Satoshi Utsunomiya, Ph. D.

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EDUCATION

Ph.D.	Mineralogy,	University of Tokyo,	March, 2000
M.Sc.	Mineralogy,	University of Tokyo,	March, 1997
B.S.	Geology,	University of Tokyo,	March, 1995

PROFESSIONAL EXPERIENCE

April, 2007 – Present
Associate Professor at Department of Chemistry, Kyushu University
November, 2004 – April, 2007
Assistant Research Scientist at Department of Geological Sciences, University of Michigan
August, 2004 – November, 2004
Post-doctoral fellow at Department of Geological Sciences, University of Michigan
March, 2004 – July, 2004
Senior research fellow at Department of Nuclear Engineering and Radiological Sciences, University of Michigan
September, 2000 – March, 2004
Research fellow at Department of Nuclear Engineering and Radiological Sciences, University of Michigan

MEMBERSHIP

Mineralogical Society of America (MSA), American Chemical Society (ACS), Japan Association of Mineralogical Sciences, Atomic Energy Society of Japan

TEACHING EXPERIENCE

- *University of Tokyo*; Teaching Assistant for Low-Temperature Geochemistry
- *University of Michigan*; GS455 Laboratory Course
- *Kyushu University*; Basic Inorganic Materials Chemistry, Radiochemistry I, Basics of Transmission Electron Microscopy, Modern Chemistry, Analytical Chemistry IV, Basic Natural Science Laboratory Course, Inorganic Chemistry Laboratory Course, International Science Course IV (1/2)

LANGUAGE SKILL

Japanese and English

INVITED TALK

- Ochiai A., Imoto J., Furuki G., Ikehara R., Suetake M., Yamasaki S., Ohnuki T., Law G.T.W., Grambow B., Ewing R.C., and Utsunomiya S. (2018) Nuclear Fuel Fragments Released from the Fukushima Daiichi Nuclear Power Plant. August 19 – 23, 2018, 256th ACS National Meeting, Boston MA, United States. **(Invited)**
- Utsunomiya S. (2017) Cesium-rich micro-particles: A window into the meltdown events at the Fukushima Daiichi Nuclear Power Plant. April 2-6, 2017, 253rd ACS National Meeting, San Francisco, California, United States. **(Invited)**

- Utsunomiya S. (2016) Challenging radionuclides in environment at the atomic scale: Issues in waste disposal and Fukushima. June 26-1 July, 2016, Goldschmidt conference, Yokohama, Japan. **(Plenary Talk)**
- S. Utsunomiya, "Cesium contamination in Fukushima soils and exploration of effective decontaminant", International workshop on post-Fukushima challenges in nuclear safety and environmental contamination, June 4 - 5, 2012, Pohang University of Science and Technology, Pohang, Republic of Korea.
- S. Utsunomiya, "Microscopic View of Colloids Associated with Radionuclides in the Environments", Migration 2011, 13th International Conference on the Chemistry and Migration Behaviour of Actinides and Fission Products in the Geosphere, September 18 - 23, 2011, Beijing, China
- S. Utsunomiya, R. C. Ewing, A. P. Novikov, S. N. Kalmykov, F. Horreard, A. Merkulov, S. B. Clark, V. V. Tkachev, B. F. Myasoedov, "Colloid Transport of Plutonium in the Far-field of the Mayak Production Association, Russia", 233rd American Chemical Society Meeting, March 25-29, 2007, Chicago, IL, USA
- Kyushu University, Department of Chemistry, Fukuoka, Japan, 2006
- S. Utsunomiya, "Migration of trace elements via nanoscale processes", 19th General Meeting of the International Mineralogical Association, July 23-28, 2006, Kobe, JAPAN.
- S. Utsunomiya, "Identification of trace metal speciation in environment using Z-contrast imaging ", 15th V.M. Goldschmidt conference, May 20-25, 2005, Moscow, Idaho, USA
- Virginia Polytechnic Institute, Department of Geosciences, Blacksburg, VA, 2005
- Kanazawa University, Department of Earth Sciences, Kanazawa, Japan 2004
- S. Utsunomiya, K. A. Traexler, L. M. Wang, and R. C. Ewing, "Nano-scale heavy metal phases on atmospheric and groundwater colloids" 225th American Chemical Society Meeting, March 23-27, 2003, New Orleans, LA, USA
- Kyushu University, Department of Nuclear Engineering, Fukuoka, Japan, 2003

AWARD & HONOR

- Poster award, "Fate of the epsilon phase in the Oklo natural reactors" by S. Utsunomiya and R.C. Ewing at *Migration 2005*, International conference on chemistry and migration behaviour of actinides and fission products in the geosphere. September 18-23, 2005, Avignon, France.
- Poster award, "Alteration of UO_2 under oxidizing conditions" by A. Deditius, S. Utsunomiya and R. C. Ewing at *Plutonium Future 2006*, International conference on plutonium and actinides, July 9-13, 2006, California, USA.
- Fellow, Mineralogical Society of America

FUNDING

1. "Nanoscale Mineralogy and Geochemistry of Arsenian Pyrite in Ore Deposits" National Science Foundation, NSF-0537626, co-PI, 2006-2008, $3,000
2. "Nano- and atomic-scale analysis for heavy metals in pyrite" Japan Ministry of Education (MEXT), Start-up fund for young scientist. PI: Utsunomiya 2008-2009 ¥2916k.
3. "Speciation of trace metals on atmospheric particulate analyzed by HRTEM and XANES" Steel Industry Foundation for the Advancement of Environmental Protection Technology, PI, 2008-2009, ¥3000k.
4. "Multi-scale analysis of ultrafine particles (UFPs) and the dynamics in east Asia" Ministry of the Environment, Japan, Environment Research and Technology Development Fund, PI, 2009-2010, ¥18000k.
5. "Understanding the migration processes of radionuclides through nanoparticles and microorganisms" Radioactive Waste Management Funding and Research Center, Basic Research Funds, PI: Utsunomiya, 2010-2012, ¥9000k.
6. "Quantitative estimation of atmospheric oxygen in the early Proterozoic: Behavior of Fe during rock weathering in the low P_{O2} condition", Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI: 2009-2011, ¥200k.
7. "Synthesis of nano-colloids using biotechnology and mechanisms of the dynamic interaction with

radionuclides", Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI: 2009-2011, ¥300k.

8. "Effects of microorganisms and nanoparticles on the migration of radionuclides in groundwaters". Japan Society for the Promotion of Science, Funds for International Collaboration, co-PI, 2011-2012, ¥100k.
9. "Analysis of chemical state of Cs in Fukushima soils for the site remediation", ESPEC Foundation for Global Environment Research and Technology (Charitable Trust)（ESPEC Prize for the Encouragement of Environmental Studies）2011, PI, ¥500k
10. "Estimation of P_{O2} increase in the atmosphere in the early Proterozoic based on the chemical state of trace metals", Japan Society for the Promotion of Science, Funds for International Collaboration, co-PI, 2012-2014, ¥200k.
11. "Multifaceted collaborative study for evaluation of intermediate and final disposal for various Cs-contaminated wastes" MEXT, Initiatives for Atomic Energy Basic and Generic Strategic Research, 2012-2014, co-PI, ¥10800k.
12. "Atomic-resolution investigation on nano-minerals using spherical aberration corrected transmission electron microscopy" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, PI: 2009-2011, ¥5070k.
13. "Analysis of dispersed Ni-particles in atmospheric particles using a combination of focused ion-beam system and atomic resolution microscopy" Steel Industry Foundation for the Advancement of Environmental Protection Technology, PI, 2012-2013, ¥3000k.
14. "Modeling the mobility of radionuclides in the groundwater and the impact of microparticles" Japan Society for the Promotion of Science, Funds for International Collaboration, co-PI, 2013-2014, ¥100k.
15. "The chemical speciation and migration of mobile radionuclides released from the nuclear accident" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI, 2013-2015, ¥900k
16. "Modeling the migration of radionuclides in the groundwater in Russia" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI: 2014-2016, ¥100k
17. "Study on the chemical speciation of radioactive cesium in the saturated sediments after fifty years" Japan Atomic Energy Agency, Collaborative research funds related to remediation in Fukushima environment, PI, 2014, ¥3000k.
18. "Development of functional materials for decontamination of radionuclides in the environment " MEXT, Basic Research for Nuclear Energy, Japan-UK Joint Research Program, co-PI, 2014-2016, ¥5600k.
19. "Atmospheric levels of O_2 and CO_2 in the late Archean – early Proterozoic and the effects on the Earth surfaces" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI: 2015-2017, ¥300k.
20. "Development of a new protocol to stabilize the radioactive wastes for decommissioning in Fukushima and remediation of DOE site" MEXT, Basic Research for Nuclear Energy, Japan-US Joint Research Program, co-PI, 2016-2019, ¥1000k per year
21. "Molecular-level study on the effects of microorganisms on the migration of radionuclides" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, PI, 2016-2019, ¥17290k
22. "Formation processes and migration of cesium-rich microparticle released from Fukushima Daiichi Nuclear Power Plant utilizing atomic-resolution electron microscopy" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, PI, 2016-2018, ¥3510k.
23. "Application of state-of-the-art microscopy to investigate association of radionuclides with micron-scale minerals" Interdisciplinary Collaborative Study on the Migration and Effects of Radionuclides in Environment, Tsukuba University, PI, 2016-2019, ¥580k.
24. "Quantification of Cs-rich microparticles released from Fukushima Daiichi Nuclear Power Plant and the radiotoxicity" Mitsubishi Foundation Research Grants in the Natural Sciences, PI, 2017, ¥5000k
25. "Understanding formation process of anthropogenic aerosols containing radionuclides" Grant-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science, co-PI, 2017-2018, ¥200k.
26. "Environmental geochemistry of radium: Field study and ion systematics" Japan Atomic Energy Agency, Reimei Research Fund, co-PI, 2017-2018, ¥500k.

27. “Effects of Mn oxidizing bacteria on the processing of mine drainage at Ningyo-toge” Japan Atomic Energy Agency, Collaborative Research, co-PI, 2016-2017, ¥330k per year.
28. “Occurrence of Mn oxidizing microorganisms in the Ningyotoge uranium mine and the molecular-scale mechanisms of Mn oxidation” Nakatsuji Basic Science Foundation, PI, 2022-2024, ¥1000k
29. “High Mass-, Enegy-, and Spatial-Resolution Analyses of Radioactive Ejecta from Fukushima Daiichi Towards Severe Accident Analysis and the Biological Impacts” JSPS Japan-Finland Bilateral Research Grant, PI, 2023-2025, ¥5000k

SOCIETY SERVICE

Proposal review:
NSF-EAR (Geochemistry, Low-T geochemistry), DOE-BES, Japan Society for the Promotion of Science (Kiban S), Swiss National Science Foundation, European Science Foundation (FWO Post-doctoral project),

Journal review:
American Mineralogist, Environmental Science & Technology, Atmospheric Environment, Canadian Mineralogist, MRS proceedings, Geochemical Journal, Tera Nova, Chemistry Letters, Physics and Chemistry of Minerals, European Journal of Mineralogy, Elements, Chemical Reviews, Water Research, Geochemical Perspective Letters, Geochimica Cosmochimica Acta, Biotechnology and Bioengineering, Journal of Nuclear Materials, Radiochimica Acta, Micron, Journal of Nuclear Science and Technology, Economic Geology, Minerals, Nuclear Materials and Energy

Journal editor:
Associate Editor of Journal of Mineralogical and Petrological Sciences,
Associate Editor of Frontiers in Energy Research

Committee:
Geochemical Society, C. C. Patterson Award Committee, 2018-2020 (Chair in 2019-2020)
International Scientific Committee for Migration Conference

Doctoral dissertation review:
Murdoch University, University of Adelaide

REFERENCE

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PUBLICATION
Scopus: 6317 citations; h-index 40
Google scholar: 8337 citations; h-index 46

Book Chapters (Reviewed)

1. Satoshi Utsunomiya, Kazuki Fueda, Kenta Minomo, Kenji Horie, Mami Takehara, Shinya Yamasaki, Hiroyuki Shiotsu, Toshihiko Ohnuki, Gareth, T. W. Law, Bernd Grambow, and Rodney C. Ewing (2022) Radioactive nano- and micro-particles released from Fukushima Daiichi: Technical challenges of multiple analytic techniques. In: Javier Jimenez Lamana & Joanna Szpunar (eds) Environmental Nanopollutants: Sources, Occurrence, Analysis and Fate. p15 – 48, Royal Society of Chemistry Book series. DOI: 10.1039/9781839166570-00015
2. S. Utsunomiya, H. Yokoo, T. Oki, K. Kawamoto, A. Takeda, H. Wang, R. C. Ewing (2020) Application of Electron Microscopy to Understanding Colloid-Facilitated Transport of Radionuclides at the Mayak Production Association Facility, Near Lake Karachai, Russia. In: Kato K., Konoplev A., Kalmykov S. (eds) Behavior of Radionuclides in the Environment I. p177-200, Springer, Singapore. DOI: 10.1007/978-981-15-0679-6_7.
3. T. Ohnuki T. Ozaki, N. Kozai, S. Utsunomiya (2020) Function of Microbes on Chemical Species Transformation of Radionuclides. In: Kato K., Konoplev A., Kalmykov S. (eds) Behavior of Radionuclides in the Environment I. p 67-92, Springer, Singapore. DOI: 10.1007/978-981-15-0679-6_3
4. S. Utsunomiya, T. Ohnuki, K. Kato, S. N. Kalmykov (2020) Commentary on the Role of Microorgansims and Nanoparticles in Radionuclides Migration through Groundwater. In: Kato K., Konoplev A., Kalmykov S. (eds) Behavior of Radionuclides in the Environment I. p221-225, Springer, Singapore. DOI: 10.1007/978-981-15-0679-6_9.
5. H. Iwata, H. Shiotsu, M. Kaneko, & S. Utsunomiya. Nuclear accidents in Fukushima, Japan and exploration of effective decontaminant for the ^{137}Cs-contaminated soils. In *Advances in Nuclear Fuel* (ed. Shripad T. Revankar) p123-142, Intech 2012.
6. S. N. Kalmykov, E. V. Zakharova, A. P. Novikov, B. F. Myasoedov, & S. Utsunomiya, Effect of Redox Conditions on Actinide Speciation and Partitioning with Colloidal Matter. In *Actinide Nanoparticle Research* (eds. S. N. Kalmykov and M.A. Denecke) p 361-376, Springer 2011.
7. S. Utsunomiya, M. Kogawa, E. Kamiishi, & R. C. Ewing, Scanning Transmission Electron Microscopy and Related Techniques for Research on Actinide and Radionuclide Nanomaterials. In *Actinide Nanoparticle Research* (eds. S. N. Kalmykov and M.A. Denecke) p33-62, Springer 2011.
8. S. Utsunomiya, C. S. Palenik, & R. C. Ewing, Electron Microscopy Imaging Techniques in Environmental and Geological Science. In *Dekker Encyclopedia of Nanoscience and Nanotechnology*, (eds. J. A. Schwartz, C. I. Contescu, and K. Putyera), p1087-1097, Marcel Dekker Inc. New York, 2004.
9. K. Kitajima, S. Utsunomiya & S. Maruyama, Physico-chemical environment of an Archean Mid-Ocean Ridge: estimate of seawater depth and hydrothermal fluid composition In *Geochemistry and the Origin of Life*, (eds. S. Nakashima, S. Maruyama, A. Brack and B. F. Windley), p179-202, Universal Academy Press Inc., Tokyo, Japan, 2001.

Peer-Reviewed Journal Articles

1. J. W. L. Ang, A. Bongrand, S. Duval, J. Donnard, J. Parkkonen, S. Utsunomiya, R. Koivula, M. Siitari-Kauppi & G. T. W. Law, Improved radio-cesium detection using quantitative real-time autoradiography. *ACS Omega*, **8(25)**, (2023) 22523–22535. DOI: 10.1021/acsomega.3c00728
2. T. Ohnuki, J. Ye, T. Kato, J. Liu, M. Takano, N. Kozai, & S. Utsunomiya. Chemical species of cesium and iodine in condensed vaporized microparticles formed by melting nuclear fuel

components with concrete materials. *Environmental Science: Processes & Impacts*, **25(7)**, (2023) 1204–1212. DOI: 10.1039/D3EM00074E

3. K. Fueda*, T. Komiya*, K. Minomo, K. Horie, M. Takehara, S. Yamasaki, H. Shiotsu, T. Ohnuki, B. Grambow, G. T. W. Law, R. C. Ewing, & S. Utsunomiya, Occurrence of radioactive cesium-rich microparticles (CsMPs) in a school building located 2.8 km south-west of the Fukushima Daiichi Nuclear Power Plant. *Chemosphere*, **328** (2023) 138566. DOI: 10.1016/j.chemosphere.2023.138566
   ***Two authors contributed equally as the first author**
4. A. Takeda*, T. Oki*, H. Yokoo, K. Kawamoto, Y. Nakano, A. Ochiai, I. D. Winarni, M. Kitahara, K. Miyoshi, K. Fukuyama, Y. Ohara, K. Yamaji, T. Ohnuki, M. F. Hochella Jr., & S. Utsunomiya, Direct observation of Mn distribution/speciation within and surrounding a basidiomycete fungus in the production of Mn-oxides important in toxic element containment. *Chemosphere*, **313** (2023) 137526. https://doi.org/10.1016/j.chemosphere.2022.137526
   ***Two authors contributed equally as the first author**
5. S. Yamasaki, H. Saito, T. Nakamura, K. Morooka, K. Sueki, & S. Utsunomiya, Gravitational separation of ^{137}Cs contaminated soil in Fukushima environment: Density dependence of ^{137}Cs activity and application to volume reduction. *Journal of Environmental Radioactivity*, **246,** 106846. DOI: 10.1016/j.jenvrad.2022.106846
6. K. Fueda, R. Takami, K. Minomo, K. Morooka, K. Horie, M. Takehara, S. Yamasaki, T. Saito, H. Shiotsu, T. Ohnuki, G. T. W. Law, B. Grambow, R. C. Ewing, & S. Utsunomiya, Volatilization of B_4C control rods in Fukushima Daiichi nuclear reactors during meltdown: B–Li isotopic signatures in cesium-rich microparticles. *Journal of Hazardous Materials*, **428** (2022) 128214. DOI: 10.1016/j.jhazmat.2022.128214
7. T. Kato, N. Kozai, K. Tanaka, D. I. Kaplan, S. Utsunomiya & T. Ohnuki, Chemical species of iodine during sorption by activated carbon -Effects of original chemical species and fulvic acids- *Journal of Nuclear Science and Technology* **59** (2022) 580-589. DOI: 10.1080/00223131.2021.1993370
8. H. Yokoo*, T. Oki*, M. Uehara, I. D. Winarni, K. Yamaji, K. Fukuyama, Y. Ohara, T. Ohnuki, M. F. Hochella Jr. & S. Utsunomiya, Geochemistry of barium ions associated with biogenic manganese oxide nanoparticles generated by a fungus strain: Implications for radium sequestration in uranium mill tailings. *Gondwana Research* **110** (2022) 270-282.
   ***Two authors contributed equally as the first author**
   DOI: 10.1016/j.gr.2021.09.020
9. S. Yamasaki & S. Utsunomiya, A review of efforts for volume reduction of contaminated soil in the ten years after the accident at the Fukushima Daiichi Nuclear Power Plant. *Journal of Nuclear Science and Technology*, **59** (2022) 135-147. DOI: 10.1080/00223131.2021.1974596
10. B. Grambow, A. Nitta, A. Shibata, Y. Koma, S. Utsunomiya, R. Takami, K. Fueda, T. Ohnuki, C. Jegou, H. Laffolley & C. Journeau, Ten years after the NPP accident at Fukushima : review on fuel debris behavior in contact with water. *Journal of Nuclear Science and Technology*, **59** (2022) 1-24. DOI: 10.1080/00223131.2021.1966347
11. K. Kawamoto*, H. Yokoo*, A. Ochiai, Y. Nakano, A. Takeda, T. Oki, M. Takehara, M. Uehara, K. Fukuyama, Y. Ohara, T. Ohnuki, M. F. Hochella, & S. Utsunomiya, The role of nanoscale aggregation of ferrihydrite and amorphous silica in the natural attenuation of contaminant metals at mill tailings sites. *Geochimica et Cosmochimica Acta*, **298** (2021) 207-226.
    ***Two authors contributed equally as the first author.**
    https://doi.org/10.1016/j.gca.2021.02.004
12. K. Morooka, E. Kurihara, M. Takehara, R. Takami, K. Fueda, K. Horie, M. Takehara, S. Yamasaki, T. Ohnuki, B. Grambow, G. T.W. Law, J. W.L. Ang, W. R. Bower, J. Parker, R. C. Ewing, & S. Utsunomiya, New highly radioactive particles derived from Fukushima Daiichi Reactor Unit 1: Properties and environmental impacts, *Science of The Total Environment*, **773** (2021) 145639. https://doi.org/10.1016/j.scitotenv.2021.145639.
13. T. Ikenoue, M. Takehara, K. Morooka, E. Kurihara, R. Takami, N. Ishii, N. Kudo, & S. Utsunomiya, Occurrence of highly radioactive microparticles in the seafloor sediment from the

pacific coast 35 km northeast of the Fukushima Daiichi nuclear power plant. *Chemosphere*, **267** (2021) 128907.
https://doi.org/10.1016/j.chemosphere.2020.128907

14. W. Zouari, T. S. Muresan, T. Kobayashi, S. Utsunomiya, A. Abdelouas, & B. Grambow, Solubility of monoclinic and yttrium stabilized cubic ZrO_2: solution and surface thermodynamics guiding ultra-trace analytics in aqueous phase. *Journal of Nuclear Materials*, **545** (2021) 152631. https://doi.org/10.1016/j.jnucmat.2020.152631
15. K. Murota, K. Tanoi, A. Ochiai, S. Utsunomiya, & T. Saito, Desorption mechanisms of cesium from illite and vermiculite. *Applied Geochemistry*, **123** (2020) 104768. https://doi.org/10.1016/j.apgeochem.2020.104768
16. E. Kurihara, M. Takehara, M. Suetake, R. Ikehara, T. Komiya, K. Morooka, R. Takami, S. Yamasaki, T. Ohnuki, K. Horie, M. Takehara, G.T.W. Law, W. Bower, J. Frederick W. Mosselmans, P. Warnicke, B. Grambow, R. C. Ewing, & S. Utsunomiya, Particulate plutonium released from the Fukushima Daiichi meltdowns. *Science of The Total Environment* **743** (2020) 140539. https://doi.org/10.1016/j.scitotenv.2020.140539
17. A. J. Fuller, P. Leary, N. D. Gray, H. S. Davies, J. Frederick W. Mosselmans, F. Cox, C. H. Robinson, J. K. Pittman, C. M. McCann, M. Muir, M. C. Graham, S. Utsunomiya, W. R. Bower, K. Morris, S. Shaw, P. Bots, F. R. Livens, & G.T.W. Law, Organic complexation of U (VI) in reducing soils at a natural analogue site: Implications for uranium transport. *Chemosphere* **254** (2020) 126859. https://doi.org/10.1016/j.chemosphere.2020.126859.
18. R. Ikehara,* K. Morooka,* M. Suetake, T. Komiya, E. Kurihara, M. Takehara, R. Takami, C. Kino, K. Horie, M. Takehara, S. Yamasaki, T. Ohnuki, G. T. W. Law, W. Bower, B. Grambow, R. C. Ewing, & S. Utsunomiya, Abundance and distribution of radioactive cesium-rich microparticles released from the Fukushima Daiichi Nuclear Power Plant into the environment. *Chemosphere* **241**(2020) 125019. * **Two authors contributed equally.**
https://doi.org/10.1016/j.chemosphere.2019.125019
19. S. Yamasaki, S. Kurita, A. Ochiai, K. Sueki, & S. Utsunomiya, Nano-scaled calcium molybdate particles formation on egg phosphatidylcholine liposome surface. *Chemistry Letters* **48** (2019) 1480-1483.
20. W. R. Bower, K. Morris, F. R. Livens, J. F. W. Mosselmans, C. M. Fallon, A. J. Fuller, L. Natrajan, C. Boothman, J. R. Lloyd, S. Utsunomiya, D. Grolimund, D. Ferreira Sanchez, T. Jilbert, J. Parker, T. S. Neill, & G. T. W. Law, Metaschoepite dissolution in sediment column systems – Implications for uranium speciation and transport. *Environmental Science & Technology* **53** (2019) 9915-9925. DOI: 10.1021/acs.est.9b02292
21. S. Utsunomiya, G. Furuki, A. Ochiai, S. Yamasaki, K. Nanba, B. Grambow, & R. C. Ewing, Caesium fallout in Tokyo on 15th March, 2011 is dominated by highly radioactive, caesium-rich microparticles. ArXiv, (2019) 1906.00212.
22. M. Suetake, Y. Nakano, G. Furuki, A. Ochiai, R. Ikehara, T. Komiya, E. Kurihara, K. Morooka, S. Yamasaki, T. Ohnuki, K. Horie, M. Takehara, G. T. W. Law, W. Bower, B. Grambow, R. C. Ewing, & S. Utsunomiya, Dissolution of radioactive, cesium-rich microparticles released from the Fukushima Daiichi Nuclear Power Plant in simulated lung fluid, pure-water, and seawater. *Chemosphere* **233** (2019) 633-644. DOI: 10.1016/j.chemosphere.2019.05.248
23. T. Ohnuki, Y. Satou, & S. Utsunomiya, Formation of radioactive cesium microparticles originating from the Fukushima Daiichi Nuclear Power Plant accident: Characteristics and perspectives *Journal of Nuclear Science and Technology* **56** (2019) 790-800 DOI: 10.1080/00223131.2019.1595767.
24. S. Yamasaki, S. Kurita, A. Ochiai, M. Hashimoto, K. Sueki, & S. Utsunomiya, Calcium molybdate nanoparticles formation in egg phosphatidyl choline based liposome caused by liposome fusion *Journal of Colloid and Interface Sciences* **530** (2018) 473-480.
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A. Rey, S. Utsunomiya, J. Gimenez, I. Casas, J. de Pablo, R. C. Ewing, "Stability of synthetic uranium(VI) peroxide hydrates under ionizing radiation" Migration 2007, Munich, Germany, August 26-31, 2007

S. Utsunomiya, R. C. Ewing, A. P. Novikov, S. N. Kalmykov, F. Horreard, A. Merkulov, S. B. Clark, V. V. Tkachev, B. F. Myasoedov, "Colloid Transport of Plutonium in the Far-field of the Mayak Production Association, Russia", 233rd American Chemical Society Meeting, March 25-29, 2007, Chicago, IL, USA **INVITED**

A. P. Deditius., S. Utsunomiya and R. C. Ewing, "Formation and alteration of coffinite ($USiO_4$) in the Grants uranium deposits, New Mexico." 223rd American Chemical Society National Meeting, Chicago, Illinois, March 25-29, 2007

C. V. Ramana, S. Utsunomiya, R. C. Ewing, U. Becker, K. Zaghib & C.M. Julien, "Synthesis, Structure, and Electrochemical Properties of $Li_4Ti_5O_{12}$" Materials Research Society, Boston, Massachusetts, November/December 27-01,2006, Boston, MA, USA.

A. P. Deditius, S. Utsunomiya and R.C. Ewing, "Alteration of coffinite ($USiO_4$) under reducing and oxidizing conditions". Materials Research Society, Boston, Massachusetts, November/December 27-01,2006, Boston, MA, USA.

S. Utsunomiya, "Nanoparticles of Trace Elements in the Environment" Slovenia & US workshop on Environmental Science & Engineering" September 27-30, 2006, Ljubljana, Slovenia. **INVITED**

S. Utsunomiya, "Migration of trace elements via nanoscale process" 19th General Meeting of International Mineralogical Association, July 23-28, 2006, Kobe JAPAN. **INVITED**

A. Deditius, S. Utsunomiya, R. C. Ewing, "Alteration of UO_2 under oxidizing conditions" 2006 Plutonium Future, July 9-13, 2006, Pacific Grove, California, USA.

D. Renock, U. Becker, S. Utsunomiya, R. C. Ewing, "STEM and electrochemical SFM characterization of As-containing nanoscale phases on iron sulfides" 231st National Meeting of American Chemical Society, March 26-30, 2006, Atlanta, Georgia, USA.

S. Utsunomiya, R. C. Ewing, "Radiation effects in garnet" American Geophysical Union, spring meeting, May 23-26, 2006, Baltimore, Maryland, USA.

M. Reich, S. Utsunomiya, U. Becker, R. C. Ewing, L. M. Wang, "Nanoparticle-host interaction in the solid state: temperature-induced dissolution and growth of natural gold nanoparticles in arsenian pyrite", NanoPEPS Workshop, January 11-13, 2006, Albuquerque, New Mexico, USA.

S. Utsunomiya, R. C. Ewing, "Nanoscale occurrence of trace metals revealed by Z-contrast STEM Imaging" NanoPEPS Workshop, January 11-13, 2006, Albuquerque, New Mexico, USA.

R. Chintalapalle, S. Utsunomiya, C. Julien and U. Becker, "Investigation of Temperature Induced Structural Transformations in Tungsten Oxide (WO_3) Thin Films", 208th Meeting of The Electrochemical Society, October 16-21, 2005, Los Angeles, USA.

S. Utsunomiya and R. C. Ewing, "The effect of ionizing radiation on U^{6+} phases", Annual meeting of Geological Society of America, October 16-19, Salt Lake City, USA.

S. Delattre, S. Utsunomiya, R. C. Ewing, and E. Balan, "Radiation damage-enhanced chemical alteration of zircon in laterite at Nsimi, Cameroon" Annual meeting of Geological Society of America, October 16-19, Salt Lake City, USA.

M. Fayek, P.C. Goodell, M. Ren, L.R. Riciputi, A. Simmons, S. Utsunomiya, and R.C. Ewing, "Geochronology and Fluid-rock Interaction Associated with the Nopal I Uranium Deposit, Peña Blanca, Mexico", Annual meeting of Geological Society of America, October 16-19, Salt Lake City, USA.

St. N. Kalmykov, A. P. Novikov, R. C. Ewing, S. Utsunomiya, "Effect of colloids on radionuclide migration in oxic and anoxic conditions". Migration 2005, September 18-23, 2005, Avignon, France.

T. Arnold, S. Utsunomiya, G. Geipel, R. C. Ewing, N. Baumann, V. Brendler, "Identification of adsorbed U(VI) surface species on muscovite by TRLFS and HAADF-STEM". Migration 2005, September 18-23, 2005, Avignon, France.

S. Utsunomiya, R. C. Ewing, "Fate of the epsilon phase in the Oklo natural reactors". Migration 2005, September 18-23, 2005, Avignon, France.

S. Utsunomiya, R. C. Ewing, "Radiation-induced decomposition of U^{6+} alteration phases of UO_2". 29th International Symposium on the Scientific Basis for Radioactive Waste management, September 12-16, 2005, Ghent, Belgium.

M. Reich, S. Utsunomiya, U. Becker, L. Wang, R. C. Ewing, "In situ observation of thermodynamic size effects on melting of natural gold nanoparticles"15th Annual V.M. Goldschmidt Conference, May 20-25, 2005, Moscow, Idaho.

S. Utsunomiya, "Identification of trace metal speciation in environment using Z-contrast imaging"15th Annual V.M. Goldschmidt Conference, May 20-25, 2005, Moscow, Idaho. **Invited talk**

S. Utsunomiya, R. C. Ewing, "The epsilon phase in the UO2 of the Oklo Natural Reactors" 15th Annual V.M. Goldschmidt Conference, May 20-25, 2005, Moscow, Idaho.

M. Fayek, S. Utsunomiya, R. C. Ewing, A. Simmons, "Natural uranium getters in near surface environments at the Nopal I Deposit Pena Blanca, Mexico"15th Annual V.M. Goldschmidt Conference, May 20-25, 2005, Moscow, Idaho. **Invited talk**

S. Utsunomiya, A. J. Cavosie, J. W. Valley, S. A. Wilde, and R. C. Ewing, "Radiation damage and alteration of zircon in granitiods from Jack Hills, western Australia", Annual meeting of Geological Society of America, November 7-10, 2004, Denver, USA.

L. L. Skovbjerg , S. L. S. Stipp , S. Utsunomiya and R. C. Ewing, "Cr(VI) reduction by green rust" 14th Annual V.M. Goldschmidt Conference, June 5-11, 2004, Copenhagen, Denmark.

T. Murakami, M. Sato, S. Utsunomiya, T. Kasama and B. Sreenivas, "Behavior of light REE in Precambrian paleosols: Implication for atmospheric oxygen evolution" 14th Annual V.M. Goldschmidt Conference, June 5-11, 2004, Copenhagen, Denmark.

S. Utsunomiya, L. M. Wang, R. C. Ewing, S. B. Clark and M. Douglas, "The effect of ionizing radiation on uranophane" 2004 Spent Fuel Workshop, April 19-20, 2004, Lake Forest, Illinois, USA

S. Utsunomiya and R. C. Ewing, "Nanocrystals and Nanodomains of trace elements in geologic materials" Frontiers in Nanoscience and Nanotechnology: A Symposium", November 14-15, 2003, Ann Arbor, Michigan, USA.

K. A. Jensen, S. Utsunomiya, M. Glasius, P. Wåhlin, F. Palmgren, N. Ø. Olesend, S. Grundvig and R.C. Ewing, "Nano- and micro-mineralogy of airborne trace metals in the city background and a high-traffic street in Copenhagen (Denmark)". The 26th Nordic Geological Winter Meeting, January 6-9, 2004 Uppsala, Sweden.

M. Douglas, S. B. Clark, J. I. Friese, B. W. Arey, E. C. Buck, B. D. Hanson, S. Utsunomiya and R. C. Ewing, "Neptunium association with uranium (VI) silicate solid phases" 9th International Conference

on Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere (MIGRATION '03). September 21-26, 2003, Gyeongju, South Korea.

F. Skomurski, S. Utsunomiya, and R. C. Ewing, "Role of vein phases in immobilizing uranium and lead released from altered betafite" Annual Meeting of Geological Society of America, November 2-5, 2003, Seattle, USA.

M. Reich, C. S. Palenik, S. Utsunomiya, U. Becker, L. Stixrude, S. E. Kesler, R. C. Ewing "Solubility limit of gold in arsenian pyrite from Carlin-type and epithermal deposits: EMPA, SIMS, HRTEM and quantum-mechanical costraints", Annual Meeting of Geological Society of America, November 2-5, 2003, Seattle, USA.

M. Fayek, S. Utsunomiya, R. C. Ewing and L. Riciputi, "Nano- and Micro-scale alteration of uraninite at the Oklo-Okelobondo natural fission reactors, Gabon" Annual Meeting of Geological Society of America, November 2-5, 2003, Seattle, USA.

S. Utsunomiya, C. S. Palenik, J. W. Valley, A. J. Cavosie, S. A. Wilde and R. C. Ewing, "Fate of Pb in an Archean zircon" Annual Meeting of Geological Society of America, November 2-5, 2003, Seattle, USA.

K. A. Jensen, S. Utsunomiya, M. Glasius, F. Palmgren and R. C. Ewing "Identity of transition and heavy metal nanoparticles in the urban outdoor and indoor atmosphere: Implications for health effect assessments", The Seventh Nordic Conference on Toxicology and Environmental Mutagenesis, June 15-18 2003, Bornholm, Denmark. **Abstract was published in *Pharmacology and Toxicology*, 93, Supplement I, p. 41-42**

T. Murakami, S. Utsunomiya, T. Yokoyama, and T. Kasama, “Biotite dissolution processes and mechanisms: Early stage weathering environment” 13th Annual V.M. Goldschmidt Conference, September 7-12, 2003, Kurashiki, Japan.

S. Utsunomiya and R. C. Ewing, “Application of high-angle annular dark field scanning transmission electron microscopy (HAADF-STEM) to trace element Nanogeoscience” Spring meeting of Michigan Microscopy and Microanalysis, April 25, 2003, Ann Arbor, Michigan.

K. A. Traexler, S. Utsunomiya, A. Kersting, and R. C. Ewing, “Modeling colloid transport of radionuclides: Where are the data gaps for the Yucca mountain performance assessment” Scientific Basis for Radioactive Waste management XXVII, June 15-18, 2003, Kalmer, Sweden.

M. Fayek, S. Utsunomiya, R. C. Ewing, L. R. Riciputi, and K. A. Jensen, “The oxygen isotopic composition of nano-scale uraninite at the Oklo-Okelobondo natural fission reactors, Gabon” Uranium Geochemistry, April 13-16, 2003, Nancy, France.

S. Utsunomiya, K. A. Traexler, L. M. Wang, and R. C. Ewing, “Nano-scale heavy metal phases on atmospheric and groundwater colloids” 225th American Chemical Society Meeting, March 23-27, 2003, New Orleans, LA, USA. **Invited talk**

M. Douglas, S. B. Clark, S. Utsunomiya, and R. C. Ewing, “Microscopy studies of cation incorporation into uranium (VI) solid phases” 225th American Chemical Society Meeting, March 23-27, 2003, New Orleans, LA, USA.

S. Nakao, S. Utsunomiya, K. Sun, L. M. Wang, Y. Miyagawa, and S. Miyagawa, "Microstructure of high-energy Zn implanted silica glasses" 17th International Conference on the Application of Accelerators in Research and Industry, CAARI 2002, November 12-16, 2002, Denton, Texas, USA.

S. Utsunomiya, K. A. Jensen, G. J. Keeler, and R. C. Ewing, "Uraninite Nanocrystals and Fullerene in Atmospheric Particulates" Annual Meeting of Geological Society of America, October 27-30, 2002, Denver, USA.

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