

先進社会環境学専攻

基幹講座

資源戦略学講座

環境複合材料創成科学分野

【論文】

● Pt-Pd Nanoalloy for the Unprecedented Activation of Carbon-Fluorine Bond at Low Temperature. [Bulletin of the Chemical Society of Japan, 93(10), (2020), 1180-1185] Raghu Nath Dhital, Keigo Nomura, Yoshinori Sato, Setsiri Haesuwannakij, Masahiro Ehara, Hidehiro Sakurai

【総説・解説】

● 酸性水溶液中でのカーボンナノチューブの酸素還元反応触媒活性. [炭素, 295, (2020), 185-193] 佐藤義倫

環境素材設計学分野

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● Experimental and computational study on sintering of ceramic coating layers with complex porous structures. [Journal of the American Ceramic Society, 103(3), (2020), 2035-2047] Sota Terasaka, Hideaki Matsubara, Takashi Shirato, Masanobu Kamitakahara, Taishi Yokoi, Norio Yamaguchi, Byung-Nam Kim

● Ti(C,N) と Cr₃C₂ を複合添加した WC-Co 超微粒超硬合金の強度. [粉体および粉末冶金, 67, (1), (2020), 10-17] 高田真之, 松原秀彰, 堤友浩, 森吉弘, 松田哲志

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環境修復生態学分野

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● A multifunctional rhizobacterial strain with wide application in different ferns facilitates arsenic phytoremediation. [Science of the Total Environment, 712(10), (2020), 134504] Chongyang Yang; Ying-Ning Ho; Ryota Makita; Chihiro Inoue, Mei-Fang Chien

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● *Cupriavidus basilensis* strain r507, a toxic arsenic phytoextraction facilitator, potentiates the arsenic accumulation by *Pteris vittata*. [Ecotoxicology and Environmental Safety, 190(1), (2020), 110075] Chongyang Yang, Ying-Ning Ho, Ryota Makita, Chihiro Inoue, Mei-Fang Chien

● Enrichment and Analysis of Stable 1,4-dioxane-Degrading Microbial Consortia Consisting of Novel Dioxane-Degraders. [Microorganisms, 8(1), (2020), 50] Tanmoy Roy Tusher, Takuya Shimizu, Chihiro Inoue, Mei-Fang Chien

● Hydroponic approach to assess rhizodegradation by sudangrass (*Sorghum x drummondii*) reveals pH- and plant age-dependent variability in bacterial degradation of polycyclic aromatic hydrocarbons (PAHs). [Journal of Hazardous Materials, 387, (2020), 121695] John Jewish A. Dominguez, Chihiro Inoue, Mei-Fang Chien

● Long-term effectiveness of microbe-assisted arsenic phytoremediation by *Pteris vittata* in field trials. [Science of the Total Environment, 740(20), (2020), 140137] Chongyang Yang, Ying-Ning Ho, Chihiro Inoue, Mei-Fang Chien

● Molybdate recovery using immobilized bioengineered *Saccharomyces cerevisiae*. [Hydrometallurgy, 198, (2020), 105491] Audrey Stephanie, Mei-Fang Chien, Naoya Ikeda, Chihiro Inoue

● Potential of biosurfactants' production on degrading heavy oil by bacterial consortia obtained from Tsunami-induced oil-spilled beach areas in Miyagi, Japan. [Journal of Marine Science and Engineering, 8(8), (2020), 577] Sandia Primeia, Chihiro Inoue, Mei-Fang Chien

地球物質・エネルギー学分野

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● Characteristics of hydrogen production with carbon storage by CO₂-rich hydrothermal alteration of olivine in the presence of Mg-Al spinel. [International Journal of Hydrogen Energy, 45(24), (2020), 13163-13175] Jiajie Wang, Noriaki Watanabe, Atsushi Okamoto, Kengo Nakamura, Takeshi Komai

● Crystallographic preferred orientation of talc determined by an improved EBSD procedure for sheet silicates: Implications for anisotropy at the slab-mantle interface due to Si-metasomatism. [American Mineralogist, 105(6), (2020), 873-893] Takayoshi Nagaya, Atsushi Okamoto, Ryosuke Oyanagi, Yusuke Seto, Akira Miyake, Masaoki Uno, Jun Muto, Simon R. Wallis

● Fluid Infiltration Through Oceanic Lower Crust in Response to Reaction-Induced Fracturing: Insights From Serpentinized Troctolite and Numerical Models. [Journal of Geophysical Research: Solid Earth, 125, (2020), e(2020)JB020268] Kazuki Yoshida, Atsushi Okamoto, Hiroyuki Shimizu, Ryosuke Oyanagi, Noriyoshi Tsuchiya

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● Sparse isocon analysis: A data-driven approach for material transfer estimation. [Chemical Geology, 532, (2020), 119345] Tatsu Kuwatani, Kenta Yoshida, Kenta Ueki, Ryosuke Oyanagi, Masaoki Uno, Shotaro Akaho

● Stabilizing and enhancing permeability for sustainable and profitable energy extraction from superhot geothermal environments. [Applied Energy, 260, (2020), 114306] Noriaki Watanabe, Kohei Saito, Atsushi Okamoto, Kengo Nakamura, Takuya Ishibashi, Hanae Saishu, Takeshi Komai, Noriyoshi Tsuchiya

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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】

● Determination of relevant factors affecting the surface oxygen exchange coefficient of solid oxide fuel cell cathode with ionic conducting oxide coating. [Solid State Ionics, 353, (2020), 115372] R. A. Budiman, H. J. Hong, S. Hashimoto, K. Yashiro, K. D. Bagarinao, H. Kishimoto, K. Yamaji, T. Kawada

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【総説・解説】

● Modeling current-voltage relationships of mixed conducting cathode materials for solid oxide fuel cells. [Current Opinion in Electrochemistry, 21, (2020), 274-282] Tatsuya Kawada

エネルギー資源リスク評価学分野

【論文】

● A geochemical approach for identifying marine incursions: Implications for tsunami geology on the Pacific coast of northeast Japan. [Applied Geochemistry, 118, (2020), 104644-104644] Takahiro Watanabe, Noriyoshi Tsuchiya, Shin-ichi Yamasaki, Yuki Sawai, Norihiro Hosoda, Fumiko W. Nara, Toshio Nakamura, Takeshi Komai

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● Consideration of strength development by three-dimensional visualization of porosity distribution in coal fly ash concrete. [Journal of Building Engineering, 35, (2020), 101948-101948] Kengo Nakamura, Yuusuke Inoue, Takeshi Komai

● Data-driven analysis for source apportionment and geochemical backgrounds establishment of toxic elements and REEs in the Tohoku region, Japan. [Chemosphere, 263, in press, (2020), 128268-128268] Arie Pujiwati, Jiajie Wang, Kengo Nakamura, Yoshishige Kawabe, Noriaki Watanabe, Takeshi Komai

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● Nitrogen recovery via aquaponics in Nepal: current status, prospects, and challenges. [SN Applied Sciences, 2(7), (2020), 1192] Rishav Adhikari, Sriyanka Rauniyar, Nishan Pokhrel, Amrita Wagle, Takeshi Komai, Shukra Raj Paudel

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● 高温環境における岩石き裂のすべり特性と透水性. [日本地熱学会誌, accepted, (2020),] 武山 詳, 後藤 遼太, 渡邊 則昭, 坂口 清敏, 土屋 範芳

● 石油系炭化水素を対象とした発光バクテリアを用いた簡易土壌汚染評価手法の開発 2 —メタン系炭化水素(アルカン類)に関する急性毒性評価—. [地下水学会誌, 62(1), (2020), 59-73] 杉田 創・駒井 武

● 石油系炭化水素を対象とした発光バクテリアを用いた簡易土壌汚染評価手法の開発 3 —アルカン構造異性体に対する急性毒性評価—. [日本地下水学会誌, 62(4), (2020), 573-587] 杉田 創, 駒井 武

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【著書】

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環境共生機能学分野

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● Morphological control of carbon-supported Pt-based nanoparticles via one-step synthesis. [Nano-Structures & Nano-Objects, 22, (2020), 100443-100443] Tatsuichiro Nakamoto, Ryohei Seki, Ken-ichi Motomiya, Shun Yokoyama, Kazuyuki Tohji, Hideyuki Takahashi

● Precursor-templated synthesis of thermodynamically unfavored platinum nanoplates for oxygen reduction reaction. [Dalton Transactions, 49(44), (2020), 15837-15842] Tatsuichiro Nakamoto, Ken-ichi Motomiya, Shun Yokoyama, Hideyuki Takahashi

● Strong adhesion of polyvinylpyrrolidone-coated copper nanoparticles on various substrates fabricated from well-

dispersed copper nanoparticle inks. [COLLOIDS AND SURFACES A-PHYSICOCHEMICAL AND ENGINEERING ASPECTS, 591, (2020), 124567] Shun Yokoyama, Junpei Nozaki, Kenichi Motomiya, Norihito Tsukahara, Hideyuki Takahashi

国際エネルギー資源学分野

【論文】

● A geochemical approach for identifying marine incursions: Implications for tsunami geology on the Pacific coast of northeast Japan. [Applied Geochemistry, 118, (2020), 104644] Takahiro Watanabe, Noriyoshi Tsuchiya, Shin-ichi Yamasaki, Yuki Sawai, Norihiro Hosoda, Fumiko W. Nara, Toshio Nakamura, Takeshi Komai

● Characteristics of hydrogen production with carbon storage by CO₂-rich hydrothermal alteration of olivine in the presence of Mg-Al spinel. [International Journal of Hydrogen Energy, 45(24), (2020), 13163-13175] Jiajie Wang, Noriaki Watanabe, Atsushi Okamoto, Kengo Nakamura, Takeshi Komai

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環境政策学講座

環境・エネルギー経済学分野

【論文】

● Natural resource use of gasoline, hybrid, electric and fuel cell vehicles considering land disturbances. [Resources, Conservation and Recycling, 166, (2020), 105256] Shoki Kosai, Kenyu Matsui, Kazuyo Matsubae, Eiji Yamasue, Tetsuya Nagasaka

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寄附講座 (DOWA ホールディングス)

環境物質政策学講座

地圏環境政策学分野

【論文】

● Adsorption of urea, creatinine, and uric acid from three solution types using spherical activated carbon and its recyclability. [Chinese Journal of Chemical Engineering, 28(12), (2020), 2993-3001] Tomohito Kameda, Kazuya Horikoshi, Shogo Kumagai, Yuko Saito, Toshiaki Yoshioka

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● Combining pyrolysis-two-dimensional gas chromatography-time-of-flight mass spectrometry with hierarchical cluster analysis for rapid identification of pyrolytic interactions: Case study of co-pyrolysis of PVC and biomass components. [Process Safety and Environmental Protection, 143, (2020), 91-100] Shogo Kumagai, Asami Matsukami, Fumie Kabashima, Masafumi Sakurai, Michiko Kanai, Tomohito Kameda, Yuko Saito, Toshiaki Yoshioka

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● Impact of Ni/Mg/Al Catalyst Composition on Simultaneous H₂-Rich Syngas Recovery and Toxic HCN Removal through a Two-Step Polyurethane Pyrolysis and Steam Reforming Process. [Industrial & Engineering Chemistry Research, 59(19), (2020), 9023-9033] Shogo Kumagai, Ryosuke Yabuki, Tomohito Kameda, Yuko Saito, Toshiaki Yoshioka

● Influence of CO₂ gas on the rate and kinetics of HCl, SO₂, and NO₂ gas removal by Mg-Al layered double hydroxide intercalated with CO₃²⁻. [Applied Clay Science, 195, (2020), 105725] Tomohito Kameda, Hiroki Uchida, Shogo Kumagai, Yuko Saito, Keiichi Mizushina, Ichirou Itou, Tianye Han, Toshiaki Yoshioka

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● Machine learning-based discrete element reaction model for predicting the dechlorination of poly(vinyl chloride) in NaOH/ethylene glycol solvent with ball milling. [Chemical Engineering Journal Advances, 3, (2020), 100025-100025] Jiaqi Lu, Siqingaowa Borjigin, Shogo Kumagai, Tomohito Kameda, Yuko Saito, Toshiaki Yoshioka

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●ポリオレフィンのケミカルリサイクルの研究開発動向とチャレンジ. [Journal of the Japan Petroleum Institute, 63(6), (2020), 345-364] 熊谷将吾, 中谷隼, 齋藤優子, 福島康裕, 吉岡敏明

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●廃家電由来の臭素系難燃剤を事例とした臭素市中賦存量推計. [廃棄物資源循環学会研究発表会講演集, 31, (2020), 155] 齋藤優子, 中村希, 熊谷将吾, 亀田知人, 白鳥寿一, 吉岡敏明

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【著書】

●太陽光パネルのリサイクル. [バリューチェーンと単位操作から見たリサイクル, (2020), 化学工学会] 白鳥寿一

連携講座

環境リスク評価学分野

【論文】

● A comparison of methods to estimate groundwater recharge from bare soil based on data observed by a large-scale lysimeter. [Hydrological Processes, 34, (2020), 2987-2999] Zaiyong Zhang, Wenke Wang, Chengcheng Gong, Ming Zhang

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● Borehole research in New York State can advance utilization of low enthalpy geothermal energy, management of potential risks, and understanding of deep sedimentary and crystalline geologic systems. [Scientific Drilling, 28, (2020), 75-91] T. Jordan, P. Fulton, J. Tester, D. Bruhn, H. Asanuma, U. Harms, C. Wang, D. Schmitt, P. Vardon, H. Hofman, P. Tom, J. Smith, and

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【総説・解説】

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