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Scandium-Catalyzed Silylation of Aromatic C–H Bonds

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Category

Metal-Mediated
Synthesis

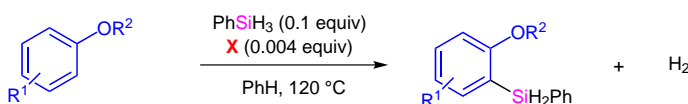
Key words

scandium

silylation

C–H activation

Scandium-Catalyzed Silylation of Aromatic C–H Bonds

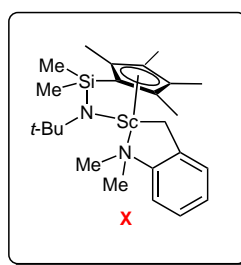
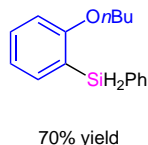
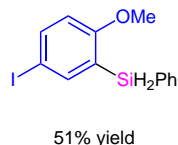
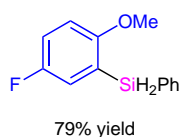
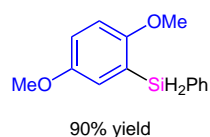


R¹ = Me, OMe, F, Cl, Br, I, SMe, NMe₂

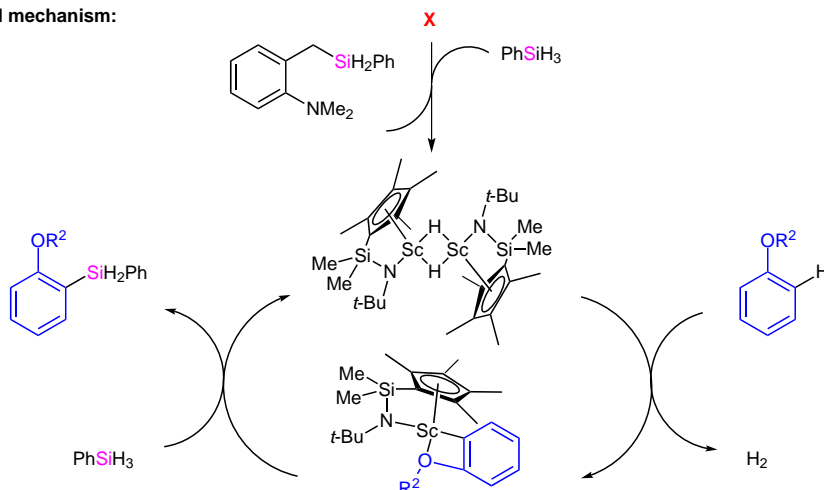
R² = Me, *n*-Bu, *i*-Pr

up to 90% yield

Selected examples:



Proposed mechanism:



Significance: The first *ortho*-regioselective, catalytic C–H silylation of aromatic alkoxydes achieved by half-sandwich scandium alkyls is reported. Carbon–heteroatom bonds such as C–SMe and C–halogen are well tolerated.

Comment: It is noteworthy that no exterior hydrogen acceptors such as alkenes are required to increase the conversion. Nevertheless, a huge excess of aromatic alkoxydes is necessary to achieve high yields.

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