

Kevin M. Rosso

Lab Fellow, Chemist
Physical Sciences

Biography

Kevin Rosso is a Laboratory Fellow and the Associate Director of the Physical Sciences Division for Geochemistry. He received his B.S. degree in geological sciences from Cal Poly at Pomona, California, in 1992, and his M.S. and Ph.D. degrees in Geochemistry from Virginia Tech in 1994 and 1998. His career to date has been at PNNL where, after starting as an entry-level research scientist in 1998, he was promoted to its highest rank by 2010 and now leads a research group of approximately 35 PhD students, postdoctoral fellows, and staff scientists. Dr. Rosso has published over 400 papers and book chapters, a body of work with an H-index of 74 and over 22,000 citations. He is a regularly invited speaker, with over 100 distinguished lectures delivered at university colloquia, workshops, and conferences internationally.

Dr. Rosso is best known for his pioneering research on electron transfer reactions between aqueous ions, mineral surfaces, and bacterial enzymes. Beginning with topics such as metal sulfide oxidation, bacterial reduction of metal oxides, contaminant interactions with clay minerals, and mechanisms of crystal growth and dissolution, his research expanded into geologic carbon sequestration, stress corrosion cracking in alloys, performance optimization of lithium battery materials, and the design of semiconductor materials for solar photocatalysis. Dr. Rosso is well recognized as being at the center of the field of molecular geochemistry, a field he helped create with the inception of advanced tools such as scanning probe microscopy, quantum mechanical molecular simulations, and massively parallel supercomputers.

Dr. Rosso won the Mineralogical Society of America Award in 2004, the Mineralogical Society's Hallimond Lectureship in 2016, and the European Association of Geochemistry's Stumm Medal in 2020. He is a Life Fellow of the Mineralogical Society of America, the Geochemical Society, and the European Association of Geochemistry. He has held honorary professorship appointments at the University of Manchester, U.K., the University of New South Wales, Australia, the University of Grenoble, France, and was recently a visiting Distinguished Scholar at Durham University, U.K. Dr. Rosso was an Associate Editor for *American Mineralogist* from 2004 to 2006, for *Geochimica et Cosmochimica Acta* from 2008 to 2011, and currently serves on the Editorial Boards of *ACS Earth and Space Chemistry*, *Applied Geochemistry*, and *Geo-Bio Interfaces*. He leads the U.S. Department of Energy's major fundamental geochemistry program at PNNL.