Cross-Coupling Reactions of Organoboron Compounds

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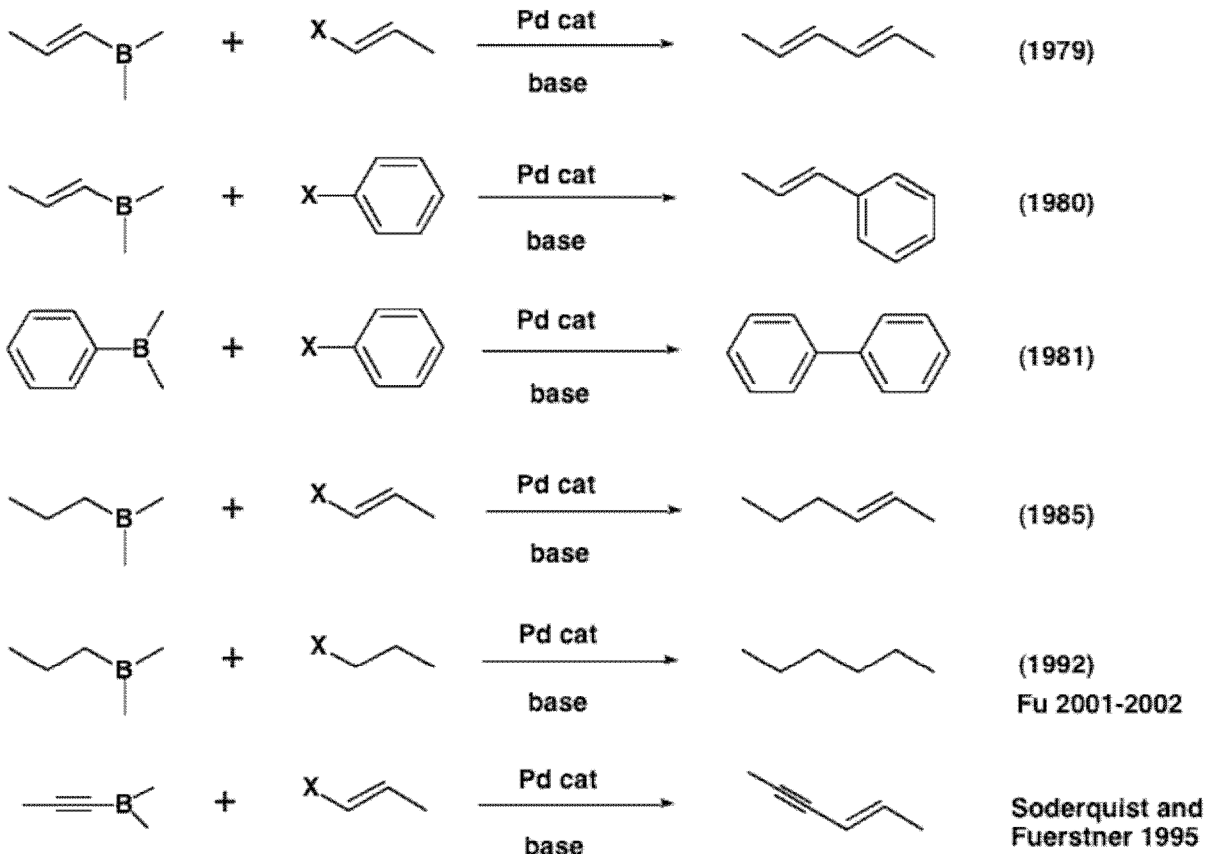
The palladium-catalyzed cross-coupling reaction between different types of organoboron compounds and various organic halides or triflates in the presence of base provides a powerful and general methodology for the formation of carbon-carbon bonds. The (sp^2)C-B compounds (such as aryl- and 1-alkenylboron derivatives) and (sp^3)C-B compounds (alkylboron compounds) readily cross-couple with organic electrophiles to give coupled products selectively in high yields. Recently, the (sp)C-B compounds (1-alkynylboron derivatives) have been also observed to react with organic electrophiles to produce expected cross-coupled products. The overview of such coupling reactions is discussed to understand the whole.



Additionally, current topics of the coupling reaction will be presented briefly.