

Supplementary Information

Template-free synthesis of rectangular mesoporous carbon nanorods and their application as a support for Pt electrocatalyst

Xiangjie Bo, Liande Zhu, Guang Wang, Liping Guo*

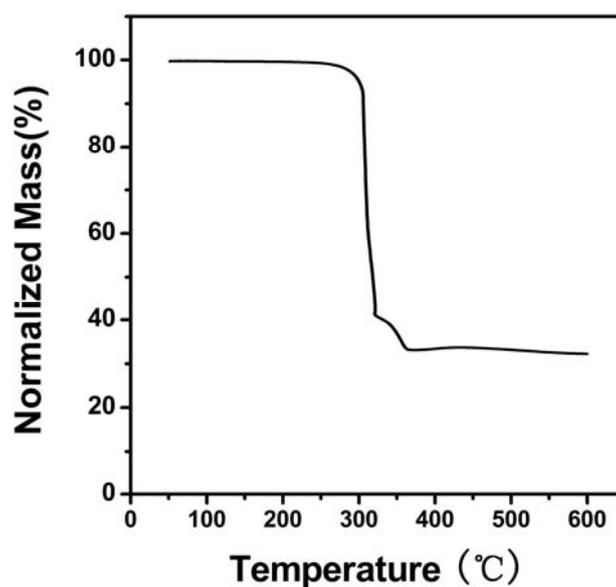


Fig.S1 TGA curve of nickel dimethylglyoximate in N₂ atmosphere.

* Corresponding author. Tel.: +86-0431-85099762; Fax: +86-0431-85099762.
E-mail address: guolp078@nenu.edu.cn (L.-P. Guo).

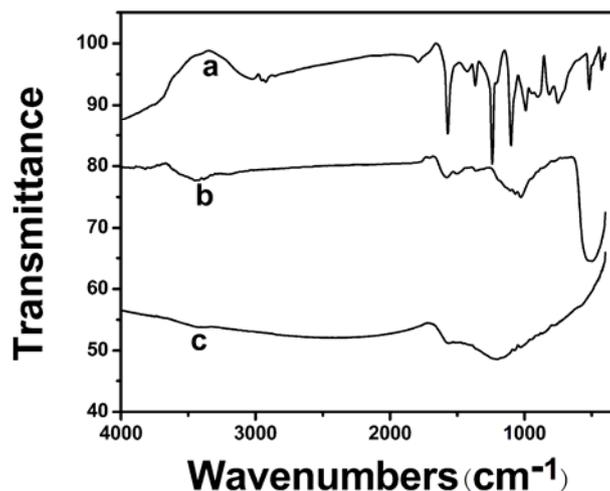


Fig. S2 IR spectra of nickel dimethylglyoximate (a), NiO(Ni)/C (b), and meso-CNRs (c).

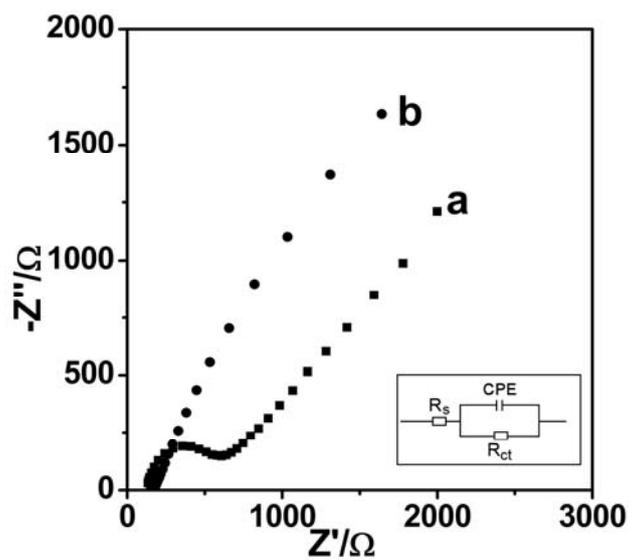


Fig. S3 Electrochemical impedance spectroscopy results of (a) GC and (b) meso-CNRs/Nafion/GC in 0.10 M KCl containing 5 mM Fe(CN)₆^{4-/3-} solutions at +0.25 V from 0.1 Hz to 10.0 KHz. Inset shows the equivalent circuit.

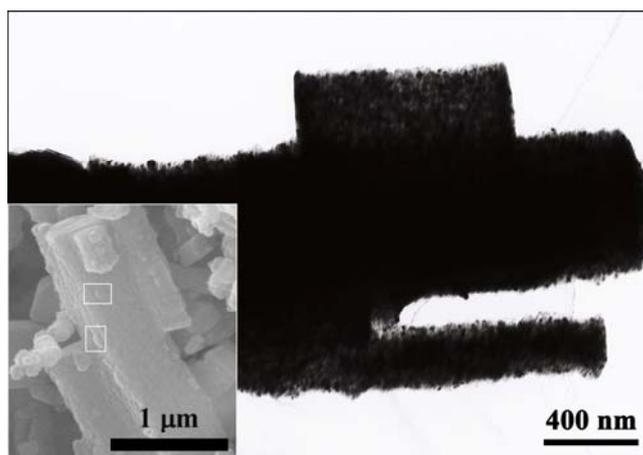


Fig. S4 TEM images of NiO(Ni)/C. Inset: SEM image of NiO(Ni)/C.

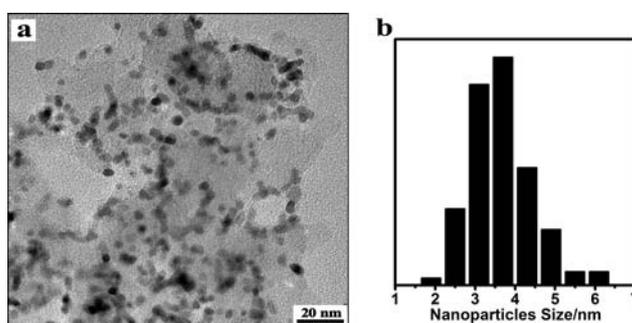


Fig. S5 (a) TEM image of the Pt/Vulcan XC-72. (b) The particle size distribution of the Pt nanoparticles on Vulcan XC-72.

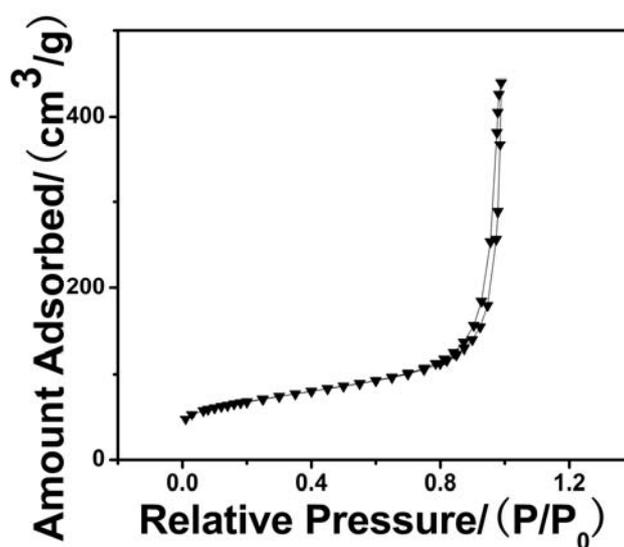


Fig. S6 Nitrogen adsorption-desorption isotherm of the Vulcan XC-72.

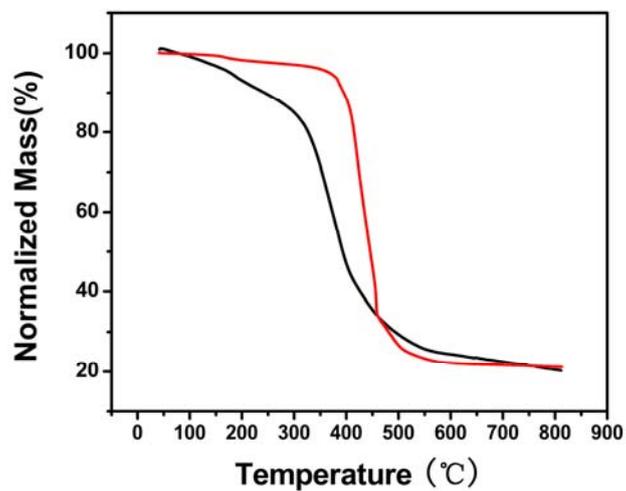


Fig. S7 TGA curves of Pt/meso-CNRs (black line) and Pt/Vulcan XC-72 (red line).

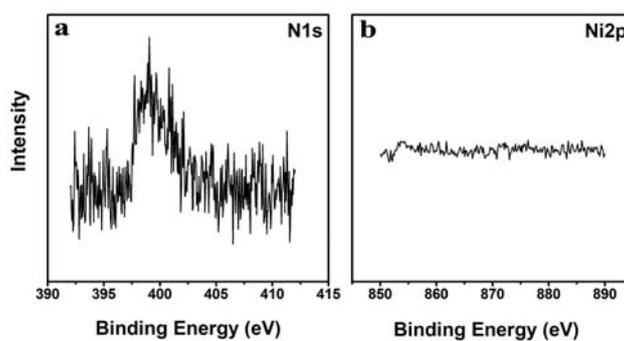


Fig. S8 XPS of (a) N1s and (b) Ni2p of Pt/meso-CNRs nanocomposites.

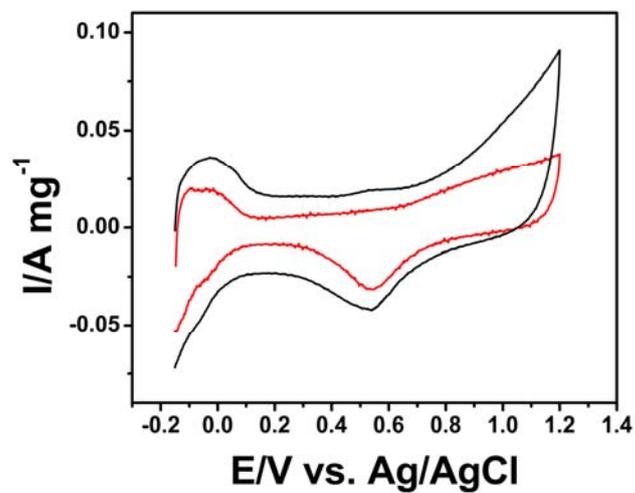


Fig. S9 Cyclic voltammograms of Pt/meso-CNRs (black line) and Pt/Vulcan XC-72 (red line) in nitrogen-saturated 0.5 M H₂SO₄.