

## 基幹講座

### 先進社会環境学専攻

## 資源戦略学講座

### 環境複合材料創成科学分野

#### 【論文】

- In Situ Electrochemical Raman Spectroscopy of Air-Oxidized Semiconducting Single-Walled Carbon Nanotube Bundles in Aqueous Sulfuric Acid Solution. [The Journal of Physical Chemistry C, 120, (2016), 7133-7143] Shin-ichi Ogino, Takashi Itoh, Daiki Mabuchi, Koji Yokoyama, Kenichi Motomiya, Kazuyuki Tohji, Yoshinori Sato
- Asymmetric and symmetric absorption peaks observed in infrared spectra of CO<sub>2</sub> adsorbed on TiO<sub>2</sub> nanotubes. [The Journal of Chemical Physics, 144, (2016), 154703(1)-154703(7)] Koichiro Yamakawa, Yoshinori Sato, Katsuyuki Fukutani
- Efficiency and long-term durability of nitrogen-doped single-walled carbon nanotube electrocatalyst synthesized by defluorination-assisted nanotube-substitution for oxygen reduction reaction. [Journal of Materials Chemistry A, 4, (2016), 9184-9195] Koji Yokoyama, Shun Yokoyama, Yoshinori Sato, Kazutaka Hirano, Shinji Hashiguchi, Kenichi Motomiya, Hiromichi Ohta, Hideyuki Takahashi, Kazuyuki Tohji, Yoshinori Sato

### 環境素材設計学分野

#### 【論文】

- Synthesis of layered double hydroxide coatings with oriented structure and controllable thickness on aluminium substrates. [Cryst. Eng. Comm., 18, (2016), 1207-1214] Taishi Yokoi, Mitsuo Hara, Takahiro Seki, Sota Terasaka, Masanobu Kamitakahara and Hideaki Matsubara
- Densification kinetics during isothermal sintering of 8YSZ. [Journal of the European Ceramics Society, 36, (2016), 1269-1275] Byung-Nam Kim, Tohru S. Suzuki, Koji Morita, Hidehiro Yoshida, Yoshio Sakka, Hideaki Matsubara
- Effects of carbonate inclusion on fluoride ion removal by hydroxyapatite: A discussion from the viewpoint of hydroxyapatite dissolution. [Journal of the Ceramic Society of Japan, 124 (12), (2016), 1211-1216] Sota Terasaka, Masanobu Kamitakahara, Taishi Yokoi, Hideaki Matsubara
- Adhesion behaviors of Escherichia coli on hydroxyapatite. [Mater. Sci. Eng. C, 61, (2016), 169-173] Masanobu Kamitakahara, Shohei Takahashi, Taishi Yokoi, Chihiro Inoue, Koji loku
- Spherical porous hydroxyapatite granules containing composites of magnetic and hydroxyapatite nanoparticles

for the hyperthermia treatment of bone tumor. [J. Mater. Sci.: Mater. Med., 27, (2016)] Masanobu Kamitakahara, Naohiro Ohtoshi, Masakazu Kawashita, Koji loku

- Effect of silicate incorporation on in vivo responses of  $\alpha$ -tricalcium phosphate ceramics. [J. Mater. Sci.: Mater. Med., 27, (2016)] Masanobu Kamitakahara, Eri Tatsukawa, Yasuaki Shibata, Shota Umamoto, Taishi Yokoi, Koji loku, Tohru Ikeda
- Regulation and biological significance of formation of osteoclasts and foreign body giant cells in an extraskeletal implantation model. [Acta Histochem. Cytochem., 49, (2016), 97-107] Gazi Jased Ahmed, Eri Tatsukawa, Kota Morishita, Yasuaki Shibata, Fumio Suehiro, Masanobu Kamitakahara, Taishi Yokoi, Takehiko Koji, Masahiro Umeda, Masahiro Nishimura, Tohru Ikeda
- Diversity of multinucleated giant cells by microstructures of hydroxyapatite and plasma components in extraskeletal implantation model. [Acta Biomaterialia, 39, (2016), 180-191] Kota Morishita, Eri Tatsukawa, Yasuaki Shibata, Fumio Suehiro, Masanobu Kamitakahara, Taishi Yokoi, Koji loku, Masahiro Umeda, Masahiro Nishimura, Tohru Ikeda
- タングステンを含むチタン炭窒化物の熱伝導率と電気伝導率. [粉体および粉末冶金, 63 (10), (2016), 918-923] 松田哲志, 松原秀彰

### 環境修復生態学分野

#### 【論文】

- Adhesion behaviors of Escherichia coli on hydroxyapatite. [Materials Science and Engineering C, 61, (2016), 169-173] Masanobu Kamitakahara, Shohei Takahashi, Taishi Yokoi, Chihiro Inoue, Koji loku
- Development of suitable hydroponics system for phytoremediation of arsenic contaminated water using an arsenic hyperaccumulator plant Pteris vittata. [Bioscience, Biotechnology, and Biochemistry, 80 (3), (2016), 614-618] Yi Huang, Keisuke Miyauchi, Chihiro Inoue, Ginro Endo
- Arsenic contamination of groundwater and agricultural soil irrigated with the groundwater in Mekong Delta, Vietnam. [Environmental Earth Sciences, 75 (9), (2016), 757] Huang Y., Miyauchi K., Endo G., Don L.D., Manh N.C., Inoue C.
- Root exudates of Arabidopsis halleri ssp. gemmifera enhance Cd and Zn extraction in a contaminated soil. [Proceedings of Goldschmidt 2016, (2016)] Hiroshi Kudo, Kazuki Sugawara, Chihiro Inoue
- Phytofiltration Potential of Pteris multifida for Accumulating As, Pb, Cd and Se from Mixed Metal Solution. [Proceedings of 13th International Phytotechnologies Conference, (2016)] Farzana Rahman, Kazuki Sugawara, Mei-Fang Chien, Chihiro Inoue

- Phenotypic and genotypic analysis of arsenic accumulation and transformation in three Pteris ferns. [Proceedings of 13th International Phytotechnologies Conference, (2016)] Shujun Wei, Mei-Fang Chien, Kazuki Sugawara, Chihiro Inoue
- Analysis of bacteria in rhizosphere of two arsenic hyperaccumulators and their effects on phytoremediation of arsenic. [Proceedings of 13th International Phytotechnologies Conference, (2016)] Ryota Makita, Mei-Fang Chien, Hirohumi Nagayama, Chihiro Inoue
- Mercury resistance transposons in Bacilli strains from different geographical regions. [FEMS Microbiology Letters, 363 (5), (2016), fnw013] Kazuaki Matsui, Satoshi Yoshinami, Masaru Narita, Mei-Fang Chien, Le T. Phung, Simon Silver and Ginro Endo
- Biotechnological remedies for the estuarine environment polluted with heavy metals and persistent organic pollutants. [International Biodeterioration & Biodegradation, (2016), 1-12] Ganiyu Oladunjoye Oyetibo, Keisuke Miyauchi, Yi Huang, Mei-Fang Chien, Matthew Olusoji Ilori, Olukayode Oladipo Amund, Ginro Endo

### 地球物質・エネルギー学分野

#### 【論文】

- Understanding of chromium and zirconium in soils by hydrofluoric acid digestion and induced coupled plasmamass spectrometry. [Soil Science and Plant Nutrition, 62 (2), (2016), 121-126] Shin-ichi Yamasaki, Akira Takeda, Kazuhiro Kimura and Noriyoshi Tsuchiya
- Contrasting geochemical signatures of Devonian and Permian granitoids from the Tseel Terrane, SW Mongolia. [Journal of Geosciences, 61, (2016), 51-66] Ulziiburen BURENJARGAL, Atsushi OKAMOTO, Noriyoshi TSUCHIYA, Masaaki UNO, Kenji HORIE, and Tomokazu HOKADA
- Supercritical geothermal reservoir revealed by a granite-porphry system. [Geothermics, 63, (2016), 182-194] Noriyoshi Tsuchiya, Ryoichi Yamada and Masaaki Uno
- Linking microearthquakes to fracture permeability. [Geophysical Research Letters, (2016)] Takuya Ishibashi, Noriaki Watanabe, Hiroshi Asanuma, and Noriyoshi Tsuchiya
- Development of Portable Thermoluminescence Measurement Equipmnet for Geothermal Exploration. [J. Geothermal Research Society of Japan, 38 (4), (2016), 127-131] Noriyoshi Tsuchiya, Hiroaki Ishikawa, Ryoichi Saito and Nobuo Hirano
- $\nu$ -X-type relative permeability curves for steam-water two-phase flows in fractured geothermal reservoirs. [Geothermics, 65, (2016), 269-279] Noriaki Watanabe, Takuma Kikuchi, Takuya Ishibashi and Noriyoshi Tsuchiya
- Linking microearthquakes to fracture permeability evolution. [Crustal Permeability, Wiley, (2017), 49-64] Takuya Ishibashi, Noriaki Watanabe, Hiroshi Asanuma and Noriyoshi Tsuchiya

- Reaction-induced rheological weakening enables oceanic plate subduction. [Nature Communications, (2016)] Hirauchi K-I, Fukushima K, Kido M, Muto J, Okamoto A
- Contrast in stress-strain history during exhumation between high- and ultrahigh-pressure metamorphic units in the Western Alps: Microboudinage analysis of piemontite in metacherts. [Journal of Structural Geology, (2016)] Omori Y, Barresi A, Kimura N, Okamoto A, Masuda T
- The roles of fluid transport and surface reaction in reaction-induced fracturing, with implications for the development of mesh textures in serpentinites. [Contributions to Mineralogy and Petrology, (2016)] Shimizu, H., Okamoto, A
- Bayesian inversion analysis of nonlinear dynamics in surface heterogeneous reactions. [Physical Review E, (2016)] Omori, T., Kuwatani T, Okamoto A., Hukushima K
- Secular changes in environmental stresses and eukaryotes during the Early Triassic to the early Middle Triassic. [Palaeogeography, Palaeoclimatology, Palaeoecology, 451, (2016), 35-45] Saito, R., Kaiho, K., Oba, M., Tong, J., Chen, Z.-Q., Takahashi, S., Chen, J., Tian, L. and Biswas, R.K.
- Effects of soil erosion and anoxic-euxinic ocean in the Permian-Triassic marine crisis. [Heliyon, 2, (2016), e00137] Kaiho, K., Saito, R., Ito, K., Miyaji, T., Biswas, R., Tian, L., Sano, H., Shi, Z., Takahashi, S., Tong, J., Liang, L., Oba, M., Nara, F., Tsuchiya, N. and Chen, Z.-Q.
- Seismic evidence for flow in the hydrated mantle wedge of the Ryukyu subduction zone. [Scientific Reports, 6, (2016), 29981, doi: 10.1038/srep29981.] Takayoshi Nagaya, Andrew M. Walker, James Wookey, Simon R. Wallis, Kazuhiko Ishii, J.-Michael Kendall
- 地熱地域の地殻の透水—不透水境界と水の状態変化にともなう鉱物析出の関係性. [日本地熱学会誌, 38 (1), (2016), 17-25] 最首花恵, 岡本敦, 土屋範芳
- スパースモデリングによる津波堆積物の判別—津波到達推定への応用—. [電子情報通信学会誌, 99 (5), (2016), 418-423] 駒井武, 桑谷立, 中村謙吾, 土屋範芳

### 地球開発環境学分野

#### 【論文】

- Study on Recycling of Tsunami Sludge in the River as Banking Materials. [Proc. of the 6th Vietnam/Japan Joint Seminar on Geohazards and Environmental Issues, 1, (2016), S3-1-1-S3-1-11] Masanori SATO, Tomoaki SATOMI and Hiroshi TAKAHASHI
- Study on Development of Placing Type Fiber-Cement-Stabilized Soil Method and Evaluation of Strength Properties of Modified Soil. [Proc. of the 6th Vietnam/Japan Joint Seminar on Geohazards and Environmental Issues, 1, (2016), S3-2-1-S3-2-8] Subaru TACHIHANA, Tomoaki SATOMI and Hiroshi TAKAHASHI
- Study on Sludge Improvement by using Rica Husk. [Proc.



of the 6th Vietnam/Japan Joint Seminar on Geohazards and Environmental Issues, 1, (2016), S3-3-1-S3-3-13] Phan Thanh CHIEN, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Study on New Combination Method for Replacing Recycled Concrete Aggregate in Concrete. [Proc. of the 6th Vietnam/Japan Joint Seminar on Geohazards and Environmental Issues, 1, (2016), S3-4-1-S3-4-15] Bui Ngoc KIEN, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Study on Recycling of Tsunami Sludge Deposited on the Bottom of Rivers as Banking Materials. [Advanced Experimental Mechanics, 1, (2016), 196-201] Hiroshi TAKAHASHI, Masanori SATO and Tomoaki SATOMI

● Study on Sludge Reinforcement with Placing type Fiber-Cement-Stabilized Soil Method by using Raw Rice Husk. [Proc. of 11th International Symposium on Advanced Science and Technology in Experimental Mechanics, 1, (2016), USB] Phan Thanh CHIEN, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Study on Application of Geopolymer for Fiber-Cement-Stabilizes Soil Method to Improve the Sludge Generated in the Disaster Sites. [Proc. of 11th International Symposium on Advanced Science and Technology in Experimental Mechanics, 1, (2016), USB] Vu Minh Chien, Le Anh Tuan, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Study on Production of Spherical Aggregates using Dehydrated Cake Discharged from Various Crushed Stone Quarries. [Proc. of 11th International Symposium on Advanced Science and Technology in Experimental Mechanics, 1, (2016), USB] Yuji ICHINOSE, Tomoaki SATOMI and Hiroshi TAKAHASHI

● A Study on Characteristics of Soil Adhesion to Material Surface. [Proc. of 11th International Symposium on Advanced Science and Technology in Experimental Mechanics, 1, (2016), USB] Kohei MASUDA, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Study on Effect of Gravel Content on Resistive Forces Acting on the Bucket in Soil Excavation Works. [Proc. of 11th International Symposium on Advanced Science and Technology in Experimental Mechanics, 1, (2016), USB] Riki ICHIMURA, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Improvement of Recycled Aggregate Concrete Properties by Coating Pozzolanic Solutions Materials. [Proc. of International Symposium on Earth Science and Technology 2016, 1, (2016), 67-73] BUI Ngoc Kien, Tomoaki SATOMI and Hiroshi TAKAHASHI

● Experimental Evaluation on Strength Properties of Placing Type Fiber-Cement-Stabilized Soil. [Proc. of International Symposium on Earth Science and Technology 2016, 1, (2016), 79-84] Subaru TACHIHANA, Tomoaki SATOMI and Hiroshi TAKAHASHI

● 地盤掘削時の抵抗力に及ぼす礫混入の影響に関する研究. [テラメカニクス, 1, (2016), 33-36] 市村力, 里見知昭, 高橋弘

● パケット掘削による地盤定数推定のためのニューラルネットワークモデル. [テラメカニクス, 1, (2016), 37-42] 里見知昭, 高橋弘

● 土粒子と材料表面の付着に関する研究. [テラメカニクス, 1, (2016), 49-54] 増田幸平, 里見知昭, 高橋弘

● 次世代社会インフラ用ロボット開発・導入の推進—災害調査部会における現場検証の紹介—. [日本ロボット学会誌, 34 (8), (2016), 196-201] 高橋弘

● 繊維質固化処理土工法に用いるセルローズ繊維の生分解性に関する実験的研究. [資源・素材学会誌, 132 (12), (2016), 182-189] 森勇人, 高橋弘, 加来伸夫, 西村宏之

● Periodic Measurement of In-Situ Rock Stress at Shallow Depth in the Vicinity of the Epicenter Before and After the 2011 Tohoku-Oki Earthquake. [Proc. of 7th International Symposium on In-Situ Rock Stress, (2016), 510-519] Kiyotoshi Sakaguchi, Motoki Egawa, Tatsuya Yokoyama

● Application and Integrated Evaluation of the Compact Conical-Ended Borehole Overcoring Technique in a Fractured Rock. [Proc. of 7th International Symposium on In-Situ Rock Stress, (2016), 593-599] T. Nayuki, T. Tanaka, K. Ando, K. Oka, N. Nishizaka, Y. Shimoguchi, H. Ogawa, K. Saito, K. Sakaguchi, M. Itamoto

● Hydraulic Fracturing in Inada Granite under Brittle-Ductile Condition. [9th Asian Rock Mechanics Symposium, (2016)] M. Egawa, N. Watanabe, K. Sakaguchi

● Stress Dependency of Permeability in High Temperatree Fractured Granite. [Proc. of 9th Asian Rock Mechanics Symposium, (2016)] N. Watanabe, M. Egawa, K. Sakaguchi

## 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】

● Electromotive force measurements of LiCoO<sub>2</sub> electrode on a lithium ion-conducting glass ceramics under mechanical stress. [SOLID STATE IONICS, 285 (SI), (2016), 75-78] Funayama, Keita Nakamura, Takashi Kuwata, Naoaki Kawamura, Junichi Kawada, Tatsuya Amezawa, Koji

● Determination of oxygen surface exchange constant of LaNi<sub>0.6</sub>Fe<sub>0.4</sub>O<sub>3-δ</sub> coated with Ce<sub>0.9</sub>Gd<sub>0.1</sub>O<sub>1.95</sub> by isotope exchange technique. [SOLID STATE IONICS, 286, (2016), 19-23] Budiman, R. A. Miyazaki, T. Hashimoto, S. Yashiro, K. Kawada, T.

● Electrochemical Impedance Spectroscopy of High-Efficiency Hydrogen Membrane Fuel Cells Based on Sputter Deposited BaCe<sub>0.8</sub>Y<sub>0.2</sub>O<sub>3-δ</sub> Thin Films. [JOURNAL OF PHYSICAL CHEMISTRY C, 120 (29), (2016), 15976-15985] Aoki, Yoshitaka Kobayashi, Shohei Yamaguchi, Tomoyuki Tsuji, Etsushi Habazaki, Hiroki Yashiro, Keiji Kawada, Tetsuya Ohtsuka, Toshiaki

● Oxygen nonstoichiometry and transport properties of LaNi<sub>0.6</sub>Co<sub>0.4</sub>O<sub>3-δ</sub>. [SOLID STATE IONICS, 292, (2016), 52-58] Budiman, R. A. Uzumaki, Y. Hong, H. J. Miyazaki, T. Hashimoto, S. Nakamura, T. Yashiro, K. Amezawa, K. Kawada, T.

● Tailoring the chemical stability of cobalt-rich perovskite mixed conductor. [SOLID STATE IONICS, 288 (SI), (2016), 2-5] Wang, Fang Igarashi, Koki Nakamura, Takashi Yashiro, Keiji Mizusaki, Junichiro Amezawa, Koji

● Thermal properties of perovskite-type oxides La<sub>0.6</sub>Sr<sub>0.4</sub>Co<sub>1-x</sub>Fe<sub>x</sub>O<sub>3-δ</sub> (0 ≤ x ≤ 1.0). [ECS Transactions, 72 (7), (2016), 105-110] Shin, Y.-C., Hashimoto, S.-I., Yashiro, K., Amezawa, K., Kawada, T.

### エネルギー資源リスク評価学分野

【論文】

● Linking microearthquakes to fracture permeability change: The role of surface roughness. [Geophysical Research Letters, 43, (2016), doi:10.1002/2016GL069478] T. Ishibashi, N. Watanabe, H. Asanuma, N. Tsuchiya

● Relative permeability curves for two-phase flows through heterogeneous vuggy carbonates. [Proceedings of the 22nd Formation Evaluation Symposium of Japan, (2016), Paper F] H. Kusanagi, N. Watanabe, T. Shimazu, M. Yagi

● Stress dependency of permeability in high temperature fractured granite. [Proceedings of the 9th Asian Rock Mechanics Symposium, (2016), PO14-P50] N. Watanabe, M. Egawa, K. Sakaguchi

● Hydraulic fracturing in Inada granite under brittle-ductile condition. [Proceedings of the 9th Asian Rock Mechanics Symposium, (2016), PO16-P66] M. Egawa, N. Watanabe, K. Sakaguchi

● 名取川水系の重金属類の環境評価に関する調査及び数理統計解析. [J of MMIJ, 132 (1), (2016), 22-30] 中村謙吾, 佐藤海里, 川辺能成, 桑谷立, 駒井武

● スパースモデリングによる津波堆積物の判別—津波到達推定への応用—. [電子情報通信学会誌, 99(5), (2016), 418-423] 駒井武, 桑谷立, 中村謙吾, 土屋範芳

● Applications of ITRAX XRF core scanning and PCA in palaeotsunami research. [Japan Geoscience Union Meeting 2016, (2016)] Catherine Chague-Goff, Patricia Gadd, Daisuke Sugawara, James Goff, Kazuhisa Goto, Takeshi Komai

● X線CTを用いた三次元間隙構造可視化による土壌充填カラムにおける間隙率分布の評価. [土木学会論文集 C, 72 (2), (2016), 190-195] 中村謙吾, 青木飛翔, 渡邊則昭, 駒井武

● 土壌汚染リスク評価システムの開発と社会実装. [環境と測定技術, 43 (10), (2016), 3-8] 駒井武

● 発光バクテリアを用いた重金属等の土壌汚染簡易評価手法の開発—メッキ金属に対する急性毒性評価—. [地下水学会誌, 58 (4), (2016), 417-430] 杉田創, 駒井武, 井本由香里, 原淳子

● 温泉水と廃アルミニウムを用いた水素生成システムの実験的検討. [日本地熱学会誌, 39 (1), (2016), accepted] 最首花恵, 小坂拓也, 土屋範芳, 渡邊則昭

【著書】

● Reconstruction and Restoration after the Japan 2011 Earthquake and Tsunami (執筆担当部分) Restoration measures 1 after the 2011 Tohoku-oki Tsunami and their impact on tsunami research. [SPRINGER, (2016)] Catherine Chagué-Goff, Kazuhisa Goto, Daisuke Sugawara, Yuichi Nishimura, Takeshi Komai

● Crustal Permeability (執筆担当部分) Chapter 7 (Linking microearthquakes to fracture permeability evolution) pp.49-64. [Wiley-Blackwell, (2016)] T. Ishibashi, N. Watanabe, H. Asanuma, N. Tsuchiya

### 環境共生機能学分野

【論文】

● In Situ Electrochemical Raman Spectroscopy of Air-Oxidized Semiconducting Single-Walled Carbon Nanotube Bundles in Aqueous Sulfuric Acid Solution. [The Journal of Physical Chemistry C, 120, (2016), 7133-7143] Shin-ichi Ogino, Takashi Itoh, Daiki Mabuchi, Koji Yokoyama, Kenichi Motomiya, Kazuyuki Tohji, Yoshinori Sato

● Green Synthesis of Cu Micro/Nanoparticles for Low-Resistivity Cu Thin Films Using Ascorbic Acid in Aqueous Solution. [Journal of Materials Chemistry C, 4, (2016), 7494-7500] S. Yokoyama, K. Motomiya, H. Takahashi, and K. Tohji

● Efficiency and long-term durability of nitrogen-doped single-walled carbon nanotube electrocatalyst synthesized by defluorination-assisted nanotube-substitution for oxygen reduction reaction. [Journal of Materials Chemistry A, 4, (2016), 9184-9195] Yokoyama, S. Yokoyama, Y. Sato, K. Hirano, S. Hashiguchi, K. Motomiya, H. Ohta, H. Takahashi, K. Tohji, and Y. Sato

● A stand-alone flat-plane lighting device in a diode structure employing highly crystalline SWCNTs as field emitters. [DIAMOND AND RELATED MATERIALS, 65, (2016), 152-157] Shimoi, N; Abe, D; Tanaka, Y; Tohji, K

● Towards a designed synthesis of metallic nanoparticles in polyols – elucidation of the redox scheme in a cobalt-ethylene glycol system. [New Journal of Chemistry, 40, (2016), 8632-8642] Kazuma Takahashi, Shun Yokoyama, Takatoshi Matsumoto, Jhon L. Cuya Huaman, Hisashi Kaneko, Jean-Yves Piquemal, Hiroshi Miyamura and Jeyadevan Balachandran

● Formation of Closely Packed Cu Nanoparticle Films by Capillary Immersion Force for Preparing Low-Resistivity Cu Films at Low Temperature [Journal of Nanoparticle Research 18 : 326 (2016) in press] Shun Yokoyama; Kenichi Motomiya; Hideyuki Takahashi; Kazuyuki Tohji

【特許】

● US9324556 FIELD ELECTRON EMISSION FILM, FIELD ELECTRON EMISSION DEVICE, LIGHT EMISSION DEVICE, AND METHOD FOR PRODUCING THEM, Norihiro Shimoi, Kazuyuki Tohji, Yasumitsu Tanaka, Hiroyuki Kai. 2016

● US9258450 Field electron emission film, field electron emission device, light emission device, and method for producing them, Norihiro Shimoi, Kazuyuki Tohji, Yasumitsu Tanaka, Hiroyuki Kai. 2016

● 電界電子放出膜、電界電子放出素子、発光素子およびそれらの製造方法 [特許第 5926709 号] 下位法弘, 田路和幸, 田中泰光, 甲斐博之

● 電界電子放出膜、電界電子放出素子、発光素子およびそれらの製造方法 [特許第 5926750 号] 下位法弘, 田路和幸, 田中泰光, 甲斐博之

● コアシェル触媒の製造方法 [特願 2016-029288] 高橋英志, 横山俊, 田路和幸, 土田修三, 谷口泰士, 関良平, 上山康博

【著書】

● 地球とつながる暮らしのデザイン (執筆担当部分) 直流ワールドによる電力革命. [(2016)] 小林光, 豊貞加奈子



## 国際エネルギー資源学分野

【論文】

- Thermogravimetric Investigation of the Lead Volatilization from Waste Cathode-Ray Tube Glass. [Recycling, 1 (1), (2016), 111-121] Guido Grause, Kenshi Takahashi, Toshiaki Yoshioka

## 環境政策学講座

### イノベーション戦略学分野

【論文】

- 生物模倣技術の最新動向と関連特許・イノベーションの分析 ～サステナビリティのための生物規範工学の構築と環境経営学との対話に向けて～. [サステナブルマネジメント, 15, (2016), 98-112] 香坂玲, 藤平祥孝, 古川柳蔵, 山内健, 小林秀敏, 石井大佑, 内山愉太
- 未来を創るあたらしいテクノロジーのかたち. [日本知財学会誌, 13 (2), (2016), 23-29] 石田秀輝, 古川柳蔵

【著書】

- 生物の形や能力を利用する学問 バイオミメティクス (執筆担当部分) 第5章「厳しい環境制約の中で心豊かな暮らしをつくるバイオミメティクス」, [東海大学出版部, (2016), 133-141.] 石田秀輝, 古川柳蔵, 山内健, 小林秀敏, 須藤祐子
- バイオミメティクスの本 (執筆担当部分) 「心豊かな暮らしを支えるバイオミメティクス」[B&Tブックス 日刊工業新聞社, (2016), p.150-151.] 古川柳蔵

【総説・解説】

- ふるさと中筋. [総合学習用教材, (2016)] 古川柳蔵, 中筋小学校・田村弘子, 豊岡市
- バックキャストリングで見える2030年の日本のライフスタイル. [月刊経団連, (2016), 36-37] 古川柳蔵
- 地球環境制約下における心豊かな暮らし方～自然環境が厳しい東北地方の戦前の暮らしを分析して～. [NETT, 94, (2016), 38-41] 古川柳蔵
- 生活者の視点から考えるスマートコミュニティ. [CEL, 114, (2016), 48-51] 加賀城俊正 ●伊勢志摩国立公園の再生と地方創生. [国立公園, 748, (2016), 21-22] 加藤倫之

### 環境・エネルギー経済学分野

【論文】

- Thermodynamic Considerations of Contamination by Alloying Elements of Remelted End-of-Life Nickel- and Cobalt-Based Superalloys. [Metallurgical and Materials Transactions B, 47 (1), (2016), 1785-1795] Xin Lu, Kazuyo Matsubae, Kenichi Nakajima, Shinichiro Nakamura, Tetsuya Nagasaka
- Product flow analysis using trade statistics and consumer survey data: a case study of mobile phones in Australia. [Journal of Cleaner Production, (2016)] Artem Golev, Tim Werner, Xuan Zhu, Kazuyo Matsubae
- Nitrogen footprints: Regional realities and options to reduce nitrogen loss to the environment. [Ambio, (2016)] Hideaki Shibata, James N. Galloway, Allison M. Leach, Lia R. Cattaneo, Laura Cattell Noll, Jan Willem Erisman, Baojing Gu,

Xia Liang, Kentaro Hayashi, Lin Ma, Tommy Dalgaard, Morten Graversgaard, Deli Chen, Keisuke Nansai, Junko Shindo, Kazuyo Matsubae, Azusa Oita, Ming-Chien Su, Shin-Ichiro Mishima, Albert Bleeker

- Revealing Final Destination of Special Steel Materials with Input-Output-Based Material Flow Analysis. [ISIJ International, 57 (1), (2016)] Ohno H.; Fukushima Y.; Matsubae K.; Nakajima K.; Nagasaka T.

- Total Material Requirement of Scrap Steel from End-of-Life Vehicles. [ISIJ International, (2016)] Eiji YAMASUE, Kazuyo Matsubae, Kenichi Nakajima, Ichiro Daigo and and Keiichi N Ishihara

- Sharing the Responsibility for Metal Use: The Case of Japan as a Distributor of Steel Alloying Elements. [Journal of Economic Structures, (2016)] Hajime Ohno, Kazuyo Matsubae, Kenichi Nakajima, Keisuke Nansai, Yasuhiro Fukushima, Tetsuya Nagasaka

- 責任あるサプライチェーンの実現に向けたニッケル資源利用に関わるリスク要因の整理と解析. [日本 LCA 学会誌, 13 (1), (2017), 1-10] 佐々木翔, 松八重一代, 中島謙一, 村上進亮, 長坂徹也

【総説・解説】

- 責任ある資源利用を目指した社会における未利用資源の活用. [化学と教育, (印刷中)] 松八重一代, 長坂徹也

### 国際環境・自然資源マネジメント学分野

【論文】

- Non-market food provisioning services via homegardens and communal sharing in satoyama socio-ecological production landscapes on Japan's Noto peninsula. [Ecosystem Services, (17), (2016), 185-196] Kamiyama, C. Hashimoto, S. Kohsaka, R. Saito, O.

- The Influence of Affiliations with Agricultural Collectives on Attitudes of Fisherman towards Conservation and Perceptions of the Local Environment. [Journal of International Fisheries, 15, (2016), 1-21] Kohsaka, R., Uchiyama, Y.

- Capturing the relationships between local foods and residents: A case in the Noto region, Japan. [Journal of Ethnic Foods, 3 (2), (2016), 86-92] Kohsaka, R., Matsuoka, H., Uchiyama, Y., Kohsaka, R.
- Cognitive value of tourism resources and their relationship with accessibility: A case of Noto region, Japan. [Tourism Management Perspectives, 19 (A), (2016), 61-68] Uchiyama, Y., Kohsaka, R.

- Analysis of the distribution of forest management areas by the forest environmental tax in the Ishikawa prefecture, Japan. [International Journal of Forestry Research, 2016, (2016), 1-8] Uchiyama, Y., Kohsaka, R.

- Tourist Perceptions of Traditional Japanese Vegetable Brands: A Quantitative Approach to Kaga Vegetable Brands and an Information Channel for Tourists at the Noto GIAHS Site. In Nakano, S., Yahara, T., Nakashizuka, T., Aquatic Biodiversity Conservation and Ecosystem Services. [Springer Singapore, (2016), 109-121] Kohsaka, R., Tomiyoshi, M., Matuoka, H.

- Why People Visit Zoos: An Empirical Approach Using the Travel Cost Method for the Higashiyama Zoo, Nagoya, Japan. In Nakano, S., Yahara, T., Nakashizuka, T., Aquatic Biodiversity Conservation and Ecosystem Services. [Springer Singapore, (2016), 101-107] Kohsaka, R., Naganawa, K., Shoji, Y.,

- 生物模倣技術に関する特許出願件数の変化および論文発表件数の一考察: 日本、中国、米国、欧州を対象として. [久留米大学商学研究, 21 (2), (2016), 53-68] 香坂玲, 藤平祥孝, 内山愉太

- 生物模倣技術の最新動向と関連特許・イノベーションの分析: サステナビリティのための生物規範工学の構築と環境経営学との対話に向けて. [サステナブルマネジメント, (15), (2016), 98-112] 香坂玲, 藤平祥孝, 古川柳蔵, 山内健, 小林秀敏, 石井大佑, 内山愉太

- 木材製品の産地を気にするのは誰か? ～小松市民を対象としたアンケート意識調査結果から～. [地域イノベーション: Journal for Regional Policy Studies, (8), (2016), 15-25] 香坂玲, 富吉満之, 藤平祥孝, 松岡光

- なぜ地域団体商標と地理的表示への申請をするのか: 石川県能登地域における農産品の事例と林産品への示唆. [久留米大学ビジネス研究所紀要, (1), (2016), 1-14] 香坂玲, 内山愉太

- 沖縄における環境協力税の導入に関する考察: 観光の基礎となる地域の社会経済状況に着目して. [観光科学, 8, (2016), 1-13] 下地芳郎, 内山愉太, 藤平祥孝, 香坂玲, 松本晶子, 平野典男,

- 世界農業遺産認定の効果と課題についての一考察 —能登地域の事例より. [農村計画学会誌, 35 (3), (2016), 361-364] 香坂玲, 内山愉太

【著書】

- ステークホルダーは誰だ? [トコトンやさしいバイオミメティクスの話, 下村政嗣・高分子学会バイオミメティクス研究会 (編著), 日刊工業新聞, (2016), 148-149] 香坂玲, 藤平祥孝, 内山愉太

- 遺産に関わる国際認定制度は産地にメリットがあるのか 世界農業遺産の能登半島における伝統野菜・地名を冠する農産品の価格動向の分析を中心として. [人としくみの農業—地域をひとから人へ手渡す六次産業化, 追手門学院大学ベンチャービジネス研究所編, 追手門学院大学出版会, (2016), 1-24] 香坂玲, 藤平祥孝, 内山愉太

- 日本酒の原材料からみる六次産業化: 北陸と東北の事例から. [人としくみの農業—地域をひとから人へ手渡す六次産業化, 追手門学院大学ベンチャービジネス研究所編, 追手門学院大学出版会, (2016), 95-126] 香坂玲, 又木実信, 佐藤淳, 内山愉太

## 寄附講座

### 環境物質政策学講座

#### (DOWA ホールディングス)

### 環境物資政策学分野

【論文】

- A stand-alone flat-plane lighting device in a diode structure employing highly crystalline SWCNTs as field emitters. [Diamond and Related Materials, 65, (2016), 152-157] Norihiro Shimoi, Daisuke Abe, Yasumitsu Tanaka, Kazuyuki Tohji
- Synthesis of 2-dim field emission cathode using solution dispersed highly-crystalline single-walled carbon nanotubes. [The abstract of International conference on Diamond

and Carbon materials 2016, 1 (1), (2016), 246-246] Shoichi KUMON, Daisuke ABE, Norihiro SHIMOI

- Effect of increased crystallinity of single-walled carbon nanotubes used as field emitters. [化学系学協会東北大会 2016 Proceedings, 1 (2), (2016), 156-158] Norihiro Shimoi

- High efficiency plane luminescence device using highly-crystallized Single-Walled Carbon Nanotubes. [EcoDePS 2016 Proceedings, 1, (2016), 128-129] Shoichi KUMON, Norihiro SHIMOI, Daisuke ABE, Kazuyuki MATSUMOTO, Kazuyuki TOHJI

【特許】

- FIELD ELECTRON EMISSION FILM, FIELD ELECTRON EMISSION DEVICE, LIGHT EMISSION DEVICE, AND METHOD FOR PRODUCING THEM, 2013年8月12日出願 (14/424,074), 2015年8月13日公開 (20150228471), 2016年4月26日登録 (9324556)

- Field electron emission film, field electron emission device, light emission device, and method for producing them, 2013年8月12日出願 (PCT/JP2014-424,074), 2016年4月26日登録 (09324556)

- 電界電子放出膜、電界電子放出素子、発光素子およびそれらの製造方法, 2013年7月31日出願 (特願 2013-159542), 2016年4月28日登録 (特許第 5926709 号)

- 電界電子放出膜、電界電子放出素子、発光素子およびそれらの製造方法, 2014年1月10日出願 (特願 2014-002982), 2016年4月28日登録 (特許第 5926750 号)



## 基幹講座

### 先端環境創成学専攻

## 都市環境・環境地理学講座

### 自然環境地理学分野

【論文】

● 中国・内モンゴル渾善達克沙地における植生変動とその要因 — 1982年～2014年の衛星 データによる検討—. [季刊地理学, 68 (1), (2016), 15-30] 咏梅, 境田清隆

## 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】

● Reduction Mechanism of FexO - Graphite Composite under Elevating Temperature. [ISIJ International, 56 (2), (2016), 233-238] Chishiro Funada, Taichi Murakami, and Eiki Kasai

● Reduction Mechanism of Iron Ore – Plastic Composite at Lower Temperature. [5th International Conference on Process Development in Iron and Steelmaking (Scanmet IV), (2016)] Taichi Murakami, Yuki Takyu, and Eiki Kasai

● Acceleration of Carburizing and Melting of Reduced Iron in Carbon-Iron Ore Composite using Two Types of Carbonaceous Materials. [Proceedings of The Eleventh Korea-Japan Workshop on Science and Technology in Ironmaking and Steelmaking, (2016), 71-75] Taichi Murakami, and Eiki Kasai

● Disintegration Mechanism of Calcium Ferrite in Sinter by Reduction. [Proceedings of 7th European Coke and Ironmaking Congress, (2016), 534-540] Taichi Murakami, Daisuke Maruoka, and Eiki Kasai

● Improved Crack Healing and High-Temperature Oxidation Resistance of Ni/Al<sub>2</sub>O<sub>3</sub> by Y or Si Doping. [Journal of the American Ceramic Society, 99, (2016), 2451-2457] Daisuke Maruoka and Makoto Nanko

● Influences of Al<sub>2</sub>O<sub>3</sub> grain size on high-temperature oxidation of nano-Ni/Al<sub>2</sub>O<sub>3</sub> composites. [Journal of Asian Ceramic Societies, 4, (2016), 120-123] Hai Vu Pham, Daisuke Maruoka, Makoto Nanko

● 鉱石・炭材の配置と反応性が高炉融着帯反応・通気特性に及ぼす影響. [鉄と鋼, 102 (9), (2016), 475-484] 砂原公平, 宇治澤優, 村上太一, 葛西栄輝

● 焼結プロセスへの鉄系凝結材酸化熱の有効利用. [焼結プロセスへの鉄系凝結材酸化熱の有効利用, 29, (2016), 7-8] 藤野和也, 村上太一, 葛西栄輝

● コークス共存下における鉄系凝結材の酸化挙動. [材料とプロセス, 29, (2016), 202-202] 藤野和也, 村上太一, 葛西栄輝

● プラスチックを用いた炭材内装鉱の低温還元機構. [材料とプロセス, 29, (2016), 222-222] 村上太一, 武弓侑樹, 丸岡大佑, 葛西栄輝

● 蓄熱体を用いるバイオマスの迅速炭化挙動. [材料とプロセス, 29, (2016), 228-228] 丸岡大佑, 中村拓正, 村上太一, 葛西栄輝

● 炭材核ペレットのガス還元挙動の検討. [材料とプロセス, 29, (2016), 582] 齋藤剛志, 丸岡大佑, 村上太一, 葛西栄輝

● 予備還元鉱石を用いた炭材内装鉱の還元挙動に及ぼす炭材種とCaO添加の影響. [材料とプロセス, 29, (2016), 583] 四ノ宮裕士, 丸岡大佑, 村上太一, 葛西栄輝

● 炭材内装鉱の還元および銑滓分離挙動に及ぼすリンの影響. [材料とプロセス, 29, (2016), 584] 山下晃司, 丸岡大佑, 村上太一, 葛西栄輝, 孫相漢

● 焼結鉱の還元反応に及ぼす水素分圧および雰囲気圧力の影響. [材料とプロセス, 29, (2016), 589] 星野弘明, 丸岡大佑, 村上太一, 葛西栄輝

● Fe粒子の高温酸化を利用した Al<sub>2</sub>O<sub>3</sub> 複合材料のき裂消滅特性. [第159回日本金属学会講演概要, (2016)] 丸岡大佑, 村上太一, 葛西栄輝

● 資源自由度拡大に資する焼結プロセスを目指して. [材料とプロセス, 29, (2016), 1-2] 村上太一

### 地球システム計測学分野

【論文】

● Estimation of spectral distribution of sky radiance using a commercial digital camera. [Applied Optics, 55 (2), (2016), 415-424] Saito, M., H. Iwabuchi, and I. Murata

● IR heterodyne spectrometer MILAHI for continuous monitoring observatory of Martian and Venusian atmospheres at Mt. Haleakalā, Hawaii. [Planet. Space Sci., 126, (2016), 34-48] Nakagawa, H., S. Aoki, H. Sagawa, Y. Kasaba, I. Murata, G. Sonnabend, M. Sornig, S. Okano, J. R. Kuhn, J. M. Ritter, M. Kagitani, T. Sakanoi, M. Taguchi, and K. Takami

【総説・解説】

● FTIR で観測されたつくばにおけるエタン全量の近年の増加. [第22回大気化学討論会講演要旨集, (2016), 38-38] 村田功, 中島英彰, 森野勇

● 改良されたスペクトル取得型光学オゾンゾンデによる成層圏オゾン、二酸化窒素の観測. [平成28年度大気球シンポジウム集録, (2016), isas-16-sbs-009] 村田功, 野口克行

### 水資源システム学分野

【論文】

● Numerical Study on Tsunami Propagation into a River. [Journal of Coastal Research, 75, (2016), 1017-1021] Yasuhisa Aoyama, Mohammad Bagus Adityawan, Wahyu Widiyanto, Yuta Mitobe, Daisuke Komori, and Hitoshi Tanaka

● Impact of dew deposition on water flux dynamics at a tropical rainfed paddy field in the dry season. [Journal of Agricultural Meteorology, 72 (1), (2016), 29-36] Daisuke KOMORI and Wonsik KIM

● Near Future Climatic Impact on Seasonal Runoff in Sri Lanka. [20th Congress of the Asia Pacific Division of International Association for Hydeo Environment Engineering & Research, (2016)] S.P. Chaminda, So, Kazama, Daisuke Komori

● 再現確率にもとづく洪水氾濫・高潮複合災害潜在被害額推定. [土木

学会論文集 B1(水工学), 72 (4), (2016), I\_267-I\_272] 秋間将宏, 風間聡, 小森大輔

● 河川遡上津波の数値計算精度に堤防越流が与える影響. [東北地域災害科学研究, 52, (2016)] 青山恭尚, 三戸部佑太, 小森大輔, 田中仁

● 水害危険性が地価に与える影響の変化時点推定 — 地域の水害危険性認識変容の把握に向けて—. [土木学会論文集 B1(水工学), 72 (4), (2016)] 井上亮, 永吉真也, 小森大輔

【総説・解説】

● Recent Activities of Water-related Disaster Group. [ICUS Newsletter article, (Vol.15-4), (2016)] R.A.Acierto, A.Kodaka, T.Shimozono, Y.Tajima, A.Kawasaki, D.Komori, N.Kohtake, Win Win Zin

## 自然共生システム学講座

### 資源再生プロセス学分野

【論文】

● Use of Mg-Al oxied for removal from an aqueous solution in rotation: Kinetics and equilibrium studies. [Journal of Environmental Management, 165, (2016), 280-285] Tomohito Kameda, Jumpei Oba, Toshiaki Yoshioka

● Synthesis of Li-Al layered double hydroxide intercalated amino tris (methylene phoaphonic acid) and kinetics and equilibrium studies of the uptake of Nd<sup>3+</sup> and Sr<sup>2+</sup> ions. [Applied Surface Science, 366, (2016), 523-528] Tomohito Kameda, Tetsu Shinmyo, Toshiaki Yoshioka

● Kinetics and equilibrium studies on the uptake of Nd<sup>3+</sup> and Sr<sup>2+</sup> by Li-Al layered double hydroxide intercalated with 1-hydroxyethane-1,1-diphosphonic acid. [Journal of Industrial and Engineering Chemistry, 36, (2016), 96-101] Tomohito Kameda, Tetsu Shinmyo, Toshiaki Yoshioka

● Equilibrium and kinetics studies on the adsorption of substituted phenols by a Cu-Al layered double hydroxide intercalated with 1-naphtol-3,8-disulfonate. [Journal of Alloys and Compounds, 670, (2016), 322-328] Tomohito Kameda, Tomomi Uchiyama, Toshiaki Yoshioka

● Pyrolysis and hydrolysis behaviors during steam pyrolysis of polyimide. [Journal of Analytical and Applied Pyrolysis, 120, (2016), 75-81] Shogo Kumagai, Tomoyuki Hosaka, Tomohito Kameda, Toshiaki Yoshioka

● Uptake of Nd<sup>3+</sup> and Sr<sup>2+</sup> by Li-Al layered double hydroxide intercalated with ethylenediaminetetraacetate. [Materials Chemistry and Physics, 177, (2016), 8-11] Tomohito Kameda, Tetsu Shinmyo, Toshiaki Yoshioka

● Treatment of hydrochloric acid using Mg-Al layered double hydroxide intercalated with carbonate. [Journal of Industrial and Engineering Chemistry, 39, (2016), 21-26] Tomohito Kameda, Masahito Toczjnai, Toshiaki Yoshioka

● Replacing conventional fuels in USA, Europ, and UK with plastic pyrolysis gases-Part I : Experiments and graphical interchangeability methods. [Energy Conversion and Management, 126, (2016), 1118-1127] Stanislav Honus, Shogo Kumagai, Ondrej Nemcek, Toshiaki Yoshioka

● Replacing conventional fuels in USA, Europ, and UK with plastic pyrolysis gases-Part II : Multi-index interchangeability methods. [Energy Conversion and Management, 126, (2016), 1128-1145] Stanislav Honus, Shogo Kumagai, Ondrej Nemcek, Toshiaki Yoshioka

● Interactions of beech wood-polyethylene mixtures during co-pyrolysis. [Journal of Analytical and Applied Pyrolysis, 122, (2016), 531-540] Shogo Kumagai, Kohei Fujita, Tomohito Kameda, Toshiaki Yoshioka

● Feedstock Recycling via Waste Plastic Pyrolysis. [Journal of the Japan Petroleum Institute, 59 (6), (2016), 243-253] Shogo Kumagai and Toshiaki Yoshioka

● Production of bio-oil from fixed bed pyrolysis of bagasse pretreated with sulphuric acid and acetic acid. [9th International Conference on: Combustion, Incineration / Pyrolysis, Emission and Climate change, (2016)] Viliame Savou, Guido Grause, Shogo Kumagai, Tomohito Kameda, Toshiaki Yoshioka

● New principals on the adsorption of alkyl compound by Mg-Al oxide: Adsorption kinetics and equilibrium studies. [Colloids and Surfaces A: Physicochemical and Engineering Aspects, 513, (2016), 348-354] Tomohito Kameda, Mami Umetsu, Shogo Kumagai, Toshiaki Yoshioka

● テトラフェニルホウ酸イオンによる水相セシウムの捕捉および有機イオン会合体相への濃縮. [環境放射能除染学会誌, 4 (3), (2016), 239-245] 熊谷将吾, 林航太郎, 亀田知人, 吉岡敏明

● 化成処理スラッジをリン源とした二次電池正極材の合成および電極特性評価. [廃棄物資源循環学会論文誌, 27, (2016), 188-195] 熊谷将吾, 佐々木薫, 亀田知人, 本間格, 吉岡敏明

【総説・解説】

● 難循環ガラス素材廃製品の適正処理に関する研究. [一般財団法人日本環境衛生センター 生活と環境, 61 (1), (2016), 61-64] 吉岡敏明

● 2015 International Chemical Congress of Pacific Basin Societies (PACIFICHEM 2015) #36 Recycling of Polymeric Materials: Challenges and Perspectives 報告. [プラスチックリサイクル化学研究会ニュースレター, 28, (2016), 13-15] 熊谷将吾

● 廃プラスチックの化学原料化のケミストリー—資源循環型社会の実現を目指して—. [日本化学会化学と工業, 69 (9), (2016), 738-739] 熊谷将吾

### 環境分析化学分野

【論文】

● Topological modulation of the porous structure of a coordination polymer constructed from a flexible building block via framework-guest interaction during self-assembly. [CrystEngComm, 18, (2016), 872-876] Atsuko Masuya-Suzuki, Nozomi Matsubara, Ryunosuke Karashimada, Hitoshi Hoshino, Nobuhiko Iki

● Crystal Structure of the cis-Bis(3-tert-butyl-o-diiminobenzosemiquinonato) platinum (II) Complex. [X-ray Structure Analysis Online, 32, (2016), 41-43] Atsuko Masuya-Suzuki, Nobuhiko Iki

## 自然共生システム学講座

### 環境生命機能学分野

【論文】

- Scanning Probe Microscopy for Nanoscale Electrochemical Imaging. [Anal. Chem., (2016), in press, DOI: 10.1021/acs.analchem.6b04355] Yasufumi Takahashi, Akichika Kumatani, Hitoshi Shiku, and Tomokazu Matsue
- Continuous collection and simultaneous detection of picoliter volume of nucleic acid samples using a mille-feuille probe. [Anal Bioanal Chem., (2016), in press, DOI: 10.1007/s00216-013-7430-z] Hidenori Ito, Motoki Tanaka, Yuanshu Zhou, Yuji Nashimoto, Yasufumi Takahashi, Kosuke Ino, Tomokazu Matsue and Hitoshi Shiku
- Electrochemical hydrogel lithography of calcium-alginate hydrogels for cell culture. [Materials, 9 (9), (2016), 744.] Fumisato Ozawa, Kosuke Ino, Hitoshi Shiku, Tomokazu Matsue
- Evaluation of RNA localization using double barrel scanning ion conductance microscopy. [ACS Nano., (2016), accepted, DOI: 10.1021/acsnano.6b02753] Nashimoto Yuji, Takahashi Yasufumi, Zhou Yuanshu, Ito Hidenori, Ida Hiroki, Ino Kosuke, Matsue Tomokazu, Shiku Hitoshi
- Liquid-junction-free system for substitutional stripping voltammetry using a closed bipolar electrode system. [T.Electrochem.Comm., 66, (2016), 34-37] Takano S, Inoue KY, Ikegawa M, Takahashi Y, Ino K, Shiku H, Matsue
- Molecular electrochemical switching element based on diffusive molecular competition for multipoint electrochemical detection of respiration activity of cell aggregates. [Sens. Actuator B-Chem., 234, (2016), 201-208] Kosuke Ino, Yuta Yamada, Yusuke Kanno, Shunsuke Imai, Hitoshi Shiku and Tomokazu Matsue
- Electrochemical imaging for single-cell analysis of cell adhesion using a collagen-coated large-scale integration (LSI)-based amperometric device. [Electrochemistry, 84 (5), (2016), 364-367] Hiroya Abe, Yusuke Kanno, Kosuke Ino, Kumi Y. Inoue, Atsushi Suda, Ryota Kunikata, Masahki Matsudaira, Hitoshi Shiku, Tomokazu Matsue
- Redox cycling-based electrochemical reporter gene assay for single cells using a scanning electrochemical microscope-microwell system. [Electrochemistry, 84(5), (2016), 308-311] Hiroki Ida, Kosuke Ino, Junya Suzuki, Yasufumi Takahashi, Hitoshi Shiku and Tomokazu Matsue
- Sequential monitoring of oxygen consumption rate of mouse embryo bodies in glucose-depleted solution. [Electrochemistry, 84 (5), (2016), 302-304] Hitoshi Shiku, Nana Aoki, Toshiharu Arai, Yuanshu Zhou, Kumi Y. Inoue, Kosuke Ino and Tomokazu Matsue
- Simultaneous real-time monitoring of oxygen consumption and hydrogen peroxide production in cells using our newly developed chip-type biosensor device. [Front. Physiol., 7, (2016),109] Ankush Prasad, Hiroyuki Kikuchi, Kumi Y. Inoue, Makoto Suzuki, Yamato Sugiura, Tomoya Sugai, Amano Tomonori, Mika Tada, Masaki Kobayashi, Tomokazu Matsue and Shigenobu Kasai

- Potentiometric bioimaging with a large-scale integration (LSI)-based electrochemical device for detection of enzyme activity. [Biosens. Bioelectron., 77, (2016),709-714.] Yusuke Kanno, Kosuke Ino, Chika Sakamoto, Kumi Y. Inoue, Masahki Matsudaira, Atsushi Suda, Ryota Kunikata, Tomohiro Ishikawa,d, Hiroya Abe, Hitoshi Shiku and Tomokazu Matsue
- Spearhead nanometric field-effect transistor sensors for single-cell analysis. [ACS Nano, 10 (3), (2016), 3214-3221] Yanjun Zhang, Jan Clausmeyer, Babak Babakinejad, Ainara López Córdoba, Tayyibah Ali, Andrew Shevchuk, Yasufumi Takahashi, Pavel Novak, Christopher Edwards, Max Lab, Sahana Gopal, Ciro Chiappini, Uma Anand, Luca Magnani, Charles Coombes, Julia Gorelik, Tomokazu Matsue, Wolfgang Schuhmann, David Klenerman, Elena Sviderskaya and Yuri Korchev
- Scanning electrochemical microscopy imaging during respiratory burst in human cell. [Front. Physiol., 7, (2016), 25.] Hiroyuki Kikuchi, Ankush Prasad, Ryo Matsuoka, Shigeo Aoyagi, Tomokazu Matsue and Shigenobu Kasai
- Hybrid hydrogel-aligned carbon nanotube scaffolds to enhance cardiac differentiation of embryoid bodies. [Acta Biomater., 31, (2016), 134-143] Samad Ahadian, Shukuyo Yamada, Javier Ramón-Azcón, Mehdi Estili, Xiaobin Liang, Ken Nakajima, Hitoshi Shiku, Ali Khademhosseini and Tomokazu Matsue
- Localized gene expression analysis during sprouting angiogenesis in mouse embryoid bodies using a double barrel carbon probe. [Anal. Chem., 88 (1), (2016), 610-613] Hidenori Ito, Yuji Nashimoto, Yuanshu Zhou, Yasufumi Takahashi, Kosuke Ino, Hitoshi Shiku, Tomokazu Matsue
- Graphene induces spontaneous cardiac differentiation in embryoid bodies. [Nanoscale, 8, (2016), 7075-7084] Samad Ahadian, Yuanshu Zhou, Shukuyo Yamada, Mehdi Estili, Xiaobin Liang, Ken Nakajima, Hitoshi Shiku and Tomokazu Matsue
- Developing biomedical nano-grained beta-type titanium alloys using high pressure torsion for improved cell adherence. [RSC Adv., 6, (2016), 7426-7430] Hakan Yilmazer, Mustafa Sen, Mitsuo Niinomi, Masaaki Nakai, Liu Huihong, Ken Cho, Yoshikazu Todaka, Hitoshi Shiku and Tomokazu Matsue
- Local redox cycling-based electrochemical chip device with nanocavities and microwells for multi-electrochemical detection of alkaline phosphatase activity in embryoid bodies from embryonic stem cells. [Lab Chip, (2016), in press] Yusuke Kanno, Kosuke Ino, Hitoshi Shiku, and Tomokazu Matsue
- Three-dimensional Co-culture of C2C12/PC12 cells improved skeletal muscle tissue formation and function. [J. Tissue Eng. Regen. Med., (2016), in press] Serge Ostrovidov, Samad Ahadian, J. Ramón-Azcón, Vahid Hosseini, Toshinori Fujie, S. Prakash Parthiban, Hitoshi Shiku, Tomokazu Matsue, Hirokazu Kaji, Murugan Ramalingam, Hojae Bae, Ali Khademhosseini
- Structure and Electrochemical Properties of Nitrogen Doped Diamond-like Carbon Film Synthesized by Low

Temperature Neutral Beam Enhanced Chemical Vapor Deposition. [J. Phys. D: Appl. Phys., (2016), in press] Chang, Xijiang; Kikuchi, Yoshiyuki; Inoue, Kumi. Y.; Kubota, Tomohiro; Matsue, Tomokazu; Nozawa, Toshihisa; Samukawa, Seiji

## 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】

- Synthesis of alkali niobate  $K_{1-x}Na_xNbO_3$  nanoparticles using a supercritical water flow system. [J. Supercritical Fluids, 107, (2016), 3422] Toyama, S.a and Hayashi, H.b and Takesue, M.c and Watanabe, M.c and Smith, R.L., Jr
- Isomerization of glucose at hydrothermal condition with  $TiO_2$ ,  $ZrO_2$ , CaO-doped  $ZrO_2$  or  $TiO_2$ -doped  $ZrO_2$ . [Catalysis Today, 274, (2016), 67-72] Kitajima H., Higashino Y., Matsuda S., Zhong H., Watanabe M., Aida T.M., Smith R.L., Jr.
- Nutrient recovery from municipal sludge for microalgae cultivation with two-step hydrothermal liquefaction. [Algal Research, 18, (2016), 61-68] Aida T.M., Nonaka T., Fukuda S., Kujiraoka H., Kumagai Y., Maruta R., Ota M., Suzuki I., Watanabe M.M., Inomata H., Smith R.L.
- Efficient valorization of biomass to biofuels with bifunctional solid catalytic materials. [Progress in Energy and Combustion Science, 55, (2016), 98-194] Li H., Fang Z., Smith R.L., Jr., Yang S.
- Winterization of Vegetable Oil Blends for Biodiesel Fuels and Correlation Based on Initial Saturated Fatty Acid Constituents. [American Chemical Society, 30, (2016), 4841-4847] Zhong H., Watanabe M., Enomoto H., Jin F., Kishita A., Aida T.M., Smith R.L.
- Analysis of the Cybotactic Region of Two Renewable Lactone-Water Mixed-Solvent Systems that Exhibit Synergistic Kamlet-Taft Basicity. [American Chemical Society, 120, (2016), 4467-4481] Duereh A., Sato Y., Smith R.L., Inomata H.
- Antioxidation Properties and Surface Interactions of Polyvinylpyrrolidone-Capped Zerovalent Copper Nanoparticles Synthesized in Supercritical Water. [American Chemical Society, 8, (2016), 1627-1634] Morioka T., Takesue M., Hayashi H., Watanabe M., Smith R.L.
- Spectroscopic Analysis of Binary Mixed-Solvent-Polyimide Precursor Systems with the Preferential Solvation Model for Determining Solute-Centric Kamlet-Taft Solvatochromic Parameters. [American Chemical Society, 119, (2016), 14738-14749] Duereh A., Sato Y., Smith R.L., Inomata H.
- Efficient conversion of fructose into 5-ethoxymethylfurfural with hydrogen sulfate ionic liquids as co-solvent and catalyst. [Chemical Engineering Journal, (2016)] Haixin Guo, Xinhua Qi, Yuya Hiraga, Taku M. Aida, Richard Lee Smith Jr.
- Nutrient recycle from defatted microalgae (*Aurantiochytrium*) with hydrothermal treatment for microalgae cultivation. [Bioresource Technology, (2016)] Taku Michael Aida, Ryouma Maruta, Yuuhiko Tanabe, Minori Oshima, Toshiyuki Nonaka,

Hiroki Kujiraoka, Yasuaki Kumagai, Masaki Ota, Iwane Suzuki, Makoto M. Watanabe, Hiroshi Inomata, Richard L. Smith Jr.

【著書】

- Production of Biofuels and Chemicals from Lignin, Volume 6. (2016) Zhen Fang, Richard L. Smith, Jr., Xinhua Qi (Eds.)

### 循環材料プロセス学分野

【論文】

- Fabrication and TEM Characterization of Metal Composite Layers on Alumina Substrate. [23rd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2016), (I22), (2016)]S.V. Komarov,Y.C. Park and S.E.Romankov
- Mechanical Plating of Metal Matrix CNT Composite Coatings on Metal Substrates. [23rd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2016), (O73), (2016)]Renata Khasenova and Sergey Komarov
- Investigation of phosphorus-containing compounds in aluminum alloys with emphasis on the formation mechanism. [Material Science Forum, 877, (2016), 132-138] Sergey Komarov, Kazuki Miyamoto
- Formation of composite CuW/Ni layers on ceramic substrates under shot impact. [Journal of Alloys and Compounds, 689, (2016), 777-786] S.Romankov, Y.C.Park, S.V. Komarov
- Microwave Application to Annealing of Metal Thin Films. [Proc. 3rd Global Congress on Microwave Energy Applications (3GCMEA), USB, (2016), 133-136] N.Yoshikawa, A.Nagata, H.Taguchi and S.Komarov
- Selected Topics on Microwave Application to Green technology in our Research Group. [Proc. 3rd Global Congress on Microwave Energy Applications (3GCMEA), USB, (2016), 77-80] N.Yoshikawa , C.C.Lee, M. Sunako, K. Kawahira and S. Taniguchi
- 超音波照射によるアルミニウム合金における Al-Fe-Si 系化合物の異質核生成促進 . [ 鑄造工学 , 88 (1), (2016),3-10] 織田和宏 , コマロフセルゲイ
- 超音波鑄造におけるキャビテーション現象とその工業的応用 . [ 鉄と鋼 , 102 (3), (2016), 75-81] コマロフセルゲイ

## 環境創成計画学講座

### 環境分子化学分野

【著書】

- Calixarenes and Beyond (執筆担当部分) Chap. 13, Thiocalixarenes, pp 335-362. [Springer International Publishing, (2016), 335-362] Nobuhiko Iki
- クリスマス分析化学原書7版, I. 基礎編(執筆担当部分) 第9, 10章. [丸善出版, (2016)] 今任稔彦, 角田欣一, 壹岐伸彦, 他



## 環境材料表面科学分野

### 【論文】

- Electrochemical Reduction of CO<sub>2</sub> on Ni- and Pt-Epitaxially Grown Cu(111) Surfaces. [Electrocatalysis, 7 (1), (2016), 97-103] N. Todoroki, N. Yokota, S. Nakahata, H. Nakamura, T. Wadayama
- Surface Structures and Electrochemical Stabilities for Pt/Pd(111) Model Electrocatalysts. [ECS Transactions, 75 (14), (2016), 741-746] N. Todoroki, Y. Bando, Y. Tani, S. Kaneko, H. Watanabe, and T. Wadayama
- ORR Properties for Model Pt-Shell LayORR Properties for Model Pt-Shell Layers Prepared on Nitrogen-Beam Irradiated Pt<sub>25</sub>Ni<sub>75</sub> (111) Substrate. [ECS Transactions, 75 (14), (2016), 809-814] M. Asano, R. Kawamura, N. Todoroki, and T. Wadayama
- Oxygen Reduction Reaction Activity and Durability for Model Pt Shell Layers on Ir(111) Prepared by Molecular Beam Epitaxy. [ECS Transactions, 75 (14), (2016), 815-820] H. Watanabe, S. Kaneko, N. Todoroki, and T. Wadayama
- Oxygen Reduction Reaction Activity and Durability for Pt/TaNx Model Catalysts Fabrication in Ultra-High-Vacuum. [ECS Transactions, 75 (14), (2016), 821-826] S. Takahashi, N. Takahashi, N. Todoroki, T. Tanabe, T. Wadayama
- On-Line Mass Spectrometry for Ethanol Oxidation on Well-Defined Sn/Pt(hkl) Electrode Surfaces. [ECS Transactions, 75 (14), (2016), 1029-1033] H. Nakamura, T. Inoue, T. Matsuda, N. Todoroki, and T. Wadayama
- Highly Enhanced Oxygen Reduction Reaction Activity and Electrochemical Stability of Pt/Ir(111) Bimetallic Surfaces. [Electrochimica Acta, 222 (20), (2016), 1616-1621] Naoto Todoroki, Hirofumi Watanabe, Takayuki Kondo, Soma Kaneko, Toshimasa Wadayama
- Oxygen Reduction Reaction Activity for Strain-Controlled Pt-Based Model Alloy Catalysts: Surface Strains and Direct Electronic Effects Induced by Alloying Elements. [ACS Catalysis, 6, (2016), 5285-5289] Masato Asano, Ryutaro Kawamura, Ren Sasakawa, Naoto Todoroki, and Toshimasa Wadayama
- ORR activity and electrochemical stability for well-defined topmost and interface structures of the Pt/Pd(111) bimetallic system. [Electrochimica Acta, 212 (10), (2016), 822-827] Naoto Todoroki, Yohe Bando, Hirofumi Watanabe, Yuki Tani, Toshimasa Wadayama
- Dealloying of Nitrogen-Introduced Pt – Co Alloy Nanoparticles: Preferential Core – Shell Formation with Enhanced Activity for Oxygen Reduction Reaction. [ACS OMEGA, 1, (2016), 1247-1252] Shuntaro Takahashi, Naoki Takahashi, Naoto Todoroki, Toshimasa Wadayama

## 連携講座

### 環境適合材料創製学分野

#### 【論文】

- Effects of solution drift on crystalline morphology in the solution growth of off-axis 4H-SiC crystals [Mater. Sci. Forum,

858, (2016), 65-68] Takashi Kato, Kazuhiko Kusunoki, Kazuaki Seki, Nobuhiro Okada, and Kazuhito Kamei

- Solution Growth on Concave Surface of 4H-SiC Crystal [Cryst. Growth Des.,16 (3), (2016), 1256-1260] Hironori Daikoku, Motohisa Kado, Akinori Seki, Kazuaki Sato, Takeshi Bessho, Kazuhiko Kusunoki, Hiroshi Kaidou, Yutaka Kishida, Koji Moriguchi, and Kazuhito Kamei
- 酸化鉄の還元挙動に与える木質バイオマス(木炭)の影響 [鉄と鋼, 102, (2016), No.8, 423-431]小暮聡, 横田恭平, 西村恒久, 国友和也, 岡崎潤
- 【特許】
- SiC 単結晶の製造方法 [特許第 587781 号] 楠一彦, 亀井一人, 大黒寛典, 加渡幹尚, 坂元秀光
- SiC 単結晶の製造方法 [特許第 5877813 号] 楠一彦, 亀井一人, 大黒寛典, 加渡幹尚, 坂元秀光
- SiC 単結晶の製造装置及び SiC 単結晶の製造方法 [特許第 5863977 号] 楠一彦, 亀井一人, 矢代将斉, 岡田信宏, 森口晃治, 大黒寛典, 加渡幹尚, 坂元秀光
- 単結晶の製造装置、それに用いられる坩堝及び単結晶の製造方法 [特許第 6028033 号] 亀井一人, 楠一彦, 矢代将斉, 岡田信宏, 森口晃治, 大黒寛典, 加渡幹尚, 坂元秀
- 炭化珪素単結晶の製造方法 [ドイツ特許 602005050016.2], [フランス特許 1806437] 楠一彦, 亀井一人, 矢代将斉, 八内昭博, 上田善久, 伊藤豊, 岡田信宏
- n 型 SiC 単結晶の製造方法 [中国特許 ZL201180054125.7], [ドイツ特許 602011025795.1], [フランス特許 2639344] 楠一彦, 亀井一人, 矢代将斉, 森口晃治, 岡田信宏
- 溶液成長法による SiC 単結晶の製造装置、当該製造装置を用いた SiC 単結晶の製造方法及び当該製造装置に用いられる坩堝 [中国特許 ZL201280027616.7] 亀井一人, 楠一彦, 矢代将斉, 岡田信宏, 大黒寛典, 加渡幹尚, 坂元秀光

### 地球環境変動学分野

#### 【論文】

- An evaluation of IASI-NH<sub>3</sub> with ground-based FTIR measurements [Atmos. Chem. Phys., 16, 10,351-10,368, (2016), doi:10.5194/acp-16-10351] Dammer, E., M. Palm, M. Van Damme, C. Vigouroux, D. Smale, S. Conway, G. C. Toon, N. Jones, E. Nussbaumer, T. Warneke, C. Petri, L. Clarisse, C. Clerbaux, C. Hermans, E. Lutsch, K. Strong, J. W. Hannigan, H. Nakajima, I. Morino, B. Herrera, W. Stremme, M. Grutter, M. Schaap, R. J. Wichink Kruit, J. Notholt, P. -F. Coheur, and J. W. Erisman
- Development of a masking device to exclude contaminated reflection during tower-based measurements of spectral reflectance from a vegetation canopy. [Agricultural and Forest Meteorology, 223, (2016), 141-150] Ide R., Hirose Y., Oguma H., Saigusa N.
- Bias corrections of GOSAT SWIR XCO<sub>2</sub> and XCH<sub>4</sub> with TCCON data and their evaluation using aircraft measurement data. [Atmos. Meas. Tech., 9, 3491-3512, (2016), doi:10.5194/amt-9-3491-2016] Inoue, M., Morino, I., Uchino, O., Nakatsuru, T., Yoshida, Y., Yokota, T., Wunch, D., Wennberg, P. O., Roehl, C. M., Griffith, D. W. T., Velazco, V. A., Deutscher, N. M., Warneke, T., Notholt, J., Robinson, J., Sherlock, V., Hase, F., Blumenstock, T., Rettinger, M., Sussmann, R., Kyrö, E., Kivi, R., Shiomi,

- K., Kawakami, S., De Mazière, M., Arnold, S. G., Feist, D. G., Barrow, E. A., Barney, J., Dubey, M., Schneider, M., Iraci, L. T., Podolske, J. R., Hillyard, P. W., Machida, T., Sawa, Y., Tsuboi, K., Matsueda, H., Sweeney, C., Tans, P. P., Andrews, A. E., Biraud, S. C., Fukuyama, Y., Pittman, J. V., Kort, E. A., and Tanaka, T.
- A comprehensive estimate of recent carbon sinks in China using both top-down and bottom-up approaches. [Scientific Reports 6, (2016), Article number: 22130] Jiang, F., J. Chen, L. Zhou, W. Ju, H. Zhang, T. Machida, P. Ciais, W. Peters, H. Wang, B. Chen, L. Liu, C. Zhang, H. Matsueda and Y. Sawa
- Determining an effective UV radiation exposure time for vitamin D synthesis in the skin without risk to health: Simplified estimations from UV observations. [Photochemistry and Photobiology, 92, (2016), 863-869, doi:10.1111/php.12651] Miyauchi, M., and H. Nakajima
- Polar stratospheric cloud evolution and chlorine activation measured by CALIPSO and MLS, and modelled by ATLAS. [Atmos. Chem. Phys., 16, (2016), 3311-3325, doi:10.5194/acp-16-3311-2016] Nakajima, H., I. Wohltmann, T. Wegner, M. Takeda, M. C. Pitts, L. R. Poole, R. Lehmann, M. L. Santee, and M. Rex
- Inverse modeling of GOSAT-retrieved ratios of total column CH<sub>4</sub> and CO<sub>2</sub> for 2009 and 2010. [Atmos. Chem. Phys., 16, (2016), 5043-5062, doi:10.5194/acp-16-5043-2016] Pandey, S., Houweling, S., Krol, M., Aben, I., Chevallier, F., Dlugokencky, E. J., Gatti, L. V., Gloor, E., Miller, J. B., Detmers, R., Machida, T., and Röckmann, T.
- Algorithm update of the GOSAT/TANSO-FTS thermal infrared CO<sub>2</sub> product (version 1) and validation of the UTLS CO<sub>2</sub> data using CONTRAIL measurements. [Atmos. Meas. Tech., 9, (2016), 2119-2134, doi:10.5194/amt-9-2119-2016] Saitoh, N., Kimoto, S., Sugimura, R., Imasu, R., Kawakami, S., Shiomi, K., Kuze, A., Machida, T., Sawa, Y., and Matsueda, H.
- Inverse modeling of pan-Arctic methane emissions at high spatial resolution: what can we learn from assimilating satellite retrievals and using different process-based wetland and lake biogeochemical models?. [Atmos. Chem. Phys., 16, (2016), 12649-12666, doi:10.5194/acp-16-12649-2016] Tan Z., Zhuang Q., Henze D.K., Frankenberg C., Dlugokencky E., Sweeney C., Turner A.J., Sasakawa M., Machida T.
- Factors contributing to soil nitrogen mineralization and nitrification rates of forest soils in the Japanese archipelago. [Forest Ecology and Management, 361, (2016), 382-396] Urakawa R., Ohte N., Shibata H., Isobe K., Tateno R., Oda T., Hishi T., Fukushima K., Inagaki Y., Hirai K., Oyanagi N., Nakata M., Toda H., Kenta T., Kuroiwa M., Watanabe T., Fukuzawa K., Tokuchi N., Ugawa S., Enoki T., Nakanishi A., Saigusa N., Yamao Y., Kotani A.
- Top-down assessment of the Asian carbon budget since the mid 1990s, [Nature Communications 7, (2016), Article number: 10724] Thompson, R., P. Patra, F. Chevallier, S. Maksyutov, R. Law, T. Ziehn, I. van der Laan-Luijkx, W. Peters, A. Ganshin, R. Zhuravlev, T. Maki, T. Nakamura, T. Shirai, M. Ishizawa, T. Saeki, T. Machida, B. Poulter, J. Canadell and P. Ciais
- Winter crop CO<sub>2</sub> uptake inferred from CONTRAIL measurements over Delhi, India. [Geophys. Res. Lett., (2016),

doi: 10.1002/2016GL070939] Umezawa, T., Y. Niwa, Y. Sawa, T. Machida and H. Matsueda

- Vortex-wide chlorine activation by a mesoscale PSC event in the Arctic winter of 2009/10. [Atmos. Chem. Phys., 16, (2016), 4569-4577, doi:10.5194/acp-16-4569-2016] Wegner, T., M. C. Pitts, L. R. Poole, I. Tritscher, J. -U. Grooß, and H. Nakajima
- Technical note: Evaluation of three machine learning models for surface ocean CO<sub>2</sub> mapping. [Ocean Science Discussions, (2016), DOI: 10.5194/os-2016-73] Zeng J., Matsunaga T., Saigusa N., Shirai T., Nakaoka S., Hong Z.
- 【著書】
- 1-1 オゾンホール . [河村公隆(代表) 編, 低温環境の科学事典, 朝倉書店, (2016), 2-4.] 中島英彰
- 2-9 シベリア上空の温室効果ガス . [河村公隆(代表) 編, 低温環境の科学事典, 朝倉書店, (2016), 52-53.] 町田敏暢

### 環境リスク評価学分野

#### 【論文】

- Linking microearthquakes to fracture permeability change: The role of surface roughness. [Geophysical Research Letter, 43, (2016), doi:10.1002/2016GL069478] Ishibashi, T., Watanabe, N., Asanuma, H., and Tsuchiya, N.
- Linking microearthquakes to fracture permeability evolution. [Crustal Permeability Book Chapter, (2016), pp472, Wiley-Blackwell] Ishibashi, T., Watanabe, N., Asanuma, H., and Tsuchiya, N.
- Pore pressure behavior at the shut-in phase and causality of large induced seismicity at Basel, Switzerland: Large induced events at shut-in phase. [J. Geophys. Res., (2016)] Mukuhira, Y., Dinske, C., Asanuma, H., Ito, T., H., Haring, M.
- Physics-based seismic evaluation method: Evaluating possible seismic moment based on microseismic information due to fluid stimulation. [Geophysics, (2016), KS195-KS205] Mukuhira, Y., Asanuma, Ito, T., H., Haring, M.
- Pore pressure behavior at the shut-in phase and causality of large induced seismicity at Basel, Switzerland: Large induced events at shut-in phase. [J. Geophys. Res., (2016)] Folesky, J., Kummerow, S., Shapiro, S., Haring, M., Asanuma, H.
- スケール付着とローカルイベントの影響評価に基づく温泉自動モニタリング装置の設計 [日本地熱学会誌, (2016)] 最首, 大月, 古賀, 渡邊, 福田, 梶原, 浅沼

### バイオエコマネジメント学分野

#### 【特許】

- 電気培養用電子メディアータ [特許公開番号 2016-140322] 平野伸一, 松本伯夫
- 燃料ペレット及びその製造方法 [特許公開番号 2016-065201] 土屋陽子, 松本伯夫
- 触媒又はその前駆体並びにこれらを利用した二酸化炭素の水素化方法及びギ酸塩の製造 [特許公開番号 2016-047487] 互理龍, 榎木啓人, 平野伸一, 松本伯夫, 碓屋隆雄
- 硝酸呼吸能を有する微生物の培養方法 [特許公開番号 2016-027832] 平野伸一, 松本伯夫, 大村直也