

## המעבדה לכימיה אורגנית ואי-אורגנית

# סמינר

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בנושא:

Ligand Structure Effect on the Catalytic Performance of  
Organoactinides

## Ligand Structure Effect on the Catalytic Performance of Organoactinides

**Abstract:** During the last decade, organoactinide-based complexes have received considerable attention from many scientific researchers. Such a profound interest reflects the principle that actinides possess a number of unique features that cannot be found among other transition metals. Among these unique features, is their very sizeable ionic radii, which give rise to large formal coordination numbers and unusual coordination geometries. In addition, the presence of 5f valence orbitals is another characteristic of the actinides that differs distinctly from the d-block and the lanthanides elements, as it has been shown that these orbitals are partially responsible for metal reactivities (in contrast to the inert 4f orbitals of the lanthanides). Considering these differences, we will present how to design actinide catalysts to foster unique catalytic transformations; in the presentation, we will show the effect of the ligand size towards the reactivity of the complexes with oxygen-containing substrates. We will present the catalytic addition of alcohols to carbodiimides, the deoxygenation of isocyanates via a catalytic hydroboration, and the hydroboration of esters.

