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DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY COLLOQUIUM
UTAH STATE UNIVERSITY

The Transfer of H^+ , H^\bullet , H^- , and e^- from $M-H$ Bonds, and their Applications to Synthesis

Transition-metal hydrides are often not very "hydridic". They can donate their hydride ligands as H^+ , H^\bullet , or H^- , and they can be good one-electron reducing agents. In many cases they can be regenerated from H_2 , which means that they can catalyze hydrogenations. The transfer of H^- enables the "ionic hydrogenation" of polar double bonds. The transfer of H^\bullet makes it possible to do radical chemistry catalytically, without the toxicity and purification difficulties associated with tin hydrides. They can isomerize olefins by H^\bullet transfer, and cyclize appropriately substituted dienes and enol ethers. They can cyclize alkyl iodides by electron transfer. With a titanium cocatalyst they can catalyze the hydrogenation of epoxides to anti-Markovnikov alcohols.

4-5PM (MDT) | Zoom

Meeting ID: 991 3991 8394

Passcode: 4W3tYY

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