Dian Wang

Iridium-Catalyzed Aromatic C-H Bond Borylation: Development, Applications and Mechanism

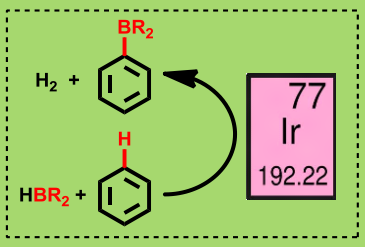
Stahl Group

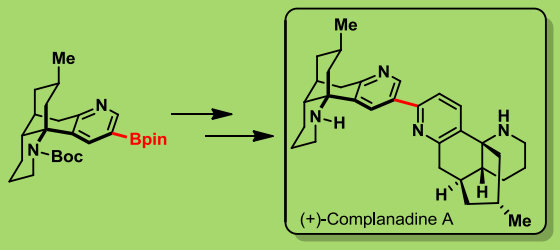
Thursday, November 15th • 11:00 AM

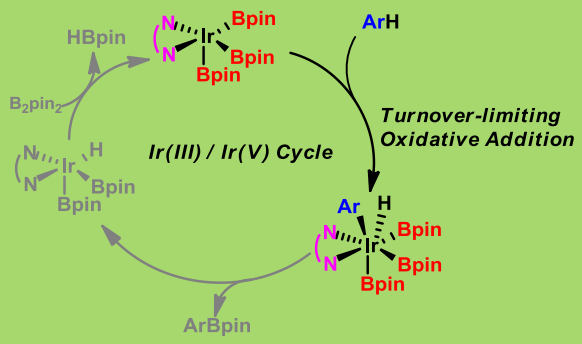
Room 1315 Chemistry

In organic synthesis, aryl boronates are useful intermediates which can undergo further transformations to form C-Cl, C-O, C-N and C-C bonds. Traditional syntheses of these molecules rely on aryl halides as starting materials and stoichiometric amounts of metals (Li, Mg) as reductants. In contrast, transition metal-catalyzed direct borylation of C-H bonds in unactivated arenes provides simple and direct access to aryl boronates.

In this talk, three aspects of the iridium-catalyzed aromatic C-H bond borylation will be presented: development of this reaction from a stoichiometric process to a useful catalytic methodology, applications of the developed catalyst system to organic synthesis, and mechanistic studies with insights into the origin of the electronic effects and unusual regioselectivity of this reaction.







Organic Seminar