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Brief Summary

The process of dissolution and re-precipitation underpins all interactions between minerals and aqueous fluids. It is of considerable interest for the mineral and mining industry, as it plays an important role in ore-forming processes (Putnis 2009). More detailed studies of the redistribution of elements and isotopes during fluid-rock interaction are necessary to understand the mechanism. This can be done by hydrothermal experiments and a systematic study of the kinetics of the process, the evolution of the fluid composition and the nature of the reaction interface within the solid phase. My PhD project will use a range of hydrothermal reaction vessels operating at various temperatures, pressures and fluid compositions to try to reproduce natural fluid-rock reactions in the laboratory.

Education: BS and MS at the Leibniz University Hanover

Research interests: experimental petrology and geochemistry

Thesis title: Experimental studies of mechanisms of fluid-rock interactions and element mobility

Supervisors: Prof. Andrew Putnis, Dr. Katy Evans and Dr. Andreas Beinlich

Publications:

Fiege, Adrian, et al. "Kinetic vs. thermodynamic control of degassing of H₂O-S±Cl-bearing andesitic melts." *Geochimica et Cosmochimica Acta* 125 (2014): 241-264. (Role: Student Research Project; conduction of experiments and analyses)

Fanara, Sara, et al. "Volatiles in magmas related to the Campanian Ignimbrite eruption: Experiments vs. natural findings." *American Mineralogist* 100.10 (2015): 2284-2297. (Role: Student Research Project; conduction of experiments and analyses)

Conferences:

S. Fanara, R.E. Botcharnikov, F. Adams, D.M. Palladino, H. Behrens ; Solubility of H₂O, CO₂, S and Cl in trachytic and trachybasaltic melts of CampiFlegrei (Italy): implications for magma storage conditions; (Role: Student Research Project, Poster)