

Coordination Chemistry of +3 Actinides

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Actinides in the +3 oxidation state occupy central roles in many areas that are important for our quality of life. These range from developing targeted alpha therapy in treating cancer to processing spent nuclear fuel. Hence, there is pressing need to advance fundamental understanding of +3 actinide coordination chemistry. While numerous heroic efforts have advanced An^{III} chemistry, two main technical challenges have impeded scientific advancements. These include (1) obtaining sufficient quantities of highly radioactive actinides for study, and (2) safely handling the highly-radioactive actinide elements. This talk will describe our recent efforts to make use of upgrades at the SSRL synchrotron facility to overcome the challenges associated with conducted studies on Ac, Am, and Cm elements.

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