

業績レポート

先進社会環境学専攻

基幹講座

資源戦略学講座

地図環境計測・分析学分野

【論文】

- NaHCO_3 as a carrier of CO_2 and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano, Noriyoshi Tsuchiya, *Frontiers in Environmental Science*, 11, 2023, doi: 10.3389/fenvs.2023.1138007.

環境複合材料創成科学分野

【論文】

- Are Non-Six-Membered Ring Defects Formed in Single-Walled Carbon Nanotubes Treated by a Fluorination-Defluorination Process?, Yoji Omoto, Hiromu Morita, Yoshinori Sato, Tetsuo Nishida, Kenichi Motomiya, Hirokazu Katsui, Takashi Goto, Yoshinori Sato, *Nanomaterials*, 13(6), 2023, 1086.

環境素材設計学分野

【論文】

- 球状多孔質 β 型リン酸三カルシウム顆粒を用いたセメントの作製と評価, 伊藤佑一郎, 加藤大夢, 梅津将喜, 上高原理暢, 『粉体および粉末冶金』, 70(5), 2023, pp. 242-247.
- Iron azaphthalocyanine electrocatalysts for enhancing oxygen reduction reactions under neutral conditions and power density in microbial fuel cells, Edwin Osebe Nyangau, Hiroya Abe, Yuta Nakayasu, Masaki Umetsu, Masaru Watanabe, Chika Tada, *Bioresource Technology Reports*, 23, 2023, 101565.
- Semi-wet methanogen cathode composed of oak white charcoal for developing sustainable microbial fuel cells, Hiroto Nakano, Yuta Nakayasu, Masaki Umetsu, Chika Tada, *Journal of Bioscience and Bioengineering*, 135(6), 2023, pp. 480-486.
- 3D-Printed Methane-Producing Electrodes for Microbial Fuel Cells Developed Using Biogel Ink Containing Live Methanogens and White Charcoal, Masaki Umetsu, Yosuke Watanabe, Masato Ueno, Tatsuya Kobayashi, Hidemitsu Furukawa, Chika Tada, *Macromolecular Materials and Engineering*, 308(12), 2023, 2300215.

【MISC】

- リン酸カルシウム球状多孔質顆粒の作製とその医療応用, 上高原理暢, 梅津将喜, 『PHOSPHORUS LETTER』, 106, 2023, pp. 7-17.
- 骨再生のためのリン酸カルシウム球状顆粒からなるセメントの作製, 梅津将喜, 上高原理暢, 『セラミックス』, 58, 2023, pp. 588-591.

環境修復生態学分野

【論文】

- A microbial consortium led by a novel *Pseudomonas* species enables degradation of carbon tetrachloride under aerobic conditions, Leonardo Stari, Tanmoy Roy Tusher, Chihiro Inoue, Mei-Fang Chien,

Chemosphere, 319, 2023, 137988.

- A porous Co_3O_4 -carbon paper electrode enabling nearly 100% electrocatalytic reduction of nitrate to ammonia, Xufeng Rao, Jiaying Yan, Koji Yokoyama, Xiaolin Shao, Chihiro Inoue, Mei-fang Chien, Yuyu Liu, *Materials Reports: Energy*, 2023, 100216.
- Assessment of factors influencing Indonesian residents' intention to use a deposit-refund scheme for PET bottle waste, Ahmad Amirudin, Chihiro Inoue, Guido Grause, *Circular Economy*, 2(4), 2023, 100061.
- Bayesian network highlights the contributing factors for efficient arsenic phytoextraction by *Pteris vittata* in a contaminated field., Kudo H, Han N, Yokoyama D, Matsumoto T, Chien MF, Kikuchi J, Inoue C, *The Science of the total environment*, 899, 2023, 165654.
- Biodegradation of polycyclic aromatic hydrocarbons (PAHs) by microbial consortium from paddy rice soil, Hernando P. Bacosa, Genes Divine B. Cayabo, Chihiro Inoue, *Journal of Environmental Science and Health, Part A*, 58(6), 2023, pp. 617-622.
- Cadmium and zinc accumulation behaviour of hyperaccumulator *Arabidopsis halleri* ssp. *gemmifera* in the hydroponic system, Syarifah Hikmah Julinda Sari, Mei-Fang Chien, Chihiro Inoue, *Journal of Degraded and Mining Lands Management*, 10(2), 2023, 4155.
- Leaching behavior of arsenic and selenium in coal fly ash by aging treatment and cement mixing, Tsugumi Seki, Yasumasa Ogawa, Koki Ibi, Taiji Chida, Chihiro Inoue, Yuichi Nibori, *Journal of Nuclear Science and Technology*, 2023, doi: 10.1080/00223131.2023.2176378.
- Rethinking Waste Management in Indonesia Using Public-Private Partnership Framework: A Case Study of Ahmad Amirudin PET Bottle Waste Management, Ahmad Amirudin, Chihiro Inoue, Guido Grause, *Nature Environment and Pollution Technology*, 22(1), 2023, pp. 29-38.
- Temperature Dependence of Metals Accumulation and Removal Kinetics by *Arabidopsis halleri* ssp. *gemmifera*, Hiroshi Kudo, Zhaojie Qian, Chihiro Inoue, Mei-Fang Chien, *Plants*, 12(4), 2023, 877.
- The benefit of the *Arabidopsis halleri* ssp. *gemmifera* root exudate in cadmium extraction from the cadmium contaminated soil, Agni Lili Ariyanti, Mei-Fang Chien, Chihiro Inoue, *Journal of Degraded and Mining Lands Management*, 10(2), 2023, 4107.
- 福島第一原子力発電所事故に起因する放射性セシウムの落葉広葉樹林内の循環, 高橋智之, 黄田毅, 趙成珍, 井上千弘, 『日本原子力学会誌』, 22(2), 2023, pp. 59-72.

地球物質・エネルギー学分野

【論文】

- Continuous thermal structures of the present-day and contact-metamorphic geothermal systems revealed by drill cuttings in the Kakkonda geothermal field, Japan, Masaoki Uno, Atsushi Okamoto, Takashi Akatsuka, Noriyoshi Tsuchiya, *Geothermics*, 115, 2023, 102806.
- Effects of hydrothermal alteration on shear localization and weakening in the mantle lithosphere, Maki Semba, Ken-ichi Hirauchi, Tomohiro Ohuchi, Atsushi Okamoto, Yui Kouketsu, *Tectonophysics*, 868, 230081, 2023, doi: 10.1016/j.tecto.2023.230081
- Geological records of transient fluid drainage into the shallow mantle wedge, Kazuki Yoshida, Ryosuke Oyanagi, Masao Kimura, Oliver Plümper, Mayuko Fukuyama, Atsushi Okamoto, *Science Advances*, 9(14), 2023, doi: 10.1126/sciadv.ade6674.
- Mantle hydration initiated by Ca metasomatism in a subduction

zone: An example from the Chandman meta-peridotite, western Mongolia, Otgonbayar Dandar, Atsushi Okamoto, Masaoki Uno, Noriyoshi Tsuchiya, *Lithos*, 452-453, 2023, 107212.

- Metamorphic rocks with different pressure-temperature-time paths bounded by a ductile shear zone at Oyayubi ridge, Brattnipene, Sør Rondane Mountains, East Antarctica, Tatsuro Adachi, Tetsuo Kawakami, Fumiko Higashino, Masaoki Uno, *Journal of Mineralogical and Petrological Sciences*, 118, 2023, 230220.
- Metasomatism at metapelite-ultramafic rock contact at the subduction interface: Insights into mass transfer and fluid flow at the mantle wedge corner, Ryosuke Oyanagi, Masaoki Uno, Atsushi Okamoto, *Contributions to Mineralogy and Petrology*, 178(5), 2023, doi: 10.1007/s00410-023-02011-1.
- Multiphase-solid fluid inclusions in HP-LT eclogite facies rock (Zavkhan Terrane, Western Mongolia): evidence for the evolution from saline to hypersaline fluids during metamorphism in subduction zone, Manzshir Bayarbald, Atsushi Okamoto, Masaoki Uno, Kenta Yoshida, Alexey Kotov, Geri Agroli, Otgonbayar Dandar, Yasuhiro Niwa, Masao Kimura, Noriyoshi Tsuchiya, *Contributions to Mineralogy and Petrology*, 178(11), 2023, doi: 10.1007/s00410-023-02055-3.
- Multiple post-peak fluid infiltrations in southern Perlebandet, Sør Rondane Mountains, East Antarctica., Fumiko Higashino, Tetsuo Kawakami, Tatsuro Adachi, Masaoki Uno, *Journal of Mineralogical and Petrological Sciences*, 2023, doi: 10.2465/jmps.230131a.
- NaHCO_3 as a carrier of CO_2 and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano, Noriyoshi Tsuchiya, *Frontiers in Environmental Science*, 11, 2023, doi: 10.3389/fenvs.2023.1138007.
- Oxidation-induced nanolite crystallization triggered the 2021 eruption of Fukutoku-Oka-no-Ba, Japan, Kenta Yoshida, Akira Miyake, Shota H. Okumura, Hideki Ishibashi, Satoshi Okumura, Atsushi Okamoto, Yasuhiro Niwa, Masao Kimura, Tomoki Sato, Yoshihiko Tamura, Shigeaki Ono, *Scientific reports*, 13(1), 2023, doi: 10.1038/s41598-023-34301-w.
- Partial Melting under Shallow-Crustal Conditions: A Study of the Pleistocene Caldera Eruption of Mendeleev Volcano, Southern Kuril Island Arc, Alexey Kotov, Sergey Smirnov, Ildar Nizametdinov, Masaoki Uno, Noriyoshi Tsuchiya, Ivan Maksimovich, *Journal of Petrology*, 64(6), 2023, doi: 10.1093/petrology/egad033.
- Progressive carbonation and Ca-metasomatism of serpentinized ultramafic rocks: insights from natural occurrences and hydrothermal experiments, Nomuulin Amarbayar, Otgonbayar Dandar, Jiajie Wang, Atsushi Okamoto, Masaoki Uno, Undarmaa Batsaikhan, Hideko Takanayagi, Yasufumi Iryu, Noriyoshi Tsuchiya, *Contributions to Mineralogy and Petrology*, 178, 2023, doi: 10.1007/s00410-023-02013-z.
- Role of mantle carbonation in trench outer-rise region in the global carbon cycle, Ikuo Katayama, Keishi Okazaki, Atsushi Okamoto, Island Arc, 2023, doi: 10.1111/iar.12499.
- Short-Lived and Voluminous Fluid-Flow in a Single Fracture Related to Seismic Events in the Middle Crust, D. Mindaleva, M. Uno, N. Tsuchiya, *Geophysical Research Letters*, 2023, doi: 10.1029/2022gl099892.
- Si- versus Mg-metasomatism at the crust-mantle interface: insights from experiments, natural observations and geochemical modeling, Atsushi Okamoto, Ryosuke Oyanagi, *Progress in Earth and Planetary Science*, 10(1), 2023, doi: 10.1186/s40645-023-00568-w.
- Upward earthquake migration in the northeastern Noto Peninsula, Japan, initiated from a deep ring-shaped cluster: Possibility of fluid leakage from a hidden magma system, Keisuke Yoshida, Masaoki Uno, Toru Matsuzawa, Yohei Yukutake, Yusuke Mukuhira, Hiroshi Sato, Takeyoshi Yoshida, *Journal of Geophysical Research: Solid Earth*, 128(6), 2023, doi: 10.1029/2022jb026047.
- 日本の浅部から深部における地殻浸透率, 石橋琢也, 富権聰, 宇野正起, 『日本地熱学会誌』, 45(1), 2023, pp. 27-44.

地球開発環境学分野（高橋弘研）

【論文】

- Simulations of Soil Excavation and Collapse Using Soil Constitutive Models with Material Point Method, Xiaodong Liu, Ryohei Suzuki, Tomoaki Satomi, Hiroshi Takahashi, *International Symposium on Earth Science and Technology 2023, CINEST23 (103)*, 2023, pp. 424-429.
- 塩化鉄による高吸水性ポリマーを含む纖維質固化処理土の吸水膨張および耐久性劣化の抑制, 上野耕平, 里見知昭, 高橋弘, 『土木学会論文集』, 79(7), 2023, doi: 10.2208/jscej.22-00251.
- 砂質土地盤におけるコーン指数とパケットに作用する抵抗力の関係, 谷口直哉, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 7-12.
- 砂質土地盤におけるコーン指数とブレード掘削抵抗力の関係, 鈴木涼平, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 1-6.
- 履帶車両における走行パラメータと砂質土地盤の関係性について, 中尾紘彰, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 35-40.

【MISC】

- 砂質土地盤におけるコーン指数とパケットに作用する抵抗力の関係—Relationship between Cone Index and Resistive Force Acting on Bucket in Sandy Soil, 谷口直哉, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 7-12.
- 砂質土地盤におけるコーン指数とブレード掘削抵抗力の関係—Relationship between cone index of sandy ground and excavating resistive force acting on the blade, 鈴木涼平, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 1-6.
- 履帶車両における走行パラメータと砂質土地盤の関係性について—Relationship between Driving Characteristics Parameters in Crawler Vehicle and Sandy Ground Condition, 中尾紘彰, 劉曉東, 里見知昭, 高橋弘, 『テラメカニクス = Teramechanics』, 43, 2023, pp. 35-40.

資源循環・環境応用学分野

【論文】

- Electrochemical investigation of scorodite synthesis for arsenic fixation using hematite as an iron source: Elucidation of reaction acceleration by Fe^{2+} using a local-cell model, Ken Adachi, Kaito Hikichi, Atsushi Iizuka, Etsuro Shibata, *HYDROMETALLURGY*, 2023, 106153.
- Investigation of performance and mechanism of zinc removal from polluted water by concrete fines derived from aggregate recycling: From problematic byproducts to effective adsorbent, Hsing-Jung Ho, Atsushi Iizuka, *Chemosphere*, 338, 2023, 139569.
- Potential investigation of concrete fines as an alternative material: A novel neutralizer for acid mine drainage treatment, Hsing-Jung Ho, Atsushi Iizuka, Viswanath Ravi Kumar Vadapalli, Henk Coetze, Leslie Petrik, Jochen Petersen, Tunde Ojumu, *Environmental Technology & Innovation*, 29, 2023, 102985.
- Simultaneous removal of fluoride and phosphate from semiconductor wastewater via chemical precipitation of calcium fluoride and hydroxyapatite using byproduct of recycled aggregate, Hsing-Jung Ho, Miyuki Takahashi, Atsushi Iizuka, *Chemosphere*, 340, 2023, 139875.
- Simultaneous Separation and Recovery of Phosphorus from Aqueous Solution by Bipolar Membrane Electrodialysis, Atsushi Iizuka, Hsing-Jung Ho, Tatsuya Sugimoto, Ken Adachi, Etsuro Shibata, *ISIJ INTERNATIONAL*, 63(7), 2023, pp. 1172-1177.
- 溶融ファイアライトスラグ中のスピネル析出挙動における不純物の影響, 柴田悦郎, 飯塚淳, 『環境資源工学』, 69(3), 2023, pp. 153-159.

【MISC】

- Enforced carbonation of cementitious materials, Maciej Zajac, Ippei Maruyama, Atsushi Iizuka, Jørgen Skibsted, *Cement and Concrete Research*, 174, 2023, 107285.

● Mineral carbonation using alkaline waste and byproducts to reduce CO₂ emissions in Taiwan, Hsing-Jung Ho, Atsushi Iizuka, Cheng-Han Lee, Wei-Sheng Chen, Environmental Chemistry Letters, 21, 2023, pp. 865-884.

● Mineral carbonation using seawater for CO₂ sequestration and utilization: a review, Hsing-Jung Ho, Atsushi Iizuka, Separation and Purification Technology, 307, 2023, 122855.

● Potential of major by-products from non-ferrous metal industries for CO₂ emission reduction by mineral carbonation: a review, Fakhreza Abdul, Atsushi Iizuka, Hsing-Jung Ho, Ken Adachi, Etsuro Shibata, Environmental Science and Pollution Research, 30(32), 2023, pp. 78041-78074.

● 南アフリカ共和国における炭酸塩鉱物化技術の研究開発, 飯塚淳, 『廃棄物資源循環学会誌』, 34(6), 2023, pp. 428-431.

● 環境工学・大気環境, 飯塚淳, 『化学工学特集化学工学年鑑2023』, 87(10), 2023, pp. 476-477.

エネルギー資源学講座

分散エネルギー資源学分野

【論文】

● Clarification of Generation Mechanism of Volatilization Flux based on Detailed Analysis of Transport Phenomena near the Ground Surface and Quantitative Evaluation of Influencing Factors, Monami Kondo, Yasuhide Sakamoto, Junko Hara, Takeshi Komai, Noriaki Watanabe, Journal of Hazardous Materials, 133356, 2023, doi: 10.1016/j.jhazmat.2023.133356.

● Laboratory hydraulic shearing of granitic fractures with surface roughness under stress states of EGS: Permeability changes and energy balance, Takuya Ishibashi, Hiroshi Asanuma, Yusuke Mukuhira, Noriaki Watanabe, International Journal of Rock Mechanics and Mining Sciences, 170, 2023, 105512.

● NaHCO₃ as a carrier of CO₂ and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano, Noriyoshi Tsuchiya, Frontiers in Environmental Science, 11, 2023, pp. doi: 10.3389/fenvs.2023.1138007.

● Numerical Analysis on the Effect of Soil Properties on the Generation of Volatilization Flux from Unsaturated Soil Contaminated by Volatile Chemical Substances, Monami Kondo, Yasuhide Sakamoto, Yoshishige Kawabe, Takeshi Komai, Noriaki Watanabe, Environmental Modeling and Assessment, 23, 2023, 09914.

● Permeability enhancement and void formation by chelating agent in volcanic rocks (Ahuachapán and Berlín geothermal fields, El Salvador), Luis Salalá, Ryota Takahashi, Jonathan Argueta, Jiajie Wang, Noriaki Watanabe, Noriyoshi Tsuchiya, Geothermics, 107, 2023, 102586.

● Prediction of 1,4-Dioxane Migration in Groundwater and Evaluation of Remediation Measures in an Illegal Dumping Site Using a 2D-Numerical Model, Thatthe Pongritsakda, Yasuhide Sakamoto, Jiajie Wang, Yoshishige Kawabe, Sanya Sirivithayapakorn, Takeshi Komai, Noriaki Watanabe, Sustainability, 15(5), 2023, 3930.

● Process and optimum pH for permeability enhancement of fractured granite through selective mineral dissolution by chelating agent flooding, Ryota Takahashi, Jiajie Wang, Noriaki Watanabe, Geothermics, 109, 2023, 102646.

● Progressive carbonation and Ca-metasomatism of serpentized ultramafic rocks: insights from natural occurrences and hydrothermal experiments, Nomuulin Amarbayar, Otgonbayar Dandar, Jiajie Wang, Atsushi Okamoto, Masaoki Uno, Undarmaa Batsaikhan, Hideko Takayanagi, Yasufumi Iryu, Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology, 178, 2023, doi: 10.1007/s00410-023-02013-z.

● Oxygen vacancy concentration, electrochemical oxygen reduction, and performance stability of a LaNiO_{3-δ} porous electrode, Budiman, R.A., Hashimoto, S.-I., Khaerudini, D.S., Yashiro, K., Kawada, T., Solid State Ionics, 395, 2023, doi: 10.1016/j.ssi.2023.116215.

● Preparation of Ag-Fe₂O₃-Based black and electrically insulating coatings by magnetron sputtering from metal targets, Satoru Tanaka, Akihiro Ishii, Mina Yamaguchi, Itaru Oikawa, Yusuke Yamazaki, Masaaki Imura, Hitoshi Takamura, VACUUM, 2023, doi: 10.1016/j.vacuum.2023.111839.

● Study of Ni-YSZ Electrode Capacitance and Its Correlation with the Microstructure, Mirai Takeda, Keiji Yashiro, Riyan Achmad Budiman, Shinichi Hashimoto, Tatsuya Kawada, JOURNAL OF THE ELECTROCHEMICAL SOCIETY, 170(3), 2023, doi: 10.1149/1945-7111/acca4.

● Visualizing internal micro-damage distribution in solid oxide fuel cells, Kazuhisa Sato, Yoshie Yabuta, Keigo Kumada, Ken-ichi Fukui, Masayuki Numao, Tatsuya Kawada, Journal of Power Sources, 570, 2023, 23359.

【MISC】

● 黒色反射防止コーティングのための新規黒色層材料の開発, 石井 晃大, 山口実奈, 田中聖, 及川格, 山崎 雄亮, 伊村正明, 高村仁, 『色材協会誌』, 96(9), 2023, pp. 299-303.

【書籍等出版物】

● 『メタンと二酸化炭素』, 監修: 上田涉, 分担著: 八代圭司, シーエムシー・リサーチ, 2023.

エネルギー資源リスク評価学分野

【論文】

● Clarification of Generation Mechanism of Volatilization Flux based on Detailed Analysis of Transport Phenomena near the Ground Surface and Quantitative Evaluation of Influencing Factors, Monami Kondo, Yasuhide Sakamoto, Junko Hara, Takeshi Komai, Noriaki Watanabe, Journal of Hazardous Materials, 133356, 2023, doi: 10.1016/j.jhazmat.2023.133356.

● Laboratory hydraulic shearing of granitic fractures with surface roughness under stress states of EGS: Permeability changes and energy balance, Takuya Ishibashi, Hiroshi Asanuma, Yusuke Mukuhira, Noriaki Watanabe, International Journal of Rock Mechanics and Mining Sciences, 170, 2023, 105512.

● NaHCO₃ as a carrier of CO₂ and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano, Noriyoshi Tsuchiya, Frontiers in Environmental Science, 11, 2023, pp. doi: 10.3389/fenvs.2023.1138007.

● Numerical Analysis on the Effect of Soil Properties on the Generation of Volatilization Flux from Unsaturated Soil Contaminated by Volatile Chemical Substances, Monami Kondo, Yasuhide Sakamoto, Yoshishige Kawabe, Takeshi Komai, Noriaki Watanabe, Environmental Modeling and Assessment, 23, 2023, 09914.

● Permeability enhancement and void formation by chelating agent in volcanic rocks (Ahuachapán and Berlín geothermal fields, El Salvador), Luis Salalá, Ryota Takahashi, Jonathan Argueta, Jiajie Wang, Noriaki Watanabe, Noriyoshi Tsuchiya, Geothermics, 107, 2023, 102586.

● Prediction of 1,4-Dioxane Migration in Groundwater and Evaluation of Remediation Measures in an Illegal Dumping Site Using a 2D-Numerical Model, Thatthe Pongritsakda, Yasuhide Sakamoto, Jiajie Wang, Yoshishige Kawabe, Sanya Sirivithayapakorn, Takeshi Komai, Noriaki Watanabe, Sustainability, 15(5), 2023, 3930.

● Process and optimum pH for permeability enhancement of fractured granite through selective mineral dissolution by chelating agent flooding, Ryota Takahashi, Jiajie Wang, Noriaki Watanabe, Geothermics, 109, 2023, 102646.

● Progressive carbonation and Ca-metasomatism of serpentized ultramafic rocks: insights from natural occurrences and hydrothermal experiments, Nomuulin Amarbayar, Otgonbayar Dandar, Jiajie Wang, Atsushi Okamoto, Masaoki Uno, Undarmaa Batsaikhan, Hideko Takayanagi, Yasufumi Iryu, Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology, 178, 2023, doi: 10.1007/s00410-023-02013-z.

● Study of Ni-YSZ Electrode Capacitance and Its Correlation with the Microstructure, Mirai Takeda, Keiji Yashiro, Riyan Achmad Budiman, Shinichi Hashimoto, Tatsuya Kawada, JOURNAL OF THE ELECTROCHEMICAL SOCIETY, 170(3), 2023, doi: 10.1149/1945-7111/acca4.

● Visualizing internal micro-damage distribution in solid oxide fuel cells, Kazuhisa Sato, Yoshie Yabuta, Keigo Kumada, Ken-ichi Fukui, Masayuki Numao, Tatsuya Kawada, Journal of Power Sources, 570, 2023, 23359.

環境共生機能学分野

【論文】

● A porous Co₃O₄-carbon paper electrode enabling nearly 100% electrocatalytic reduction of nitrate to ammonia, Xufeng Rao, Jiaying Yan, Koji Yokoyama, Xiaolin Shao, Chihiro Inoue, Meifang Chien, Yuyu Liu, Materials Reports: Energy, 2023, doi: 10.1016/j.matre.2023.100216.

● Adhesive Cu-Ag core-shell nanowires on polymer-coated glass substrates for fabricating transparent conductive films with durability against spin coating, Hiromi Koga, Shun Yokoyama, Kenichi Motomiya, Koji Yokoyama, Hideyuki Takahashi, Colloids and Surfaces A: Physicochemical and Engineering Aspects, 660, 2023, 130804.

● Ambient Aqueous-Phase Synthesis of Highly Stable Methylammonium Tin Iodide Perovskites Using Alkali Iodides and Ascorbic Acid, Koji Yokoyama, Takahisa Omata, Shun Yokoyama, Hideyuki Takahashi, ACS Applied Energy Materials, 2023, doi: 10.1021/acsaem.3c01909.

国際エネルギー資源学分野

【論文】

● Comprehensive assessment of four volcano-hosted geothermal fields with relation to tectonics and faults in El Salvador, Luis Salalá, Jonathan Argueta, Noel López, Osmany Aparicio, Diana Martínez, Pedro Santos, Arturo Quezada, Oziel García, José Erazo, Hiroyuki Yamagishi, Noriyoshi Tsuchiya, Geothermics 117 (2024) 102880, doi: 10.1016/j.geothermics.2023.102880.

● Continuous thermal structures of the present-day and contact-metamorphic geothermal systems revealed by drill cuttings in the Kakkonda geothermal field, Japan, Masaoki Uno, Atsushi Okamoto, Takashi Akatsuka and Noriyoshi Tsuchiya, Geothermics 115 (2023) 102806, doi: 10.1016/j.geothermics.2023.102806.

● Decompressional spinel + plagioclase symplectite from Tenmondai Rock, Lützow-Holm Complex, East Antarctica: Implications for the garnet-aluminosilicate–spinel-plagioclase geobarometer, Toshiaki Shimura, Yuki Harada, Geoffrey L. Frasert and Noriyoshi Tsuchiya, Journal of Mineralogical and Petrological Sciences (2023) 118:S008, doi: 10.2465/jmps.221130.

● Geochemical modeling of a volcano-centered acidic geothermal fluid: Case study at Tamagawa hot spring, NE Japan, Munetake Sasaki, Noriyoshi Tsuchiya, Geothermics 114 (2023) 102788, doi: 10.1016/j.geothermics.2023.102788.

● Identification of fracturing behavior in thermally cracked granite using the frequency spectral characteristics of acoustic emission, Kazumasa Sueyoshi, Manami Kitamura, Xinglin Lei, Ikuo Katayama, Journal of Mineralogical and Petrological Sciences 118.1, 2023: 221014, doi: 10.2465/jmps.221014.

● Mantle hydration initiated by Ca metasomatism in a subduction zone: An example from the Chandman meta-peridotite, western Mongolia, Otgonbayar Dandar, Atsushi Okamoto, Masaoki Uno and Noriyoshi Tsuchiya, LITHOS 452-453 (2023) 107212, doi: 10.1016/j.lithos.2023.107212.

● Major element analysis of geological samples with wavelength Dispersive X-ray Fluorescence (WDXRF) spectrometry using glass disks and pressed powder pellets, Shin-Ichi Yamasaki, Hiroyuki Yamagishi and Noriyoshi Tsuchiya, SUSTAINABLE ENVIRONMENT 2023, VOL. 9, NO. 1, (2023) 2251805, doi: 10.1080/27658511.2023.2251805.

● Maximizing permeability of fractured volcanic rocks through chelating-agent-assisted and pH-controlled selective mineral dissolution, Luis Salalá, Jonathan Argueta, Jiajie Wang, Noriaki Watanabe, Noriyoshi Tsuchiya, Geothermics, 119 (2024) 102949, doi: 10.1016/j.geothermics.2024.102949.

● Multiphase-solid fluid inclusions in HP-LT eclogite facies rock (Zavkhan Terrane, Western Mongolia): evidence for the evolution from saline to hypersaline fluids during metamorphism in subduction zone,

Manzshir Bayarbold, Atsushi Okamoto, Masaoki Uno, Kenta Yoshida, Alexey Kotov, Geri Agroli1, Otgonbayar Dandar, Yasuhiro Niwa, Masaaki Kimura, Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology (2023) 178:85, doi: 10.1007/s00410-023-02055-3.

● NaHCO₃ as a carrier of CO₂ and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano and Noriyoshi Tsuchiya, Frontiers in Environmental Science (2023) 10.3389/fenvs.2023.1138007, doi: 10.3389/fenvs.2023.1138007.

● Nudging attitudes toward IT innovations by information provision that serves as a reminder of familial support, Hidenori Komatsu, Hiromi Kubota, Nobuyuki Tanaka, PLoS one, 18(2), 2023, e0282077.

● Partial Melting under Shallow-Crustal Conditions: A Study of the Pleistocene Caldera Eruption of Mendeleev Volcano, Southern Kuril Island Arc, Alexey Kotov, Sergey Smirnov, Ildar Nizametdinov, Masaoki Uno, Noriyoshi Tsuchiya and Ivan Maksimovich, Journal of Petrology, 2023, 64, 1–22 (2023) egad033, doi: 10.1093/petrology/egad033.

● Permeability enhancement and void formation by chelating agent in volcanic rocks (Ahuachapán and Berlín geothermal fields, El Salvador), Luis Salalá, Ryota Takahashi, Jonathan Argueta, Jiajie Wang, Noriaki Watanabe, Noriyoshi Tsuchiya, Geothermics 107 (2023) 102586, doi: 10.1016/j.geothermics.2022.102586.

● Permeability evolution in fine-grained Aji granite during triaxial compression experiments, Kazumasa Sueyoshi, Ikuo Katayama, Kazuki Sawayama, Geophysical Prospecting 72.2, 2024: 675-684, doi: 10.1111/1365-2478.13412.

● Progressive carbonation and Ca-metasomatism of serpentized ultramafic rocks: insights from natural occurrences and hydrothermal experiments, Nomuulin Amarbayar, Otgonbayar Dandar, Jiajie Wang, Atsushi Okamoto, Masaoki Uno, Undarmaa Batsaikhan, Hideko Takayanagi, Yasufumi Iryu and Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology (2023) 178:38, doi: 10.1007/s00410-023-02013-z.

● Short-Lived and Luminous Fluid-Flow in a Single Fracture Related to Seismic Events in the Middle Crust, Diana Mindaleva, Masaoki Uno and Noriyoshi Tsuchiya, Geophysical Research Letters, Volume 50, Issue 5 (2023) 2022GL099892, doi: 10.1029/2022GL099892.

【MISC】

● 地熱・地中熱エネルギー開発の現状と課題 今後の発電利用と地中熱利用に向けた展望, 堺田ひろみ, 海江田秀志, 日本原子力学会誌『アトモス』, 65(11), 2023, pp. 19-23.

環境政策学講座

環境・都市エネルギー学分野

【論文】

● Equitable, affordable, and deep decarbonization pathways for low-latitude developing cities by rooftop photovoltaics integrated with electric vehicles, Retno Gumilang Dewi, Ucok Welo Risma Siagian, Briantama Asmara, Syahrina Dyah Anggraini, Jun Ichihara, Takuro Kobashi, Applied Energy, 332, 2023, 120507.

● On the adoption of rooftop photovoltaics integrated with electric vehicles toward sustainable Bangkok City, Thailand, Thiti Jittayasotorn, Muthiah Sadidah, Takahiro Yoshida, Takuro Kobashi, ENERGIES, 16(7), 2023, 3011.

● Policy Design by “Imaginary Future Generations” with Systems Thinking a Practice by Kyoto City towards Decarbonization in 2050, Keishiro Hara, Yutaka Nomaguchi, Shinya Fukutomi, Kuroda Masashi, Kikuo Fujita, Yoko Kawai, Masayuki Fujita, Takuro Kobashi, Futures, 2023, 103272.

● SolarEV City Concept for Paris, Paul Deroubaix, Takuro Kobashi, Léna Gurriaran, Fouzi Benkhelifa, Philippe Ciais, Katsumasa Tanaka, Applied Energy, 350, 2023, 121762.

[MISC]

- SolarEV シティー構想推進への期待と課題, 小端拓郎, 『自動車技術』, 77(6), 2023, pp. 98-103.
- 低緯度地帯都市の太陽光発電と EV を活用した都市の脱炭素化, 小端拓郎, 『グリーンエネルギー』, 32(8), 2023, pp. 28-32.

【書籍等出版物】

- 『都市の脱炭素化の実践 (脱炭素化入門シリーズ)』, 小端拓郎, 大河出版, 2023.

環境・エネルギー経済学分野

【論文】

- Assessment of food-related nitrogen and phosphorus footprints in Indonesia, Farah Wirasenjaya, Aurup Ratan Dhar, Azusa Oita, Kazuyo Matsubae, Sustainable Production and Consumption, 39, 2023, pp. 30-41.
- China's recycling potential of large-scale public transport vehicles and its implications, Xin Xiong, Xianlai Zeng, Zhengyang Zhang, Robert Pell, Kazuyo Matsubae, Zhaoji Hu, Communications Engineering, 2(1), 2023, doi: 10.1038/s44172-023-00106-y.
- Countries' vulnerability to food supply disruptions caused by the Russia-Ukraine war from a trade dependency perspective, Zhengyang Zhang, Meshal J. Abdullah, Guochang Xu, Kazuyo Matsubae, Xianlai Zeng, Scientific reports, 13(1), 2023, doi: 10.1038/s41598-023-43883-4.
- Coupling Mineralization and Product Characteristics of Steel Slag and Carbon Dioxide, Zhengyang Zhang, Minerals, 13(6), 2023, 795.
- Forecasting coal power plant retirement ages and lock-in with random forest regression, Achmed Edianto, Gregory Trencher, Niccolò Manych, Kazuyo Matsubae, Patterns, 4(7), 2023, 100776.
- Global Warming Potential and Waste Handling of Pearl Farming in Ago Bay, Mie Prefecture, Japan, Dheanara Pinka, Kazuyo Matsubae, Resources, 2023, doi: 10.3390/resources12070075.
- Wrought and cast aluminum flows in China in the context of electric vehicle diffusion and automotive lightweighting, Binze Wang, Zhengyang Zhang, Guochang Xu, Xianlai Zeng, Wentao Hu, Kazuyo Matsubae, Resources, Conservation and Recycling, 191, 2023, doi: 10.1016/j.resconrec.2023.106877.
- 中国における大型公共交通機関車両のリサイクル・ポテンシャルとその示唆, Zhengyang Zhang, Communications Engineering, 2(1), 2023, doi: 10.1038/s44172-023-00106-y.
- 電気電子廃棄物からの NdFeB 磁石とニアース蛍光体のリサイクル, Qiande Xu, Dongxu Wu, Wentao Hu, Zhengyang Zhang, Xinwei Liu, Feihua Yang, Zhaojia Wang, JOM, 2023, doi: 10.1007/s11837-023-06235-1.
- 貿易依存の観点から見たロシア・ウクライナ戦争による食料供給混乱への脆弱性分析, Zhengyang Zhang, Meshal J. Abdullah, Guochang Xu, Kazuyo Matsubae, Xianlai Zeng, Scientific reports, 13(1), 2023, doi: 10.1038/s41598-023-43883-4.
- 有機酸ベースの水熱浸出法による LiFePO 正極材料の回収, Zixian Li, Qingxin Zheng, Akitoshi Nakajima, Zhengyang Zhang, Masaru Watanabe, Advanced Sustainable Systems, 2023, doi: 10.1002/adss.202300421.

【MISC】

- 第 14 回国際産業エコロジー学会・社会経済的代謝分科会の参加報告, 張政陽, 『日本 LCA 学会誌』, 19(1), 2023, pp. 42-44.

産業エコロジー分野

【論文】

- Drivers of household carbon footprints across EU regions, from 2010 to 2015, Jemyung Lee, Yosuke Shigetomi, Keiichiro Kanemoto, Environmental Research Letters, 18(4), 2023, 044043.
- Japanese urban household carbon footprints during early-stage

COVID-19 pandemic were consistent with those over the past decade, Yin Long, Yoshikuni Yoshida, Yida Jiang, Liqiao Huang, Wentao Wang, Zhifu Mi, Yosuke Shigetomi, Keiichiro Kanemoto, npj Urban Sustainability, 3(1), 2023, doi: 10.1038/s42949-023-00095-z.

● Mapping Natural Product Biosynthetic Hotspots: Prioritizing Conservation for Medicinal Resources, Muhamad Fahmi, Kojiro Takanashi, Yusuke Kakei, Yasuhiro Kubota, Keiichiro Kanemoto, bioRxiv, 2023, doi: 10.1101/2023.08.12.553062.

● National high-resolution cropland classification of Japan with agricultural census information and multi-temporal multi-modality datasets, Junshi Xia, Naoto Yokoya, Bruno Adriano, Keiichiro Kanemoto, International Journal of Applied Earth Observation and Geoinformation, 117, 2023, 103193.

寄附講座

環境物質政策学講座
(DOWA ホールディングス)

環境プロセス学分野

【論文】

- Adsorption of l-lactate from cell culture media by layered double hydroxide and evaluation of its cytotoxicity to cell lines, Valentina Podolinnaya, Tomohito Kameda, Itsuki Takanashi, Fumihiro Kitagawa, Shogo Kumagai, Yuko Saito, Masayuki Kondo, Yoichi Jimbo, Toshiaki Yoshioka, JCIS Open, 12, 2023, 100099.
- Composition sensitive selectivity and activity of electrochemical carbon dioxide reduction on Pd-Cu solid-solution alloy nanoparticles, Naoto Todoroki, Masanao Ishijima, Jhon L. Cuya Huaman, Yuto Tanaka and Jeyadevan Balachandran, Catal. Sci. Technol., 13, 2023, 5025.
- Cubic Mesocrystal Magnetic Iron Oxide Nanoparticle Formation by Oriented Aggregation of Cubes in Organic Media: A Rational Design to Enhance the Magnetic Hyperthermia Efficiency, David Egea-Benavente, Carlos Diaz-Ufano, Álvaro Gallo-Cordova, Francisco Javier Palomares, Jhon Lehman Cuya Huaman, Domingo F. Barber, María del Puerto Morales, and Jeyadevan Balachandran, ACS Appl. Mater. Interfaces 15, 2023, 32162-32176.
- Enrichment of carbon dioxide using Mg-Al layered double hydroxides, Tomohito Kameda, Satoru Nagano, Shogo Kumagai, Yuko Saito, Toshiaki Yoshioka, Chemical Engineering Research and Design, 194, 2023, pp. 318-324.
- Host-guest interactions in biocompatible anion-intercalated Mg-Al layered double hydroxides and their influence on L-lactate uptake, Valentina Podolinnaya, Tomohito Kameda, Fumihiro Kitagawa, Shogo Kumagai, Yuko Saito, Masayuki Kondo, Yoichi Jimbo, Toshiaki Yoshioka, Nano-Structures & Nano-Objects, 35, 2023, 100984.
- Kinetically Controlled Direct Synthesis of B2- and A1-Structured Cu-Pd Nanoparticles, Masanao Ishijima, Naoto Todoroki, Jhon L. Cuya Huaman, Yuto Tanaka, and Jeyadevan Balachandran, Inorg. Chem. 62, 2023, 19270-19278.
- Mechanism of formation of Co-Ru nanoalloys: the key role of Ru in the reduction pathway of Co, Brandon Azeredo, Tayssir Ben Ghzaiel, Ning Huang, Sophie Nowak, Jennifer Peron, Marion Giraud, Jeyadevan Balachandran, Olivier Tache, Laurent Barthe, Jean-Yves Piquemal, Valerie Briois and Lorette Sicard, Phys. Chem. Chem. Phys., 25, 2023, 22523.
- Synthesis of layered double oxide with high specific surface area by innovative sol-gel method through its application to arsenate anion adsorption, Itsuki Takanashi, Tomohito Kameda, Shogo Kumagai, Yuko Saito, Yasuyuki Nomura, Daiki Kawamura, Toshiaki Yoshioka, Journal of Alloys and Compounds, 960, 2023, 170865.

- 2点アレイ位相速度計測における入射特性依存項の効果, 白石英孝, 浅沼宏, 『物理探査』, 76, 2023, pp. 1-13, doi: 10.3124/segj.76.1.

- OH 型 Mg-Al 系層状複水酸化物の再生方法及び再生装置, 森浩一, 伊藤一郎, 吉岡敏明, 鶴田知人, 白井利昌, 山本浩, 特願 2023-125279.
- 酸性ガス処理剤及び酸性ガス処理方法, 森浩一, 伊藤一郎, 竹綱啓尚, 鈴木雅博, 吉岡敏明, 鶴田知人, 特願 2023-120841.
- 二酸化炭素の吸脱着方法、及び二酸化炭素の吸脱着材, 鈴木雅博, 清水宏益, 式田尚志, 吉岡敏明, 鶴田知人, PCT/JP2023/34235.
- 排ガス前処理設備、排ガス処理設備、及び、排ガス前処理設備の CO₂ 分離回収方法, 山本浩, 森下桂樹, 喜多山周平, 片桐隆介, 吉岡敏明, 鶴田知人, 森浩一, 伊藤一郎, 特願 2023-211401.
- 鉛を含有する汚染土壤の浄化方法, 吉岡敏明, 鶴田知人, 野村泰之, 河村大樹, 横塚享, 特願 2023-120880.

【産業財産権】

- WC-Co 超硬合金丸棒の液相移動と変形一焼結体中の冷却時温度勾配の寄与, 斎藤武志, 松原秀彰, 遠藤寛之, 福市安春, 梶原太智, 「粉体および粉末冶金」, Advanced Publication by J-STAGE, 2023, pp. 1-7.

環境政策実装学分野

【書籍等出版物】

- 『廃プラスチックの現在と未来: 持続可能な社会におけるプラスチック資源循環』, 4.4.2 湿式脱ハロゲン処理とその研究展開, 斎藤優子, 熊谷将吾, 吉岡敏明, コロナ社, 2023.

硬質材料環境調和設計学講座

硬質材料環境調和設計学分野

【論文】

- WC-Co 超硬合金丸棒の液相移動と変形一焼結体中の冷却時温度勾配の寄与, 斎藤武志, 松原秀彰, 遠藤寛之, 福市安春, 梶原太智, 「粉体および粉末冶金」, Advanced Publication by J-STAGE, 2023, pp. 1-7.

連携講座

環境リスク評価学分野（産業技術総合研究所）

【論文】

- Clarification of generation mechanism of volatilization flux based on detailed analysis of transport phenomena near the ground surface and quantitative evaluation of influencing factors, Monami Kondo, Yasuhide Sakamoto, Junko Hara, Takeshi Komai and Noriaki Watanabe, Journal of Hazardous Materials, 465, 2024, 133356.
- Investigating Geophysical Indicators of Permeability Change during Laboratory Hydraulic Shearing of Granitic Fractures with Surface Roughness, Ishibashi, T., Asanuma, H., Rock Mechanics and Rock Engineering, 2023, doi: 10.1007/s00060-023-03590-y.
- Numerical Analysis on the Effect of Soil Properties on the Generation of Volatilization Flux from Unsaturated Soil Contaminated by Volatile Chemical Substances, Monami Kondo, Yasuhide Sakamoto, Yoshishige Kawabe, Takeshi Komai and Noriaki Watanabe, Environmental Modeling & Assessment, 28, 2023, pp. 1055-1081.
- Permeability changes and energy balance of a crystalline rock fracture with surface roughness during hydraulic shear slips under pseudo-EGS crustal stress states, Ishibashi, T., Asanuma, H., Mukuhira, Y., Watanabe, N., IJRMMS, 2023, doi: 10.1016/j.ijrmms.2023.105512.

- Prediction of 1,4-Dioxane Migration in Groundwater and Evaluation of Remediation Measures in an Illegal Dumping Site Using a 2D-Numerical Model, Thathep Pongritsakda, Yasuhide Sakamoto, Jiajie Wang, Yoshishige Kawabe, Sanya Sirivithayapakorn, Takeshi Komai and Noriaki Watanabe, Sustainability, 15(5), 2023, 3930.

- 2点アレイ位相速度計測における入射特性依存項の効果, 白石英孝, 浅沼宏, 『物理探査』, 76, 2023, pp. 1-13, doi: 10.3124/segj.76.1.

先端環境創成学専攻

基幹講座

都市環境・環境地理学講座

環境地理学分野

【論文】

- A linearization for stable and fast geographically weighted Poisson regression, Daisuke Murakami, Narumasa Tsutsumida, Takahiro Yoshida, Tomoki Nakaya, Binbin Lu, Paul Harris, International Journal of Geographical Information Science, 37(8), 2023, pp. 1818-1839.

- A Route Map for Successful Applications of Geographically Weighted Regression, Alexis Comber, Christopher Brunsdon, Martin Charlton, Guanpeng Dong, Richard Harris, Binbin Lu, Yihe Lü, Daisuke Murakami, Tomoki Nakaya, Yunqiang Wang, Paul Harris, Geographical Analysis, 55(1), 2023, pp. 155-178, doi: 10.1111/gean.12316.

- Association between socioeconomic status and net survival after primary lung cancer surgery: a tertiary university hospital retrospective observational study in Japan., Mariko Hanafusa, Yuri Ito, Hironori Ishibashi, Tomoki Nakaya, Nobutoshi Nawa, Tomotaka Sobue, Kenichi Okubo, Takeo Fujiwara, Japanese Journal of Clinical Oncology, 53(4), 2023, pp. 287-296.

- Association of mesothelioma deaths with neighborhood asbestos exposure due to a large-scale asbestos-cement plant., Yuri Kitamura, Ling Zha, Rong Liu, Masayuki Shima, Tomoki Nakaya, Norio Kurumatani, Shinji Kumagai, Junko Goji, Tomotaka Sobue, Cancer Science, 114(7), 2023, pp. 2973-2985.

- [Commute mode - physical activity and the possibility of change to active commuting among Japanese workers: a descriptive study by region], Atsuko Fukunishi, Masaki Machida, Hiroyuki Kikuchi, Yuko Odagiri, Tomoko Takamiya, Noritoshi Fukushima, Shiho Amagasa, Tomoki Nakaya, Kimihiro Hino, Shigeru Inoue, Sangyo eiseigaku zasshi = Journal of Occupational Health, 2023, doi: 10.1539/sangyo-eisei.2023-014-E.

- Depression among middle-aged adults in Japan: The role of the built environment design, Mohammad Javad Koohsari, Akitomo Yasunaga, Gavin R. McCormack, Ai Shibata, Kaori Ishii, Tomoki Nakaya, Tomoya Hanibuchi, Yukari Nagai, Koichiro Oka, Landscape and Urban Planning, 231, 2023, 104651.

- Effects of greenery at different heights in neighbourhood streetscapes on leisure walking: a cross-sectional study using machine learning of streetscape images in Sendai City, Japan., Shusuke Sakamoto, Mana Kogure, Tomoya Hanibuchi, Naoki Nakaya, Atsushi Hozawa, Tomoki Nakaya, International Journal of Health Geographics, 22(1), 2023, 29.

- [Geographic information in National Cancer Registry data: Overseas examples and challenges in Japan], Kota Katanoda, Hidemi Ito, Yuri Ito, Kayoko Katayama, Yoshikazu Nishino, Anna Tsutsui, Kayo Togawa, Hirokazu Tanaka, Yuko Ohno, Tomoki Nakaya, [Nihon koshu eisei zasshi] Japanese Journal of Public Health, 2023, doi: 10.11236/jph.22-093.

- Historical determinants of street connectivity in Japanese cities: Relationship between Japanese castle town formation, war damage, and space syntax integration value, Reo Watanabe, Tomoya Hanibuchi, Ryoko Yamamoto, Tomoki Nakaya, Japan Architectural Review, 2023, doi: 10.1002/2475-8876.12408.

- Information Seeking and COVID-19 Preventive Behaviors: A Comparison Between Immigrants and the Host Population in Japan, Yuanyuan Teng, Tomoya Hanibuchi, Tomoki Nakaya, Journal of Disaster Research, 18(1), 2023, pp. 57-68.

- Neighborhood Socioeconomic Characteristics Associated with the COVID-19 Incidence in Elementary School Children: An Ecological Study in Osaka City, Japan, Kan Oishi, Takaaki Mori, Tomoki Nakaya, Kojiro Ishii, Children, 10(5), 2023, 822.

● Place attachment and walking behaviour: Mediation by perceived neighbourhood walkability, Mohammad Javad Koohsari, Akitomo Yasunaga, Koichiro Oka, Tomoki Nakaya, Yukari Nagai, Gavin R. McCormack, *Landscape and Urban Planning*, 235, 2023, 104767.

● Psychological determinants of COVID-19 vaccine acceptance: A comparison between immigrants and the host population in Japan, Yuanyuan Teng, Tomoya Hanibuchi, Masaki Machida, Tomoki Nakaya, *Vaccine*, 41(8), 2023, pp. 1426-1430.

● The Impact of Changes in Anthropogenic Activity Caused by COVID-19 Lockdown on Reducing Nitrogen Dioxide Levels in Thailand Using Nighttime Light Intensity, Nutnaree Thongrueang, Narumasa Tsutsumida, Tomoki Nakaya, *Sustainability* (Switzerland), 15(5), 2023, doi: 10.3390/su15054296.

● The Metaverse, the Built Environment, and Public Health: Opportunities and Uncertainties, Mohammad Javad Koohsari, Gavin R McCormack, Tomoki Nakaya, Akitomo Yasunaga, Daniel Fuller, Yukari Nagai, Koichiro Oka, *Journal of Medical Internet Research*, 25, 2023, e43549.

● Urban design and cardio-metabolic risk factors., Mohammad Javad Koohsari, Koichiro Oka, Tomoki Nakaya, Jennifer Vena, Tyler Williamson, Hude Quan, Gavin R McCormack, *Preventive Medicine*, 173, 2023, 107552.

● 身体活動支援環境とアーバニズム: walkability から 15 分都市へ?, 中谷友樹, 『体力科学』, 72(1), 2023, 124.

● 全国郵便番号界ウォーカビリティ指標の整備と有用性の検討, 谷本涼, 増渕知哉, 中谷友樹, 『季刊地理学』, 75(1), 2023, pp. 16-26.

● 統合失調症の空間疫学 都市性の環境要因, 澤井大和, 中谷友樹, 『医学のあゆみ』, 286, (6), 2023, pp. 608-613.

【書籍等出版物】

● COVID-19 はどのように拡大したか, 中谷友樹, 『フィールドから地球を学ぶ: 地理授業のための 60 のエピソード』, 横山智・湖中真哉・由井義通・綾部真雄・森本泉・三尾裕子 編, 古今書院, 2023, pp. 110-111.

● 感染症問題の地理学, 中谷友樹, 『地理学事典』, 日本地理学会編, 丸善出版, 2023, pp. 534-535.

国際防災学分野

【論文】

● Family and Community Obligations Motivate People to Immigrate—A Case Study from the Republic of the Marshall Islands, Ryo Fujikura, Mikiyasu Nakayama, Daisuke Sasaki, Irene Taafaki, Jichao Chen, *International Journal of Environmental Research and Public Health*, 20(8), 2023, pp. 5448.

● How Does the Central Government Make a Remark in the International Arena of Disaster Risk Reduction? Focusing on the Frequency of Statement Publication at the UN Global Platform for Disaster Risk Reduction, Yuta Hara, Daisuke Sasaki, Yuichi Ono, *Journal of Disaster Research*, 18(5), 2023, pp. 475-483.

● Special Issue "Disaster Risk Reduction and Climate Change Adaptation: An Interdisciplinary Approach", Mikio Ishiwatari, Daisuke Sasaki, *International Journal of Environmental Research and Public Health*, 20(3), 2023, pp. 2641.

● Who Pays? Cost-Sharing for Disaster Management in the US and Japan, Mikio Ishiwatari, Daniel P. Aldrich, Daisuke Sasaki, *Journal of Disaster Research*, 18(5), 2023, pp. 467-474.

【MISC】

● 事前防災投資で災害リスクを削減, 永見光三, 『国際開発ジャーナル』, 801, 2023, pp. 30-31.

● 世界のビックリ農業: 中国より 超大規模! カニ・ザリガニとのイネ共作, 原裕太, 『現代農業』, 102(12), 2023, pp. 246-251.

【書籍等出版物】

● Estimating the economic viability of long-term investment in flood protection: Case study of the Natorigawa River, Mikio Ishiwatari,

Masashi Sakamoto, Daisuke Sasaki (担当: 共著), JICA Ogata Sadako Research Institute for Peace and Development, 2023.

太陽地球システム・エネルギー学講座

資源利用プロセス学分野

【論文】

● Crack Disappearance Effect of Fe-Dispersed Alumina Composite Ceramics using High-Temperature Oxidation of Metallic Iron Particles, Daisuke Maruoka, Taichi Murakami, ISIJ INTERNATIONAL, 63(12), 2023, pp. 1951-1956.

● Effect of CaO Component on Strength of Pre-granulated Pellets in Composite Sinter Products, Zhe Ma, Daisuke Maruoka, Taichi Murakami, Eiki Kasai, Takahide Higuchi, *Tetsu-To-Hagane/Journal of the Iron and Steel Institute of Japan*, 109(7), 2023, pp. 559-566.

● Effect of Chemical Species of Silicon Oxide on Carburizing and Melting Behaviors of Carbon-Iron Oxide Composite, Ryota Higashi, Masamu Ohno, Daisuke Maruoka, Taichi Murakami, Eiki Kasai, ISIJ INTERNATIONAL, 63(7), 2023, pp. 1185-1192.

● High-temperature oxidation and self-healing behavior of SiC and Ni Co-dispersed into Al₂O₃ matrix composite, Daisuke Maruoka, Makoto Nanko, *Ceramics International*, 49(17), 2023, pp. 28629-28634.

● High-Temperature Oxidation Behavior of Ni/Al₂O₃ Composites with Various Ni Content, Phanuwat Khlaissongkham, Yen Ling Kuo, Makoto Nanko, Daisuke Maruoka, *Materials Transactions*, 64(4), 2023, pp. 914-919.

● Influence of Na₂SO₄ molten salts on the self-healing behavior of Ni/Al₂O₃ composites, Daisuke Maruoka, Kentaro Harada, Taichi Murakami, Eiki Kasai, *Journal of Asian Ceramic Societies*, 11(4), 2023, pp. 472-479.

● Low Temperature Reduction Mechanism of Carbon-Iron Ore Composite Using Woody Biomass, Ryota Higashi, Daisuke Maruoka, Eiki Kasai, Taichi Murakami, ISIJ INTERNATIONAL, 63(12), 2023, pp. 1972-1978.

地球システム計測学分野

【論文】

● Anomalies of O₃, CO, C₂H₂, H₂CO, and C₂H₆ detected with multiple ground-based Fourier-transform infrared spectrometers and assessed with model simulation in 2020: COVID-19 lockdowns versus natural variability, Ivan Ortega, Benjamin Gaubert, James W. Hannigan, Guy Brasseur, Helen M. Worden, Thomas Blumenstock, Hao Fu, Frank Hase, Pascal Jeseck, Nicholas Jones, Cheng Liu, Emmanuel Mahieu, Isamu Morino, Isao Murata, Justus Notholt, Mathias Palm, Amelie Röhling, Yao Té, Kimberly Strong, Youwen Sun, Shoma Yamanouchi, *Elem Sci Anth*, 11(1), 2023, doi: 10.1525/elementa.2023.00015.

● Development of a super-pressure balloon for the LODEWAVE (LOng-Duration Experiment of gravity WAVE over Antarctica) (II), { Vit JAXA Research and Development Report}, Saito Yoshitaka, Tomikawa Yoshihiro, Murata Isao, Akita Daisuke, Nakashino Kyoichi, Matsuo Takuma, Hashimoto Hiroyuki, Matsushima Kiyohiko, JAXA-RR-22-008, 2023, pp. 25-35, doi: 10.20637/00049110.

● LODEWAVE (LOng-Duration balloon Experiment of gravity WAVE over Antarctica), Y. Tomikawa, K. Sato, Y. Saito, I. Murata, N. Hirasawa, M. Kohma, K. Nakashino, D. Akita, T. Matsuo, M. Fujiwara, T. Kaho, L. Yoshida, J. Evolv. Space Activ., 1, 2023, 14.

● Mid-infrared laser heterodyne spectrometer by hollow optical fiber and its newly designed coupler, Hiromu Nakagawa, Satoko Tsukada, Takashi Katagiri, Yasumasa Kasaba, Isao Murata, Yasuhiro Hirahara, Yuji Matsuura, Atsushi Yamazaki, *APPLIED OPTICS*, 62(6), 2023, A31.

● Numerical Prediction of Changes in Atmospheric Chemical

Compositions During a Solar Energetic Particle Event on Mars, Yuki Nakamura, François Leblanc, Naoki Terada, Sayano Hiruba, Isao Murata, Hiromu Nakagawa, Shotaro Sakai, Shohei Aoki, Arianna Piccialli, Yannick Willame, Lori Neary, Ann Carine Vandaele, Kiyoka Murase, Ryuho Kataoka, *Journal of Geophysical Research: Space Physics*, 128(12), 2023, doi: 10.1029/2022JA031250.

● Photochemical and radiation transport model for extensive use (PROTEUS), Yuki Nakamura, Naoki Terada, Shungo Koyama, Tatsuya Yoshida, Hiroki Karyu, Kaori Terada, Takeshi Kuroda, Arihiro Kamada, Isao Murata, Shotaro Sakai, Yuhei Suzuki, Mirai Kobayashi, François Leblanc, *Earth, Planets and Space*, 75(1), 2023, doi: 10.1186/s40623-023-01881-w.

● Validation of OMPS Suomi NPP and OMPS NOAA-20 Formaldehyde Total Columns With NDACC FTIR Observations, H.-A. Kwon, G. González Abad, C. R. Nowlan, H. Chong, A. H. Souris, C. Vigouroux, A. Röhling, R. Kivi, M. Makarova, J. Notholt, M. Palm, H. Winkler, Y. Té, R. Sussmann, M. Rettinger, E. Mahieu, K. Strong, E. Lutsch, S. Yamanouchi, T. Nagahama, J. W. Hannigan, M. Zhou, I. Murata, M. Grutter, W. Stremme, M. De Mazière, N. Jones, D. Smale, I. Morino, *Earth and Space Science*, 10(5), 2023, doi: 10.1029/2022ea002778.

水資源システム学分野

【論文】

● Achieving low-carbon municipal wastewater treatment by anaerobic membrane bioreactor at seasonal temperatures: A pilot scale investigation on reducing sludge yield and greenhouse gas emissions, Chao Rong, Tianjie Wang, Zibin Luo, Yu-You Li, *Chemical Engineering Journal*, 463, 2023, doi: 10.1016/j.cej.2023.142415.

● Anammox upflow hybrid reactor: Nitrogen removal performance and potential for phosphorus recovery, Ying Song, Jialing Ni, Yan Guo, Kengo Kubota, Wei-Kang Qi, Yu-You Li, *Chemosphere*, 313, 2023, 137580.

● A novel method for the whole-cell detection of environmental microorganisms using hemin and tyramide signal amplification (Hemin-TSA) with a desired fluorescent dye, Kampachi Urasaki, Yu-You Li, Kengo Kubota, *Systematic and Applied Microbiology*, 46(6), 2023, 126473.

● Assessing Water Resource Sustainability in the Kabul River Basin: A Standardized Runoff Index and Reliability, Resilience, and Vulnerability Framework Approach, MN Sediqi, D Komori, *Sustainability*, 16 (1), 2023, 246.

● Combination of optical images and SAR images for detecting landslide scars, using a classification and regression tree, S Phakdimek, D Komori, T Chaithong, *International Journal of Remote Sensing*, 44 (11), 2023, pp. 3572-3606.

● Correlation analysis of agricultural drought risk on wet farming crop and meteorological drought index in the tropical-humid region, ANR Irawan, D Komori, VSA Hendrawan, *Theoretical and Applied Climatology*, 1(14), 2023.

● Coupled systems of pre-denitrification and partial nitritation/anammox improved functional microbial structure and nitrogen removal in treating swine manure digestate, Yunzhi Qian, Shilong He, Fuqiang Chen, Junhao Shen, Yan Guo, Yu Qin, Yu-You Li, *Bioresource Technology*, 386, 2023, doi: 10.1016/j.biortech.2023.129494.

● Crop response pattern to several drought timescales and its possible determinants: a global-scale analysis during the last decades, VSA Hendrawan, W Kim, D Komori, *Anthropocene*, 2023, 100389.

● Decay rate estimation of respiratory viruses in aerosols and on surfaces under different environmental conditions, Sewwandi Bandara, Wakana Oishi, Syun-suke Kadoya, Daisuke Sano, *International Journal of Hygiene and Environmental Health*, June, 251, 2023, 114187.

● Dissolved organic matter composition and microbial community dynamics in two-phase multi-staged up-flow anaerobic sludge blanket treatment of tapioca starch processing wastewater, Thanapat Thepubon, Phanwatt Phungsai, Pairaya Choeisai, Kengo Kubota, *Bioresource Technology Reports*, 24, 2023, 101660.

● Enhanced digestion of sludge via co-digestion with food waste in a high-solid anaerobic membrane bioreactor: Performance evaluation and microbial response, Yemei Li, Jialing Ni, Hui Cheng, Guangze Guo, Tao Zhang, Ajun Zhu, Yu Qin, Yu-You Li, *Science of the Total Environment*, 899, 2023, doi: 10.1016/j.scitotenv.2023.165701.

● Evaluation of bioenergy production and material flow in treating Japanese concentrated Johkasou sludge using high-solid anaerobic membrane bioreactor based on one-year operation, Guangze Guo, Shitong Zhou, Yujie Chen, Weiyi Wang, Yu Qin, Yu-You Li, *Chemical Engineering Journal*, 469, 2023, doi: 10.1016/j.cej.2023.143918.

● High-solid co-digestion performance of lipids and food waste by mesophilic hollow fiber anaerobic membrane bioreactor, Ziang He, Yuanyuan Ren, Jianyong Liu, Yu-You Li, *Bioresource Technology*, 374, 2023, doi: 10.1016/j.biortech.2023.128812.

● Improved Properties and Enhancement Strategies of Hydroxyapatite-Based Functional Granular Sludge for a High-Rate Partial Nitritation/Anammox System, Yujie Chen, Gaoxuefeng Feng, Guangze Guo, Kampachi Urasaki, Kengo Kubota, and Yu-You Li, *Environmental Science and Technology*, 57(19), 2023, pp. 7624-7633, doi: 10.1021/acs.est.3c00491.

● Improving the biomass retention and system stability of the anammox EGSB reactor by adding a calcium silicate hydrate functional material, Lan Lin, Kyuto Ishida, Yanlong Zhang, Norihiro Usui, Ayaka Miyake, Nobuhiko Abe, Yu-You Li, *Science of the Total Environment*, 857, 2023, doi: 10.1016/j.scitotenv.2022.159719.

● Increasing nitrogen and organic matter removal from swine manure digestate by including pre-denitrification and recirculation in single-stage partial nitritation/anammox, Yunzhi Qian, Junhao Shen, Fuqiang Chen, Yan Guo, Yu Qin, Yu-You Li, *Bioresource Technology*, 367, 2023, doi: 10.1016/j.biortech.2022.128229.

● Key factors improving the stability and the loading capacity of nitrogen removal in a hydroxyapatite (HAP)-enhanced one-stage partial nitritation/anammox process, Yujie Chen, Yan Guo, Gaoxuefeng Feng, Kampachi Urasaki, Guangze Guo, Yu Qin, Kengo Kubota, Yu-You Li, *Chemical Engineering Journal*, 452, 2023, doi: 10.1016/j.cej.2022.139589.

● Long-term effects of phosphorus deficiency on one-stage partial nitritation-anammox system and recovery strategies, Liang Zhang, Zhe Tian, Yunzhi Qian, Fuqiang Chen, Yu-You Li, Xueke Wang, Cuilian Fu, Yongzhi Chi, *Journal of Cleaner Production*, 402, 2023, doi: 10.1016/j.jclepro.2023.136820.

● Possible factors determining global-scale patterns of crop yield sensitivity to drought, VSA Hendrawan, D Komori, W Kim, *Plos one* 18 (2), 2023, e0281287.

● Propidium monoazide - polymerase chain reaction reveals viable microbial community shifts in anaerobic membrane bioreactors treating domestic sewage at low temperature, Jialing Ni, Jiayuan Ji, Yu-You Li, Kengo Kubota, *Bioresource Technology*, 387, 2023, doi: 10.1016/j.biortech.2023.129564.

● Recent developments in anammox-based membrane bioreactors: A review, Fuqiang Chen, Yunzhi Qian, Hui Cheng, Junhao Shen, Yu Qin, Yu-You Li, *Science of the Total Environment*, 857, 2023, doi: 10.1016/j.scitotenv.2022.159539.

● Swine wastewater treatment using pilot-scale siphon driven agitation anaerobic baffled reactor, Junhao SHEN, Yunzhi QIAN, Fuqiang CHEN, Yan GUO, Yu-You LI, *Journal of JSCE*, 11(25), 2023, 23-25016.

● Systematic review and meta-analysis of human health-related protein markers for realizing real-time wastewater-based epidemiology, Luhur Akbar Devianto, Daisuke Sano, *Science of the Total Environment*, November, 897, 2023, 165304.

- The phosphorus harvest from low-temperature mainstream wastewater through iron phosphate crystallization in a pilot-scale partial nitritation/anammox reactor, Yan Guo, Eli Hendrik Sanjaya, Tianjie Wang, Chao Rong, Zibin Luo, Yi Xue, Hong Chen, Yu-You Li, *Science of the Total Environment*, 862, 2023, doi: 10.1016/j.scitotenv.2022.160750.
- アナモックス法を用いた脱炭素型窒素除去に関する研究進展, 陳玉潔, 郭広澤, 李玉友, 『色材協会誌』, 96(12), 2023, 405-409.
- 一槽式 PNA 法における HAP グラニュール汚泥の特性及び窒素・リン除去効果の強化, 陳玉潔, 郭広澤, 李玉友, 『土木学会論文集』, 79(25), 2023, 23-25015.
- LODEWAVE 実験にむけたスーパーブレッシャー気球の開発(II), 斎藤芳隆, 富川喜弘, 村田功, 秋田大輔, 中篠恭一, 松尾卓摩, 橋本紘幸, 松嶋清穂, 『宇宙航空研究開発機構研究開発報告: 大気球研究報告』, 2023, pp. 25-35.
- 【MISC】
- Candidate phyla radiation (CPR)/Candidatus Patescibacteria の実態を廃水処理システムの視点から理解する, 黒田恭平, 成廣隆, 藤井直樹, 中島芽梨, 景政玲蘭, 中井亮佑, 佐藤久, 久保田健吾, 金田一智規, 『日本微生物生態学会誌』, 38(1), 2023, pp. 2-13.
- ## 自然共生システム学講座
- ### 資源再生プロセス学分野
- 【論文】
- A novel strategy for rapid identification of pyrolytic synergy and prediction of product yield: Insight into co-pyrolysis of xylan and polyethylene, Shengyu Xie, Shogo Kumagai, Naomichi Takahashi, Tomohito Kameda, Yuko Saito, Toshiaki Yoshioka, *Chemical Engineering Journal*, 453, 2023, 139958.
- Adsorption of l-lactate from cell culture media by layered double hydroxide and evaluation of its cytotoxicity to cell lines, Valentina Podolinnia, Tomohito Kameda, Itsuki Takanashi, Fumihiro Kitagawa, Shogo Kumagai, Yuko Saito, Masayuki Kondo, Yoichi Jimbo, Toshiaki Yoshioka, *JCIS Open*, 12, 2023, 100099.
- Alkaline hydrolysis of photovoltaic backsheet containing PET and PVDF for the recycling of PVDF, Yoshinori Morita, Yuko Saito, Shogo Kumagai, Tomohito Kameda, Toshikazu Shiratori, Toshiaki Yoshioka, *Journal of Material Cycles and Waste Management*, 25(2), 2023, pp. 674-683.
- Carbon footprint analysis and carbon neutrality potential of desalination by electrodialysis for different applications, Na Xue, Jiaqi Lu, Dungang Gu, Yuhang Lou, Yuan Yuan, Guanghui Li, Shogo Kumagai, Yuko Saito, Toshiaki Yoshioka, Nan Zhang, *WATER RESEARCH*, 2023, 119716.
- Effective synthesis of ethylene urea from CO₂ adsorbed cerium doped Mg-Al layered double hydroxide, Farzana Rahman, Xinyi Yang, Fiona Motswaiso, Itsuki Takanashi, Tomohito Kameda, Mir Tamzid Rahman, Yuko Saito, Shogo Kumagai, Toshiaki Yoshioka, *Journal of Cleaner Production*, 2023, 140191.
- Enrichment of carbon dioxide using Mg-Al layered double hydroxides, Tomohito Kameda, Satoru Nagano, Shogo Kumagai, Yuko Saito, Toshiaki Yoshioka, *Chemical Engineering Research and Design*, 194, 2023, pp. 318-324.
- Fluorine recovery through alkaline defluorination of polyvinylidene fluoride, Yoshinori Morita, Yuko Saito, Shogo Kumagai, Tomohito Kameda, Toshikazu Shiratori, Toshiaki Yoshioka, *Journal of Material Cycles and Waste Management*, 2023, doi: 10.1007/s10163-023-01749-x.
- Host-guest interactions in biocompatible anion-intercalated Mg-Al layered double hydroxides and their influence on L-lactate uptake, Valentina Podolinnia, Tomohito Kameda, Fumihiro Kitagawa, Shogo Kumagai, Yuko Saito, Masayuki Kondo, Yoichi Jimbo, Toshiaki Yoshioka, *Nano-Structures & Nano-Objects*, 35, 2023, 100984.
- Neural network based prediction of the efficacy of ball milling to separate cable waste materials, Jiaqi Lu, Mengqi Han, Shogo Kumagai, Guanghui Li, Toshiaki Yoshioka, *Communications Engineering*, 2(1), 2023, doi: 10.1038/s44172-023-00079-y.
- Synthesis of layered double oxide with high specific surface area by innovative sol-gel method through its application to arsenate anion adsorption, Itsuki Takanashi, Tomohito Kameda, Shogo Kumagai, Yuko Saito, Yasuyuki Nomura, Daiki Kawamura, Toshiaki Yoshioka, *Journal of Alloys and Compounds*, 960, 2023, 170865.
- 【MISC】
- プラスチックリサイクルから見えるカーボンニュートラルに貢献する既存技術展開の可能性, 吉岡 敏明, 『都市清掃』, 76(374), 2023, pp. 339-343.
- 熱分解法によるプラスチックのケミカルリサイクルが繋ぐ動脈連携, 吉岡敏明, 熊谷将吾, 『高分子』, 72(1), 2023, pp. 8-10.
- ### 環境分析化学分野
- 【論文】
- Kinetic aspects of iron(III)-chelation therapy with deferasirox (DFX) revealed by the solvolytic dissociation rate of the Fe(III)-DFX complex estimated with capillary electrophoretic reactor, Ryota Suzuki, Nobuhiko Iki, *JOURNAL OF INORGANIC BIOCHEMISTRY*, 241, 2023, 112131.
- MRI Contrasting Agent Based on Mn-MOF-74 Nanoparticles with Coordinatively Unsaturated Sites, Nobuhiko Iki, Ryuta Nakane, Atsuko Masuya-Suzuki, Yoshikazu Ozawa, Takako Maruoka, Megumi Iiyama, Akira Sumiyoshi, Ichio Aoki, *MOLECULAR IMAGING AND BIOLOGY*, 2023, doi: 10.1007/s11307-023-01801-0.
- Selective collection of Yb(III) over La(III) and Eu(III) from aqueous solution by bis(tetramethylammonium) salt crystals of p-tert-butylcalix[4]arene-1,3-diphosphonic acid, Naoya Morohashi, Mayu Osawa, Vandana Bhalla, Sahoko Sumida, Yutaka Kato, Ryuki Takahashi, Nobuhiko Iki, Tetsutaro Hattori, *Crystengcomm*, 2023, doi: 10.1039/d3ce00525a.
- 【書籍等出版物】
- 『キャビラリー電気泳動法・イオンクロマトグラフィーの分析テクニック』, 壱岐伸彦, (株) 技術情報協会, 2023.
- ### 環境生命機能学分野
- 【論文】
- Batteryless wireless magnetostrictive Fe₃₀Co₇₀/Ni clad plate for human coronavirus 229E detection, Daiki Neyama, Siti Masturah binti Fakhruddin, Kumi Y. Inoue, Hiroki Kurita, Shion Osana, Naoto Miyamoto, Tsuyoshi Tayama, Daiki Chiba, Masahito Watanabe, Hitoshi Shiku, Fumio Narita, *Sensors and Actuators A: Physical*, 349, 2023, 114052.
- Bipolar Electrochemical Sensor with Perylene Diimide-Based Cathodic Luminophore for Dopamine Detection and Imaging, Tomoki Iwama, Mayo Komatsu, Kumi Y. Inoue, Koki Kubota, Takahiro Ito-Sasaki, Hitoshi Shiku, Elsevier BV, 2023, doi: 10.2139/ssrn.4632693.
- Comprehensive Cell Adhesion Analysis Using Electrochemiluminescence Imaging and Electrochemical Impedance Spectroscopy, Kimiharu Oba, Kosuke Ino, Yoshinobu Utagawa, Hiroya Abe, Hitoshi Shiku, *Electrochemistry*, 2023, doi: 10.5796/electrochemistry.23-68109.
- C-reactive Protein Detection Using an Ion-sensitive Field-effect Transistor (ISFET)-based Aptasensor with a Chemically Modified Gate Surface for Improved Sensitivity, Siti Masturah binti Fakhruddin, Kumi Y. Inoue, Masayoshi Esashi, Hitoshi Shiku, *Sensors and Materials*, 35(10), 2023, 4797.
- Droplet-free digital immunoassay based on electrochemiluminescence, Kentaro Ito, Kumi Y. Inoue, Kosuke Ino, Hitoshi Shiku, Biosensors and Bioelectronics: X, 2023, 100312.
- Effect of valinomycin on the respiration activity of zebrafish embryos using a large-scale-integration-based multiple amperometric biosensor, Kazuki Terao, Masato Suzuki, Ryota Kunikata, Atsushi Suda, Kumi Y. Inoue, Kosuke Ino, Tomokazu Matsue, Tomoyuki Yasukawa, *Sensors and Materials* 35(10), 2023, 4781.
- Electrochemical imaging correlated to hydrogen evolution reaction on transition metal dichalcogenide, WS₂, Akichika Kumatani, Hiroto Ogawa, Takahiko Endo, Yu Kobayashi, Jana Lustikova, Hiroki Ida, Yasufumi Takahashi, Tomokazu Matsue, Yasumitsu Miyata, Hitoshi Shiku, *Journal of Vacuum Science & Technology B*, 2023, doi: 10.1116/6.0002706.
- Electrochemical Li⁺ Insertion/Extraction Reactions at LiPON/Epitaxial Graphene Interfaces, Satoshi Yamamoto, Munekazu Motoyama, Masahiko Suzuki, Ryotaro Sakakibara, Norikazu Ishigaki, Akichika Kumatani, Wataru Norimatsu, Yasutoshi Iriyama, *ACS Nano*, 17(17), 2023, pp. 16448-16460.
- Electrochemical sensing of oxygen metabolism for a three-dimensional cultured model with biomimetic vascular flow, Yuji Nashimoto, Rei Mukomoto, Takuto Imaizumi, Takato Terai, Shotaro Shishido, Kosuke Ino, Ryuuji Yokokawa, Takashi Miura, Kunishige Onuma, Masahiro Inoue, Hitoshi Shiku, *Biosensors and Bioelectronics*, 219, 2023, 114808.
- Energy-harvesting and mass sensor performances of magnetostrictive cobalt ferrite-spattered Fe-Co alloy plate, Hiroki Kurita, Siti Masturah binti Fakhruddin, Kumi Y. Inoue, Takeru Nakaki, Shotaro Kuroda, Zhenjin Wang, Wakako Araki, Hitoshi Shiku, Fumio Narita, *Journal of Alloys and Compounds*, 951, 2023, 169844.
- Enhancement of Electrochemiluminescence by Au Paste Electrode for Bipolar Electroanalysis, Ayane Endo, Koki Kuboya, Takahiro Ito-Sasaki, Mayo Komatsu, Tomoki Iwama, Hitoshi Shiku, Kumi Y. Inoue, *Electrochemistry*, 2023, doi: 10.5796/electrochemistry.23-68114.
- Evaluation of respiratory and secretory activities of multicellular spheroids via electrochemiluminescence imaging, Kaoru Hiramoto, Keika Komatsu, Ryota Shikuwa, An Konno, Yusuke Sato, Ayumi Hirano-Iwata, Kosuke Ino, Hitoshi Shiku, *Electrochimica Acta*, 458, 2023, 142507.
- Fabrication and Cell Culture Applications of Core-Shell Hydrogel Fibers Composed of Chitosan/DNA Interfacial Polyelectrolyte Complexation and Calcium Alginate: Straight and Beaded Core Variations, Yoshinobu Utagawa, Kosuke Ino, Masahiro Takinoue, Hitoshi Shiku, *Advanced healthcare materials*, 2023, e2302011.
- Facile Synthesis of Pd Nanosheets and Implications for Superior Catalytic Activity, Sumiya Ando, Eisuke Yamamoto, Makoto Kobayashi, Akichika Kumatani, Minoru Osada, *ACS Nano*, 2023, doi: 10.1021/acsnano.3c07861.
- Frustoconical porous microneedle for electroosmotic transdermal drug delivery, Daigo Terutsuki, Reiji Segawa, Shinya Kusama, Hiroya Abe, Matsuhiro Nishizawa, *Journal of Controlled Release*, 354, 2023, pp. 694-700.
- Highly Sensitive Electrochemical Endotoxin Sensor Based on Redox Cycling Using an Interdigitated Array Electrode Device, Kentaro Ito, Kumi Y. Inoue, Takahiro Ito-Sasaki, Miho Ikegawa, Shinichiro Takano, Kosuke Ino, Hitoshi Shiku, *Micromachines*, 14(2), 2023, 327.
- Iron azaphthalocyanine electrocatalysts for enhancing oxygen reduction reactions under neutral conditions and power density in microbial fuel cells, Edwin Osebe Nyangau, Hiroya Abe, Yuta Nakayasu, Masaki Umetsu, Masaru Watanabe, Chika Tada, *Bioresource Technology Reports*, 23, 2023, 101565.
- Microarray-Based Electrochemical Biosensing, Kosuke Ino, Yoshinobu Utagawa, Hitoshi Shiku, *Advances in Biochemical Engineering/Biotechnology*, 2023, doi: 10.1007/10_2023_229.
- Microfluidic vascular formation model for assessing angiogenic capacities of single islets, Yuji Nashimoto, An Konno, Takuto Imaizumi, Kaori Nishikawa, Kosuke Ino, Takeshi Hori, Hirokazu Kaji, Hiroyumi Shintaku, Masafumi Goto, Hitoshi Shiku, *Biotechnology and bioengineering*, 2023, doi: 10.1002/bit.28631.
- Mussel-inspired interfacial ultrathin films for cellular adhesion on the wrinkled surfaces of hydrophobic fluids, Hiroya Abe, Tomoya Ina, Hirokazu Kaji, Matsuhiro Nishizawa, *Polymer Journal*, 55(11), 2023, pp. 1231-1236.
- Oxygen metabolism analysis of a single organoid toward the noninvasive discrimination of cancer subpopulations with different growth capabilities, Yuji Nashimoto, Shotaro Shishido, Kunishige Onuma, Kosuke Ino, Masahiro Inoue, Hitoshi Shiku, *Frontiers in Bioengineering and Biotechnology*, 11, 2023, 1184325.
- Porous Microneedle-Based Potentiometric Sensor for Intradermal Electrolyte Monitoring, Daigo Terutsuki, Shuhei Yamaguchi, Yuina Abe, Hiroya Abe, Matsuhiro Nishizawa, *Electrochemistry*, 91(4), 2023, 047007.
- Progress on Separation and Hydrothermal Carbonization of Rice Husk Toward Environmental Applications, Hiroya Abe, Yuta Nakayasu, Kazutoshi Haga, Masaru Watanabe, *Global Challenges*, 7(8), 2023, doi: 10.1002/gch2.202300112.
- Relationship between Plasma Lipopolysaccharide Concentration and Health Status in Healthy Subjects and Patients with Abnormal Glucose Metabolism in Japan: A Preliminary Cross-Sectional Study, Nobuo Fuke, Shojiro Sawada, Takahiro Ito-Sasaki, Kumi Y. Inoue, Yusuke Ushida, Ikuo Sato, Tomokazu Matsue, Hideki Katagiri, Hiroyuki Ueda, Hiroyuki Suganuma, *J. Multidiscip. Res.*, 6(4), 2023, pp. 605-626.
- Simple, Rapid, and Large-Scale Fabrication of Multi-Branched Hydrogels Based on Viscous Fingering for Cell Culture Applications, Yoshinobu Utagawa, Kosuke Ino, Kaoru Hiramoto, Hitoshi Shiku, *Macromolecular Bioscience*, 2023, 2300069.
- Spatiotemporally Controllable Chemical Delivery Utilizing Electroosmotic Flow Generated in Combination of Anionic and Cationic Hydrogels, Daigo Terutsuki, Sho Miyazawa, Junya Takagi, Akihiro Yamada, Yunhao Sun, Hiroya Abe, Gaobo Wang, Matsuhiro Nishizawa, *Advanced Functional Materials*, 34(2), 2023, doi: 10.1002/adfm.202304946.
- Surface morphology live-cell imaging reveals how macropinocytosis inhibitors affect membrane dynamics, Hiroki Ida, Noriko Taira, Koichi Azuma, Akichika Kumatani, Misao Akishiba, Shiroh Futaki, Yasufumi Takahashi, Hitoshi Shiku, *Electrochimica Acta*, 441, 2023, 141783.
- The Development of Aptamer-Coupled Microelectrode Fiber Sensors (apta-μFS) for Highly Selective Neurochemical Sensing, Tomoki Saizaki, Mahiro Kubo, Yuichi Sato, Hiroya Abe, Tomokazu Ohshiro, Hajime Mushiaki, Fabien Sorin, Yuanyuan Guo, *Analytical Chemistry*, 95(17), 2023, pp. 6791-6800.
- Topographical evaluation of human mesenchymal stem cells during osteogenic differentiation using scanning ion conductance microscopy, Kota Nozawa, Xuyang Zhang, Takuo Nakamura, Yuji Nashimoto, Yasufumi Takahashi, Kosuke Ino, Hitoshi Shiku, *Electrochimica Acta*, 449, 2023, 142192.
- Vascularization-on-a-Chip with a Porous Membrane Electrode for In Situ Electrochemical Detection of Nitric Oxide Released from Endothelial Cells, Yoshinobu Utagawa, Kosuke Ino, Kaoru Hiramoto, Kazuyuki Iwase, Yuji Nashimoto, Itaru Honma, Hitoshi Shiku, *Analytical Chemistry*, 95(49), 2023, 18158.
- ガラスナノキャビラリーを用いるイオン電流整流作用におけるイオン濃度の影響の調査, 伊藤千聖, 伊野浩介, 平本薫, 梨本裕司, 珠玖仁, 『分析化学』, 72(3), 2023, pp. 117-123.
- 局所電気化学測定を可能とするナノ電気化学セル顕微鏡とその応用, 熊谷明哉, 佐藤寛仁, 堀口佳子, 珠玖仁, 『顕微鏡』, 2023, doi: 10.11410/kenbikyo.58.1_13.
- 【MISC】
- Electrochemical imaging for cell analysis in microphysiological systems, An Konno, Kosuke Ino, Yoshinobu Utagawa, Hitoshi Shiku, *Current Opinion in Electrochemistry*, 39, 2023, 101270.

- Recent development of electrochemical devices in analytical chemistry, Kosuke Ino, *Analytical Sciences*, 39, 2023, pp. 769-770.
- 体に速く強く接着するハイドロゲル、阿部博弥、*化学同人『化学』*, 2023
- クローズドバイポーラ電気化学顕微鏡の実現に向けた多孔質膜への導電性ペースト充填の検討、井上(安田)久美、遠藤彩音、久保田恒喜、水原詩苑、伊藤隆広、戸塚友里、『化学センサ』, 39(Suppl.B), 2023, pp. 88-90.
- クローズドバイポーラ電極-溶液間電位差計測による電気化学発光挙動の解析、井上(安田)久美、阿部岳晃、久保田恒喜、遠藤彩音、戸塚友理、*Chemical Sensors*, 39(Suppl.A), 2023, pp. 103-105.
- 研究者の最新動向 細胞間伝達物質のイメージングに向けた電気化学顕微鏡の開発、井上(安田)久美、*Precision Medicine*, 6(8), 2023, pp. 654-658.
- 細胞間伝達物質のイメージングに向けた電気化学顕微鏡の開発、井上(安田)久美、『細胞』(*Precision Medicine* 誌より転載), 55(13), 2023, pp. 61-64.
- 第47回研究会報告 化学とマイクロ・ナノシステム学会、第47回研究会、伊野浩介、『化学とマイクロ・ナノシステム』, 22(2), 2023, pp. 18-19.
- バイポーラ電極を用いる電気化学バイオイメージング、井上(安田)久美、『化学センサ』, 39, 202, pp. 10-21.
- マイクロ・ナノ電気化学におけるバイオ分析とバイオファブリケーションに関する研究、伊野浩介、『化学とマイクロ・ナノシステム』, 22(1), 2023, pp. 5-6.

資源循環プロセス学講座

環境グリーンプロセス学分野

- 【論文】
- Can PVC Dechlorination Bring Circularity Benefits? – An Analysis Using a Multi-Objective, Multi-Regional Technology Choice Model, Ryodai Makino, Hajime Ohno, Alexander Guzman Urbina, Jialing Ni, Yasuhiro Fukushima, 日本LCA学会誌, 2023, doi: 10.3370/lca.19.158.
 - Coordinated Integration of Agricultural and Industrial Processes: a Case Study of Sugarcane-Derived Production, Kotaro Ouchida, Yuichiro Kanematsu, Yasuhiro Fukushima, Satoshi Ohara, Akira Sugimoto, Taiichiro Hattori, Yoshifumi Terajima, Tatsuya Okubo, Yasunori Kikuchi, PROCESS INTEGRATION AND OPTIMIZATION FOR SUSTAINABILITY, 2023, doi: 10.1007/s41660-023-00337-8.
 - Deriving local Nusselt number correlations for heat transfer of nanofluids by genetic programming, Alexander Guzman-Urbina, Kazuki Fukushima, Hajime Ohno, Yasuhiro Fukushima, International Journal of Thermal Sciences, 2023, doi: 10.1016/j.ijthermalsci.2023.108382.

複合材料設計学分野

- 【論文】
- Batteryless wireless magnetostrictive Fe₃₀Co₇₀/Ni clad plate for human coronavirus 229E detection, Daiki Neyama, Siti Masturah binti Fakhruddin, Kumi Y. Inoue, Hiroki Kurita, Shion Osana, Naoto Miyamoto, Tsuyoshi Kanno, Daiki Chiba, Masahito Watanabe, Hitoshi Shiku, Fumio Narita, *Sensors and Actuators A: Physical*, 349, 2023, 114052.
 - Carbon Fiber-Reinforced Piezoelectric Nanocomposites: Design, Fabrication and Evaluation for Damage Detection and Energy Harvesting, Yaonan Yu, Yu Shi, Hiroki Kurita, Yu Jia, Zhenjin Wang, Fumio Narita, Composites Part A: Applied Science and Manufacturing, 172, 2023, 107587.
 - Characterization of metal-core piezoelectric fiber/aluminum composite in a large-strain region, Tetsuro Yanaseko, Hiroshi Sato, Fumio Narita, Hiroshi Asanuma, *Materials Today Communications*, 35, 2023, 105942.
 - Crack self-sensing capability of glass fiber reinforced polymer

- composites embedded with magnetostrictive fibers in mixed-mode bending, Tomoki Miyashita, Kenichi Katabira, Hiroki Kurita, Takeru Nakaki, Fumio Narita, *Composites Science and Technology*, 241, 2023, 110107.
- Design and Finite Element Analysis of the Electromechanical Performance of Functionally Graded Composites, Kohei Maruyama, Zhenjin Wang, Fumio Narita, *Journal of Functionally Graded Materials*, 36, 2023, pp. 9-12.
- Effects of Thermal Boundary Resistance on Thermal Management of Gallium-Nitride-Based Semiconductor Devices: A Review, Tianzhuo Zhan, Mao Xu, Zhi Cao, Chong Zheng, Hiroki Kurita, Fumio Narita, Yen-Ju Wu, Yibin Xu, Haidong Wang, Mengjie Song, Wei Wang, Yangguang Zhou, Xueling Liu, Yu Shi, Yu Jia, Sujun Guan, Tatsuro Hanajiri, Toru Maekawa, Akitoshi Okino, Takanobu Watanabe, *Micromachines*, 14(11), 2023, 2076.
- Energy harvesting and wireless communication by carbon fiber-reinforced polymer-enhanced piezoelectric nanocomposites, Y. Yu, C. Luo, H. Chiba, Y. Shi, F. Narita, *Nano Energy*, 113, 2023, 108588.
- Energy harvesting using a magnetostrictive transducer based on switching control, An Li, Keiju Goto, Yusuke Kobayashi, Yushin Hara, Yu Jia, Yu Shi, Constantinos Soutis, Hiroki Kurita, Fumio Narita, Keisuke Otsuka, Kanjiro Makihara, *Sensors and Actuators A: Physical*, 355, 2023, 114303.
- Energy-harvesting and mass sensor performances of magnetostrictive cobalt ferrite-spattered Fe-Co alloy plate, Hiroki Kurita, Siti Masturah binti Fakhruddin, Kumi Y. Inoue, Takeru Nakaki, Shotaro Kuroda, Zhenjin Wang, Wakako Araki, Hitoshi Shiku, Fumio Narita, *Journal of Alloys and Compounds*, 951, 2023, 169844.
- Fabrication of negative magnetostrictive Japanese traditional paper (washi) with cobalt ferrite particles, Hiroki Kurita, Lovisa Rova, Takumi Keino, Fumio Narita, *JOURNAL OF APPLIED PHYSICS*, 134, 2023, 165001.
- Negative magnetostrictive paper formed by dispersing CoFe₂O₄ particles in cellulose nanofibrils, Takumi Keino, Lovisa Rova, Alia Gallet-Pandellé, Hiroki Kurita, Fumio Narita, *Scientific Reports*, 13(1), 2023, 6144.
- Performance Evaluation of Magnetostrictive Small Wind Turbines Using Fe-Co Alloy-Based Clad Sheets, Toshiki Ueno, Takeru Nakaki, Taisei Mukogawa, Shuonan Dong, Hiroki Kurita, Keisuke Otsuka, Kanjiro Makihara, Fumio Narita, *Advanced Engineering Materials*, 25(19), 2023, 2300185.
- Quantification of damage expansion influence on frequency response function of plate for structural health monitoring with integral differential method, Tao Wen, Fumio Narita, Hiroki Kurita, Yu Jia, Yu Shi, *Composites Science and Technology*, 244, 2023, 110298.
- Room temperature enhancement of flexural strength in silicon carbide green body via the addition of cellulose nanofiber, Teruyoshi Kanno, Hiroki Kurita, Fumio Narita, *International Journal of Advanced Manufacturing Technology*, 125(5-6), 2023, pp. 2055-2064.
- Variation of the Tensile Properties of Basalt-Fiber-Reinforced Polybutylene Succinate Matrix Composites during Microbial Degradation, Lovisa Rova, Hiroki Kurita, Shinji Kudo, Shio Hatayama, Teruyoshi Kanno, Alia Gallet-Pandellé, Fumio Narita, *Polymers*, 15, (7), 2023, 1796.

MISC

- セルロースナノファイバー強化シルク繊維の創製と力学・物理特性評価, 栗田大樹, Wang Zhenjin, 堀雅敏, 清水紀弘, 成田史生, 『繊維学会誌』, 79(7), 2023, pp. P-207-P-210.
- 圧電・磁歪複合材料によるウイルスの電池レスセンシング, 成田史生, 王真金, 栗田大樹, 『バムサジャーナル』, 35(1), 2023, pp. 5-9.
- 圧電性を有する炭素繊維強化プラスチック複合材料, 王真金, 成田史生, 『日本複合材料学会誌』, 49(1), 2023, pp. 13-19.
- 炭素繊維強化圧電複合材料の開発と振動発電・蓄電によるワイヤレス情報通信, 栗田大樹, 王真金, 余瑠楠, 成田史生, 『クリーンエネルギー』, 32(11), 2023, pp. 41-44.

【産業財産権】

- 衝撃位置検出装置、衝撃位置検出方法、衝撃位置検出プログラム、及び衝撃位置検出システム, 趙子文, 王真金, 成田史生, 橫田弘, 岡田穂, 特願 2023-204160.

環境創成計画学講座

環境分子化学分野

【論文】

- Predictive distribution coefficient (pKD) model for hops extract fractionation in high-pressure CO₂ - ethanol - water solvent systems, Masaki Ota, Yusuke Ueno, Masato Urabe, Aruto Kuwahara, Masaru Watanabe, Richard Lee Smith, Hiroshi Inomata, *Fluid Phase Equilibria*, 569, 2023, doi: 10.1016/j.fluid.2023.113762.

環境材料表面科学分野

【論文】

- Composition sensitive selectivity and activity of electrochemical carbon dioxide reduction on Pd-Cu solid-solution alloy nanoparticles, Naoto Todoroki, Masanao Ishijima, Jhon L. Cuya Huaman, Yuto Tanaka, Jeyadevan Balachandran, *Catalysis Science & Technology*, 13(17), 2023, pp. 5025-5032.

- Enhanced electrochemical hydrogen oxidation reaction and suppressed hydrogen peroxide generation properties on Pt/Ir(111) bimetallic surfaces, Kenta Hayashi, Takeru Tomimori, Riku Sato, Naoto Todoroki, Toshimasa Wadayama, *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*, 2023, doi: 10.1039/d2cp05430b.

- Experimental study platform for electrocatalysis of atomic-level controlled high-entropy alloy surfaces, Yoshihiro Chida, Takeru Tomimori, Tomoaki Ebata, Noboru Taguchi, Tsutomu Ioroi, Kenta Hayashi, Naoto Todoroki, Toshimasa Wadayama, *Nature Communications*, 14(1), 2023, doi: 10.1038/s41467-023-40246-5.

- Improving the Oxygen Evolution Activity and Stability of Nb-Doped TiO₂-Supported RuO₂ by a SnO₂ Interlayer: A Model Catalyst Study on Single-Crystal Oxide Heterostructures, Naoto Todoroki, Ryutaro Kudo, Kenta Hayashi, Mizuho Yokoi, Naomi Naraki, Toshimasa Wadayama, *ACS Catalysis*, 13, 2023, pp. 11433-11440.

- Influence of renewable energy power fluctuations on water electrolysis for green hydrogen production, Hirokazu Kojima, Kensaku Nagasawa, Naoto Todoroki, Yoshikazu Ito, Toshiaki Matsui, Ryo Nakajima, *International Journal of Hydrogen Energy*, 48(12), 2023, pp. 4572-4593.

- Kinetically Controlled Direct Synthesis of B2- and A1-Structured Cu-Pd Nanoparticles, Masanao Ishijima, Naoto Todoroki, Jhon L. Cuya Huaman, Yuto Tanaka, Jeyadevan Balachandran, *INORGANIC CHEMISTRY*, 2023, doi: 10.1021/acs.inorgchem.3c02766.

- Oxygen Reduction Reaction Activity Enhancement of Dry-Process-Synthesized Pt(111)/Nb:SnO₂(101)/Pt(111) Coherent Lattice Stacking Model Catalyst Surface, Yoshihiro Chida, Hikaru Kamikawa, Naoto Todoroki, Toshimasa Wadayama, *Materials Transactions*, 2023, doi: 10.2320/matertrans.mt-m2023172.

- Pt-Surface Stabilization by High-Entropy Alloys for Enhancing Oxygen Reduction Reaction Property: Single-Crystal Model Catalyst Study, Yoshihiro Chida, Takeru Tomimori, Naoto Todoroki, Toshimasa Wadayama, *ELECTROCHEMISTRY COMMUNICATIONS*, 2023, 107657.

- Stainless Steel Anode for Alkaline Water Electrolysis: Recent Progress in Active and Durable Surface Catalyst Layer Generation, Naoto Todoroki, Toshimasa Wadayama, *Materials Transactions*, 64(10), 2023, pp. 2376-2385.

- Suppressed Hydrogen Peroxide Generation and Enhanced Electrochemical Hydrogen Oxidation Activity for Tungsten-Oxide-Modified Platinum Surface Model Catalyst System, Kenta Hayashi,

- Hikaru Kamikawa, Naoto Todoroki, Toshimasa Wadayama, *Materials Transactions*, 64(10), 2023, pp. 2431-2439.

- Suppression of Catalyst Layer Detachment by Interfacial Microstructural Modulation of the NiCo₂O₄/Ni Oxygen Evolution Electrode for Renewable Energy-Powered Alkaline Water Electrolysis, Naoto Todoroki, Kensaku Nagasawa, Hayato Enjoji, Shigenori Mitsushima, *ACS APPLIED MATERIALS & INTERFACES*, 2023, doi: 10.1021/acsmi.3c01572.

- Surface modification of gold by carbazole dendrimers for improved carbon dioxide electroreduction, Sota Yoshida, Masaki Sampei, Naoto Todoroki, Eri Hisamura, Kohei Nakao, Ken Albrecht, Toshimasa Wadayama, *Chemical Communications*, 59, 2023, pp. 3459-3462.
- 再生可能エネルギーを直接利用する水電解技術：再生可能エネルギーの電力変動が電解槽の耐久性に及ぼす影響、小島宏一、長澤兼作、轟直人、伊藤良一、松井敏明、中島良、『水素エネルギーシステム』, 48(3), 2023, pp. 189-213.

【MISC】

- ステンレス鋼上へのナノ構造触媒層の形成とアルカリ水電解用酸素発生電極への応用、轟直人, *Materia Japan*, 62(6), 2023, pp. 368-374.
- アルカリ水電解用酸素発生電極への応用に向けた ステンレス鋼上への水酸化物ナノ構造触媒の生成、轟直人, 日本化学会研究会『低次元系光機能材料研究会』ニュースレター, 28, 2023, pp. 11-12.

【書籍等出版物】

- 『グリーン水素製造に向けた水電解および周辺技術』, 小島宏一, 長澤兼作, 轟直人, 伊藤良一, 松井敏明, 中島良, 情報機構, 2023.

【産業財産権】

- アルカリ水電解システム、アルカリ水電解方法、及び水素の製造方法, 轟直人, *PCT/JP2023/033920*.

連携講座

地球環境変動学分野（国立環境研究所）

【論文】

- Autumn cooling paused increased CO₂ release in central Eurasia, Kondo M., Sasakawa M., Machida T., Arshinov M., Hiyama T., *Nature Climate Change*, 13, 2023, pp. 334-337.

- Development of a predictive model for vitamin D deficiency based on the vitamin D status in young Japanese women: A study protocol, Kuwabara, A., Nakatani, E., Tsugawa, N., Nakajima, H., Sasaki, S., Kohno, K., Uenishi, K., Takenaka, M., Takahashi, K., Maeta, A., Sera, N., Kaimoto, K., Iwamoto, M., Kawate, H., Yoshida, M., and Tanaka, K., *PLoS ONE*, 17(3), 2022, e0264943, doi: 10.1371/journal.pone.0264943.

- Estimation of the vitamin D (VD) status of pregnant Japanese women based on food intake and VD synthesis by solar UV-B radiation using a questionnaire and UV-B observations, J. Steroid Biochem, Nakajima, H., Sakamoto, Y., Honda, Y., Sasaki, T., Igeta, Y., Ogishima, D., Matsuoka, S., Kim, S.-G., Ishijima, M., and Miyagawa, K., *Mol. Biol.*, 229, 2023, 106272, doi: 10.1016/j.jsbmb.2023.106272.

- Near-real-time estimation of fossil fuel CO₂ emissions from China based on atmospheric observations on Hateruma and Yonaguni Islands, Tohjima Y., Niwa Y., Patra P.K., Mukai H., Machida T., Sasakawa M., Tsuboi K., Saito K., Ito A., Japan. *Progress in Earth and Planetary Science*, 10, 2023, doi: 10.1186/s40645-023-00542-6.

- Estimating methane emissions in the Arctic nations using surface observations from 2008 to 2019, Wittig S., Berchet A., Pison I., Saunois M., Thanwerdas J., Martinez A., Paris J.D., Machida T., Sasakawa M., Worthy D.E.J., Lan X., Thompson R.L., Sollum E., Arshinov M., *Atmospheric Chemistry and Physics*, 23(11), 2023, pp. 6457-6485.

[MISC]

- オゾン観測ネットワークの現状～札幌と那覇サイトの停止が与える影響～, 林田佐智子, 中島英彰, 藤原正智, 山内恭, 金谷有剛, 笠井康子, 今村隆史, 『天気』, 70, 2023, pp. 19-25.
- 成層圈・中間圏の大気化学の諸問題, 江口菜穂, 山下陽介, 秋吉英治, 酒井哲, 長濱智生, 富川喜弘, 中島英彰, 杉田考文, 坂崎貴俊, 斎藤拓也, 水野亮, 『大気化学研究』, 48, 2023, 048A02, pp. 1-38.

環境研究推進センター

[MISC]

- 石の上にも三年…(第12回)古代墳墓の辰砂の起源:古代東アジアにおける辰砂のトレーサビリティ, 大庭雅寛, 『季刊資源と素材』, 8(2), 2023, pp. 44-46.

環境研究推進センター

地域共創ビジョン推進室

【論文】

- Steroidogenic potential of the gonad during sex differentiation in the rice field frog Hoplobatrachus rugulosus (Anura: Dicoglossidae), Thriawan Traijitt, Sukanya Jaroenporn, Kazue Nagasawa, Makoto Osada, Noppadon Kitana, Jirarach Kitana, Journal of Experimental Zoology Part A: Ecological and Integrative Physiology, 2023, pp. 1-13.
- Hemocytes of Yesso scallop characterized by cytological, molecular marker, and functional analyses, Kazue Nagasawa, Makoto Kanamori, Jeongwoong Yoon, Mutsuko Kobayashi, Mariia Mokrina, Takahiro Kato, Makoto Osada, Fish and Shellfish Immunology, 137, 2023, 108751.
- Expression and functional analyses for estrogen receptor and estrogen related receptor of Yesso scallop, Patinopecten yessoensis, Wenbin Gu, Tongchai Thitiphuree, Yurika Otoki, Emily C. Marquez, Takeshi Kitano, Naoki Itoh, Kazue Nagasawa, Makoto Osada, The Journal of Steroid Biochemistry and Molecular Biology, 231, 2023, 10.

資源戦略研究センター

【論文】

- Clarification of Generation Mechanism of Volatilization Flux based on Detailed Analysis of Transport Phenomena near the Ground Surface and Quantitative Evaluation of Influencing Factors, Monami Kondo, Yasuhide Sakamoto, Junko Hara, Takeshi Komai, Noriaki Watanabe, Journal of Hazardous Materials, 465, 2023, 133356.
- Comparative study on national policies and educational approaches toward regional revitalization in Japan and South Korea: Aiming to achieve the sustainable development goals, Shiori Osanai, Jeongsoo Yu, Societies, 13(9), 2023, doi: 10.3390/soc13090210.
- Continuous thermal structures of the present-day and contact-metamorphic geothermal systems revealed by drill cuttings in the Kakkonda geothermal field, Japan, Masaoki Uno, Atsushi Okamoto, Takashi Akatsuka, Noriyoshi Tsuchiya, Geothermics, 115, 2023, 102806.
- Mantle hydration initiated by Ca metasomatism in a subduction zone: An example from the Chandman meta-peridotite, western Mongolia, Otgonbayar Dandar, Atsushi Okamoto, Masaoki Uno, Noriyoshi Tsuchiya, Lithos, 452-453, 2023, 107212.
- Multiphase-solid fluid inclusions in HP-LT eclogite facies rock (Zavkhan Terrane, Western Mongolia): evidence for the evolution from saline to hypersaline fluids during metamorphism in subduction zone, Manzshir Bayarbold, Atsushi Okamoto, Masaoki Uno, Kenta Yoshida, Alexey Kotov, Geri Agroli, Otgonbayar Dandar, Yasuhiro Niwa, Masao Kimura, Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology, 178(11), 2023, doi: 10.1007/s00410-023-02055-3.
- NaHCO_3 as a carrier of CO_2 and its enhancement effect on mineralization during hydrothermal alteration of basalt, Sena Kikuchi, Jiajie Wang, Otgonbayar Dandar, Masaoki Uno, Noriaki Watanabe, Nobuo Hirano, Noriyoshi Tsuchiya, Frontiers in Environmental Science, 11, 2023, doi: 10.3389/fenvs.2023.1138007.
- Numerical Analysis on the Effect of Soil Properties on the Generation of Volatilization Flux from Unsaturated Soil Contaminated by Volatile Chemical Substances, Monami Kondo, Yasuhide Sakamoto, Yoshishige Kawabe, Takeshi Komai, Noriaki Watanabe, Environmental Modeling and Assessment, 23, 2023, 09914.
- Overview of the Special Issue "Progress of Earth and Data Sciences Research into Tsunami Deposits, and Contribution to Tsunami Disaster Prevention (Part I): Paleoenvironmental Analysis and Disaster Prevention Education Using Tsunami Deposits", Noriyoshi Tsuchiya, Takeshi Komai, Kengo Nakamura, Journal of Geography (Chigaku Zasshi), 132(4), 2023, pp. 265-268.
- Partial Melting under Shallow-Crustal Conditions: A Study of the Pleistocene Caldera Eruption of Mendelev Volcano, Southern Kuril Island Arc, Alexey Kotov, Sergey Smirnov, Ildar Nizametdinov, Masaoki Uno, Noriyoshi Tsuchiya, Ivan Maksimovich, Journal of Petrology, 64(6), 2023, doi: 10.1093/petrology/egad033.
- Prediction of 1,4-Dioxane Migration in Groundwater and Evaluation of Remediation Measures in an Illegal Dumping Site Using a 2D-Numerical Model, Thatthep Pongritsakda, Yasuhide Sakamoto, Jiajie Wang, Yoshishige Kawabe, Sanya Sirivithayapakorn, Takeshi Komai, Noriaki Watanabe, Sustainability, 15(5), 2023, 3930.
- Permeability enhancement and void formation by chelating agent in volcanic rocks (Ahuachapán and Berlín geothermal fields, El Salvador), Luis Salalá, Ryota Takahashi, Jonathan Argueta, Jiajie Wang, Noriaki Watanabe, Noriyoshi Tsuchiya, Geothermics, 107, 2023, 102586.
- Progressive carbonation and Ca-metasomatism of serpentinized ultramafic rocks: insights from natural occurrences and hydrothermal experiments, Nomuulin Amarbayar, Otgonbayar Dandar, Jiajie Wang, Atsushi Okamoto, Masaoki Uno, Undarmaa Batsaikhan, Hideko Takayanagi, Yasufumi Iryu, Noriyoshi Tsuchiya, Contributions to Mineralogy and Petrology, 178, 2023, doi: 10.1007/s00410-023-02013-z.
- Teaching the Effectiveness of Integrated Studies and Social Engagement: A Case Study on SDG Education in Depopulated Areas in Japan, Shiori Osanai, Jeongsoo Yu, Education Sciences, 13(3), 2023, 250.
- 機械学習による津波堆積物の地球化学的判別手法および簡易判定システムの提案, 佐藤就太, 駒井武, 中村謙吾, 渡邊則昭, 『地学雑誌』, 132(5), 2023, pp. 385-402.
- 石油系炭化水素を対象とした発光パクテリアを用いた簡易土壤汚染評価手法の開発 5 -アルカン混合成分に関する急性毒性評価-, 杉田創, 駒井武, 『地下水学会誌』, 65(1), 2023, pp. 53-66.
- 千葉県茂原市浅層地下水におけるメタンとメタン酸化細菌の分布, ならびに地下水汚染浄化への利用可能性の検討, 竹内美緒, 宇佐美潤, 葛岡等, 駒井武, 『社会地質学会誌』, 18(3/4), 2023, pp. 44-53.
- テラヘルツ波を用いた廃プラスチックの識別, 佐々木哲朗, 田邊匡生, 劉庭秀, 真子岳, 大窪和明, 『リサイクル材・バイオマス複合プラスチックの技術と仕組』, 2023, pp. 60-66.
- テラヘルツ波を用いたプラスチック素材識別技術, 田邊匡生, 佐々木哲朗, 劉庭秀, 真子岳, 『プラスチックの循環利用拡大に向けたリサイクルシステムと要素技術の開発動向 2023』。
- 東北地方太平洋沖地震による津波堆積物の堆積域の推定と重金属類の分布特性評価, 川辺能成, 原淳子, 宮崎晋行, 駒井武, 『地学雑誌』, 132(4), 2023, pp. 327-340.
- XRF コアスキャンデータを用いた地層の統計的対比—津波堆積物層への適用による概念実証—, 桑谷立, 酒井俊元, 中村謙吾, 駒井武, 『地学雑誌』, 132(5), 2023, pp. 367-384.
- XRF コアスキャナーを用いた混合層中の津波堆積物の層境界の推定, 中村謙吾, 桑谷立, 駒井武, 『地学雑誌』, 132(5), 2023, pp. 403-415.

[MISC]

- 次世代自動車用バッテリーの普及戦略と政策動向—日中韓の国際比較を中心にして—, 劉庭秀, 『中国を中心とする東・東南アジアの自動車リユース・リサイクルの経済地理学的研究 (科学研究費 基盤 (B) 19H01285 最終報告書)』, 2023, pp. 71-84.
- 地球科学とデータ科学に基づく津波堆積物研究の進展と津波防災への貢献 (Part I) —津波堆積物を用いた古環境解析と防災教育—, 土屋範芳, 駒井武, 中村謙吾, 『地学雑誌』, 132(4), 2023, pp. 265-268.
- 地球科学とデータ科学に基づく津波堆積物研究の進展と津波防災への貢献 (Part II) —津波堆積物に対する新しい分析方法とデータプロセッシング—, 土屋範芳, 駒井武, 中村謙吾, 『地学雑誌』, 132(5), 2023, pp. 363-364.
- テラヘルツ波による廃プラスチック高度識別装置の開発, 佐々木哲朗, 田邊匡生, 劉庭秀, 真子岳, 大窪和明, 『OPTRONICS』, 12(6), 2023, pp. 89-93.
- テラヘルツ波を用いたプラスチック素材識別技術, 田邊匡生, 佐々木哲朗, 劉庭秀, 真子岳, 『プラスチックの循環利用拡大に向けたリサイクルシステムと要素技術の開発動向 2022』, 11, 2023, pp. 29-30.
- プラスチック製容器包装廃棄物の高度選別装置の開発, 劉庭秀, 『光学』, 52(11), 2023, pp. 497-499.

【書籍等出版物】

- 『高(句)麗の里と渡来人』, 駒井武, 環境地理探訪, No.5, 2023.
- 『土壤汚染対策法の20年の歩み～研究者の観点から～』, 駒井武, 産業管理, 2023.