



## **AVVISO DI SEMINARI**

Il giorno 11/06/2019 alle ore 14:30  
nell'Aula Seminari del Dipartimento di Scienze e  
Tecnologie Chimiche

**Prof. Aaron Sadow**

Senior Scientist, Ames Laboratory Director, Center for  
Catalysis  
Iowa State University

*Terrà un seminario dal titolo:*

New Alkylanthranides and their Catalytic Chemistry

*Proponente: Prof. Pietro Tagliatesta*

*Abstract:*

Aaron D. Sadow

co-workers: Smita Patnaik, Kasuni Boteju, Brad Schmidt, Aradhana Pindwal, KaKing Yan

There is, in general, a need to find new uses for overproduced and underutilized early lanthanides, and viable organometallic starting materials for synthesis, surface deposition, and catalysis could help solve that problem. Traditionally, preparation of monomeric organolanthanides containing only one type of ligand (so called homoleptic compounds) have been plagued with synthetic difficulties and challenging characterization due to paramagnetic products, salt and solvent coordination, and temperature sensitive products.

The approach we develop, based on the inclusion of  $\beta$ -SiH groups in the alkyl ligand, overcomes these challenges, and our strategy will make the early organolanthanides species available for new synthetic, materials, and catalytic applications. We have synthesized compounds supported by  $C(SiHMe_2)_3$  or  $C(SiHMe_2)_2Ph$  ligand, and our work includes detailed spectroscopic and structural characterization of the series, which is important and useful for understanding reactivity properties of heteroleptic or surface grafted derivatives in catalytic or materials applications. Then, selected applications the compounds as catalysts for C–O bond cleavage via hydroboration, Si–C bond formation via hydrosilylation, and C–C bond formation in polymerizations will be presented.