Supplementary Material (ESI) for Journal of Materials Chemistry

Electronic Supplementary Information

Imidazolium Modified Carbon Nanohorns: Switchable Solubility and Stabilization of Metal Nanoparticles

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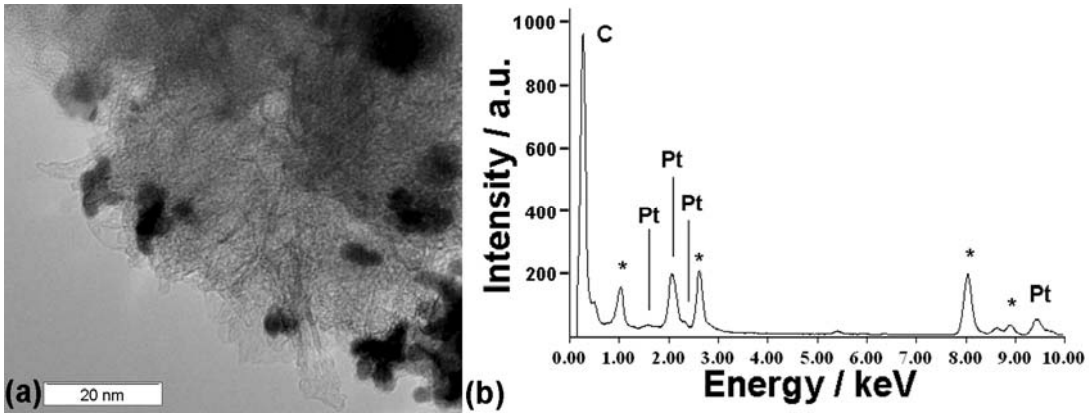

Fig. S1. (a) Representative HR-TEM image and (b) EDX spectra of [Br^-] N-*n*-butyl imidazolium CNHs decorated with Pt nanoparticles (stars denote impurity elements which are detected because of their presence in the microscope equipment, sample holder, and crystal detector).

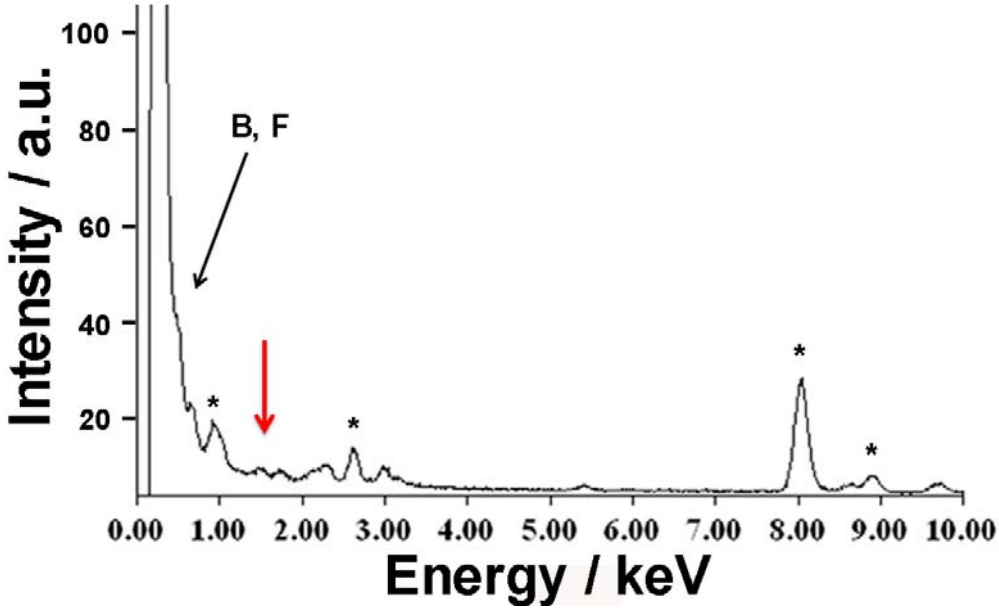

Fig. S2. EDX spectra of [BF_4^-] imidazolium-modified CNHs **3b**. The elements of B and F are masked under the peak for C and O as shown by the black arrow. Red arrow indicates the absence of Br peak (stars denote the elements Cu, Fe, Al, and Si which are detected because of their presence in the microscope equipment, sample holder, and crystal detector).

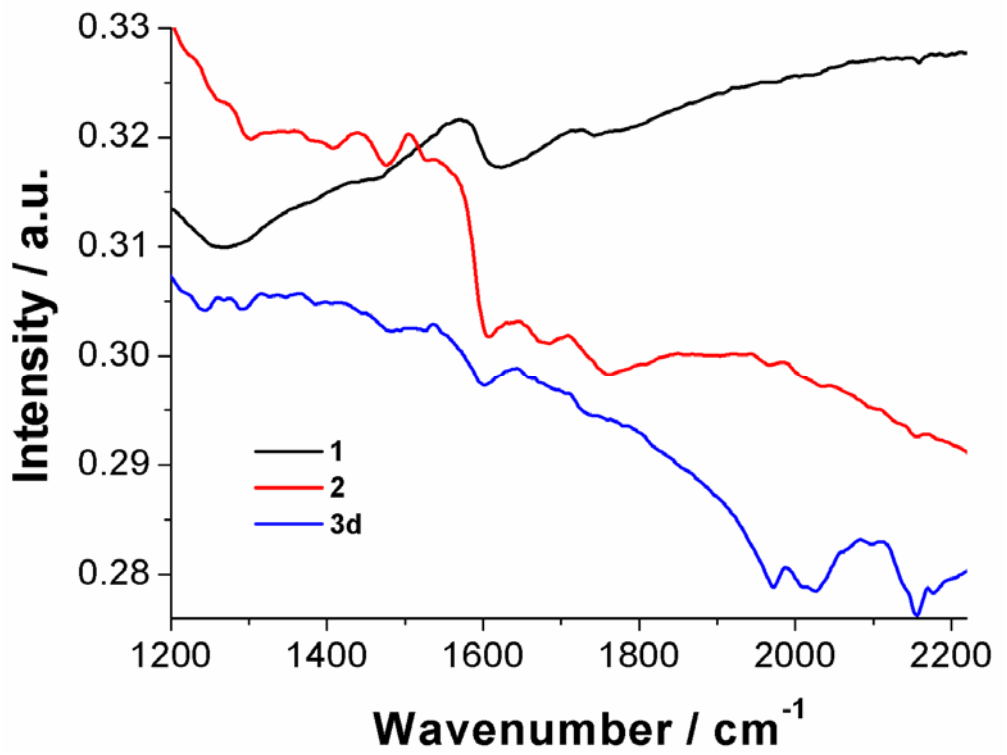

Fig. S3. ATR-IR spectra of oxidized CNHs **1** (black), imidazole-modified CNHs **2** (red) and [PF_6^-] imidazolium-modified CNHs **3d** (blue).

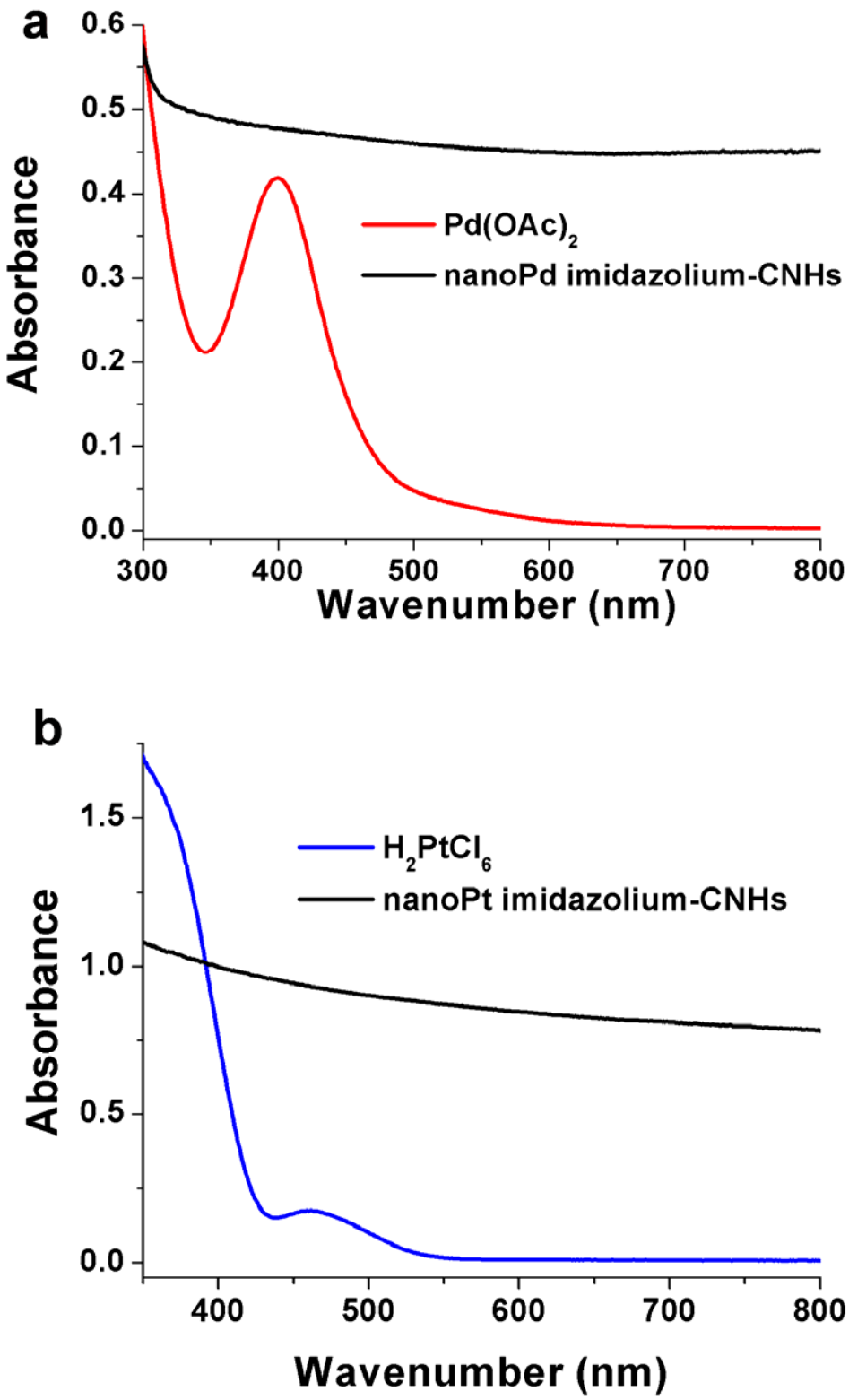

Fig. S4. Absorption spectra a) of [Br^-] imidazolium-modified CNHs decorated with Pd nanoparticles (black) and $Pd(OAc)_2$ (red), and b) [Br^-] imidazolium-modified CNHs decorated with Pt nanoparticles (black) and H_2PtCl_6 (blue), in DMF.