

## Supporting Information

Core-shell-structured nanoporous PtCu with high Cu content and enhanced catalytic performance

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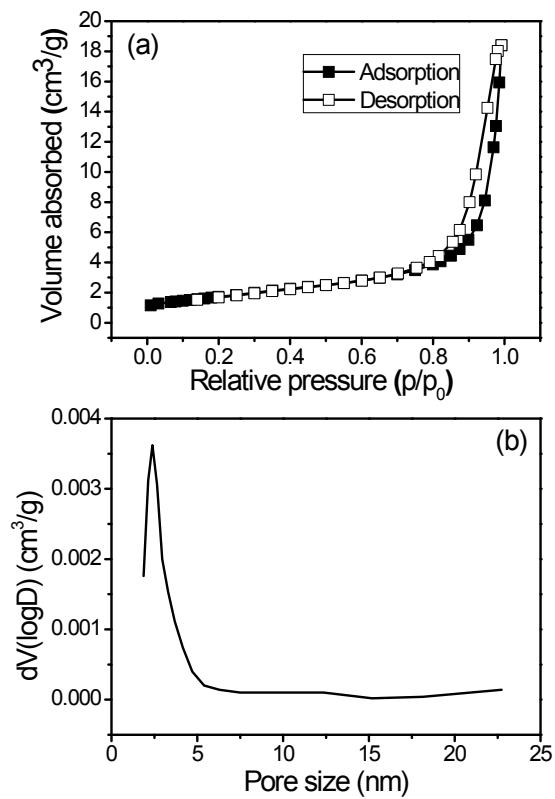


Figure S1. Nitrogen adsorption/desorption curve (a) and pore size distribution (b) of the np-PtCu.

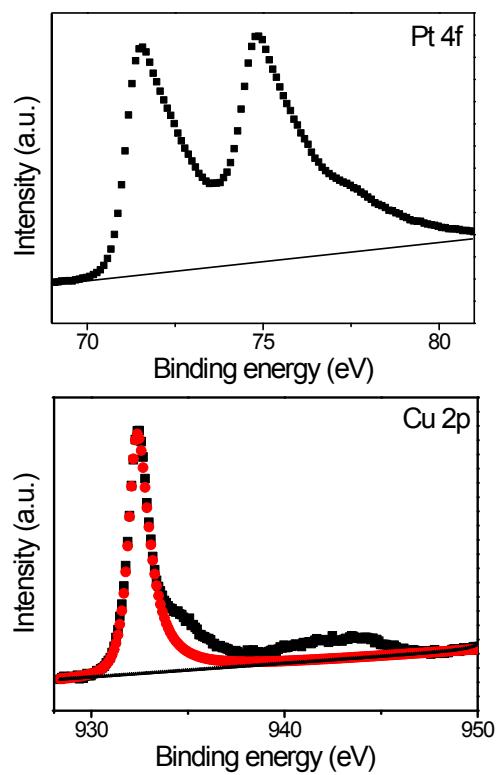


Figure S2. XPS spectra of Pt 4f and Cu 2p of np-PtCu.

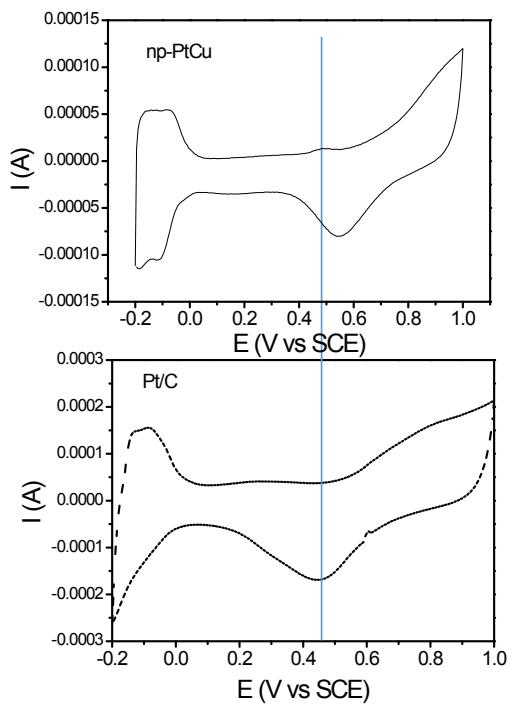


Figure S3. CV curves of the np-PtCu and Pt/C in 0.5 M  $\text{H}_2\text{SO}_4$  solution.

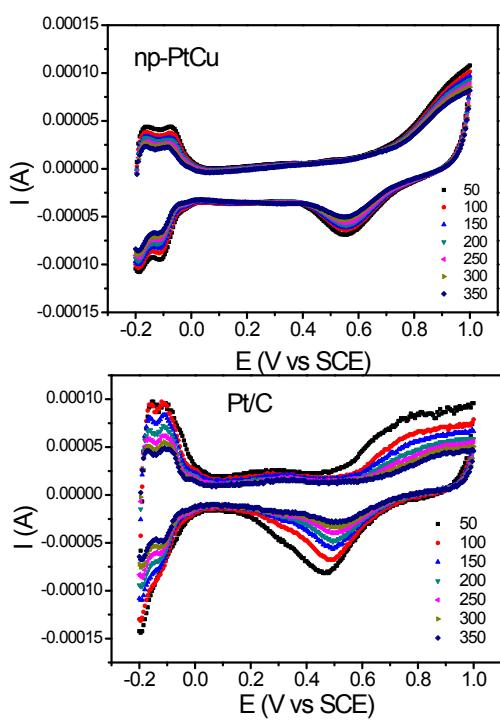


Figure S4. CV curves of the np-PtCu and Pt/C catalysts at different cycles in 0.5 M  $\text{H}_2\text{SO}_4$  solution.

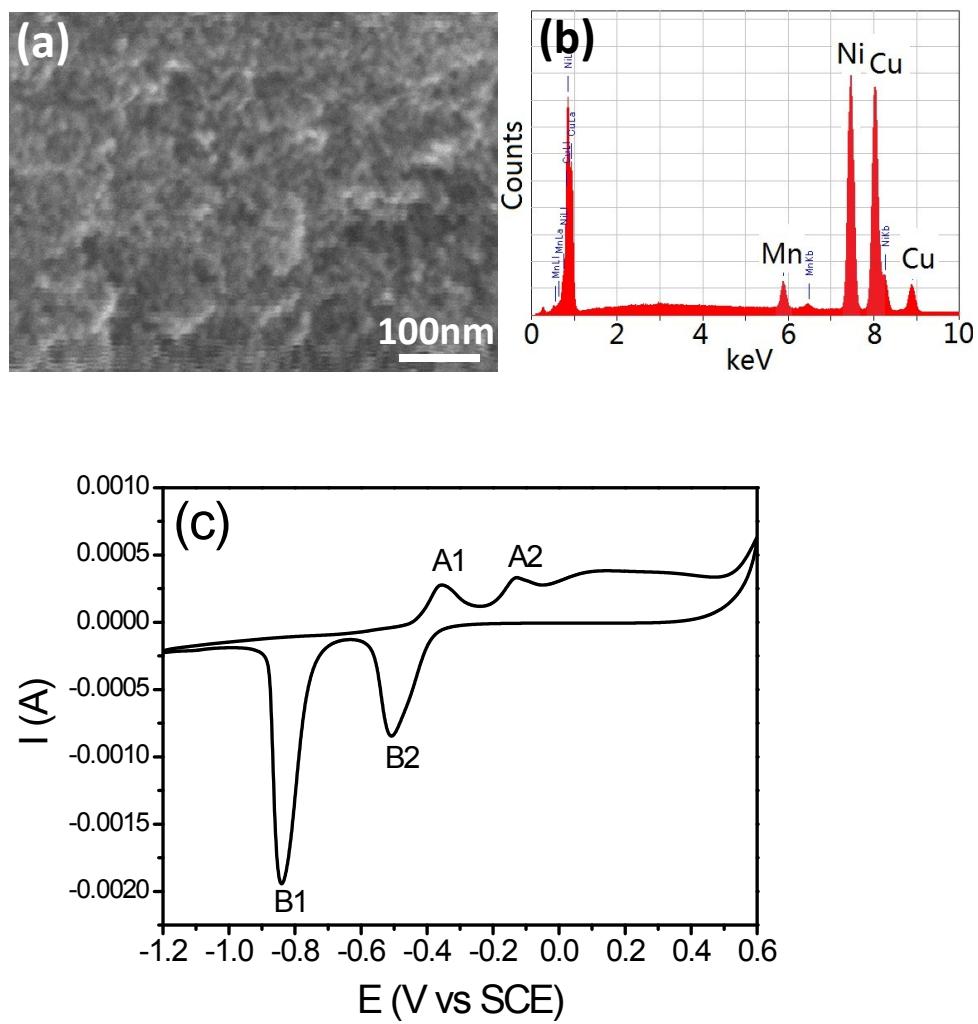


Figure S5. SEM image (a), EDS spectrum (b) and CV curve in 1 M KOH solution (c) of the core-shell-structured nanoporous NiCu alloy.

From the CV curve, all the peaks can be ascribed to Cu electrochemical oxidation (A1 and A2 peaks indicate the oxidation of Cu to Cu(I) and Cu(II), respectively) and Cu reduction (B2 and B1 peaks show the reduction of Cu(II) to Cu(I) and Cu,

respectively).<sup>1</sup> No obvious redox peaks from Ni can be observed, which is usually between 0 and 0.5 V vs SCE.

## Reference

1. H. J.Qiu, L. Lu, L. Y. Xue, X. R. Huang, *Electrochimi. Acta* 2010, 55, 6081-6087.