Block Copolymer Reduce, Protect and Mediate Oriented Growth into Nano-Submicron Branched Platinum

Supporting Information

Fig. S1  Fourier Transform Infrared Spectrum (FTIR) of pure Pluronic F127 and after reflux.

* College of Environmental & Energy Engineering, Beijing University of Technology, Pingleyuan100, Chaoyang district 100124, Beijing, P.R.China. Tel: 86-010-67396474; Fax: 86-010-67396474; Email: zhanglj1997@bjut.edu.cn
**Fig. S2** Geometric model of Pluronic F127 continue to migrate from low energy point to high region, the steric effect of hydrophobic PPO mediated Pt-NDs oriented growth into 3D nano-submicron B-Pt.

**Fig. S3** UV spectrum of the supernatant reaction solution at different reflux times.
Fig. S4 (A, B) TEM images of the monodisperse Pt nanoparticles synthesized with 1mMolL$^{-1}$ PEG6000. (C, D) TEM images of the spiny Pt nanoclusters synthesized with 0.5mMolL$^{-1}$ P123.
**Fig. S5** TEM images of the Pt nanocrystal synthesized with different concentrations of Pluronic F127 (A, B) 0.08 mMolL$^{-1}$, (C, D) 0.4 mMolL$^{-1}$, (E, F) 2 mMolL$^{-1}$
Fig. S6 N₂ adsorption-desorption isotherm of the Pt black and the nano-submicron B-Pt, respectively.