An Efficient, Practical, and Selective Multicomponent Copper-Catalyzed Process

Significance: The authors demonstrate the generation of multifunctional alkenylboron fragments starting from two simple unsaturated organic molecules and a commercially available diboron reagent. These fragments were shown to carry several advantageous properties. The catalyst used is generated in situ by the reaction of inexpensive CuCl with a chiral ligand which was prepared on multigram scale in good yield.

Comment: The practical protocol can be performed on large scale and makes gram quantities of a variety of complex organic molecules easily available. The products, which contain a stereogenic carbon center, a monosubstituted alkene, and an easily functionalizable Z-trisubstituted alkenylboron group, are obtained in good yields and excellent selectivities.

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SYNFACTS 2015, 11(1), 0073 Published online: 15.12.2014
DOI: 10.1055/s-0034-1379656; Reg-No.: P16014SF