

Electronic Supplementary Information for:

**Tuning the Chemoselective Hydrogenation of Aromatic
Ketones, Aromatic Aldehydes and Quinolines Catalyzed
by Phosphine Functionalized Ionic Liquids Stabilized
Ruthenium Nanoparticles**

He-yan Jiang* and Xu-xu Zheng

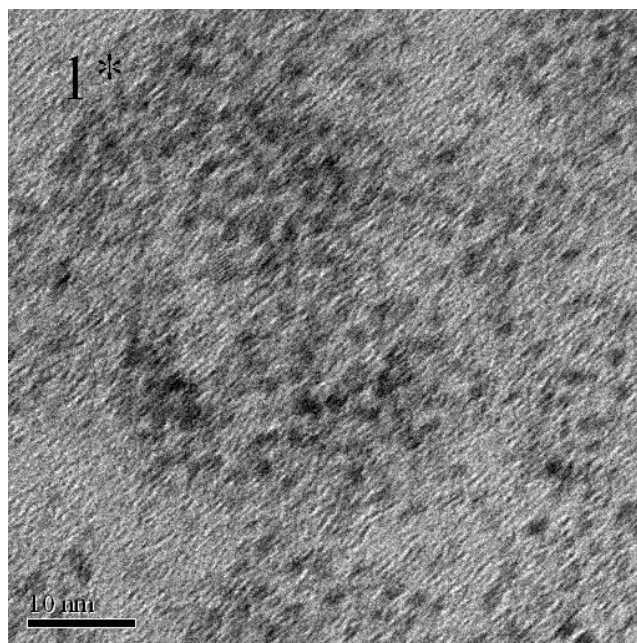
Key Laboratory of Catalysis Science and Technology of Chongqing Education
Commission, Chongqing Key Laboratory of Catalysis and Functional Organic Molecules,
Chongqing Technology and Business University, Chongqing 400067, P.R. China

S1. Detailed ICP-AES measurements.

For the high-pressure asher digestion: organic phase in styrene catalytic hydrogenation or supernatant of the [BMIM][tppm]-stabilized Ru NPs **1** washing procedure were treated under reduced pressure to dryness before the high-pressure asher digestion. Samples were then carefully transferred into the quartz vessels. Enough HCl and HNO₃ (6:1) were added; the vessels were closed, set in the heating block and inserted into the pressure vessel of the high-pressure asher. The system was pressurized with nitrogen to 100 bar and a three-stage digestion program was run (stage 1: rapid heating to 100 °C; stage 2: heating from 100 °C to 300 °C at 30 min; stage3: holding at 300 °C for 360 min). After cool-down and depressurizing steps the samples were diluted to 5 ml with water and HCl concentration was adjusted to 2% (v/v) prior to the ICP-AES determination.

For the ICP-AES measurements: the calibration standard solutions used in this study were diluted from a commercial Ru or P stock solution (1000 mg L⁻¹). In order to test the suitability of this external calibration approach, a couple of preliminary tests concerning the calibration of the Perkin Elmer Optima 2100DV ICP-AES instrument were run.

S2. TEM characterization of the spent Ru NPs **1** after ten recycles of styrene hydrogenation.



S3. Size distribution histogram of the spent Ru NPs **1** after ten cycles of styrene hydrogenation.

