

[015]九州大学低温センターだより表紙奥付等

<https://hdl.handle.net/2324/4763145>

出版情報：九州大学低温センターだより. 15, 2021-03. Low Temperature Center, Kyushu University
バージョン：
権利関係：

低温センターを利用した論文 (2020)

工学研究院 エネルギー量子部門

河江研究室

1. Precise absolute Seebeck coefficient measurement and uncertainty analysis using high-Tc superconductors as a reference
Y. Amagai, T. Shimazaki, K. Okawa, T. Kawae, H. Fujiki, and N.-H. Kaneko
Rev. Sci. Instrum, **91**, 014903 (2020)
2. Corundum insulating phases in highly Ti-doped V₂O₃ nanocrystals
Y. Ishiwata, T. Maruyama, S. Otsuru, T. Tsukahara, H. Ishii, Y.-F. Liao, K.-D. Tsuei, M. Imamura, K. Takahashi, Y. Inagaki, T. Kawae, T. Kida, S. Suehiro, M. Nantoh, and K. Ishibashi
Phys. Rev. B **101**, 035415 (2020)
3. Superconductivity in Palladium Hydride Systems
T. Kawae, Y. Inagaki, S. Wen, S. Hirota, D. Ito, and T. Kimura
J. Phys. Soc. Jpn. **89**, 051004 (2020)
4. Point-Contact Spectroscopy Study of Kondo Insulator SmB₆
T. Harada, M. Shiga, K. Okimura, Y. Inagaki, F. Iga, and T. Kawae
JPS Conference Proceedings **30**, 011022 (2020)
5. In-situ Investigation of Electronic Properties in Yttrium-hydride Prepared at Low Temperature
K. Miyakawa, H. Takata, T. Yamaguchi, Y. Inagaki, and T. Kawae
JPS Conference Proceedings **30**, 011077 (2020)
6. Point-Contact Spectroscopy Study of YbPd/W Interface
M. Shiga, T. Harada, T. Takahashi, A. Mitsuda, H. Wada, Y. Inagaki, and Tatsuya Kawae
JPS Conference Proceedings **30**, 011139 (2020)
7. Spin order in the classical spin kagome antiferromagnet Mg_xMn_{4-x}(OH)₆Cl₂
Md. M. R. Bhuiyan, X.-G. Zheng, M. Hagihala, S. Torii, T. Kamiyama, and T. Kawae,
Phys. Rev. B, 101.134424 (2020)

8. Anisotropic Magnetic Field Dependence of Specific Heat in Cubic Symmetric Quadrupolar Kondo Compound $\text{Pr}_{0.05}\text{La}_{0.95}\text{Pb}_3$
T. Kawae, M. Koga, Y. Sato, Y. Inagaki, T. Fujiwara, H. S. Suzuki, and Tetsuo Kitai
J. Phys. Soc. Jpn. **89**, 063704 (2020)
9. High-accuracy compensation of radiative heat loss in Thomson coefficient measurement
Y. Amagai, T. Shimazaki, K. Okawa, T. Kawae, H. Fujiki, and N.-H. Kaneko
Appl. Phys. Lett. **117**, 063903 (2020)
10. 点接合分光法を用いた強相関希土類化合物のフェルミ面電子状態に関する微視的研究
志賀 雅亘
九州大学工学府博士論文 (2020年3月)
11. Fermionic order by disorder in a van der Waals antiferromagnet
R. Okuma, D. Ueta, S. Kuniyoshi, Y. Fujisawa, B. Smith, C. H. Hsu, Y. Inagaki, W. Si, T. Kawae, H. Lin, F. C. Chuang, T. Masuda, R. Kobayashi and Y. Okada
Sci. Rep. **10**, 15311 (2020)
12. Study of a new layered ternary chalcogenide CuAnTe_2 and its potassium intercalation effect
M. K. Islam, M. A. Sarker, Y. Inagaki and M. S. Islam
Mater. Res. Express **7**, 105904 (2020)
13. Comparative study of the conductivity of synthesized bivalent vanadates CaV_2O_6 and MnV_2O_6
M. S. Saiful, H. Kabir, Y. Inagaki and A. R. Sarker
J. Alloys Compd. **829**, 154499 (2020)

工学研究院 応用化学部門

石原研究室

1. Chemo-mechanical strain effects on band engineering of the TiO_2 photocatalyst for increasing the water splitting activity
Yoonyoung Kim, Motonori Watanabe, Junko Matsuda, Aleksandar Staykov, Hajime Kusaba, Atsushi Takagaki, Taner Akbay, Tatsumi Ishihara
Journal of Materials Chemistry A, **8**(3), 1335-1346, (2020)

2. Improved Photocatalytic Hydrogen Evolution on Tantalate Perovskites CsTaO₃ and LiTaO₃ by Strain-Induced Vacancies
Kaveh Edalati, Keisuke Fujiwara, Shuhei Takechi, Qing Wang, Makoto Arita, Motonori Watanabe, Xavier Sauvage, Tatsumi Ishihara, Zenji Horita
Applied Energy Materials, 3(2), 1710-1718, (2020)
3. Strain effects on the Co oxidation state and the oxygen dissociation activity in barium lanthanum cobaltite thin films on Y₂O₃ stabilized ZrO₂
Aline Fluri, Hajime Kusaba, John Druce, M. Dobeli, Thomas Lippert, Junko Matsuda, Tatsumi Ishihara
Journal of Materials Chemistry A, 8(13), 6283-6290, (2020)
4. Effect of Ni-based cathodic layer on intermediate temperature tubular electrolysis cell using LaGaO₃ based electrolyte thin film
Zhe Tan, Tatsumi Ishihara
JPhys Energy, 2(2), 024004, (2020)
5. Highly correlation of CO₂ reduction selectivity and surface electron Accumulation: A case study of Au-MoS₂ and Ag-MoS₂ catalyst
Songmei Sun, Qi An, Motonori Watanabe, Junfang Cheng, Hack Ho Kim, Taner Akbay, Atsushi Takagaki, Tatsumi Ishihara
Applied Catalysis B: Environmental, 271, 118931, (2020)
6. Photobiocatalytic H₂ evolution of GaN:ZnO and [FeFe]-hydrogenase recombinant *Escherichia coli*
Nuttavut Kosem, Yuki Honda, Motonori Watanabe, Atsushi Takagaki, Zahra Pourmand Tehrani, Fatima Haydous, Thomas Lippert, Tatsumi Ishihara
Catalysis Science & Technology, 10(12), 4042-4052, (2020)
7. Tensile strain for band engineering of SrTiO₃ for increasing photocatalytic activity to water splitting
Yoonyoung Kim, Motonori Watanabe, Junko Matsuda, Jun Tae Song, Atsushi Takagaki, Aleksandar Staykov, Tatsumi Ishihara
Applied Catalysis B: Environmental, 278, 119292, (2020)
8. Z-scheme-type conductive-polymer-P3HT/KTa(Zr)O₃ heterojunction composites for

enhancing the photocatalytic activity of water splitting

Yuta Koganemaru, Yoonyoung Kim, Motonori Watanabe, Atsushi Takagaki, Tatsumi Ishihara
Applied Catalysis A, General, 602, 117737, (2020)

9. Scandium and copper co-doping effect on stability and activity to the NO direct decomposition of Ba₃Y₄O₉

Siman Fang, Atsushi Takagaki, Motonori Watanabe, Jun Tae Song, Tatsumi Ishihara
Applied Catalysis A, General, 602, 117743, (2020)

10. Porous Boron Nitride as a Weak Solid Base Catalyst

Shohei Nakamura, Atsushi Takagaki, Motonori Watanabe, Kanta Yamada, Masaaki Yoshida, Tatsumi Ishihara
ChemCatChem, 12(23), 6033-6039, (2020)

11. Enhancement of solid base activity for porous boron nitride catalysts by controlling active structure using post treatment

Atsushi Takagaki, Shohei Nakamura, Motonori Watanabe, Yoonyoung Kim, Jun Tae Song, Keiko Jimura, Kanta Yamada, Masaaki Yoshida, Shigenobu Hayashi, Tatsumi Ishihara
Applied Catalysis A: General, 608, 117843, (2020)

12. Hexafluorophosphate-Bis(trifluoromethanesulfonyl)imide anion co-intercalation for increased performance of dual-carbon battery using mixed salt electrolyte

Jose C. Madrid Madrid, Kotaro Nakamura, Keisuke Ina, Lukas Haneke, Andreas Heckmann, Joop Enno Frerichs, Michael Ryan Hansen, Tobias Placke, Martin Winter, Motonori Watanabe, Atsushi Takagaki, Taner Akbay, Tatsumi Ishihara
Journal of Power Sources, 479, 229084, (2020)

後藤・神谷研究室

1. Lipid based biocompatible ionic liquids: synthesis, characterization and biocompatibility evaluation

S. Uddin, Md. R. Chowdhury, R. Wakabayashi, N. Kamiya, M. Moniruzzaman, M. Goto
Chem. Comm., 56,13756-13759 (2020)

2. Formation and potential application of micelles composed of biocompatible N-lauroyl-amino acid ionic liquids surfactant

R. Md Moshikur, Md. K. Ali, R. Wakabayashi, M. Moniruzzaman, M. Goto

Journal of Molecular Liquids, 320, 114424(2020)

3. Biocompatible Ionic Liquid Enhances Transdermal Antigen Peptide Delivery and Preventive Vaccination Effect
Y. Tahara, K. Morita, R. Wakabayashi, N. Kamiya, M. Goto
Molecular Pharmaceutics, 17, 3845-3856(2020)
4. Ionic liquid polymer materials with tunable nanopores controlled by surfactant aggregates: A novel approach for CO₂ capture
A. V. B. Reddy, M. Moniruzzaman, M. A. Bustam, M. Goto, B. B. Saha, C. Janiak
Journal of Materials Chemistry A, 8, 15034-15041(2020)
5. Solid-in-oil nanodispersions as a novel delivery system to improve the oral bioavailability of bisphosphate, risedronate sodium
Y. Hou, H. Piao, Y. Tahara, S. Qin, J. Wang, Q. Kong, M. Zou, G. Cheng, M. Goto
European Journal of Pharmaceutical Sciences, 155, 105521 (2020)
6. Monoolein Assisted Oil-Based Transdermal Delivery of Powder Vaccine
M. Kitaoka, A. Oka, M. Goto
Pharmaceutics, 12, 814-826(2020)
7. Selective separation of platinum group metals via sequential transport through polymer inclusion membranes containing an ionic liquid carrier
A. T. N. Fajar, T. Hanada, M. L. Firmansyah, F. Kubota, M. Goto
ACS Sustainable Chemistry & Engineering, 8, 11283-11291 (2020)
8. An environmentally benign ionic liquid based formulation for enhanced oil spill remediation: Optimization of environmental factors
M. U. H. Shah, M. Moniruzzaman, V. B. R. Ambavaram, R. T. M. Mahabubur, Dr S. Yusup, M. Goto
Journal of Molecular Liquids, 314, 113603 (2020)
9. Effective transcutaneous delivery of hyaluronic acid using an easy-to-prepare reverse micelle formulation
S. Kozaka, A. Kashima, T. Nakata, T. Ueda, R. Wakabayashi, M. Goto
Cosmetics, 7(3), 52-60 (2020)

10. A Novel Binary Supercooled Liquid Formulation for Transdermal Drug Delivery
Y. Hirakawa, H. Ueda, R. Wakabayashi, N. Kamiya, M. Goto
Biological and Pharmaceutical Bulletin, 43, 393-398 (2020)
11. Redox-responsive functionalized hydrogel marble for the generation of cellular spheroids
W. Ramadhan, Y. Ohama, K. Minamihata, K. Moriyama, R. Wakabayashi, M. Goto,
N. Kamiya
Journal of Biosci. and Bioeng., 130(4), 416-423 (2020)
12. Construction of higher-order cellular microstructures by a self-wrapping co-culture strategy using a redox-responsive hydrogel
W. Ramadhan, G. Kagawa, K. Moriyama, R. Wakabayashi, K. Minamihata, M. Goto,
N. Kamiya
Scientific Reports, 10, 6710 (2020)
13. PolyTag: A peptide tag that affords scaffold-less covalent protein assembly catalyzed by microbial transglutaminase
R. Sato, K. Minamihata, R. Wakabayashi, M. Goto, N. Kamiya
Analytical Biochemistry, 600, 113700 (2020)
14. Ionic liquid-in-oil microemulsions prepared with biocompatible choline carboxylic acids for improving the transdermal delivery of a sparingly soluble drug
I. M. Rafiqul, C. M. Raihan, R. Wakabayashi, N. Kamiya, M. Moniruzzaman, M. Goto
Pharmaceutics, 12, 392-399 (2020)
15. Choline and amino acid based biocompatible ionic liquid mediated transdermal delivery of the sparingly soluble drug Acyclovir
I. M. Rafiqul, C. M. Raihan, R. Wakabayashi, Y. Tahara, N. Kamiya, M. Moniruzzaman,
M. Goto
International Journal of Pharmaceutics, 582, 119335 (2020)
16. Linear polymerization of protein by sterically-controlled enzymatic cross-linking with a tyrosine-containing peptide loop
D. Permana, K. Minamihata*, R. Sato, R. Wakabayashi, M. Goto, N. Kamiya
ACS Omega, 5, 5160-5169 (2020)

17. A Solid-in-Oil Nanodispersion System for Transcutaneous Immunotherapy of Cow's Milk Allergies
M. Kitaoka, W. Xiao, Q. Kong, Y. Tahara, N. Kamiya, M. Goto
Pharmaceutics, 12(3), 205-212 (2020)
18. Transcutaneous cancer vaccine using a reverse micellar antigen carrier
S. Kozaka, Y. Tahara, R. Wakabayashi, T. Nakata, T. Ueda, N. Kamiya, M. Goto
Molecular Pharmaceutics, 17, 645-655 (2020)
19. Ionic liquids with N-methyl-2-pyrrolidonium cation as an enhancer for topical drug delivery: Synthesis, characterization, and skin-penetration evaluation
R. M. Moshikur, C. M. Raihan, R. Wakabayashi, Y. Tahara, N. Kamiya, M. Moniruzzaman, M. Goto
Journal of Molecular Liquids, 299, 112166 (2020)
20. Biocompatible ionic liquids and their application in pharmaceuticals
Rahman Md Moshikur, Md. Raihan Chowdhury, Muhammad Moniruzzaman, and Masahiro Goto
Green Chemistry, 22,8116-8139 (2020)
21. An Overview on the Toxicological Properties of Ionic Liquids toward Microorganisms
M. Sivapragasam, M. Moniruzzaman, M. Goto
Biotechnology Journal, 15, 1900073 (2020)
22. Solid-in-Oil Nanodispersions for Transcutaneous Immunotherapy of Japanese Cedar Pollinosis
Q. Kong, M. Kitaoka, R. Wakabayashi, Y. Tahara, N. Kamiya, M. Goto
Pharmaceutics, 12(3), 240-248, (2020)
23. Application of Ionic Liquids in Solvent Extraction of Platinum Group Metals
M.L. Firmansyah, W. Yoshida, T. Hanada, M. Goto
Solvent Extraction Research and Development, Japan, 27(1), 1-24, (2020)
24. Recent advances of enzymatic reactions in ionic liquids: Part II
A.A.M. Elgharbawy, M. Moniruzzaman, M. Goto
Biochemical Engineering Journal, 154, 107426 (2020)

田中研究室

1. Design of a Bioinert Interface Using an Amphiphilic Block Copolymer Containing a Bottlebrush Unit of Oligo(oxazoline)
J. H. Hong, M. Totani, D. Kawaguchi, H. Masunaga, N. L. Yamada, H. Matsuno, K. Tanaka
ACS Appl. Bio Mater. 3(11), 7363-7368 (2020)
2. Effect of Molecular Architecture on Conformational Relaxation of Polymer Chains at Interfaces
Hung K. Nguyen, Daisuke Kawaguchi, Keiji Tanaka
Macromol. Rapid Commun 41(21), 2000096 (2020)
3. Surface Segregation of a Star-Shaped Polyhedral Oligomeric Silsesquioxane in a Polymer Matrix
K. Yamamoto, D. Kawaguchi, T. Abe, T. Komino, M. Mamada, T. Kabe, C. Adachi, K. Naka, K. Tanaka
Langmuir 36(33), 9960-9966 (2020)
4. Effect of a Heterogeneous Network on Glass Transition Dynamics and Solvent Crack Behavior of Epoxy Resins
M. Aoki, A. Shundo, S. Yamamoto, K. Tanaka
Soft Matter 16(32), 7470-7478 (2020)
5. Time-dependent Heterogeneity in Polyacrylic Pressure Sensitive Adhesive
Y. Wu, A. Shundo, Y. Yasukochi, K. Tanaka
Eur. Poly. J. 134, 109812 (2020)
6. Mechanical Stabilization of Deoxyribonucleic Acid Solid Films Based on Hydrated Ionic Liquid
Y. Morimitsu, H. Matsuno, N. Ohta, H. Sekiguchi, A. Takahara, K. Tanaka
Biomacromolecules 21(2), 464-471 (2020)
7. The Effect of Interfacial Dynamics on the Bulk Mechanical Properties of Rubber Composites
S. Sugimoto, M. Inutsuka, D. Kawaguchi, K. Tanaka
Polym. J. 52(2), 217-223 (2020)

久枝研究室

1. Synthesis of 2,6,9-substituted xanthen-3-one and solvent effect on structural and photophysical properties
Taro Koide, Shohei Iwamori, Satoshi Koga, Yasutaka Suzuki, Jun Kawamata, Yoshio Hisaeda
Dyes and Pigm., 183, 108667–108671, (2020)
2. Mechanistic study on ring-contracting skeletal rearrangement from porphycene to isocorrole by experimental and theoretical methods
Taro Koide, Takafumi Maeda, Tsukasa Abe, Yoshihito Shiota, Yoshio Yano, Toshikazu Ono, Kazunari Yoshizawa, Yoshio Hisaeda
Eur. J. Org. Chem. 12, 1811–1816, (2020)
3. Electrochemical properties and catalytic reactivity of cobalt complexes with redox-active meso-substituted porphycene ligands
Taro Koide, Zihan Zhou, Ning Xu, Yoshio Yano, Toshikazu Ono, Zhongli Luo, Hisashi Shimakoshi, Yoshio Hisaeda
J. Porphyr. Phthalocyanines, 24, 90–97, (2020)
4. Synthesis of a B₁₂-BODIPY dyad for B₁₂-inspired photochemical transformations of a trichloromethylated organic compound
Yuki Anai, Keita Shichijo, Mamoru Fujitsuka, Yoshio Hisaeda, Hisashi Shimakoshi
Chem. Commun., 56, 11945–11948, (2020)
5. Visible light-driven photocatalytic duet reaction catalyzed by the B₁₂-rhodium-titanium oxide hybrid catalyst
Keita Shichijo, Mamoru Fujitsuka, Yoshio Hisaeda, Hisashi Shimakoshi
J. Organomet. Chem., 907, 121058–121062, (2020)
6. Catalytic dehalogenation of aryl halides via excited state electron transfer from the Co(I) state of B₁₂ complex
Hisashi Shimakoshi, Keita Shichijo, Shiori Tominaga, Yoshio Hisaeda, Mamoru Fujitsuka, Tetsuro Majima
Chem. Lett., 49, 820–822, (2020)
7. Tris(pentafluorophenyl)borane-pyrrolo[3,2-b]pyrrole hybrids: Studies on the solid-state

- structure and the crystallization-induced enhanced emission
Sou Hatanaka, Toshikazu Ono, Yoshio Yano, Daniel T. Gryko, Yoshio Hisaeda
ChemPhotoChem 4, 138–143, (2020)
8. Tetra- and Hexanuclear Copper(I) Iminothiolate Complexes: Synthesis, Structures, and Solid-State Thermochromic Dual Emission in Visible and Near-Infrared Regions
Yoshiki Ozawa, Marino Mori, Hidetoshi Kiyooka, Yuumi Sugata, Toshikazu Ono, Masaaki Abe
Chem. Pap. 74(11), 3717–3725, (2020)
 9. Electrocatalytic Reactivity of Imine/Oxime-type Cobalt Complex for Direct Perfluoroalkylation of Indole and Aniline Derivatives
Luxia Cui, Toshikazu Ono, Yoshitsugu Morita, Yoshio Hisaeda
Dalton Trans. 49, 7546–7551, (2020)
 10. Electrochemically Driven, Cobalt–Carbon Bond-Mediated Direct Intramolecular Fluoroalkylating Cyclization and Perfluoroalkylation of (Hetero)Arenes using $X(\text{CF}_2)_4X$
Luxia Cui, Toshikazu Ono, Md. Jakir Hossain, and Yoshio Hisaeda
RSC Adv. 10, 24862–24866, (2020)
 11. Vapoluminescence Behavior Triggered by Crystal State Complexation between Host Crystals and Guest Vapors Exhibiting No Visible Fluorescence
Tomoki Ogoshi, Yukie Hamada, Ryuta Sueto, Ryosuke Kojima, Fumiyasu Sakakibara, Yuuya Nagata, Yoko Sakata, Shigehisa Akine, Toshikazu Ono, Takahiro Kakuta and Tada-aki Yamagishi
Cryst. Growth Des. 20, 7087–7092, (2020)
 12. Rectangular Holes in Porphyrin Isomers Act As Mono- and Binucleating Ligands: Stereochemistry of Mono- and Diboron Porphycenes and Their Protonation Behaviors
Ning Xu, Toshikazu Ono, Yoshitsugu Morita, Teruyuki Komatsu, Yoshio Hisaeda
Inorg. Chem. in press. (2020)
 13. Dinuclear Triple-Stranded Helicates Composed of Tetradentate Ligands with Al(III) Chromophores: Optical Resolution and Multi-Color Circularly Polarized Luminescence Properties
Toshikazu Ono, Kohei Ishihama, Ai Taema, Takunori Harada, Kiyohao Fukusho, Yuki

Nojima, Masashi Hasegawa, Masaaki Abe, Yoshio Hisaeda
Angew. Chem. Int. Ed. in press, (2020)

14. Dinuclear Triple-stranded Helicates Comprising Al(III), Ga(III), or In(III) and a Hydrazine-linked Bisiminopyrrolyl Ligand: Synthesis, Structure, Optical Resolution, and Chiroptical Properties

Kohei Ishihama, Toshikazu Ono, Toru Okawara, Takunori Harada, Yuki Nojima, Masashi Hasegawa, Taro Koide, Masaaki Abe, Yoshio Hisaeda
Bull. Chem. Soc. Jpn. in press, (2020)

工学研究院 化学工学部門

上平研究室

1. Targeted knock-in into the *OVA* locus of chicken cells using CRISPR/Cas9 system with homology-independent targeted integration

Ming Shi, Yoshinori Kawabe, Akira Ito, Masamichi Kamihira

Journal of Bioscience and Bioengineering, Vol. 129, No. 3, pp. 363–370 (2020)

2. A bioartificial liver device based on three-dimensional culture of genetically engineered hepatoma cells using hollow fibers

Yusuke Fujii, Keigo Higashi, Hiroshi Mizumoto, Masamichi Kamihira, Toshihisa Kajiwara

Cytotechnology, Vol. 72, No. 2, pp. 227–237 (2020)

3. Novel neuromuscular junction model in 2D and 3D myotubes co-cultured with induced pluripotent stem cell-derived motor neurons

Kantaro Yoshioka, Akira Ito, Yoshinori Kawabe, Masamichi Kamihira

Journal of Bioscience and Bioengineering, Vol. 129, No. 4, pp. 486–493 (2020)

4. Transgene integration into the ovalbumin locus of chicken cells using CRISPR/Cas9 system for transgenic chicken bioreactors

工学府、化学システム工学専攻

Ming Shi (2020年)

工学研究院 材料工学部門

田中研究室

1. Activated slip systems in bimodal Ti–6Al–4V plastically deformed at low and moderately high temperatures

- B.R. Anne, Y. Okuyama, T. Morikawa, M. Tanaka
Mater. Sci. Eng. A, **798** (2020), 14211.
2. The Critical Shear Stress for Slip Generation due to Scratches in Silicon Wafers
J. Fujise, B. Ko, T. Ono, M. Tanaka
ECS J. Solid Stage Sci. Technol., **9** (2020), 055012.
 3. Effect of Surface Oxygen Concentration on Wafer Strength in Floating Zone Si Wafers
J. Fujise, B. Ko, T. Ono, M. Tanaka
ECS J. Solid Stage Sci. Technol., **9** (2020), 104002.
 4. Modelling and Crystal Plasticity Analysis for the Mechanical Response of Alloys with Non-uniformly Distributed Secondary Particles
Y. Okuyama, M. Tanaka, T. Ohashi, T. Morikawa
ISIJ International, **60** (2020), 1819-1828.
 5. Mechanism Behind the Onset of Delamination in Wire-drawn Pearlitic Steels
M. Tanaka, T. Manabe, T. Morikawa, K. Higashida
ISIJ International, **60** (2020), 2596-2603.

先導物質化学研究所 物質基盤化学部門

佐藤研究室

1. Manipulating Slow Magnetic Relaxation by Light in a Charge Transfer {Fe₂Co} Complex
Junqiu Li, Shuqi Wu, Shengqun Su, Shinji Kanegawa, and Osamu Sato
Chem. Eur. J. **26**, 3259 – 3263 (2020)
2. Effect of Axial Ligands on Easy-Axis Anisotropy and Field-Induced Slow Magnetic Relaxation in Heptacoordinated Fe^{II} Complexes
Arpan Mondal, Shu-Qi Wu, Osamu Sato, Sanjit Konar
Chem. Eur. J. **26**, 4780-4789 (2020)
3. Structural Modulation of Fluorescent Rhodamine-Based Dysprosium(III) Single-Molecule Magnets
Mei-Jiao Liu, Shu-Qi Wu, Jia-Xin Li, Yi-Quan Zhang, Osamu Sato, Hui-Zhong Kou
Inorg. Chem. **59**, 2308-2315 (2020)

4. Macroscopic Polarization Change via Electron Transfer in a Valence Tautomeric Cobalt Complex
Shu-Qi Wu, Meijiao Liu, Kaige Gao, Shinji Kanegawa, Yusuke Horie, Genki Aoyama, Hajime Okajima, Akira Sakamoto, Michael L. Baker, Myron S. Huzan, Peter Bencok, Tsukasa Abe, Yoshihito Shiota, Kazunari Yoshizawa, Wenhuan Xu, Hui-Zhong Kou, Osamu Sato
Nat Commun. 11, 1992 (2020)
5. Anisotropic Thermal Expansion in an Anionic Framework Showing Guest-Dependent Phases
Zhu Zhuo, You Gui Huang, Krista S. Walton, Osamu Sato
Frontiers in Chemistry, 8, 18 (2020)
6. Quenching and Restoration of Orbital Angular Momentum through a Dynamic Bond in a Cobalt(II) Complex
Sheng Qun Su, Shu Qi Wu, Michael L. Baker, Peter Bencok, Nobuaki Azuma, Yuji Miyazaki, Motohiro Nakano, Soonchul Kang, Yoshihito Shiota, Kazunari Yoshizawa, Shinji Kanegawa, Osamu Sato
J. Am. Chem. Soc. 142, 11434–11441 (2020)
7. Three-Step Spin State Transition and Hysteretic Proton Transfer in the Crystal of an Iron(II) Hydrazone Complex
Takumi Nakanishi, Yuta Hori, Shuqi Wu, Hiroyasu Sato, Atsushi Okazawa, Norimichi Kojima, Yusuke Horie, Hajime Okajima, Akira Sakamoto, Yoshihito Shiota, Kazunari Yoshizawa, Osamu Sato
Angew. Chem. Int. Ed. 59, 14781-14787 (2020)
8. Femtosecond Polarization Switching in the Crystal of a [CrCo] Dinuclear Complex
Hikaru Kuramochi, Genki Aoyama, Hajime Okajima, Akira Sakamoto, Shinji Kanegawa, Osamu Sato, Satoshi Takeuchi, Tahei Tahara
Angew. Chem. Int. Ed. 59, 15865-15869 (2020)

システム情報科学研究所 電気システム工学部門

木須研究室

1. Scanning Hall-probe microscopy for site-specific observation of microstructure in superconducting wires and tapes for the clarification of their performance bottlenecks
Kohei Higashikawa, Masayoshi Inoue, Shujun Ye, Akiyoshi Matsumoto, Hiroaki Kumakura,

Ryuji Yoshida, Takeharu Kato, Takato Machi, Akira Ibi, Teruo Izumi, Takanobu Kiss
Superconductor Science and Technology, 33, 064005 (2020)

2. Measurement and Analysis on Local Magnetization Properties of RE-123 Coated Conductor With DC Transport Current and External Magnetic Field
Kohei Higashikawa, Naohiro Numata, Kohei Hisajima, Takumi Suzuki, Takanobu Kiss
IEEE Transactions on Applied Superconductivity, 30, 4701605 (2020)
3. Design and Cooling Properties of High Stable Field REBCO Superconducting Magnet for MRI
Shoichi Yokoyama, Hideaki Miura, Tetsuya Matsuda, Tatsuya Inoue, Yusuke Morita, Ryo Eguchi, Shunsuke Otake, Hajime Tanabe, Shinji Sato, Takanobu Kiss, Daisuke Miyagi, Makoto Tsuda, Taketsune Nakamura, Yasuyuki Shirai
IEEE Transactions on Applied Superconductivity, 30, 4400904 (2020)

システム情報科学研究所 情報エレクトロニクス部門

白谷・古閑・板垣研究室

1. Impact of radish sprouts seeds coat color on the electron paramagnetic resonance signals after plasma treatment
K. Koga, P. Attri, K. Kamataki, N. Itagaki, M. Shiratani, V. Mildaziene
Jpn. J. Appl. Phys., 59, SHHF01, (2020)

理学研究院 物理学部門

固体電子研究室

1. Asymmetric nonlocal signal induced by thermoelectric effects in a lateral spin valve
N. Asam, T. Ariki, T Kimura
Physica E: Low-dimensional Systems and Nanostructures, vol.117, pp.113738, (2020)
2. Pressure Effects on Magnetic and Transport Properties in CoFe-Based Spin Valve
Akihiro Mitsuda, Motoki Kaneda, Kanta Matsutomo, Takashi Kimura, Hiromi Yuasa
Materials Transactions, Vol .61, No.8, pp.1483-1486, (2020)
3. Superconductivity in Palladium Hydride Systems
Tatsuya Kawae, Yuji Inagaki, Si Wen, Souhei Hirota, Daiki Itou, Takashi Kimura
journal of the physical society of japan, vol. 89, No.5, pp.051004, (2020)

4. Spin-transport insuperconductors
K. Ohnishi, S. Komori, G. Yang, K. R. Jeon, L. A.B. Olde Olthof, X. Montiel, M. G. Blamire, J. W.A. Robinson
Applied Physics Letters, Vol. 116, pp. 130501, (2020)

磁性物理学研究室

1. Lattice instability coupled with valence degrees of freedom in valence fluctuation compound YbPd
Satoshi Tsutsui, Takumi Hasegawa, Akihiro Mitsuda, Masaki Sugishima, Kohei Oyama, Masaichiro Mizumaki, Norio Ogita, Hirofumi Wada, and Masayuki Udagawa
Phys. Rev. B 102, 245150, (2020)
2. Ga Substitution Effect on the Valence Transition of $\text{Eu}_2\text{Pt}_6\text{Al}_{15}$
Kohei Oyama, Akihiro Mitsuda, Hirofumi Wada, Yasuo Narumi, Masayuki Hagiwara, Ryunosuke Takahashi, Hiroki Wadati, Hiroyuki Setoyama, and Koichi Kindo
J. Phys. Soc. Jpn. 89, 114713, (2020)
3. Valence Transition of EuRh_2Si_2 Studied by Synchrotron Mössbauer Spectroscopy
Akihiro Mitsuda, Hirofumi Wada, Ryo Masuda, Shinji Kitao, Makoto Seto, Yoshitaka Yoda, and Hisao Kobayashi
J. Phys. Soc. Jpn. 89, 104703, (2020)
4. Temperature-induced valence transition in $\text{EuNi}_2(\text{Si}_{1-x}\text{Ge}_x)_2$ investigated by high-energy resolution fluorescence detection
Ryohei Shimokasa, Naomi Kawamura, Takayuki Matsumoto, Koki Kawakami, Taku Kawabata, Gen Isumi, Takayuki Uozumi, Akihiro Mitsuda, Hirofumi Wada, Masaichiro Mizumaki, Kojiro Mimura
Rad. Phys. Chem. 175, 108150, (2020)
5. Pressure Effects on Magnetic and Transport Properties in CoFe-Based Spin Valve
Akihiro Mitsuda, Motoki Kaneda, Kanta Matsutomo, Takashi Kimura, Hiromi Yuasa
Materials Transactions 61, 1483, (2020)
6. Electronic Structure of the Valence Transition System $\text{Eu}(\text{Rh}_{1-x}\text{T}_x)_2\text{Si}_2$ ($T = \text{Co}, \text{Ir}$) Studied by High-Energy Resolution
Ryohei SHIMOKASA, Naomi KAWAMURA, Taku KAWABATA, Gen ISUMI, Takayuki

- UOZUMI, Akihiro MITSUDA, Hirofumi WADA, Fuminori HONDA, Masato HEDO,
Takao NAKAMA, Yoshichika ŌNUKI, Masaichiro MIZUMAKI, Kojiro MIMURA
JPS Conf. Proc. 30, 011134 (2020)
7. Ultrasound investigation of the Eu-based mixed valence system EuRh_2Si_2
Yoshiki NAKANISHI, Shinya KUDO, Kyouhei KIKUTANI, Mitsuteru NAKAMURA,
Masahito YOSHIZAWA, Akihiro MITSUDA
JPS Conf. Proc. 30, 011133 (2020)
8. Point-Contact Spectroscopy Study of YbPd/W Interface
Masanobu Shiga, Takurou Harada, Takuya Takahashi, Akihiro Mitsuda, Hirofumi Wada, Yuji
Inagaki, Tatsuya Kawae
JPS Conf. Proc. 30, 011139 (2020)
9. Pressure-induced Cubic Valence Fluctuating Ground State in YbPd
Kohei Oyama, Kousuke Tanabe, Akihiro Mitsuda, Hirofumi Wada, Naohisa Hirao, Saori
Imada Kawaguchi, Yasuo Ohishi, Jun Gouchi, Yoshiya Uwatoko
JPS Conf. Proc. 30, 011141 (2020)
10. Development of Low-Energy Fluctuations Toward Structural Transition in YbPd Inferred
from ^{105}Pd NMR
Y. Nakai, R. Nakanishi, T. Fujii, M. Hirata, K. Oyama, A. Mitsuda, K. Ueda, H. Wada, T.
Mito
JPS Conf. Proc. 30, 011140 (2020)

理学研究院 化学部門

触媒有機化学研究室

1. DFT study for selective adsorption of 1, 3-dimethyltrisulfane responsible for aged odor in
Japanese sake using supported gold nanoparticles
Sonoura. A, Hayashi. A, Ato. Y, Koga. H, Murayama. H, Tokunaga. M, Okumura. M
Chem. Lett., **2020**, 49, 218-221
2. Theoretical study of selective hydrogenolysis of methyl vinyl carbinol over Au-Ni bimetallic
catalyst: toward constructing a working hypothesis for the role of dichloroethane solvent and
perimeter sites
Ato. Y, Hayashi. A, Sonoura. A, Koga. H, Ishida. T, Tokunaga. M, Okumura. M

Chem. Phys. Lett. **2020**, 754, 137773

3. Structures analyses of supported ruthenium catalysts under asymmetric hydrogenation reaction
Murayama. H, Ikutake. Y, Nakashima. H, Honma. T, Tokunaga. M
Rad. Phys. Chem., **2020**, 175, 108158
4. 清酒の劣化臭吸着剤としてのシリカ担持金ナノ粒子の応用
村山美乃、磯谷敦子、徳永 信
放射光学会誌, **2020**, 33, 222-230
5. 担持金ナノ粒子吸着剤による酒類からの硫黄臭除去
村山美乃、徳永 信、磯谷敦子
最新吸着技術便覧 プロセス・材料・設計 新訂三版 監修 竹内 雍、NTS 出版
274-278 (2020)

生物有機化学研究室

1. Total Synthesis of Amphidinol 3: A General Strategy for Synthesizing Amphidinol Analogues and Structure-Activity Relationship Study
Yuma Wakamiya, Makoto Ebine, Nobuaki Matsumori, Tohru Oishi
J. Am. Chem. Soc. **142**, 3472–3478 (2020)
2. Synthesis and Stereochemistry of the C30–C63 Section of Karlotoxin 2
Keitaro Umeno, Tohru Oishi
Asian J. Org. Chem. **9**, 1597–1601 (2020)
3. Structure Determination, Chemical Synthesis, and Evaluation of Biological Activity of Super Carbon Chain Natural Products
Tohru Oishi
Bull. Chem. Soc. Jpn. **93**, 1350–1360 (2020)

寺崎研究室

1. Improvement of reflectron time-of-flight mass spectrometer for better convergence of ion beam
T. Handa, T. Horio, M. Arakawa, and A. Terasaki
Int. J. Mass Spectrom **451**, 116311 (2020)

2. A revisit to electronic structures of cobalt-doped silver cluster anions by size-dependent reactivity measurement
K. Minamikawa, M. Arakawa, K. Tono, and A. Terasaki
Chem. Phys. Lett **753**, 137613 (2020)
3. Preadsorption effect of carbon monoxide on reactivity of cobalt cluster cations toward hydrogen
M. Arakawa, D. Okada, S. Kono, and A. Terasaki
J. Phys. Chem. A **124**, 9751–9756 (2020)
4. Reaction kinetics of nitric oxide on size-selected silver cluster cations
M. Arakawa, M. Horioka, K. Minamikawa, T. Kawano, and A. Terasaki
J. Phys. Chem. C **124**, 26881–26888 (2020)
5. 気相金属化合物クラスターの反応研究による宇宙分子進化へのアプローチ
荒川雅
低温科学 **78**, 127–133 (2020)
6. アンモニアによるタンタルクラスター正イオンの窒化過程：5 族元素窒化物の組成の起源の探究
荒川雅, G. Naresh Patwari, 寺寄亨
ナノ学会会報 **19**, 21–26 (2020)

農学研究院 環境農学部門

森林圏環境資源科学研究室

1. Isolation of new secondary metabolites from gorgonian soft coral *Heteroxenia fuscescens* collected from Red Sea
Fahd M. Abdelkarem, Ezz Eldin K. Desoky, Alaa M. Nafady, Ahmed E. Allam, Aldoushy Mahdy, Maki Nagata, Tomofumi Miyamoto, Kuniyoshi Shimizu
Phytochemistry Letters, 36. 156-161 (2020)
2. A new aliphatic ester of hydroxysalicylic acid from fermented *Carica papaya* L. preparation with a potential hair growth stimulating activity
Ahmed Ashour, Yhiya Amen, Toshinori Nakagawa, Yasuharu Niwa, Amira Mira, Koichiro Ohnuki, Shinki Murakami, Mitsuko Imao, Kuniyoshi Shimizu
Natural Product Research. 34(12). 1750-1755 (2020)

3. A new cycloartane triterpene and other phytoconstituents from the aerial parts of *Euphorbia dendroides*
Ahmed R.Hassan, Ahmed Ashour, Yhiya Amen, Maki Nagata,
Sayed A. El Toumy, Kuniyoshi Shimizu
Natural Product Research. in press (2020)
4. Postprandial Hyperglycemia Lowering Effect of the Isolated Compounds from Olive Mill Wastes – An Inhibitory Activity and Kinetics Studies on α -Glucosidase and α -Amylase Enzymes
Rogers Mwakalukwa, Yhiya Amen, Maki Nagata, Kuniyoshi Shimizu
ACS Omega. 5(32). 20070-20079 (2020)
5. Isolation and quantification of the plant growth regulator 1-triacontanol from moso bamboo (*Phyllostachys pubescens*) shoot skin and its compost
Yasuhiro Mori, Akinobu Tanaka, Toshinori Nakagawa, Yhiya Amen, Yasumitsu Kuwano, Yufu Tanizaki, Shota Tomokiyo, Kuniyoshi Shimizu
Agriculture and Forestry. 66(3). 81-93 (2020)
6. *Diadema setosum*: isolation of bioactive secondary metabolites with cytotoxic activity toward human cervical cancer
Fahd M. Abdelkarem, Ezz Eldin K. Desoky, Alaa M. Nafady, Ahmed E. Allam, Aldoushy Mahdy, Ahmed Ashour, Kuniyoshi Shimizu
Natural Product Research. in press (2020)

カーボンニュートラル・エネルギー国際研究所 物質変換科学ユニット
山内研究室

1. Multiscale design for high-performance glycolic acid electro-synthesis cell: Preparation of nanoscale-IrO₂-applied Ti anode and optimization of cell assembling
Takashi Fukushima, Manabu Higashi, Sho Kitano, Takeharu Sugiyama, Miho Yamauchi
Catalysis Today, 351, 12-20, (2020)
2. Electrosynthesis of Glycine from Bio-derivable Oxalic Acid
Takashi Fukushima, Miho Yamauchi
Journal of Applied Electrochemistry, Special issue Electrochemical Routes for Conversion, 印刷中(2020)

3. CO₂-free Energy System—Polymer Electrolyte Alcohol Electrosynthesis Cell with a Low Iridium Content Anode Based on in situ Growth Method
Junfang Cheng, Manabu Higashi, Nobutaka Maeda, Junko Matsuda, Miho Yamauchi, Naotoshi Nakashima
Electrochimica Acta, 361, 137078 (2020)

基幹教育院 自然科学実験系部門

分子細胞生物学研究室

1. Mammalian Homologue NME3 of DYNAMO1 Regulates Peroxisome Division
Honsho M, Abe Y, Imoto Y, Chang Z.F, Mandel H, Falik-Zaccai T.C, and Fujiki Y
Int. J. Mol. Sci., **21**, 8040 (2020)
2. Peroxisome Deficiency Impairs BDNF Signaling and Memory
Abe Y, Nishimura Y, Nakamura K, Tamura S, Honsho M, Udo H, Yamashita T, and Fujiki Y
Front. Cell Dev. Biol., **8**, 567017 (2020)
3. Mitotic phosphorylation of Pex14p regulates peroxisomal import machinery
Yamashita K, Tamura S, Honsho M, Yada H, Yagita Y, Kosako H, and Fujiki Y
J. Cell Biol., **219**(10), e202001003 (2020)
4. A peroxisome deficiency-induced reductive cytosol state up-regulates the brain-derived neurotrophic factor pathway
Abe Y, Honsho M, Kawaguchi R, Matsuzaki T, Ichiki Y, Fujitani M, Fujiwara K, Hirokane M, Oku M, Sakai Y, Yamashita T, and Fujiki Y
J. Biol. Chem. **295**(16), 5321-5334 (2020)

医学研究院 基礎医学部門

ウイルス学分野

1. Disruption of the Dimer-Dimer Interaction of the Mumps Virus Attachment Protein Head Domain, Aided by an Anion Located at the Interface, Compromises Membrane Fusion Triggering
Marie Kubota, Iori Okabe, Shin-ichi Nakakita, Ayako Ueo, Yuta Shirogane, Yusuke Yanagi, Takao Hashiguchi
Journal of Virology, 94, e01732-19, (2020)

神経病理学研究室

1. A juvenile case of epilepsy-associated, isocitrate dehydrogenase wild-type/histone 3 wild-type diffuse glioma with a rare BRAF A598T mutation
Shoko Sadashima, Satoshi O Suzuki, Hironori Haruyama, Nobutaka Mukae, Yutaka Fujioka, Nobuhiro Hata, Masahiro Mizoguchi, Keisuke Ishimatsu, Akio Hiwatashi, Toru Iwaki
Neuropathology, Volume 40, Issue 6, page 646-650, 2020
2. Accumulation of Astrocytic Aquaporin 4 and Aquaporin 1 in Prion Protein Plaques
Shoko Sadashima, Hiroyuki Honda, Satoshi O Suzuki, Masahiro Shijo, Shinichi Aishima, Keita Kai, Junichi Kira, Toru Iwaki
Journal of Neuropathology Experimental Neurology. Volume 79, Issue 4, page 419-429. 2020
3. PCBP2 Is Downregulated in Degenerating Neurons and Rarely Observed in TDP-43 Positive Inclusions in Sporadic Amyotrophic Lateral Sclerosis
Motoi Yoshimura, Hiroyuki Honda, Naokazu Sasagasako, Shinichiro Mori, Hideomi Hamasaki, Satoshi O Suzuki, Takashi Ishii, Toshiharu Ninomiya, Jun-Ichi Kira, Toru Iwaki
Journal of Neuropathology Experimental Neurology. Volume 79, 2020
doi: 10.1093/jnen/nlaa148. Online ahead of print.

医学研究院 臨床医学部門

臨床・腫瘍外科

1. Necroptosis in pancreatic cancer promotes cancer cell migration and invasion by release of CXCL5
Yohei Ando, Kenoki Ohuchida, Yoshiki Otsubo, Shin Kibe, Shin Takesue, Toshiya Abe, Chika Iwamoto, Koji Shindo, Taiki Moriyama, Kohei Nakata, Yoshihiro Miyasaka, Takao Ohtsuka, Yoshinao Oda, Masafumi Nakamura
PLoS One 15(1): e0228015, 2020
2. Microsatellite instability in Japanese female patients with triple-negative breast cancer
Kurata K, Kubo M, Kai M, Mori H, Kawaji H, Kaneshiro K, Yamada M, Nishimura R, Osako T, Arima N, Okido M, Oda Y, Nakamura M
Breast Cancer 27(3):490-498, 2020
3. Comprehensive molecular profiling broadens treatment options for breast cancer patients
Kawaji H, Kubo M, Yamashita N, Yamamoto H, Kai M, Kajihara A, Yamada M, Kurata K, Kaneshiro K, Harada Y, Hayashi S, Shimazaki A, Mori H, Akiyoshi S, Oki E, Oda Y,

Baba E, Mori M, Nakamura M

Cancer Medicine <https://doi.org/10.1002/cam4.3619>, 2020

4. LAMA4 upregulation is associated with high liver metastasis potential and poor survival outcome of Pancreatic Cancer
Zheng B, Qu J, Ohuchida K, Feng H, Chong SJF, Yan Z, Piao Y, Liu P, Sheng N, Eguchi D, Ohtsuka T, Mizumoto K, Liu Z, Pervaiz S, Gong P, Nakamura M
Surg Today 50(10):1290-1296, 2020
5. Neutrophil extracellular traps promote liver micrometastasis in pancreatic ductal adenocarcinoma via the activation of cancer-associated fibroblasts
Takesue S, Ohuchida K, Shinkawa T, Otsubo Y, Matsumoto S, Sagara A, Yonenaga A, Ando Y, Kibe S, Nakayama H, Iwamoto C, Shindo K, Moriyama T, Nakata K, Miyasaka Y, Ohtsuka T, Toma H, Tominaga Y, Mizumoto K, Hashizume M, Nakamura M
International Journal of Oncology 6(2):596-605, 2020
6. FoundationOne® CDx gene profiling in Japanese pancreatic ductal adenocarcinoma patients: a single-institution experience
Kimura R, Ohtsuka T, Kubo M, Kajihara A, Fujii A, Watanabe Y, Mori Y, Ikenaga N, Nakata K, Shindo K, Ohuchida K, Nakamura M
Surg Today doi: 10.1007/s00595-020-02123-2, 2020

生体防御医学研究所 細胞機能制御学部門

炎症制御学分野

1. Site-specific ubiquitination of the E3 ligase HOIP regulates apoptosis and immune signaling
Fennell LM, Gomez Diaz C, Deszcz L, Kavirayani A, Hoffmann D, Yanagitani K, Schleiffer A, Mechtler K, Hagelkruys A, Penninger J, Ikeda F
EMBO J. 2020 Nov 20:e103303. Epub ahead of print

生体防御医学研究所 分子機能制御学部門

構造生物学研究室

1. Two-State Exchange Dynamics in Membrane-Embedded Oligosaccharyltransferase Observed in Real-Time by High-Speed AFM
Kawasaki Y, Ariyama H, Motomura H, Fujinami D, Noshiro D, Ando T, Kohda D
J Mol Biol. 432(22):5951-5965 (2020)

2. Mosaic Cooperativity in Slow Polypeptide Topological Isomerization Revealed by Residue-Specific NMR Thermodynamic Analysis
Fujinami D, Motomura H, Oshima H, Mahin AA, Elsayed KM, Zendo T, Sugita Y, Sonomoto K, Kohda D
J Phys Chem Lett. 11(5):1934-1939 (2020)

3. Crystal contact-free conformation of an intrinsically flexible loop in protein crystal: Tim21 as the case study
Bala S, Shinya S, Srivastava A, Ishikawa M, Shimada A, Kobayashi N, Kojima C, Tama F, Miyashita O, Kohda D
Biochim Biophys Acta Gen Subj. 1864(2):129418 (2020)