

## 基幹講座

### 先進社会環境学専攻

## 資源戦略学講座

### 地圏環境計測・分析学分野

【論文】

- Competitive hydration and dehydration at olivine-quartz boundary revealed by hydrothermal experiments: Implications for silica metasomatism at the crust-mantle boundary [Earth and Planetary Science Letters 425,44 - 55(2015)] Ryosuke Oyanagi, Atsushi Okamoto, Nobuo Hirano, and Noriyoshi Tsuchiya
- Beyond-laboratory-scale prediction for channeling flows through subsurface rock fractures with heterogeneous aperture distributions revealed by laboratory evaluation [J.Geophysical Reserch: Solid Earth 120(1),106 - 124(2015)] Takuya Ishibashi, Noriaki Watanabe, Nobuo Hirano, Atsushi Okamoto and Noriyoshi Tsuchiya

### 資源素材設計学分野

【論文】

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- Ability of Hydroxyapatite Synthesized from Waste Oyster Shells to Remove Fluoride Ions. [Materials Transactions, 56 (9),(2015), 1509-1512] Sota Terasaka, Masanobu Kamitakahara, Taishi Yokoi, Hideaki Matsubara
- レーザー加熱法によるサーメットの熱衝撃試験と解析—変形量評価 .[粉体および粉末冶金, 61 (9), (2015),485-490] 松田哲志, 松原秀彰
- Continuous expansion of the interplanar spacing of octacalcium phosphate by incorporation of dicarboxylate ions with a side chain. [Dalton Transactions, 44, (2015), 7943-7950] Taishi Yokoi, Masanobu Kamitakahara, Chikara Ohtsuki
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### 地球物質・エネルギー学分野

【論文】

- Beyond-laboratory-scale prediction for channeling flows through subsurface rock fractures with heterogeneous aperture distributions revealed by laboratory evaluation. [J. Geophysical Research: Solid Earth, 120 (1),(2015), 106-124] Takuya Ishibashi, Noriaki Watanabe, Nobuo Hirano, Atsushi Okamoto and Noriyoshi Tsuchiya
- 大深度地熱貯留層 . [ 配管技術 , 57 (1), (2015), 11-15] 土屋範芳
- 熱水変質帯の風化岩からのヒ素及び金属元素の溶出挙動に関する実験的検討 . [Journal of the Mining and Materials Processing Institute of Japan, 131 (2,3), (2015), 58-64] 濱井昴弥, 土屋範芳, 山田亮一, 小川泰正
- 地方自治体におけるエネルギー・ビジョンの策定 . [ 東北自治 , 81,(2015), 25-36] 土屋範芳
- New  $\nu$ -type relative permeability curves for two-phase flows through subsurface fractures. [Water Resource Research, 51, (2015), 1-18] Noriaki Watanabe, Keisuke Sakurai,Takuya Ishibashi, Yutaka Ohsaki, Tetsuya Tamagawa, Masahiko Yagi, Noriyoshi Tsuchiya
- Redox conditions in the end-Early Triassic Panthalassa. [Palaeogeography, Palaeoclimatology, Palaeoecology, 432,(2015), 15-28] Satoshi Takahashi, Shin-ichi Yamasaki, Kazuhiro Ogawa, Kunio Kaiho, and Noriyoshi Tsuchiya
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### 地球開発環境学分野

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- Study on Dredging of Tsunami Skudge in the River and Recycling of Tsunami Sludge as Banking Materials. [Proc. of the 5th Vietnam/Japan Joint Seminar on Geohazards and Environmental Issues, 1, (2015), S3-1-1-S3-1-7] Masanori SATO, Tomoaki SATOMI and Hiroshi TAKAHASHI
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- 津波堆積土砂の浚渫と築堤材への再資源化に関する研究 . [テラメカニクス , (35),(2015), 41-44] 佐藤政則, 里見知昭, 高橋弘
- 海底面掘削機械開発に関する基礎的研究—水中における土質定数について—. [テラメカニクス , (35), (2015),45-49] 諫田貴哉, 里見知昭, 高橋弘, 小川和樹

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- Study on Application of Neural Network on Estimation of Soil Strength Parameters from Bucket Digging Force. [Proc. of 10th International Symposium on Advanced Science and Technology in Experimental Mechanics, (2015), CD-ROM, Paper Number 061] Tomoaki SATOMI and Hiroshi TAKAHASHI
- Study on Automatic Ground Strength Measurement from The Sky at Landslide Area. [Proc. of 10th International Symposium on Advanced Science and Technology in Experimental Mechanics, (2015), CD-ROM, Paper Number 012] Takaya KANDA, Tomoaki SATOMI and Hiroshi TAKAHASHI
- Study on Improvement of Sludge in Mekong Delta Area, Vietnam by Using Rice Husk. [Proc. of 10th International Symposium on Advanced Science and Technology in Experimental Mechanics, (2015), CD-ROM, Paper Number 011] Phan Thanh CHIEN, Tomoaki SATOMI and Hiroshi TAKAHASHI
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- Study on Recycling of Waste Asphalt Blocks Containing Roadbed Materials Using a New Screenless Separation Equipment with a Vibrating Device Dealing with Grizzly under Materials Containing 3% and 5% Water Content. [Proc. of International Symposium on Earth Science and Technology

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● Fundamental Study for Beyond Brittle Geothermal Reservoirs. [Proceedings of World Geothermal Congress 2015, (2015)] N. Tsuchiya, H. asanuma, A. Okamoto, K.Sakaguchi, N. Hirano, A. Kizaki, N. Watanabe

● In-situ Stress Measurement at Shallow depth in the Vicinity of the Epicenter before and after the 2011 Tohokuoki Earthquake. [13th Int. Cong. on Rock Mechanics, (2015)] K. Sakaguchi, T. Yokoyama

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● CO<sub>2</sub> 地中貯留条件下における水および CO<sub>2</sub> を包有する Berea 砂岩の多孔質弾性パラメータ. [石油技術協会誌, 80 (5), (2015), 385-396] 渡邊則昭, 白井祐人, 木崎彰久, 坂口清敏

## 環境修復生態学分野

【論文】

● Development of suitable hydroponics system for phytoremediation of arsenic contaminated water using an arsenic hyperaccumulator plant *Pteris vittata*. [Bioscience, Biotechnology, and Biochemistry, in press, (2015)] Yi Huang, Keisuke Miyachi, Chihiro Inoue, Ginro Endo

● Study on As uptake and rhizobacteria of two As hyperaccumulators forward to As phytoremediation. [Advanced Materials Research, 1130, (2015), 568-571] Mei-Fang Chien, Ryota Makita, Kazuki Sugawara, Chihiro Inoue

● Physical peeling of passivating layers on chalcopyrite leached with ferric ion using small alumina balls. [Advanced Materials Research 1130, (2015), 304-307] Seongjin Joe, Chihiro Inoue, Tadashi Chida

● Polycyclic aromatic hydrocarbons (PAHs) biodegradation potential and diversity of microbial consortia enriched from tsunami sediments in Miyagi, Japan. [Journal of Hazardous Materials, 283, (2015), 689-697] Hernando Pactao Bacosa, Chihiro Inoue

● 土壌・地下水中のヒ素の実態と課題. [化学物質と環境, 134, (2015), 10-12] 井上 千弘

● Characterization of rhizobacteria isolated from arsenic hyperaccumulator ferns. [Proceedings of 12th International Phytotechnologies Conference, (2015), 107] Mei-Fang Chien, Ryota Makita, Hirofumi Nagayama, Kazuki Sugawara, Chihiro Inoue

● Evaluation of arsenic behavior in temperate-zone plant, *Pteris multifida*. [Proceedings of 12th International Phytotechnologies Conference, (2015), 137] Kazuki Sugawara, Mei-Fang Chien, Chihiro Inou

## 環境複合材料創成科学分野

【論文】

● Significant Stabilization of Palladium by Gold in the Bimetallic Nanocatalyst Leading to an Enhanced Activity in the Hydrodechlorination of Aryl Chlorides. [Chemical Communications, 51, (2015), 12724-12727] Sangita Karanjit, Atchaleeya Jinasan, Ekasith Samsook, Raghu N. Dhital, Kenichi Motomiya, Yoshinori Sato, Kazuyuki Tohji, Hidehiro Sakurai

● Defluorination-assisted nanotube-substitution reaction with ammonia gas for synthesis of nitrogen-doped single-walled carbon nanotubes. [Carbon, 94, (2015), 1052-1060] Koji Yokoyama, Yoshinori Sato, Kazutaka Hirano, Hiromichi Ohta, Kenichi Motomiya, Kazuyuki Tohji, Yoshinori Sato

【招待論文】

● Enhancement of photovoltaic power of single-walled carbon nanotube films by interface structures of different film thickness Hajime Sakakibara, Koji Yokoyama, Kenichi Motomiya, Kazuyuki Tohji, Yoshinori Sato *Materials Today (web version: Materials Comment)*, 2015

【著書】

● Handbook of Polymernanocomposites. Processing, Performance and Application Volume B: Carbon Nanotube Based Polymer Composites (執筆担当部分) Chapter 39, "Mechanical Properties of Boron-added Carbon Nanotube Yarns", pp.61-73. [Springer, (2015)] Yoshinori Sato, Mei Zhang, Kazuyuki Tohji

## エネルギー資源学講座

### 国際エネルギー資源学分野

【論文】

● Effects of steam on the thermal dehydrochlorination of poly(vinyl chloride) resin and flexible poly(vinyl chloride) under atmospheric pressure [Polymer Degradation and Stability, 117,(2015) 8-15] Juan Diego Fonseca, Guido Grause, Tomohito Kameda, Toshiaki Yoshioka

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● Chemical modification of poly(vinyl chloride) using sodium trisulfide [Journal of Polymer Research, 22, (2015) 1-5] Tomohito Kameda, Makoto Yoshihara, Guido Grause, Toshiaki Yoshioka

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● Enhancement of bio-oil production via pyrolysis of wood biomass by pretreatment with H<sub>2</sub>SO<sub>4</sub> [Bioresource Technology, 178, (2015) 76-82] Shogo Kumagai, Ryo Matsuno, Guido Grause, Tomohito Kameda, Toshiaki Yoshioka

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### エネルギー資源リスク評価学分野

【論文】

● 製鋼スラグと腐植物質の相互作用に基づく重金属類の長期溶出特性. [土木学会論文集G(環境), 71 (1),(2015), 39-48] 中村謙吾, 肴倉宏史, 川辺能成, 駒井武

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● 津波堆積物に含有する重金属の化学分析と地球科学的特徴.

[環境と測定技術, 42 (9), (2015), 14-21] 駒井 武

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● Beyond-laboratory-scale prediction for channeling flows through subsurface rock fractures with heterogeneous aperture distributions revealed by laboratory evaluation. [Journal of Geophysical Research - Solid Earth, 120,(2015), 106-124] T. Ishibashi, N. Watanabe, N. Hirano, A. Okamoto, N. Tsuchiya

● New  $\nu$ -type relative permeability curves for two-phase flows through subsurface fractures. [Water Resources Research, 51, (2015), 2014WR016515] N. Watanabe, K. Sakurai, T. Ishibashi, Y. Ohsaki, T. Tamagawa, M. Yagi, N. Tsuchiya

● CO<sub>2</sub> 地中貯留条件下における水および CO<sub>2</sub> を包有する Berea 砂岩の多孔質弾性パラメータ. [石油技術協会誌, 80 (5), (2015), 385-396] 渡邊則昭, 白井祐人, 木崎彰久, 坂口清敏

● Predicting the channeling flows through fractures at various scales. [Proceedings World Geothermal Congress 2015, (2015), paper number 15015] N. Watanabe, T. Ishibashi, N. Tsuchiya

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● Permeability measurements of fractured granite at 350-450 ° C under confining stress. [GRC Transactions,39, (2015), 329-334] T. Numakura, N. Watanabe, K. Sakaguchi, T. Kikuchi, N. Tsuchiya

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● Reports of Research and Investigation on Multiple Geological Hazards Caused by Huge Earthquakes(執筆担当部分) Environmental risk caused by tsunami. [Research PlanningOffice for Geological Survey and Applied Geoscience, (2015)4 月] Takeshi Komai, Yoshishige Kawabe, Junko Hara, Yasuhide Sakamoto, Ming Zhang

【総説・解説】

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[株式会社化学工業社月刊 ケミカルエンジニアリング, 60 (10), (2015), 1-6] 渡邊則昭

### エネルギー分散システム学分野

【論文】

● Electrochemical Study of LaNi<sub>0.6</sub>Fe<sub>0.4</sub>O<sub>3</sub>-delta Film Electrode. [JOURNAL OF THE ELECTROCHEMICAL SOCIETY, 162 (14), (2015), F1445-F1450] Budiman, R. A. Miyazaki, T. Hashimoto, S. Nakamura, T. Yashiro, K. Amezawa, K. Kawada, T.

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● Influence of Small Defects Produced in Electrolytes during Manufacturing Processes on Operated SOFCs. [ECS Transactions, 68 (1), (2015), 2421-2428] S. Onuki, F. Iguchi, M. Shimizu, T. Kawada, H. Yugami



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● Characterization of time-varying macroscopic electrochemo-mechanical behavior of SOFC subjected to Nisintering in cermet microstructures. [COMPUTATIONAL MECHANICS, 56 (4), (2015), 653-676] Muramatsu, M. Terada, K. Kawada, T. Yashiro, K. Takahashi, K. Takase, S.

【著書】

● High-temperature Solid Oxide Fuel Cells for the 21st Century: Fundamentals, Design and Applications [Eds., K. Kendall and M. Kendall, Elsevier AMSTERDAM, (2015), Chapter 6, pp161-193] T. Kawada, T. Horita

【総説・解説】

● 中低温作動 SOFC カソードの基礎物性と組織・界面設計。

[Electrochemistry, 83 (9), (2015), 739-745] 川田達也 , 八代圭司 , 橋本真一

## 環境生体機能学分野

【論文】

● Defluorination-assisted nanotube-substitution reaction with ammonia gas for synthesis of nitrogen-doped single-walled carbon nanotubes [Carbon, 2015, 94, 1052 - 1060] Koji Yokoyama, Yoshinori Sato, Kazutaka Hirano, Hiromichi Ohta, Kenichi Motomiya, Kazuyuki Tohji, Yoshinori Sato

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