

## Reika Yokochi

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EMPLOYMENT: **Apr 2010 - present** Research Scientist at The University of Chicago  
**Apr 2008 - present** Visiting research assistant professor at University of Illinois at Chicago  
**Jan 2009 - May 2009** Visitor in Geochemistry at California Institute of Technology  
**Sept 2005 - Mar 2008** Postdoctoral research associate at University of Illinois at Chicago

EDUCATION: **2005** Ph.D. Institut National Polytechnique de Lorraine, Nancy, France  
**2001** M.Sc. Hiroshima University, Japan  
**1999** B.Sc. Hiroshima University, Japan

AWARDS: **Dec 2012** NASA Planetary Science Early Career Fellow  
**Dec 2012** Young Scientist Award, Geochemistry Research Association of Japan  
**Nov 2005 - Oct 2007** Dreyfus postdoctoral fellow in environmental chemistry (\$45,000/yr, 2 yrs)  
**Jan 2002 - Dec 2004** Bourse de la region Lorraine (12,000 Euros/year, 2 yrs)

SERVICE: 

- Referee: Journal of Volcanology and Geothermal Research, G-cubed, Geochimica et Cosmochimica Acta, Chemical Geology, Fonds National de la Recherche Luxembourg, National Science Foundation (Petrology and Geochemistry program), Journal of Environmental Radioactivity, Science, Earth and Planetary Science Letters, Ground Water, Terrestrial, Atmospheric and Oceanic Sciences, Nature Geoscience, Contributions to Mineralogy and Petrology
- Panel: NASA Cosmochemistry Panel (2012)

PROFESSIONAL SOCIETIES: Geochemical Society, American Geophysical Union

LANGUAGE: Fluent in Japanese, English and French

PUBLICATIONS :

23. P.K. Aggarwal, T. Matsumoto, N.C. Sturchio, H.K. Chang, D. Gastmans, L. J. Araguas-Araguas, W. Jiang, Z.-T Lu, P. Mueller, R. Yokochi, R. Purtschert, T. Torgersen (2014). Continental degassing of  $^4\text{He}$  by surficial discharge of deep groundwater. *Nature Geoscience*, **8**, 35-39
22. Z.-T. Lu, P. Schlosser, W.M. Smethie Jr., N.C. Sturchio, T.P. Fischer B.M. Kennedy, R. Purtschert, J.P. Severinghaus, D.K. Solomon, T. Tanhuak, R. Yokochi (2014) Tracer Applications of Noble Gas Radionuclides in the Geosciences. *Earth-Science Reviews*, **138**, 196-214
21. N.C. Sturchio, K.L. Kuhlman, R. Yokochi, P.C. Probst, W. Jiand, Z.-T. Lu, P. Mueller, G.-M. Yang (2014) Krypton-81 in groundwater of the Culebra Dolomite near the Waste Isolation Pilot Plant, New Mexico. *Journal of Contaminant Hydrology*, **160**, 12-20
20. T. Ireland, F. Tissot, R. Yokochi and N. Dauphas (2013) Teflon-HPLC: A novel chromatographic system for application to isotope geochemistry and other industries. *Chemical Geology*, **357**, 203-214.
19. R. Yokochi, N.C. Sturchio, R. Purtschert, W. Jiang, G.-M. Yang, P. Mueller, Z.-T. Lu, and B.M. Kennedy (2013) Noble Gas Radionuclides in Yellowstone Geothermal Gas Emissions: A Reconnaissance. *Chemical Geology*, **339**, 43-51.
18. R. Purtschert, R. Yokochi and N. Sturchio (2013)  $^{81}\text{Kr}$  dating of old groundwater. in "Dating old groundwater: A guide book", A. Suckow (Ed.), IAEA, pp. 400
17. R. Yokochi, N. Sturchio, R. Purtschert (2012). Determination of crustal fluid residence times using nucleogenic  $^{39}\text{Ar}$ . *Geochimica et Cosmochimica Acta*, **88**, 19-26.
16. R. Yokochi, U. Marboeuf, E. Quirico & B. Schmitt (2012). Pressure dependent trace gas trapping in amorphous water ice at 77K: Implications for determining conditions of comet formation. *Icarus*, **218** (2), 760-770.
15. R. Yokochi & A.M. Mandell (2011) Water, delivery on Earth. in *Encyclopedia of Astrobiology*, M. Gargaud, R. Amils, J. C. Quintanilla, H. J. Cleaves, W. M. Irvine, D. L. Pinti, & M. Viso (Eds.), Springer, pp. 1770-1773.
14. W. Williams, Lu, Z.-T., K. Rudinger, C. Xu, R. Yokochi & P. Mueller (2011). Spectroscopic study of the cycling transition  $4s[3/2]_2-4p[5/2]_3$  at 811.8 nm in  $^{39}\text{Ar}$ : Hyperfine structure and isotope shift. *Physical Review A*, **83**, 012512
13. R. Yokochi, B. Marty, G. Chazot and P. Burnard, Nitrogen in peridotite xenolith: Large isotopic heterogeneity and  $\text{N}_2/\text{Ar}$  enrichment. (2009) *Geochimica et Cosmochimica Acta* **73**, 4843-4861.
12. N. Coltice, B. Marty and R. Yokochi (2009) Xenon constraints on the thermal evolution of the Earth. *Chemical Geology* **266** (1-2), 4-9.
11. R. Yokochi, N. Sturchio and L. Heraty (2008) Method for purification of Kr from environmental samples for analysis of radiokrypton isotopes. *Analytical Chemistry* **80**(22), 8688-8693.
10. R. Yokochi, D. Ohnenstetter and Y. Sano (2008) Intra-grain variation in  $\delta^{13}\text{C}$  and nitrogen concentration associated with textural heterogeneities of carbonado. *The Canadian Mineralogist* **46**(5), 1283-1296.
9. B. Marty and R. Yokochi (2006) Water in the Early Earth. in *Water in Nominally anhydrous minerals (Reviews in Mineralogy and Geochemistry)* **62**, 421-450.
8. P.-H. Blard, R. Pik, J. Lav, D. Bours, P.G. Burnard, R. Yokochi, B. Marty and F. Trusdell (2006) Cosmogenic  $^3\text{He}$  production rates revisited from evidences of grain size dependent release of matrix-sited helium. *Earth and Planetary Science Letters* **247** (3-4), 222-234.
7. R. Yokochi and B. Marty (2006) Nitrogen isotope disequilibrium in mantle xenoliths, Fast chemical and isotopic exchange of nitrogen during reaction with hot molybdenum. *Geochemistry Geophysics Geosystems* **7** (1), Q07004, doi:10.1029.

6. R. Yokochi and B. Marty (2005) Geochemical Constraints on Mantle Dynamics in the Hadean. *Earth and Planetary Science Letters* **238**, 17-30.
5. R. Yokochi, B. Marty, R. Pik and P. Burnard (2005). High  $^3\text{He}/^4\text{He}$  ratios in peridotite xenoliths from SW Japan revisited: Evidence for cosmogenic  $^3\text{He}$  released by vacuum crushing. *Geochemistry Geophysics Geosystems* **1** (6), Q01004, doi:10.1029.
4. R. Yokochi and B. Marty (2004) A determination of neon isotopic composition of the deep mantle. *Earth and Planetary Science Letters* **225**, 77-88.
3. Y. Sano, T. Kosugi, N. Takahata and R. Yokochi (2004) Helium isotopes in Pacific waters from adjacent region of Honshu, Japan. *Journal of Oceanography* **60**, 625-630.
2. N. Takahata, R. Yokochi, Y. Nishio and Y. Sano (2003) Volatile element isotope systematics at Ontake volcano, Japan. *Geochemical Journal* **37**, 299-310.
1. Y. Sano, R. Yokochi, K. Terada, M.L. Chaves and M. Ozima (2002) Ion Probe Pb-Pb dating of carbonado, polycrystalline diamond. *Precambrian Research* **133**, 155-168.

INVITED TALKS:

8. R. Yokochi (2015) Pure Kr in 60 minutes. *International Workshop on Tracer Applications of Noble Gas Radionuclides*, University of Heidelberg, Heidelberg.
7. R. Yokochi (2012) Tracing Time Scales of Fluid Residence and Migration in the Crust. *International Workshop on Tracer Applications of Noble Gas Radionuclides*, Argonne National Laboratory, Argonne.
6. R. Yokochi (2011) Processes affecting the volatile budget of the Earth. *Seminar at Institut de Planétologie et d'Astrophysique de Grenoble (IPAG)*, Université Joseph Fourier Grenoble 1, Grenoble.
5. R. Yokochi (2010) Processes affecting the volatile budget of the Earth. *The delivery of volatiles & organics Workshop*, Space Telescope Science Institute, Baltimore.
4. R. Yokochi (2008) Nitrogen in peridotite xenolith: Large isotopic heterogeneity and  $\text{N}_2/\text{Ar}$  enrichment. *Departmental seminar at University of Quebec at Montreal and GEOTOP-UQAM-McGill*, Montreal.
3. R. Yokochi (2008) Radiokrypton Isotopes in Geochemistry: An Application of Atom Trap. *Medium Energy Physics seminar, Physics Division, Argonne National Laboratory*, Argonne.
2. R. Yokochi (2008) Time Constraints on Early Earth's Events: Degassing and Volatile Escape. *Origin of Water Workshop*, Molokai.
1. R. Yokochi and B. Marty (2007) The source and distribution of volatile elements on Hadean Earth. *Annual V.M. Goldschmidt Conference*, Cologne.