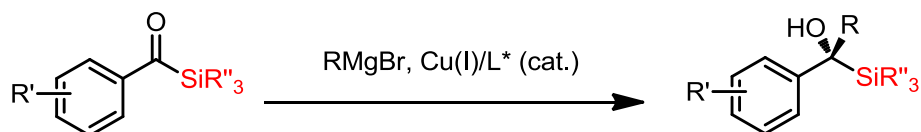


Catalytic asymmetric synthesis of chiral tertiary α -hydroxysilanes

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Optically active α -hydroxysilanes are a class of chiral organometallic compounds that contain a functional group which have been used for stereocontrolled C-C bond formation and rearrangements¹. The literature-known methods for the preparation of α -hydroxysilanes are based on the asymmetric reduction of acylsilanes² and asymmetric addition of nucleophilic silicon reagents to aldehydes¹. All of these methods allow accessing chiral secondary α -hydroxysilanes. No methods are known for synthesis of chiral tertiary α -hydroxysilanes. In this research we report, that a chiral copper(I) catalyst facilitates the 1,2-addition of readily available Grignard reagents to aromatic silyl ketones, thus providing access to chiral tertiary α -hydroxysilanes with good yields and enantioselectivities up to 92%.



Reference

1. *Angew. Chem. Int. Ed.* **2013**, *52*, 1785-1788
2. *Angew. Chem. Int. Ed.* **2008**, *47*, 1770 – 1773