Electronic Supplementary Information for:

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

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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 HNO\(_3\) (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 recyclces of styrene hydrogenation.
S3. Size distribution histogram of the spent Ru NPs 1 after ten recycles of styrene hydrogenation.