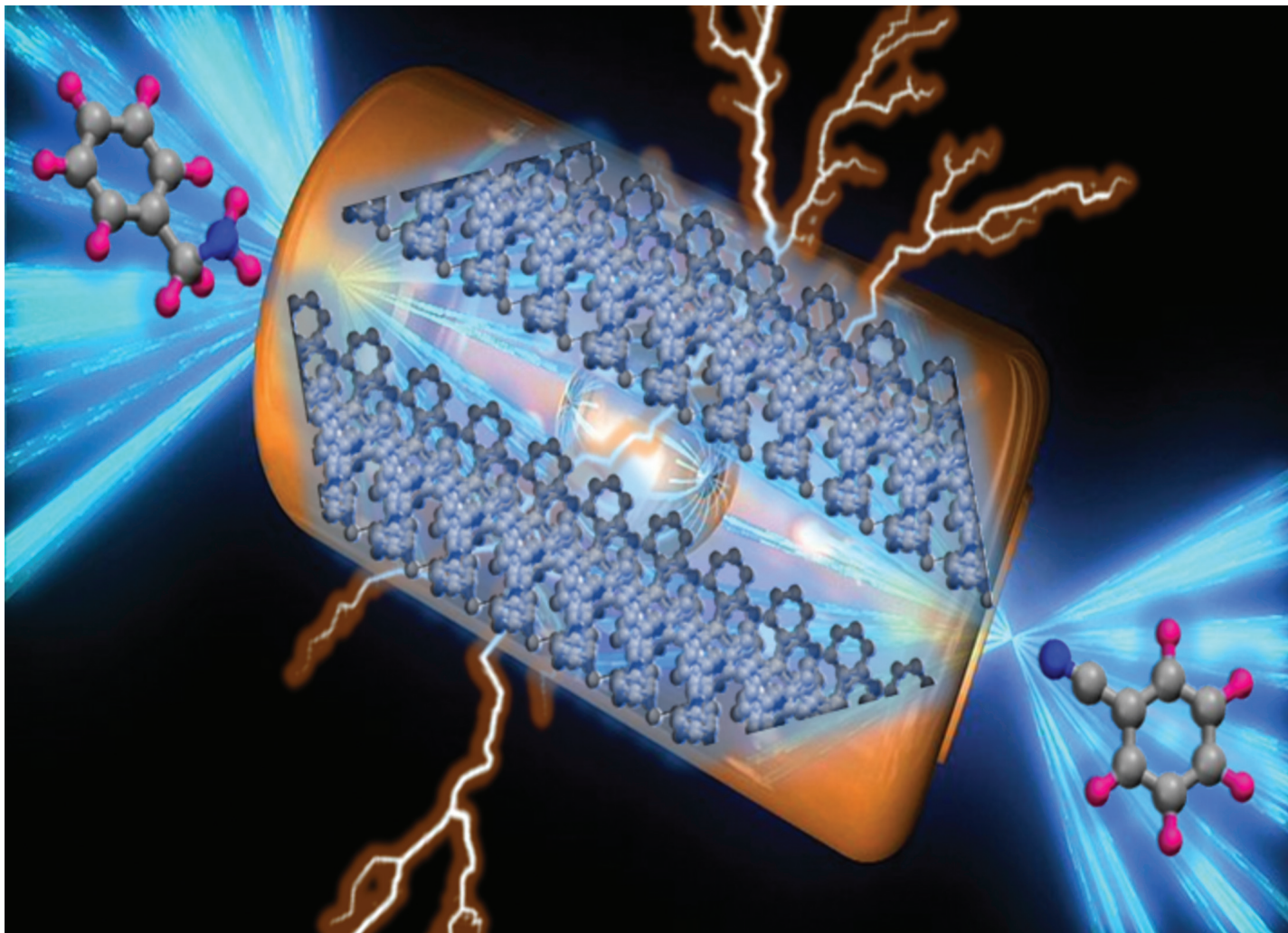




Showcasing research from Professor Gupta's laboratory,
Department of Chemistry, University of Delhi, India.

Acceptorless oxidant-free dehydrogenation of amines catalyzed
by Ru-hydride complexes of amide-acid/ester ligands

Acceptorless dehydrogenation of amines to nitriles and imines without using an oxidant or hydrogen acceptor is significant yet challenging. This work presents elegant Ru-hydride complexes illustrating oxidant-free, acceptorless, and selective dehydrogenation of both primary and secondary amines affording nitriles and imines, respectively. The catalytic activity is influenced by the associated multidentate ligand that creates hydrogen bonds to a substrate and aids in bringing it closer to the catalyst. Our results exquisitely exhibit that strategic ligand design can overcome challenges associated with oxidant-free and acceptorless dehydrogenation of amines.

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54, 5675.