



Houk-Jung Organic Colloquium

Cationic Late Transition Metal Complexes for Selective α -C-H Functionalization

Abstract: We describe the discovery and development of catalytic α -C-H functionalization reactions of simple unsaturated hydrocarbons, including alkynes, alkenes, and allenes, using cationic cyclopentadienyliron(II) dicarbonyl complexes. These complexes enable the development of a new mode of catalytic C-H functionalization in which metal coordination to a π -bond facilitates the deprotonation of a neighboring C-H bond. The implementation of this strategy resulted in mild, functional group tolerant, and regioselective transformations for the coupling of unsaturated hydrocarbons with aldehydes, iminiums, and other readily available or easily accessed carbon electrophiles. Investigations into the reaction mechanism and the discovery and optimization of new ligand systems are discussed. Extensions of this approach to other transition metal catalysts for stereoselective transformations are also described.

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Thursday, April 20, 2023 | 4:00 PM
Mani L. Bhuamik Collaboratory - YH 4222
Dongwon Yoo Seminar & Conference Hall

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