Glenn T. Seaborg Center Seminar

New Lanthanide and Actinide Complexes for Separation Technologies

Prof. Gregory S. Girolami

Department of Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL

Wednesday, Oct 14, 2015
4:00 pm – 5:00 pm
Bldg. 70A, Room 3377

This seminar will describe the synthesis and characterization of f-metal complexes of two types of mono-anionic bidentate ligands: aminodiboranates and dithiophosphinates. We have discovered that aminodiboranates, $(BH_3)_2NR_2$, bond to metal centers through their B-H bonds and thus are bidentate analogues of tetrahydroborates. The binary f-metal aminodiboranates have different volatilities, which could be useful in developing separation methodologies; in addition, the complexes are potentially useful chemical vapor deposition precursors. Dithiophosphinates, S_2PR_2, are known to be useful bidentate ligands for liquid extraction (LE) separation of lanthanides from the minor actinides. The second half of this seminar will describe the synthesis and characterization of new dithiophosphinates and their complexes, with the goal of varying the covalency of the f-metal to sulfur bond, a phenomenon that may be related to LE separation factors.

Host: Stefan Minasian (510) 486-5352 SGMinasian@lbl.gov | Admin. Asst: Catherine Mendez (510) 486-5587
Ernest Orlando Lawrence Berkeley National Laboratory One Cyclotron Road, Berkeley, California 94720