

CO₂ Mineralization for *in situ* Storage and *ex situ* Enhanced Metals Recovery



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1987 M.Sc. experimental nuclear physics
University of Groningen (NL)
1992 Ph.D. marine geochemistry
University of Utrecht (NL)
1993–1995 Woods Hole Oceanographic
Institution/Harvard/Florida State
University – postdoctoral positions
1995–2006 University of South Florida –
ICP-MS manager and senior analyst
2000–2004 Agilent Technologies, Inc. –
ICP-MS customer training consultant
2006–present University of Maryland
Center for Environmental Science –
graduate faculty

Technology or focus area

- Advanced analysis and modeling of trace metal solubility and mobility in (hyper)saline, carbonate-rich solutions (e.g., seawater)
- Metal behavior in anoxic and euxinic waters

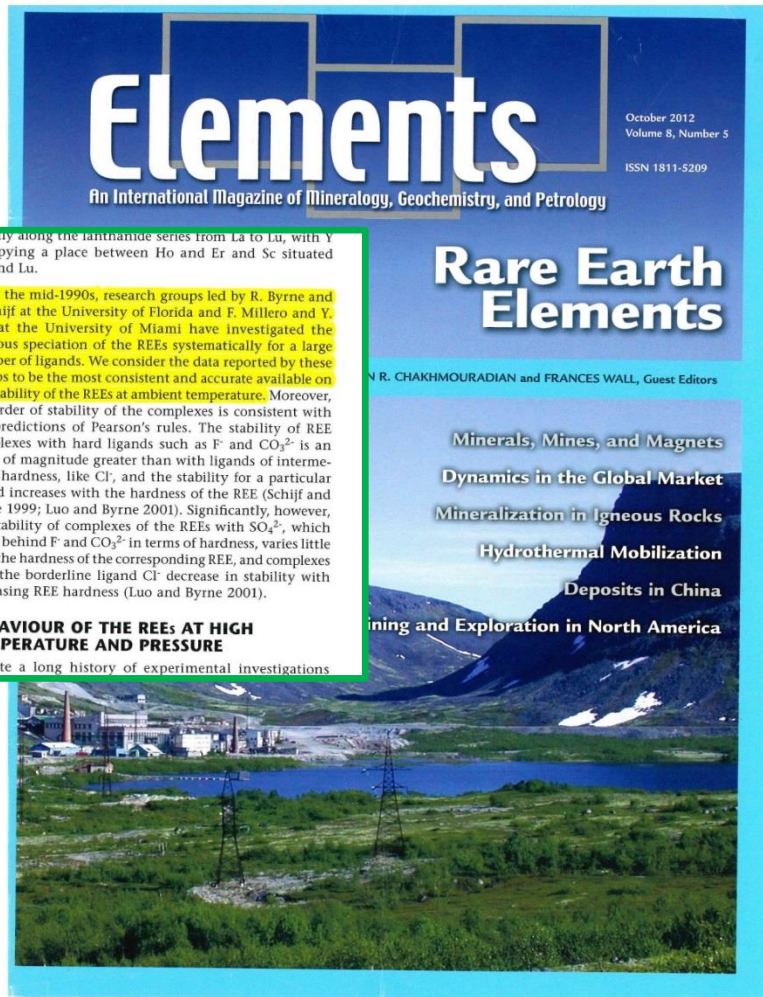
Ideas, Interests, Concepts to be Explored

Evaluation (and, if necessary, correction) of the existing thermodynamic database for metals of specific interest (Co, Cr, Ni) in order to facilitate crucial speciation modeling in anticipated CO₂-storage/enhanced-recovery systems

Can provide advanced analytical support (trace metal concentrations in natural waters and solids, as well as other parameters of physicochemical relevance)

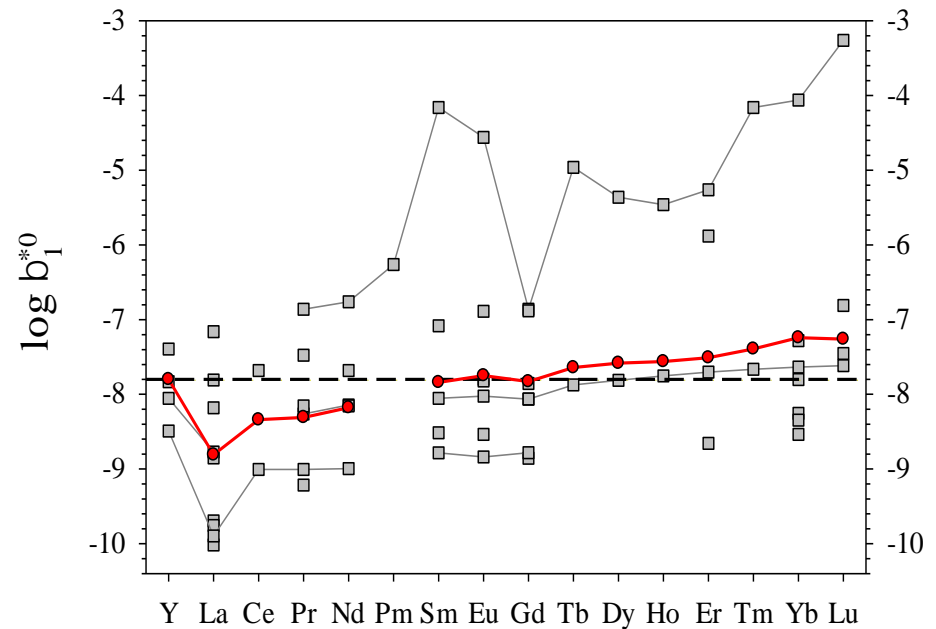
Have prior experience with ARPA-e application process and am looking for collaborations, as I am currently a 1-person research team

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Example: correction of literature data for REE hydrolysis by rapid-scan spectrophotometry

(Schijf J. and R.H. Byrne, "Speciation of yttrium and the rare earth elements in seawater: Review of a 20-year analytical journey" *Chemical Geology* invited review paper, submitted).



Williams-Jones A.E., A.A. Migdisov, and I.M. Samson (2012) *Elements* 8, 355–360.