



Glenn T. Seaborg Center Seminar

Uranium Bearing Molecules

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Wednesday, March 5, 2014

4:00 pm – 5:00 pm

Bldg. 70A, Room 3377

The experimental methods for performing laser-ablation actinide metal matrix isolation experiments will be described followed by examples from several chemical systems. We have prepared the oxydifluorides of Th and U from the atom reactions with $^{16}\text{OF}_2$ and $^{18}\text{OF}_2$ and the isocyanides from reactions with $(\text{CN})_2$ precursors including ^{13}C and ^{15}N substitutions. Our work involving six and five NN complexes with UN and NUN, respectively, will be mentioned. Ablation of cold pressed (10 tons) red P/ UH_3 mixtures and UP_2 has provided evidence for new UP_x species. Comparisons between neon and argon matrix absorptions will also be shown. These investigations point to new uranium chemistry that might be possible on a larger synthetic scale.