Supplementary Material (ESI) for New Journal of Chemistry

Synthesis of Mesoporous Metal Complex-Silica Materials and their Use as Solvent-free Catalysts

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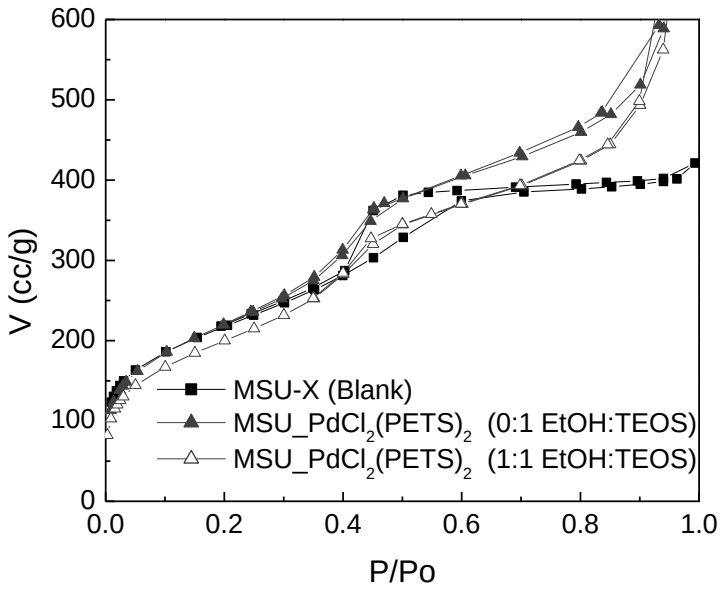
Supporting information

(a)



(b)

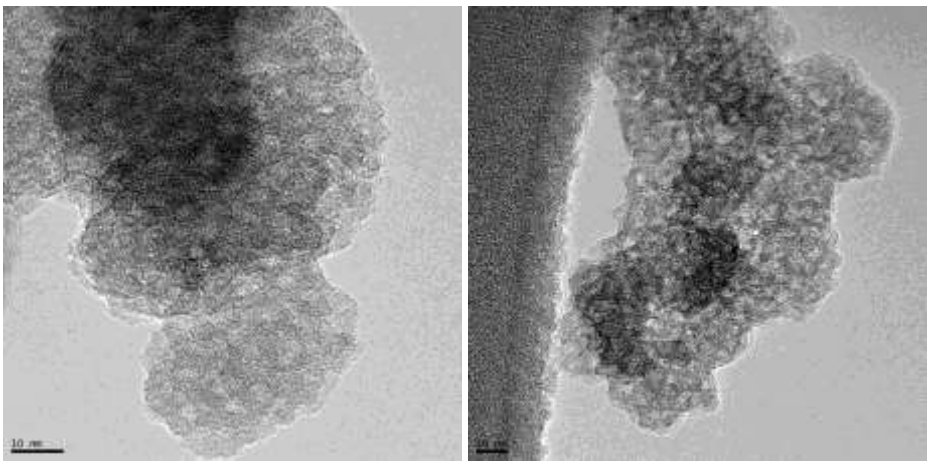


Figure S1. (a) N_2 isotherms for catalyst MSU_$PdCl_2(PETS)_2$ prepared with 1%Pd:SiO_2 with (-Δ-) and without (-▲-) ethanol in their synthesis. **(b)** Representative TEM images of these samples prepared with (left) and without (right) ethanol in the synthesis. The scale bars represent 10 nm

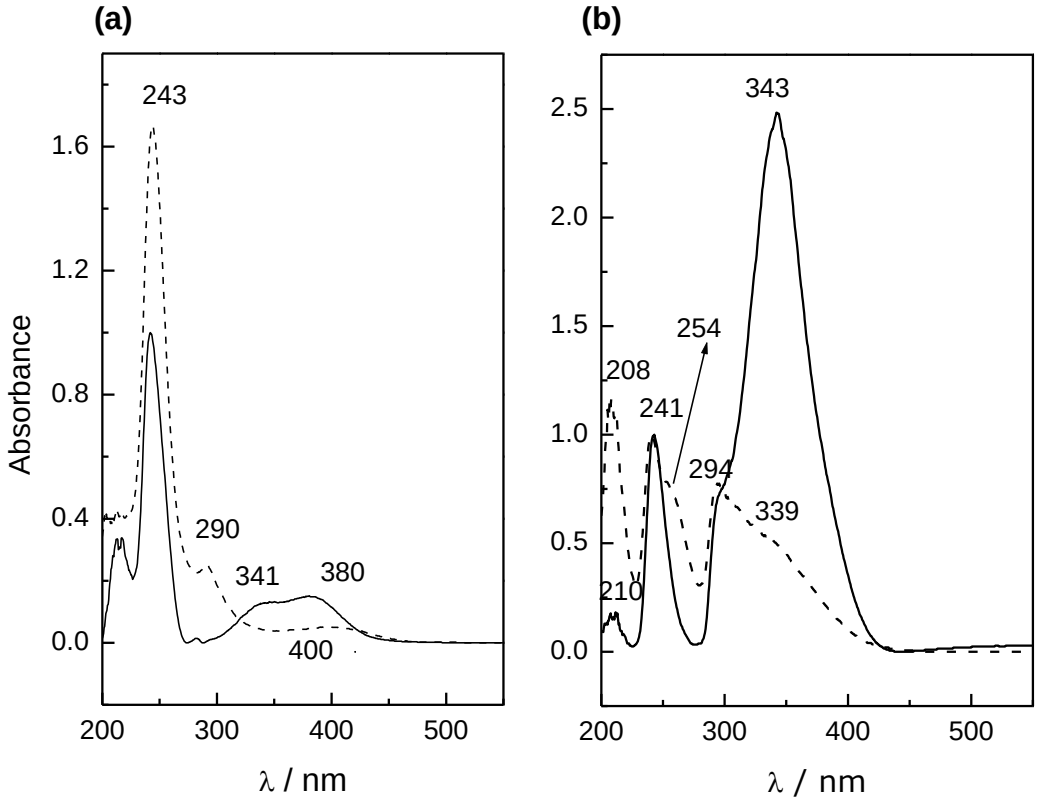


Figure S2. DRUV spectra of **(a)** pressed pure powders of the MSU-$PdCl_2(APTS)_2$ material (solid line) and the monomer complex [trans-$PdCl_2(APTS)_2$] **1** (dotted line) and **(b)** pressed pure powders of the MSU-$PdCl_2(PPETS)_2$ material (solid line) and the monomer complex [trans-$PdCl_2(PPETS)_2$] **3** (dotted line).

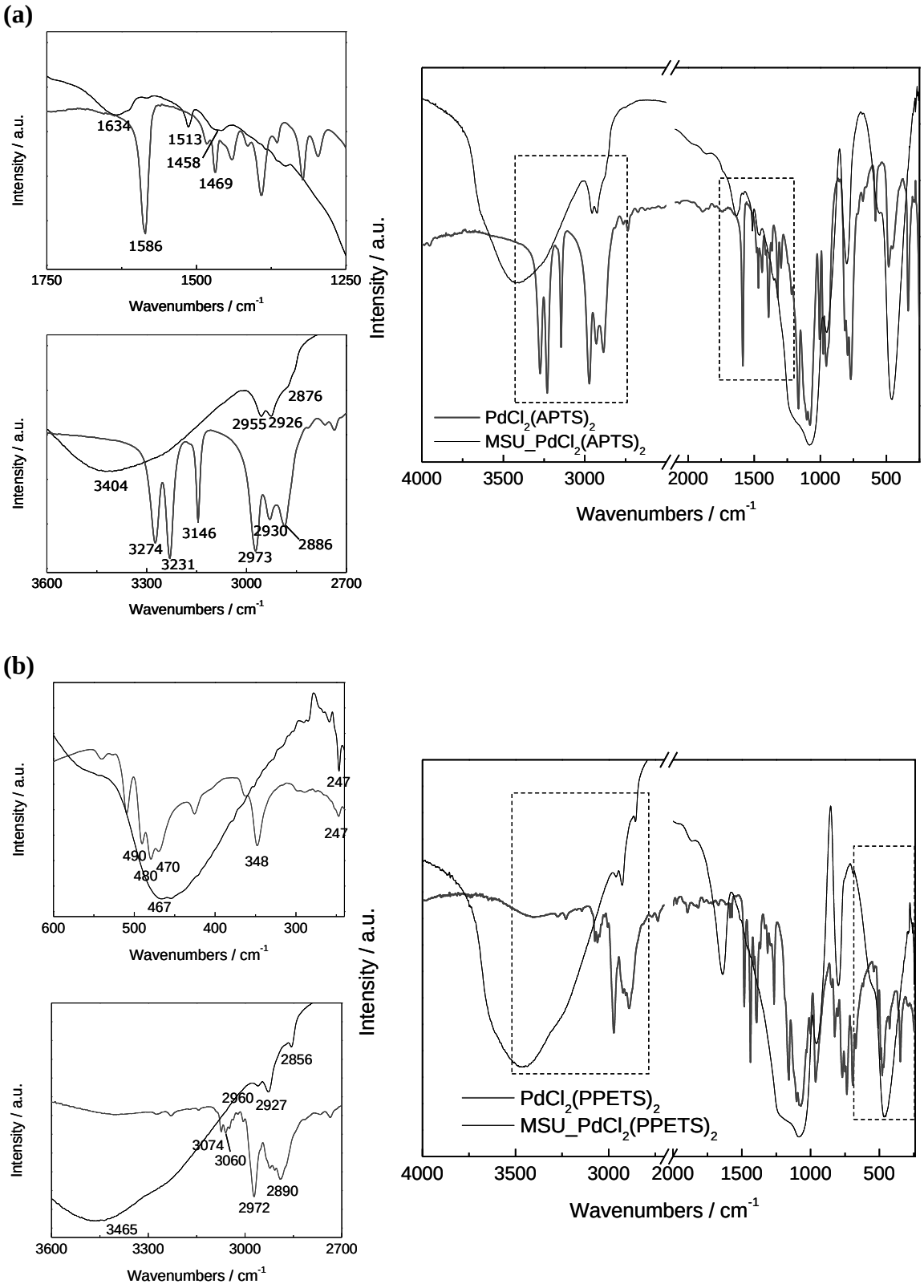


Figure S3. FT-IR spectra of **(a)** the MSU-$PdCl_2(APTS)_2$ silica material (up) and the monomer complex [trans-$PdCl_2(APTS)_2$] **1** (down) and **(b)** the MSU-$PdCl_2(PPETS)_2$ silica material (up) and the monomer complex [trans-$PdCl_2(PPETS)_2$] **3** (down). For clarity, two magnifications or the marked areas in the spectra are shown in the left.

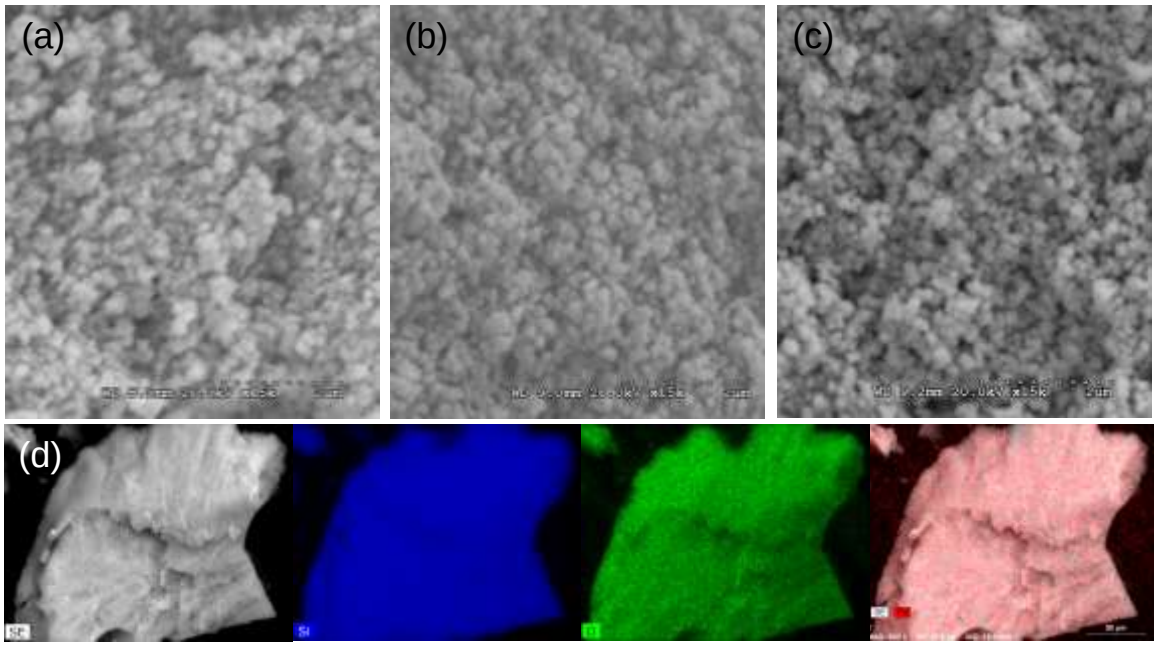


Figure S4. SEM images of the **(a)** MSU_$PdCl_2(APTS)_2$ material prepared from amine ligand and 0.65 wt% loading of Pd, **(b)** MSU_$PdCl_2(PETS)_2$ material prepared from pyridine ligand and 0.75 wt% loading of Pd and **(c)** MSU_$PdCl_2(PPETS)_2$ material prepared from phosphine ligand and 0.70 wt% loading of Pd. **(d)** X-ray elemental mapping images for a representative sample of MSU_$PdCl_2(PETS)_2$ (0.75 wt% Pd:SiO_2), blue, green and red dots represent silicon, oxygen and palladium atoms, respectively.