

Gordon E. Brown, Jr.

Gordon E. Brown, Jr. is the D.W. Kirby Professor of Earth Sciences and Chair of the Department of Geological Sciences, Stanford University, Professor of Photon Sciences, SLAC National Accelerator Laboratory, and Professor (by courtesy) of Chemical Engineering, Stanford University.

A member of the Stanford faculty since 1973, he has served as Chair of the Department of Geological & Environmental Sciences (1986-1992 and 2012-2015), Co-Director of the Stanford-NSF Center for Materials Research (1987-1989), Chair of the Department of Photon Sciences (1998-2007), and Director of the Stanford-NSF Environmental Molecular Science Institute (2004-2010). He was also a visiting Professor at the *Laboratoire de Minéralogie-Cristallographie, Université Pierre et Marie Curie, Paris VI*, in 1984.

The research of Brown and his students has focused on molecular-level problems in geochemistry, mineral physics, and environmental chemistry ranging from x-ray and neutron diffraction studies of mineral structures as a function of temperature, x-ray scattering and x-ray absorption spectroscopy studies of silicate glasses and liquids at high temperature, and x-ray scattering studies of structure/property relationships of natural and manufactured nanoparticles to molecular-level spectroscopic studies of chemical and microbial interactions on metal oxide surfaces (including CO₂/metal oxide surface interactions), the speciation and transformations of heavy metal and radionuclide contaminants in complex environmental settings, and the release/sequestration of toxic trace metals during the burning of fossil fuels. Results of these studies have been published in about 380 peer-reviewed articles (h-index = 76 with over 18,000 citations) and presented in over 230 invited talks. Brown and his research group have used the extremely intense radiation from synchrotron light sources for over 37 years to address the types of problems listed above.

He has served as principal advisor of 13 M.S. and 36 Ph.D. students and 32 post-doctoral students at Stanford and Princeton. Brown has received awards for his research from the American Geosciences Institute (Ian Campbell Medal in 2013), the Mineralogical Society of America (Roebbling Medal in 2007), the Geochemical Society (Patterson Medal in 2007), the Mineralogical Association of Canada (Hawley

Medal in 2007), and the Association of Environmental Engineering and Science Professors (2007 Best Paper Award) and is a Fellow of the AAAS (2000), the Geochemical Society (1999), the European Association of Geochemistry (1999), the Geological Society of America (1997), and the Mineralogical Society of America (1975). In addition, he received a *Docteur Honoris Causa* degree from the University of Paris VII in 1997 and was elected as a Foreign Member of Academia Europaea in 2013.

Brown has served on advisory/review committees at SLAC National Accelerator Lab, Los Alamos National Lab, Pacific Northwest National Lab, Lawrence Berkeley National Lab, Argonne National Lab, the Canadian Light Source, Sincrotrone Trieste, and on many DOE Office of Basic Energy Sciences committees over the past 25 years, including the DOE Basic Energy Sciences Advisory Committee (2012-present).

Brown received his Ph.D. in Mineralogy/Crystallography from Virginia Tech in 1970 and was a post-doctoral fellow at SUNY Stony Brook in 1970-71, where he performed mineralogical studies of returned lunar samples from the Apollo missions. Prior to moving to Stanford in 1973, he was on the faculty at Princeton University.