

先進社会環境学専攻

基幹講座

資源戦略学講座

地圏環境計測・分析学分野

【論文】

- Vulnerability of Mechanical Properties of Rocks Generated by Rapid Decompression Fracturing Under Hydrothermal Conditions Kazumasa Sueyoshi, Satoshi Aoshima, Kenta Takagi, Katsuya Mizuno, Nobuo Hirano, Noriyoshi Tsuchiya Rock Mechanics and Rock Engineering, 58, pages 8477–8489, 2025. DOI: 10.1007/s00603-025-04468-x

環境素材設計学分野

【論文】

- Design of bioresorbable calcium phosphate cement with high porosity via the addition of bioresorbable polymers Masanobu Kamitakahara, Kakeru Kato, Masaki Umetsu, Kumiko Yoshihara, Yasuhiro Yoshida Journal of Biomaterials Applications, 39(6), 557-565, 2025. DOI: 10.1177/08853282241277477
- Effect of oxidation treatment and UV irradiation of titanium on surface properties and yeast adhesion Masaki Umetsu, Ryota Sekiai, Mei-Fang Chien, Shun Yokoyama, Masanobu Kamitakahara Journal of Asian Ceramic Societies, 13(2), 144-153, 2025. DOI: 10.1080/21870764.2025.2492407
- Effect of ultraviolet irradiation on adhesion of cells and microorganisms on titania films Masanobu Kamitakahara, Haruki Iwama, Masaki Umetsu Surfaces and Interfaces, 78, 108148, 2025. DOI: 10.1016/j.surfin.2025.108148
- Enhanced Molybdenum Recovery Achieved by a Complex of Porous Material-Immobilized Surface-Engineered Yeast in Development of a Sustainable Biosorption Technology Thiti Jittayasotorn, Kentaro Kojima, Audrey Stephanie, Kaho Nakamura, Hernando P. Bacosa, Kengo Kubota, Masanobu Kamitakahara, Chihiro Inoue, Mei-Fang Chien Microorganisms, 13(5), 1034, 2025. DOI: 10.3390/microorganisms13051034
- Methanogen Biocathode Microbial Fuel Cell System That Simultaneously Achieves Cattle-Barn Wastewater Treatment and Carbon Dioxide Utilization Yuta Nakayasu, Hiroto Nakano, Masaki Umetsu, Koji Yokoyama, Hideyuki Takahashi, Chika Tada Energy Technology, 13(4), 2401558, 2025. DOI: 10.1002/ente.202401558
- Osteotropic properties of mesenchymal stromal cells generated in Masquelet’s induced membrane technique Masao Suzuki, Masanobu Kamitakahara, Wataru Kihara, Cangyou Xie, Hiromu Kato, Yuki Fukawa, Miwako Hamagaki, Kazuhiro Aoki, Satoshi Ichihara, Muneaki Ishijima, Tohru Ikeda, Takatoshi Okuda Scientific Reports, 15, 18304, 2025. DOI: 10.1038/s41598-025-02576-w

【MISC】

- New insights into immobilized bacterial systems for removal of heavy metals from wastewater Upasana Jhariya, Mei-Fang Chien, Masaki Umetsu, Masanobu Kamitakahara International Journal of Environmental Science and Technology, 22, 8319-8334, 2025. DOI: 10.1007/s13762-025-06369-6

環境修復生態学分野

【論文】

- Changes of soil ecological stoichiometry in rhizosphere of alfalfa under salt stress Luyun Chen, Yuxi Feng, Maryam Noor, Jiamin Wang, Rundong Chai, Jibiao Fan, Zhao Chen, Mei-Fang Chien, Xuebing Yan, Shengnan Sun Journal of Soil Science and Plant Nutrition, 25, 7108-7120, 2025. DOI: 10.1007/s42729-025-02583-w
- Complete genome sequence of a carbon tetrachloride-degrading bacterium, *Pseudomonas* sp. strain Stari2 Leonardo Stari, Thiti Jittayasotorn, Chihiro Inoue, Mei-Fang Chien Microbiology resource announcements, 14(3), e0095824, 2025. DOI: 10.1128/mra.00958-24
- Effect of oxidation treatment and UV irradiation of titanium on surface properties and yeast adhesion Masaki Umetsu, Ryota Sekiai, Mei-Fang Chien, Shun Yokoyama, Masanobu Kamitakahara Journal of Asian Ceramic Societies, 13(2), 144-153, 2025. DOI: 10.1080/21870764.2025.2492407
- Effects of wood ash fertilizer on element dynamics in soil solution and crop uptake Chuazhen Jian, Toru Hamamoto, Chihiro Inoue, Mei-Fang Chien, Hiroshi Naganuma, Takehito Mori, Akihiro Sawada, Masafumi Hidaka, Hiroyuki Setoyama, Tomoyuki Makino Agronomy, 15(5), 1097, 2025. DOI: 10.3390/agronomy15051097
- Elevational variations in atmospheric microplastics and surface-adsorbed heavy metals in roadside and non-roadside areas in Iligan City, Philippines Najiha B. Amer, Jade Rae B. Ministerio, Rodolfo A. Romarate II, Mei-Fang Chien, Hernando P. Bacosa Air Quality, Atmosphere & Health, 18, 3947–3960, 2025. DOI: 10.1007/s11869-025-01866-6
- Enhanced molybdenum recovery achieved by a complex of porous material-immobilized surface-engineered yeast in development of a sustainable biosorption technology Thiti Jittayasotorn, Kentaro Kojima, Audrey Stephanie, Kaho Nakamura, Hernando P. Bacosa, Kengo Kubota, Masanobu Kamitakahara, Chihiro Inoue, Mei-Fang Chien Microorganisms, 13(5), 1034, 2025. DOI: 10.3390/microorganisms13051034
- Exploring Cd tolerance and detoxification strategies of *Arabidopsis halleri* ssp. *gemmifera* under high cadmium exposure Sari, S. H. J., Chien, M. F., & Inoue, C. International Journal of Phytoremediation, 27(7), 934–940, 2025. DOI: 10.1080/15226514.2025.2456678
- Fluorene, phenanthrene, and pyrene degradation by a bacterial consortium enriched from rice field sediments Hernando P. Bacosa, Jennifer Therese C. Paradero, Jay Rumen U. Maglupay, Jhosin Jaik B. Pardillo, Mei-Fang Chien, Chihiro Inoue Journal of Environmental Science and Health, Part A, 60(4), 157-164, 2025. DOI: 10.1080/10934529.2025.2565845

- Mesoplastics: A review of contamination status, analytical methods, pollution sources, potential risks, and future perspectives of an emerging global environmental pollutant Dionielma Mae C. Ellos, Mei-Fang Chien, Chihiro Inoue, Haruka Nakano, Atsuhiko Isobe, Deo Florence L. Onda, Koza Watanabe, Hernando P. Bacosa Toxics, 13(3), 227, 2025. DOI: 10.3390/toxics13030227
- Navigating the depths: A comprehensive review of 40 years of marine oil pollution studies in the philippines (1980 to 2024) Hernando P. Bacosa, Jill Ruby L. Parmisana, Nur Inih U. Sahidjan, Joevin Mar B. Tumongha, Keana Aubrey A. Valdehueza, Jay Rumen U. Maglupay, Andres Philip Mayol, Chin-Chang Hung, Marianne Faith Martinico-Perez, Koza Watanabe, Mei-Fang Chien, Chihiro Inoue Water, 17(11), 1709, 2025. DOI: 10.3390/w17111709
- New insights into immobilized bacterial systems for removal of heavy metals from wastewater Jhariya, U., Chien, M.-F., Umetsu, M., Kamitakahara, M. International Journal of Environmental Science and Technology, 22, 8319-8334, 2025. DOI: 10.1007/s13762-025-06369-6
- Production of lipase and extracellular polymeric substances by the lipid-degrading bacterium *Burkholderia arboris* strain JYK2 in response to different substrates Jiyu Huang, Mei-Fang Chien, Hernando P. Bacosa, Chihiro Inoue World Journal of Microbiology and Biotechnology, 41, 198, 2025. DOI: 10.1007/s11274-025-04432-5
- Unraveling tissue-specific molecular mechanisms orchestrating arsenic response processes in *Pteris vittata* through transcriptomic analysis Shujun Wei, Ryota Moriuchi, Christine Dwi A.P. Wiyono, Chihiro Inoue, Mei-Fang Chien Ecotoxicology and Environmental Safety, 294, 118059, 2025. DOI: 10.1016/j.ecoenv.2025.118059

地球物質・エネルギー学分野

【論文】

- Biobased biodegradable chelating agents enhance coupled ex situ and in situ carbon dioxide mineralization via peridotite dissolution and wormholing Luis Salalá, Noriaki Watanabe, Jiajie Wang, Atsushi Okamoto Communications Earth & Environment, 6, 686, 2025. DOI: 10.1038/s43247-025-02687-2
- Data-driven depth direction super-resolution framework for X-ray CT images of rock samples by deep learning Ryogo Kagawa, Atsushi Okamoto, Toshiaki Omori Nonlinear Theory and Its Applications, IEICE, 16(3), 390-400, 2025. DOI: 10.1587/nolta.16.390
- Estimating the iron oxidation state of serpentinite using X-ray absorption fine structure spectroscopy Kazuki Yoshida, Atsushi Okamoto, Ryosuke Oyanagi, Yasuhiro Niwa, Masao Kimura AMERICAN MINERALOGIST, 110(5), 757-766, 2025. DOI: 10.2138/am-2024-9571
- Extreme maldistribution of high field strength elements along subduction zones revealed by baddeleyite aggregates in serpentinite Hikaru Sawada, Ryosuke Oyanagi, Sota Niki, Takafumi Hirata, Kazuki Yoshida, Mitsuhiro Nagata, Atsushi Okamoto Scientific Reports, 15 23990, 2025. DOI: 10.1038/s41598-025-07698-9
- Low-Dimensional Controls on Oceanic Basalt Geochemistry Revealed by Regression-Based Machine Learning Models Satoshi Matsuno, Masaoki Uno, Atsushi Okamoto Journal of Geophysical Research: Machine Learning and Computation, 2(4), e2025JH000700 , 2025. DOI: 10.1029/2025JH000700
- Oscillations in fluid pressure caused by silica precipitation in a fracture

- Atsushi Okamoto, Edward Vinis Nature Communications, 16, 1791, 2025. DOI: 10.1038/s41467-025-57199-6
- Self-induced differential stress and cascading reactions, fracturing, and permeability enhancement triggered by volatile-consuming reactions Atsushi Okamoto, Fukuma Sakashita, Kazuki Yoshida, Otgonbayar Dandar, Masaoki Uno Geochimica et Cosmochimica Acta, 402, 1-15, 2025. DOI: 10.1016/j.gca.2025.06.018
- The control of oceanic crustal age and redox conditions on seafloor alteration: Examples from a quantitative comparison of elemental mass transport in the South and Northwest Pacific Satoshi Matsuno, Masaoki Uno, Atsushi Okamoto CHEMICAL GEOLOGY, 678, 122651, 2025. DOI: 10.1016/j.chemgeo.2025.122651
- Visualization of four-dimensional X-ray absorption fine structure data using a virtual reality system Haruo Igarashi, Daiki Kido, Yutaka Ishii, Yasuhiro Niwa, Atsushi Okamoto, Masao Kimura Journal of Synchrotron Radiation, 32(1), 162-170, 2025. DOI: 10.1107/s1600577524011226

地球開発環境学分野

【産業財産権】

- Particle size distribution estimation device, particle size distribution estimation method, and non-transitory computer-readable medium storing particle size distribution estimation program Tomoaki SATOMI, Yusuke KOBAYASHI, Hiroshi TAKAHASHI 特願 US 19/303,560, 出願日：2025-08-19
- Soil property estimation device, soil property estimation method, and non-transitory computer-readable medium storing soil property estimation program Tomoaki SATOMI, Naoya YAGUCHI, Hiroshi TAKAHASHI 特願 US 19/368,403, 出願日：2025-10-24
- 粒度分布推定装置、粒度分布推定方法、及び、粒度分布推定プログラム 里見知昭、小林佑輔、高橋弘 特願 2025-111022, 出願日：2025-06-30

資源循環・環境応用学分野

【論文】

- A Comparative Study of Mineral Carbonation Using Seawater for CO₂ Utilization: Magnesium-Based System Versus Calcium-Based System with Low Energy Input Hsing-Jung Ho, Atsushi Iizuka Advanced Energy and Sustainability Research, 6(6), 2400388, 2025. DOI: 10.1002/aesr.202400388
- Assessment of product carbon accounting associated with carbon dioxide-storing concrete via mineral carbonation and utilization Hsing-Jung Ho, Yoshito Izumi, Atsushi Iizuka Journal of Environmental Chemical Engineering, 13(5), 118458, 2025. DOI: 10.1016/j.jece.2025.118458
- Chemical-Free Pressure-Swing Carbonation of Blast Furnace Slag for CO₂ Utilization and Sequestration Hsing-Jung Ho, Atsushi Iizuka ACS Sustainable Chemistry & Engineering, 13(10), 3842-3852, 2025. DOI: 10.1021/acssuschemeng.4c05872
- Comparative study of direct and indirect aqueous mineral carbonation of construction and demolition waste fines for CO₂ sequestration K. Ramasena, B. Oladipo, V. N. Katambwe, V. R. K. Vadapalli, J. Petersen, S. Gcasamba, H. Coetzee, A. Horvat, H.-J. Ho, A. Iizuka, L.

F. Petrik, T. V. Ojumu
Journal of Environmental Chemical Engineering, 13(5), 117754, 2025. DOI: 10.1016/j.jece.2025.117754

- Direct mineral carbonation of fly ash under high pressure using acid mine drainage: Effects of solid-to-liquid ratio, stirring speed and CO₂ pressure

Sibulele Zide, Hsing-Jung Ho, Atsushi Iizuka, Jochen Petersen, Viswanath Ravi, Kumar Vadapalli, Leslie Petrik, Tunde Ojumu
Environmental Progress & Sustainable Energy, 44(2), e14545, 2025. DOI: 10.1002/ep.14545

- Identification of suitable conventional cooling methods for direct aqueous carbonation of blast furnace slags and their mechanism

Hsing-Jung Ho, Atsushi Iizuka, Hironari Kubo
International Journal of Minerals, Metallurgy and Materials, 32(7), 1566-1579, 2025. DOI: 10.1007/s12613-024-3054-x

- Kinetic evaluation of the CO₂ sequestration process of MgO-rich materials derived from ferronickel slag

F. Abdul, K. Adachi, H. J. Ho, A. Iizuka, E. Shibata
International Journal of Environmental Science and Technology, 23(1), 62, 2026. DOI: 10.1007/s13762-025-06911-6

- Screening of Flotation Reagents Based on Adsorption Models on Mineral Surfaces for Arsenic-Containing Mineral Separation

Taro Kimura, Ken Adachi, Yuki Toma, Ken Higuchi, Atsushi Iizuka, Etsuro Shibata
MATERIALS TRANSACTIONS, 66(6), 733-744, 2025. DOI: 10.2320/matertrans.m-m2024817

【MISC】

- A critical review of current treatment methods of acid mine drainage with an assessment of associated CO₂ emissions toward carbon neutrality

Journal of Water Process Engineering, 77, 108347, 2025. DOI: 10.1016/j.jwpe.2025.108347

- Assessment of the potential industrial applications of calcium carbonate derived from mineral carbonation of alkaline waste material

International Journal of Environmental Science and Technology, 23, 82, 2026 (Version of record: 02 December 2025). DOI: 10.1007/s13762-025-06922-3

- Filtration and electrical membrane-based treatment methods for PFAS-contaminated water and preparation methods for the membranes employed

Applied Water Science, 15, 290, 2025. DOI: 10.1007/s13201-025-02644-6

- Total Resource Circulation in Chemical Mechanical Polishing Wastewater Treatment from Semiconductor Manufacturing Industry: A review

Journal of Water Process Engineering, 72, 107619, 2025. DOI: 10.1016/j.jwpe.2025.107619

【書籍等出版物】

- 3.5 気候変動（『事例で読み解く環境汚染と健康リスク：大気汚染から気候変動 ,マイクロプラスチックまで』 東賢一，水越厚史）

飯塚淳
朝倉書店 , 76-82, 2025. ISBN: 9784254180718

環境調和システム学分野

【論文】

- Tensile Strength of WC-Ti(C,N)-Cr3C2-Co Ultrafine-Grained Cemented Carbide

Tomohiro Tsutsumi, Masayuki Takada, Sota Terasaka, Kiyotoshi Sakaguchi, Noriaki Watanabe, Hideaki Matsubara
MATERIALS TRANSACTIONS, 66(6), 745-751, 2025. DOI: 10.2320/matertrans.mt-y2024011

【産業財産権】

- 岩盤破碎方法及びそれを用いた貯留層造成方法

渡邊則昭 ,坂口清敏 , 詫間康平

特願 2025-97500, 出願日 : 2025-06-11

エネルギー資源学講座

分散エネルギーシステム学分野

【論文】

- Effect of noble metallic current collectors and contact layers on power density and polarization resistance of planar solid oxide fuel cells

Hirofumi Sumi, Hiroyuki Shimada, Yuki Yamaguchi, Masaya Fujioka, Mizuki Momai, Kazuhisa Sato, Mina Yamaguchi, Riyan Achmad Budiman, Tatsuya Kawada
International Journal of Hydrogen Energy, 127, 286-294, 2025. DOI: 10.1016/j.ijhydene.2025.04.153

- Elucidating Factors Governing the Discrepancy of Oxygen Vacancy Concentration Between La_{0.6}Sr_{0.4}Co_{1-y}Fe_yO_{3-δ} (y = 0, 0.2, 0.4, 0.6, 0.8, 1) Dense Film and Bulk Electrodes

Daichi Oi, Nanaha Miyashita, Riyan Achmad Budiman, Katherine Develos-Bagarinao, Yuta Kimura, Takashi Nakamura, Keiji Yashiro, Koji Amezawa, Tatsuya Kawada
Journal of The Electrochemical Society, 172(2), 024506, 2025. DOI: 10.1149/1945-7111/adb216

- Elucidating reaction resistances in electrode-supported solid oxide cells using a nonlinear least-square model

Rikuto Konishi, Riyan Achmad Budiman, Marika Sakai, Mina Yamaguchi, Tatsuya Kawada, Keiji Yashiro
Electrochimica Acta, 528, 146289, 2025. DOI: 10.1016/j.electacta.2025.146289

- Ferro-Elasticity in Rhombohedral Crystals of Sc-Stabilized ZrO₂

Mina Yamaguchi, Tomohiro Kori, Yuta Kimura, Satoshi Watanabe, Keiji Yashiro, Riyan Achmad Budiman, Tatsuya Kawada
ECS Journal of Solid State Science and Technology, 14(8), 083002, 2025. DOI: 10.1149/2162-8777/adf6e2

- High-temperature in situ stress monitoring of a co-fired electrolyte for metal-supported solid oxide cells

Mina Yamaguchi, Takumi Komaya, Zaka Ruhma, Satoshi Watanabe, Keiji Yashiro, Keigo Kumada, Kazuhisa Sato, Toshiyuki Hashida, Itaru Oikawa, Hitoshi Takamura, Riyan Achmad Budiman, Tatsuya Kawada
Journal of Power Sources, 630, 236147, 2025. DOI: 10.1016/j.jpowsour.2024.236147

- In Situ Measurement of RedOx-Induced Stresses in Electrolyte of Anode-Supported Solid Oxide Fuel Cells Using the Cos α Method

Mina Yamaguchi, Takumi Komaya, Satoshi Watanabe, Keiji Yashiro, Kazuhisa Sato, Riyan Achmad Budiman, Tatsuya Kawada
Journal of The Electrochemical Society, 172, 044504, 2025. DOI: 10.1149/1945-7111/adc62d

- In situ monitoring of cell deformation during operation in solid oxide fuel cells

Junya Tanaka, Shinichi Sugihara, Kazuhisa Sato, Keiji Yashiro, Tatsuya Kawada, Toshiyuki Hashida
International Journal of Hydrogen Energy, 186, 151895, 2025. DOI: 10.1016/j.ijhydene.2025.151895

- Mitigating fracture risks in solid oxide fuel cells: Study on temperature dependence of residual stress and optimal design strategy upon sintering process

Junya Tanaka, Kazuhisa Sato, Keiji Yashiro, Tatsuya Kawada, Toshiyuki Hashida
Journal of Power Sources, 641, 236850, 2025. DOI: 10.1016/j.jpowsour.2025.236850

- Mitigating SrZrO₃ phase formation at air electrode/electrolyte of solid oxide cell: A review

R. A. Budiman, A. U. Hapsari, Damisih, R. D. Pravitasari, Y. Deni, K. Arifin, N. Indayaningsih, J. Raharjo, K. Yashiro, T. Kawada
Journal of Power Sources, 655, 238176, 2025. DOI: 10.1016/j.jpowsour.2025.238176

- Operando Evaluation of the Electrochemically Active Area in a Solid Oxide Fuel Cell Porous Electrode by Micro X-ray Absorption Spectroscopy

Yoshinobu Fujimaki, Takashi Nakamura, Yuta Kimura, Kiyofumi Nitta, Oki Sekizawa, Yasuko Terada, Keiji Yashiro, Tatsuya Kawada, Koji Amezawa
The Journal of Physical Chemistry Letters, 16(37), 9599-9605, 2025. DOI: 10.1021/acs.jpcllett.5c02422

- Origin of Ultraviolet-Induced High-Temperature Photovoltaic Response at Pt/Gd-Doped CeO₂ Interface

Mina Yamaguchi, Masaki Kurata, Yuki Morita, Ryosuke Iwata, Shogo Fuwa, Akihiro Ishii, Hitoshi Takamura, Keiji Yashiro, Tatsuya Kawada
Advanced Optical Materials, 13(33), e01971, 2025. DOI: 10.1002/adom.202501971

- Oxygen Non-Stoichiometry of Bulk and Thin Film of Co-Based Mixed Ionic and Electronic Conductors

Nanaha Miyashita, Riyan Achmad Budiman, Takamichi Miyazaki, Mina Yamaguchi, Katherine Develos-Bagarinao, Keiji Yashiro, Tatsuya Kawada
Journal of The Electrochemical Society, 172(9), 094501, 2025. DOI: 10.1149/1945-7111/adfe1e

- Study on Ni-ceramic cathode degradation in H₂O electrolysis using a two-dimensional patterned cell

Xiaolin Shao, Riyan Achmad Budiman, Takashi Sato, Mina Yamaguchi, Keiji Yashiro, Tatsuya Kawada
International Journal of Hydrogen Energy, 120, 201-212, 2025. DOI: 10.1016/j.ijhydene.2025.03.236

- Understanding the influence of particle size on the reaction mechanism in porous La_{0.6}Sr_{0.4}CoO_{3-δ} air electrodes

Mina Yamaguchi, Yuki Amano, Marika Sakai, Riyan Achmad Budiman, Keiji Yashiro, Tatsuya Kawada
Journal of Power Sources, 659, 238442, 2025. DOI: 10.1016/j.jpowsour.2025.238442

【MISC】

- 高温燃料電池作動雰囲気下での固体電解質の応力状態評価

山口実奈 ,駒谷拓己 , 佐藤一永 , 八代圭司 , 川田達也
クリーンエネルギー , 34(9), 52-62, 2025.

エネルギー資源リスク評価学分野

【論文】

- Biobased biodegradable chelating agents enhance coupled ex situ and in situ carbon dioxide mineralization via peridotite dissolution and wormholing

Luis Salalá, Noriaki Watanabe, Jiajie Wang, Atsushi Okamoto
Communications Earth & Environment, 6, 686, 2025. DOI: 10.1038/s43247-025-02687-2

- Creating multidirectional fractures through particle jamming

Yusuke Mukuhira, Ryota Goto, Noriaki Watanabe, Kazumasa Sueyoshi, Kohei Takuma, Rongchang Zhang, Tongfei Tian, Vladimir Sokolovski, Makoto Naoi, Yuko Arai, Takaaki Tomai, Masaoki Uno, Takatoshi Ito
International Journal of Rock Mechanics and Mining Sciences, 188, 106051, 2025. DOI: 10.1016/j.ijrmms.2025.106051

- Machine-learning applications for magmatic–hydrothermal systems: Quartz trace-element insights into ore deposits

Denghui Zhu, Jiajie Wang, Tatsu Kuwatani, Noriyoshi Tsuchiya
APPLIED GEOCHEMISTRY, 189, 106431, 2025. DOI: 10.1016/j.apgeochem.2025.106431

- Tensile Strength of WC-Ti(C,N)-Cr₃C₂-Co Ultrafine-Grained Cemented Carbide

Tomohiro Tsutsumi, Masayuki Takada, Sota Terasaka, Kiyotoshi Sakaguchi, Noriaki Watanabe, Hideaki Matsubara
MATERIALS TRANSACTIONS, 66(6), 745-751, 2025. DOI: 10.2320/matertrans.mt-y2024011

- Unlocking geothermal potential: Activating calcite-filled veins using chelating agents to improve granitic rock permeability

Lena Muhl, Luis Salalá, Eko Pramudyo, Jiajie Wang, Ingo Sass, Noriaki Watanabe
Geothermics, 131, 103356, 2025. DOI: 10.1016/j.geothermics.2025.103356

【産業財産権】

- 岩石中の成分の溶解方法、地中への二酸化炭素の貯留方法、二酸化炭素の 固定方法、地中への流体の貯留方法、原油の回収方法、及び、天然ガスの回収方法

渡邊則昭 ,ワン ジャージェ , 田村諒太 , 平野ひとみ , 玉川哲也
特願 2025-069581, 出願日 : 2025-04-21

- 岩盤破碎方法及びそれを用いた貯留層造成方法

渡邊則昭 ,坂口清敏 , 詫間康平
特願 2025-97500, 出願日 : 2025-06-11

- 金属化合物の回収方法および金属化合物の回収装置

渡邊則昭 ,WANG JIAJIE , 三山凌 , 坂本和寛 , 進藤学 , 小林彪雅
特願 2025-173860, 出願日 : 2025-10-15

- 金属成分及び陰イオン成分の回収方法

渡邊則昭 , Wang Jiajie
特願 2025-072724, 出願日 : 2025-04-24

- 精製リチウムの製造方法

Wang Jiajie , 渡邊則昭
特願 2025-194429, 出願日 : 2025-11-13

- 水圧破碎法

渡邊則昭 , 渡辺優斗 , 小幡凪
特願 2025-77753, 出願日 : 2025-05-08

環境共生機能学分野

【論文】

- (Invited) Interaction between Tin-Based Perovskites and Aqueous Solutions: From Solar Cells to Photo-Rechargeable Batteries

Koji Yokoyama
ECS Meeting Abstracts, MA2025-02, 2025. DOI: 10.1149/MA2025-02452242mtgabs

- Synthesis and Surface Control of Iron Metal Particles by Controlling the Metal Complexes in an Aqueous Solution

Hideyuki Takahashi, Koji Yokoyama, Shun Yokoyama
ECS Meeting Abstracts, MA2025-01, 2025. DOI: 10.1149/MA2025-01261495mtgabs

- Synthesis of Aggregation-Free Iron Metal Particles Using Amylopectin and Amylase in a Basic Aqueous Solution

Koji Yokoyama, Yuma Araya, Kaori Yokosaka, Shoichi Kumon, Kimitaka Sato, Shun Yokoyama, Hideyuki Takahashi
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, 614, 172764, 2025. DOI: 10.1016/j.jmmm.2024.172764

国際エネルギー資源学分野

【論文】

- Converting woody biomass ash and CO₂ into valuable resources via a sustainable chelation approach

Jiajie Wang , So Katsumi, Hiroshi Naganuma, Tomoyuki Makino, Chuanzhen Jian, Yuki Ogori, Vani Novita Alviani , Noriyoshi Tsuchiya, Noriaki Watanabe
Resources, Conservation & Recycling, 225, 108606, 2026. DOI: 10.1016/j.resconrec.2025.108606

- Creating multidirectional fractures through particle jamming

Yusuke Mukuhira, Ryota Goto, Noriaki Watanabe, Kazumasa

Sueyoshi, Kohei Takuma, Rongchang Zhang, Tongfei Tian, Vladimir Sokolovski, Makoto Naoi, Yuko Arai, Takaaki Tomai, Masaoki Uno, Takatoshi Ito International Journal of Rock Mechanics and Mining Sciences, 188, 106051, 2025. DOI: 10.1016/j.ijrmms.2025.106051

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環境政策学講座の講義風景

環境政策学講座

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Alexey Kotov, Noriyoshi Tsuchiya, Satoshi Okumura, Masao Ban, Masaoki Uno, Isoji Miyagi , Kenji Shimizu, Takayuki Ushikubo, Gerι Agrolι, Shumpei Yoshimura, Manzshir Bayarbold
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【産業財産権】
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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

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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】

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寄附講座

反応解析機器開発学分野

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● A comprehensive pyrolysis-gas chromatography/mass spectrometry analysis for the assessment of microplastics in various salts Jihye Kwon, Hyein Kim, Muhammad Zain Siddiqui, Hui-Seung Kang, Jong-Hyun Choi, Shogo Kumagai, Atsushi Watanabe, Norio Teramae, Eilhann E. Kwon, Young-Min Kim Food Chemistry, 467, 142193, 2025. DOI: 10.1016/j.foodchem.2024.142193 ● Catalytic co-pyrolysis of yellow poplar and HDPE using MOF-incorporated HY zeolite catalysts Janejira Ratthiwal, Lee Byung Chul, Lim Min Gyu, Young-Min Kim, Sathrugnan Karthikeyan, Atsushi Watanabe, Suwadee Kongparakul, Thi Tuong Vi Tran, Chanatip Samart Fuel, 381(Part A), 133355, 2025. DOI: 10.1016/j.fuel.2024.133355 ● Determination of phenylphosphonic acid zinc salt in poly(lactic acid) using thermally assisted methylation pyrolysis–gas chromatography/mass spectrometry Kazuko Matsui, Makoto Niwa, Atsushi Watanabe, Chuichi Watanabe, Norio Teramae Analytical Sciences, 41, 1817-1823, 2025. DOI: 10.1007/s44211-025-00845-2 ● Exploration of Source-Specific Markers for Secondary Microplastics Derived from Polyolefin-Coated Fertilizers Naoya Katsumi, Yuji Honda, Kai Kan, Atsushi Watanabe Environ. Sci. Technol., 59(43), 23466-23474, 2025. DOI: 10.1021/acs.est.5c07809

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地域連携・アウトリーチ

資源戦略研究センター

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● A cluster analysis of cooperative recycling behaviors for post-consumer plastic waste in urban areas: A case study on sendai, kawasaki, and kyoto city in japan Zhuojiao Yu, Xiaoyue Liu, Jeongsoo Yu, Mohammad Sujauddin, Gaku Manago Sustainability, 17(17), 7939, 2025. DOI: 10.3390/su17177939 ● Actual situation analysis of energy poverty issues among nomadic herders in Mongolia Xiaoyue Liu, Jeongsoo Yu, Bayasgalan Dugarjav, Kazuaki Okubo, Turmandakh Bat-Orgil, Shuoyao Wang Energy for Sustainable Development, 89, 101867, 2025. DOI: 10.1016/j.esd.2025.101867

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【産業財産権】
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SOFC/SOEC 実装支援研究センター

【書籍等出版物】
● カーボンニュートラルのための SOFC/SOEC 技術 ～基礎・評価法から熱利用を含むシステム応用まで～ 東北大学 SOFC/SOEC 実装支援研究センター（監修）シーエムシー・リサーチ, 2025. ISBN: 9784910581736