



Inorganic Chemistry Seminar Series

Friday, August 23, 2019, 12:30 pm
Grace Ford Salvatori Hall, GFS 101

Professor David Mills

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Building precise molecular architectures to unlock remarkable f-element properties

The complexity and richness of synthetic f-element chemistry has attracted increasing attention in recent years. This interest is stimulated jointly by scientific curiosity of a relatively unexplored field and the myriad applications that these elements have found in diverse areas such as organic synthesis, materials science and nuclear fuel cycles. Our research focuses on stabilizing f-element complexes with unusual coordination geometries and/or oxidation states, which can provide enhanced reactivity and unique physical properties. We mainly utilise bulky bis(silyl)amides and cyclopentadienyls as supporting ligands to stabilise these unusual f-element motifs. Here we will present some recent highlights of this work, such as the first near-linear f-element complexes, the first measurements of actinide covalency by pulsed EPR spectroscopy on the Th(III) complex and the first isolated f-block metallocenium cations, which provided record magnetic hysteresis temperatures for the dysprosium analogue in 2017.

Hosted by Professor Megan Fieser

The scientific community is invited