Catalytic Hydroboration Reaction with Lewis-base Stabilized Hydrostannylenes

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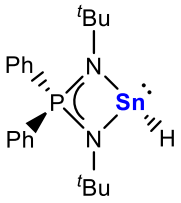
Currently, molecular transformations using low-valent p-block compounds have attracted much attention as alternative catalysts for transition metal compounds. Among them, much interest has been focused on the transformation of carbonyl compounds, which is one of the crucial processes in organic synthesis, using low-valent tin compounds. Meanwhile, hydrostannylenes, tin(II) hydrides are an intriguing class of organotin compounds because of their unusual structural behavior and as a key intermediate in the hydroboration reaction of carbonyl compounds[1,2].

Recently, we are interested in the synthesis of a series of low-valent heavier group 14 element species stabilized by strong electron-donating Lewis bases. In this presentation, we will report on the synthesis of the Lewis-base stabilized hydrostannylenes **1**[3] and **2** by incorporating iminophosphonamide and amino-substituted *N*-heterocyclic carbene[4] ligands, respectively, and the catalytic hydroboration reactions of various carbonyl and imine compounds through them as key intermediates.



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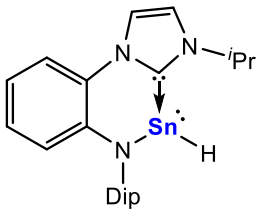

Dip = 2,6-^{i}Pr$_2$C$_6$H$_3$

2

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