taniguchi, R. Arita, N. Nagaosa, K. Kobayashi, Y. Murakami, R. Kumai, Y. Kaneko, Y. Onose, and Y. Tokura, *Nature Mat.* **10**, 521-526 (2011).
- "Contribution of intermediate submicrometer structures to physical properties near T_c in Pb(Zn_{1/3}Nb_{2/3})O₃-9%PbTiO₃", Kenji Ohwada, Jun'ichiro Mizuki, Kazumichi Namikawa, Mitsuyoshi Matsushita, Susumu Shimomura, Hironori Nakao and Kazuma Hirota, *Phys. Rev. B* **83**, 224115:1-7 (2011).
- "Element specific magnetic anisotropy energy of alternately layered FeNi thin films", M. Sakamaki and K. Amemiya, *Appl. Phys. Express* **4**, 073002:1-3 (2011).
- "Structure of Hydrated Sodium Ions and Water Molecules Adsorbed on the Mica/Water Interface", Hiroshi Sakuma, Toshihiro Kondo, Hironori Nakao, Koichi Shiraki, and Katsuyuki Kawamura, *J. Phys. Chem. C* **115**, 15959-15964 (2011).
- "An in-vacuum diffractometer for resonant elastic soft x-ray scattering", D. G. Hawthorn, F. He, L. Venema, H. Davis, A. J. Achkar, J. Zhang, R. Sutarto, H. Wadati, A. Radi, T. Wilson, G. Wright, K. M. Shen, J. Geck, H. Zhang, V. Novak, and G. A. Sawatzky, *Rev. Sci. Instrum.* **82**, 073104:1-8 (2011).
- "Metallic Quantum Well States in Artificial Structures of Strongly Correlated Oxide", K. Yoshimatsu, K. Horiba, H. Kumigashira, T. Yoshida, A. Fujimori, and M. Oshima, *Science* **333**, 319-322 (2011).
- "Inkjet printing of single-crystal films", Hiromi Minemawari, Toshikazu Yamada, Hiroyuki Matsui, Jun'ya Tsutsumi, Simon Haas, Ryosuke Chiba, Reiji Kumai & Tatsuo Hasegawa, *Nature* **475**, 364-367 (2011).
- "An n-type Transparent Conducting Oxide: Nb₁₂O₂₉", T. Ohsawa, J. Okubo, T. Suzuki, H. Kumigashira, M. Oshima, and T. Hitosugi, *J. Phys. Chem. C* **115**, 16625-16629 (2011).
- "Magnetic Field and Temperature Dependence of X-ray Superlattice Intensity in Multipole Ordered Phase of Pr(Ru_{1-x}Rh_x)₄P₁₂ (x = 0, 0.03)", Kotaro SAITO, Kazuaki IWASA, Lijie HAO, Hironori NAKAO and Youichi MURAKAMI, *J. Phys. Soc. Jpn.* **80**, SA026:1-3 (2011).
- "Softening of phonon by filled rare-earth ion motion common to skutterudite with Sb cages", K. Iwasa, Y. Mori, S. Itohe, R. Igarashi, Y. Murakami, H. Sugawara, M. Kohgi, H. Sato, *J. Phys. Soc. Jpn.* **80**, SA032:1-3 (2011).
- "Carrier compensation mechanism in heavily Nb-doped anatase Ti_{1-x}Nb_xO₂+d epitaxial thin films", H. Nogawa, A. Chikamatsu, Y. Hirose, S. Nakao, H. Kumigashira, M. Oshima, and T. Hasegawa, *J. Phys. D: Appl. Phys.* **44**, 365404:1-6 (2011).
- "Multiferroicity in NiBr₂ with long-wavelength cycloidal spin structure on a triangular lattice", Y. Tokunaga, D. Okuyama, T. Kurumaji, T. Arima, H. Nakao, Y. Murakami, Y. Taguchi, and Y. Tokura, *Phys. Rev. B* **84**, 060406:1-4 (2011).
- "Ferrimagnetism and spontaneous ordering of transition metals in double perovskite La₂CrFeO₆ films", S. Chakraverty, A. Ohtomo, D. Okuyama, M. Saito, M. Okude, R. Kumai, T. Arima, Y. Tokura, S. Tsukimoto, Y. Ikuhara, and M. Kawasaki, *Phys. Rev. B* **84**, 064436:1-5 (2011).
- "Insulating state of ultrathin epitaxial LaNiO₃ thin films detected by hard x-ray photoemission", A. X. Gray, A. Janotti, J. Son, J. M. LeBeau, S. Ueda, Y. Yamashita, K. Kobayashi, A. M. Kaiser, R. Sutarto, H. Wadati, G. A. Sawatzky, C. G. Van de Walle, S. Stemmer,

- and C. S. Fadley,
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22. "Resonant elastic soft X-ray scattering in oxygen-ordered YBa₂Cu₃O_{6+δ}",
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 23. "Formation of transition layers at metal/perovskite oxide interfaces showing resistive switching behaviors",
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 24. "Displacement-Type Ferroelectricity with Off-Center Magnetic Ions in Perovskite Sr_{1-x}Ba_xMnO₃",
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 25. "Growth of Highly Insulating Bulk Single Crystals of Multiferroic BiFeO₃ and Their Inherent Internal Strains in the Domain-Switching Process",
T. Ito, T. Ushiyama, Y. Yanagisawa, R. Kumai, and Y. Tomioka,
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 26. X-ray induced insulator-metal transition in a thin film of electron-doped VO₂",
K. Shibuya, D. Okuyama, R. Kumai, Y. Yamasaki, H. Nakao, Y. Murakami, Y. Taguchi, T. Arima, M. Kawasaki, and Y. Tokura,
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R. Fukuta, S. Miyasaka, K. Hemmi, S. Tajima, D. Kawana, K. Ikeuchi, Y. Yamasaki, A. Nakao, H. Nakao, Y. Murakami, and K. Iwasa,
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A. Braun, S. Erat, A. K. Ariffin, R. Manzke, H. Wadati, T. Graule, and L. J. Gauckler,
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 31. "Electronic structure of the SrTiO₃/LaAlO₃ interface revealed by resonant soft x-ray scattering",
H. Wadati, J. Geck, D. G. Hawthorn, T. Higuchi, M. Hosoda, C. Bell, Y. Hikita, H. Y. Hwang, C. Schussler-Langeheine, E. Schierle, E. Weschke and G. A. Sawatzky,
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 32. "Peierls Mechanism of the Metal-Insulator Transition in Ferromagnetic Hollandite K₂Cr₃O₁₆",
T. Toriyama, A. Nakao, Y. Yamaki, H. Nakao, Y. Murakami, K. Hasegawa, M. Isobe, Y. Ueda, A.V. Ushakov, D. I. Khomskii, S.V. Streltsov, T. Konishi, and Y. Ohta,
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 33. "Motion of the guest ion as precursor to the first-order phase transition in the cage system GdB₆",
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 35. "Advanced Neutron Reflectometer for Investigation on Dynamic/Static Structures of Soft-Interfaces in J-PARC",
K. Mitamura, N. L. Yamada, H. Sagehashi, H. Seto, N. Torikai, T. Sugita, M. Furusaka, and A. Takahara,
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 36. "Effect of surface roughness on magnetism of ultrathin Co films",
M. Sakamaki and K. Amemiya,
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 37. "Nano-scale characterization of poly-Si gate on high-k gate stack structures by scanning photoemission microscopy",
S. Toyoda, Y. Nakamura, K. Horiba, H. Kumigashira, M. Oshima, and K. Amemiya,
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 38. "X-ray photon correlation spectroscopy of structural fluctuations in relaxor ferroelectrics PZN-9%PT",
Kenji Ohwada, Susumu Shimomura, Hironori Nakao, Mitsuyoshi Matsushita, Kazumichi Namikawa and Jun'ichiro Mizuki,
Journal of Physics: Conference Series, **320**, 012086:1-5 (2011).
 39. "Ferroelectricity and Pressure-Induced Phenomena Driven by Neutral Ionic Valence Instability of Acid-Base Supramolecules",
R. Kumai, S. Horiuchi, J. Fujioka, and Y. Tokura,
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 40. "Quasi-One-Dimensional Spin Dynamics in LiV₂O₄: One-to-Three-Dimensional Crossover as a Possible Origin of Heavy Fermion State",
R. Kadono, A. Koda, W. Higemoto, K. Ohishi, H. Ueda, C. Urano, S. Kondo, M. Nohara, and H. Takagi,
J. Phys. Soc. Jpn. **81**, 014709:1-4 (2012).
 41. "Gelation Effect on the Synthesis of High-Aspect-Ratio Gold Nanorods",
Yoshiko Takenaka, Hiroyuki Kitahata, Norifumi L. Yamada, Hideki Seto, and Masahiko Hara,
J. Nanosci. Nanotech. **12**, 714-718 (2012).
 42. "Formation of a Multiscale Aggregate Structure through Spontaneous Blebbing of an Interface",
Yutaka Sumino, Hiroyuki Kitahata, Yuya Shinohara, Norifumi L. Yamada, and Hideki Seto,
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43. "Origin of the Large Polarization in Multiferroic YMnO₃ Thin Films Revealed by Soft- and Hard-X-Ray Diffraction", H. Wadati, J. Okamoto, M. Garganourakis, V. Scagnoli, U. Staub, Y. Yamasaki, H. Nakao, Y. Murakami, M. Mochizuki, M. Nakamura, M. Kawasaki, and Y. Tokura, *Phys. Rev. Lett.* **108**, 047203:1-5 (2012).
 44. "Magnetic Phase Diagrams of YVO₃ and TbVO₃ under High Pressure", Daisuke Bizen, Hironori Nakao, Kazuaki Iwasa, Youichi Murakami, Toyotaka Osakabe, Jun Fujioka, Toshio Yasue, Shigeki Miyasaka, and Yoshinori Tokura, *J. Phys. Soc. Jpn.* **81**, 024715:1-6 (2012).
- BIT's 1st Annual World Congress of Nano-S&T (World EXPO Center, Dalian, China) October 23-26, 2011
 - Invited, "Resonant Soft X-Ray Scattering Studies of Multiferroic Thin Films" Hiroki Wadati
 - The 9th Taiwan-Japan Joint Seminar on Crystallography (National Taiwan University, Taipei, Taiwan) November 6-9, 2011
 - Invited, "Ordering States of Electronic Degrees of Freedom Studied by Resonant X-ray/Soft X-ray Scattering" Youichi Murakami
 - 1st Asia-Oceania Conference on Neutron Scattering (EPOCAL Tsukuba, Japan) November 20-24, 2011
 - Invited, "Orbital and magnetic order in RVO₃ under high pressure" Hironori Nakao

<Conference>

- Seminar (University of Toronto, Canada) April 13, 2011
 - Oral, "Charge/orbital/spin ordering in Mn-oxide thin films revealed by resonant soft x-ray scattering" H. Wadati
- 2011 Villa Conference on Complex Oxide Heterostructures (VC-COH) (Las Vegas, Nevada, US) April 21-24, 2011
 - Invited, "Metal-insulator transition and two-dimensional electron liquid in SrVO₃ ultrathin films" Hiroshi Kumigashira
- Search for new physics in transition metal compounds by spectroscopies (Tohoku University, Sendai, Japan) July 28-30, 2011
 - Invited, "Orbital ordering of intermediate-spin state of Co³⁺ in Sr₃YCo₄O_{10.5} studied by resonant x-ray scattering" H. Nakao
- 6th International School and Conference on Spintronics and Quantum Information Technology (Matsue, Japan) August 1-5, 2011
 - "Formation of a NiO-like surface single layer by deposition of Ni on O/Cu(001)" K. Amemiya and M. Sakamaki
 - "In-situ observation of magnetic anisotropy on growth process of alternately layered FeNi thin films" M. Sakamaki and K. Amemiya
- XXII Congress and General Assembly of the International Union of Crystallography (Municipal Conference Centre, Madrid, Spain) August 22-30, 2011
 - Poster, "Resonant X-ray Diffraction from CB-type Charge-Orbital Order in Nd_{1.5}Sr_{0.5}NiO₄" Yuichi Yamasaki, Masaki Uchida, Hironori Nakao, Youichi Murakami, and Yoshinori Tokura
 - Poster, "Orbital Ordering of Co³⁺ Intermediate-Spin State in RT ferromagnet Sr₃YCo₄O_{10.5}" Hironori Nakao, Tetsuya Murata, Daisuke Bizen, Youichi Murakami, Kenji Ohoyama, Kazuyoshi Yamada, Shintaro Ishiwata, Wataru Kobayashi, and Ichiro Terasaki
- EMPA Seminar (EMPA, Dübendorf, Switzerland) August 23, 2011
 - Oral, "HARD X-RAY PHOTOEMISSION OF PHASE SEPARATION IN PEROVSKITE MN-OXIDE SUPERLATTICES" Hiroki WADATI
- 18th International Workshop on Oxide Electronics (Napa Valley Marriott Hotel&Spa, CA, US) September 26-28, 2011
 - Invited, "Metallic Quantum Well States in Artificial Structures based on Strongly-Correlated Oxide" Hiroshi Kumigashira
- CIFAR Quantum Materials Program Meeting (Novotel Montreal Centre, Montreal, QC) October 12-16, 2011
 - Invited, "Resonant Soft X-Ray Scattering Studies of Multiferroic YMnO₃ Thin Films" Hiroki Wadati
- IMSS Symposium '11 (EPOCAL Tsukuba, Japan) December 6-7, 2011
 - Invited, "Doping variation charge/orbital order and oxygen hole symmetry in layered perovskite Nd_{2-x}Sr_xNiO₄" Yuichi Yamasaki
 - Invited, "Quantum confinement of strongly correlated electrons in oxide artificial structure" Hiroshi Kumigashira
 - Poster, "Structural Study of Organic Ferroelectrics TTF-CA" Kensuke Kobayashi, Reiji Kumai, Sachio Horiuchi, Fumitaka Kagawa, Youichi Murakami, Yoshinori Tokura
 - Poster, "Detection of Orbital Wave in YVO₃" D. Kawana, Y. Murakami, T. Yokoo, S. Itoh, A.T. Savich, G.E. Granroth, K. Ikeuchi, H. Nakao, K. Iwasa, R. Fukuta, S. Miyasaka, S. Ishihara and Y. Tokura
 - Poster, "Resonant soft X-ray scattering and spectroscopic study of Co³⁺ intermediate-spin state in RT ferromagnet Sr₃YCo₄O_{10.5}" J. Okamoto, H. Nakao, W. Kobayashi, S. Ishiwata, D. J. Huang, I. Terasaki, and Y. Murakami
 - Poster, "Dopant-dependence on charge/orbital ordering in layered manganite La_{0.5}Sr_{1.5}MnO₄" Y. Yamaki, H. Nakao, Y. Yamasaki, Y. Murakami, Y. Kaneko, and Y. Tokura
 - Poster, "Electronic and magnetic structure in manganite artificial superlattice system" H. Nakao, H. Yamada, M. Kubota, J. Okamoto, Y. Yamasaki, K. Iwasa, Y. Murakami, A. Sawa
- FIRST-QS²C Workshop (ANA InterContinental Manza Beach Hotel & Resort) December 12-15, 2011
 - Oral, "X-ray Induced Phase Transition in Impurity Doped Manganites" Y. Murakami
 - Poster, "Large polarization directing antiparallel to ionic displacement in TTF-CA" Kensuke Kobayashi, Sachio Horiuchi, Reiji Kumai, Fumitaka Kagawa, Youichi Murakami, Yoshinori Tokura
 - Poster, "X-ray scattering and photoemission studies of Mn-oxide superlattices" H. Wadati, J. Okamoto, M. Garganourakis, V. Scagnoli, U. Staub, E. Sakai, M. Tamamitsu, K. Horiba, H. Kumigashira, M. Oshima, T. Sugiyama, E. Ikenaga, M. Nakamura, M. Kawasaki, Y. Tokura
 - Poster, "Electronic and Magnetic Structure in Manganite Artificial Superlattice System" H. Nakao
 - Poster, "Orbital Wave in YVO₃" D. Kawana
 - Poster, "Large Orbital Moment of Co²⁺ in La_{1.5}Ca_{0.5}CoO₄ Studied by Resonant Soft X-ray Scattering" J. Okamoto
 - Poster, "Dopant-dependence on Charge-Orbital Ordering and Magnetic Property in La_{0.5}Sr_{1.5}MnO₄" Y. Yamaki
- UK-Japan Meeting 2012 in Tokyo (The University of Tokyo, Tokyo, Japan) January 9-10, 2012
 - Poster, "Resonant Soft X-Ray Scattering Studies of Multiferroic YMnO₃ Thin Films" Hiroki Wadati
- EMPA Seminar (EMPA Dübendorf) January 13, 2012
 - Oral, "RESONANT SOFT X-RAY SCATTERING STUDIES OF MULTIFERROIC RMNO₃ THIN FILMS" Hiroki Wadati

- SPIE Photonics West (Moscone Center, San Francisco, CA, US) January 21-26, 2012
 - Invited, “Metallic Quantum Well States in Artificial Structures Based on Strongly-Correlated Oxide” Hiroshi Kumigashira

- Applied Physics/Photon Science Special Seminar (Stanford University) March 6, 2012
 - Oral, “Direct Observation of Electron Spins in Solids by Resonant Soft X-ray Scattering” Hiroki Wadati