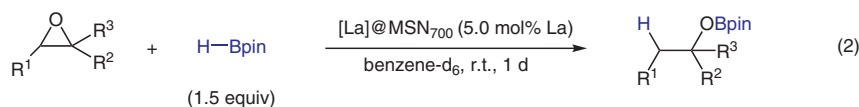
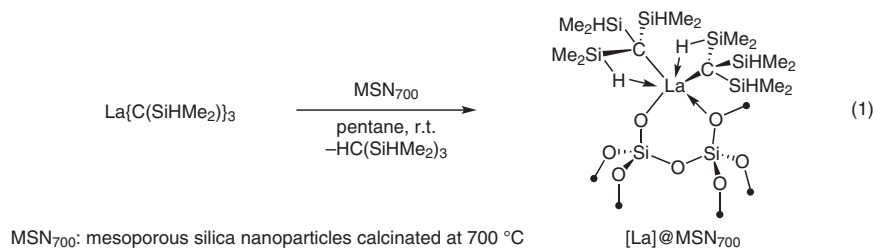


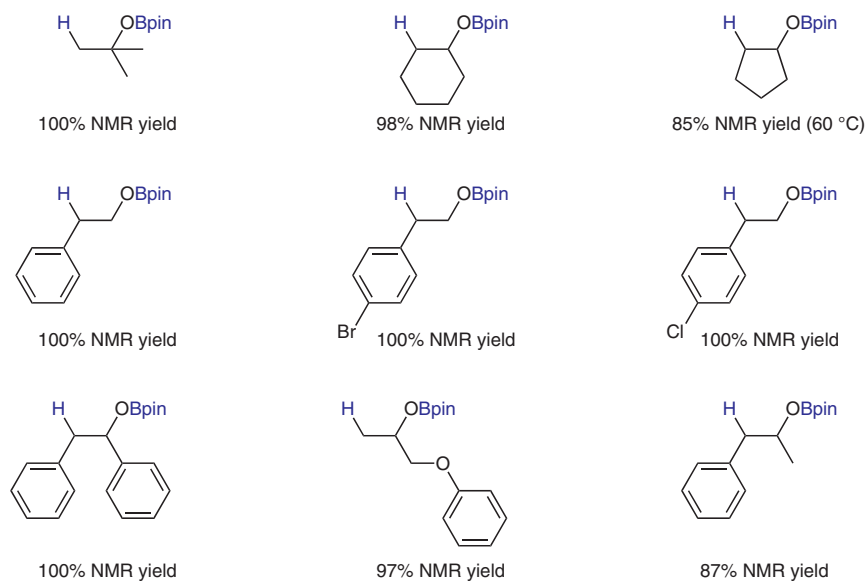
Z. WANG, S. PATNAIK, N. EEDUGURALA, J. S. MANZANO, I. I. SLOWING, T. KOBAYASHI, A. D. SADOW*, M. PRUSKI* (U.S. DEPARTMENT OF ENERGY AND IOWA STATE UNIVERSITY, AMES, USA)

Silica-Supported Organolanthanum Catalysts for C–O Bond Cleavage in Epoxides
J. Am. Chem. Soc. **2020**, *142*, 2935–2947.

Ring-Opening Hydroboration of Epoxides Catalyzed by a Silica-Supported Organolanthanum Complex



Results:



Significance: An organolanthanum complex immobilized on mesoporous silica nanoparticles ([La]@MSN₇₀₀), prepared as shown in equation 1, catalyzed the ring-opening hydroboration of epoxides with pinacolborane to give the corresponding boryl ethers in 87–100% NMR yield (eq. 2).

Comment: [La]@MSN₇₀₀ was characterized by means of mass balance of grafting, surface alcoholysis reactions, elemental analysis, and DRIFTS, STEM, EDX, and SSNMR spectroscopies. In the reaction of styrene oxide with pinacolborane, the catalyst was reused five times with a gradual loss of its catalytic activity.

SYNFACTS Contributors: Yasuhiro Uozumi, Shun Ichii
Synfacts 2020, 16(05), 0565 Published online: 20.04.2020
DOI: 10.1055/s-0040-1707918; Reg-No.: Y03520SF

© 2020, Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Category

Polymer-Supported
Synthesis

Key words

lanthanum catalysis
mesoporous silica
hydroboration
epoxides

Synfact
of the
Month

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.