

Interactions of Iridium PCP Pincer Complex with Small Molecules

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Hydrogen as the alternative energy source is one of the best because it is environmentally friendly. Alkanes are one of the potential hydrogen storages because they contain lots of hydrogen sources. Alkanes are abundant and relatively inexpensive. However, alkanes are very poor electron donors and/or acceptors and thus the activation of alkane C-H bonds is difficult. In this presentation, the mechanistic studies in the dehydrogenation of alkanes using iridium PCP pincer complex, $\text{IrH}_2\{\text{C}_6\text{H}_3\text{-2,6-(CH}_2\text{P}^i\text{Bu}'_2)_2\}$, will be discussed. In addition, the treatment of Ir PCP pincer complex with small molecules such as H_2 , N_2 , H_2O , CO_2 and CO gave the corresponding complexes, respectively. These complexes account for these small molecules' inhibition of dehydrogenation reactions, which are catalyzed by Ir PCP pincer complex. These complexes were isolated and completely characterized by NMR, IR and X-ray crystallography.