Nicolas F. Spycher **Staff Geological Scientist**
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Education and Training

BA	Geological Sciences	1979	University of Geneva, Switzerland
MS	Geological Sciences (Geophysics)	1980	University of Geneva, Switzerland
Ph.D.	Geological Sciences (Geochemistry)	1987	University of Oregon

Research and Professional Experience

1998-Present	Staff Geological Scientist, Lawrence Berkeley National Laboratory
1993-1997	Geochemist/Hydrogeologist, DBA AquaLogic (private consultant)
1988-1998	Senior Project Scientist, International Technology Corporation, Irvine, CA
1987-1988	Post-Doctoral Research Associate (Geochemistry), University of Oregon
1981-1987	Research Assistant (Geochemistry), University of Oregon

Example Publications (see full list at: http://www.researcherid.com/rid/E-6899-2010)

Arora B., **Spycher N.F.**, Steefel, C., Molins S., et al., 2016. Influence of hydrological, biogeochemical and temperature transients on subsurface carbon fluxes in a flood plain environment, Biogeochemistry, doi:10.1007/s10533-016-0186-8..

Zheng, L., **Spycher, N.**, Varadharajan, C., Tinnacher, et al., 2015. On the mobilization of metals by CO_2 leakage into shallow aquifers: exploring release mechanisms by modeling field and laboratory experiments. *Greenhouse Gas Sci Technol. 5:1–16 (2015); DOI: 10.1002/ghg*

Spycher N., Oldenburg C., 2015. Will mercury impurities impact CO_2 injectivity in deep sedimentary formations? II. Mineral dissolution and precipitation. *Greenhouse Gas Sci Technol.*, 5(1), 72–90.

Spycher, N., Peiffer, L., Saldi, G., Sonnenthal, E., Reed, M.H., Kennedy, B.M., 2014. Integrated multicomponent solute geothermometry. Geothermics, 51, 113–123.

Spycher, N.F., M. Issarangkun, B. Stewart, S.S. Sengor, E. Belding, T. Ginn, B. Peyton, and R.K. Sani, 2011. Biogenic uraninite precipitation and its reoxidation by iron(III) (hydr)oxides: A reaction modeling approach. *Geochimica et Cosmochimica Acta* 75, 4426–4440.

Spycher, N., Pruess, K., 2010. A Phase-partitioning model for CO_2-brine mixtures at elevated temperatures and pressures: Application to CO_2-enhanced geothermal systems. *Transport in Porous Media, 82:173–196*.

Research Areas

Dr. Spycher has over twenty five years of applied research experience in aqueous geochemistry and water/rock/gas interactions, including the development and application of multicomponent geochemical and reactive transport models. His current research activities focus on developing biogeochemical conceptual and numerical models to understand water/gas/rock/sediment interactions in various types of subsurface environments. His specific research areas include water/rock interactions in geothermal systems and geothermal exploration, the impact of CO_2 geological sequestration on groundwater quality, U(VI) transport and reactive chemistry at contaminated DOE sites, metal cycling in contaminated lake sediments, and the study of coupled thermal, hydrological, and chemical processes related to nuclear waste geologic storage. He has also been working on the development of chemical geothermometry software (GeoT), gas solubility correlations for carbon dioxide sequestration and geothermal studies, and has developed and compiled thermodynamic data for use with geochemical models, including the aqueous speciation and surface complexation of various metals. He is part of the TOUGHREACT reactive transport simulator development team and has significantly contributed to the development of the CHILLER/SOLVEQ geochemical modeling codes. Besides his academic background, Nic has extensive experience in the field of environmental hydrogeology and hydrogeochemistry, including ten years of private-sector consulting experience dedicated to the remedial investigation of contaminated sites. His investigations included predicting the fate of metals, spilled fuels, and solvents in the subsurface using various field measurements and modeling techniques.