

Gregory C. FU

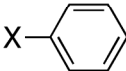

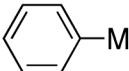
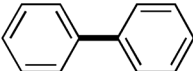
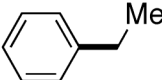
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Despite the tremendous accomplishments that have been described in the development of palladium- and nickel-catalyzed carbon-carbon bond-forming processes, it is nevertheless true that many significant opportunities remain. For example, to date the overwhelming majority of studies have focused on couplings between two sp^2 -hybridized reaction sites (e.g., an aryl metal with an aryl halide).

As of 2001, there were few examples of palladium- or nickel-catalyzed coupling reactions of alkyl electrophiles. During the past several years, we have pursued the discovery of palladium- and nickel-based catalysts for coupling activated and unactivated primary and secondary alkyl electrophiles that bear β hydrogens. Our recent efforts to develop broadly applicable methods, including enantioselective processes, will be discussed.

Figure 1. Some carbon-carbon bond-forming processes of interest.

		<i>heavily studied</i>	<i>relatively few examples</i>
		↓	↓
halide or sulfonate coupling partner	organometallic coupling partner	aryl or vinyl 	alkyl 
aryl or vinyl			
alkyl	