Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

SUPPORTING INFORMATION

Highly Dispersed Platinum Nanoparticles Generated in Viologen Micelles with Highly Catalytic Activity and Stability

Gui-Qi Gao, Ling Lin, Cong-Min Fan, Qing Zhu, Rui-Xia Wang, and An-Wu Xu*

Division of Nanomaterials and Chemistry, Hefei National Laboratory for Physical Sciences at Microscale, Department of Chemistry, University of Science and Technology of China, Hefei 230026, P. R China.

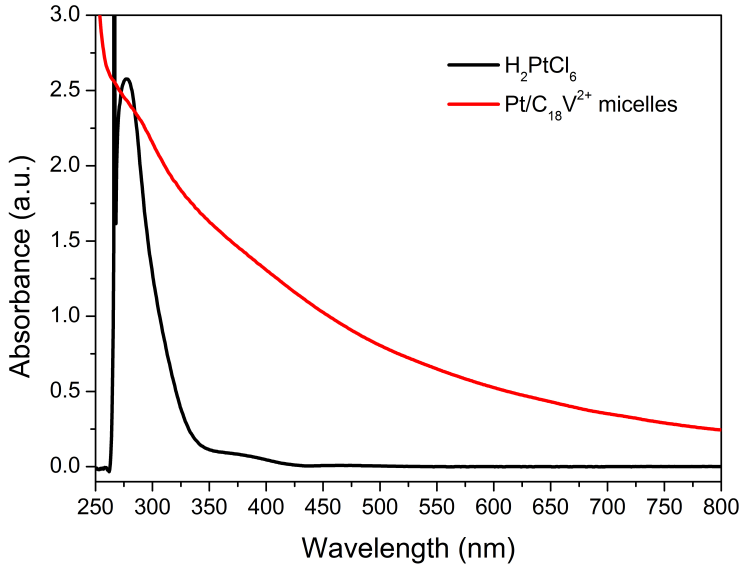

Fig. S1. UV-vis absorption spectra of H_2PtCl_6 and $Pt/C_{18}V^{2+}$ micelle solution.

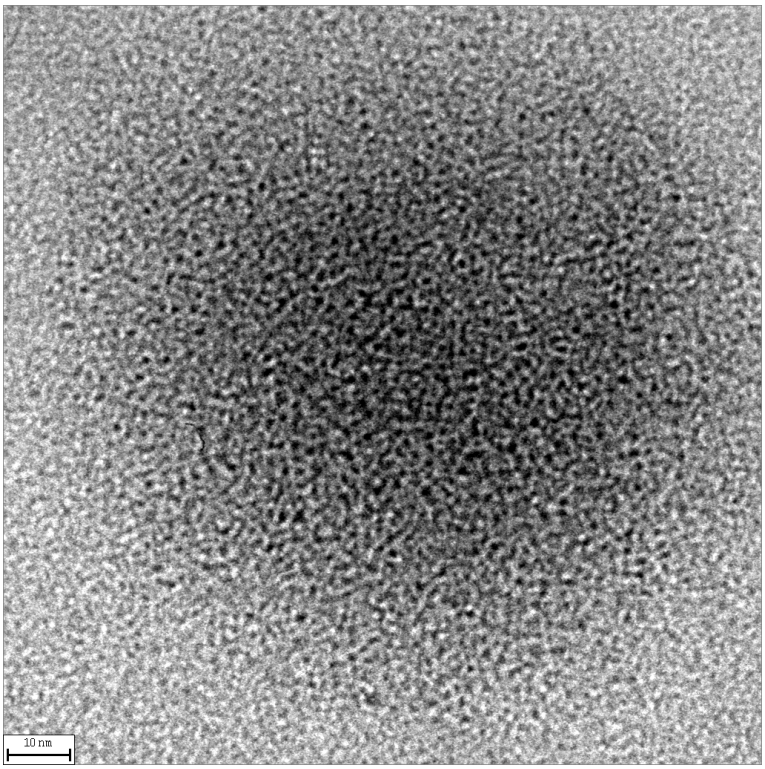

Fig. S2. HRTEM image of the as-synthesized Pt NPs/viologen micellar nanocomposites. The molar ratio of $C_{18}V^{2+}/H_2PtCl_6$ = 0.60, the volume ratio of DMF/H_2O = 20%.

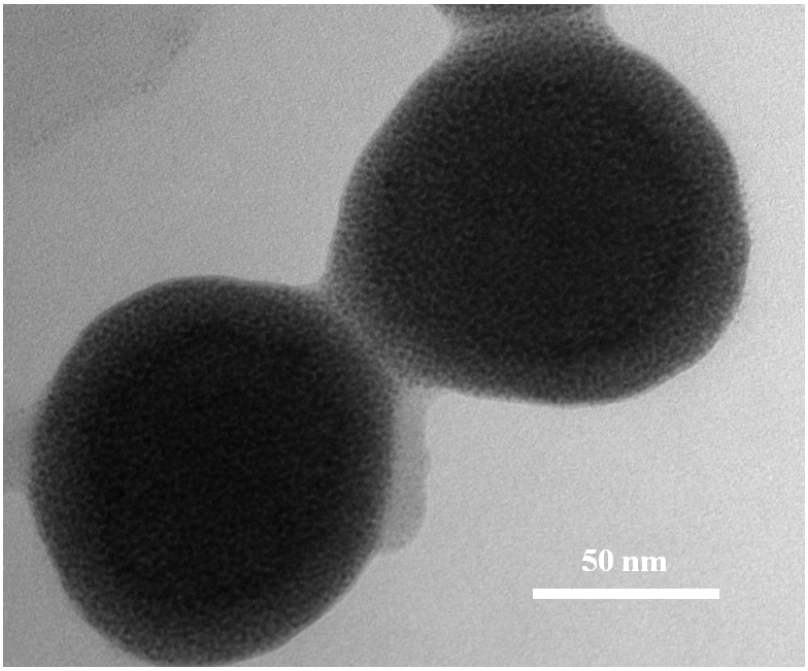

Fig. S3. HRTEM image of the as-synthesized Pt NPs/viologen micellar nanocomposites. The molar ratio of $C_{18}V^{2+}/H_2PtCl_6$ = 0.30, the volume ratio of DMF/H_2O = 50%.

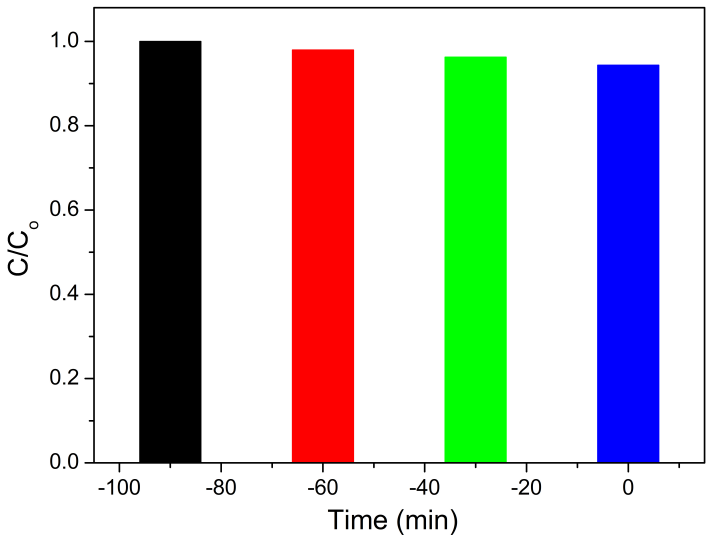

Fig. S4. 4-NP saturation adsorption on Pt/$C_{18}V^{2+}$ micellar catalyst before adding $NaBH_4$.

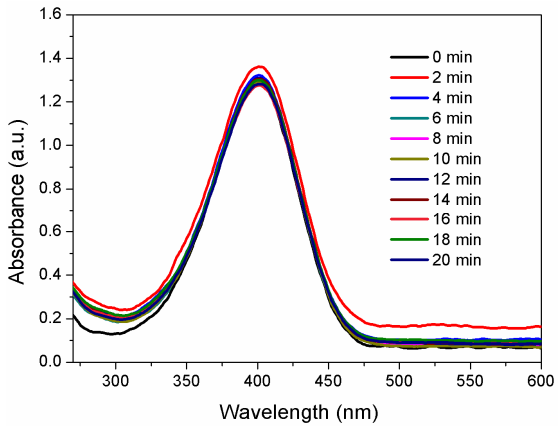

Fig. S5. Time-dependent UV-vis absorbance of 4-NP catalyzed by $C_{18}V^{2+}$ at room temperature. The time difference between two neighbor curves is 2 min.

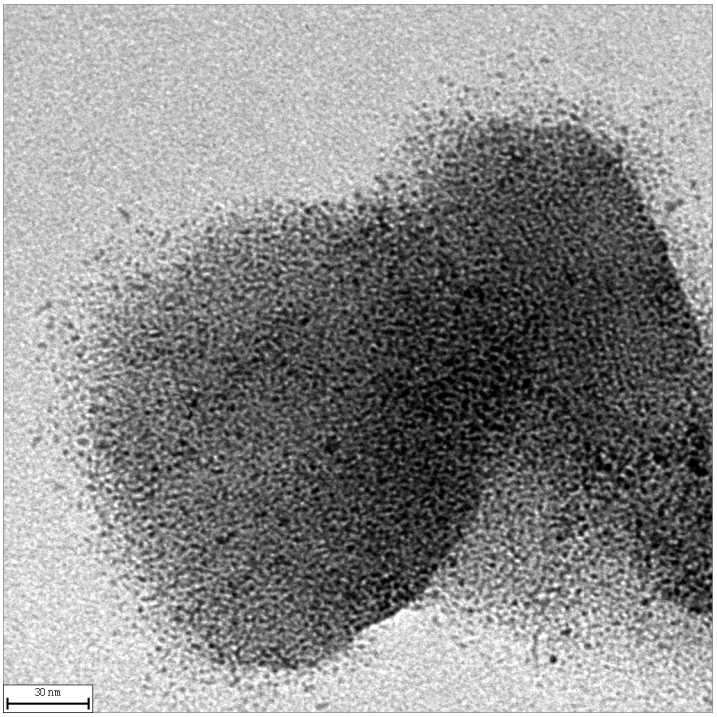

Fig. S6. TEM image of $Pt/C_{18}V^{2+}$ micelles after five cycles of catalytic reaction.

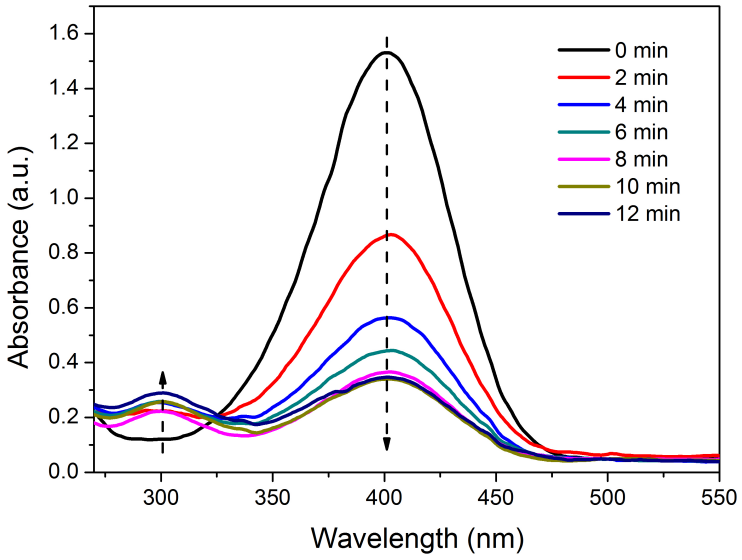

Fig. S7. Time-dependent UV-vis absorbance of 4-NP catalyzed by $Pt/C_{18}V^{2+}$ micelles kept in ethanol for one month.