FAKULTÄT FÜR CHEMIE

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Einladung zum Vortrag von

Prof. Dr. Alan S. Goldman
Rutgers University, New Brunswick, NJ

„Dehydrogenation and Related Reactions of Alkanes Catalyzed by Iridium Complexes. Mechanism, Selectivity and a New Class of Catalysts"

Iridium complexes have played a leading role in the organometallic chemistry of alkanes and unreactive C-H bonds since the inception of the field 30 years ago. We have found that "PCP"-pincer-ligated iridium complexes are particularly effective for the dehydrogenation of alkanes and have incorporated this reaction into tandem systems for catalytic transformations based on dehydrogenation. The selectivity for dehydrogenation at the terminal position of n-alkanes displayed by some (PCP)Ir derivatives is of particular interest; the factors that determine such selectivity (or the lack thereof) have been elucidated.
More recently we have turned attention to iridium Phebox complexes.
Although the (PCP)Ir and (Phebox)Ir units are formally isoelectronic, the former effects dehydrogenation via C-H activation by Ir(I) while the latter operates via Ir(III) (as an acetate complex) and possibly Ir(V) intermediates. Such a high-oxidation-state catalytic cycle offers advantages for many potential applications of dehydrogenation.

Mittwoch, 31. Mai 2017, 16:15 Uhr
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