Glenn T. Seaborg Center Seminar

Design and Development of Selective Extractants for f-Element Ions

Robert T. Paine

Department of Chemistry and Chemical Biology
University of New Mexico, Albuquerque, New Mexico

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As global pressures on oil supplies continue to intensify renewed attention to the use of nuclear energy for electricity generation has grown. However, in order to achieve greater public confidence in this well known but much maligned power source, realistic plans for the treatment and recycle of nuclear fuel, and the safe disposal of radioactive waste are needed. This requires the development of advanced, high efficiency separations of f-block elements from each other and from various other fission products. The accomplishment of these advanced separations, in turn, requires further discovery and enhanced understanding of the unique coordination chemistry of the f-element ions.

Our program at the University of New Mexico has focused primarily on the design and synthesis of chelating ligands that have practical utility as f-block ion selective recognition agents. In this talk, the evolution of the so-called CMPO extractants onward to new phosphine oxide, N-oxide and amide based ligand families will be described and prospects for future developments with these agents will be outlined.

Host: Corwin Booth (510) 486-6079 CHBooth@lbl.gov Admin. Assistant: Catherine Mendez (510) 486-5587