

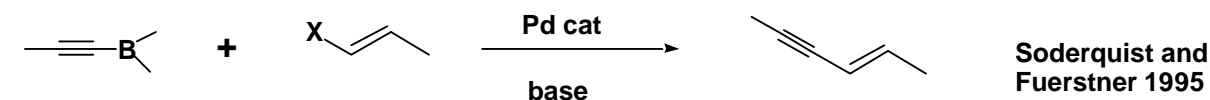
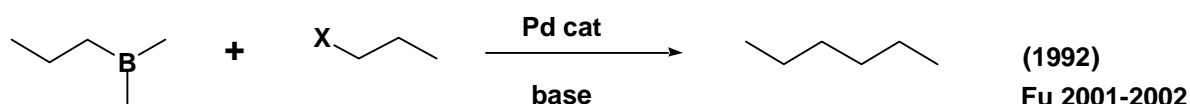
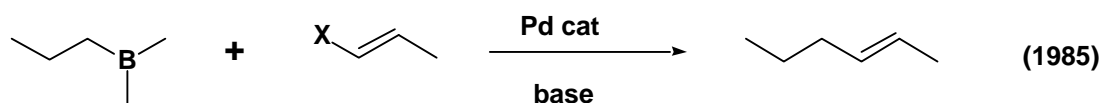
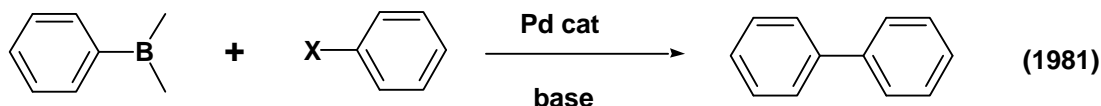
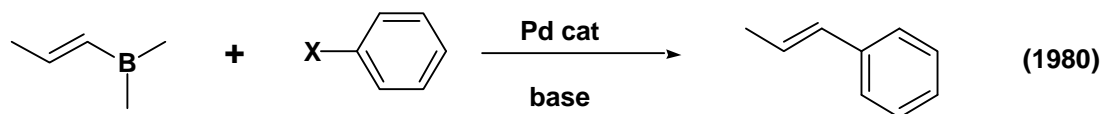
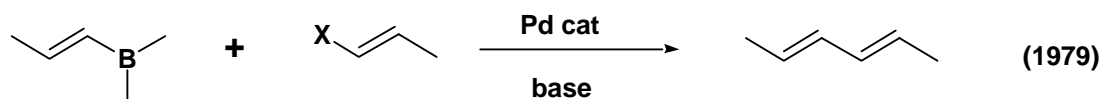
An Example of Useful Science: Organic Synthesis by Organoboron Coupling Reaction

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The palladium-catalyzed cross-coupling reaction between different types of organoboron compounds and various organic electrophiles including 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.



These coupling reactions have been actively utilized not only in academic laboratories but also in industrial processes including pharmaceutical and agrochemical industries, and liquid crystal and OLED production in industry.