

CURRICULUM VITAE

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B.S., Geochemistry, Purdue University, August 1969.
A.M., Geology, Indiana University, February 1974.
Ph.D., Geochemistry, The Pennsylvania State University 1979

Geochemical kinetics: the kinetics of reactions in multiphase systems and the application of kinetics principles toward understanding natural systems.

Aqueous geochemistry: hydrothermal and geothermal systems, the role of water in metamorphism and diagenesis, thermodynamic properties of electrolyte solutions.

Applied geochemistry: application of geochemical principles to the solution of health, environmental, and industrial problems, including acid mine drainage, respired mineral dusts and disease, contamination from corroding metallic lead, and high level radioactive wastes.

1969-1970:	Research assistant. Department of Biochemistry, University of Cincinnati.
1970-1971:	U.S. Army. Research Assistant at Feldman Explosives Laboratory, Picatinny Arsenal, Dover, NJ.
1972-1973:	Graduate student at Indiana University.
1974 (Jan-Aug)	Exploration Geologist (coal). Phillips Petroleum Company.
1974-1979:	Graduate student at The Pennsylvania State University.
1979-1980:	Research Associate, Branch of Experimental Geochemistry and Mineralogy, U.S. Geological Survey, Reston, VA
1980-1986:	Assistant Professor of Geochemistry, Virginia Polytechnic Institute and State University, Blacksburg, VA
1986-1992:	Associate Professor of Geochemistry, Virginia Polytechnic Institute and State University, Blacksburg, VA
1992-2010:	Professor of Geochemistry, Virginia Polytechnic Institute and State University, Blacksburg, VA
2010-present	Professor Emeritus, Virginia Polytechnic Institute and State University, Blacksburg, VA

Member:

American Association for the Advancement of Science (elected fellow 2016)
The Geochemical Society
Mineralogical Society of America (elected fellow 1996)
International Association of Geochemistry and Cosmochemistry

Books

- Hall D. L., Craig J. R., and Rimstidt J. D. (1988) *Exercises in Resources Geology*, 185 pp. Kendall Hunt Publishing Co.
- Craig J. R. and Rimstidt J. D. (1993) *Exercises in Resources Geology, 2nd ed.* Kendal Hunt Publishing Co.
- Rimstidt J. D. and Craig J. R. (2001) *Exercises in Resources Geology, 3rd Edition.* Kendall-Hunt Inc.
- Rimstidt J.D. (2014) *Geochemical Rate Models.* Cambridge University Press. 232 pp.

Journal Articles

- Sharma J., Staley R. H., Rimstidt J. D., Fair H. D., and Gora T. (1971) Effect of doping on the x-ray photoelectron spectra semiconductors. *Chemical Physics Letters* **9**, 564-567.
- Gora T., Rimstidt J. D., Sharma J., and Staley R. (1972) The x-ray photoelectron spectrum of diamond. *Physical Review* **B 5**, 2309-2314.
- Sharma J., Gora T., Rimstidt J. D., and Staley R. (1972) The x-ray photoelectron spectra of the alkali azides. *Chemical Physics Letters* **15**, 232-235.
- Rimstidt J. D. and Barnes H. L. (1980) The kinetics of silica-water reactions. *Geochimica et Cosmochimica Acta* **44**, 1683-1699.
- Rimstidt J. D. and Cole D. R. (1983) Geothermal Mineralization I: The mechanism of formation of the Beowawe, Nevada siliceous sinter deposit. *American Journal of Science* **283**, 861-875.
- Ingram G. R. and Rimstidt J. D. (1984) The natural weathering of coal. *Fuel* **63**, 292-296.
- Mangan M., Craig J. R., and Rimstidt J. D. (1984) Submarine exhalative gold mineralization at the London-Virginia Mine, Buckingham County, Virginia. *Mineralium Deposita* **19**, 227-236.
- Wiersma C. L. and Rimstidt J. D. (1984) Rates of reaction of pyrite and marcasite with ferric iron at pH 2. *Geochimica et Cosmochimica Acta* **48**, 85-92.
- Dove P. M. and Rimstidt J. D. (1985) The solubility and stability of scorodite, $\text{FeAsO}_4 \cdot \text{H}_2\text{O}$. *American Mineralogist* **70**, 838-844.
- Keith L. A. and Rimstidt J. D. (1985) A numerical compaction model of over pressuring in shales. *Mathematical Geology* **17**, 115-135.
- Johnson N. E., Craig J. R., and Rimstidt J. D. (1986) Compositional trends in tetrahedrites. *Canadian Mineralogist* **24**, 385-397.
- Rimstidt J. D. and Dove P. M. (1986) Mineral/solution reaction rates in a mixed flow reactor: Wollastonite hydrolysis. *Geochimica et Cosmochimica Acta* **50**, 2509-2516.
- Sinha A. K., Hewitt D. A., and Rimstidt J. D. (1986) Fluid interaction and element mobility in the development of ultramylonites. *Geology* **14**, 883-886.
- Walsh C. A. and Rimstidt J. D. (1986) Rates of reaction of covellite and blaubleibender covellite with ferric iron at pH 2. *Canadian Mineralogist* **24**, 35-44.
- Brooker D. D., Craig J. R., and Rimstidt J. D. (1987) Ore metamorphism and pyrite porphyroblast development at the Cherokee Mine, Ducktown, Tennessee. *Economic Geology*. **82**, 72-86.
- Dove P. M. and Rimstidt J. D. (1987) The solubility and stability of scorodite $\text{FeAsO}_4 \cdot \text{H}_2\text{O}$, Reply. *American Mineralogist* **70**, 845-848.
- Johnson N. E., Craig J. R., and Rimstidt J. D. (1987) Effect of substitution on the cell dimensions of tetrahedrite. *Canadian Mineralogist* **25**, 237-244.
- Rimstidt J. D. and Dove P. M. (1987) The solubility and stability of scorodite, $\text{FeAsO}_4 \cdot \text{H}_2\text{O}$, Reply. *American Mineralogist* **70**, 852-855.

- Johnson N. E., Craig J. R., and Rimstidt J. D. (1988) The crystal chemistry of tetrahedrite. *American Mineralogist* **73**, 389-397.
- Sinha A. K., Hewitt D. A., and Rimstidt J. D. (1988) Metamorphic petrology and strontium isotope geochemistry associated with the development of mylonites: an example from the Bevard fault zone, North Carolina. *American Journal of Science* **288-A**, 115-147.
- Barbary R. J. and Rimstidt J. D. (1989) Redox conditions of calcite cementation interpreted from Mn and Fe contents of authigenic calcites. *Geological Society of America Bulletin* **101**, 795-804
- Chermak J. A. and Rimstidt J. D. (1990) Hydrothermal transformation rate of kaolinite to muscovite/illite. *Geochimica et Cosmochimica Acta* **54**, 2979-2990.
- Chermak J. A. and Rimstidt J. D. (1989) Estimating the thermodynamic properties (ΔG_f° and ΔH_f°) of silicate minerals at 298K from the sum of polyhedral contributions. *American Mineralogist* **74**, 1023-1031.
- Chermak J. A. and Rimstidt J. D. (1990) Estimation ΔG_f° of silicate minerals at high temperatures from the sum of polyhedral contributions. *American Mineralogist* **75**, 1376-1380.
- Groen J. C., Craig J. R., and Rimstidt J. D. (1990) Gold-rich rim formation on electrum grains in placers. *Canadian Mineralogist* **28(2)**, 207-228.
- Cline J. S., Bodnar R. J., and Rimstidt J. D. (1992) Numerical stimulation of fluid flow and silica transport and deposition in boiling hydrothermal solutions: Application to epithermal gold deposits. *Journal of Geophysical Research* **97**, 9085-9103.
- Hume L. A. and Rimstidt J. D. (1992) The biodurability of chrysotile asbestos. *American Mineralogist* **77**, 1125-1128.
- Williamson M. A. and Rimstidt J. D. (1992) Correlation between structure and thermodynamic properties of aqueous sulfur species. *Geochimica et Cosmochimica Acta* **56**, 3867-3880.
- Kirby C. S. and Rimstidt J. D. (1993) Mineralogy and surface properties of municipal solid waste ash. *Environmental Science and Technology* **27**, 652-660.
- Rimstidt J. D. and Newcomb W. D. (1993) Measurement and analysis of rate data: The rate of reaction of ferric iron with pyrite. *Geochimica et Cosmochimica Acta* **57**, 1919-1934.
- Williamson M. A. and Rimstidt J. D. (1993) The rate of decomposition of the ferric-thiosulfate complex in acidic aqueous solutions. *Geochimica et Cosmochimica Acta* **57**, 3555-3561.
- Kibry C. S. and Rimstidt J. D. (1994) Interaction of municipal solid waste ash with water. *Environmental Science and Technology* **28**, 443-451.
- Williamson M. A. and Rimstidt J. D. (1994) The kinetics and electrochemical rate-determining step of aqueous pyrite oxidation. *Geochimica et Cosmochimica Acta* **58**, 5443-5454.
- Lu J., Craig J. R., and Rimstidt J. D. (1995) Paragenesis and geochemistry of the Idol Mine zinc deposit, Tennessee. *Economic Geology*. **90**, 194-199.
- Werner A. J., Hochella Jr. M. F., Guthrie Jr. G. D., Hardy J. A., Aust A. E., and Rimstidt J. D. (1995) Asbestiform riebeckite (crocidolite) dissolution in the presence of Fe chelators: Implications for mineral-induced disease. *American Mineralogist* **80**, 1093-1103.
- Junta-Rosso J. L., Hochella Jr. M. F., and Rimstidt J. D. (1997) Linking microscopic and macroscopic data for heterogeneous reactions illustrated by the oxidation of manganese (II) at mineral surfaces. *Geochimica et Cosmochimica Acta* **61**, 149-159.
- Rimstidt J. D. (1997) Quartz solubility at low temperatures. *Geochimica et Cosmochimica Acta* **61**, 2553-2558.
- Craig J. R. and Rimstidt J. D. (1998) Gold production history of the United States. *Ore Geology Reviews* **13**, 407-464.
- Junta-Rosso J. L., Hochella Jr. M. F., and Rimstidt J. D. (1998) Reply to the comment by J.J. Morgan and S.H.R. Davis on "Linking microscopic and macroscopic data for

- heterogeneous reactions illustrated by the oxidation of manganese(II) at mineral surfaces. *Geochimica et Cosmochimica Acta* **62**, 365-368.
- Rimstidt J. D., Balog A., and Webb J. (1998) Distribution of trace elements between carbonate minerals and aqueous solutions. *Geochimica et Cosmochimica Acta* **62**, 1851-1863.
- Craig J. R., Rimstidt J. D., Bonnaffon C. A., Collins T. K., and Scanlon P. F. (1999) Surface water transport of lead at a shooting range. *Environmental Contamination and Toxicology* **63**, 312-319.
- Diz H. R., Novak J. T., and Rimstidt J. D. (1999) Iron precipitation kinetics in synthetic acid mine drainage. *Mine Water and the Environment* **18**, 1-14.
- Rosso J. J. and Rimstidt J. D. (2000) A high resolution study of forsterite dissolution rates. *Geochimica et Cosmochimica Acta* **64**, 797-812.
- Weissbart E. J. and Rimstidt J. D. (2000) Wollastonite: Incongruent dissolution and leached layer formation. *Geochimica et Cosmochimica Acta* **64**, 4007-4016.
- Jurinski J. B. and Rimstidt J. D. (2001) Biodurability of talc. *American Mineralogist* **86**, 392-399.
- Craig J. R., Edwards D., Rimstidt J. D., Scanlon P. F., Colling T. K., Schabenberger O., and Birch J. B. (2002) Lead distribution on a public shotgun range. *Environmental Geology* **41**, 876-882.
- Newcomb W. D. and Rimstidt J. D. (2002) Trace element distribution in US groundwaters: A probabilistic assessment using public domain data. *Applied Geochemistry* **17**, 49-57.
- Sun Z. and Rimstidt J. D. (2002) Silica transport in the high-level radioactive waste repository, Yucca Mountain, Nevada. *Environmental & Engineering Geoscience* **8**, 3-9.
- Dunkle S. E., Craig J. R., and Rimstidt J. D. (2003) Romarchite, hydromarchite and abhurite formed during the corrosion of pewter artifacts from the *Queen Anne's Revenge* (1718). *Canadian Mineralogist* **41**, 659-669.
- Jerz J. K. and Rimstidt J. D. (2003) Efflorescent iron sulfate minerals: Paragenesis, relative stability and environmental impact. *American Mineralogist* **88**, 1919-1932.
- Kowalewski M. and Rimstidt J. D. (2003) Average lifetime and age spectra of detrital grains: Toward a unifying theory of sedimentary grains. *Journal of Geology* **111**, 427-439.
- Rimstidt J. D. and Vaughan D. J. (2003) Pyrite oxidation: A state-of-the-art assessment of the reaction mechanism. *Geochimica et Cosmochimica Acta* **67**, 873-880.
- Jerz J. K. and Rimstidt J. D. (2004) Pyrite oxidation in moist air. *Geochimica et Cosmochimica Acta* **68**, 701-714.
- Elwood Madden M. E., Bodnar R. J., and Rimstidt J. D. (2004) Jarosite as an indicator of water-limited chemical weathering on Mars. *Nature* **43**, 821-823.
- Liu Y., Olsen A. A., and Rimstidt J. D. (2006) Mechanism for the dissolution of olivine series minerals in acidic solutions. *American Mineralogist* **91**, 455-458.
- Walker F. P., Schreiber M. E., and Rimstidt J. D. (2006) Kinetics of arsenopyrite oxidative dissolution by oxygen. *Geochimica et Cosmochimica Acta* **70**, 1668-1676.
- Harvey M. C., Schreiber M. E., Rimstidt J. D., and Griffith M. A. (2006) Scorodite dissolution kinetics: Implications for arsenic release. *Environmental Science and Technology* **40**, 6709-6714.
- Olsen, A. A. and Rimstidt, J. D., 2007. Using a mineral lifetime diagram to evaluate the persistence of olivine on Mars. *American Mineralogist* **92**, 598-602.
- Schwartz, B. F., Schreiber, M. E., Pooler, P. S., and Rimstidt, J. D., 2008. Calibrating access-tube time domain reflectometry soil water measurements in deep and heterogeneous soil profiles. *Soil Science Society of America Journal* **72**, 917-930.
- Olsen, A. A. and Rimstidt, J. D., 2008. Oxalate-promoted forsterite dissolution at low pH. *Geochimica et Cosmochimica Acta* **72**, 1758-1766.

- Luxton, T. P., Eick, M. J., and Rimstidt, J. D., 2008. The role of silicate in the adsorption/desorption of arsenite on goethite. *Chemical Geology* **252**, 125-135.
- Liu, J., Aruguete, D. M., Jinschek, J. R., Rimstidt, J. D., and Hochella Jr., M. F., 2008. The non-oxidative dissolution of galena nanocrystals: Insights into mineral dissolution rates as a function of grain size, shape, and aggregation state. *Geochimica et Cosmochimica Acta* **72**, 5984-5996.
- Huminicki, D. M. C. and Rimstidt, J. D., 2008. Neutralization of sulfuric acid solutions by calcite dissolution and the application to anoxic limestone drain design. *Applied Geochemistry* **23**, 148-165.
- Elwood Madden, M. E., Guess, J. R., Madden, A. S., and Rimstidt, J. D., 2008. Measuring jarosite dissolution rates to determine jarosite lifetimes on Earth and Mars. *Geochimica et Cosmochimica Acta* **72**, A243.
- Mitra, A. and Rimstidt, J. D., 2009. Solubility and dissolution rate of silica in acid fluoride solutions. *Geochimica et Cosmochimica Acta* **73**, 7045-7059.
- Schwartz, B. F., Schreiber, M. E., Pooler, P. S., and Rimstidt, J. D., 2008. Calibrating access-tube time domain reflectometry soil water measurements in deep and heterogeneous soil profiles. *Soil Science Society of America Journal* **72**, 917-930.
- Scheetz, C. D. and Rimstidt, J. D., 2009. Dissolution, transport, and fate of lead on shooting ranges. *Environmental Geology* **58**, 655-665.
- Mitra, A. and Rimstidt, J. D., 2009. Solubility and dissolution rate of silica in acid fluoride solutions. *Geochimica et Cosmochimica Acta* **73**, 7045-7059.
- Huminicki, D. M. C. and Rimstidt, J. D., 2009. Iron oxyhydroxide coating of pyrite for acid mine drainage control. *Applied Geochemistry* **24**, 1626-1634.
- Fall, A., Rimstidt, J. D., and Bodnar, R. J., 2009. An assessment of the precision of thermal history reconstruction based on fluid inclusions: The effect of inclusion size. *Economic Geology* **94**, 1569-1579.
- Elwood Madden, M. E., Madden, A. S., and Rimstidt, J. D., 2009. How long was Meridani Planum wet? Applying a jarosite stopwatch to constrain the duration of diagenesis. *Geology* **37**, 635-638.
- Kimball, B. E., Rimstidt, J. D., and Brantley, S. L., 2010. Chalcopyrite dissolution rate laws. *Applied Geochemistry* **25**, 972-983.
- Zahrai, S.K., Elwood Madden, M.E., Madden, A.S., Rimstidt, J.D., 2013. Na-jarosite dissolution rates: the effect of mineral composition on jarosite lifetimes. *Icarus* **223**, 438-443.
- Wang, D., Hamm, L.M., Guioffre, A.J., Echigo, T., Rimstidt, J.D., De Yoreo, J.J., Grotzinger, J., Dove, P.M., 2012. Revisiting geochemical controls on patterns of carbonate deposition through the lens of multiple pathways to mineralization. *Faraday Discussions* **159**, 371-386.
- Tamada, O., Gibbs, G.V., Boisen Jr., M.B., Rimstidt, J.D., 2012. Silica dissolution catalyzed by NaOH: Reaction kinetics and energy barriers simulated by quantum mechanical strategies. *Journal of Mineralogical and Petrological Sciences* **107**, 87-98.
- Steele-MacInnis, M., Han, L., Lowell, R.P., Rimstidt, J.D., Bodnar, R.J., 2012. The role of fluid phase immiscibility in quartz dissolution and precipitation in sub-seafloor hydrothermal systems. *Earth and Planetary Science Letters* **321-322**, 139-151.
- Steele-MacInnis, M., Han, L., Lowell, R.P., Rimstidt, J.D., Bodnar, R.J., 2012. Quartz precipitation and fluid inclusion characteristics in sub-seafloor hydrothermal systems associated with volcanogenic massive sulfide deposits. *Central European Journal of Geosciences* **4**, 275-286.
- Steele-MacInnis, M., Capobianco, R.M., Dillmore, R., Goodman, A., Guthrie Jr., G., Rimstidt, J.D.,

- Bodnar, R.J., 2012. Volumetrics of CO₂ storage in deep saline formations. *Environmental Science and Technology* **47**, 79-86.
- Rimstidt, J.D., Brantley, S.L., Olsen, A.A., 2012. Systematic review of forsterite dissolution data. *Geochimica et Cosmochimica Acta* **99**, 159-178.
- Moncada, D., Mutchler, S., Nieto, A., Reynolds, T.J., Rimstidt, J.D., Bodnar, R.J., 2012. Mineral textures and fluid inclusion petrography of the epithermal Ag-Au deposits at Guanajuato, Mexico: Application to exploration. *Journal of Geochemical Exploration* **114**, 20-35.
- French, R.A., Caraballo, M.A., Kim, B., Rimstidt, J.D., Murayama, M., Hochella Jr., M.F., 2012. The enigmatic iron oxyhydroxysulfate nanomineral schwertmannite: Morphology, structure, and composition. *American Mineralogist* **97**, 1469-1482.
- Elwood Madden, M.E., Madden, A.S., Rimstidt, J.D., Zahrai, S., Kendall, M.R., Miller, M.A., 2012. Jarosite dissolution rates and nanoscale mineralogy. *Geochimica et Cosmochimica Acta* **91**, 306-321.
- Balashov, V.N., Guthrie, G.D., Hakala, J.A., Lopano, C.L., Rimstidt, J.D., Brantley, S.L., 2013. Predictive modeling of CO₂ sequestration in deep saline sandstone reservoirs: Impacts of geochemical kinetics. *Applied Geochemistry* **30**, 41-56.
- Caraballo, M.A., Rimstidt, J.D., Macias, F., Nieto, J.M., Hochella, M.F., 2013. Metastability, nanocrystallinity and pseudo-solid solution effects on the understanding of schwertmannite solubility. *Chemical Geology* **360**, 22-31.
- Schreiber, M.E., Rimstidt, J.D., 2013. Trace element source terms for mineral dissolution. *Applied Geochemistry* **37**, 94-101.
- Steele-MacInnis, M., Capobianco, R.M., Dilmore, R., Goodman, A., Guthrie, G., Rimstidt, J.D., Bodnar, R.J., 2013. Volumetrics of CO₂ Storage in Deep Saline Formations. *Environmental Science & Technology* **47**, 79-86.
- Zahrai, S.K., Madden, M.E.E., Madden, A.S., Rimstidt, J.D., 2013. Na-jarosite dissolution rates: The effect of mineral composition on jarosite lifetimes. *Icarus* **223**, 438-443.
- Chiriță, P. and Rimstidt, J.D. (2014) Pyrrhotite dissolution in acidic media. *Applied Geochemistry* **41**, 1-10.
- Rimstidt, J.D. (2015) Rate equations for sodium catalyzed quartz dissolution. *Geochimica et Cosmochimica Acta* **167**, 195-204.
- Rimstidt, J.D. (2015) Diffusion control of quartz and forsterite dissolution rates. *Applied Geochemistry* **61**, 99-108.
- Olsen, A.A., Hausrath, E. and Rimstidt, J.D. (2015) Forsterite dissolution rates in Mg-sulfate-rich Mars-analog brines and implications of the aqueous history of Mars. *Journal of Geophysical Research: Planets* **120**, 388-400.
- Capobianco, R.M., Gruskiewicz, M.S., Bodnar, R.J. and Rimstidt, J.D. (2015) Conductivity measurements on H₂O-bearing CO₂-rich fluids. *Journal of Solution Chemistry* **44**, 934-962.
- Xu, J., Murayama, M., Roco, C.M., Veeramani, H., Michel, F.M., Rimstidt, J.D., Winkler, C. and Hochella Jr., M.F. (2016) Highly-defective nanocrystals of ZnS formed via dissimilatory bacterial sulfate reduction: A comparative study with their abiogenic analogues. *Geochimica et Cosmochimica Acta* **180**, 1-14.
- Rimstidt, J.D., Zhang, Y. and Zhu, C. (2016) Rate equations for sodium catalyzed amorphous silica dissolution *Geochimica et Cosmochimica Acta* **195**, 120-125.
- Liu, Z., Rimstidt, J.D., Zhang, Y. and Zhu, C. (2016) A stable isotope doping method to test the range of applicability of detailed balance. *Geochemical Perspectives Letters* **2**, 78-86.
- Rimstidt, J.D. (2015) Rate equations for sodium catalyzed quartz dissolution. *Geochimica et*

Cosmochimica Acta **167**, 195-204.

- Rimstidt, J.D., Zhang, Y. and Zhu, C. (2016) Rate equations for sodium catalyzed amorphous silica dissolution. *Geochimica et Cosmochimica Acta* **195**, 120-125.
- Zhu, C., Liu, Z., Zhang, Y., Wang, C., Scheerer, A., Zhang, G., Georg, R.B., Yuan, H.-I. and Rimstidt, J.D. (2016) Measuring silicate dissolution rates using Si isotope doping. *Chemical Geology* **445**, 146-163.
- Lamadrid, H.M., Rimstidt, J.D., Schwartzbach, E.M., Klein, F., Ulrich, S., Dolocan, A. and Bodnar, R.J. (2017) Effect of water activity on rates of serpentinization of olivine. *Nature Communications* **8**, 16107.
- Pollyea, R.M. and Rimstidt, J.D. (2017) Rate equations for modeling carbon dioxide sequestration in basalt. *Applied Geochemistry* **81**, 53-62.
- Lamadrid, H.M., Moore, L.R., Moncada, D., Rimstidt, J.D., Burruss, R.C. and Bodnar, R.J. (2017) Reassessment of the Raman CO₂ densimeter. *Chemical Geology* **450**, 210-222.
- Michel, F.M., Rimstidt, J.D. and Kletetschka, K. (2018) 3D printed mixed flow reactor for geochemical rate measurements. *Applied Geochemistry* **89**, 86-91.
- Sublet Jr., D.M., Gonzalez, M.M., Rimstidt, J.D. and Bodnar, R.J. (2018) Synthetic fluid inclusions XXI. Partitioning of Na and K between liquid and vapor in the H₂O-NaCl-KCl system at 600–800°C and 500–1000 bars. *Geochimica et Cosmochimica Acta* **235**, 173-188
- Serra-Mia, R., Bellier, M., Chastka, S., Tranhuu, K., Subowo, A., Rimstidt, J.D., Usov, P.M., Morris, A.J. and Michel, F.M. (2018) Mechanism and kinetics of hydrogen peroxide decomposition on platinum nanocatalysts. *ACS Applied Materials & Interfaces* **10**, 21224-21234
- Kletetschka, K., Rimstidt, J.D., Long, T.E. and Michel, F.M. (2018) Suitability of 3D-printed devices for low-temperature geochemical experiments. *Applied Geochemistry*, **98**, 121-126.

Conference proceedings

- Staley R., Gora T. F., Rimstidt J. D., and Sharma J. (1971) Valence electronic structure by XPS. *Proceed. of the International Conference on Electron Spectroscopy*, 719-724.
- Barnes H. L. and Rimstidt J. D. (1975) Control of silica scaling. *Workshop on Geothermal Reservoir Engineering*, 185-192.
- Downs W. F., Barnes H. L., and Rimstidt J. D. (1976) Scaling tests on a Salton Sea geothermal brine. *Second Workshop on Geothermal Reservoir Engineering*, 176-180.
- Downs W. F., Rimstidt J. D., and Barnes H. L. (1976) Kinetics of silica scaling. *E.R.D.A. Workshop -- Scale Management in Geothermal Energy Development*.
- Downs W. F., Barnes H. L., and Rimstidt J. D. (1978) Field scaling tests on geothermal brines. *Geothermal Resources Council Transactions* **2**, 165-166.
- Rimstidt J. D. and Barnes H. L. (1978) Experiments for rapid assessment of the scaling properties of geothermal fluids. *Geothermal Resources Council Transactions* **2**, 567-569.
- Barnes H. L., Downs W. F., and Rimstidt J. D. (1983) Experimental determination of rates of hydrothermal reactions. *Proceedings of the First International Symposium on Hydrothermal Chemistry*, 217-239.
- Rimstidt J. D., Chermak J. A., and Newcomb W. D. (1986) The oxidation of sulfide minerals. *Proceedings of the Fifth International Symposium on Water-Rock Interactions*, 471-474.
- Rimstidt J. D., Newcomb W. D., and Shettel Jr. D. L. (1989) A vertical thermal gradient experiment to stimulate conditions in vapor dominated geothermal systems, epithermal gold deposits, and high level radioactive repositories in unsaturated media. *Proceedings of the Sixth International Symposium on Water-Rock Interactions*, 585-588.
- Rimstidt J. D. and Newcomb W. D. (1989) A comparison of pyrite oxidation rates in batch, mixed flow, and plug flow reactors. *Proceedings of the Sixth International Symposium on*

Water-Rock Interactions, 581-584.

- Rimstidt J. D., Williamson M. A., and Newcomb W. D. (1992) Element redistribution in Yucca Mountain radioactive waste repository produced by evaporation and condensation of water in a thermal field. *Proceedings of the Topical Meeting on Nuclear Waste Packaging*, 50-57.
- Kirby C. S. and Rimstidt J. D. (1993) Municipal solid waste incinerator ash: A geochemical analysis. *Municipal Waste Combustion, Proceedings of an International Specialty Conference*, 479-511.
- Newcomb W. D. and Rimstidt J. D. (1993) Reaction rate of ferric iron with pyrite: Evaluation of raw data analysis from different experimental procedures. *Ground Water Management, Proceedings of the Focus Conference*, 579-591.
- Rimstidt J. D., Chermak J. A., and Gagen P. M. (1994) Rates of reaction of galena, sphalerite, chalcopyrite, and arsenopyrite with Fe(III) in acidic solutions. *The Environmental Geochemistry of Sulfide Oxidation, A.C.S. Symp. Series*, 2-13.
- Newcomb W. D., Rimstidt J. D., and Smith E. P. (1999) Probabilistic modeling of trace element distributions in groundwater. Applications to groundwater quality standards. *Fifteenth Annual Groundwater Foundation Symposium*, 14.
- Jerz J. K. and Rimstidt J. D. (2000) A reactor to measure pyrite oxidation in air. *Proceedings from the Fifth International Conference on Acid Rock Drainage*, 55-60.
- Rimstidt J. D. (2000) Silica: A geochemist's perspective. *The physics and chemistry of SiO₂ of the Si-SiO₂ Interface*, 217-234.
- Huminicki D. M. C. and Rimstidt J. D. (2004) The effect of secondary precipitates on the dissolution rate of calcite in AMD solutions. *Eleventh International Symposium on Water-Rock Interaction*, 1531-1534.
- Olsen A. A., Rimstidt J. D., Barkatt A., and Pulvirenti A. (2004) Corrosion of Yucca Mountain high-level radioactive waste canister material. *Eleventh International Symposium on Water-Rock Interaction*, 1597-1599.
- Rimstidt J. D. (2004) Variability of acid mine drainage compositions. *Eleventh International Symposium on Water-Rock Interactions*, 1629-1632.
- Williamson M. A., Kirby C. S., and Rimstidt J. D. (2006) Iron dynamics in acid mine drainage. *7th International Conference on Acid Rock Drainage (ICARD)*, 2411-2423.

Book Chapters & Reports

- Dove P. M. and Rimstidt J. D. (1994) Silica-water interactions. In *Silica Reviews in Mineralogy*, 29, 259-308.
- Johnson N. E., Craig J. R., and Rimstidt J. D. (1989) Vein copper mineralization of the Virginina District, Virginia and North Carolina. In *Contributions to Virginia Geology*, Vol. 4., Virginia Division of Mineral Resources Publication 88, 2-16
- Kirby C. S. and J.D. R. (1990) The geology and geochemistry of the Falls Hollow travertine deposit. In *Travertine-Marl: Stream Deposits in Virginia* (ed. J. S. Herman and D. A. Hubbard Jr.). Virginia Division of Mineral Resources Publication 101.
- McCawley F. X., Barnes H. L., Rimstidt J. D., Hayba D. O., and Murowchick J. B. (1983) Scaling in geothermal systems: Investigations of geothermal brines of the Salton Sea area, U.S. *Bureau of Mines Report. of Investigations OFR*, 144-183..
- Potter J., Pohl D., and Rimstidt J. D. (1987) Fluid flow systems for kinetic and solubility studies. In *Research Techniques for High Temperature and High Solubility*, V 2 (ed. H. L. Barnes and G. C. Ulmer), 240-260.

- Rimstidt J. D. (1997) Gangue mineral transport and deposition. In *The Geochemistry of Hydrothermal Ore Deposits* (ed. H. L. Barnes), John Wiley & Sons, 487-515.
- Walsh C., Robinson E. S., Rimstidt J. D., and Stovall R. L. (1989) Exploration for magmatic sulfide deposits in the Blue Ridge. In *Contributions to Virginia Geology*, Virginia Division of Mineral Resources Publication, 4, 17-21.
- Blue, C.R., Rimstidt, J.D., Dove, P.M., 2013. Chapter 23 - A Mixed Flow Reactor Method to Synthesize Amorphous Calcium Carbonate Under Controlled Chemical Conditions, in: James, J.D.Y. (Ed.), *Methods in Enzymology*. Academic Press, 557-568.
- Bodnar, R.J., Steele-MacInnis, M., Capobianco, R.M., Rimstidt, J.D., Dillmore, R., Goodman, A., Guthrie, G., 2013. PVTX properties of H₂O-CO₂- "salt" at PTX conditions applicable to carbon sequestration, *Reviews in Mineralogy & Geochemistry*. Mineralogical Society of America, 123-152.

Popular Articles

- Craig J. R. and Rimstidt J. D. (1985) Gold geochemistry. In *McGraw-Hill Yearbook of Science and Technology*, pp. 208-210. McGraw-Hill.
- Rimstidt J. D. and Barnes H. L. (1977) Development of geothermal energy. Some problems. *Earth and Mineral Science* **47**(2), 9-12.
- Rimstidt J. D. and Craig J. R. (1990) Gold and silver. In *Magill's Survey of Science: Earth Science Series* (ed. F. N. Magill), pp. 975-981. Salem Press.
- Rimstidt J. D. (1993) Construction amid destruction. *Nature* **366**, 210.
- Rimstidt J.D. and Vaughan D.J. (2014) Acid mine drainage. *Elements* **10**, 153-154

Service

- Faculty Secretary 1980-1983
 Department Honors Committee, Chairman 1982-1985
 Water Resources Research Center Technical Advisory Committee 1982-1986
 Department Student Affairs Committee 1984-1985, 1994-1995, 1990-2000
 University Graduate Honor System Judicial Panel 1984-1989
 Department Curriculum Committee, Chairman 1985-1988
 Department Awards Committee 1987
 Department Long Range Planning Committee, Chairman 1988
 Department Assistant Chairman 1988-1994, 2000-2004
 Department Executive Committee 1988-1994, 1999-2000. 2005-2006
 College Personnel Committee 1994 & 2005-2007 (appointed); 1997-1998 (elected)
 Department Chair 2004-2005
 Museum and Outreach Committee 2006-2010
 Geosciences Building Committee 2007-2010
 University Budget and Planning Committee 2007-2010

- Associate Editor *Geochimica et Cosmochimica Acta*: 1994-1996 and 1999-2003.
 Publications Chairman for the Goldschmidt Conference 1988 and 1990
 Symposium organizer for the Goldschmidt Conference 1992, 2001

- 1993: DOE BES program review panel. Chair of section that reviewed seven DOE programs on Water-Rock Interaction research during a three-day meeting. I wrote the final report for the review panel, which consisted of six other members.
- 1994: Panel member for NAS Nuclear Waste Technical Review Board (NAS) meeting in Denver
- 1996: DOE proposal review panel for the Environmental Management Science Program
- 2000: DOE workshop on Low Activity [Radioactive] Waste glasses at the Hanford site

2001: Review panel for EPA Office of Research and Development to select a university that will receive funding for a Center for the Study of Mining Wastes
2007 & 2010: NSF Committee of Visitors review of EAR Instrumentation and Facilities Program

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