Fluorophobic Effects in Homogeneous Catalysis

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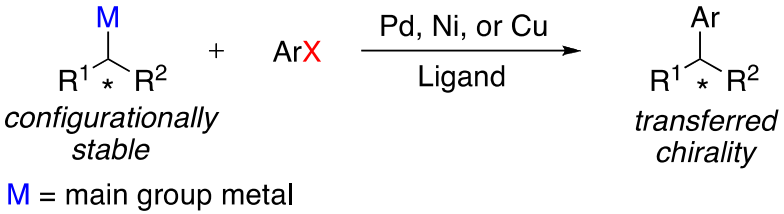
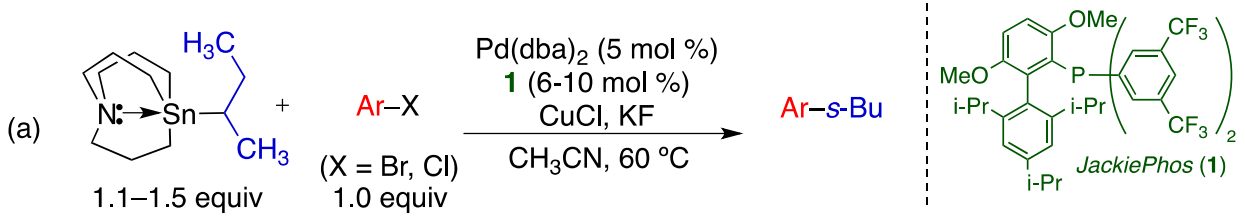
The development of a general transition metal-catalyzed process for the incorporation of optically active centers into organic molecules would be immediately impactful on the fields of medicinal and materials chemistry. The goal of this research is shown below. We have previously made significant process towards this end, which has been published in the listed articles.



J. Am. Chem. Soc. **2011**, *133*, 8478.
Org. Lett. **2011**, *13*, 1218.
J. Org. Chem. **2012**, *77, 6629.*
Synlett **2012**, *23*, 1103.

During the past year, we have developed the first method that permits the general use of secondary alkyltin reagents in cross-coupling reactions. This process is independent of the electronic properties of the electrophilic and nucleophilic coupling partners. Most importantly, we have demonstrated that stable, isolable, optically-active alkylstannatranes can be employed in cross-coupling reactions with retention of configuration. Because of the generality of our reaction, this process should be extendable to the broad use of optically-active alkylstannatrane reagents.



Manuscript submitted