



Gordon Brown

Dorrell William Kirby Professor of Geology in the School of Earth Sciences,
Emeritus

Earth & Planetary Sciences

Bio

BIO

Gordon Brown specializes in environmental geochemistry and aqueous and surface geochemistry. He and his research group focus on chemical and microbiological interactions at environmental interfaces, which are defined as interfaces between solids and aqueous solutions, solids and gases, aqueous solutions and gases, solids and microbial organisms (including microbial biofilms), and solids and natural organic matter. They utilize molecular-scale methods, particularly those involving very intense x-rays from synchrotron radiation sources, to study the interactions of contaminants and pollutants, particularly heavy metals such as lead and mercury, metalloids such as arsenic and selenium, and actinides such as uranium, with mineral surfaces, with the aim of understanding reactions that can sequester or release these species or transform them into more or less toxic forms.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Earth & Planetary Sciences
- Member, Bio-X
- Affiliate, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Postdoctoral Research Associate, State University of New York, Stony Brook, (1970-1971)
- Assistant Professor of Mineralogy and Crystallography, Princeton University, (1971-1973)
- Scientific Collaborator, Chemistry Department, Brookhaven National Laboratory, (1972-1973)
- Assistant Professor of Mineralogy and Crystallography, Stanford University, (1973-1977)
- Associate Professor of Mineralogy and Crystallography, Stanford University, (1977-1986)
- Visiting Faculty Fellow High Temperature Chemistry and Ceramics Division, Sandia National Laboratory, Albuquerque, New Mexico, (1983-1983)
- Visiting Professor, Universite Pierre et Marie Curie Paris VI, Laboratoire de Mineralogie-Cristallographie, (1984-1984)
- Professor of Mineralogy and Geochemistry, Stanford University, (1986- present)
- Chairman Geology Department, Stanford University, (1986-1992)
- Co-Director Center for Materials Research, Stanford University, (1987-1990)
- Professor of Photon Science, Photon Science Department, SLAC National Accelerator Laboratory, (1992- present)
- Acting Chair, Stanford Synchrotron Radiation Laboratory Faculty (now SLAC), (1997-1998)
- Chair Stanford Synchrotron Radiation Laboratory Faculty (now Department of Photon Science), SLAC National Accelerator Laboratory, (1998-2007)
- Director, Stanford Environmental Molecular Science Institute, Stanford University, (2004-2011)
- Professor (by courtesy) of Chemical Engineering, Stanford University, (2008- present)

- Chair, Department of Geological & Environmental Sciences, Stanford University, (2012- present)

HONORS AND AWARDS

- Graduate Traineeship, National Science Foundation (1965 – 1966)
- Graduate Fellow, National Defense Education Act (1966 – 1969)
- Fellow, Mineralogical Society of America (1975)
- French Government Fellowship as Professor associe, Universit Paris VI-VII (1984)
- Dorrell William Kirby Professor of Earth Sciences, Stanford University (1991 – Present)
- 24th Hallimond Lecturer, Mineralogical Society of Great Britain and Ireland (1992)
- Elected Vice President and President, Mineralogical Society of America (1994 - 1996)
- Docteur Honoris Causa, Universite Paris VII (1997)
- Fellow, Geological Society of America (1997)
- Edison Lecturer, University of Notre Dame (1999)
- Fellow, Geochemical Society (1999)
- Fellow, European Association of Geochemistry (1999)
- Best Paper Award 1999 (shared with G. Morin, F. Juillot, J. D. Ostergren, P. Ildefonse, G. Calas), Mineralogical Society of America (2000)
- Fellow, American Association for the Advancement of Science (2000)
- Umbgrove Lecturer, Utrecht University, The Netherlands (2000)
- Distinguished Lecturer, Distinguished Lecturer Series on Frontier Applications of Synchrotron Radiation, Cornell University (2004)
- Hawley Medal, Canadian Mineralogist (2006), shared: Farges, Siewert, Ponader, Pichavant, Behrens, Mineralogical Association of Canada (2007)
- Outstanding Paper Award (shared w/ Hayes, Roe, Hodgson, Leckie, Parks), Association of Environmental Engineering and Science Professors (2007)
- Patterson Medal, The Geochemical Society (2007)
- Roebling Medal, Mineralogical Society of America (2007)
- Ian Campbell Medal, American Geosciences Institute (2012)
- Elected Foreign Member, Academia Europaea (Earth and Cosmic Sciences Section) (2013)
- Louis T. J. Delbaere Memorial Lecturer, Canadian Light Source Annual Users Meeting, Saskatoon, Saskatchewan, Canada. (2015)
- Award for Excellence in Teaching, Stanford School of Earth, Energy & Environmental Sciences (2016)
- Special Session in Honor of the Lifetime Contributions to the Geochemistry Community, Geochemical Society; Goldschmidt 17 Conference, Paris, France (2017)
- Honorary Doctorate of Science Degree, Millsaps College, Jackson, MS, (2018)
- Medal of Excellence in Mineralogical Sciences, International Mineralogical Association (2018)
- Elected Union Fellow, American Geophysical Union (2020)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Invited Talks, (1) "Interfaces in Environmental Chemistry: What Have We Learned in the Last 30 Years", (2) "Interaction of Organic Molecules and Microorganisms with Mineral Surfaces and Their Impact on Metal Ion Sorption Processes", (3) "Geochemistry of Mercury in Mining Environments", Short Course on Computer Simulation and Synchrotron Radiation in Environmental Chemistry and Geochemistry", Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, March 16-18, 2015. (2015 - 2015)
- Member, DOE-BESAC Subcommittee on Transformational Research Opportunities (2014 - present)
- Co-Organizer, Session on Interaction of Organic and Inorganic Pollutants With Mineral and Organic Surfaces, Goldschmidt Conference 2014, Sacramento, CA, June 2014. (2014 - 2014)
- Invited Lecturer and Co-Convenor, "The Expanding Role of Large User Facilities in the Earth Sciences and the New Research Opportunities They Create", Union Session on Elements: 10 Years Old, Goldschmidt Conference 2014, Sacramento, CA, June 2014. (2014 - 2014)

- Invited Talk, "Interaction of Engineered and Natural Nanoparticles (NPs) at Solid-water, Solid-Organic Matter, and Solid-Microbe Interfaces", Session on Engineered Nanomaterials Interacting with Natural and Engineered Interfaces, Division of Colloid and Surface Chemistry, 248th American Chemical Society Meeting, San Francisco, CA, August 12, 2014. (2014 - 2014)
- Invited Talk, "Synchrotrons and the Environment – A Marriage Made in Heaven", Synchrotron Environmental Science VI, Advanced Photon Source, Argonne, IL, September 11-12, 2014. (2014 - 2014)
- Invited Talk, "Properties, Health Impacts, and Transformations of Engineered, Incidental, and Natural Nanoparticles", International Conference on Nanoscience and the Environment, Center of Competences Nanosciences in Ile de France (C'Nano IdF, <http://www.cnanoidf.org>), Paris, France, November 6, 2014. (2014 - 2014)
- Plenary Lecture, "Interface Chemistry and Geochemistry: What Have We Learned in the Last 30 Years?", Conference on the Chemical Side of SLU2+, Swedish University of Agricultural Sciences, Uppsala, Sweden, August 19-21, 2014. (2014 - 2014)
- Member, Science Advisory Board, Blue Planet Ltd. (2013 - present)
- Member, University Committee on Environmental Health & Safety, Stanford University (2013 - present)
- Principal Editor, Elements Magazine (2013 - present)
- Invited Lecturer, "Applications of XAFS Spectroscopy to Molecular Environmental Science", SLAC National Accelerator Laboratory Summer School on Applications of Synchrotron X-ray Absorption Spectroscopy, SLAC National Accelerator Laboratory, June (2013 - 2013)
- Invited Speaker, IMPMC, U.Paris VI-VII: Uranium Speciation in Contaminated Sediments, March 2007. (2013 - 2013)
- Invited Talk, "Environmental Geochemistry of the Light Actinides" Institut de Minéralogie et de Physique des Milieux Condensés (IMPMC), Université Paris VI, Paris, France, June (2013 - 2013)
- Invited Talk, "Mineral-aqueous solution interfacial processes and their impact on the environment". 2013 Gordon Research Conference on Chemical Reactions on Surfaces. Les Diablerets, Switzerland, April (2013 - 2013)
- Invited Talk, "Mineral-Aqueous Solution Interface Reactions and Their Impact on the Environment", Frontiers in Geosciences Seminar Series. Earth and Environmental Sciences Division, Los Alamos National Laboratory, Los Alamos, NM, July (2013 - 2013)
- Invited Talk, "Mineral-aqueous solution interfacial processes and their impact on the environment." U.S.G.S. Western Region Colloquium, Menlo Park, CA, May (2013 - 2013)
- Invited Talk, "Mineral-Aqueous Solution Interface Reactions and Their Impact on the Environment", Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement (CEREGE), Université Aix-Marseille, Aix-in-Provence, France, June (2013 - 2013)
- Invited Talk, "Factors Controlling Chemical Reactions at Environmental Interfaces", Session on Behavior of Contaminants at Environmental Interfaces, Division of Colloid and Surface Chemistry, 246th American Chemical Society Meeting, Indianapolis, IN, September (2013 - 2013)
- Invited Talk and Co-Organizer, "Molecular Characterization of Natural Organic Matter", Workshop on Belowground Carbon Cycling Processes at the Molecular Scale, Environmental Molecular Science Laboratory, Pacific Northwest National Lab, Richland, WA, February (2013 - 2013)
- Keynote Speaker, "Beneficial Uses of Engineered Nanoparticles and the Behavior of Natural and Engineered Nanoparticles in the Environment", Session on Environmental Application of Engineered Nanomaterials: Benefits and Risks. In Theme on Anthropogenic Impacts on Pollutant Dynamics, Goldschmidt 2013 Conference, Florence, Italy, August (2013 - 2013)
- Lead, Task on Complex Environmental Interfaces under Realistic Conditions, SLAC Initiative on Controlling Chemical Reactivity for Energy and the Environment (2013 - 2013)
- Member, Geological Society of America Geology and Public Policy Committee (2013 - 2013)
- Member, DOE - BESAC Sub-Committee on Synchrotron Light Sources (2013 - 2013)
- Member, DOE - Basic Energy Sciences Advisory Committee (BESAC) Sub-Committee on Major Facilities (2013 - 2013)
- Member, Committee on Synchrotron Light Sources, National Science Foundation Mathematics and Physical Science Directorate (2013 - 2013)
- Smith Lecturer, "Mineral-Aqueous Solution Interfacial Processes and Their Impact on the Environment". Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor, MI, March (2013 - 2013)
- Invited Talk, "Probing Environmental Nanoparticles and Chemical Reactions at Solid-Water-Microbial Biofilm Interfaces with Synchrotron Light." Synchrotron Soleil – French National Synchrotron Facility Seminar, Gif-sur-Yvette, France, May (2012 - 2012)
- Invited Talk, "Mesoscale Phenomena Associated with Mineral Surfaces and Pathway-Dependent Chemical Processes." Session on Earth Materials at the Mesoscale: Characterization and Applications. American Geophysical Union Meeting, San Francisco, CA, December (2012 - 2012)
- Organizer, Session on "Surface Adsorption and Reaction Processes of Nanomaterials Relevant to Environmental Science." Division of Colloid and Surface Science, 243rd American Chemical Society National Meeting, San Diego, CA, March (2012 - 2012)
- Member, Basic Energy Sciences Advisory Committee, Department of Energy (2011 - present)
- Member, Basic Energy Sciences Advisory Committee Subcommittee on Mesoscale Science & Engineering, Department of Energy (2011 - 2013)
- Co-Organizer (with Georges Calas, University of Paris 6), Session on Actinides in the Environment, AGU Fall National Meeting, San Francisco, CA, December (2011 - 2011)

- Invited Speaker, NSF Chemistry Workshop on Nanomaterials and the Environment: "Surface Adsorption and Reaction Processes Relevant to Environmental Science" and "Infrastructure and Human Resources Needs in Nano/Environmental Science: Computational Tools", Arlington, VA, June (2011 - 2011)
- Keynote Speaker, Session on Chemical and Microbial Electron Transfer Processes at Mineral Surfaces, Goldschmidt 2011 Conference: "Element Attachment and Electron Transfer Reactions at Mineral-Water and Mineral-Microbe Interfaces", Prague, The Czech Republic, August (2011 - 2011)
- Member, Organizing Committee, NSF Chemistry Workshop on "Nanomaterials and the Environment: The Role of Chemists", Arlington, VA, June 28-30 (2011 - 2011)
- Member, Provost's Committee on Postdoctoral Students, Stanford University (2010 - present)
- Invited Speaker, Symposium on Spectroscopic Investigations of Metal Interactions at Mineral/Water/Microbial Interfaces: "Spectroscopic Investigations of Metal Ion Interactions with Mineral Surfaces – What Have We Learned in the Last 30 Years?", 239th American Chemical Society Meeting, San Francisco, CA, March (2010 - 2010)
- Invited Speaker, Symposium on Environmental Interfaces, 57th Annual American Vacuum Society Meeting: "Environmental Interfaces: Where the Vacuum, Cleanliness, and Size Gaps Must be Minimized", Albuquerque, NM, October 2010. (2010 - 2010)
- Invited Speaker, Symposium on Environmental Implications of Nanotechnology, PacifiChem Meeting: "Structure and Reactivity of Silver and Iron Oxide Nanoparticles", Honolulu, HI, December 2010. (2010 - 2010)
- Invited Speaker, Session on Biotic and Abiotic Transformations and Effects of Manufactured Nanomaterials – Fundamental Environmental Aspects, Goldschmidt 2010 Conference: "Sulfidation of Silver Nanoparticles", Knoxville, TN, June 2010. (2010 - 2010)
- Affiliated Faculty, Woods Institute for the Environment, Stanford University (2009 - present)
- Co-Chair, Science Theme Advisory Panel on Geochemistry, Biogeochemistry, and Subsurface Science, Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory (2009 - 2010)
- Co-Organizer (with Abby Kavner, UCLA; Nancy Ross, Virginia Tech; Glenn Waychunas, LBNL), Mineralogical Society of America Symposium on "Frontiers in Mineral Sciences: Mineral/Melt Energetics, Mineral Surface Chemistry, Mineral Nanoscience, and High Pressure Mineralogy," Geological Society of America Annual Meeting, Portland, OR, October (2009 - 2009)
- Co-Organizer (with Janet Hering, ETH), Session on "Mineral/Water Interface Chemistry: The Legacy of Stumm and Schindler and What We Have Learned Since," 2009 | Goldschmidt Conference, Davos, Switzerland, June (2009 - 2009)
- Co-Organizer and Invited Speaker (with Georges Calas, University of Paris 6), Symposium on Environmental Mineralogy, French Academy of Sciences, Institut de France: "Environmental Mineralogy – Molecular-level Perspectives", Paris, France, September (2009 - 2009)
- Discussion Leader, Gordon Research Conference on Chemical Reactions at Surfaces, Session on "Environmental Surface Chemistry", Ventura, CA, February (2009 - 2009)
- Invited Speaker, Center for Environmental Implications of Nanotechnology Annual Meeting: "Surface Science Studies of Iron Oxide and Silver Nanoparticles", Washington, DC, September (2009 - 2009)
- Invited Speaker, Symposium on Metal and Metalloid Speciation and Adsorption: "Interaction of Zn(II) with Mineral Nano- and Microparticles, Bacterial Surfaces, and Biofilm-Coated Metal Oxides", 237th American Chemical Society National Meeting, Salt Lake City, UT, March (2009 - 2009)
- Invited Speaker, Department of Earth and Planetary Sciences Seminar: "Mercury Pollution in California - From Subduction to Mercury in Tuna", Washington University St. Louis, April (2009 - 2009)
- Invited Speaker, San Jose State University Geology Club: "From Subduction to Mercury in Tuna: The Legacy of Mercury and Gold Mining in California", San Jose, CA, November (2009 - 2009)
- Invited Speaker, Department of Earth & Environmental Sciences, Ludwig-Maximilians-Universität: "Applications of Synchrotron Radiation in the Earth, Environmental, and Energy Sciences", Munich, Germany, June (2009 - 2009)
- Member, Stanford Faculty Senate, Stanford University (2009 - 2009)
- Member, Proposal Review Panel, Geobiology and Low Temperature Geochemistry Program, Earth Sciences Division, National Science Foundation 2008 Keynote Speaker: Beveridge Symposium on the Interaction of Metal Ions with Bacteria: "Synchrotron X-ray Studies of Bacteria-Mineral-Metal Ion Interactions", Goldschmidt Conference, Vancouver, British Columbia, Canada, July (2008 - 2009)
- Co-Organizer, Session on Nanoparticles in the Environment, American Geophysical Union Fall Meeting, San Francisco, CA, December (2008 - 2008)
- Invited Participant, DOE-BES Workshop on Solving Science and Energy Grand Challenges with Next Generation Photon Sources, Rockville, MD, October (2008 - 2008)
- Invited Speaker, Department of Civil & Environmental Engineering Seminar Series, U.C. Berkeley: "Shedding New Light on Environmental Chemistry and Environmental Microbiology: Synchrotron-Based Studies of Complex Environmental Processes", Berkeley, CA, September (2008 - 2008)
- Invited Speaker, Cross-Cutting Review of Environmental Science at the Advanced Light Source, Lawrence Berkeley National Laboratory: "STXM Studies of Nanoscale Environmental and Geological Materials and Processes", Berkeley, CA, October (2008 - 2008)
- Invited Speaker, Institute Seminar, EAWAG, Swiss Federal Institute of Aquatic Science & Technology: "Mercury Pollution in California – From Subduction to Mercury in Tuna", Dübendorf, Switzerland, November (2008 - 2008)

- Invited Speaker, Louisiana State University Office of Research and Economic Development Workshop - Enabling Grand Challenge Science: The Light Source of the Future, "A Case for Environmental Science at the 'Next Generation' Light Source", Baton Rouge, LA, January (2008 - 2008)
- Invited Speaker, Geochemistry Division Symposium on Advanced Approaches to Investigating Adsorption at the Solid-Water Interface: "Factors Controlling the Reactivity of Metal Oxide Surfaces", American Chemical Society 235th National Meeting, New Orleans, LA, April (2008 - 2008)
- Invited Speaker, Department of Environmental Science Seminar: "Microbial and Chemical Interactions at Mineral Surfaces and Their Impact on Trace Element Cycling", ETH-Zurich, Zurich, Switzerland, November (2008 - 2008)
- Invited Speaker, Stanford-Berkeley Summer School in Applications of Synchrotron Radiation in the Physical Sciences: "Applications of Synchrotron Radiation in the Environmental Sciences", Stanford Linear Accelerator Center and Stanford University, Stanford, CA, August (2008 - 2008)
- Invited Speaker, U.C. Berkeley Workshop on Imaging Complex Pore Structure of Cement: "Synchrotron X-ray Spectromicroscopy Studies of Minerals and Biominerals in Complex, Multi-phase Samples", Berkeley, CA, April (2008 - 2008)
- Member, External Review Committee, Geosciences, Environmental Sciences, and Planetary Sciences Programs, Advanced Photon Source, Argonne National Laboratory (2008 - 2008)
- Member, School of Earth Sciences Council, Stanford University (2007 - present)
- Member: SLAC Faculty Task Force, Stanford University (2007 - present)
- Member, Science Advisory Board, Calera Corporation, Cupertino, CA (2007 - 2012)
- Member: GES Graduate Admissions Committee, Stanford University (2007 - 2012)
- Co-Chair, Task Force Team on Materials, Energy, Environment, and Technology, SLAC, Stanford University (2007 - 2008)
- Member, Junior Faculty Search Committee, Dept. of Chemical Engineering, Stanford University (2007 - 2008)
- Member, SLAC Strategic Planning Committee, DOE Contract Competition, SLAC, Stanford University (2007 - 2008)
- Co-Organizer, SSRL Workshop on STXM and X-ray Nanoprobe Capabilities and Needs for Geological, Environmental, and Biological Sciences, Stanford University, July 2007. (2007 - 2007)
- Invited Lecturer and Participant, DOE Workshop on Molecular Dynamics and Structure of Geofluids, Claremont Resort, Berkeley, CA (2007 - 2007)
- Invited Speaker, The Future of X-ray Science – A symposium in honor of Prof. Joachim Stohr, Director of SSRL, on his 60th birthday, "Molecular Environmental and Interface Science - Applications of Synchrotron X-rays to Pollutants and Their Interactions at Environmental Interfaces", SLAC, Stanford, CA, September 2007. (2007 - 2007)
- Invited Speaker, Goldschmidt Conference, Symposium on Speciation and Reactivity of Trace Elements in Natural Environments, Mercury Speciation in Mining Environments, Cologne, Germany, August 2007. (2007 - 2007)
- Invited Speaker, 1st ERA-Chemistry Flash Conference: Factors Controlling Chemical Reactivity at Metal Oxide-Aqueous Solution Interfaces, Autrans, France, March 2007. (2007 - 2007)
- Invited Speaker, Department of Chemistry Seminar, University of Paris VI: Factors Controlling Chemical Reactivity at Metal Oxide-Aqueous Solution Interfaces, Paris, France, March 2007. (2007 - 2007)
- Invited Speaker, The FYSICUM, Stockholm University: Molecular Environmental Science-Applications of Synchrotron Radiation to Environmental Problems at the Molecular Level, Stockholm, Sweden, March 2007. (2007 - 2007)
- Invited Speaker, Workshop on Colloidal Ceramic Processing - The Role of Interfaces, University of Melbourne: Reactivity of Hematite Nanoparticles in the Presence of Zn(II)aq and *Shewanella oneidensis*, Melbourne, Australia, February 2007. (2007 - 2007)
- Invited Speaker, Glen T. Seaborg Institute for Transactinium Science Seminar Series, Lawrence Berkeley National Laboratory: Uranium Speciation in Contaminated Sediments: XAFS Studies of Model and Natural Systems, Berkeley, CA, January 2007 (2007 - 2007)
- Invited Speaker, Hudnall Symposium in Memory of Prof. Joseph V. Smith, "Applications of Synchrotron Radiation to Earth Materials", Department of the Geophysical Sciences, University of Chicago, Chicago, IL, October 2007. (2007 - 2007)
- Keynote Speaker, Australian Colloid and Interface Symposium - Inorganic Oxide Surfaces, Factors Controlling the Reactivity of Metal Oxide Surfaces, Sydney, Australia, February 2007. (2007 - 2007)
- Member, Committee on Committees, Mineralogical Society of America 2007 | Keynote Speaker: Frontiers in Mineral Sciences 2007 Conference: Interaction of Organic Molecules and Microorganisms with Mineral Surfaces and Their Impact on Metal Ion Sorption Processes, Cambridge, U.K., June 2007. (2007 - 2007)
- Member, External Review Committee, Chemistry and Forensics Review, Los Alamos National Laboratory, Los Alamos, NM (2007 - 2007)
- Participant and Discussion Leader, 2007 EnviroSync DOE Workshop: Assessing Synchrotron Radiation Capabilities and Future Needs for Molecular Environmental Science and Low Temperature Geochemistry, Rockville, MD, July 2007. (2007 - 2007)
- Plenary Lecturer, 12th International Symposium on Water-Rock Interaction: Recent Advances in Surface, Interface, and Environmental Geochemistry, Kunming, China, August 2007. (2007 - 2007)
- Plenary Lecturer, Goldschmidt Conference, Patterson Medal Lecture, A Geochemists View of the Environment from the Molecular Perspective, Cologne, Germany, August 2007. (2007 - 2007)

- Third Roebling Medallist Lecturer, "Reminiscences of a Mineralogist Who Went Astray", Geological Society of America Annual Meeting, Denver, CO, October 2007 (2007 - 2007)
- Member, Search Committee, Senior Faculty Position in Molecular Theory, Photon Science Department, SLAC, Stanford University (2006 - 2009)
- Invited Speaker, Workshop on the Development of New User Research Capabilities in Environmental Molecular Science: Stanford EMSI - Current and Future Research Efforts, W.R. Wiley Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA, August 2006. (2006 - 2006)
- Invited Speaker, 232nd American Chemical Society National Meeting, Division of Colloid and Surface Chemistry Symposium on Environmental Interfaces, Soft X-ray Spectroscopy Studies of Environmental Interfaces, San Francisco, CA, September 2006. (2006 - 2006)
- Invited Speaker, Stanford Vice Provost for Undergraduate Education Seminar Series in Earth Sciences: Mercury in the Environment, Stanford University, July 2006. (2006 - 2006)
- Invited Speaker, Department of Chemistry Seminar, Autonomous University of Barcelona, "Environmental Interfaces, Heavy Metals, Microbes, and Plants: Shedding New Light on Environmental Science at the Molecular Level", Barcelona, Spain, April 2006 (2006 - 2006)
- Invited Speaker, Stanford-Berkeley Summer School in Applications of Synchrotron Radiation in the Physical Sciences, Interfaces, Heavy Metals, Microbes, and Plants: Shedding New Light on Environmental Science at the Molecular Level, U.C. Berkeley, June 2006 (2006 - 2006)
- Invited Speaker, NSF Workshop on Preparing for an Academic Career in the Geosciences, Stanford Environmental Molecular Science Institute Overview, Stanford University, July 2006. (2006 - 2006)
- Invited Speaker, Energy Recovery Linac Workshop on Frontier Applications of X-ray Science in Biology, Applications of X-ray Absorption Spectroscopy in Microbial Biomineralization, Cornell University, Ithaca, NY, June 2006. (2006 - 2006)
- Keynote Speaker, Annual Meeting of the Center for Environmental Molecular Science, Stony Brook University: Chemical and Microbial Processes at Environmental Interfaces - From Molecular to Field Scales, Stony Brook, NY, November 2006. 2005 Invited Speaker: Department of Materials Science and Engineering Seminar Series, Stanford University, X-ray Spectroscopy and Microscopy Studies of Chemical and Biological Processes at Environmental Interfaces, Stanford, CA, January 2005 (2006 - 2006)
- Member, DOE Chemical Sciences Division Program Review Committee, Chemistry Division, Argonne National Laboratory, March 2006 (2006 - 2006)
- Member, Science Advisory Council, Sincrotrone Trieste, ELETTRA, Trieste, Italy (2005 - 2012)
- Member, International Program Committee, XAFS13, 13th International Meeting on X-ray Absorption Fine Structure Spectroscopy, Stanford, CA (2005 - 2006)
- Member, Local Organizing Committee, XAFS 13 (2005 - 2006)
- Chair, Stanford Synchrotron Radiation Laboratory Director Search Committee, SLAC, Stanford University (2005 - 2005)
- Invited Speaker, Stanford-Berkeley Summer School in Applications of Synchrotron Radiation in the Physical Sciences, Interfaces, Heavy Metals, Microbes, and Plants: Shedding New Light on Environmental Science at the Molecular Level, SLAC, June 2005. (2005 - 2005)
- Invited Speaker, Chemistry Department Seminar Series, U.C. Irvine, Chemical and Biological Processes at Environmental Interfaces - A Reductionist Approach Using Synchrotron Radiation Methods, Irvine, CA, February 2005. (2005 - 2005)
- Invited Speaker, Symposium on Research, Education, and Outreach in the NSF Environmental Molecular Science Institutes, 230th American Chemical Society Meeting, iResearch Overview of the Stanford EMSI, Washington, DC, August 2005. (2005 - 2005)
- Invited Speaker, Bancroft Symposium, 88th Canadian Chemistry Conference, Synchrotron Radiation Studies of Environmental Interfaces, Saskatoon, Saskatchewan, May 2005. (2005 - 2005)
- Invited Speaker, Symposium on Applications of Physical Chemistry to Environmental and Biogeochemical Research, 229th American Chemical Society National Meeting, The Role of Organic Molecules and Microbial Organisms in Metal Ion Sorption Processes, San Diego, CA, March 2005. (2005 - 2005)
- Invited Speaker, Los Alamos National Lab Workshop on Addressing National Security Needs at DOE User Laboratories - Determining Structure-Function Relationships in Security-Relevant Materials, (1) Molecular Environmental Science: An Example of Applied Science at the User Facilities; (2) Research Opportunities at SSRL Relevant to National Security, Los Alamos, NM, February 2005. (2005 - 2005)
- Invited Speaker, Symposium on Environmental Interfaces, American Physical Society March Meeting, Chemical Reactivity at Metal Oxide-Aqueous Solution Interfaces, Los Angeles, CA, March 2005. (2005 - 2005)
- Invited Speaker, Robinson Environmental Theme Dormitory Seminar Series, Stanford University, Exploring Environmental Science Issues at the Molecular Level, Stanford, CA, March 2005. (2005 - 2005)
- Invited Speaker, Environmental Mineralogy Seminar Studies at the Molecular Level, Molecular-Level Studies of Chemical and Biological Interactions at Iron and Aluminum Oxide Surfaces, Universite de Grenoble, Grenoble, France, October 2005. (2005 - 2005)
- Invited Speaker, Stanford-Berkeley Summer School in Applications of Synchrotron Radiation in the Physical Sciences, Interfaces, Heavy Metals, Microbes, and Plants: Shedding New Light on Environmental Science at the Molecular Level, SLAC, June 2005. (2005 - 2005)
- Invited Speaker, DOE Review and Site Visit of SSRL, Molecular Environmental and Interface Science Research at SSRL, SLAC, Menlo Park, CA, January 2005 (2005 - 2005)

- Plenary Speaker, Synchrotron Environmental Science III, Synchrotron Environmental Science: What Have We Accomplished and What Lies Ahead?, Brookhaven National Laboratory, Upton, NY, September, 2005. (2005 - 2005)
- Plenary Speaker, Workshop on In-Situ Characterization of Surface and Interface Structures and Processes, Argonne National Laboratory, Synchrotron-Based Studies of Environmental Surfaces, Interfaces, and Reactions, Argonne, IL, September 2005. (2005 - 2005)
- Member, Science Advisory Committee, Center for Advanced Microstructures and Devices, Louisiana State University, Baton Rouge, LA (2004 - 2008)
- 2004 – 2006 | Member, Search Committee, Junior Faculty Position in X-ray Imaging and Ultra-Fast Scattering, SSRL Faculty, Stanford University (2004 - 2006)
- Chair, Committee of Visitors, Division of Chemical Sciences, Geosciences, and Biosciences, Office of Basic Energy Sciences, Department of Energy (2004 - 2005)
- Member, Search Committee in Chemical Engineering for New Faculty Member in Heterogeneous Catalysis, Stanford University (2004 - 2005)
- Invited Speaker, Symposium on Synchrotron Radiation as a Frontier Multidisciplinary Scientific Tool, American Association for the Advancement of Science Annual Meeting, Shedding New Light on Environmental Problems: Applications of Synchrotron Radiation to Environmental Science at the Molecular Level, Seattle, WA, February 2004; (2004 - 2004)
- Invited Speaker, Environmental Protection Agency STAR Mercury Program Final Review, Processes Controlling the Chemical/Isotopic speciation and Distribution of Mercury from Contaminated Mine Wastes, Washington, DC, November 2003; (2004 - 2004)
- Keynote Speaker, 7th Annual Environmental Chemistry Symposium, Pennsylvania State University Center for Environmental Chemistry and Geochemistry, From Subduction to Mercury in Tuna: Hg Mining and Contamination in the California Coast Range, USA and Environmental Interfaces, Heavy Metals, Microbes, and Plants: Applications of Synchrotron Radiation Methods to Environmental Science at the Molecular Level, University Park, PA, March 2004; (2004 - 2004)
- Member, Visiting Committee, Carnegie Institution of Washington, Geophysical Laboratory (2004 - 2004)
- Member, Science Advisory Committee, Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory (2003 - present)
- Chair, Core Disciplines Subcommittee, School of Earth Sciences, Stanford University (2003 - 2004)
- Member, Grants Committee, Stanford Institute for the Environment, Stanford University (2003 - 2004)
- Invited Speaker, University of Paris VI-VII: From Subduction to Mercury in Tuna: Hg Mining and Contamination in the California Coast Range, USA, Paris, France, June 2003; (2003 - 2003)
- Invited Speaker, Berkeley-Stanford Summer School on Synchrotron Radiation and Its Applications: Applications of Synchrotron Radiation in Environmental Science, Berkeley, CA, June 2003; (2003 - 2003)
- Invited Speaker, Mesilla Chemistry Workshop on Environmental Chemistry at Interfaces: Advances through Molecular-Level Insight: Approaching the Complexity of Natural Environmental Interfaces: Spectroscopic Studies of Aqueous Metal and Metalloid Reactions with Biofilm-Coated Metal Oxides, Mesilla, NM, February 2003; (2003 - 2003)
- Invited Speaker, Department of Geology and Geophysics Seminar Series, Yale University, From Subduction to Mercury in Tuna: Hg Mining and Contamination in the California Coast Range, USA, New Haven, CN, November 2003 (2003 - 2003)
- Invited Speaker, DOE Geosciences Program Principal Investigator Symposium on Surficial Geochemical Processes: Sorption Reactions at Mineral-Water Interfaces: X-ray Spectroscopy/Scattering Studies of Sorption Complex Geometries, Surface Structure, and Reactivity, Effects of Organic and Inorganic Ligands, and Complex Natural Samples, Argonne National Laboratory, Argonne, IL, March 2003; (2003 - 2003)
- Member (and Chair of X-ray and Neutron Science Subcommittee), Committee of Visitors, Materials Science and Engineering Division, Basic Energy Sciences, Department of Energy (2003 - 2003)
- Plenary Lecturer, XAFS12 12th International Conference on X-ray Absorption Spectroscopy: Environmental Interfaces, Heavy Metals, Microbes, and Plants: Applications of XAFS Spectroscopy and Related Synchrotron Radiation Methods to Environmental Science, Malm, Sweden, June 2003; (2003 - 2003)
- Plenary Science Lecture, American Chemical Society 225th National Meeting, Symposium on Synchrotron-Based Analytical Techniques for Nuclear and Environmental Sciences: Overview of Applications of Synchrotron-Based Techniques in Environmental and Nuclear Science, New Orleans, LA, March 2003; (2003 - 2003)
- Chair, Search Committee for Geomicrobiology Faculty Position, Stanford University (2002 - 2003)
- Invited Lecturer, Berkeley-Stanford Summer School on Synchrotron Radiation and Its Applications: Applications of Synchrotron Radiation in Environmental Science, Stanford, CA, July 2002; (2002 - 2002)
- Invited Lecturer, Mineralogical Society of America-Geochemical Society Short Course on Applications of Synchrotron Radiation to Low Temperature Geochemistry and Environmental Science: Overview of Applications to Low Temperature Geochemistry and Environmental Science, Monterey, CA, December 2002; (2002 - 2002)
- Invited Participant, National Academy of Sciences-National Research Council Workshop on Environmental Chemistry, Irvine, CA (Nov. 2002) (2002 - 2002)
- Invited Speaker, American Geophysical Union Fall Meeting, Union Session on National Facilities in the Earth Sciences: Overview of Applications to Low Temperature Geochemistry and Environmental Science, San Francisco, CA, December 2002. (2002 - 2002)

- Invited Speaker, Spectroscopic Characterization of Speciation and Chemistry on Mineral Surfaces, Symposium on Chemistry and the Environment in the 21st Century - Session on Environmental Chemistry at Interfaces, 223rd National Meeting of the American Chemical Society, Orlando, FL, April 2002; (2002 - 2002)
- Member, NSF Advisory Committee on Government Performance and Assessment (GPRA) Performance Assessment (2002 - 2002)
- Panel Member, Chemistry Division, National Science Foundation, Collaborative Research in Chemistry Panel (2002 - 2002)
- Invited Lecturer, Berkeley-Stanford Summer School on Synchrotron Radiation and Its Applications, Berkeley, CA; Symposium on Establishing a National Synchrotron Light Research Facility in Israel, SLAC, Stanford University; Departmental Seminar Series, Dept. of Earth and Space Sciences, University of Washington, Seattle, WA. (2001 - 2001)
- Invited Speaker, Second International Workshop on Oxide Surfaces, Taos, NM; Session on Advances in the Development and Application for In Situ Techniques for the Investigation of Geochemical Systems, Goldschmidt Conference, The Homestead, Hot Springs, VA; (2001 - 2001)
- Keynote Speaker, Session on Environmental Mineralogy and Geochemistry The Molecular Environmental Science Perspective, European Union of Geosciences Meeting, Strasbourg, France; (2001 - 2001)
- Member, External Review Committee, Columbia University NSF-DOE-Environmental Molecular Sciences Institute (2001 - 2001)
- Plenary Lecture, UK Natural Environment Research Council Workshop on Unlocking the Potential of DIAMOND and SOLIEL for Environmental Sciences, Strasbourg, France; Workshop on Molecular Environmental Science and Soft X-ray Sources, Lawrence Berkeley National Laboratory, Berkeley, CA; (2001 - 2001)
- Member, University Committee on Land and Building Development, Stanford University (2000 - 2003)
- Chair, GES Graduate Admissions Committee, Stanford University (2000 - 2001)
- Invited Speaker, Univ of Saskatchewan & Can. Light Source; DOE Wkshop, Soft X-Ray Sci Next Millennium, Pikeville, TN (2000 - 2000)
- Invited Speaker, SLAC High Energy Physics Symposium, Stanford Linear Accelerator Center, Stanford, CA; Environmental Science, Engineering, and Policy in the 21st Century Distinguished Lecture Series, University of Michigan, Ann Arbor, MI (2000 - 2000)
- Invited Speaker, Advanced Light Source Division Seminars, Lawrence Berkeley National Laboratory, Berkeley, CA; (2000 - 2000)
- Member, Advisory Board, NSF EPSCoR Interface Science Center, University of Nevada, Las Vegas (2000 - 2000)
- Participant, American Academy of Microbiology Workshop on Geobiology, Tuscon, AZ (2000 - 2000)
- Plenary Lecture, 2nd Euroconference and NEA Workshop on Speciation, Techniques, and Facilities for Radioactive Materials at Synchrotron Light Sources, Grenoble, France (2000 - 2000)
- Plenary Lecturer, Users Meeting, Advanced Photon Source, Argonne National Laboratory, Argonne, IL; (2000 - 2000)
- Umbgrove Lecturer, Utrecht University, The Netherlands; (2000 - 2000)
- Member (Chair, 2002), MSA Distinguished Public Serve Award Committee (1999 - 2002)
- Member: Facility Advisory Committee, Canadian Light Source (1999 - 2001)
- Co-Chair, GES Research Infrastructure Committee, Stanford University (1999 - 2000)
- Edison Lecturer, Department of Civil Engineering and Geological Sciences, University of Notre Dame, South Bend, IN (1999 - 1999)
- Invited Lecturer, DOE-BES Geosciences Research Symposium VI: Interfacial Processes, Pacific Northwest National Laboratory, Richland, WA (1999 - 1999)
- Invited Lecturer, Invited Lecture: 6th International Conference on the Structure of Surfaces (ICSOS-6), Vancouver, B.C., Canada; (1999 - 1999)
- Invited Lecturer, Corning Science Fellows Conference, Corning, NY; Invited Lecture: Mineralogy at the Millenium Symposium, Carnegie Institution of Washington, Geophysical Laboratory; New Opportunities in Molecular Environmental Science, Science Policy Committee Meeting, Stanford Linear Accelerator Center (1999 - 1999)
- Invited Speaker, NSF/DOE Chemistry Workshop, Molecular Energy & Env Science, Chicago, IL; (1999 - 1999)
- Invited Speaker, NSF Earth Sciences Workshop on Mineral and Rock Physics and Earth Materials, Scottsdale, AZ (1999 - 1999)
- Invited Speaker, Krauskopf Symposium, Stanford University, Stanford, CA; Invited Speaker: Gibbs Symposium, American Geophysical Union Fall Meeting, San Francisco, CA (1999 - 1999)
- Keynote Speaker, Chemistry on Oxides Session, 46th American Vacuum Society International Symposium, Seattle, WA (1999 - 1999)
- Keynote Speaker, ACS Symposium on Interfacial and Colloidal Phenomena in Aquatic Environments, Environmental Chemistry Division, 217th American Chemical Society National Meeting, Anaheim, CA (1999 - 1999)
- Keynote Speaker, Synchrotron Environmental Science Conference, Argonne National Laboratory, Argonne, IL (1999 - 1999)
- Member, Search Committee, Ion Microprobe Faculty Position, Stanford University (1999 - 1999)

- Participant, NSF/DOE Chemistry Workshop on Energy and Environmental Science (1999 - 1999)
- Participant, NSF Earth Sciences Workshop on Mineral and Rock Physics and Earth Materials (1999 - 1999)
- Plenary Lecture, ACS Symposium on First Accomplishments of the Environmental Management Science Program, Nuclear Chemistry Division, 218th American Chemical Society National Meeting, New Orleans, LA (1999 - 1999)
- Plenary Lecturer, NRCan Light Source Synchrotron Workshop, Ottawa, Canada (1999 - 1999)
- Chair, Stanford Synchrotron Radiation Laboratory Faculty, SLAC, Stanford University (1998 - 2007)
- Co-Chair, EnviroSync, A National Organization of Environmental Science Users of U.S. Synchrotron Radiation Sources (1998 - 2004)
- Chair, Search Committee for Two Senior Faculty Members at SSRL, Stanford University (1998 - 2001)
- Member, AGU Mineral and Rock Physics National Committee (1998 - 2001)
- Visiting Professor, Universite Paris VII (1998 - 1999)
- Chair, Environmental Science/Geosciences Working Group, DOE-BES Workshop on Building a Scientific Case for the Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA (1998 - 1998)
- Co-Convener, Symposium on Applications of Synchrotron Radiation in Mineralogy, 17th International Mineralogical Association Meeting, Toronto, Ontario, Canada (1998 - 1998)
- Invited Lecturer, Nanostructures, Energy, and Technology Seminar, U.C. Davis, Davis, CA; San Francisco Gem and Mineral Society; DOE-BES Workshop on Building a Scientific Case for the Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; Environmental Science Colloquium, Dept. of Physics, U.C. Riverside, Riverside, CA; Interface Science Seminar, Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Hanford, WA; (1998 - 1998)
- Invited Lecturer, Keynote Address: Canadian Synchrotron Institute Workshop on Opportunities for Synchrotron Light in Mining, Natural Resources, and the Environment, Vancouver, B.C., Canada; (1998 - 1998)
- Invited Lecturer, Advanced Photon Source Users Meeting Workshop on Environmental and Geosciences, Argonne National Laboratory, Argonne, IL; National Academy of Sciences Colloquium on Geology, Mineralogy, and Human Welfare, Irvine, CA (1998 - 1998)
- Member, Search Committee, Director of SLAC, SLAC, Stanford University (1998 - 1998)
- Participant, Department of Energy, Nuclear Energy Research Initiative Workshop, Washington, DC (1998 - 1998)
- Participant and Invited Speaker, National Academy of Sciences Colloquium on Geology, Mineralogy, and Human Welfare, Irvine, CA (1998 - 1998)
- Plenary Lecture, Environmental Management Science Program Review, Chicago, IL (1998 - 1998)
- Member, Environmental Research Division Review Committee, Argonne National Laboratory (1997 - 2002)
- Member, Science Advisory Committee, Advanced Light Source, Lawrence Berkeley National Laboratory (1997 - 2001)
- Member, Users Advisory Committee, Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory (1997 - 2000)
- Chair, Search Committee, Director of the Stanford Synchrotron Radiation Laboratory, SLAC, Stanford University (1997 - 1998)
- Member, Basic Energy Sciences Advisory Committee Panel on Synchrotron Radiation Sources and Science (1997 - 1998)
- Co-Convener, DOE Workshop on Chemical Interactions at Metal Oxide-Aqueous Solution Interfaces, Santa Fe, NM (1997 - 1997)
- Co-Convener, Symposium on Applications of Synchrotron Radiation in the Earth and Environmental Sciences, American Geophysical Union Meeting, San Francisco, CA (1997 - 1997)
- Member, International Organizing Committee, 10th International Conference on X-ray Absorption Fine Structure (1997 - 1997)
- Member, Visiting Committee, Department of Geology, Arizona State University (1997 - 1997)
- Organizer, DOE-Chemical Sciences Workshop on Molecular Environmental Science and Synchrotron Radiation Facilities, Stanford Synchrotron Radiation Laboratory (1997 - 1997)
- Participant, DOE Earth Sciences Council Workshop on Scaling in Geological Processes (1997 - 1997)
- Member, U.S. Department of Energy, Council on Chemical Sciences (1996 - 2001)
- Member, Visiting Committee, Geophysical Laboratory, Carnegie Institution of Washington (1996 - 2000)
- Co-Chair, DOE Council on Chemical Sciences Workshop on Chemical Interactions at Metal Oxide-Aqueous Solution Interfaces (1996 - 1999)
- Co-Editor, Journal of Synchrotron Radiation (1995 - 2003)
- Chair, Search Committee for Soil/Environmental Geochemist, Stanford University (1994 - 1998)

- Co-Chair, Beam Line 11 Technical Planning Group, Stanford Synchrotron Radiation Laboratory (1994 - 1998)
- Chair, Chemical Sciences Division, Initiative in Molecular Environmental Science, U.S. Department of Energy, (1994 - 1997)
- Member, Visiting Committee, Department of Geological & Geophysical Sciences, Princeton University (1993 - 2000)
- Member and Co-organizer, Interdisciplinary Research Group on the Structure and Reactivity of Oxide Surfaces, Stanford Center for Materials Research (1993 - 1999)
- Head, Environmental Sciences Section, Stanford Synchrotron Radiation Laboratory Research Department (1992 - present)
- Member, Steering Committee, GeoSoilEnviro CARS, Advanced Photon Source, Argonne National Laboratory (1990 - present)
- Member, Board of Governors, Gemological Institute of America (1988 - 2008)
- Member (Chair, 1990-92, 1999-2002), External Review Committee, Chemical Science and Technology Division (now Chemistry Division), Los Alamos National Laboratory (1988 - 2003)
- Chair, Research Advisory Committee, Gemological Institute of America (1984 - 2008)
- Curator, Stanford Research Mineral Collection and Display, Stanford University (1978 - present)
- Member, Executive Committee of the Center for Materials Research, Stanford University (1978 - 1999)

PROFESSIONAL EDUCATION

- Ph.D., Virginia Polytechnic Institute and State University , Mineralogy and Crystallography (1970)
- M.S., Virginia Polytechnic Institute and State University , Mineralogy and Crystallography (1968)
- B.S., Millsaps College , Chemistry and Geology (1965)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

My research interests involve five main areas: (1) geochemistry of mineral surfaces and their reactivity with aqueous metal complexes, organic matter, and microbial organisms; (2) structure and properties of natural and manufactured nanoparticles; (3) environmental chemistry/geochemistry of heavy metal and actinide contaminants; (4) experimental studies of carbon sequestration through mineral carbonation reactions; and (5) structure-property relationships of silicate liquids and glasses. The first four areas have bearing on the sequestration, transport, and transformations of environmental contaminants (e.g., mercury, lead, arsenic, uranium, and CO₂) in aquatic systems, soils, and the atmosphere; the last focuses on the high-temperature geochemistry of silicate magmas and their trace elements. My students and I utilize various types of macroscopic and microscopic measurements, including the very intense x-rays from synchrotron radiation sources, as well as field investigations.

Teaching

I teach courses at both the undergraduate and graduate levels, including Earth Materials (GES 102), the basic sophomore-level course required of GES majors on minerals and rocks and the processes that form and modify them; Environmental Geochemistry (GES 170/270), a senior-, graduate-level course on the chemistry of the environment; and Physics and Chemistry of Minerals and Mineral Surfaces (GES 261), a graduate-level course on my specialty. I also occasionally teach a sophomore seminar on environment and human health as well as graduate seminars on current topics in environmental geochemistry and mineral surface and aqueous geochemistry.

Professional Activities

Elected Fellow, Academia Europaea (2013); Ian Campbell Medal, American Geosciences Institute (2012); Patterson Medal, Geochemical Society for Environmental Geochemistry Research (2007); Roebling Medal, Mineralogical Society of America (2007); director, Stanford-NSF Environmental Molecular Science Institute (2004-2011); member, Science Advisory Committees of the DOE Office of Basic Energy Sciences (2011-present);

Environmental Molecular Science Laboratory-PNNL (2003-present); Sincrotrone Trieste-Italian National Synchrotron Laboratory (2005-2011); Center for Advanced Microdevices-LSU (2005-2010); Advanced Light Source-LBNL (1997-2000); Canadian Light Source (1999-2002); Chemistry Division-Los Alamos National Laboratory (1988-2003); fellow, American Association for the Advancement of Science (2000); fellow, Geochemical Society and European Association of Geochemistry (1999); fellow, Geological Society of America (1997); fellow, Mineralogical Society of America (1975); Docteur Honoris Causa degree, Universite Paris 7 (1997); president, Mineralogical Society of America (1996); professor (1988-present) and chair (1998-2007), Stanford Synchrotron Radiation Laboratory Faculty (now Department of Photon Science), SLAC; member, Board of Governors, Geological Institute of America (1988-2008); chair, Department of Geology, Stanford (1986-1992); co-director, Stanford-NSF Center for Materials Research (1987-1989); chair, Department of Geological & Environmental Sciences (2012-present).

Publications

PUBLICATIONS

- **(in press) Reservoir oxidation by geologically sequestered CO₂.** *Geochim. Cosmochim. Acta*
Nielsen, L. C., Maher, K., Brown, Jr., G. E., Bird, D. K., Thomas, B., Johnson, N. C., Rosenbauer, R. J.
2105
- **Oxide- and Silicate-Water Interfaces and Their Roles in Technology and the Environment.** *Chemical reviews*
Bañuelos, J. L., Borguet, E., Brown, G. E., Cygan, R. T., DeYoreo, J. J., Dove, P. M., Gaigeot, M. P., Geiger, F. M., Gibbs, J. M., Grassian, V. H., Ilgen, A. G., Jun, Y. S., Kabengi, et al
2023
- **Pauling's rules for oxide-based minerals: A re-examination based on quantum mechanical constraints and modern applications of bond-valence theory to Earth materials** *AMERICAN MINERALOGIST*
Gibbs, G., Hawthorne, F. C., Brown, G. E.
2022; 107 (7): 1219-1248
- **Mechanism of Arsenic Partitioning During Sulfidation of As-Sorbed Ferrihydrite Nanoparticles.** *ACS earth & space chemistry*
Kumar, N., Noël, V., Besold, J., Planer-Friedrich, B., Boye, K., Fendorf, S., Brown, G. E.
2022; 6 (7): 1666-1673
- **Mechanism of Arsenic Partitioning During Sulfidation of As-Sorbed Ferrihydrite Nanoparticles** *ACS EARTH AND SPACE CHEMISTRY*
Kumar, N., Noel, V., Besold, J., Planer-Friedrich, B., Boye, K., Fendorf, S., Brown Jr, G. E.
2022
- **Chemical and Reactive Transport Processes Associated with Hydraulic Fracturing of Unconventional Oil/Gas Shales.** *Chemical reviews*
Jew, A. D., Druhan, J. L., Ihme, M., Kovscek, A. R., Battiatto, I., Kaszuba, J. P., Bargar, J. R., Brown, G. E.
2022
- **Reply to the Comment on "FeS colloids - formation and mobilization pathways in natural waters" by S. Peiffer,**
DOEN00967A *ENVIRONMENTAL SCIENCE-NANO*
Noel, V., Kumar, N., Boye, K., Lezama-Pacheco, J. S., Brown, G. E., Bargar, J. R.
2021; 8 (6): 1817-1821
- **Global Sensitivity Analysis of a Reactive Transport Model for Mineral Scale Formation During Hydraulic Fracturing** *Environmental Engineering Science*
Li, Q., Wang, L., Perzan, Z., Caers, J., Brown Jr., G. E., Bargar, J. R., Maher, K.
2021
- **FeS colloids - formation and mobilization pathways in natural waters** *ENVIRONMENTAL SCIENCE-NANO*
Noel, V., Kumar, N., Boye, K., Barragan, L., Lezama-Pacheco, J. S., Chu, R., Tolic, N., Brown, G. E., Bargar, J. R.
2020; 7 (7): 2102–16
- **Reactive Transport Modeling of Shale-Fluid Interactions after Imbibition of Fracturing Fluids** *ENERGY & FUELS*
Li, Q., Jew, A. D., Brown, G. E., Bargar, J. R., Maher, K.
2020; 34 (5): 5511–23

- **Chemical Speciation and Stability of Uranium in Unconventional Shales: Impact of Hydraulic Fracture Fluid.** *Environmental science & technology*
Jew, A. D., Besançon, C. J., Roycroft, S. J., Noel, V. S., Bargar, J. R., Brown, G. E.
2020
- **Redox Heterogeneities Promote Thioarsenate Formation and Release into Groundwater from Low Arsenic Sediments.** *Environmental science & technology*
Kumar, N. n., Noël, V. n., Planer-Friedrich, B. n., Besold, J. n., Lezama-Pacheco, J. n., Bargar, J. R., Brown, G. E., Fendorf, S. n., Boye, K. n.
2020
- **Thicknesses of Chemically Altered Zones in Shale Matrices Resulting from Interactions with Hydraulic Fracturing Fluid** *ENERGY & FUELS*
Li, Q., Jew, A. D., Kohli, A., Maher, K., Brown, G. E., Bargar, J. R.
2019; 33 (8): 6878–89
- **Alteration depths from the shale surface into the matrix**
Li, Q., Jew, A., Kohli, A., Brown, G., Maher, K., Bargar, J.
AMER CHEMICAL SOC.2019
- **Shale Kerogen: Hydraulic Fracturing Fluid Interactions and Contaminant Release** *ENERGY & FUELS*
Dustin, M. K., Bargar, J. R., Jew, A. D., Harrison, A. L., Joe-Wong, C., Thomas, D. L., Brown, G. E., Maher, K.
2018; 32 (9): 8966–77
- **Sulfidation mechanisms of Fe(III)-(oxyhydr)oxide nanoparticles: a spectroscopic study** *ENVIRONMENTAL SCIENCE-NANO*
Kumar, N., Pacheco, J., Noel, V., Dublet, G., Brown, G. E.
2018; 5 (4): 1012–26
- **Theoretical and experimental investigations of mercury adsorption on hematite surfaces** *JOURNAL OF THE AIR & WASTE MANAGEMENT ASSOCIATION*
Jung, J., Liguori, S., Jew, A. D., Brown, G. E., Wilcox, J.
2018; 68 (1): 39–53
- **Effects of nano-confinement on Zn(II) adsorption to nanoporous silica** *Geochimica et Cosmochimica Acta*
Nelson, J., Bargar, J. R., Wasylenki, L., Brown Jr., G. E., Maher, K.
2018; 240: 80-97
- **Partitioning of uranyl between ferrihydrite and humic substances at acidic and circum-neutral pH** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Dublet, G., Pacheco, J., Bargar, J. R., Fendorf, S., Kumar, N., Lowry, G. V., Brown, G. E.
2017; 215: 122–40
- **Kinetics and Products of Chromium(VI) Reduction by Iron(II/III)-Bearing Clay Minerals** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Joe-Wong, C., Brown, G. E., Maher, K.
2017; 51 (17): 9817–25
- **Impact of Organics and Carbonates on the Oxidation and Precipitation of Iron during Hydraulic Fracturing of Shale** *ENERGY & FUELS*
Jew, A. D., Dustin, M. K., Harrison, A. L., Joe-Wong, C. M., Thomas, D. L., Maher, K., Brown, G. E., Bargar, J. R.
2017; 31 (4): 3643-3658
- **Effects of surface structural disorder and surface coverage on isotopic fractionation during Zn(II) adsorption onto quartz and amorphous silica surfaces** *Geochimica et Cosmochimica Acta*
Nelson, J., Wasylenki, L., Bargar, J. R., Brown Jr., G. E., Maher, K.
2017; 215: 354-376
- **Clumped-isotope thermometry of magnesium carbonates in ultramafic rocks** *GEOCHIMICA ET COSMOCHIMICA ACTA*
del Real, P. G., Maher, K., Kluge, T., Bird, D. K., Brown, G. E., John, C. M.
2016; 193: 222-250
- **Effect of biofilm coatings at metal-oxide/water interfaces II: Competitive sorption between Pb(II) and Zn(II) at Shewanella oneidensis/metal-oxide/water interfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Wang, Y., Gelabert, A., Michel, F. M., Choi, Y., Eng, P. J., Spormann, A. M., Brown, G. E.
2016; 188: 393-406

- **Pb, Cu, and Zn distributions at humic acid-coated metal-oxide surfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Wang, Y., Michel, F. M., Choi, Y., Eng, P. J., Levard, C., Siebner, H., Gu, B., Bargar, J. R., Brown, G. E.
2016; 188: 407-423
- **Comparison of isoelectric points of single-crystal and polycrystalline alpha-Al₂O₃ and alpha-Fe₂O₃ surfaces** *AMERICAN MINERALOGIST*
Wang, Y., Persson, P., Michel, F. M., Brown, G. E.
2016; 101 (9-10): 2248-2259
- **Effect of biofilm coatings at metal-oxide/water interfaces I: Pb(II) and Zn(II) partitioning and speciation at *Shewanella oneidensis*/metal-oxide/water interfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Wang, Y., Gelabert, A., Michel, F. M., Choi, Y., Gescher, J., Ona-Nguema, G., Eng, P. J., Bargar, J. R., Farges, F., Spormann, A. M., Brown, G. E.
2016; 188: 368-392
- **Uranium Immobilization and Nanofilm Formation on Magnesium Rich Minerals** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
van Veelen, A., Bargar, J. R., Law, G. T., Brown, G. E., Wogelius, R. A.
2016; 50 (7): 3435-3443
- **A spatially resolved surface kinetic model for forsterite dissolution** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Maher, K., Johnson, N. C., Jackson, A., Lammers, L. N., Torchinsky, A. B., Weaver, K. L., Bird, D. K., Brown, G. E.
2016; 174: 313-334
- **Silver Sulfidation in Thermophilic Anaerobic Digesters and Effects on Antibiotic Resistance Genes** *ENVIRONMENTAL ENGINEERING SCIENCE*
Kim, B., Miller, J. H., Monsegue, N., Levard, C., Hong, Y., Hull, M. S., Murayama, M., Brown, G. E., Vikesland, P. J., Knocke, W. R., Pruden, A., Hochella, M. F.
2016; 33 (1): 1-10
- **First-Principles Investigation of Mercury Adsorption on the alpha-Fe₂O₃(110) Surface** *JOURNAL OF PHYSICAL CHEMISTRY C*
Jung, J., Geatches, D., Lee, K., Aboud, S., Brown, G. E., Wilcox, J.
2015; 119 (47): 26512-26518
- **Ni cycling in mangrove sediments from New Caledonia** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Noel, V., Morin, G., Juillot, F., Marchand, C., Brest, J., Bargar, J. R., Munoz, M., Marakovic, G., Ardo, S., Brown, G. E.
2015; 169: 82-98
- **Mercury Interaction with the Fine Fraction of Coal-Combustion Fly Ash in a Simulated Coal Power Plant Flue Gas Stream** *ENERGY & FUELS*
Jew, A. D., Rupp, E. C., Geatches, D. L., Jung, J., Farfan, G., Bahet, L., Hower, J. C., Brown, G. E., Wilcox, J.
2015; 29 (9): 6025-6038
- **Goethite aging explains Ni depletion in upper units of ultramafic lateritic ores from New Caledonia** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Dublet, G., Juillot, F., Morin, G., Fritsch, E., Fandeur, D., Brown, G. E.
2015; 160: 1-15
- **Sedimentary reservoir oxidation during geologic CO₂ sequestration** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Lammers, L. N., Brown, G. E., Bird, D. K., Thomas, R. B., Johnson, N. C., Rosenbauer, R. J., Maher, K.
2015; 155: 30-46
- **Stable Hg Isotope Signatures in Creek Sediments Impacted by a Former Hg Mine** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Smith, R. S., Wiederhold, J. G., Jew, A. D., Brown, G. E., Bourdon, B., Kretzschmar, R.
2015; 49 (2): 767-776
- **As(III) and As(V) speciation during transformation of lepidocrocite to magnetite.** *Environmental Science & Technology*
Wang, Y., Morin, G., Ona-Nguema, G., Brown, Jr., G. E.
2015; 48 (24): 14282-14290
- **(in press) The role of the Si-rich surface layer in forsterite dissolution. 2: An "ion-by-ion" model for dissolution and Mg isotope fractionation.** *Geochimica et Cosmochimica Acta*
Maher, K., Nielsen-Lammers, L. C., Johnson, N. C., Torchinsky, A. B., Weaver, K. I., Bird, D. K., Brown, Jr., G. E.

2015

- **(in press) Ni cycling in mangrove sediments from New Caledonia.** *Environmental Science & Technology*
Noel, V., Morin, G., Juillot, F., Marchand, C., Brest, J., Bargar, J. R., Munoz, M., Marakovic, G., Ardo, S., Brown, Jr., G. E.
2015
- **(submitted) Goethite aging explains Ni depletion in upper units of ultramafic lateritic ores from New Caledonia.** *Geochimica et Cosmochimica Acta*
Dublet, G., Juillot, F., Morin, G., Fritsch, E., Fandeur, D., Brown, Jr., G. E.
2015
- **Stable Hg isotope signatures in creek sediments impacted by a former Hg mine.** *Environmental Science & Technology*
Smith, R. S., Wiederhold, J. G., Jew, A. D., Brown, Jr., G. E., Bourdon, B., Kretzschmer, R.
2015; 49 (2): 767-776
- **(submitted) The role of the Si-rich layer in forsterite dissolution. 3: Spatially and temporally resolved incorporation of an isotopic tracer.** *Geochimica et Cosmochimica Acta*
Johnson, N. C., Rosenbauer, R. J., Bird, D. K., Brown, Jr., G. E., Chidsey, C. E., Maher, K.
2015
- **Arsenic(III) and Arsenic(V) Speciation during Transformation of Lepidocrocite to Magnetite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wang, Y., Morin, G., Ona-Nguema, G., Brown, G. E.
2014; 48 (24): 14282-14290
- **Preparation, Structure, and Orientation of Pyrite FeS₂{100} Surfaces: Anisotropy, Sulfur Monomers, Dimer Vacancies, and a Possible FeS Surface Phase** *JOURNAL OF PHYSICAL CHEMISTRY C*
Andersson, K. J., Ogasawara, H., Nordlund, D., Brown, G. E., Nilsson, A.
2014; 118 (38): 21896-21903
- **Sulfidation of copper oxide nanoparticles and properties of resulting copper sulfide** *ENVIRONMENTAL SCIENCE-NANO*
Ma, R., Stegemeier, J., Levard, C., Dale, J. G., Noack, C. W., Yang, T., Brown, G. E., Lowry, G. V.
2014; 1 (4): 347-357
- **Small-scale studies of roasted ore waste reveal extreme ranges of stable mercury isotope signatures** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Smith, R. S., Wiederhold, J. G., Jew, A. D., Brown, G. E., Bourdon, B., Kretzschmar, R.
2014; 137: 1-17
- **Properties of impurity-bearing ferrihydrite III. Effects of Si on the structure of 2-line ferrihydrite** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Cismasu, A. C., Michel, F. M., Tcaciuc, A. P., Brown, G. E.
2014; 133: 168-185
- **Olivine dissolution and carbonation under conditions relevant for in situ carbon storage** *CHEMICAL GEOLOGY*
Johnson, N. C., Thomas, B., Maher, K., Rosenbauer, R. J., Bird, D., Brown, G. E.
2014; 373: 93-105
- **Integrated Approaches of X-Ray Absorption Spectroscopic and Electron Microscopic Techniques on Zinc Speciation and Characterization in a Final Sewage Sludge Product** *JOURNAL OF ENVIRONMENTAL QUALITY*
Kim, B., Levard, C., Murayama, M., Brown, G. E., Hochella, M. F.
2014; 43 (3): 908-916
- **Small-scale studies on roasted ore waste reveal extreme ranges of mercury isotope signatures** *Geochimica et Cosmochimica Acta*
Smith, R. S., Wiederhold, J. G., Jew, A. D., Brown, Jr., G. E., Bourdon, B., Kretzschmar, R.
2014; 137: 1-17
- **XAS evidence for Ni sequestration by siderite in a lateritic Ni-deposit from New Caledonia** *AMERICAN MINERALOGIST*
Dublet, G., Juillot, F., Morin, G., Fritsch, E., Noel, V., Brest, J., Brown, G. E.
2014; 99 (1): 225-234
- **Microbially enhanced dissolution of HgS in an acid mine drainage system in the California Coast Range** *GEOBIOLOGY*
Jew, A. D., Behrens, S. F., Rytuba, J. J., Kappler, A., Spormann, A. M., Brown, G. E.

2014; 12 (1): 20-33

- **Integrated approaches of x-ray absorption spectroscopic and electron microscopic techniques in zinc speciation and characterization in a final sewage sludge product** *J. Environ. Qual.*
Kim, B., Levard, C., Murayama, M., Brown, Jr., G. E., Hochella, Jr., M. F.
2014; 43 (3): 908-916
- **Preparation, structure, and orientation of single crystal pyrite FeS₂(100)** *J. Phys. Chem. C*
Andersson, K., Ogasawara, H., Kendelewicz, T., Brown, Jr., G. E., Nilsson, A.
2014; 118 (38): 21896-21903
- **Sulfidation of copper oxide nanoparticles and properties of the resulting copper sulfide** *Environmental Science: Nano*
Ma, R., Stegemeier, J., Levard, C., Dae, J. D., Yang, T., Brown, Jr., G. E., Lowry, G. V.
2014; 1 (4): 347-357
- **Properties of impurity-bearing ferrihydrites III. Effects of Si and precipitation rate on the structure of 2-line ferrihydrite** *Geochimica Cosmochimica Acta*
Cismasu, A. C., Michel, F. M., Tcaciuc, A. P., Brown, Jr., G. E.
2014; 133: 168-185
- **Competitive adsorption of Pb(II) and Zn(II) at polyacrylic acid-coated aluminum oxide surfaces** *Environmental Science & Technology*
Wang, Y., Michel, F. M., Levard, C., Choi, Y., Eng, P. J., Brown, Jr., G. E.
2014; 47: 12131-12139
- **Olivine carbonation kinetics. Part 1. Inhibition of the reaction by SiO₂** *Chemical Geology*
Johnson, N. C., Thomas, B., Maher, K., Bird, D., Rosenbauer, R. J., Brown, Jr., G. E.
2014; 373: 95-103
- **Microbially enhanced dissolution of HgS in an acid mine drainage system in the California Coast Range** *Geobiology*
Jew, A. D., Kühner, P., Behrens, S. F., Rytuba, J. J., Kappler, A., Spormann, A. M., Brown, Jr., G. E.
2014; 12: 20-33
- **Sulfidation of silver nanoparticles: Natural antidote to their toxicity** *Environ. Sci. Technol.*
Levard, C., Hotze, E. M., Colman, B. P., Truong, L., Yang, X., Bone, A., Brown, Jr., G. E., Tanguay, R. L., Di Giulio, R. T., Bernhardt, E. S., Meyer, J. N., Wiesner, M. R., et al
2014; 47: 13440-13448
- **XAS evidence for Ni sequestration by siderite in lateritic regolith from New Caledonia** *American Mineralogist*
Dublet, G., Juillot, F., Morin, G., Fritsch, E., Brown, Jr., G. E.
2014; 99 (1): 225-234
- **Sulfidation of Silver Nanoparticles: Natural Antidote to Their Toxicity** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Levard, C., Hotze, E. M., Colman, B. P., Dale, A. L., Truong, L., Yang, X. Y., Bone, A. J., Brown, G. E., Tanguay, R. L., Di Giulio, R. T., Bernhardt, E. S., Meyer, J. N., Wiesner, et al
2013; 47 (23): 13440-13448
- **Competitive Sorption of Pb(II) and Zn(II) on Polyacrylic Acid-Coated Hydrated Aluminum-Oxide Surfaces** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wang, Y., Michel, F. M., Levard, C., Choi, Y., Eng, P. J., Brown, G. E.
2013; 47 (21): 12131-12139
- **Properties of impurity-bearing ferrihydrite II: Insights into the surface structure and composition of pure, Al- and Si-bearing ferrihydrite from Zn(II) sorption experiments and Zn K-edge X-ray absorption spectroscopy** *GEOCHIMICA ET COSMOCHEMICA ACTA*
Cismasu, A. C., Levard, C., Michel, F. M., Brown, G. E.
2013; 119: 46-60
- **Quantification of the ferric/ferrous iron ratio in silicates by scanning transmission X-ray microscopy at the Fe L_{2,3} edges** *CONTRIBUTIONS TO MINERALOGY AND PETROLOGY*
Bourdelle, F., Benzerara, K., Beyssac, O., Cosmidis, J., Neuville, D. R., Brown, G. E., Paineau, E.
2013; 166 (2): 423-434

- **Mercury Isotope Signatures as Tracers for Hg Cycling at the New Idria Hg Mine** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wiederhold, J. G., Smith, R. S., Siebner, H., Jew, A. D., Brown, G. E., Bourdon, B., Kretzschmar, R.
2013; 47 (12): 6137-6145
- **Effect of Chloride on the Dissolution Rate of Silver Nanoparticles and Toxicity to E. coli.** *Environmental science & technology*
Levard, C., Mitra, S., Yang, T., Jew, A. D., Badireddy, A. R., Lowry, G. V., Brown, G. E.
2013; 47 (11): 5738-5745
- **Presentation of the Mineralogical Society of America Award for 2012 to Karim Benzerara** *AMERICAN MINERALOGIST*
Brown, G. E.
2013; 98 (5-6): 1088-1088
- **Environmental Speciation of Actinides** *INORGANIC CHEMISTRY*
Maher, K., Bargar, J. R., Brown, G. E.
2013; 52 (7): 3510-3532
- **Sulfidation Mechanism for Zinc Oxide Nanoparticles and the Effect of Sulfidation on Their Solubility** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ma, R., Levard, C., Michel, F. M., Brown, G. E., Lowry, G. V.
2013; 47 (6): 2527-2534
- **Structure and reactivity of As(III)- and As(V)-rich schwertmannites and amorphous ferric arsenate sulfate from the Carnoules acid mine drainage, France: Comparison with biotic and abiotic model compounds and implications for As remediation** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Maillot, F., Morin, G., Juillot, F., Bruneel, O., Casiot, C., Ona-Nguema, G., Wang, Y., Lebrun, S., Aubry, E., Vlaic, G., Brown, G. E.
2013; 104: 310-329
- **X-ray Photoemission and Density Functional Theory Study of the Interaction of Water Vapor with the Fe₃O₄(001) Surface at Near-Ambient Conditions** *JOURNAL OF PHYSICAL CHEMISTRY C*
Kendelewicz, T., Kaya, S., Newberg, J. T., Bluhm, H., Mulakaluri, N., Moritz, W., Scheffler, M., Nilsson, A., Pentcheva, R., Brown, G. E.
2013; 117 (6): 2719-2733
- **Highly Compressed Two-Dimensional Form of Water at Ambient Conditions** *SCIENTIFIC REPORTS*
Kaya, S., Schlesinger, D., Yamamoto, S., Newberg, J. T., Bluhm, H., Ogasawara, H., Kendelewicz, T., Brown, G. E., Pettersson, L. G., Nilsson, A.
2013; 3
- **Photoemission and DFT study of the reaction of water vapor with the Fe₃O₄ (100) surface at near-ambient conditions** *Journal of Physical Chemistry C*
Kendelewicz, T., Kaya, S., Newberg, J. E., Bluhm, H., Mulakluri, N., Mortitz, W., Scheffler, M., Nilsson, A., Pentcheva, R., Brown, Jr., G. E.
2013; 117: 2719-2733
- **A sequential chemical extraction and spectroscopic assessment of the potential bioavailability of mercury released from the inoperative New Idria Mercury Mine, San Benito, Co., CA** *Geochimica et Cosmochimica Acta*
Jew, A. D., Luong, P. M., Rytuba, J. J., Brown, Jr., G. E.
2013
- **Structure and reactivity of As(III)- and As(V)-rich schwertmannites and ferric arsenate sulfate from the Carnoules acid mine drainage, France: Comparison with biotic and abiotic model compounds and implications for As remediation** *Geochimica et Cosmochimica Acta*
Maillot, F., Morin, G., Juillot, F., Buneel, O., Casiot, C., Ona-Nguema, G., Wang, Y., Lebrun, S., Aubrey, E., Vlaic, G., Brown, Jr., G. E.
2013; 104: 310-329
- **Opportunities with Synchrotron Radiation at the Mesoscale** *Synchrotron Radiation News*
Bargar, J. R., Brown, Jr., G. E., Crabtree, G. W.
2013; 26 (4)
- **Effect of chloride on the dissolution rate and toxicity of silver nanoparticles to E. coli** *Environmental Science & Technology*
Levard, C., Mitra, S., Yang, T., Jew, A. D., Badireddy, A. R., Lowry, G. V., Brown, Jr., G. E.
2013; 47 (1): 5738-5745
- **Ni speciation in a New Caledonian lateritic regolith: A quantitative X-ray absorption spectroscopy investigation** *GEOCHIMICA ET COSMOCHIMICA ACTA*

Dublet, G., Juillot, F., Morin, G., Fritsch, E., Fandeur, D., Ona-Nguema, G., Brown, G. E.
2012; 95: 119-133

- **MINERAL-AQUEOUS SOLUTION INTERFACES AND THEIR IMPACT ON THE ENVIRONMENT** *GEOCHEMICAL PERSPECTIVES*
Brown, G. E., Calas, G.
2012; 1 (4-5): 483-742
- **Properties of impurity-bearing ferrihydrite I. Effects of Al content and precipitation rate on the structure of 2-line ferrihydrite** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Cismasu, A. C., Michel, F. M., Stebbins, J. F., Levard, C., Brown, G. E.
2012; 92: 275-291
- **Environmental Transformations of Silver Nanoparticles: Impact on Stability and Toxicity** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Levard, C., Hotze, E. M., Lowry, G. V., Brown, G. E.
2012; 46 (13): 6900-6914
- **Sulfidation of Silver Nanoparticles Decreases Escherichia coli Growth Inhibition** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Reinsch, B. C., Levard, C., Li, Z., Ma, R., Wise, A., Gregory, K. B., Brown, G. E., Lowry, G. V.
2012; 46 (13): 6992-7000
- **An Early-Branching Microbialite Cyanobacterium Forms Intracellular Carbonates** *SCIENCE*
Couradeau, E., Benzerara, K., Gerard, E., Moreira, D., Bernard, S., Brown, G. E., Lopez-Garcia, P.
2012; 336 (6080): 459-462
- **X-ray Absorption Fine Structure Evidence for Amorphous Zinc Sulfide as a Major Zinc Species in Suspended Matter from the Seine River Downstream of Paris, Ile-de-France, France** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Priadi, C., Le Pape, P., Morin, G., Ayrault, S., Maillot, F., Juillot, F., Hochreutener, R., Llorens, I., Testemale, D., Proux, O., Brown, G. E.
2012; 46 (7): 3712-3720
- **Morphological preservation of carbonaceous plant fossils in blueschist metamorphic rocks from New Zealand** *GEOBIOLOGY*
Galvez, M. E., Beyssac, O., Benzerara, K., Bernard, S., Menguy, N., Cox, S. C., Martinez, I., Johnston, M. R., Brown, G. E.
2012; 10 (2): 118-129
- **Size-Controlled Dissolution of Organic-Coated Silver Nanoparticles** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ma, R., Levard, C., Marinakos, S. M., Cheng, Y., Liu, J., Michel, F. M., Brown, G. E., Lowry, G. V.
2012; 46 (2): 752-759
- **Sulfidation decreases silver nanoparticle growth inhibition effect for Escherichia coli** *Environmental Science & Technology*
Reinsch, B. C., Levard, C. M., Li, Z., Ma, R., Wise, A., Gregory, K. B., Brown, Jr., G. E., Lowry, G. V.
2012; 46 (3): 6992-7000
- **From Quanta to the Continuum: Opportunities for Mesoscale Science** *A Report for the Basic Energy Sciences Advisory Committee, Mesoscale Science Subcommittee*
Crabtree, G. W., Sarrao, J., Alivisatos, P., Barletta, W., Bates, F., Brown, Jr., G. E., French, R., Green, L., Hemminger, J., Kastner, M., Kay, B., Lewis, J., et al
U.S. Department of Energy.2012
- **Mineral-aqueous solution interfaces and their impact on the environment** *Geochemical Perspectives*
Brown, Jr., G. E., Calas, G.
2012; 1: 483-742
- **EXAFS and SEM evidence for zinc sulfide solid phases in riverine suspended matter from the Seine River, France** *Environmental Science & Technology*
Priadi, C., Morin, G., Ayrault, S., Maillot, F., Juillot, F., Alliot, I., Testemale, D., Proux, O., Bonté, P., Brown, Jr., G. E.
2012; 46: 3712-3720
- **Neutron Pair Distribution Function Study of Two-Line Ferrihydrite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Harrington, R., Hausner, D. B., Xu, W., Bhandari, N., Michel, F. M., Brown, G. E., Strongin, D. R., Parise, J. B.
2011; 45 (23): 9883-9890

- **Probing Ag nanoparticle surface oxidation in contact with (in)organics: an X-ray scattering and fluorescence yield approach** *JOURNAL OF SYNCHROTRON RADIATION*
Levard, C., Michel, F. M., Wang, Y., Choi, Y., Eng, P., Brown, G. E.
2011; 18: 871-878
- **Molecular-level modes of As binding to Fe(III) (oxyhydr)oxides precipitated by the anaerobic nitrate-reducing Fe(II)-oxidizing Acidovorax sp strain BoFeN1** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Hohmann, C., Morin, G., Ona-Nguema, G., Guigner, J., Brown, G. E., Kappler, A.
2011; 75 (17): 4699-4712
- **Distinctive Arsenic(V) Trapping Modes by Magnetite Nanoparticles Induced by Different Sorption Processes** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wang, Y., Morin, G., Ona-Nguema, G., Juillot, F., Calas, G., Brown, G. E.
2011; 45 (17): 7258-7266
- **Autocatalytic Surface Hydroxylation of MgO(100) Terrace Sites Observed under Ambient Conditions** *JOURNAL OF PHYSICAL CHEMISTRY C*
Newberg, J. T., Starr, D. E., Yamamoto, S., Kaya, S., Kendelewicz, T., Mysak, E. R., Porsgaard, S., Salmeron, M. B., Brown, G. E., Nisson, A., Bluhm, H.
2011; 115 (26): 12864-12872
- **Study of the crystallographic architecture of corals at the nanoscale by scanning transmission X-ray microscopy and transmission electron microscopy** *ULTRAMICROSCOPY*
Benzerara, K., Menguy, N., Obst, M., Stolarski, J., Mazur, M., Tyliszczak, T., Brown, G. E., Meibom, A.
2011; 111 (8): 1268-1275
- **Sulfidation Processes of PVP-Coated Silver Nanoparticles in Aqueous Solution: Impact on Dissolution Rate** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Levard, C., Reinsch, B. C., Michel, F. M., Oumahi, C., Lowry, G. V., Brown, G. E.
2011; 45 (12): 5260-5266
- **Characterization of the Active Bacterial Community Involved in Natural Attenuation Processes in Arsenic-Rich Creek Sediments** *MICROBIAL ECOLOGY*
Bruneel, O., Volant, A., Gallien, S., Chaumande, B., Casiot, C., Carapito, C., Bardil, A., Morin, G., Brown, G. E., Personne, C. J., Le Paslier, D., Schaeffer, C., Van Dorsselaer, et al
2011; 61 (4): 793-810
- **Contrasting isotopic signatures between anthropogenic and geogenic Zn and evidence for post-depositional fractionation processes in smelter-impacted soils from Northern France** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Juillot, F., Marechal, C., Morin, G., Jouvin, D., Cacaly, S., Telouk, P., Benedetti, M. F., Ildefonse, P., Sutton, S., Guyot, F., Brown, G. E.
2011; 75 (9): 2295-2308
- **Density functional theory investigation of the interaction of water with alpha-Al₂O₃ and alpha-Fe₂O₃ (111) surfaces: Implications for surface reactivity** *PHYSICAL REVIEW B*
Aboud, S., Wilcox, J., Brown, G. E.
2011; 83 (12)
- **Composition and structural aspects of naturally occurring ferrihydrite** *COMPTES RENDUS GEOSCIENCE*
Cismasu, A. C., Michel, F. M., Tcaciuc, A. P., Tyliszczak, T., Brown, G. E.
2011; 343 (2-3): 210-218
- **Environmental mineralogy - Understanding element behavior in ecosystems** *COMPTES RENDUS GEOSCIENCE*
Brown, G. E., Calas, G.
2011; 343 (2-3): 90-112
- **Environmental mineralogy** *COMPTES RENDUS GEOSCIENCE*
Calas, G., Brown, G. E.
2011; 343 (2-3): 83-89
- **New Technique for Quantification of Elemental Hg in Mine Wastes and Its Implications for Mercury Evasion Into the Atmosphere** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*

- Jew, A. D., Kim, C. S., Rytuba, J. J., Gustin, M. S., Brown, G. E.
2011; 45 (2): 412-417
- **Nanomaterials and the Environment: The Chemistry and Materials Perspective** *NSF-Chemistry Workshop on Nanomaterials and the Environment: The Chemistry and Materials Perspective*
Grassian, V., Hamers, R., Brown, Jr., G. E., Fairbrother, H., Johnston, M., Penn, R. L.
2011
 - **Water reaction with MgO(100) probed by ambient pressure XPS** *Journal of Physical Chemistry C*
Newberg, J. T., Starr, D. E., Posgaard, S., Yamamoto, S., Kaya, S., Kendelewicz, T., Mysak, E., Salmeron, M. B., Nilsson, A., Brown, Jr., G. E., Bluhm, H.
2011; 115: 12864-12872
 - **Evidence for contrasted isotopic signatures between anthropogenic and natural Zn in smelter-impacted soils from Northern France** *Geochimica et Cosmochimica Acta*
Juillot, F., Maréchal, C., Morin, G., Jouvin, D., Cacaly, S., Telouk, P., Benedetti, M. F., Ildefonse, P., Sutton, S., Guyot, F., Brown, Jr., G. E.
2011; 75: 2295-2308
 - **Formation of hydroxyl and water layers on MgO films studied with ambient pressure XPS** *SURFACE SCIENCE*
Newberg, J. T., Starr, D. E., Yamamoto, S., Kaya, S., Kendelewicz, T., Mysak, E. R., Porsgaard, S., Salmeron, M. B., Brown, G. E., Nilsson, A., Bluhm, H.
2011; 605 (1-2): 89-94
 - **Multiscale characterization of pyritized plant tissues in blueschist facies metamorphic rocks** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Bernard, S., Benzerara, K., Beyssac, O., Brown, G. E.
2010; 74 (17): 5054-5068
 - **XANES, Raman and XRD study of anthracene-based cokes and saccharose-based chars submitted to high-temperature pyrolysis** *CARBON*
Bernard, S., Beyssac, O., Benzerara, K., Findling, N., Tzvetkov, G., Brown, G. E.
2010; 48 (9): 2506-2516
 - **XANES Evidence for Rapid Arsenic(III) Oxidation at Magnetite and Ferrihydrite Surfaces by Dissolved O₂ via Fe²⁺-Mediated Reactions** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ona-Nguema, G., Morin, G., Wang, Y., Foster, A. L., Juillot, F., Calas, G., Brown, G. E.
2010; 44 (14): 5416-5422
 - **Presentation of the Mineralogical Society of America Award for 2009 Thomas Patrick Trainor** *AMERICAN MINERALOGIST*
Brown, G. E.
2010; 95 (4): 662-663
 - **Ordered ferrimagnetic form of ferrihydrite reveals links among structure, composition, and magnetism** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Michel, F. M., Barron, V., Torrent, J., Morales, M. P., Serna, C. J., Boily, J., Liu, Q., Ambrosini, A., Cismasu, A. C., Brown, G. E.
2010; 107 (7): 2787-2792
 - **Water Adsorption on alpha-Fe₂O₃(0001) at near Ambient Conditions** *JOURNAL OF PHYSICAL CHEMISTRY C*
Yamamoto, S., Kendelewicz, T., Newberg, J. T., Ketteler, G., Starr, D. E., Mysak, E. R., Andersson, K. J., Ogasawara, H., Bluhm, H., Salmeron, M., Brown, G. E., Nilsson, A.
2010; 114 (5): 2256-2266
 - **Role of extracellular polymeric substances in metal ion complexation on *Shewanella oneidensis*: Batch uptake, thermodynamic modeling, ATR-FTIR, and EXAFS study** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Ha, J., Gelabert, A., Spormann, A. M., Brown, G. E.
2010; 74 (1): 1-15
 - **Nanotextures of aragonite in stromatolites from the quasi-marine Satonda crater lake, Indonesia** *Tufas and Speleothems: Unraveling the Microbial and Physical Controls*
Benzerara, K., Meibom, A., Gautier, Q., Kazmierczak, J., Stolarski, J., Lopez-Garcia, P., Menguy, N., Brown, Jr., G. E.
edited by Pedley, H. M., Rogerson, M.
Geological Society of London.2010: 211-224

- **Extended x-ray absorption fine structure analysis of arsenite and arsenate adsorption on green rust** *Environmental Science & Technology*
Wang, Y., Morin, G., Ona-Nguema, G., Juillot, F., Guyot, F., Calas, G., Brown, Jr., G. E.
2010; 44: 109-115
- **Evidence for Different Surface Speciation of Arsenite and Arsenate on Green Rust: An EXAFS and XANES Study** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wang, Y., Morin, G., Ona-Nguema, G., Juillot, F., Guyot, F., Calas, G., Brown, G. E.
2010; 44 (1): 109-115
- **Organic matter heterogeneities in 2.72 Ga stromatolites: Alteration versus preservation by sulfur incorporation** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Lepot, K., Benzerara, K., Rividi, N., Cotte, M., Brown, G. E., Philippot, P.
2009; 73 (21): 6579-6599
- **Uranyl-chlorite sorption/desorption: Evaluation of different U(VI) sequestration processes** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Singer, D. M., Maher, K., Brown, G. E.
2009; 73 (20): 5989-6007
- **XANES Evidence for Oxidation of Cr(III) to Cr(VI) by Mn-Oxides in a Lateritic Regolith Developed on Serpentinized Ultramafic Rocks of New Caledonia** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Fandeur, D., Juillot, F., Morin, G., Olivi, L., Cognigni, A., Webb, S. M., Ambrosi, J., Fritsch, E., Guyot, F., Brown, G. E.
2009; 43 (19): 7384-7390
- **EXAFS and HRTEM Evidence for As(III)-Containing Surface Precipitates on Nanocrystalline Magnetite: Implications for As Sequestration** *LANGMUIR*
Morin, G., Wang, Y., Ona-Nguema, G., Juillot, F., Calas, G., Menguy, N., Aubry, E., Bargar, J. R., Brown, G. E.
2009; 25 (16): 9119-9128
- **Cation field strength effects on high pressure aluminosilicate glass structure: Multinuclear NMR and La XAFS results** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Kelsey, K. E., Stebbins, J. F., Singer, D. M., Brown, G. E., Mosenfelder, J. L., Asimow, P. D.
2009; 73 (13): 3914-3933
- **Ultrastructural and chemical study of modern and fossil sporoderms by Scanning Transmission X-ray Microscopy (STXM)** *REVIEW OF PALAEOBOTANY AND PALYNOLOGY*
Bernard, S., Benzerara, K., Beyssac, O., Brown, G. E., Stamm, L. G., Düringer, P.
2009; 156 (1-2): 248-261
- **Biogenic nanoparticulate UO₂: Synthesis, characterization, and factors affecting surface reactivity** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Singer, D. M., Farges, F., Brown, G. E.
2009; 73 (12): 3593-3611
- **Arsenic(III) polymerization upon sorption on iron(II,III)-(hydr)oxides surfaces: Implications for arsenic mobility under reducing conditions** *19th Annual VM Goldschmidt Conference*
Morin, G., Ona-Nguema, G., Wang, Y., Juillot, F., Menguy, N., CALAS, G., Brown, G. E.
PERGAMON-ELSEVIER SCIENCE LTD.2009: A906-A906
- **Photoemission study of the reaction of Fe₃O₄(100) with water at near ambient conditions** *19th Annual VM Goldschmidt Conference*
Kendelewicz, T., Kaya, S., Newberg, J., Bluhm, H., Nilsson, A., Brown, G. E., Pentcheva, R., Moritz, W.
PERGAMON-ELSEVIER SCIENCE LTD.2009: A638-A638
- **Study of mineral-microbe assemblages down to the nm-scale in carbonate microbialites** *19th Annual VM Goldschmidt Conference*
Benzerara, K., Meibom, A., Lopez-Garcia, P., Kazmierczak, J., Brown, G. E.
PERGAMON-ELSEVIER SCIENCE LTD.2009: A110-A110
- **Iron biomineralization by neutrophilic nitrate-reducing iron-oxidizing bacteria** *19th Annual VM Goldschmidt Conference*
Miot, J., Benzerara, K., Morin, G., Kappler, A., Obst, M., Brown, G. E., Guyot, F.
PERGAMON-ELSEVIER SCIENCE LTD.2009: A884-A884

- **Interaction of Zn(II) with Hematite Nanoparticles and Microparticles: Part 2. ATR-FTIR and EXAFS Study of the Aqueous Zn(II)/Oxalate/Hematite Ternary System** *LANGMUIR*
Ha, J., Trainor, T. P., Farges, F., Brown, G. E.
2009; 25 (10): 5586-5593
- **Interaction of Aqueous Zn(II) with Hematite Nanoparticles and Microparticles. Part 1. EXAFS Study of Zn(II) Adsorption and Precipitation** *LANGMUIR*
Ha, J., Trainor, T. P., Farges, F., Brown, G. E.
2009; 25 (10): 5574-5585
- **Speciation of Arsenic in Euglena gracilis Cells Exposed to As(V)** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Miot, J., Morin, G., Skouri-Panet, F., Ferard, C., Poitevin, A., Aubry, E., Ona-Nguema, G., Juillot, F., Guyot, F., Brown, G. E.
2009; 43 (9): 3315-3321
- **Uranyl-chlorite sorption/desorption: Evaluation of different U(VI) sequestration processes**
Singer, D. M., Maher, K., Brown, G. E.
AMER CHEMICAL SOC.2009
- **Arsenite sequestration at the surface of nano-Fe(OH)(2), ferrous-carbonate hydroxide, and green-rust after bioreduction of arsenic-sorbed lepidocrocite by Shewanella putrefaciens** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Ona-Nguema, G., Morin, G., Wang, Y., Menguy, N., Juillot, F., Olivi, L., Aquilanti, G., Abdelmoula, M., Ruby, C., Bargar, J. R., Guyot, F., Calas, G., Brown, et al
2009; 73 (5): 1359-1381
- **Uranium Speciation As a Function of Depth in Contaminated Hanford Sediments - A Micro-XRF, Micro-XRD, and Micro- And Bulk-XAFS Study** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Singer, D. M., Zachara, J. M., Brown, G. E.
2009; 43 (3): 630-636
- **Iron biomineralization by anaerobic neutrophilic iron-oxidizing bacteria** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Miot, J., Benzerara, K., Morin, G., Kappler, A., Bernard, S., Obst, M., Ferard, C., Skouri-Panet, F., Guigner, J., Posth, N., Galvez, M., Brown, G. E., Guyot, et al
2009; 73 (3): 696-711
- **EXAFS and HRTEM evidence for surface precipitation of arsenic(III) on nanocrystalline magnetite: Implications for As sequestration** *Langmuir*
Morin, G., Wang, Y., Ona-Nguema, G., Juillot, F., Calas, G., Menguy, N., Aubry, E., Bargar, J. R., Brown, Jr., G. E.
2009; 25: 9119-9128
- **A pre-edge analysis of Mn K-edge XANES spectra to help determine the speciation of manganese in minerals and glasses** *CONTRIBUTIONS TO MINERALOGY AND PETROLOGY*
Chalmin, E., Farges, F., Brown, G. E.
2009; 157 (1): 111-126
- **Study of iodide adsorption on organobentonite using x-ray absorption spectroscopy** *Journal of the Mineral Society of Korea*
Yoon, J., Ha, J., Hwang, J., Hwang, B-H., Brown, Jr., G. E.
2009; 22: 23-34
- **Sequestration of Sr(II) by calcium oxalate - A batch uptake study and EXAFS analysis of model compounds and reaction products** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Singer, D. M., Johnson, S. B., Catalano, J. G., Farges, F., Brown, G. E.
2008; 72 (20): 5055-5069
- **Nanoscale study of As biomineralization in an acid mine drainage system** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Benzerara, K., Morin, G., Yoon, T. H., Miot, J., Tyliszczak, T., Casiot, C., Bruneel, O., Farges, F., Brown, G. E.
2008; 72 (16): 3949-3963
- **XAS study of arsenic coordination in Euglena gracilis exposed to arsenite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Miot, J., Morin, G., Skouri-Panet, F., Ferard, C., Aubry, E., Briand, J., Wang, Y., Ona-Nguema, G., Guyot, F., Brown, G. E.
2008; 42 (14): 5342-5347

- **Acceptance of the 2007 Clair C. Patterson Award** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Brown, G. E.
2008; 72 (12): S10-S11
- **Changes in arsenic speciation through a contaminated soil profile: A XAS based study** *SCIENCE OF THE TOTAL ENVIRONMENT*
Cances, B., Juillot, F., Morin, G., Laperche, V., Polyá, D., Vaughan, D. J., Hazemann, J., Proux, O., Brown, G. E., CALAS, G.
2008; 397 (1-3): 178-189
- **Impact of S-oxidizing MR-1 biofilm coatings on trace element partitioning at metal-oxide/water interfaces: A long period XSW-FY study** *18th Annual V M Goldschmidt Conference*
Wang, Y., Gelabert, A., Ha, J., Ona-Nguema, G., Gescher, J., Cordova-Arduy, C., Bargar, J. R., Rogers, J., Eng, P. J., Ghose, S. K., Spormann, A. M., Brown, G. E.
PERGAMON-ELSEVIER SCIENCE LTD.2008: A1003–A1003
- **Synchrotron X-ray studies of bacteria-mineral-metal ion interactions** *18th Annual V M Goldschmidt Conference*
Brown, G. E., Gelabert, A., Wang, Y., Cismasu, C., Ha, J., Ona-Nguema, G., Benzerara, K., Morin, G., Yang, Y., Juillot, F., Guyot, F., CALAS, G., Yoon, et al
PERGAMON-ELSEVIER SCIENCE LTD.2008: A116–A116
- **Adsorption of organic matter at mineral/water interfaces: 7. ATR-FTIR and quantum chemical study of lactate interactions with hematite nanoparticles** *LANGMUIR*
Ha, J., Yoon, T. H., Wang, Y., Musgrave, C. B., Brown, G. E.
2008; 24 (13): 6683-6692
- **Arsenite sorption at the magnetite-water interface during aqueous precipitation of magnetite: EXAFS evidence for a new arsenite surface complex** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Wang, Y., Morin, G., Ona-Nguema, G., Menguy, N., Juillot, F., Aubry, E., Guyot, F., Calas, G., Brown, G. E.
2008; 72 (11): 2573-2586
- **Acceptance of the Mineralogical Society of America Roebling Medal for 2007** *AMERICAN MINERALOGIST*
Brown, G. E.
2008; 93 (5-6): 956-957
- **Extended X-ray absorption fine structure analysis of arsenite and arsenate adsorption on maghemite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Morin, G., Ona-Nguema, G., Wang, Y., Menguy, N., Juillot, F., Proux, O., Guyot, F., Calas, G., Brown, G. E.
2008; 42 (7): 2361-2366
- **Microbially influenced formation of 2,724-million-year-old stromatolites** *NATURE GEOSCIENCE*
Lepot, K., Benzerara, K., Brown, G. E., Philippot, P.
2008; 1 (2): 118-121
- **Synchrotron X-ray studies of heavy metal mineral-microbe interactions** *8th International Symposium on the Geochemistry of the Earths Surface (GES-8)*
Brown, G. E., Wang, Y., Gelabert, A., Ha, J., Cismasu, C., Ona-Nguema, G., Benzerara, K., Miot, J., Menguy, N., Morin, G., Juillot, F., Guyot, F., CALAS, et al
MINERALOGICAL SOC.2008: 169–73
- **EXAFS analysis of arsenite and arsenate adsorption on maghemite** *Environmental Science & Technology*
Morin, G., Ona-Nguema, G., Wang, Y., Menguy, N., Juillot, F., Proux, O., Guyot, F., Calas, G., Brown, Jr., G. E.
2008; 42: 2361-2366
- **Arsenite adsorption at the magnetite-water interface during aqueous precipitation of magnetite: EXAFS evidence for a new arsenite surface complex** *Geochimica et Cosmochimica Acta*
Wang, Y., Morin, G., Ona-Nguema, G., Menguy, N., Juillot, F., Aubry, E., Guyot, F., Calas, G., Brown, Jr., G. E.
2008; 72: 2573-2586
- **SSRL Workshop on STXM and X-ray Nanoprobe Capabilities and Needs in the Environmental, Geological, and Biomedical Sciences** *Synchrotron Radiation News*
Bargar, J. R., Brown, Jr., G. E., DeBeer-George, S., Ohldag, H.
2008; 21: 22-24

- **Nanoscale study of As transformations by bacteria in an acid mine drainage system** *Geochimica et Cosmochimica Acta*
Benzerara, K., Morin, G., TYoon, T. H., Miot, J., Tyliczszak, T., Casiot, C., Farges, F., Brown, Jr., G. E.
2008; 72: 3949-3963
- **Change in arsenic speciation through a contaminated soil profile: an XAS based study** *Science of the Total Environment*
Cancès, B., Juillot, F., Morin, G., Laperche, V., Polyá, D., Vaughan, D. J., Hazemann, J-L., Proux, O., Brown, Jr., G.E., Calas, G.
2008; 397: 178-189
- **Exceptional preservation of fossil plant spores in high-pressure metamorphic rocks** *EARTH AND PLANETARY SCIENCE LETTERS*
Bernard, S., Benzerara, K., Beyssac, O., Menguy, N., Guyot, F., Brown, G. E., Goffe, B.
2007; 262 (1-2): 257-272
- **Speciation and colloid transport of arsenic from mine tailings** *APPLIED GEOCHEMISTRY*
Slowey, A. J., Johnson, S. B., Newville, M., Brown, G. E.
2007; 22 (9): 1884-1898
- **Alteration of submarine basaltic glass from the Ontong Java Plateau: A STXM and TEM study** *EARTH AND PLANETARY SCIENCE LETTERS*
Benzerara, K., Menguy, N., Banerjee, N. R., Tyliczszak, T., Brown, G. E., Guyot, F.
2007; 260 (1-2): 187-200
- **Citation for presentation of the 2006 F. W. Clarke Award to Alexis S. Templeton** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Brown, G. E.
2007; 71 (15): S22-S23
- **Study at the nanoscale of the alteration of submarine basaltic glass from the Ontong Java Plateau** *17th Annual V M Goldschmidt Conference*
Miot, J., Benzerara, K., Banerjee, N. R., Menguy, N., Tyliczszak, T., Brown, G. E., Guyot, F.
PERGAMON-ELSEVIER SCIENCE LTD.2007: A671–A671
- **Speciation of mercury in mining environments** *17th Annual V M Goldschmidt Conference*
Brown, G. E., Slowey, A., Jew, A., Kim, C. S., Lowry, G. V., Shaw, S., Gustin, M. S., Rytuba, J. J.
PERGAMON-ELSEVIER SCIENCE LTD.2007: A126–A126
- **Transformations of mercury, iron, and sulfur during the reductive dissolution of iron oxyhydroxide by sulfide** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Slowey, A. J., Brown, G. E.
2007; 71 (4): 877-894
- **Surface diffraction study of the hydrated hematite (1(1)over-bar-02) surface** *SURFACE SCIENCE*
Tanwar, K. S., Lo, C. S., Eng, P. J., Catalano, J. G., Walko, D. A., Brown, G. E., Waychunas, G. A., Chaka, A. M., Trainor, T. P.
2007; 601 (2): 460-474
- **Adsorption and precipitation of aqueous Zn(II) on hematite nano- and microparticles** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Ha, J., Farges, F., Brown, G. E.
AMER INST PHYSICS.2007: 238–240
- **BiogenicUO(2) - Characterization and surface reactivity** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Singer, D. M., Farges, F., Brown, G. E.
AMER INST PHYSICS.2007: 277–279
- **EXAFS signatures of structural Zn at trace levels in layered minerals** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Juillot, F., Morin, G., Hazemann, J., Proux, O., Belin, S., Briois, V., Brown, G. E., Calas, G.
AMER INST PHYSICS.2007: 247–249
- **Durability of silicate glasses: An historical approach** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Farges, F., Etcheverry, M., Haddi, A., Trocellie, P., Curti, E., Brown, G. E.
AMER INST PHYSICS.2007: 44–50

- **On the coordination of actinides and fission products in silicate glasses** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Haddi, A., Farges, F., Trocellier, P., Curti, E., Harfouche, M., Brown, G. E.
AMER INST PHYSICS.2007: 256–258
- **Adsorption mechanisms of trivalent gold onto iron Oxy-Hydroxides: From the molecular scale to the model** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Cances, B., Benedetti, M., Farges, F., Brown, G. E.
AMER INST PHYSICS.2007: 217–219
- **Discovery of unusual minerals in paleolithic black pigments from lascaux (France) and Ekain (Spain)** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Chalmin, E., Farges, F., Vignaud, C., Susini, J., Menu, M., Brown, G. E.
AMER INST PHYSICS.2007: 220–222
- **Selenium speciation in biofilms from granular sludge bed reactors used for wastewater treatment** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
van Hullenbusch, E., Farges, F., Lenz, M., Lens, P., Brown, G. E.
AMER INST PHYSICS.2007: 229–231
- **Chrysocolla redefined as spertiniite** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Farges, F., Benzerara, K., Brown, G. E.
AMER INST PHYSICS.2007: 223–225
- **Study of interactions between microbes and minerals by scanning transmission X-ray microscopy (STXM)** *13th International Conference on X-Ray Absorption Fine Structure (XAFS13)*
Benzerara, K., Tyliszczak, T., Brown, G. E.
AMER INST PHYSICS.2007: 726–730
- **Geochemistry of mineral surfaces and factors affecting their chemical reactivity** *Chemical Bonding at Surfaces and Interfaces*
Brown, Jr., G. E., Trainor, T. P., Chaka, A. M., Nilsson (ed.), A., Pettersson (ed.), L. M., Norskov (ed.), J.
Elsevier, New York.2007: 457–509
- **Biogenic UO₂ characterization and surface reactivity** *Am. Inst. Phys. Conf. Proc., 13th Int. XAFS Conf. 882*
Singer, D. M., Farges, F., Brown, Jr., G. E.
2007: 277-279
- **Exceptional preservation of fossil plants spores in high-pressure metamorphic rocks** *Earth and Planetary Science Letters*
Bernard, S., Benzerara, K., Beyssac, O., Menguy, N., Guyot, F., Brown, Jr., G. E., Goffe, B.
2007; 262: 257-272
- **Coordination environments of highly charged cations (Ti, Cr, and Light REEs) in borosilicate glass/melts to 1120°C** *Am. Inst. Phys. Conf. Proc., 13th Int. XAFS Conf. 882*
Farges, F., Brown, Jr., G. E.
2007: 208-210
- **Recent advances in surface, interface, and environmental geochemistry** *12th International Symposium on Water-Rock Interaction (WRI-12)*
Brown, G. E., Kendelewicz, T., Trainor, T. P., Tanwar, K. S., Chaka, A. M., Eng, P. J., Yamamoto, S., Nilsson, A., Bluhm, H., Starr, D. E., Salmeron, M., Catalano, J. G., Yoon, et al
TAYLOR & FRANCIS LTD.2007: 3–11
- **Search for microbial signatures within human and microbial calcifications using soft X-ray spectromicroscopy** *Symposium on Pathological Calcification - Crystallization, Infection, or Cellular Transdifferentiation*
Benzerara, K., Miller, V. M., Barell, G., Kumar, V., Miot, J., Brown, G. E., Lieske, J. C.
LIPPINCOTT WILLIAMS & WILKINS.2006: 367–79
- **Nanometer-scale chemical heterogeneities of black carbon materials and their impacts on PCB sorption properties: Soft X-ray spectromicroscopy study** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Yoon, T. H., Benzerara, K., Ahn, S., Luthy, R. G., Tyliszczak, T., Brown, G. E.
2006; 40 (19): 5923-5929

- **COLL 420-Structure of the iron-oxide aqueous solution interface via coupled surface X-ray diffraction and density functional theory**
Trainor, T. P., Eng, P., Chaka, A. M., Brown, G. E., Tanwar, K., Petitto, S. C., Lo, C. S., Ghose, S. K., Waychunas, G. A.
AMER CHEMICAL SOC.2006
- **EXAFS signature of structural Zn at trace levels in natural and synthetic trioctahedral 2 : 1 phyllosilicates** *AMERICAN MINERALOGIST*
Juillot, F., Morin, G., Ildefonse, P., Calas, G., Brown, G. E.
2006; 91 (8-9): 1432-1441
- **Applications of synchrotron radiation to processes at environmental interfaces** *16th Annual V M Goldschmidt Conference*
Brown, G. E., Benzerara, K., Yoon, T. H., Ha, J., Cordova, C. D., Spormann, A. M., Tyliszczak, T., Tanwar, K. S., Trainor, T. P., Eng, P. J., Kendelewicz, T., Yamamoto, S., Bluhm, et al
PERGAMON-ELSEVIER SCIENCE LTD.2006: A69–A69
- **Nanoscale detection of organic signatures in carbonate microbialites** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Benzerara, K., Menguy, N., Lopez-Garcia, P., Yoon, T., Kazmierczak, J., Tyliszczak, T., Guyot, F., Brown, G. E.
2006; 103 (25): 9440-9445
- **Structural environments around molybdenum in silicate glasses and melts. II. Effect of temperature, pressure, H₂O, halogens and sulfur** *Conference on Rare-Element Geochemistry and Mineral Deposits held at the 2004 GAC-MAC Annual Meeting*
Farges, F., Siewert, R., Ponader, C. W., Brown, G. E., Pichavant, M., Behrens, H.
MINERALOGICAL ASSOC CANADA.2006: 755–773
- **Structural environments around molybdenum in silicate glasses and melts. I. Influence of composition and oxygen fugacity on the local structure of molybdenum** *Conference on Rare-Element Geochemistry and Mineral Deposits held at the 2004 GAC-MAC Annual Meeting*
Farges, F., Siewert, R., Brown, G. E., Guesdon, A., Morin, G.
MINERALOGICAL ASSOC CANADA.2006: 731–753
- **Redox and speciation of tin in hydrous silicate glasses: A comparison with Nb, Ta, Mo and W** *Conference on Rare-Element Geochemistry and Mineral Deposits held at the 2004 GAC-MAC Annual Meeting*
Farges, F., Linnen, R. L., Brown, G. E.
MINERALOGICAL ASSOC CANADA.2006: 795–810
- **Structural environment of Nb⁵⁺ in dry and fluid-rich (H₂O, F) silicate glasses: A combined XANES and EXAFS study** *Conference on Rare-Element Geochemistry and Mineral Deposits held at the 2004 GAC-MAC Annual Meeting*
Piilonen, P. C., Farges, F., Linnen, R. L., Brown, G. E., Pawlak, M., Pratt, A.
MINERALOGICAL ASSOC CANADA.2006: 775–794
- **Changes in uranium speciation through a depth sequence of contaminated Hanford sediments** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Catalano, J. G., McKinley, J. P., Zachara, J. M., Heald, S. M., Smith, S. C., Brown, G. E.
2006; 40 (8): 2517-2524
- **Scientific advances made possible by user facilities** *ELEMENTS*
Brown, G. E., Calas, G., Hemley, R. J.
2006; 2 (1): 23-30
- **New opportunities at emerging facilities** *ELEMENTS*
Parise, J. B., Brown, G. E.
2006; 2 (1): 37-42
- **User facilities around the world** *ELEMENTS*
Brown, G. E., Sutton, S. R., Calas, G.
2006; 2 (1): 9-14
- **Soft X-ray microscopy and spectroscopy at the molecular environmental science beamline at the Advanced Light Source** *JOURNAL OF ELECTRON SPECTROSCOPY AND RELATED PHENOMENA*
Bluhm, H., Andersson, K., Araki, T., Benzerara, K., Brown, G. E., Dynes, J. J., Ghosal, S., Gilles, M. K., Hansen, H. C., Hemminger, J. C., Hitchcock, A. P., Ketteler, G., Kilcoyne, et al
2006; 150 (2-3): 86-104

- **The Stanford Environmental Molecular Science Institute: A Focus on Chemical and Microbial Processes at Environmental Interfaces** *The Geochemical News*
Brown, Jr., G. E., Nilsson, A., Spormann, A. M., Addiego, W. P., Benzerara, K., Bergmann, U., Bluhm, H., Brown, B. A., Calas, G., Chaka, A. M., Constantz, B. R., Farges, F., et al
2006; 128: 7-30
- **XAS evidence of As(V) association with iron oxyhydroxides in a contaminated soil at a former arsenical pesticide processing plant** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Cances, B., Juillot, F., Morin, G., Laperche, V., ALVAREZ, L., Proux, O., Hazemann, J. L., Brown, G. E., CALAS, G.
2005; 39 (24): 9398-9405
- **EXAFS analysis of arsenite adsorption onto two-line ferrihydrite, hematite, goethite, and lepidocrocite** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ona-Nguema, G., Morin, G., Juillot, F., CALAS, G., Brown, G. E.
2005; 39 (23): 9147-9155
- **Role of organic acids in promoting colloidal transport of mercury from mine tailings** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Slowey, A. J., Johnson, S. B., Rytuba, J. J., Brown, G. E.
2005; 39 (20): 7869-7874
- **In situ analysis of thioarsenite complexes in neutral to alkaline arsenic sulphide solutions** *Conference on Environmental Mineralogy, Geochemistry and Human Health*
Bostick, B. C., Fendorf, S., Brown, G. E.
MINERALOGICAL SOC.2005: 781-95
- **Multi-spectroscopic study of Fe(II) in silicate glasses: Implications for the coordination environment of Fe(II) in silicate melts** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Jackson, W. E., Farges, F., Yeager, M., Mabrouk, P. A., Rossano, S., WAYCHUNAS, G. A., SOLOMON, E. I., Brown, G. E.
2005; 69 (17): 4315-4332
- **Surface complexation studied via combined grazing-incidence EXAFS and surface diffraction: arsenate on hematite (0001) and (10-12)** *ANALYTICAL AND BIOANALYTICAL CHEMISTRY*
Waychunas, G., Trainor, T., Eng, P., Catalano, J., Brown, G., Davis, J., Rogers, J., Bargar, J.
2005; 383 (1): 12-27
- **Water in silicate glasses and melts of environmental interest: from volcanoes to cathedrals** *9th International Conference on the Structure of Non-Crystalline Materials (NCM9)*
Farges, F., Djanarthany, S., De Wispelaere, S., Munoz, M., Magassouba, B., Haddi, A., Wilke, M., Schmidt, C., Borchert, M., Trocellier, P., Crichton, W., Simionovici, A., Petit, et al
SOC GLASS TECHNOLOGY.2005: 350-53
- **CTR diffraction and grazing-incidence EXAFS study of U(VI) adsorption onto alpha-Al₂O₃ and alpha-Fe₂O₃ (110) surfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Catalano, J. G., Trainor, T. P., Eng, P. J., WAYCHUNAS, G. A., Brown, G. E.
2005; 69 (14): 3555-3572
- **Adsorption of organic matter at mineral/water interfaces. 6. Effect of inner-sphere versus outer-sphere adsorption on colloidal stability** *LANGMUIR*
Johnson, S. B., Brown, G. E., HEALY, T. W., Scales, P. J.
2005; 21 (14): 6356-6365
- **Uranyl adsorption onto montmorillonite: Evaluation of binding sites and carbonate complexation** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Catalano, J. G., Brown, G. E.
2005; 69 (12): 2995-3005
- **Adsorption of organic matter at mineral/water interfaces. IV. Adsorption of humic substances at boehmite/water interfaces and impact on boehmite dissolution** *LANGMUIR*
Yoon, T. H., Johnson, S. B., Brown, G. E.
2005; 21 (11): 5002-5012
- **Trace metal ion partitioning at polymer film-metal oxide interfaces: Long-period X-ray standing wave study** *LANGMUIR*

Yoon, T. H., Trainor, T. P., Eng, P. J., Bargar, J. R., Brown, G. E.
2005; 21 (10): 4503-4511

- **Structure and reactivity of hydroxylated hematite surfaces: Application of surface x-ray diffraction and spectroscopy** *15th Annual V M Goldschmidt Conference*
Trainor, T. P., Eng, P. J., Chaka, A. M., Lo, C. S., Tanwar, K., Ghose, S. K., Brown, G. E., Catalano, J. G., Waychunas, G. A., Tempelton, A. S.
PERGAMON-ELSEVIER SCIENCE LTD.2005: A486–A486
- **Soft X-ray spectromicroscopy study of chemical heterogeneities in iron precipitates formed at or near bacterial cells** *15th Annual V M Goldschmidt Conference*
Yoon, T. H., Borch, T., Benzerara, K., Fendorf, S., Tyliszczak, T., Brown, G. E.
PERGAMON-ELSEVIER SCIENCE LTD.2005: A598–A598
- **Adsorption of organic matter at mineral/water interfaces: 5. Effects of adsorbed natural organic matter analogues on mineral dissolution** *LANGMUIR*
Johnson, S. B., Yoon, T. H., Brown, G. E.
2005; 21 (7): 2811-2821
- **Speciation of mercury and mode of transport from placer gold mine tailings** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Slowey, A. J., Rytuba, J. J., Brown, G. E.
2005; 39 (6): 1547-1554
- **Soft x-ray spectromicroscopy study of carbonaceous materials: Characterization of their chemical heterogeneities in sub-micrometer scale** *229th National Meeting of the American-Chemical-Society (ACS)*
Yoon, T. H., Benzerara, K., Ahn, S. W., Luthy, R. G., Tyliszczak, T., Brown, G. E.
AMER CHEMICAL SOC.2005: U860–U860
- **Role of organic molecules and microbial organisms in metal ion sorption processes.** *229th National Meeting of the American-Chemical-Society (ACS)*
Brown, G. E., Yoon, T. H., Johnson, S. B., Templeton, A. S., Trainor, T. P., Benzerara, K., Bostick, B. C., Kendelewicz, T., Doyle, C. S., Spormann, A. M.
AMER CHEMICAL SOC.2005: U784–U785
- **ATR-FTIR investigation of the mechanism(s) of lactate adsorption on hematite (alpha-Fe₂O₃) nanoparticles at water/lactate/mineral interface.** *229th National Meeting of the American-Chemical-Society (ACS)*
Ha, J., Johnson, S. B., Yoon, T. H., Brown, G. E.
AMER CHEMICAL SOC.2005: U654–U654
- **Nanoscale environments associated with bioweathering of a Mg-Fe-pyroxene** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Benzerara, K., Yoon, T. H., Menguy, N., Tyliszczak, T., Brown, G. E.
2005; 102 (4): 979-982
- **Environmental interfaces, heavy metals, microbes, and plants: Applications of XAFS spectroscopy and related synchrotron radiation methods to environmental science** *PHYSICA SCRIPTA*
Brown, G. E., Catalano, J. G., Templeton, A. S., Trainor, T. P., Farges, F., Bostick, B. C., Kendelewicz, T., Doyle, C. S., Spormann, A. M., Revill, K., Morin, G., Juillot, F., Calas, et al
2005; T115: 80-87
- **Sorption and precipitation of Co(II) in Hanford sediments and alkaline aluminate solutions** *APPLIED GEOCHEMISTRY*
Catalano, J. G., Warner, J. A., Brown, G. E.
2005; 20 (1): 193-205
- **Tin and niobium in dry and fluid-rich (H₂O, F) silicate glasses** *PHYSICA SCRIPTA*
Piilonen, P. C., Farges, F., Linnen, R. L., Brown, G. E.
2005; T115: 405-407
- **Archeological applications of XAFS: Prehistorical paintings and medieval glasses** *PHYSICA SCRIPTA*
Farges, F., Chalmin, E., Vignaud, C., Pallot-Frossard, I., Susini, J., Bargar, J., Brown, G. E., Menu, M.
2005; T115: 885-887

- **Iron in silicate glasses: a systematic analysis of pre-edge, XANES and EXAFS features** *PHYSICA SCRIPTA*
Farges, F., Rossano, S., Lefrere, Y., Wilke, M., Brown, G. E.
2005; T115: 957-959
- **Surface complexation studied via combined grazing-incidence EXAFS and surface diffraction: arsenate on hematite (0001) and (1-102)** *Analytical and Bioanalytical Chemistry*
Waychunas, G. A., Trainor, T. P., Eng, P., Catalano, J. G., Brown, Jr., G. E., Davis, J. A., Rogers, J., Bargar, J. R.
2005; 383: 12-27
- **CTR diffraction and grazing incidence XAFS study of U(VI) adsorption to α -Al₂O₃ and α -Fe₂O₃ (1-102) surfaces** *Geochimica et Cosmochimica Acta*
Catalano, J. G., Trainor, T. P., Eng, P. J., Waychunas, G. A., Brown, Jr., G. E.
2005; 69: 3555-3572
- **Sorption and precipitation of Co(II) in alkali aluminate solutions and Hanford sediments** *Applied Geochemistry*
Catalano, J. G., Warner, J. A., Brown, Jr., G. E.
2005; 20: 193-205
- **Adsorption of organic matter at mineral/water interfaces: 3. Implications of surface dissolution for adsorption of oxalate** *LANGMUIR*
Johnson, S. B., Yoon, T. H., Slowey, A. J., Brown, G. E.
2004; 20 (26): 11480-11492
- **Structure and reactivity of the hydrated hematite (0001) surface** *SURFACE SCIENCE*
Trainor, T. P., Chaka, A. M., Eng, P. J., Newville, M., WAYCHUNAS, G. A., Catalano, J. G., Brown, G. E.
2004; 573 (2): 204-224
- **In situ characterization of aluminum-containing mineral-microorganism aqueous suspensions using scanning transmission X-ray microscopy** *LANGMUIR*
Yoon, T. H., Johnson, S. B., Benzerara, K., Doyle, C. S., Tyliszczak, T., Shuh, D. K., Brown, G. E.
2004; 20 (24): 10361-10366
- **Adsorption of organic matter at mineral/water interfaces: I. ATR-FTIR spectroscopic and quantum chemical study of oxalate adsorbed at boehmite/water and corundum/water interfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Yoon, T. H., Johnson, S. B., Musgrave, C. B., Brown, G. E.
2004; 68 (22): 4505-4518
- **Experimental and theoretical characterization of the structure of defects at the pyrite FeS₂(100) surface** *PHYSICAL REVIEW B*
Andersson, K., Nyberg, M., Ogasawara, H., Nordlund, D., Kendelewicz, T., Doyle, C. S., Brown, G. E., Pettersson, L. G., Nilsson, A.
2004; 70 (19)
- **Soft X-ray spectroscopic studies of the reaction of fractured pyrite surfaces with Cr(VI)-containing aqueous solutions** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Doyle, C. S., Kendelewicz, T., Bostick, B. C., Brown, G. E.
2004; 68 (21): 4287-4299
- **Macroscopic and microscopic observations of particle-facilitated mercury transport from new idria and sulphur bank mercury mine tailings** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Lowry, G. V., Shaw, S., Kim, C. S., Rytuba, J. J., Brown, G. E.
2004; 38 (19): 5101-5111
- **The effect of redox state on the local structural environment of iron in silicate glasses: a molecular dynamics, combined XAFS spectroscopy, and bond valence study** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
Farges, F., Lefrere, Y., Rossano, S., Berthereau, A., CALAS, G., Brown, G. E.
2004; 344 (3): 176-188
- **Scanning transmission X-ray microscopy study of microbial calcification** *GEOBIOLOGY*
Benzerara, K., Yoon, T. H., Tyliszczak, T., Constantz, B., Spormann, A. M., Brown, G. E.
2004; 2 (4): 249-259
- **Adsorption of Suwannee River fulvic acid on aluminum oxyhydroxide surfaces: An in situ ATR-FTIR study** *LANGMUIR*
Yoon, T. H., Johnson, S. B., Brown, G. E.

2004; 20 (14): 5655-5658

- **Adsorption mechanisms of trivalent gold on iron- and aluminum-(oxy)hydroxides. Part 1: X-ray absorption and Raman scattering spectroscopic studies of Au(III) adsorbed on ferrihydrite, goethite, and boehmite** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Berrodier, I., Farges, F., Benedetti, M., Winterer, M., Brown, G. E., Deveughele, M.
2004; 68 (14): 3019-3042
- **Analysis of uranyl-bearing phases by EXAFS spectroscopy: Interferences, multiple scattering, accuracy of structural parameters, and spectral differences** *AMERICAN MINERALOGIST*
Catalano, J. G., Brown, G. E.
2004; 89 (7): 1004-1021
- **Adsorption of organic matter at mineral/water interfaces. 2. Outer-sphere adsorption of maleate and implications for dissolution processes** *LANGMUIR*
Johnson, S. B., Yoon, T. H., Kocar, B. D., Brown, G. E.
2004; 20 (12): 4996-5006
- **Initial oxidation of fractured surfaces of FeS₂(100) by molecular oxygen, water vapor, and air** *SURFACE SCIENCE*
Kendelewicz, T., Doyle, C. S., Bostick, B. C., Brown, G. E.
2004; 558 (1-3): 80-88
- **The role of organic molecules and microbial organisms in metal ion sorption processes** *14th Annual V M Goldschmidt Conference*
Brown, G. E., Yoon, T. H., Johnson, S. B., Templeton, A. S., Trainor, T. P., Bostick, B. C., Kendelewicz, T., Doyle, C. S., Spormann, A. M.
PERGAMON-ELSEVIER SCIENCE LTD.2004: A160-A160
- **Inhibition of the reduction of Cr(VI) at the magnetite-water interface by calcium carbonate coatings** *APPLIED SURFACE SCIENCE*
Doyle, C. S., Kendelewicz, T., Brown, G. E.
2004; 230 (1-4): 260-271
- **Spectroscopic and diffraction study of uranium speciation in contaminated vadose zone sediments from the Hanford site, Washington state** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Catalano, J. G., Heald, S. M., Zachara, J. M., Brown, G. E.
2004; 38 (10): 2822-2828
- **ATR-FTIR and macroscopic investigation of humic acid adsorption on goethite.** *227th National Meeting of the American-Chemical Society*
Johnson, S. B., Yoon, T. H., Brown, G. E.
AMER CHEMICAL SOC.2004: U1218-U1218
- **In situ grazing-incidence extended X-ray absorption fine structure study of Pb(II) chemisorption on hematite (0001) and (1-102) surfaces** *LANGMUIR*
Bargar, J. R., Trainor, T. P., Fitts, J. P., Chambers, S. A., Brown, G. E.
2004; 20 (5): 1667-1673
- **EXAFS study of mercury(II) sorption to Fe- and Al-(hydr)oxides I. Effects of pH** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Kim, C. S., Rytuba, J. J., Brown, G. E.
2004; 271 (1): 1-15
- **Geological and anthropogenic factors influencing mercury speciation in mine wastes: an EXAFS spectroscopy study** *APPLIED GEOCHEMISTRY*
Kim, C. S., Rytuba, J. J., Brown, G. E.
2004; 19 (3): 379-393
- **EXAFS study of mercury(II) sorption to Fe- and Al-(hydr)oxides - II. Effects of chloride and sulfate** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Kim, C. S., Rytuba, J., Brown, G. E.
2004; 270 (1): 9-20
- **In-situ grazing incidence EXAFS study of Pb(II) chemisorption on hematite (0001) and (1-102)** *Langmuir*
Bargar, J. R., Trainor, T. P., Fitts, J. P., Chambers, S. A., Brown, Jr., G. E.
2004; 20: 1667-1673

- **Chromium speciation and mobility in a high level nuclear waste vadose zone plume** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Zachara, J. M., Ainsworth, C. C., Brown, G. E., Catalano, J. G., McKinley, J. P., Qafoku, O., Smith, S. C., Szecsody, J. E., Traina, S. J., Warner, J. A.
2004; 68 (1): 13-30
- **A novel spectrometer system for hard x-ray interfacial environmental chemistry** *8th International Conference on Synchrotron Radiation Instrumentation (SRI 2003)*
Rogers, J. H., Bargar, J. R., WAYCHUNAS, G. A., Yoon, T. H., Brown, G. E.
AMER INST PHYSICS.2004: 981-984
- **Molecular Environmental Science: An Assessment of Research Accomplishments, Available Synchrotron Radiation Facilities, and Needs** *A Report Prepared on Behalf of EnviroSync - A National Organization Representing Molecular Environmental Science Users of Synchrotron Radiation Sources*
Brown, Jr., G. E., Sutton, S. R., Bargar, J. R., Shuh, D. K., Bassett, W. A., Bertsch, P. M., Bisognano, J., Bleam, W. F., Clark, D. L., De Stasio, P., Fendorf, S. E., Fenter, P. A., et al
SLAC.2004: 60p.
- **Soft X-ray scanning transmission microscope working in an extended energy range at the advanced light source** *8th International Conference on Synchrotron Radiation Instrumentation (SRI 2003)*
Tyliszczak, T., Warwick, T., Kilcoyne, A. L., Fakra, S., Shuh, D. K., Yoon, T. H., Brown, G. E., Andrews, S., Chembrolu, V., Strachan, J., Acremann, Y.
AMER INST PHYSICS.2004: 1356-1359
- **EXAFS study of uranyl adsorption on Wyoming montmorillonite** *11th Internat. Symp. on Water-Rock Interaction*
Catalano, J. G., Brown, Jr., G. E., Wanty (ed.), R. B., Seal, II (ed.), R. R.
2004: 665-69
- **Synchrotron-based studies of microbe-metal ion-mineral interactions.** *11th Internat. Symp. on Water-Rock Interaction*
Brown, Jr., G. E., Templeton, A. S., Trainor, T. P., Spormann, A. M., Yoon, T. H., Benzerara, K.
edited by Wanty, R. B., Seal II, R. R.
2004: 1069-77
- **Mercury speciation by X-ray absorption fine structure spectroscopy and sequential chemical extractions: A comparison of speciation methods** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Kim, C. S., Bloom, N. S., Rytuba, J. J., Brown, G. E.
2003; 37 (22): 5102-5108
- **Selenium speciation and partitioning within Burkholderia cepacia biofilms formed on alpha-Al₂O₃ surfaces** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Templeton, A. S., Trainor, T. P., Spormann, A. M., Brown, G. E.
2003; 67 (19): 3547-3557
- **Rapid oxidation of pyrite surfaces by thiobacillus ferrooxidans and T. thiooxidans.** *226th National Meeting of the American-Chemical-Society*
Bostick, B. C., Lester, K., Doyle, C., Kendelewicz, T., Brown, G. E., Fendorf, S., Spormann, A. M.
AMER CHEMICAL SOC.2003: U591-U591
- **Effect of sulfate and phosphate on oxalate adsorption on boehmite** *226th National Meeting of the American-Chemical-Society*
Ha, J. Y., Yoon, T. H., Brown, G. E.
AMER CHEMICAL SOC.2003: U494-U494
- **X-ray absorption fine structure study of As(V) and Se(IV) sorption complexes on hydrous Mn oxides** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Foster, A. L., Brown, G. E., Parks, G. A.
2003; 67 (11): 1937-1953
- **Speciation of Pb(II) sorbed by Burkholderia cepacia/goethite composites** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Templeton, A. S., Spormann, A. M., Brown, G. E.
2003; 37 (10): 2166-2172
- **Occurrence of Zn/Al hydroxalcalite in smelter-impacted soils from northern France: Evidence from EXAFS spectroscopy and chemical extractions** *AMERICAN MINERALOGIST*
Juillot, F., Morin, G., Ildefonse, P., Trainor, T. P., Benedetti, M., Galois, L., CALAS, G., Brown, G. E.

2003; 88 (4): 509-526

- **Effect of simple organic acid adsorption on the stability of aqueous metal oxide systems** *225th National Meeting of the American-Chemical-Society*
Johnson, S. B., Yoon, T. H., Brown, G. E., Scales, P. J., HEALY, T. W.
AMER CHEMICAL SOC.2003: U799-U799
- **Sorption versus biomineralization of Pb(II) within Burkholderia cepacia biofilms** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Templeton, A. S., Trainor, T. P., Spormann, A. M., Newville, M., Sutton, S. R., Dohnalkova, A., Gorby, Y., Brown, G. E.
2003; 37 (2): 300-307
- **XAFS study of As(V) and Se(IV) sorption complexes on hydrous Mn oxides** *Geochimica et Cosmochimica Acta*
Foster, A. L., Brown, Jr., G. E., Parks, G. A.
2003; 67: 1937-1953
- **Role of arsenic in pyrite oxidation**
Bostick, B. C., Doyle, C., Fendorf, S., Kendelewicz, T., Bargar, J., Brown, G. E.
PERGAMON-ELSEVIER SCIENCE LTD.2002: A95-A95
- **Application of the long-period X-ray standing wave technique to the analysis of surface reactivity: Pb(II) sorption at alpha-Al₂O₃/aqueous solution interfaces in the presence and absence of Se(VI)** *LANGMUIR*
Trainor, T. P., Templeton, A. S., Brown, G. E., Parks, G. A.
2002; 18 (15): 5782-5791
- **Bond valence in silicate glasses** *5th Brazilian Symposium on Glasses and Related Materials/1st International Symposium on Non-Crystalline Solids in Brazil*
Rossano, R., Farges, F., Ramos, A., Delaye, J. M., Brown, G. E.
ELSEVIER SCIENCE BV.2002: 167-73
- **Molecular beam epitaxial growth and properties of CoFe₂O₄ on MgO(001)** *JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS*
Chambers, S. A., Farrow, R. F., Maat, S., Toney, M. F., Folks, L., Catalano, J. G., Trainor, T. P., Brown, G. E.
2002; 246 (1-2): 124-139
- **Crystal truncation rod diffraction study of the alpha-Al₂O₃ (110) surface** *SURFACE SCIENCE*
Trainor, T. P., Eng, P. J., Brown, G. E., Robinson, I. K., De Santis, M.
2002; 496 (3): 238-250
- **Actinides in silicate glasses and melts and on mineral surfaces: Information on local coordination environments from XAFS spectroscopy and bond valence theory**
Brown, Jr., G. E., Farges, F., Bargar, J. R., Berbeco, H. T., 2002
Nuclear Energy Agency/Organization for Economic Co-operation and Development, AEN/NEA 2002.2002: 10-12
- **An overview of synchrotron radiation applications to low temperature geochemistry and environmental science** *Conference on Synchrotron Applications to Low-Temperature Geochemistry and Environmental Science held at the American-Geophysical-Union Fall Meeting*
Brown, G. E., Sturchio, N. C.
MINERALOGICAL SOC AMER.2002: 1-115
- **Crystal truncation rod diffraction study of the clean and hydrated alpha-Al₂O₃ (110) surface** *Surface Science*
Trainor, T. P., Eng, P., Brown, Jr., G. E., Robinson, I. K., De Santis, M.
2002; 496: 238-250
- **Grazing-incidence XAFS study of aqueous Zn(II) sorption on alpha-Al₂O₃ single crystals** *Journal of Colloid and Interface Science*
Trainor, T. P., Fitts, J. P., Templeton, A. S., Grolimund, D., Brown, Jr., G. E.
2002; 244: 239-244
- **A new hard x-ray XAFS spectroscopy facility for environmental samples, including actinides, at the Stanford Synchrotron Radiation Laboratory**
Bargar, J. R., Brown, Jr., G. E., Evans, I., Rabedeau, T., Rowen, M., Rogers, J.
Nuclear Energy Agency/Organization for Economic Co-operation and Development, AEN/NEA 2002.2002: 10-12
- **Actinides in earth materials: The importance of natural analogues**

Farges, F., Harfouche, M., Petit, P.-E., Brown, Jr., G. E.

Nuclear Energy Agency/Organization for Economic Co-operation and Development, AEN/NEA 2002.2002: 10–12

- **Grazing-incidence XAFS study of aqueous Zn(II) sorption on alpha-Al₂O₃ single crystals** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Trainor, T. P., Fitts, J. P., Templeton, A. S., Grolimund, D., Brown, G. E.
2001; 244 (2): 239-244
- **Pb(II) distributions at biofilm-metal oxide interfaces** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Templeton, A. S., Trainor, T. P., Traina, S. J., Spormann, A. M., Brown, G. E.
2001; 98 (21): 11897-11902
- **Surface science - How minerals react with water** *SCIENCE*
Brown, G. E.
2001; 294 (5540): 67-?
- **Transition elements in water-bearing silicate glasses/melts. Part II. Ni in water-bearing glasses** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Munoz, M., Siewert, R., Malavergne, V., Brown, G. E., Behrens, H., Nowak, M., Petit, P. E.
2001; 65 (10): 1679-1693
- **Oxidation state and coordination of Fe in minerals: An Fe K-XANES spectroscopic study** *AMERICAN MINERALOGIST*
Wilke, M., Farges, F., Petit, P. E., Brown, G. E., Martin, F.
2001; 86 (5-6): 714-730
- **Transition elements in water-bearing silicate glasses/melts. Part I. A high-resolution and anharmonic analysis of Ni coordination environments in crystals, glasses, and melts** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Brown, G. E., Petit, P. E., Munoz, M.
2001; 65 (10): 1665-1678
- **Sorption of trace elements from aqueous media: Modern perspectives from spectroscopic studies and comments on adsorption in the marine environment** *International Geology Review*
Brown, Jr., G. E., Parks, G. A.
2001; 43: 867-976
- **Mineralogy of lead in a soil developed on a Pb-mineralized sandstone (Largentiere, France)** *AMERICAN MINERALOGIST*
Morin, G., Juillot, F., Ildefonse, P., CALAS, G., Samama, J. C., Chevallier, P., Brown, G. E.
2001; 86 (1-2): 92-104
- **Interaction of water and aqueous chromium ions with iron oxide surfaces** *Nuclear Site Remediation - First Accomplishments of the Environmental Management Science Program*
Brown, Jr., G. E., Chambers, S. A., Amonette, J. E., Rustad, J. R., Kendelewicz, T., Liu, P., Doyle, C. S., Grolimund, D., Foster-Mills, N. S., Joyce, S.A., S. A., Thevuthasan, S.
edited by Eller, P. G., Heineman, W. R.
Am. Chem. Soc., Columbus, OH.2001: 212–246
- **Transition elements in water-bearing silicate glasses/melts. Part I. A high resolution and anharmonic EXAFS analysis of Ni coordination environments in crystals, glasses, and melts** *Geochimica et Cosmochimica Acta*
Farges, F., Brown, Jr., G. E., Petit, P.-E., Munoz, M.
2001; 65: 1665-1678
- **Oxidation state and coordination of Fe in minerals: an Fe K-XANES study** *American Mineralogist*
Wilke, M., Farges, F., Petit, P.-E., Brown, Jr., G. E., Martin, F.
2001; 86: 714-730
- **Inside rocks** *Geotimes, American Geological Institute*
Astheimer, R., Kristin, B., Brown, Jr., G. E., Hoy, J., Jones, K. W., Sturchio, N. C., Sutton, S. R., Waychunas, G. A., Woodward, N. B.
2001: 20-23
- **Transition elements in water-bearing silicate glasses/melts. Part II. Ni in water-bearing glasses** *Geochimica et Cosmochimica Acta*
Farges, F., Munoz, M., Siewert, R., Malavergne, V., Brown, Jr., G. E., Behrens, H., Nowak, M., Petit, P.-E.

2001; 65: 1679-1693

- **Structural evolution of Cr(III) polymeric species at the gamma-Al₂O₃/water interface** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Fitts, J. P., Brown, G. E., Parks, G. A.
2000; 34 (24): 5122-5128
- **Spectroscopic study of the reaction of aqueous Cr(VI) with Fe₃O₄(111) surfaces** *SURFACE SCIENCE*
Kendelewicz, T., Liu, P., Doyle, C. S., Brown, G. E.
2000; 469 (2-3): 144-163
- **Adsorption and Precipitation of Aqueous Zn(II) on Alumina Powders.** *Journal of colloid and interface science*
Trainor, T. P., Brown, G. E., Parks, G. A.
2000; 231 (2): 359-372
- **Adsorption and precipitation of aqueous Zn(II) on alumina powders** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Trainor, T. P., Brown, G. E., Parks, G. A.
2000; 231 (2): 359-372
- **Characterization and speciation of mercury-bearing mine wastes using X-ray absorption spectroscopy** *5th International Conference on Mercury as a Global Pollutant*
Kim, C. S., Brown, G. E., Rytuba, J. J.
ELSEVIER SCIENCE BV.2000: 157-68
- **Inorganic Ligand Effects on Pb(II) Sorption to Goethite (alpha-FeOOH).** *Journal of colloid and interface science*
Ostergren, J. D., Trainor, T. P., Bargar, J. R., Brown, G. E., Parks, G. A.
2000; 225 (2): 466-482
- **Inorganic ligand effects on Pb(II) sorption to goethite (alpha-FeOOH) - I. Carbonate** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Ostergren, J. D., Trainor, T. P., Bargar, J. R., Brown, G. E., Parks, G. A.
2000; 225 (2): 466-482
- **Inorganic ligand effects on Pb(II) sorption to goethite (alpha-FeOOH) - II. Sulfate** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Ostergren, J. D., Brown, G. E., Parks, G. A., Persson, P.
2000; 225 (2): 483-493
- **Inorganic Ligand Effects on Pb(II) Sorption to Goethite (alpha-FeOOH).** *Journal of colloid and interface science*
Ostergren, J. D., Brown, G. E., Parks, G. A., Persson, P.
2000; 225 (2): 483-493
- **Structure of the hydrated alpha-Al(2)O(3) (0001) surface** *Science (New York, N.Y.)*
Eng, P. J., Trainor, T. P., Brown, G. E., Waychunas, G. A., Newville, M., Sutton, S. R., Rivers, M. L.
2000; 288 (5468): 1029-33
- **Structure of the hydrated alpha-Al₂O₃ (0001) surface** *SCIENCE*
Eng, P. J., Trainor, T. P., Brown, G. E., WAYCHUNAS, G. A., Newville, M., Sutton, S. R., Rivers, M. L.
2000; 288 (5468): 1029-1033
- **Reaction of water with the (100) and (111) surfaces of Fe₃O₄** *SURFACE SCIENCE*
Kendelewicz, T., Liu, P., Doyle, C. S., Brown, G. E., Nelson, E. J., Chambers, S. A.
2000; 453 (1-3): 32-46
- **Growth and electronic structure of vanadium on alpha-Al₂O₃(0001)** *SURFACE SCIENCE*
Biener, J., Baumer, M., Madix, R. J., Liu, P., Nelson, E., Kendelewicz, T., Brown, G.
2000; 449 (1-3): 50-60
- **Formation and Release of Cobalt(II) Sorption and Precipitation Products in Aging Kaolinite-Water Slurries.** *Journal of colloid and interface science*
Thompson, H. A., Parks, G. A., Brown, G. E.
2000; 222 (2): 241-253
- **Spectroscopic study of the reaction of Cr(VI)aqueous with Fe₃O₄ (111) surfaces** *Surface Science*

- Kendelewicz, T., Liu, P., Doyle, C. S., Brown, Jr., G. E.
2000; 469: 144-163
- **XAFS study of Cu model compounds and Cu²⁺ sorption products on amorphous SiO₂, gamma-Al₂O₃, and anatase** *AMERICAN MINERALOGIST*
Cheah, S. F., Brown, G. E., Parks, G. A.
2000; 85 (1): 118-132
 - **XAFS study of copper model compounds and copper(II) sorption on amorphous SiO₂, alpha-Al₂O₃, and anatase** *American Mineralogist*
Cheah, S.-F., Brown, Jr., G. E., Parks, G. A.
2000; 85: 118-132
 - **Structure and Bonding of Cu(II)-Glutamate Complexes at the gamma-Al₂O₃-Water Interface.** *Journal of colloid and interface science*
Fitts, J. P., Persson, P., Brown, G. E., Parks, G. A.
1999; 220 (1): 133-147
 - **The interaction of carbon dioxide with single crystal CaO(100) surfaces** *6th International Conference on the Structure of Surfaces (ICSOS-6)*
Doyle, C. S., Kendelewicz, T., Carrier, X., Brown, G. E.
WORLD SCIENTIFIC PUBL CO PTE LTD.1999: 1247-54
 - **Reaction of water with clean surfaces of MnO(100)** *6th International Conference on the Structure of Surfaces (ICSOS-6)*
Kendelewicz, T., Doyle, C. S., Carrier, X., Brown, G. E.
WORLD SCIENTIFIC PUBL CO PTE LTD.1999: 1255-63
 - **Reaction of CO₂ with MgO(100) surfaces** *6th International Conference on the Structure of Surfaces (ICSOS-6)*
Carrier, X., Doyle, C. S., Kendelewicz, T., Brown, G. E.
WORLD SCIENTIFIC PUBL CO PTE LTD.1999: 1237-45
 - **A synchrotron study of the growth of vanadium oxide on Al₂O₃(0001)** *SURFACE SCIENCE*
Biener, J., Baumer, M., Madix, R. J., Liu, P., Nelson, E. J., Kendelewicz, T., Brown, G. E.
1999; 441 (1): 1-9
 - **Outer-sphere adsorption of Pb(II)EDTA on goethite** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Bargar, J. R., Persson, P., Brown, G. E.
1999; 63 (19-20): 2957-2969
 - **Structural investigation of platinum solubility in silicate glasses** *AMERICAN MINERALOGIST*
Farges, F., Neuville, D. R., Brown, G. E.
1999; 84 (10): 1562-1568
 - **Structure and composition of copper(II)-2,2'-bipyridine sorption complexes on amorphous SiO₂** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Cheah, S. F., Brown, G. E., Parks, G. A.
1999; 63 (19-20): 3229-3246
 - **Sorption of Co(II) on Metal Oxide Surfaces.** *Journal of colloid and interface science*
Towle, S. N., Bargar, J. R., Brown, G. E., Parks, G. A.
1999; 217 (2): 312-321
 - **Sorption of Co(II) on metal oxide surfaces I. Identification of specific binding sites of Co(II) on (110) and (001) surfaces of TiO₂ (rutile) by grazing-incidence XAFS spectroscopy** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Towle, S. N., Brown, G. E., Parks, G. A.
1999; 217 (2): 299-311
 - **Sorption of Co(II) on Metal Oxide Surfaces.** *Journal of colloid and interface science*
Towle, S. N., Brown, G. E., Parks, G. A.
1999; 217 (2): 299-311
 - **Ambient-temperature synthesis, evolution, and characterization of cobalt-aluminum hydroxalite-like solids** *CLAYS AND CLAY MINERALS*
Thompson, H. A., Parks, G. A., Brown, G. E.
1999; 47 (4): 425-438

- **Dynamic interactions of dissolution, surface adsorption, and precipitation in an aging cobalt(II)-clay-water system** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Thompson, H. A., Parks, G. A., Brown, G. E.
1999; 63 (11-12): 1767-1779
- **Quantitative speciation of lead in selected mine tailings from Leadville, CO** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Ostergren, J. D., Brown, G. E., Parks, G. A., Tingle, T. N.
1999; 33 (10): 1627-1636
- **Grazing-incidence XAFS studies of aqueous Zn(II) on sapphire single crystals** *10th International Conference on XAFS (XAFS X)*
Trainor, T. P., Fitts, J. P., Grolimund, D., Bargar, J. R., Brown, G. E.
WILEY-BLACKWELL.1999: 618-620
- **Grazing-incidence XAFS investigations of Cu(II) sorption products at alpha-Al₂O₃-water and alpha-SiO₂-water interfaces** *JOURNAL OF SYNCHROTRON RADIATION*
Fitts, J. P., Trainor, T. P., Grolimund, D., Bargar, J. R., Parks, G. A., Brown, G. E.
1999; 6: 627-629
- **XAFS and XSW study of the distribution of Pb(II) sorbed to biofilms on alpha-Al₂O₃ and alpha-FeOOH surfaces** *10th International Conference on XAFS (XAFS X)*
Templeton, A. S., Ostergren, J. D., Trainor, T. P., Foster, A. L., Traina, S. J., Spormann, A., Brown, G. E.
WILEY-BLACKWELL.1999: 642-644
- **Adsorption of Au ferrihydrites using Au-L-III edge XAFS spectroscopy** *10th International Conference on XAFS (XAFS X)*
Berrodier, I., Farges, F., Benedetti, M., Brown, G.
WILEY-BLACKWELL.1999: 651-652
- **XANES studies at the Al K-edge of aluminium-rich surface phases in the soil environment** *JOURNAL OF SYNCHROTRON RADIATION*
Doyle, C. S., Traina, S. J., Ruppert, H., Kendelewicz, T., Rehr, J. J., Brown, G. E.
1999; 6: 621-623
- **Identification of Cr species at the aqueous solution-hematite interface after Cr(VI)-Cr(III) reduction using GI-XAFS and Cr L-edge NEXAFS** *JOURNAL OF SYNCHROTRON RADIATION*
Grolimund, D., Trainor, T. P., Fitts, J. P., Kendelewicz, T., Liu, P., Chambers, S. A., Brown, G. E.
1999; 6: 612-614
- **Utility of EXAFS in characterization and speciation of mercury-bearing mine wastes** *10th International Conference on XAFS (XAFS X)*
Kim, C. S., Rytuba, J. J., Brown, G. E.
WILEY-BLACKWELL.1999: 648-650
- **Combined EXAFS and FTIR investigation of sulfate and carbonate effects on Pb(II) sorption to goethite (alpha-FeOOH)** *10th International Conference on XAFS (XAFS X)*
Ostergren, J. D., Bargar, J. R., Brown, G. E., Parks, G. A.
WILEY-BLACKWELL.1999: 645-647
- **Surface structure of MBE-grown alpha-Fe₂O₃(0001) by intermediate-energy X-ray photoelectron diffraction** *SURFACE SCIENCE*
Thevuthasan, S., Kim, Y. J., Yi, S. I., Chambers, S. A., Morais, J., Denecke, R., Fadley, C. S., Liu, P., Kendelewicz, T., Brown, G. E.
1999; 425 (2-3): 276-286
- **X-ray absorption and photoemission study of the adsorption of aqueous Cr(VI) on single crystal hematite and magnetite surfaces** *SURFACE SCIENCE*
Kendelewicz, T., Liu, P., Doyle, C. S., Brown, G. E., Nelson, E. J., Chambers, S. A.
1999; 424 (2-3): 219-231
- **Mineral surfaces and bioavailability of heavy metals: A molecular-scale perspective** *National-Academy-of-Sciences Colloquium on Geology, Mineralogy, and Human Welfare*
Brown, G. E., Foster, A. L., Ostergren, J. D.
NATL ACAD SCIENCES.1999: 3388-95
- **XAFS determination of the chemical form of lead in smelter-contaminated soils and mine tailings: Importance of adsorption processes** *AMERICAN MINERALOGIST*

- Morin, G., Ostergren, J. D., Juillot, F., Ildefonse, P., CALAS, G., Brown, G. E.
1999; 84 (3): 420-434
- **Identification of Cr species at the solution-hematite interface after Cr(VI)-Cr(III) reduction using GI-XAFS and Cr L-edge NEXAFS** *Journal of Synchrotron Radiation*
Grolimund, D., Kendelewicz, T., Trainor, T. P., Liu, P., Fitts, J. P., Chambers, S. A., Brown, Jr., G. E.
1999; 6: 612-614
 - **Metal oxide surfaces and their interactions with aqueous solutions and microbial organisms** *CHEMICAL REVIEWS*
Brown, G. E., Henrich, V. E., Casey, W. H., Clark, D. L., Eggleston, C., Felmy, A., Goodman, D. W., Gratzel, M., Maciel, G., McCarthy, M. I., Neelson, K. H., Sverjensky, D. A., Toney, et al
1999; 99 (1): 77-174
 - **XAFS and XSW studies of the distribution and chemical speciation of Pb sorbed to biofilms on α -Al₂O₃ and α -FeOOH surfaces** *Journal of Synchrotron Radiation*
Templeton, A. S., Ostergren, J. D., Trainor, T. P., Foster, A. L., Traina, S. J., Spormann, A., Brown, Jr., G. E.
1999; 6: 642-644
 - **Adsorption of Au on iron oxy-hydroxides using Au L3-edge XAFS spectroscopy** *Journal of Synchrotron Radiation*
Berrodier, I., Farges, F., Benedetti, M., Brown, Jr., G. E.
1999; 6: 651-652
 - **Quantitative lead speciation in selected mine tailings from Leadville, CO** *Environmental Science & Technology*
Ostergren, J. D., Brown, Jr., G. E., Parks, G. A., Tingle, T. N.
1999; 33: 1627-1636
 - **Al-XANES studies of aluminum-rich surface phases in the soil environment** *Journal of Synchrotron Radiation*
Doyle, C. S., Traina, S. J., Ruppert, H., Kendelewicz, T., Rehr, J. J., Brown, Jr., G. E.
1999; 6: 621-623
 - **Grazing-incidence XAFS investigations of Cu(II) sorption products at the oxide-water interface** *Journal of Synchrotron Radiation*
Fitts, J. P., Trainor, T. P., Grolimund, D., Bargar, J. R., Parks, G. A., Brown, Jr., G. E.
1999; 6: 627-629
 - **XAFS Spectroscopy Study of Cu(II) Sorption on Amorphous SiO₂ and gamma-Al₂O₃: Effect of Substrate and Time on Sorption Complexes.** *Journal of colloid and interface science*
Cheah, S. F., Brown, G. E., Parks, G. A.
1998; 208 (1): 110-128
 - **XAFS spectroscopy study of Cu(II) sorption on amorphous SiO₂ and gamma-Al₂O₃: Effect of substrate and time on sorption complexes** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Cheah, S. F., Brown, G. E., Parks, G. A.
1998; 208 (1): 110-128
 - **Reaction of water vapor with alpha-Al₂O₃(0001) and alpha-Fe₂O₃(0001) surfaces: synchrotron X-ray photoemission studies and thermodynamic calculations** *SURFACE SCIENCE*
Liu, P., Kendelewicz, T., Brown, G. E., Nelson, E. J., Chambers, S. A.
1998; 417 (1): 53-65
 - **Reaction of water with vacuum-cleaved CaO(100) surfaces: an X-ray photoemission spectroscopy study** *SURFACE SCIENCE*
Liu, P., Kendelewicz, T., Brown, G. E., Parks, G. A., Pianetta, P.
1998; 416 (1-2): 326-340
 - **Reaction of water with MgO(100) surfaces: Part III. X-ray standing wave studies** *SURFACE SCIENCE*
Liu, P., Kendelewicz, T., Nelson, E. J., Brown, G. E.
1998; 415 (1-2): 156-169
 - **Reaction of water with MgO(100) surfaces. Part I: Synchrotron X-ray photoemission studies of low-defect surfaces** *SURFACE SCIENCE*
Liu, P., Kendelewicz, T., Gordon, G. E., Parks, G. A.
1998; 412-13: 287-314

- **Reaction of water with MgO(100) surfaces. Part II: Synchrotron photoemission studies of defective surfaces** *SURFACE SCIENCE*
Liu, P., Kendelewicz, T., Brown, G. E.
1998; 412-13: 315-332
- **Interaction of sodium overlayers with the PbS(100) (galena) surface: evidence for a Na <-> Pb exchange reaction** *SURFACE SCIENCE*
Kendelewicz, T., Liu, P., Brown, G. E., Nelson, E. J.
1998; 411 (1-2): 10-22
- **X-ray absorption fine-structure spectroscopy study of photocatalyzed, heterogeneous As(III) oxidation on kaolin and anatase** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Foster, A. L., Brown, G. E., Parks, G. A.
1998; 32 (10): 1444-1452
- **Quantitative arsenic speciation in mine tailings using X-ray absorption spectroscopy** *AMERICAN MINERALOGIST*
Foster, A. L., Brown, G. E., Tingle, T. N., Parks, G. A.
1998; 83 (5-6): 553-568
- **Atomic geometry of the PbS(100) surface** *SURFACE SCIENCE*
Kendelewicz, T., Liu, P., Brown, G. E., Nelson, E. J.
1998; 395 (2-3): 229-238
- **Structure and composition of uranium(VI) sorption complexes at the kaolinite-water interface** *Adsorption of Metals by Geomedia, Variables, Mechanisms, and Model Applications*
Thompson, H. A., Parks, G. A., Brown, Jr., G. E., Jenne (ed.), E. A.
Academic Press.1998: 349-370
- **Surface complexation of Pb(II) at oxide-water interfaces: III. XAFS determination of Pb(II) and Pb(II)-chloro adsorption complexes on goethite and alumina** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Bargar, J. R., Brown, G. E., Parks, G. A.
1998; 62 (2): 193-207
- **Use of x-ray absorption spectroscopy to study reaction mechanisms at metal oxide-water interfaces** *Am. Chem. Soc. Symposium Series 715, Kinetics and Mechanisms of Reactions at the Mineral/Water Interface*
Brown, Jr., G. E., Parks, G. A., Bargar, J. R., Towle, S. N.
edited by Sparks, D. L., Grundl, T.
1998: 14-37
- **Abiotic selenium redox transformations in the presence of Fe(II,III) oxides** *SCIENCE*
Myneni, S. C., TOKUNAGA, T. K., Brown, G. E.
1997; 278 (5340): 1106-1109
- **Prediction of extended x-ray-absorption fine-structure spectra from molecular interaction models: Na+(H2O)(n)-MgO (100) interface** *PHYSICAL REVIEW B*
McCarthy, M. I., Schenter, G. K., CHACONTAYLOR, M. R., Rehr, J. J., Brown, G. E.
1997; 56 (15): 9925-9936
- **Differential redox and sorption of Cr(III/VI) on natural silicate and oxide minerals: EXAFS and XANES results** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Peterson, M. L., Brown, G. E., Parks, G. A., Stein, C. L.
1997; 61 (16): 3399-3412
- **Ti K-edge XANES studies of Ti coordination and disorder in oxide compounds: Comparison between theory and experiment** *PHYSICAL REVIEW B*
Farges, F., Brown, G. E., Rehr, J. J.
1997; 56 (4): 1809-1819
- **Surface complexation of Pb(II) at oxide-water interfaces .1. XAFS and bond-valence determination of mononuclear and polynuclear Pb(II) sorption products on aluminum oxides** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Bargar, J. R., Brown, G. E., Parks, G. A.
1997; 61 (13): 2617-2637

- **Surface complexation of Pb(II) at oxide-water interfaces .2. XAFS and bond-valence determination of mononuclear Pb(II) sorption products and surface functional groups on iron oxides** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Bargar, J. R., Brown, G. E., Parks, G. A.
1997; 61 (13): 2639-2652
- **XAFS spectroscopic study of uranyl coordination in solids and aqueous solution** *AMERICAN MINERALOGIST*
Thompson, H. A., Brown, G. E., Parks, G. A.
1997; 82 (5-6): 483-496
- **Selenium redox reactions and transport between ponded waters and sediments** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
TOKUNAGA, T. K., Brown, G. E., Pickering, I. J., Sutton, S. R., Bait, S.
1997; 31 (5): 1419-1425
- **Surface passivation of magnetite by reaction with aqueous Cr(VI): XAFS and TEM results** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Peterson, M. L., White, A. F., Brown, G. E., Parks, G. A.
1997; 31 (5): 1573-1576
- **Coordination chemistry of titanium(IV) in silicate glasses and melts .4. XANES studies of synthetic and natural volcanic glasses and tektites at ambient temperature and pressure** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Brown, G. E.
1997; 61 (9): 1863-1870
- **Characterization of outer-sphere EDTA and Pb(II)EDTA surface complexes on goethite by FTIR and XAFS spectroscopy.**
Bargar, J. R., Persson, P., Brown, G. E.
AMER CHEMICAL SOC.1997: 135-GEOC
- **XAFS study of Cu(II) at the water-goethite (alpha-FeOOH) interface** *9th International Conference on X-Ray Absorption Fine Structure*
Bochatay, L., Persson, P., Lovgren, L., Brown, G. E.
EDP SCIENCES S A.1997: 819-20
- **XAFS studies of Pb(II)-chloro and Hg(II)-chloro ternary complexes on goethite** *9th International Conference on X-Ray Absorption Fine Structure*
Bargar, J. R., Persson, P., Brown, G. E.
EDP SCIENCES S A.1997: 825-26
- **Ti K-edge XANES studies of oxides: Theory vs. experiment** *9th International Conference on X-Ray Absorption Fine Structure*
Farges, F., Brown, G. E., Rehr, J. J.
EDP SCIENCES S A.1997: 191-93
- **Oxidation state, local structure, and ab-initio XAFS modeling of chromium in contaminated soils and model compounds** *9th International Conference on X-Ray Absorption Fine Structure*
Peterson, M. L., Brown, G. E., Parks, G. A.
EDP SCIENCES S A.1997: 781-83
- **Coordination of actinides in silicate melts** *9th International Conference on X-Ray Absorption Fine Structure*
Farges, F., Brown, G. E., Wu, Z.
EDP SCIENCES S A.1997: 1009-10
- **XAFS determination of As(V) associated with Fe(III) oxyhydroxides in weathered mine tailings and contaminated soil from California, USA** *9th International Conference on X-Ray Absorption Fine Structure*
Foster, A. L., Brown, G. E., Parks, G. A., Tingle, T. N., Voigt, D. E., Brantley, S. L.
EDP SCIENCES S A.1997: 815-16
- **Surface Precipitation of Co(II)(aq) on Al₂O₃** *Journal of colloid and interface science*
Towle, S. N., Bargar, J. R., Brown, G. E., Parks, G. A.
1997; 187 (1): 62-82
- **XAFS and Bond-Valence Determination of the Structures and Compositions of Surface Functional Groups and Pb(II) and Co(II) Sorption Products on Single-Crystal alpha-Al₂O₃** *Journal of colloid and interface science*
Bargar, J. R., Towle, S. N., Brown, G. E., Parks, G. A.
1997; 185 (2): 473-92

- **XAFS and bond-valence determination of the structures and compositions of surface functional groups and Pb(II) and Co(II) sorption products on single-crystal alpha-Al₂O₃** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Bargar, J. R., Towle, S. N., Brown, G. E., Parks, G. A.
1997; 185 (2): 473-492
- **Selenium transport between ponded waters and sediments** *Environmental Science & Technology*
Tokunaga, T. K., Brown, Jr., G. E., Pickering, I. J., Sutton, S. R., Bajt, S.
1997; 31: 1419-1425
- **Ca X-ray absorption spectroscopy of C-S-H and some model compounds** *ADVANCES IN CEMENT RESEARCH*
Kirkpatrick, R. J., Brown, G. E., Xu, N., Cong, X. D.
1997; 9 (33): 31-36
- **Quantitative determination of chromium valence in environmental samples using XAFS spectroscopy** *Symposium on Aqueous Chemistry and Geochemistry of Oxides, Oxyhydroxides, and Related Materials, at the 1996 MRS Spring Meeting*
Peterson, M. L., Brown, G. E., Parks, G. A.
MATERIALS RESEARCH SOCIETY.1997: 75-80
- **The effect of substrate type and 2,2'-bipyridine on the sorption of copper(II) on silica and alumina** *Symposium on Aqueous Chemistry and Geochemistry of Oxides, Oxyhydroxides, and Related Materials, at the 1996 MRS Spring Meeting*
Cheah, S. F., Brown, G. E., Parks, G. A.
MATERIALS RESEARCH SOCIETY.1997: 231-236
- **Surface precipitation in the Co(II)/Al₂O₃ sorption system** *Symposium on Aqueous Chemistry and Geochemistry of Oxides, Oxyhydroxides, and Related Materials, at the 1996 MRS Spring Meeting*
Towle, S. N., Bargar, J. R., Persson, P., Brown, G. E., Parks, G. A.
MATERIALS RESEARCH SOCIETY.1997: 237-242
- **XAFS study of Pb(II)-chloro- and Hg(II)-chloro- ternary complexes on goethite** *Journal de Physique IV, Colloque C*
Bargar, J. R., Persson, P., Brown, Jr., G. E.
1997; 2: 825-826
- **Structure, composition, and reactivity of Pb(II) and Co(II) sorption products and surface functional groups on single-crystal alpha-Al₂O₃** *Journal of Colloid and Interface Science*
Bargar, J. R., Towle, S. N., Brown, Jr., G. E., Parks, G. A.
1997; 185: 473-493
- **Co(II) sorption at the calcite-water interface .1. X-ray photoelectron spectroscopic study** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Xu, N., Hochella, M. F., Brown, G. E., Parks, G. A.
1996; 60 (15): 2801-2815
- **Coordination chemistry of Ti(IV) in silicate glasses and melts .1. XAFS study of titanium coordination in oxide model compounds** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Brown, G. E., Rehr, J. J.
1996; 60 (16): 3023-3038
- **Coordination chemistry of Ti(IV) in silicate glasses and melts .2. Glasses at ambient temperature and pressure** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Brown, G. E., NAVROTSKY, A., Gan, H., Rehr, J. J.
1996; 60 (16): 3039-3053
- **Coordination chemistry of Ti(IV) in silicate glasses and melts .3. Glasses and melts from ambient to high temperatures** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Brown, G. E., NAVROTSKY, A., Gan, H., Rehr, J. R.
1996; 60 (16): 3055-3065
- **X-ray absorption spectroscopy of Co(II) sorption complexes on quartz (alpha-SiO₂) and rutile (TiO₂)** *GEOCHIMICA ET COSMOCHIMICA ACTA*
ODAY, P. A., CHISHOLMBRAUSE, C. J., Towle, S. N., Parks, G. A., Brown, G. E.
1996; 60 (14): 2515-2532

- **An empirical model for the anharmonic analysis of high-temperature XAFS spectra of oxide compounds with applications to the coordination environment of Ni in NiO, gamma-Ni₂SiO₄ and Ni-bearing Na-disilicate glass and melt** *5th Silicate Melt Workshop*
Farges, F., Brown, G. E.
ELSEVIER SCIENCE BV.1996: 93–106
- **Photoemission study of Na and Cs adsorption on MgO(100)1 x 1** *15th European Conference on Surface Science*
Kendelewicz, T., Liu, P., Brown, G. E., Nelson, E. J., Pianetta, P.
ELSEVIER SCIENCE BV.1996: 451–456
- **Selenium transformations in ponded sediments** *SOIL SCIENCE SOCIETY OF AMERICA JOURNAL*
TOKUNAGA, T. K., Pickering, I. J., Brown, G. E.
1996; 60 (3): 781-790
- **Direct XAFS evidence for heterogeneous redox reaction at the aqueous chromium/magnetite interface** *Symposium on Colloidal and Interfacial Phenomena to Aquatic Environments, at the 209th National Meeting of the American-Chemical-Society*
Peterson, M. L., Brown, G. E., Parks, G. A.
ELSEVIER SCIENCE BV.1996: 77–88
- **Outer-sphere lead(II) adsorbed at specific surface sites on single crystal α -alumina** *Geochimica et Cosmochimica Acta*
Bargar, J. R., Towle, S. N., Brown, Jr., G. E., Parks, G. A.
1996; 60: 3541-3547
- **Coordination chemistry of titanium(IV) in silicate glasses and melts. I. XAFS study of Ti coordination in oxide model compounds** *Geochimica et Cosmochimica Acta*
Farges, F., Brown, Jr., G. E., Rehr, J. J.
1996; 60: 3023-3038
- **Coordination chemistry of titanium(IV) in silicate glasses and melts. Part III. Glasses and melts from ambient to high temperatures** *Geochimica et Cosmochimica Acta*
Farges, F., Brown, Jr., G. E., Navrotsky, A., Gan, H., Rehr, J.J.
1996; 60: 3055-3065
- **X-ray absorption spectroscopy studies of selenium transformations in ponded sediments** *Soil Science Society of America Journal*
Tokunaga, T. K., Pickering, I. J., Brown, Jr., G. E.
1996; 60: 781-790
- **Coordination chemistry of titanium(IV) in silicate glasses and melts. Part II. Glasses at ambient temperature and pressure** *Geochimica et Cosmochimica Acta*
Farges, F., Brown, Jr., G. E., Navrotsky, A., Gan, H., Rehr, J.J.
1996; 60: 3039-3053
- **ADSORPTION AND STRUCTURAL ENVIRONMENT OF CO(II) AT THE ZINC OXIDE-AQUEOUS AND ZINC SULFIDE-AQUEOUS SOLUTION INTERFACES** *LANGMUIR*
Persson, P., Parks, G. A., Brown, G. E.
1995; 11 (10): 3782-3794
- **X-RAY-ABSORPTION SPECTROSCOPIC STUDIES OF CADMIUM AND SELENITE ADSORPTION ON ALUMINUM-OXIDES** *LANGMUIR*
Papelis, C., Brown, G. E., Parks, G. A., Leckie, J. O.
1995; 11 (6): 2041-2048
- **CATIONS IN GLASSES UNDER AMBIENT AND NON-AMBIENT CONDITIONS** *1st European Conference on Synchrotron Radiation in Materials Science*
CALAS, G., Brown, G. E., Farges, F., Galois, L., Itie, J. P., Polian, A.
ELSEVIER SCIENCE BV.1995: 155–61
- **XAFS STUDY OF CO(II) SORPTION AT THE ALPHA-AL₂O₃-WATER INTERFACE** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Towle, S. N., BARGAR, J. A., Persson, P., Brown, G. E., Parks, G. A.
ELSEVIER SCIENCE BV.1995: 439–40

- **COORDINATION CHANGE AROUND 2WT-PERCENT NI IN NA₂SIO₅ GLASS MELT SYSTEMS** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Farges, F., Brown, G. E., CALAS, G., Galois, L., WAYCHUNAS, G. A.
ELSEVIER SCIENCE BV.1995: 381–82
- **XAFS STUDY OF CO(II) AT THE ZNO-AQUEOUS AND ZNS-AQUEOUS INTERFACES** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Persson, P., Parks, G. A., Brown, G. E.
ELSEVIER SCIENCE BV.1995: 453–54
- **XAFS STUDY OF PB(II) SORPTION AT THE ALPHA-AL₂O₃-WATER INTERFACE** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Bargar, J. R., Brown, G. E., Parks, G. A.
ELSEVIER SCIENCE BV.1995: 455–56
- **AL AND SI K-ABSORPTION EDGES OF AL₂SIO₅ POLYMORPHS USING THE NEW YB66 SOFT-X-RAY MONOCHROMATOR** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Froba, M., Wong, J., Rowen, M., Brown, G. E., Tanaka, T., Rek, Z.
ELSEVIER SCIENCE BV.1995: 555–56
- **LOW AND AMBIENT-TEMPERATURE XAFS STUDY OF U(VI) IN SOLIDS AND AQUEOUS-SOLUTION** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Thompson, H. A., Brown, G. E., Parks, G. A.
ELSEVIER SCIENCE BV.1995: 167–68
- **NEW OPPORTUNITIES IN 1-2-KEV SPECTROSCOPY** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Wong, J., Rek, Z. U., Rowen, M., Tanaka, T., Schafers, F., Muller, B., George, G. N., Pickering, I. J., Via, G., DeVries, B., Brown, G. E., Froba, M.
ELSEVIER SCIENCE BV.1995: 220–22
- **SURFACE EXAFS AND X-RAY STANDING-WAVE STUDY OF THE CLEAVED CAO(100) SURFACE** *8th International Conference on X-Ray Absorption Fine Structure (XAFS VIII)*
Kendelewicz, T., Liu, P., LABIOSA, W. B., Brown, G. E.
ELSEVIER SCIENCE BV.1995: 441–42
- **Intracrystalline distribution of nickel in San Carlos olivine: An EXAFS study** *American Mineralogist*
Galois, L., Calas, G., Brown, Jr., G. E.
1995; 80: 1089-1092
- **X-ray scattering and x-ray spectroscopy studies of silicate melts** *STRUCTURE, DYNAMICS AND PROPERTIES OF SILICATE MELTS*
Brown, G. E., Farges, F., CALAS, G.
1995; 32: 317-410
- **SORPTION AT MINERAL WATER INTERFACES - MACROSCOPIC AND MICROSCOPIC PERSPECTIVES** *Mineralogical-Society Winter Conference on Mineralogical Applications of Surface Science*
Brown, G. E., Parks, G. A., ODAY, P. A.
CHAPMAN & HALL.1995: 129–183
- **Coordination change around 2 wt% Ni in Na₂Si₂O₅ glass/melt systems** *Physica B*
Farges, F., Brown, Jr., G. E., Calas, G., Galois, L., Waychunas, G. A.
1995; 208/209: 381-382
- **Molecular Environmental Science: Speciation, Reactivity, and Mobility of Environmental Contaminants** *Report of the DOE Molecular Environmental Science Workshop, July 5-8, 1995, Airlie Center, VA*
edited by Brown, Jr., G. E., Chiamelli, R., Stock, L., Stults, R., Sutton, S. R., Traina, S. J.
SLAC, Menlo Park, CA.1995
- **Adsorption and local environment of Co(II) at the zinc oxide- and zinc sulfide-aqueous interfaces** *Langmuir*
Persson, P., Parks, G. A., Brown, Jr., G. E.
1995; 11: 3782-3794

- **X-ray absorption spectroscopy of selenium transformations in Kesterson Reservoir soils** *Environmental Science & Technology*
Pickering, I.J., Brown, Jr., G. E., Tokunaga, T.K.
1995; 29: 2456-2459
- **Effect of surface structure on the adsorption of Co(II) on alpha-Al₂O₃: A glancing angle XAFS study** *Symposium on Structure and Properties of Interfaces in Ceramics, at the 1994 Fall Meeting of the Materials-Research-Society*
Towle, S. N., Bargar, J. R., Brown, G. E., Parks, G. A., Barbee, T. W.
MATERIALS RESEARCH SOC.1995: 23–28
- **NEW OPPORTUNITIES IN XAFS INVESTIGATION IN THE 1-2-KEV REGION** *SOLID STATE COMMUNICATIONS*
Wong, J., George, G. N., Pickering, I. J., Rek, Z. U., Rowen, M., Tanaka, T., VIA, G. H., DeVries, B., Vaughan, D. E., Brown, G. E.
1994; 92 (7): 559-562
- **STRUCTURAL TRANSFORMATION IN NI-BEARING NA₂S₂O₅ GLASS AND MELT** *GEOPHYSICAL RESEARCH LETTERS*
Farges, F., Brown, G. E., CALAS, G., Galois, L., WAYCHUNAS, G. A.
1994; 21 (18): 1931-1934
- **STRUCTURAL ENVIRONMENT OF ZR IN 2 INOSILICATES FROM CAMEROON - MINERALOGICAL AND GEOCHEMICAL IMPLICATIONS** *AMERICAN MINERALOGIST*
Farges, F., Brown, G. E., Velde, D.
1994; 79 (9-10): 838-847
- **X-RAY-ABSORPTION SPECTROSCOPY OF COBALT(II) MULTINUCLEAR SURFACE COMPLEXES AND SURFACE PRECIPITATES ON KAOLINITE** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
ODAY, P. A., Brown, G. E., Parks, G. A.
1994; 165 (2): 269-289
- **MOLECULAR-STRUCTURE AND BINDING-SITES OF COBALT(II) SURFACE COMPLEXES ON KAOLINITE FROM X-RAY-ABSORPTION SPECTROSCOPY** *CLAYS AND CLAY MINERALS*
ODAY, P. A., Parks, G. A., Brown, G. E.
1994; 42 (3): 337-355
- **EXTENDED X-RAY-ABSORPTION FINE-STRUCTURE (EXAFS) ANALYSIS OF DISORDER AND MULTIPLE-SCATTERING IN COMPLEX CRYSTALLINE SOLIDS** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
ODAY, P. A., Rehr, J. J., Zabinsky, S. I., Brown, G. E.
1994; 116 (7): 2938-2949
- **Structural transformations in Ni-bearing Na₂Si₂O₅ glass and melt** *Geophysical Research Letters*
Farges, F., Brown, Jr., G. E., Calas, G., Galois, L., Waychunas, G. A.
1994; 21: 1931-1934
- **FLUORESCENCE YIELD XANES AND EXAFS EXPERIMENTS - APPLICATION TO HIGHLY DILUTE AND SURFACE SAMPLES** *31st Annual Conference on Applications of X-Ray Analysis*
WAYCHUNAS, G. A., Brown, G. E.
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1994: 607–617
- **New XAFS spectroscopic investigations in the 1-2 keV region** *Solid State Communications*
Wong, J., George, G. N., Pickering, I. J., Rek, Z. U., Rowen, M., Tanaka, T., Via, G. H., DeVries, B., Vaughan, D. E. W., Brown, Jr., G. E.
1994; 92: 559-562
- **X-ray spectroscopic study of the structural environment of Zr in two inosilicates from Cameroon: implications for substitution mechanisms and Zr-partitioning** *American Mineralogist*
Farges, F., Brown, Jr., G. E., Velde, D.
1994; 79: 838-847
- **HIGH-TEMPERATURE XAS STUDY OF FE₂SIO₄ LIQUID - REDUCED COORDINATION OF FERROUS IRON** *SCIENCE*
Jackson, W. E., DeLeon, J. M., Brown, G. E., WAYCHUNAS, G. A., Conradson, S. D., Combes, J. M.
1993; 262 (5131): 229-233
- **THE STRUCTURE OF APERIODIC, METAMICT (CA,TH)ZRTI₂O₇ (ZIRCONOLITE) - AN EXAFS STUDY OF THE ZR-SITES, TH-SITES AND U-SITES** *JOURNAL OF MATERIALS RESEARCH*

- Farges, F., Ewing, R. C., Brown, G. E.
1993; 8 (8): 1983-1995
- **GRAZING-INCIDENCE EXAFS SPECTROSCOPY OF METAL-ION SORPTION ON SINGLE-CRYSTAL ALPHA-AL₂O₃**
Towle, S. N., Bargar, J. R., Brown, G. E., Parks, G. A., Persson, P., WAYCHUNAS, G. A., Barbee, T. W.
AMER CHEMICAL SOC.1993: 105-GEOC
 - **LOCAL ENVIRONMENT AROUND GOLD(III) IN AQUEOUS CHLORIDE SOLUTIONS - AN EXAFS SPECTROSCOPY STUDY** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., SHARPS, J. A., Brown, G. E.
1993; 57 (6): 1243-1252
 - **KINETICS AND MECHANISM OF LIGAND-EXCHANGE OF AU(III), ZN(II), AND CD(II) CHLORIDES IN AQUEOUS-SOLUTION - AN NMR-STUDY FROM 28-98-DEGREES-C** *GEOCHIMICA ET COSMOCHIMICA ACTA*
SHARPS, J. A., Brown, G. E., Stebbins, J. F.
1993; 57 (4): 721-731
 - **The structure of aperiodic, metamict, (Ca,Th)₂Zr₂Ti₄O₁₄: an EXAFS study of the Zr, Th, and U sites** *Journal of Materials Research*
Farges, F., Ewing, R. C., Brown, Jr., G. E.
1993; 8: 1983-1995
 - **First XAFS spectra with a YB66 monochromator** *Synchrotron Radiation News*
Rowen, M., Rek, Z. U., Wong, J., Tanaka, T., George, G. N., Pickering, I. J., Via, G.H., Brown, Jr., G.E.
1993; 6: 25-27
 - **STRUCTURAL ENVIRONMENTS OF INCOMPATIBLE ELEMENTS IN SILICATE GLASS MELT SYSTEMS .2. UIV, UV, AND UVI** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Ponader, C. W., CALAS, G., Brown, G. E.
1992; 56 (12): 4205-4220
 - **X-RAY ABSORPTION SPECTROSCOPIC STUDY OF SELENITE AND CADMIUM(II) COMPLEXES AT ALUMINUM-OXIDE WATER INTERFACES**
Papelis, C., Brown, G. E., Parks, G. A., Leckie, J. O.
AMER CHEMICAL SOC.1992: 50-GEOC
 - **EXAFS SPECTROSCOPIC STUDY OF NEPTUNIUM(V) SORPTION AT THE ALPHA-FeOOH WATER INTERFACE** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Combes, J. M., CHISHOLMBRAUSE, C. J., Brown, G. E., Parks, G. A., Conradson, S. D., Eller, P. G., Triay, I. R., Hobart, D. E., Meijer, A.
1992; 26 (2): 376-382
 - **Synchrotron radiation in the earth sciences** *Encyclopedia of Earth Systems Science (Vol 4)*
Bassett, W. A., Brown, Jr., G. E.
Academic Press.1992: 339-350
 - **STRUCTURAL ENVIRONMENTS OF INCOMPATIBLE ELEMENTS IN SILICATE GLASS MELT SYSTEMS .1. ZIRCONIUM AT TRACE LEVELS** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Farges, F., Ponader, C. W., Brown, G. E.
1991; 55 (6): 1563-1574
 - **SPECIATION OF AQUEOUS GOLD(III) CHLORIDES FROM ULTRAVIOLET VISIBLE ABSORPTION AND RAMAN RESONANCE RAMAN SPECTROSCOPIES** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Peck, J. A., Tait, C. D., Swanson, B. I., Brown, G. E.
1991; 55 (3): 671-676
 - **INSITU X-RAY ABSORPTION STUDY OF LEAD-ION SURFACE COMPLEXES AT THE GOETHITE WATER INTERFACE** *LANGMUIR*
Roe, A. L., Hayes, K. F., CHISHOLMBRAUSE, C., Brown, G. E., Parks, G. A., Hodgson, K. O., Leckie, J. O.
1991; 7 (2): 367-373
 - **X-ray absorption study of lead complexes at α -FeOOH/water interfaces** *Langmuir*
Roe, A. L., Hayes, K. F., Chisholm-Brause, C. J., Brown, Jr., G. E., Hodgson, K. O., Parks, G. A., O., Leckie J.
1991; 7: 367-373

- **EXAFS study of aqueous Co(II) sorption complexes on kaolinite and quartz surfaces** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
O'Day, P. A., Brown, Jr., G. E., Parks, G. A., Hasnain, S. S.
Ellis Horwood Ltd.1991: 260–262
- **In-situ EXAFS study of changes in Co(II) sorption complexes on gamma-Al₂O₃ with increasing sorption densities** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Chisholm-Brause, C. J., Brown, Jr., G. E., Parks, G. A., Hasnain, S. S.
Ellis Horwood Ltd.1991: 263–265
- **X-ray absorption and Raman-UV/visible spectroscopic study of Au(III) complexes in chloride solutions: direct evidence for chlorine and oxychlorine complexes** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Farges, F., Peck, J. A., Brown, Jr., G. E., Hasnain (ed.), S. S.
Ellis Horwood Ltd.1991: 478–480
- **EXAFS study of the structural environments of trace levels of Zr⁴⁺, Mo⁶⁺, and U⁶⁺/U⁵⁺/U⁴⁺ in silicate glass/melt systems** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Farges, F., Brown, Jr., G. E., Ponader, C. W., Hasnain (ed.), S. S.
Ellis Horwood Ltd.1991: 309–311
- **XAFS analysis in the anharmonic limit: Applications to Hi-Tc superconductors and ferrosilicates** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Mustre de Leon, J., Conradson, S. D., Batistic, I., Bishop, A. R., Raistrick, I., Jackson, W. E., Brown, Jr., G. E., Waychunas, G. A., Hasnain, S. S.
Ellis Horwood Ltd.1991: 54–57
- **In-situ high temperature x-ray absorption study of ferrous iron in orthosilicates crystals and liquids** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Jackson, W. W., Brown, Jr., G. E., Waychunas, G. A., Mustre de Leon, J., Conradson, S. D., Combes, J., Hasnain (ed.), S. S.
Ellis Horwood Ltd.1991: 298–301
- **X-ray absorption study of the local Ca environment in silicate glasses** *XAFS VI, Sixth Internat. Conf. on X-ray Absorption Fine Structure*
Combes, J. M., Brown, Jr., G. E., Waychunas, G. A.
edited by Hasnain, S. S.
Ellis Horwood, Ltd.1991: 312–314
- **X-RAY ABSORPTION FINE-STRUCTURE OF SYSTEMS IN THE ANHARMONIC LIMIT** *CONF ON X-RAYS IN MATERIALS ANALYSIS 2 : NOVEL APPLICATIONS AND RECENT DEVELOPMENTS*
DeLeon, J. M., Conradson, S. D., Batistic, I., Bishop, A. R., Raistrick, I., Jackson, W. E., Brown, G.
SPIE - INT SOC OPTICAL ENGINEERING.1991: 85–96
- **EVIDENCE FOR MULTINUCLEAR METAL-ION COMPLEXES AT SOLID WATER INTERFACES FROM X-RAY ABSORPTION-SPECTROSCOPY** *NATURE*
CHISHOLMBRAUSE, C. J., ODAY, P. A., Brown, G. E., Parks, G. A.
1990; 348 (6301): 528-531
- **SPECTROSCOPIC INVESTIGATION OF PB(II) COMPLEXES AT THE GAMMA-AL₂O₃ WATER INTERFACE** *GEOCHIMICA ET COSMOCHIMICA ACTA*
CHISHOLMBRAUSE, C. J., Hayes, K. F., Roe, A. L., Brown, G. E., Parks, G. A., Leckie, J. O.
1990; 54 (7): 1897-1909
- **SYNCHROTRON RADIATION - APPLICATIONS IN THE EARTH SCIENCES** *ANNUAL REVIEW OF EARTH AND PLANETARY SCIENCES*
Bassett, W. A., Brown, G. E.
1990; 18: 387-447
- **POLARIZED X-RAY ABSORPTION-SPECTROSCOPY OF METAL-IONS IN MINERALS - APPLICATIONS TO SITE GEOMETRY AND ELECTRONIC-STRUCTURE DETERMINATION** *PHYSICS AND CHEMISTRY OF MINERALS*
WAYCHUNAS, G. A., Brown, G. E.
1990; 17 (5): 420-430
- **SPECTROSCOPIC STUDIES OF CHEMISORPTION REACTION-MECHANISMS AT OXIDE-WATER INTERFACES** *SHORT COURSE ON MINERAL-WATER INTERFACE GEOCHEMISTRY*

- Brown, G. E.
MINERALOGICAL SOC AMERICA.1990: 309–363
- **RARE-EARTH ELEMENTS IN SILICATE GLASS MELT SYSTEMS .2. INTERACTIONS OF LA, GD, AND YB WITH HALOGENS** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Ponader, C. W., Brown, G. E.
1989; 53 (11): 2905-2914
 - **MINERALOGY IN 2 DIMENSIONS - SCANNING TUNNELING MICROSCOPY OF SEMICONDUCTING MINERALS WITH IMPLICATIONS FOR GEOCHEMICAL REACTIVITY** *AMERICAN MINERALOGIST*
Hochella, M. F., Eggleston, C. M., Elings, V. B., Parks, G. A., Brown, G. E., Wu, C. M., Kjoller, K.
1989; 74 (11-12): 1233-1246
 - **SYNCHROTRON-BASED X-RAY ABSORPTION STUDIES OF CATION ENVIRONMENTS IN EARTH MATERIALS** *REVIEWS OF GEOPHYSICS*
Brown, G. E., Parks, G. A.
1989; 27 (4): 519-533
 - **RARE-EARTH ELEMENTS IN SILICATE GLASS MELT SYSTEMS .1. EFFECTS OF COMPOSITION ON THE COORDINATION ENVIRONMENTS OF LA, GD, AND YB** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Ponader, C. W., Brown, G. E.
1989; 53 (11): 2893-2903
 - **INSITU X-RAY ABSORPTION SPECTROSCOPIC STUDIES OF IONS AT OXIDE-WATER INTERFACES** *CHIMIA*
Brown, G. E., Parks, G. A., CHISHOLMBRAUSE, C. J.
1989; 43 (9): 248-256
 - **INSITU HIGH-TEMPERATURE X-RAY ABSORPTION STUDY OF IRON IN ALKALI SILICATE MELTS AND GLASSES** *PHYSICA B-CONDENSED MATTER*
WAYCHUNAS, G. A., Brown, G. E., Jackson, W. E., Ponader, C. W.
1989; 158 (1-3): 67-68
 - **XANES AND EXAFS STUDY OF AQUEOUS PB(II) ADSORBED ON OXIDE SURFACES** *PHYSICA B-CONDENSED MATTER*
CHISHOLMBRAUSE, C. J., Roe, A. L., Hayes, K. F., Brown, G. E., Parks, G. A., Leckie, J. O.
1989; 158 (1-3): 674-675
 - **EXAFS INVESTIGATION OF AQUEOUS CO(II) ADSORBED ON OXIDE SURFACES INSITU** *PHYSICA B-CONDENSED MATTER*
CHISHOLMBRAUSE, C. J., Brown, G. E., Parks, G. A.
1989; 158 (1-3): 646-648
 - **Mineralogy in two dimensions: Scanning tunneling microscopy of semiconducting minerals with implications for geochemical reactivity** *American Mineralogist*
M. F. Hochella, Jr., Eggleston, C. M., Elings, V. B., Parks, G. A., Brown, Jr., G. E., Wu, C. M., Kjoller, K.
1989; 74: 1235-1248
 - **Synchrotron radiation facilities: opportunities in the earth sciences** *Frontiers in Mineral Physics*
Brown, Jr., G. E., Bassett, W. A., Manghnani, M. H., Mao, H., Shankland, T. J.
edited by Mackwell, S. J., Bassett, W. A., McMillan, P. F.
American Geophysical Union.1989: 87–96
 - **Synchrotron radiation: applications in the earth sciences** *Report of the Mineral Physics Committee, American Geophysical Union*
Bassett, W. A., Brown, Jr., G. E.
1989: 1-28
 - **X-RAY ABSORPTION-SPECTROSCOPY OF IONS AT SOLID WATER INTERFACES**
Brown, G. E., Chisholm, C. J., Parks, G. A., Hayes, K. F., Leckie, J. O., Roe, A. L.
AMER CHEMICAL SOC.1988: 66-GEOC
 - **ASPECTS OF SILICATE SURFACE AND BULK STRUCTURE-ANALYSIS USING X-RAY PHOTOELECTRON-SPECTROSCOPY (XPS)** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Hochella, M. F., Brown, G. E.
1988; 52 (6): 1641-1648

- **EVIDENCE FROM X-RAY ABSORPTION FOR NETWORK-FORMING FE-2+ IN MOLTEN ALKALI SILICATES** *NATURE*
WAYCHUNAS, G. A., Brown, G. E., Ponader, C. W., Jackson, W. E.
1988; 332 (6161): 251-253
- **ELECTRONIC ABSORPTIONS IN THE HIGH-TC SUPERCONDUCTOR YBA₂CU₃O_x** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Little, W. A., Collman, J. P., Yee, G. T., Holcomb, M. J., McDevitt, J. T., Brown, G. E.
1988; 110 (4): 1301-1302
- **Synchrotron x-ray sources in the earth sciences** *EOS, Transactions American Geophysical Union*
Sutton, S. R., Rivers, M. L., Smith, J. V., Brown, Jr., G. E., Jones, K. W.
1988; 69: 1666-1675
- **X-RAY ABSORPTION-SPECTROSCOPY AND ITS APPLICATIONS IN MINERALOGY AND GEOCHEMISTRY** *REVIEWS IN MINERALOGY*
Brown, G. E., CALAS, G., WAYCHUNAS, G. A., PETIAU, J.
1988; 18: 431-512
- **X-ray absorption spectroscopy and its applications in mineralogy and geochemistry** *Spectroscopic Methods in Mineralogy and Geology*
Brown, Jr., G. E., Calas, G., Waychunas, G. A., Petiau, J. F.
edited by Hawthorne, F.
Mineralogical Society of America, Washington, DC. 1988: 431-512
- **INSITU X-RAY ABSORPTION STUDY OF SURFACE COMPLEXES - SELENIUM OXYANIONS ON ALPHA-FeOOH** *SCIENCE*
Hayes, K. F., Roe, A. L., Brown, G. E., Hodgson, K. O., Leckie, J. O., Parks, G. A.
1987; 238 (4828): 783-786
- **X-RAY ABSORPTION STUDY OF THE POTASSIUM COORDINATION ENVIRONMENT IN GLASSES FROM THE NaAlSi₃O₈-KAlSi₃O₈ BINARY - STRUCTURAL IMPLICATIONS FOR THE MIXED-ALKALI EFFECT** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
Jackson, W. E., Brown, G. E., Ponader, C. W.
1987; 93 (2-3): 311-322
- **LEAD ADSORPTION AT AQUEOUS OXIDE INTERFACES - AN EXAFS STUDY**
Roe, A. L., Hayes, K. F., Brown, G. E., Hodgson, K. O., Leckie, J. O., Parks, G. A.
AMER CHEMICAL SOC. 1987: 95-COLL
- **PARTITIONING OF FE WITHIN HIGH-PRESSURE SILICATE PEROVSKITE - EVIDENCE FOR UNUSUAL GEOCHEMISTRY IN THE LOWER MANTLE** *GEOPHYSICAL RESEARCH LETTERS*
Jackson, W. E., Knittle, E., Brown, G. E., Jeanloz, R.
1987; 14 (3): 224-226
- **X-RAY ABSORPTION SPECTROSCOPIC STUDIES OF SILICATE-GLASSES AND MINERALS** *PHYSICS AND CHEMISTRY OF MINERALS*
CALAS, G., Brown, G. E., WAYCHUNAS, G. A., PETIAU, J.
1987; 15 (1): 19-29
- **NEAR-EDGE STRUCTURE OF OXYGEN IN INORGANIC OXIDES: EFFECT OF LOCAL GEOMETRY AND CATION TYPE** *JOURNAL DE PHYSIQUE*
Brown, G. E., WAYCHUNAS, G. A., Stohr, J., Sette, F.
1986; 47 (C-8): 163-167
- **ELECTRONIC-STRUCTURE FROM X-RAY K-EDGES IN ZNS-Fe AND CuFeS₂** *JOURNAL DE PHYSIQUE*
Saintavit, P., CALAS, G., PETIAU, J., KARNATAK, R., Esteva, J. M., Brown, G. E.
1986; 47 (C-8): 411-414
- **EXAFS AND NEXAFS STUDIES OF CATION ENVIRONMENTS IN OXIDE GLASSES** *JOURNAL DE PHYSIQUE*
Brown, G. E., WAYCHUNAS, G. A., Ponader, C. W., Jackson, W. E., McKeown, D. A.
1986; 47 (C-8): 140-147
- **LITHIOPHILITE FORMATION IN GRANITIC PEGMATITES - A RECONNAISSANCE EXPERIMENTAL-STUDY OF PHOSPHATE CRYSTALLIZATION FROM HYDROUS ALUMINOSILICATE MELTS** *AMERICAN MINERALOGIST*
Shigley, J. E., Brown, G. E.
1986; 71 (3-4): 356-366

- **JAHNS,R.H. MEMORIAL ISSUE - THE MINERALOGY, PETROLOGY, AND GEOCHEMISTRY OF GRANITIC PEGMATITES AND RELATED GRANITIC-ROCKS - INTRODUCTION** *AMERICAN MINERALOGIST*
Brown, G. E., Ewing, R. C.
1986; 71 (3-4): 233-238
- **HIGH-TEMPERATURE STRUCTURE AND CRYSTAL-CHEMISTRY OF HYDROUS ALKALI-RICH BERYL FROM THE HARDING PEGMATITE, TAOS COUNTY, NEW-MEXICO** *AMERICAN MINERALOGIST*
Brown, G. E., MILLS, B. A.
1986; 71 (3-4): 547-556
- **MINERALOGY AND GEOCHEMICAL EVOLUTION OF THE LITTLE 3 PEGMATITE-APLITE LAYERED INTRUSIVE, RAMONA, CALIFORNIA** *AMERICAN MINERALOGIST*
Stern, L. A., Brown, G. E., Bird, D. K., JAHNS, R. H., Foord, E. E., Shigley, J. E., SPAULDING, L. B.
1986; 71 (3-4): 406-427
- **STRUCTURAL MECHANISMS OF ANOMALOUS THERMAL-EXPANSION OF CORDIERITE-BERYL AND OTHER FRAMEWORK SILICATES** *JOURNAL OF THE AMERICAN CERAMIC SOCIETY*
Hochella, M. F., Brown, G. E.
1986; 69 (1): 13-18
- **X-RAY K-EDGE ABSORPTION-SPECTRA OF FE MINERALS AND MODEL COMPOUNDS .2. EXAFS** *PHYSICS AND CHEMISTRY OF MINERALS*
WAYCHUNAS, G. A., Brown, G. E., Apted, M. J.
1986; 13 (1): 31-47
- **OCCURRENCE AND ALTERATION OF PHOSPHATE MINERALS AT THE STEWART PEGMATITE, PALA DISTRICT, SAN-DIEGO COUNTY, CALIFORNIA** *AMERICAN MINERALOGIST*
Shigley, J. E., Brown, G. E.
1985; 70 (3-4): 395-408
- **THE STRUCTURES OF ALBITE AND JADEITE COMPOSITION GLASSES QUENCHED FROM HIGH-PRESSURE** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Hochella, M. F., Brown, G. E.
1985; 49 (5): 1137-1142
- **EXAFS AND XANES STUDY OF THE LOCAL COORDINATION ENVIRONMENT OF SODIUM IN A SERIES OF SILICA-RICH GLASSES AND SELECTED MINERALS WITHIN THE NA₂O-AL₂O₃-SiO₂ SYSTEM** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
McKeown, D. A., WAYCHUNAS, G. A., Brown, G. E.
1985; 74 (2-3): 325-348
- **STRUCTURE AND SPECIFICATION OF IRON COMPLEXES IN AQUEOUS-SOLUTIONS DETERMINED BY X-RAY ABSORPTION-SPECTROSCOPY** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Apted, M. J., WAYCHUNAS, G. A., Brown, G. E.
1985; 49 (10): 2081-2089
- **EXAFS STUDY OF THE COORDINATION ENVIRONMENT OF ALUMINUM IN A SERIES OF SILICA-RICH GLASSES AND SELECTED MINERALS WITHIN THE NA₂O-AL₂O₃-SiO₂ SYSTEM** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
McKeown, D. A., WAYCHUNAS, G. A., Brown, G. E.
1985; 74 (2-3): 349-371
- **Local coordination environment of Na in a series of silica-rich glasses and selected minerals within the Na₂O-Al₂O₃-SiO₂ system** *EXAFS and Near Edge Structure III*
McKeown, D. A., Brown, Jr., G. E., Waychunas, G. A.
edited by Hodgson, K. O., Hedman, B., Penner-Hahn, J. E.
Springer-Verlag.1984: 308-310
- **Applications of EXAFS and XANES spectroscopy to problems in mineralogy and geochemistry** *EXAFS and Near Edge Structure III*
Waychunas, G. A., Brown, Jr., G. E.
edited by Hodgson, K. O., Hedman, B., Penner-Hahn, J. E.
Springer-Verlag.1984: 336-342

- **STRUCTURE AND VISCOSITY OF RHYOLITIC COMPOSITION MELTS** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Hochella, M. F., Brown, G. E.
1984; 48 (12): 2631-2640
- **RAMAN STUDIES OF AL COORDINATION IN SILICA-RICH SODIUM ALUMINOSILICATE GLASSES AND SOME RELATED MINERALS** *JOURNAL OF NON-CRYSTALLINE SOLIDS*
McKeown, D. A., GALEENER, F. L., Brown, G. E.
1984; 68 (2-3): 361-378
- **Total electron yield K-XANES and EXAFS investigation of aluminum in amorphous and crystalline aluminosilicates** *Stanford Synchrotron Radiation Laboratory Report 83/01*
Brown, Jr., G. E., Dikmen, F. D., Waychunas, G. A.
1983: 148-149
- **X-RAY K-EDGE ABSORPTION-SPECTRA OF FE MINERALS AND MODEL COMPOUNDS - NEAR-EDGE STRUCTURE** *PHYSICS AND CHEMISTRY OF MINERALS*
WAYCHUNAS, G. A., Apted, M. J., Brown, G. E.
1983; 10 (1): 1-9
- **POLYMERIZATION OF SILICATE AND ALUMINATE TETRAHEDRA IN GLASSES, MELTS, AND AQUEOUS-SOLUTIONS .3. LOCAL SILICON ENVIRONMENTS AND INTERNAL NUCLEATION IN SILICATE-GLASSES** *GEOCHIMICA ET COSMOCHIMICA ACTA*
DEJONG, B. H., Keefer, K. D., Brown, G. E., Taylor, C. M.
1981; 45 (8): 1291-1308
- **A neutron and x-ray diffraction study of Amelia low albite** *American Mineralogist*
Harlow, G. E., Brown, Jr., G. E.
1980; 65: 986-995
- **CRYSTAL-STRUCTURE OF RASVUMITE, KFE2S3** *AMERICAN MINERALOGIST*
Clark, J. R., Brown, G. E.
1980; 65 (5-6): 477-482
- **Crystal chemistry of the olivines and silicate spinels** *Mineralogy (2nd edition, 1982)*
Brown, Jr., G. E., Ribbe (ed.), P. H.
Mineralogical Society of America.1980: 275-381
- **STRUCTURE OF MINERAL GLASSES .3. NAALS13O8 SUPERCOOLED LIQUID AT 805-DEGREES-C AND THE EFFECTS OF THERMAL HISTORY** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Taylor, M., Brown, G. E., FENN, P. M.
1980; 44 (1): 109-117
- **POLYMERIZATION OF SILICATE AND ALUMINATE TETRAHEDRA IN GLASSES, MELTS, AND AQUEOUS-SOLUTIONS .1. ELECTRONIC-STRUCTURE OF H6SI2O7, H6ALSIO-1-(7), AND H6AL2O-2-(7)** *GEOCHIMICA ET COSMOCHIMICA ACTA*
DEJONG, B. H., Brown, G. E.
1980; 44 (3): 491-511
- **POLYMERIZATION OF SILICATE AND ALUMINATE TETRAHEDRA IN GLASSES, MELTS AND AQUEOUS-SOLUTIONS .2. THE NETWORK MODIFYING EFFECTS OF MG2+, K+, NA+, LI+, H+, OH-, F-, CL-, H2O, CO2 AND H3O+ ON SILICATE POLYMERS** *GEOCHIMICA ET COSMOCHIMICA ACTA*
DEJONG, B. H., Brown, G. E.
1980; 44 (11): 1627-1642
- **STRUCTURE OF MINERAL GLASSES .1. FELDSPAR GLASSES NAALS13O8, KALS13O8, CAAL2SI2O8** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Taylor, M., Brown, G. E.
1979; 43 (1): 61-75
- **HIGH-TEMPERATURE CRYSTAL-CHEMISTRY OF HYDROUS MG-CORDIERITES AND FE-CORDIERITES** *AMERICAN MINERALOGIST*
Hochella, M. F., Brown, G. E., Ross, F. K., Gibbs, G. V.
1979; 64 (3-4): 337-351

- **STRUCTURE OF MINERAL GLASSES .2. SiO_2 - $\text{NaAlSi}_3\text{O}_8$ JOIN** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Taylor, M., Brown, G. E.
1979; 43 (9): 1467-1473
- **STRUCTURE ENERGIES OF THE ALKALI FELDSPARS** *PHYSICS AND CHEMISTRY OF MINERALS*
Brown, G. E., FENN, P. M.
1979; 4 (1): 83-100
- **CRYSTAL-STRUCTURE OF HYDROCHLORBORITE, $\text{Ca}_2[\text{B}_3\text{O}_3(\text{OH})_4]\text{O}_6(\text{OH})_3\text{Cl}\cdot 7\text{H}_2\text{O}$, A SEASONAL EVAPORITE MINERAL** *AMERICAN MINERALOGIST*
Brown, G. E., Clark, J. R.
1978; 63 (9-10): 814-823
- **CRYSTAL-STRUCTURES AND COMPOSITIONS OF SANIDINE AND HIGH ALBITE IN CRYPTOPERTHITIC INTERGROWTH** *AMERICAN MINERALOGIST*
Keefe, K. D., Brown, G. E.
1978; 63 (11-1): 1264-1273
- **CRYSTAL-STRUCTURE OF A SYNTHETIC, COMPOSITIONALLY INTERMEDIATE, HYPERSOLVUS ALKALI FELDSPAR - EVIDENCE FOR Na,K SITE ORDERING** *ZEITSCHRIFT FÜR KRISTALLOGRAPHIE*
FENN, P. M., Brown, G. E.
1977; 145 (1-2): 124-145
- **HIGH-TEMPERATURE STRUCTURAL STUDY OF P21-AREVERSIBLE A2-A PHASE-TRANSITION IN SYNTHETIC TITANITE, $\text{CaTiSi}_2\text{O}_{10}$** *AMERICAN MINERALOGIST*
Taylor, M., Brown, G. E.
1976; 61 (5-6): 435-447
- **CATION ORDERING IN NI-MG OLIVINE** *AMERICAN MINERALOGIST*
Rajamani, V., Brown, G. E., Prewitt, C. T.
1975; 60 (3-4): 292-299
- **PYROXENES IN SHAW (L-7) CHONDRITE** *GEOCHIMICA ET COSMOCHIMICA ACTA*
DODD, R. T., Grover, J. E., Brown, G. E.
1975; 39 (12): 1585-?
- **The Feldspars, NATO Advanced Studies Institute on Feldspars**
Brown, Jr., G. E., Hamilton, W. C., Prewitt, C. T., Sueno, S.
Manchester University Press. 1974: 68-80
- **HIGH TEMPERATURE CRYSTAL-CHEMISTRY OF SPHENE**
Taylor, M., Brown, G. E.
AMER GEOPHYSICAL UNION. 1974: 1201-
- **FRANKDICKSONITE, BaF_2 , A NEW MINERAL FROM NEVADA** *AMERICAN MINERALOGIST*
Radtke, A. S., Brown, G. E.
1974; 59 (9-10): 885-888
- **Earth Materials** *Geology Today*
Brown, Jr., G. E., Ernst, W. G.
Del Mar Books, Del Mar, California. 1974: 91-113
- **Crystallography of pigeonites from basaltic vitrophyre 15597** *Geochimica et Cosmochimica Acta*
Brown, Jr., G. E., Wechsler, B. A.
1973: 887-900
- **HIGH-TEMPERATURE CRYSTAL-CHEMISTRY OF HORTONOLITE** *AMERICAN MINERALOGIST*
Brown, G. E., Prewitt, C. T.
1973; 58 (7-8): 577-587

- **NEW SINGLE-CRYSTAL HEATER FOR PRECESSION CAMERA AND 4-CIRCLE DIFFRACTOMETER** *AMERICAN MINERALOGIST*
Brown, G. E., Sueno, S., Prewitt, C. T.
1973; 58 (7-8): 698-704
- **Apollo 12 clinopyroxenes: high temperature x-ray diffraction studies** *Proceedings of the 2nd Lunar Science Conference*
Prewitt, C. T., Brown, Jr., G. E., Papike, J. J.
1972; 1: 59-68
- **COMPARISON OF STRUCTURES OF LOW AND HIGH PIGEONITE** *JOURNAL OF GEOPHYSICAL RESEARCH*
Brown, G. E., Papike, J. J., Prewitt, C. T., Sueno, S.
1972; 77 (29): 5778-?
- **CRYSTAL-STRUCTURE OF HIGH CUMMINGTONITE** *JOURNAL OF GEOPHYSICAL RESEARCH*
Sueno, S., Brown, G. E., Prewitt, C. T., Papike, J. J.
1972; 77 (29): 5767-?
- **APOLLO-12 CLINOPYROXENES - EXSOLUTION AND EPITAXY** *EARTH AND PLANETARY SCIENCE LETTERS*
Papike, J. J., Bence, A. E., Brown, G. E., Prewitt, C. T., Wu, C. H.
1971; 10 (3): 307-?
- **STEREOCHEMISTRY AND ORDERING IN TETRAHEDRAL PORTION OF SILICATES** *AMERICAN MINERALOGIST*
Brown, G. E., Gibbs, G. V.
1970; 55 (9-10): 1587-?
- **REFINEMENT OF CRYSTAL STRUCTURE OF OSUMILITE** *AMERICAN MINERALOGIST*
Brown, G. E., Gibbs, G. V.
1969; 54 (1-2): 101-?
- **NATURE AND VARIATION IN LENGTH OF SI-O AND AL-O BONDS IN FRAMEWORK SILICATES**
Brown, G. E., Gibbs, G. V., Ribbe, P. H.
AMER GEOPHYSICAL UNION. 1969: 358-?
- **NATURE AND VARIATION IN LENGTH OF SI-O AND AL-O BONDS IN FRAMEWORK SILICATES** *AMERICAN MINERALOGIST*
Brown, G. E., Gibbs, G. V., Ribbe, P. H.
1969; 54 (7-8): 1044-?
- **OXYGEN COORDINATION AND SI-O BOND** *AMERICAN MINERALOGIST*
Brown, G. E., Gibbs, G. V.
1969; 54 (11-1): 1528-?