M. H. NGUYEN, K. T. O'BRIEN, A. B. SMITH, III* (UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, USA)

Design, Synthesis, and Application of Polymer-Supported Silicon-Transfer Agents for Cross-Coupling Reactions with Organolithium Reagents
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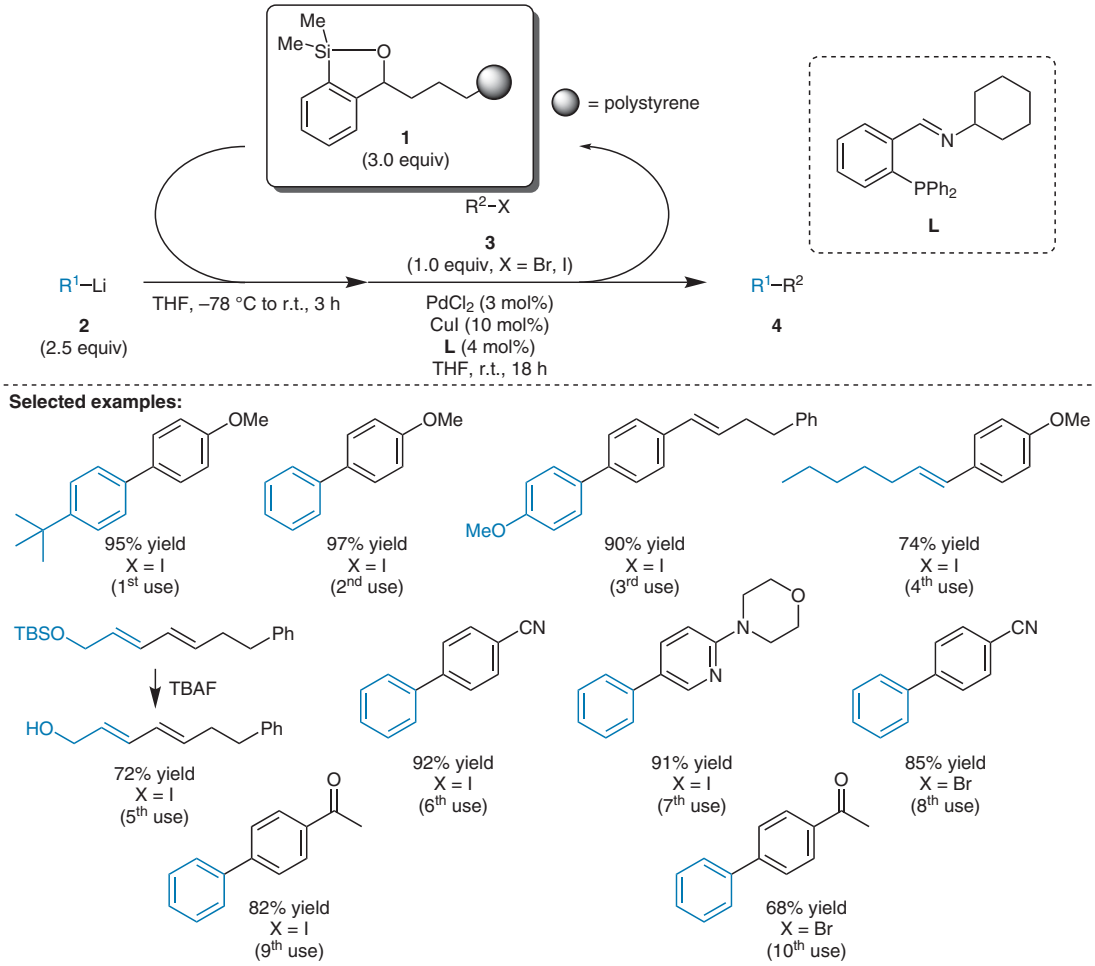
Pd-Catalyzed Cross-Coupling Mediated by Polymer-Supported Siloxanes



Significance: Polymer-supported siloxanes were developed as transfer agents for cross-coupling reactions involving organolithium reagents. For example, the polystyrene-supported siloxane **1** was treated with an aryl or alkenyl lithium **2**, and the resulting material was treated with an aryl halide **3** in the presence of $PdCl_2$, CuI, and ligand **L** to give the corresponding product **4** in 68–97% yield.

Comment: The transfer agent **1** was recovered almost quantitatively by simple filtration and rinsing, and reused in the cross-coupling several times. No cross-contamination of the products **4** was detected in a series of ten reactions with recycled **1** and various combinations of organolithium reagents **2** and aryl halides **3**.

SYNFACTS Contributors: Yasuhiro Uozumi, Takuma Sato
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Category
Polymer-Supported Synthesis

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