

“Ligand Influences on Base Metals for Multi-Electron Transformations”

INORGANIC SEMINAR

UNIVERSITY OF ROCHESTER
DEPARTMENT OF
CHEMISTRY

MONDAY, 4:00 P.M.
FEBRUARY 20, 2017
HUTCHISON HALL 473



GUEST SPEAKER:
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Abstract:

Multi-electron transformations featuring base metals are both particularly challenging and interesting. Using various ligand designs we have discovered routes to enable 2-electron redox processes on base metals. A series multi-dentate ligand frameworks containing both hydrogen bond donating and accepting moieties in the secondary coordination sphere have been synthesized and reactivity will be described. These transformations feature the reduction of inorganic oxyanions which have long been touted for their inertness since these species are generally considered to be non-complexing anions, poor nucleophiles and kinetically inert to oxidation and reduction. Likewise, using a strong-field bis(carbene) ligand platform we have been able to demonstrate two-electron redox reactions on both cobalt and nickel complexes to access relatively rare organometallic species that are capable of a variety of catalytic transformations.

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