

## Electronic Supplementary Information (ESI) for CTAB-reduced synthesis of urchin-like Pt–Cu alloy nanostructure and catalysis study towards methanol oxidation reaction

Wenjun Kang,<sup>a</sup> Rui Li,<sup>a</sup> Denghu Wei,<sup>b</sup> Shuling Xu,<sup>a</sup> Shenyong Wei,<sup>a</sup> and Haibo Li<sup>\*a</sup>

<sup>a</sup>Shandong Provincial Key Laboratory of Chemical Energy Storage and Novel Cell Technology, Department of Chemistry, Liaocheng University, Liaocheng 252059, China

<sup>b</sup>School of Materials Science and Engineering, Liaocheng University, Liaocheng 252059, China

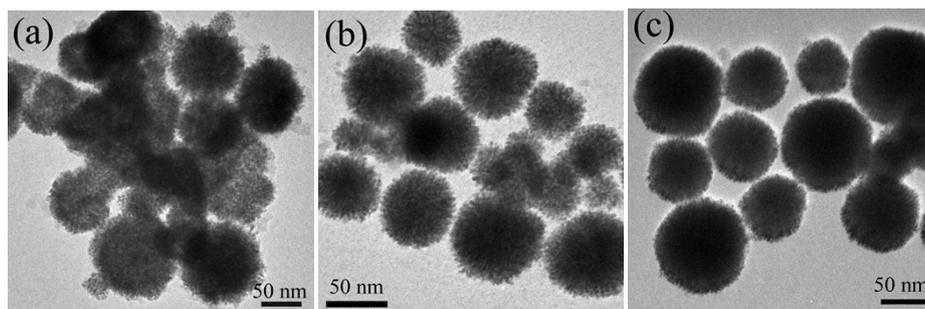


Figure S1. TEM images of PtCu alloy obtained at different quantity of CTAB: (a) 0.01 g, (b) 0.03 g, and (c) 0.07 g.

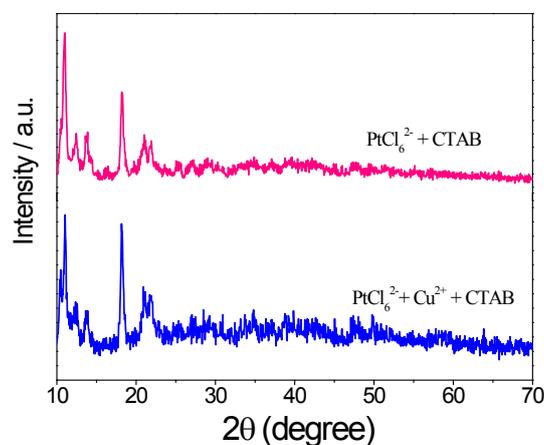


Figure S2. XRD patterns of products obtained from the reaction of  $\text{PtCl}_6^{2-}$  and CTAB

for 30 min in the presence (blue curve) and absence (pink curve) of  $\text{CuSO}_4$ .

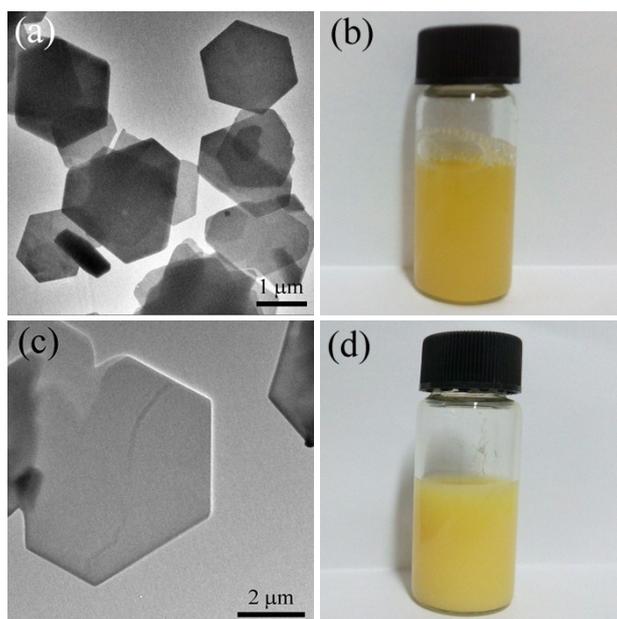


Figure S3.(a,c) TEM images and (b, d) photographs of products obtained from the reaction of  $\text{PtCl}_6^{2-}$  and CTAB for 30 min in the presence (a, b) and absence (c, d) of  $\text{CuSO}_4$ .