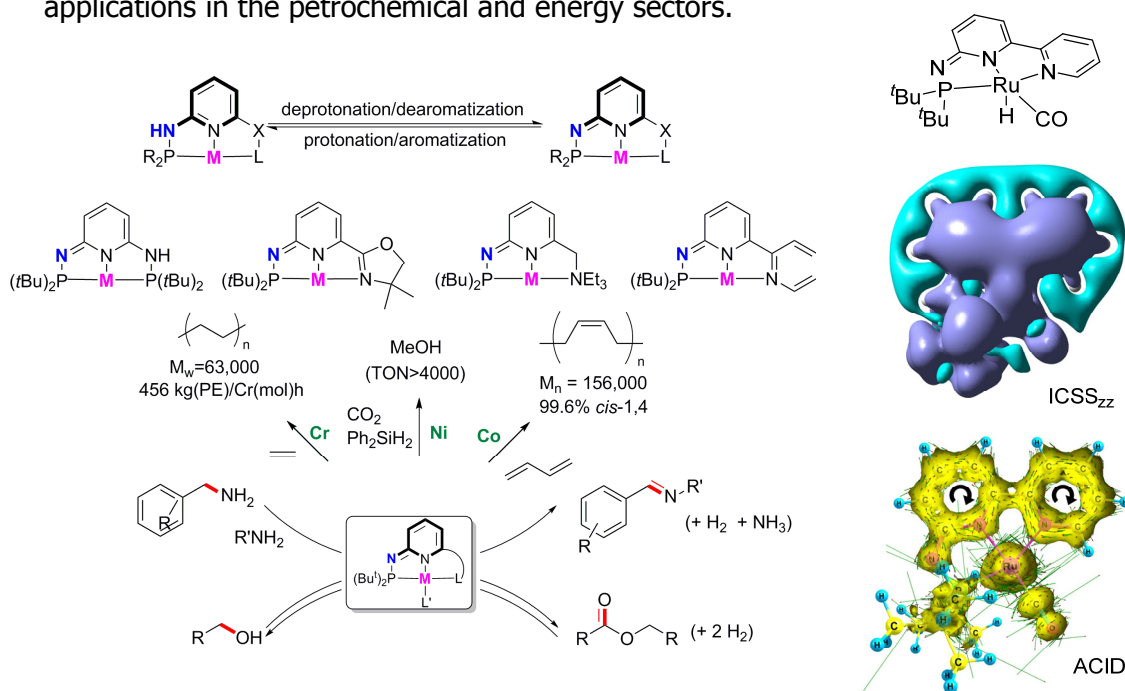


A Novel Class of PN³-Pincer Complexes: Cooperative Catalysis and Beyond

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Pincer transition metal complexes have versatile reactivities to catalyze many organic transformations and to activate strong chemical bonds. In particular, complexes with ligand derived from tridentate pyridine-based framework exhibit interesting reactivities. We have designed and prepared a series of transition metal catalysts based on a novel class of pincer-type PN³-ligands which are capable of interacting with the substrates during the reaction. Rich reactivities have been observed with their catalytic activities being explored recently. In very recent work, we have witnessed that the seemingly small change by replacing the CH₂ spacer in the pyridine-based pincer complex with an NH group has dramatically influenced the thermodynamic and kinetic properties, and in some cases the catalytic behaviors of the corresponding metal complexes. It is conceivable that this new class of transition metal pincer complexes will offer exciting opportunities for the development of novel catalytic applications in the petrochemical and energy sectors.



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