

Synthesis, Reactivity, and Catalytic Behavior of Immobilized Copper Hydrides and Borohydrides

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Copper hydrides are key catalytic intermediates for many reactions including hydrosilylations,^[1] hydroborations,^[2] and even CO₂ hydrogenation.^[3] Preparation of monomeric copper hydride still challenging. One of potential method for stabilizing monomeric copper hydrides is by using site isolation on heterogeneous surfaces to prevent dimerization. We demonstrate here that surface immobilization can be used to influence the stability of copper hydrides and that the support has a large effect on the activity and selectivity of the Cu-H during hydroboration and hydrosilylation.

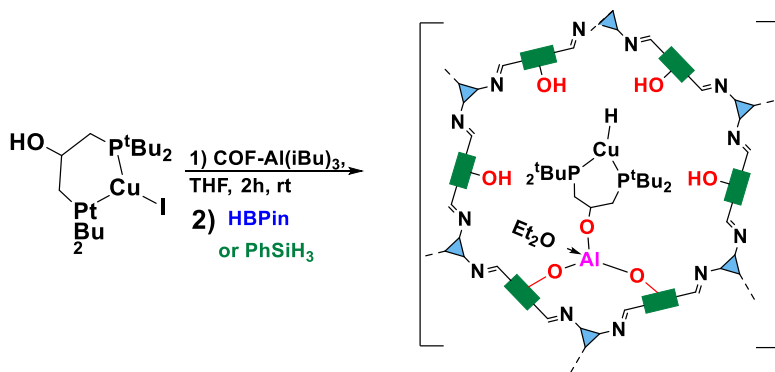


Figure 1: Synthesis and Characterization of heterogenous monomeric Cu-I catalyst.

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[2] W. J. Jang., S. M. Song, J. H. Moon, J. Y. Lee, J. Yun., *J. Am. Chem. Soc.* 2017, **139**, 13660, DOI: 10.1021/jacs.7b08379.

[3] C. M. Zall, J. C. Linehan, A. M. Appel., *J. Am. Chem. Soc.* 2016, **138**, 9968, doi.org/10.1021/jacs.6b05349.