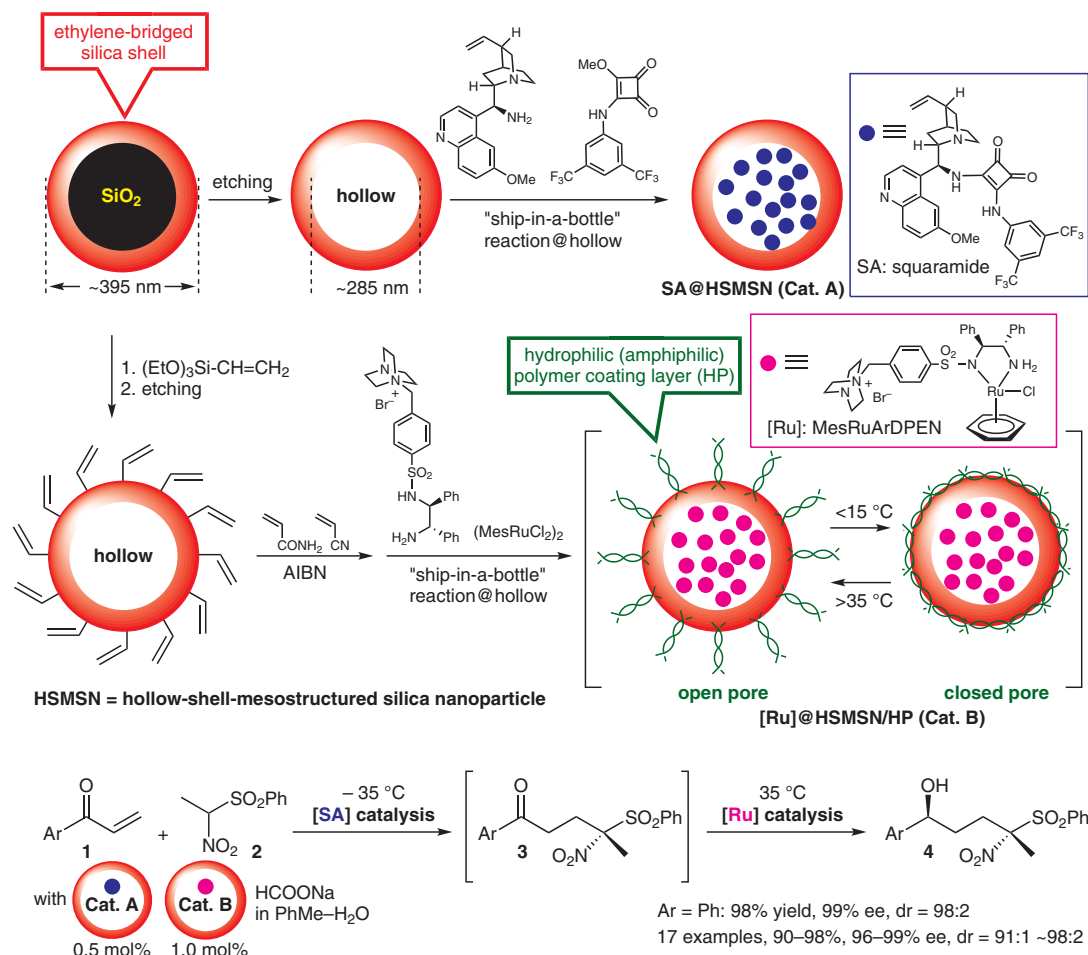


F. CHANG, S. WANG, Z. ZHAO, L. WANG, T. CHENG, G. LIU* (SHANGHAI NORMAL UNIVERSITY, P. R. OF CHINA)
 Enantioselective Dual-Catalysis: A Sequential Michael Addition/Asymmetric Transfer Hydrogenation of α -Nitrosulfone and Enones
 ACS Catal. 2020, 10, 10381–10389, DOI: 10.1021/acscatal.0c01559.

One-Pot Two-Step Catalytic Asymmetric Michael Addition/Hydrogenation



Significance: A one-pot two-step asymmetric Michael addition–transfer hydrogenation co-catalyzed by an immobilized organocatalyst [SA@HSMSN (Cat. A)] and a Ru complex catalyst [[Ru]@HSMSN/HP (Cat. B)] was developed. The reaction of enone **1** and nitro sulfone **2** in the presence of Cat. A, Cat. B, and HCO_2Na gave the corresponding alcohols **4** in excellent chemical yields and with high diastereoselectivity (96–99% ee).

Comment: Squaramide and MesRuArDPEN were immobilized in hollow-shell-mesostructured silica nanoparticles without or with a hydrophilic polymer coating to form Cat. A and Cat. B, respectively. Cat. A promoted the Michael addition at -35°C , and Cat. B catalyzed the transfer hydrogenation at 35°C , to realize temperature-dependent control of the sequential dual-catalytic process.

SYNFACTS Contributors: Yasuhiro Uozumi, Ryoko Niimi
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