

## Invited Talks at International Conferences

1. "Investigation on electronic structure at metal/oxide interfaces," N. Ohashi, S. Hirose, T. Ohsawa, and S. Ueda, 43rd International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2019), Hilton Daytona Beach Oceanfront Resort, Florida, USA, Jan. 27-Feb. 1 (2019).
2. "High-throughput depth-resolved electronic structure measurements by hard X-ray photoelectron spectroscopy combined with X-ray total reflection," S. Ueda, Saint-Gobain Seminar, Saint-Gobain Recherche Paris, Paris, France, Jun. 7 (2019).
3. "Thin-film transistors: Device structures, materials, physics, and applications," T. Kamiya, 28th International Conference on Amorphous and Nanocrystalline Semiconductors, Ecole Polytechnique, Palaiseau, France, Aug. 4-9 (2019).
4. "Charge screening strategy for manipulating domains and piezoelectric response in ferroelectric nano-rods," T. Yamada, K. Okamoto, D. Ito, O. Sakata, M. Yoshino, and T. Nagasaki, The 2019 Asia-Pacific Workshop on Piezoresponse Force Microscopy and Nanoscale Electromechanics of Functional Materials and Electrochemical Systems (Asia-Pacific PFM 2019), Seoul National University, Seoul, Korea, Aug. 11-14 (2019).
5. "Manipulation of domain structure and piezoelectric response in ferroelectric nano-rods with charge screening strategy," T. Yamada, K. Okamoto, D. Ito O. Sakata, M. Yoshino, and T. Nagasaki, The 5th International Conference on Advanced Electromaterials (ICAE 2019), Ramada Plaza Jeju Hotel, Jeju, Korea, Nov. 5-8 (2019).
6. "Synchrotron x-ray diffraction-based visualization of lattice-plane tilting of a GaN substrate and homo-epitaxial thin film," O. Sakata, 16th China International Forum on Solid State Lighting & 2019 International Forum on Wide Bandgap Semiconductors (SSLCHINA&IFWS 2019), Shenzhen Convention & Exhibition Center, Shenzhen, China, Nov. 25-27 (2019).

## Invited Talks at Domestic Conferences

1. "HfO<sub>2</sub> 基薄膜の相安定性と機能発現," 清水 荘雄, 三村和仙, 舟窪浩, 第 57 回セラミックス基礎討論会, 仙台国際センター, 仙台市, 2019 年 1 月 16-17 日.
2. "ホイスラー合金の応用による貴金属フリー触媒開発の可能性," 小嶋隆幸, 第 14 回新機能無機物質探索研究センターシンポジウム, 東北大学多元物質科学研究所, 仙台市, 2019 年 2 月 22 日.

3. "放射光を用いた光電子分光による III-V 族窒化物半導体の価電子帯構造と表面酸化プロセスの評価," 角谷正友, 上田茂典, 吉越章隆, 隅田真人, 第 66 回応用物理学会春季学術講演会, 東京工業大学, 東京, 2019 年 3 月 9-12 日.
4. "酸化物半導体・デバイスの電子構造、材料設計と成膜条件," 神谷利夫, 細野秀雄, 第 66 回応用物理学会春季学術講演会, 東京工業大学, 東京, 2019 年 3 月 9-12 日.
5. "NIMS ビームラインの利用法と X 線回折、硬 X 線光電子分光の利用例の紹介," 坂田修身, 令和元年度文部科学省ナノテクノロジープラットフォーム事業 JAEA & NIMS & QST 微細構造解析プラットフォーム 放射光設備利用講習会, 兵庫県立工業技術センター, 神戸市, 2019 年 8 月 27 日.
6. "最先端放射光科学による原子配列・電子構造の分析," 坂田修身, JST-ACCEL・JACI 「元素間融合を基軸とする物質開発と応用展開」シンポジウム, SMBC ホール, 東京, 2019 年 10 月 4 日.
7. "アモルファス酸化物半導体を用いた新規デバイスの開拓," 井手啓介, 金正煥, 片瀬貴義, 細野秀雄, 神谷利夫, 薄膜材料デバイス研究会 第 16 回研究会, 龍谷大学, 京都市, 2019 年 11 月 8-9 日.

#### Presentations at International Conferences

1. "Effect of prior structure to intercritical annealing on rapid formation of ultrafine ferrite + austenite structure and mechanical properties in 0.1%C-2%Si-5%Mn steels," S.Torizuka, T. Adachi, H. Adachi, and A. Ito, 4th International Conference on Medium and High Manganese Steels (HMnS2019), Aachen University, Aachen, Germany, Apr. 1-5 (2019).
2. "Effect of alkali post-deposition treatments on the Cu(In,Ga)Se<sub>2</sub> surface and the deeply buried Cu(In,Ga)Se<sub>2</sub> /Mo interface structure," J. Bombsch, E. Avancini, R. Carron, E. Handick, R. Garcia-Diez, C. Hartmann, R. Felix, S. Ueda, R. G. Wilks, S. Buecheler, A. N. Tiwari, and M. Bar, 2019 MRS Spring Meeting, Phoenix Convention Center and Sheraton Grand Phoenix, Phoenix, USA, Apr. 22-26 (2019).
3. "Impact of RbF/NaF post-deposition treatments on the Cu(In,Ga)Se<sub>2</sub> surface and deeply buried Cu(In,Ga)Se<sub>2</sub>/Mo interface structure," J. Bombsch, E. Avancini, R. Carron, E. Handick, R. Garcia-Diez, C. Hartmann, R. Felix, S. Ueda, R. G. Wilks, S. Buecheler, A. N. Tiwari, and M. Bär, 10th International workshop on CIGS Technology (IW-CIGSTech 10), IPVF and École Polytechnique, Paris, France, May 23-24 (2019).

4. "Synthetization, stability and orientation characterization of the quasicrystal, 2/1 and 1/1 approximants in Cd-Mg-RE (RE = Tm, Er, Ho, Dy, Tb, Gd, Sm, Y) systems," F. Labib, S. Ohhashi, and A.P. Tsai, 14th International Conference on Quasicrystals (ICQ14), Hotel Kompas, Kranjska Gora, Slovenia, May 26-31 (2019).
5. "Polarization dependent bulk-sensitive valence band photoemission spectroscopy and density functional theory calculations: 3d transition metals," S. Ueda, I. Hamada, The 8th International Conference on Hard X-Ray Photoelectron Spectroscopy (HAXPES 2019), Sorbonne Université - Campus Pierre et Marie Curie, France, Jun. 2-7 (2019).
6. "Polarization dependent bulk-sensitive valence band photoemission spectroscopy and density functional theory calculations: 4d transition metals," S. Ueda, I. Hamada, The 8th International Conference on Hard X-Ray Photoelectron Spectroscopy (HAXPES 2019), Sorbonne Université - Campus Pierre et Marie Curie, France, Jun. 2-7 (2019).
7. "Hard x-ray photoemission spectroscopy of Kondo lattices YbNi<sub>2</sub>X<sub>2</sub> (X=Si, Ge)," H. Sato, A. Rousuli, Y. Matsumoto, S. Ohara, T. Ueda, T. Nagasaki, K. Mimura, H. Anzai, K. Ichiki, S. Ueda, K. Shimada, and H. Namatame, The 8th International Conference on Hard X-Ray Photoelectron Spectroscopy (HAXPES 2019), Sorbonne Université - Campus Pierre et Marie Curie, France, Jun. 2-7 (2019).
8. "High-throughput depth-resolved electronic structure measurements by hard x-ray photoelectron spectroscopy combined with x-ray total reflection," S. Ueda, , The 8th International Conference on Hard X-Ray Photoelectron Spectroscopy (HAXPES 2019), Sorbonne Université - Campus Pierre et Marie Curie, France, Jun. 2-7 (2019).
9. "GaP/Si(001) interface study by photoelectron spectroscopy with varying photon energies in combination with Ar gas cluster ion beam sputtering," O. Romanyuk, I. Gordeev, O. Supplie, A. Paszuk, R.G. Wilks, J. Bombsch, C. Hartmann, R. Garcia-Diez, S. Ueda, E. Ukraintsev, I. Bartoš, J. Houdkova, P. Kleinschmidt, M. Bär, P. Jiříček, T. Hannappel, 3rd international Conference on Applied Surface Science (ICASS 2019), Pisa Palazzo dei Congrssi, Pisa, Italy, Jun. 17-20 (2019).
10. "Encapsulation of plant viral particles in calcite crystals," M. B. Al-Handawi, P. Commins, S. Shukla, P. Didier, M. Tanaka, G. Raj, F. A. Veliz, R. Pasricha, N. F. Steinmetz, and P. Naumov, Crystal Growth and Assembly 2019, Southern New Hampshire University, Manchester, USA, Jun. 23-28 (2019).

11. "Quantitative analysis of energy loss process for the core level intensities in hard x-ray photoemission," T. Konishi, S. Ueda, and T. Kinoshita, The 40th International Conference on Vacuum Ultraviolet and X-ray Physics (VUVX19), The Westin St. Francis Hotel, San Francisco, USA, Jul. 1-5 (2019).
12. "Photoelectron spectroscopic characterizations of TiO<sub>2</sub> thin films grown by magnetron sputtering," A. Delanoe, T. Ohsawa, H. Montigaud, and N. Ohashi, The 11th International Conference on the Science and Technology for Advanced Ceramics (STAC-11), Tsukuba International Congress Center (EPOCHAL), Tsukuba, Japan, Jul. 9-11 (2019).
13. "Surface band bending of polar ZnO studied by hard x-ray photoemission combined with x-ray total reflection," S. Ueda, , The 11th International Conference on the Science and Technology for Advanced Ceramics (STAC-11), Tsukuba International Congress Center (EPOCHAL), Tsukuba, Japan, Jul. 9-11 (2019).
14. "LiCoO<sub>2</sub>-BaTiO<sub>3</sub>-electrolyte interface after electrochemical treatment," S. Yasuhara, Y. Yoshikawa, T. Teranishi, O. Sakata, S. Yasui, T. Taniyama, and M. Itoh, The 11th International Conference on the Science and Technology for Advanced Ceramics (STAC-11), Tsukuba International Congress Center (EPOCHAL), Tsukuba, Japan, Jul. 9-11 (2019).
15. "Electronic states and polar structures of ZnO/Ag junctions by x-ray photoelectron spectroscopy," T. Hosaka, T. Ohsawa, H. Montigaud, T. Ishigaki, and N. Ohashi, The 11th International Conference on the Science and Technology for Advanced Ceramics (STAC-11), Tsukuba International Congress Center (EPOCHAL), Tsukuba, Japan, Jul. 9-11 (2019).
16. "Low-temperature fabrication of direct-current driven electroluminescent device using amorphous oxide semiconductor thin-film phosphor," N. Watanabe, K. Ide, T. Katase, J. Kim, S. Ueda, K. Horiba, H. Kumigashira, H. Hiramatsu, H. Hosono, and T. Kamiya, The 11th International Conference on the Science and Technology for Advanced Ceramics (STAC11), Tsukuba International Congress Center (EPOCHAL), Tsukuba, Japan, Jul. 9-11 (2019).
17. "Enhanced piezoelectric response in size-controlled (111)-epitaxial tetragonal Pb(Zr<sub>0.35</sub>Ti<sub>0.65</sub>)O<sub>3</sub> nanorods," T. Yamada, K. Okamoto, O. Sakata, M. Yoshino, and T. Nagasaki, 2019 ISAF-ICE-FEM-IWPM-PFM Joint Conference – f2c π 2, Swiss Tech Convention Center, Lausanne, Switzerland, Jul. 14-19 (2019).

18. "Effective pre-electrochemical treatment of Cu EQCM electrode on lithium electrodeposition/dissolution processes," A Niida, K. S. Smaran, A. Ohama, Y. Uchino, K. Nishihara, and T. Kondo, The Electrochemical Conference on Energy and the Environment (ECEE 2019), Scottish Events Campus, Glasgow, Scotland, Jul. 21-26 (2019).
19. "Powerful synchrotron x-ray techniques for metal nanoparticle studies," O. Sakata, The Workshop on Neutron and X-ray Characterizations on Caloric Materials, Holiday Inn Express Shenyang Golden Corridor, Shenyang, China, Aug. 15-16 (2019).
20. "Electron delocalization and relaxation behavior in Cu-doped Bi<sub>2</sub>Se<sub>3</sub> films," M. Li, Z. Zhang, and Z. Wang, Second National Conference on Nanomaterials and Nanotechnology, Xige Hotel, Xiamen, China, Aug. 16-18 (2019).
21. "Synchrotron radiation analysis of the mechanism to emerge 1500MPa-30% excellent mechanical properties of ultrafine ferrite + austenite structure in Low C-2%Si-5%Mn steels," K. Minoda, H. Adachi, and S. Torizuka, The 10th International Conference on Advanced Materials and Processing (PRICM-10), Qujiang International Conference Center, Xi'an, China, Aug. 18-22 (2019).
22. "Analysis on the effects of grain refinement and stability on deformation induced martensitic transformation in austenitic stainless steels by synchrotron radiation," Y. Izuta, S. Furukane, and S. Torizuka, The 10th International Conference on Advanced Materials and Processing (PRICM-10), Qujiang International Conference Center, Xi'an, China, Aug. 18-22 (2019).
23. "Hard x-ray photoelectron spectroscopy (HAXPES) study of heterovalent interfaces: Structure models of GaP/Si(001) interfaces," O. Romanyuk, O. Romanyuk, O. Supplie, A. Paszuk, R.G. Wilks, J. Bombsch, C. Hartmann, R. Garcia-Diez, S. Ueda, I. Bartoš, I. Gordeev, J. Houdkova, P. Kleinschmidt, M. Bär, P. Jiříček, T. Hannappel, 18th European Conference on Applications of Surfaces and Interface Analysis (ECASIA'19), International Congress Center, Dresden, Germany, Sep. 15-20 (2019).
24. "Analysis of selective surface interaction of ruthenium nanoparticles by hard x-ray photoemission spectroscopy," I. Gueye, A. Yang, L. S. R. Kumara, O. Seo, J. Kim, Y. Chen, C. H. Song, S. Hiroi, H. Kobayashi, K. Kusada, H. Kitagawa, and O. Sakata, European Conference on Applications of Surface and Interface Analysis (ECASIA'19), Institute of Solid State and Materials Research, Dresden, Germany, Sep. 15-20 (2019).

25. "Electronic structure of YbNi<sub>2</sub>X<sub>2</sub> (X=Si, Ge) studied by hard x-ray photoemission spectroscopy," H. Sato, A. Rousuli, Y. Matsumoto, S. Ohara, T. Ueda, T. Nagasaki, K. Mimura, H. Anzai, K. Ichiki, S. Ueda, K. Shimada, and H. Namatame, International Conference on Strongly Correlated Electron Systems (SCES 2019), Okayama Convention Center, Okayama, Japan, Sep. 23-28 (2019).
26. "Effects of Disorder and Pressure in CoAl<sub>2</sub>O<sub>4</sub>," T. Naka, T. Nakane, A. Ohmura, F. Ishikawa, A. de Visser, and T. Uchikoshi, International Conference on Strongly Correlated Electron Systems (SCES 2019), Okayama Convention Center, Okayama, Japan, Sep. 23-28 (2019).
27. "Substitution effect of the electronic structure of layered iridium oxides from hard x-ray photoemission spectroscopy," S. Tsuda, S. Sugiura, H. T. Hirose, N. Kikugawa, S. Ueda, M. Isobe, S. Uji, International Conference on Strongly Correlated Electron Systems 2019 (SCES2019), Okayama Convention Center, Okayama, Japan, Sep. 23-28 (2019).
28. "Superconductivity in higher titanates of  $\gamma$ -Ti<sub>3</sub>O<sub>5</sub> and Ti<sub>4</sub>O<sub>7</sub> films," K. Yoshimatsu, O. Sakata, and A. Ohtomo, 26th International Workshop on Oxide Electronic (iWOE26), Kyoto University, Uji, Japan, Sep. 29-Oct. 2 (2019).
29. "Low-temperature fabrication of multi-color thin-film phosphor and light emitting diodes using amorphous oxide semiconductor, rare-earth doped  $\alpha$ -Ga-O," N. Watanabe, K. Ide, T. Katase, J. Kim, S. Ueda, K. Horiba, H. Kumigashira, H. Hiramatsu, H. Hosono, and T. Kamiya, 11th International Symposium on Transparent Oxide and Related Materials for Electronics and Optics (TOEO-11), Todaiji Temple Culture Center, Nara, Japan, Oct. 7-9 (2019).
30. "Light emitting diodes on glass using amorphous oxide semiconductor thin-film phosphors, rare-earth doped  $\alpha$ -Ga-O," N. Watanabe, K. Ide, T. Katase, J. Kim, S. Ueda, K. Horiba, H. Kumigashira, H. Hiramatsu, H. Hosono, and T. Kamiya, Materials Research Meeting 2019, Yokohama Symposia, Yokohama, Japan, Oct. 10-14 (2019).
31. "Effects of Solid Electrolyte Interphases Formed on Cu EQCM Electrodes on Lithium Electrodeposition/Dissolution Reaction," Y. Uchino, A. Ohama, K. S. Smaran, and T. Kondo, 236th ECS Meeting, Hilton Atlanta, Atlanta, USA, Oct. 13-17 (2019).
32. "Size dependence of piezoelectric response in (111)-oriented tetragonal Pb(Zr, Ti)<sub>3</sub>O<sub>9</sub> nanorods," K. Okamoto, T. Yamada, O. Sakata, M. Yoshino, and T. Nagasaki, The 13th

Pacific Rim Conference of Ceramic Societies (PACRIM13), Okinawa Convention Center, Okinawa, Japan, Oct. 27-Nov. 1 (2019).

33. "Investigation of metals/SrTiO<sub>3</sub> Schottky junctions by photoemission spectroscopy," T. Ohsawa, Takumi Hosaka, Shigenori Ueda, Takamasa Ishigaki, and Naoki Ohashi, The 13th Pacific Rim Conference of Ceramic Societies (PACRIM13), Okinawa Convention Center, Japan, Oct. 27-Nov. 1 (2019).

34. "Fluorination and reduction of CaCrO<sub>3</sub> by topochemical methods," C. A. Juillerat, Y. Tsujimoto, A. Chikamatsu, Y. Masubuchi, T. Hasegawa, and K. Yamaura, The 13th Pacific Rim Conference of Ceramic Society (PACRIM13), Okinawa Convention Center, Ginowan, Japan, Oct. 27-Nov. 1 (2019).

35. "Band alignment at non-polar AlN/MnS interface investigated by hard x-ray photoelectron spectroscopy," K. Kurishima, K. Tatejima, Y. Yamashita, S. Ueda, K. Ishibashi, K. Takahashi, S. Suzuki, A. Ogura, T. Chikyow, and T. Nagata, 32nd International Microprocesses and Nanotechnology Conference (MNC2019), International Conference Center, Hiroshima, Japan, Oct. 28-31 (2019).

36. "Photoelectron spectroscopic study on electronic state of corundum In<sub>2</sub>O<sub>3</sub> (111) epitaxial thin film grown by mist-CVD," T. Nagata, T. Yamaguchi, S. Ueda, W. Yi, J. Chen, T. Kobayashi, H. Yokoo, Y. Yamahita, and T. Chikyow, 32nd International Microprocesses and Nanotechnology Conference (MNC2019), International Conference Center, Hiroshima, Japan, Oct. 28-31 (2019).

37. "Enhanced piezoelectric response by field-induced phase transition in (111)-tetragonal Pb(Zr, Ti)O<sub>3</sub> nanorods," T. Yamada, K. Okamoto, O. Sakata, M. Yoshino, and T. Nagasaki, The 19th US-Japan Seminar on Dielectric and Piezoelectric Ceramics, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, Nov. 3-6 (2019).

38. "Sodium diffusion across emitter/Cu(In,Ga)Se<sub>2</sub> thin-film solar cell interface probed by photoelectron spectroscopy," D. Valenta, H. A. Yetkin, T. Kodalle, J. Bombsch, R. Garcia-Diez, C. Hartmann, R. G. Wilks, S. Ueda, C. Kaufmann, and M. Bar, N2 Conference "From Research to Application", Umwwltforum, Berlin, Germany, Nov. 13-15 (2019).

39. "Rapid formation of ultrafine ferrite + austenite structure from prior ferrite + cementite structure and analysis on the mechanism to bring 1500MPa-30% by synchrotron radiation in 0.1-0.2%C-2%Si-5%Mn steels, Keynote lecture.," S.Torizuka, K. Minoda, T.

Adachi, H. Adachi, and A. Ito, Industrial and Societal Applications (NMD-ATM2019), Hotel Uday Samudra, Trivandrum, India, Nov. 15-16 (2019).

40. "Study of correlations between strain and surface segregation on SrTi<sub>0.5</sub>Fe<sub>0.5</sub>O<sub>3</sub> thin films by in-situ x-ray heating experiments," S. S. Ha, B. Seo, O. Seo, J. Kim, I. H. Cho, S. Choi, H. Oh, S. Han, J. Kim, W. Jung, O. Sakata, and D. Y. Noh, The 31st Synchrotron Radiation User's Workshop, POSCO International Center, Pohang, Republic of Korea, Nov. 29 (2019).
41. "Electronic structures of MgO/Fe interfaces revealed by hard x-ray photoemission with an applied magnetic field," S. Ueda, M. Mizuguchi, M. Tsujikawa, and M. Shirai, MRS Fall Meeting 2019, Hynes Convention Center, Boston, USA, Dec. 1-6 (2019).
42. "Thermally induced chemical interactions across emitter/Cu(In,Ga)Se<sub>2</sub> thin-film solar cell interface probed by photoelectron spectroscopy," D. Valenta, H. A. Yetkin, T. Kodalle, J. Bombsch, R. Garcia-Diez, C. Hartmann, R. G. Wilks, S. Ueda, C. Kaufmann, and M. Bar, 11th Joint BER II and BESSY II User Meeting, WISTA-Centre/BESSY II, Berlin, Germany, Dec. 4-6 (2019).
43. "Effect of NaF and NaF/RbF post-deposition treatments on the Cu(In,Ga)Se<sub>2</sub> surface and the deeply buried Cu(In,Ga)Se<sub>2</sub>/Mo interface structure," J. Bombsch, E. Avancini, R. Carron, E. Handick, R. Garcia-Diez, C. Hartmann, R. Felix, S. Ueda, R. G. Wilks, S. Buecheler, A. N. Tiwari, and M. Bär, 11th Joint BER II and BESSY II User Meeting, WISTA-Centre/BESSY II, Berlin, Germany, Dec. 4-6 (2019).
44. "Passivation of deep centers in zinc oxide studied with deep level transient spectroscopy," T. Ohsawa, Shigenori Ueda, Isao Sakaguchi and Naoki Ohashi, Materials Research Meeting 2019, Yokohama, Japan, Dec. 10-14 (2019).

#### Presentations at Domestic Conferences

1. "放射光粉末 X 線回折における蛍光 X 線バックグラウンドを用いた X 線吸収端測定," 勝矢良雄, 田中雅彦, C. H. Song, 坂田修身, 第 32 回日本放射光学会年会・放射光科学合同シンポジウム, 福岡国際会議場, 福岡市, 2019 年 1 月 9-11 日.
2. "Ag/ZnO 接合薄膜の加熱処理における界面電子状態評価," 山形栄人, 大澤健男, 保坂拓己, S. Grachev, H. Montigaud, 石垣隆正, 大橋直樹, 第 57 回セラミックス基礎科学討論会, 仙台国際センター, 仙台市, 2019 年 1 月 16-17 日.



3. "自動車用電池技術の概要," 鋤柄宜, , 電動車両技術の最新動向 JSAE が考える電動車両技術の近未来, 株式会社 IHI, 東京都, 2019 年 1 月 24 日.
4. "充放電サイクル後の「LiCoO<sub>2</sub>-BaTiO<sub>3</sub>-電解液」三相界面の観察," 安原颯, 吉川祐未, 寺西貴志, 坂田修身, 安井伸太郎, 谷山智康, 伊藤満, 第 66 回応用物理学会春季学術講演会, 東京工業大学, 東京, 2019 年 3 月 9-12 日.
5. "アモルファス酸化物半導体 a-GaO<sub>x</sub> をホストとする蛍光体を用いた直流駆動型発光素子の低温作製," 渡邊脩人, 井手啓介, 片瀬貴義, 笹瀬雅人, 戸田喜丈, 金正煥, 上田茂典, 堀場弘司, 組頭広志, 平松秀典, 細野秀雄, 神谷利夫, 第 66 回応用物理学会春季学術講演会, 東京工業大学, 東京, 2019 年 3 月 9-12 日.
6. "ZnO/Ag 接合の加熱処理における界面電子状態の評価," 山形栄人, 大澤健男, 保坂拓己, H. Montigaud, 石垣隆正, 大橋直樹, 第 66 回応用物理学会春季学術講演会, 東京工業大学, 東京, 2019 年 3 月 9-12 日.
7. "層状リン化カルコゲナイド超伝導体(Zr<sub>1-y</sub>Luy)PX (X = S, Se)の硬 X 線光電子分光," 石坂仁志, 田北仁志, 久保拓也, 宮下剛夫, W. Mansuer, 島田賢也, 生天目博文, 上田茂典, 鬼頭聖, 石田茂之, 岡邦彦, 後藤義人, 藤久裕司, 吉田良行, 伊豫彰, 荻野拓, 永崎洋, 川島健司, 柳陽介, 日本物理学会第 74 回年次大会, 九州大学, 福岡市, 2019 年 3 月 14-17 日.
8. "A サイト-スピネル磁性体 CoM<sub>2</sub>O<sub>4</sub>(M = Al, Co, Ga, Rh)の磁気緩和現象と磁気相図," 名嘉節, 間宮広明, 中根茂行, 中山美奈子, 田中雅彦, 勝矢良雄, 石井聡, 打越哲郎, 日本物理学会第 74 回年次大会, 九州大学伊都キャンパス, 福岡市, 2019 年 3 月 14-17 日.
9. "オーステナイト系ステンレス鋼の加工誘起変態に及ぼす結晶粒微細化と化学的安定性の影響," 出田悠祐, 鳥塚史郎, 日本鉄鋼協会第 177 回秋季講演大会第 49 回学生ポスターセッション, 東京電機大学, 東京, 2019 年 3 月 20-22 日.
10. "1500MPa – 30%超高強度高延性 5%Mn フェライト+オーステナイト鋼の作製とその力学特性発現機構の放射光解析," 蓑田和樹, 足立大樹, 鳥塚史郎, 日本鉄鋼協会第 177 回秋季講演大会第 49 回学生ポスターセッション, 東京電機大学, 東京, 2019 年 3 月 20-22 日.
11. "有機物テンプレートを用いて合成した TiO<sub>2</sub> におけるキラリティと光触媒性能の相関," 神寶一樹, 田邊豊和, 恒賀聖司, 太田恵唯, 金仁華, 日本金属学会 2019 年春期大会, 東京電機大学, 東京, 2019 年 3 月 20-22 日.

12. "(111)正方晶 Pb(Zr, Ti)O<sub>3</sub> ナノロッドにおける圧電応答のサイズ依存性," 岡本一輝, 山田智明, 坂田修身, 今井康彦, 吉野正人, 長崎正雅, 日本セラミックス協会 2019 年年会, 工学院大学新宿キャンパス, 東京, 2019 年 3 月 24-26 日.
13. "スパッタリング法により作製した ZnO/Ag 接合の極性と電子状態変化の評価," 保坂拓己, 大澤健男, Herve Montigaud, 石垣隆正, 大橋直樹, 第 35 回日本セラミックス協会関東支部研究発表会, つくば国際会議場, 2019 年 9 月 3-4 日.
14. "スピネル型 FeAl<sub>2</sub>O<sub>4</sub> 相のスピンガラス磁性に現れる交換バイアス効果," 中根茂行, 石井聡, 名嘉節, 日本物理学会 2019 年秋季大会, 岐阜大学, 岐阜市, 2019 年 9 月 10-13 日.
15. "硬 X 線光電子分光測定によるドーブした Ba<sub>2</sub>IrO<sub>4</sub> の電子状態研究," 津田俊輔, 杉浦栞理, 廣瀬陽代, 菊川直樹, 上田茂典, 磯部雅朗, 宇治進也, 日本物理学会 2019 年秋季大会, 岐阜大学, 岐阜市, 2019 年 9 月 10-13 日.
16. "オーステナイト系ステンレス鋼の加工誘起変態に及ぼす結晶粒径と転位密度に対しての化学的安定性の影響," 出田悠祐, 鳥塚史郎, 日本鉄鋼協会第 178 回秋季講演大会第 50 回学生ポスターセッション, 岡山大学, 岡山市, 2019 年 9 月 11-13 日.
17. "有機物テンプレートを用いて合成したキラル酸化チタンのキラルドメインの同定とその光触媒性能評価," 神寶一樹, 田邊豊和, 恒賀聖司, 太田恵唯, 金仁華, 日本金属学会 2019 年秋期大会, 岡山大学, 岡山市, 2019 年 9 月 11-13 日.
18. "1500MPa – 30%超高強度高延性 5%Mn フェライト+オーステナイト鋼の開発とその力学特性発現機構の放射光解析," 蓑田和樹, 足立大樹, 鳥塚史郎, 日本鉄鋼協会第 178 回秋季講演大会, 岡山大学, 岡山市, 2019 年 9 月 11-13 日.
19. "0.1%C-2%Si-5%Mn 超微細フェライト+オーステナイト鋼の短時間組織形成と力学的特性に及ぼす二相域焼鈍前 組織の影響," 鳥塚史郎, 安達節展, 足立大樹, 伊東篤志, 日本鉄鋼協会第 178 回秋季講演大会「オーステナイトを含む複相鋼における不均一変形」フォーラム共催 「鉄鋼材料の不均一変形と力学特性」シンポジウム, 岡山大学, 岡山市, 2019 年 9 月 11-13 日.
20. "Local atomic structure and electronic structure of dopant in  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>," J. Tang, R. Nishibata, R. Miyawaki, O. Seo, A. Yoshigoe, and K. Miki, 第 80 回応用物理学会秋季学術講演会, 北海道大学, 札幌市, 2019 年 9 月 18-21 日.

21. "ペロブスカイト型 La<sub>2</sub>FeCoO<sub>6</sub> 人工超格子薄膜の作製," Y. Takeuchi, O.Sakata, and A. Ohtomo, 第 80 回応用物理学会秋季学術講演会, 北海道大学, 札幌市, 2019 年 9 月 18-21 日.
22. "5 d 遷移金属窒化物の高圧合成と体積弾性率の結晶構造相関," 遊佐齊, 川村史朗, 谷口尚, 日本結晶学会令和元年 (2019 年) 度年会, 金沢市文化ホール, 金沢市, 2019 年 11 月 19-20 日.
23. "放射光粉末 X 線回折による  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> 構造中の In 分配の決定," 田中雅彦, 湯蓋邦夫, 勝矢良夫, 坂田修身, 日本結晶学会令和元年度年会, 金沢市文化ホール, 金沢市, 2019 年 11 月 19-20 日.
24. "GaN(0001) の表面にほぼ垂直な格子面の局所的なまがりの可視化," 坂田修身, J. Kim, O. Seo, 日本結晶学会令和元年 (2019 年) 度年会, 金沢市文化ホール, 金沢市, 2019 年 11 月 19-20 日.
25. "強誘電体(Pb<sub>0.9</sub>Sr<sub>0.1</sub>)TiO<sub>3</sub>/常誘電体 SrTiO<sub>3</sub> 人工超格子薄膜の作製と電気機械特性の評価," 井口雄介, 山田智明, 坂田修身, 吉野正人, 長崎正雄, 第 39 回電子材料研究討論会, ウィンク愛知, 名古屋市, 2019 年 11 月 28-29 日.
26. "(111)正方晶 Pb(Zr, Ti)O<sub>3</sub> ナノロッドにおける圧電応答の半径依存性," 岡本一輝, 山田智明, 坂田修身, 吉野正人, 長崎正雅, 東北大学金属材料研究所ワークショップ「強誘電体関連物質の機能発現に関する構造科学の新展開」, 東北大学金属材料研究所, 仙台市, 2019 年 12 月 16-17 日.

#### Awards

1. "ホイスラー合金の応用による触媒研究開発," 小嶋隆幸, 第 29 回トーキン科学技術賞最優秀賞・トーキン財団特別賞 重賞, 仙台国際ホテル, 仙台市, 2019 年 3 月 4 日.
2. "1500MPa-30%超高強度高延性 5%Mn フェライト+オーステナイト鋼の作製とその力学特性発現機構の放射光解析," 蓑田和樹, 足立大樹, 鳥塚史郎日本鉄鋼協会第 177 回秋季講演大会第 49 回学生ポスターセッション 最優秀賞, 東京電機大学, 東京, 2019 年 3 月 20-22 日.
3. "ポスター賞," 保坂拓己, 大澤健男, Herve Montigaud, 石垣隆正, 大橋直樹第 35 回日本セラミックス協会関東支部研究発表会, つくば国際会議場, 2019 年 9 月 3-4 日.
4. "ホイスラー合金等の機能性材料の応用による 新規触媒開発," 小嶋隆幸, 第 59 回原田研究奨励賞, 東北大学金属材料研究所, 仙台市, 2019 年 7 月 5 日.

## Doctoral Dissertations and Master's Theses

1. "Thin-film growth and evaluation of heterojunction properties of  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> based solid solutions," R. Wakabayashi, Tokyo Institute of Technology, (2019).
2. "Topological surface state regulation and photoelectric properties of topological insulator Bi<sub>2</sub>Se<sub>3</sub>," M. Li, University of Science and Technology of China, (2019).
3. "Thin-film fabrication and characterization of the electronic properties of mixed-anion titanium compounds," J. Mizushiro, Tokyo Institute of Technology, Master Thesis, (2019).
4. "Fabrication of magnetic superlattice structures based on transition-metal oxides and application of low-temperature reduction methods," Y. Noguchi, Tokyo Institute of Technology, Master Thesis, (2019).