

## Supporting Information

### Three-dimensional Flower-like NiCo<sub>2</sub>O<sub>4</sub>/CNT for Efficient Catalysis of Oxygen Evolution Reaction

Zhaoling Ma<sup>a</sup>, Hao Fu<sup>a</sup>, Cibing Gu<sup>a</sup>, Youguo Huang<sup>a\*</sup>, Sijiang Hu<sup>b</sup>, Qingyu Li<sup>a</sup>,  
Hongqiang Wang<sup>a,b,\*</sup>

<sup>a</sup> Guangxi Key Laboratory of Low Carbon Energy Materials, School of Chemistry and  
Pharmaceutical Sciences, Guangxi Normal University, Guilin, 541004, China.

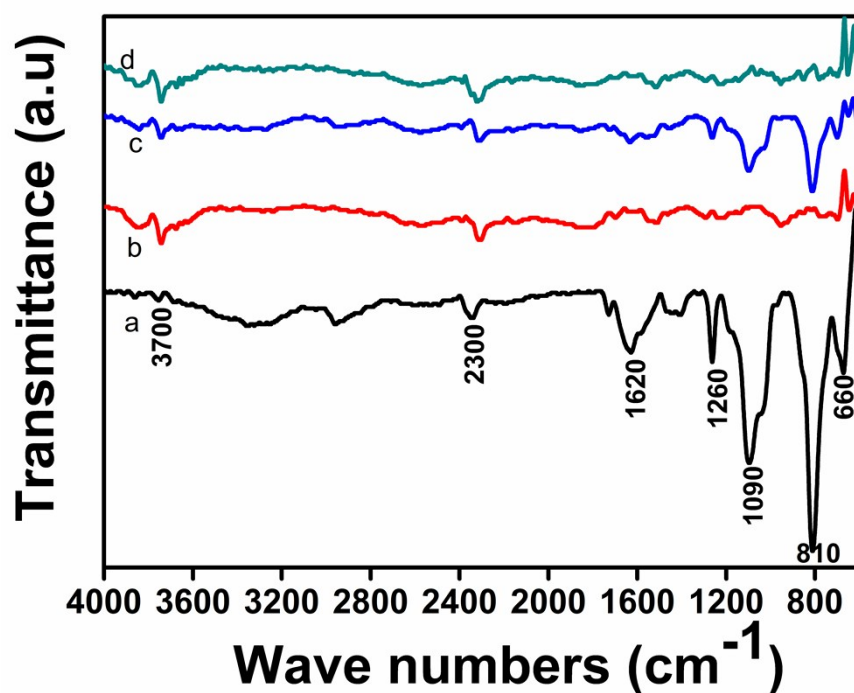
<sup>b</sup> Hubei Key Laboratory for Processing and Application of Catalytic Materials,  
College of Chemical Engineering, Huanggang Normal University, Huanggang,  
438000, China.

Corresponding authors

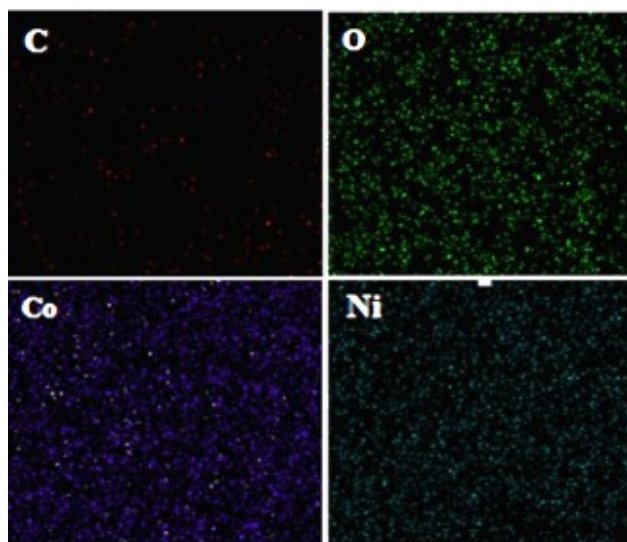
E-mail addresses:

\* Hong-Qiang Wang, whq74@126.com, whq74@mailbox.gxnu.edu.cn

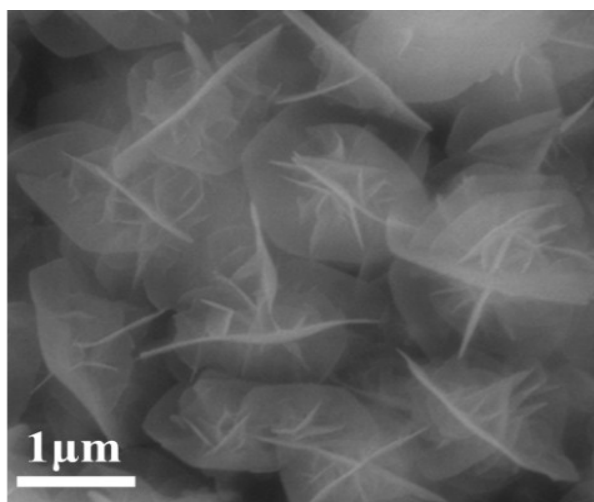
Fax: +86-0773-5858562



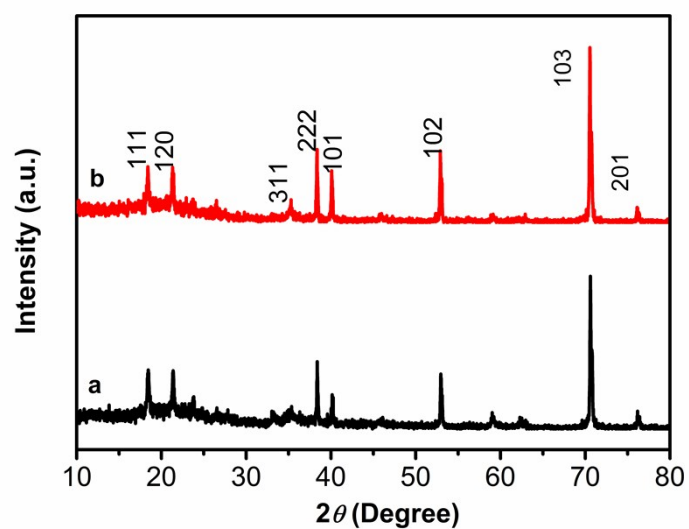
**Figure S1.** FTIR spectra of CNT (a), NiCo<sub>2</sub>O<sub>4</sub>/CNT (b), NiCo<sub>2</sub>O<sub>4</sub>/CNT -150 (c),  
NiCo<sub>2</sub>O<sub>4</sub>/CNT -250 (d).



**Figure S2.** The corresponding elemental mappings of C, O, Co and Ni for the NiCo<sub>2</sub>O<sub>4</sub>/CNT -150.



**Figure S3.** SEM of NiCo<sub>2</sub>O<sub>4</sub>/CNT-150 after all the electrochemical characterization.



**Figure S4.** XRD spectra of NiCo<sub>2</sub>O<sub>4</sub>/CNT-150 (a) before and (b) after all the electrochemical characterization.

**Table S1. Performances Comparison of NiCo<sub>2</sub>O<sub>4</sub>/CNT -150 catalysts.**

Catalyst Material	Electrolyte solution	Onset $\eta$ (mV)	$\eta$ (mV) at 10 mA/cm <sup>2</sup>	$\eta$ (mV) at 100 mA/cm <sup>2</sup>	Tafel slope (mV/dec)	Ref.
NiCo <sub>2</sub> O <sub>4</sub> /CNT -150	0.1 M KOH	300	340	470	129	In this work
Au/NiCo <sub>2</sub> O <sub>4</sub>	1 M KOH	—	360	—	63	[1]
NiCo <sub>2</sub> O <sub>4</sub> NNs	1 M KOH	365	—	—	292	[2]
NiCo <sub>2</sub> O <sub>4</sub> NSs	1 M KOH	415	—	—	393	[2]
NiCo <sub>2</sub> O <sub>4</sub> /CNTs	1 M KOH	500	—	—	68.1	[3]
NiCo <sub>2</sub> O <sub>4</sub> /Graphene	0.1M KOH	550	—	—	164	[4]
NiCo <sub>2</sub> O <sub>4</sub> /C	1 M KOH	—	414	—	69.4	[5]
NiCo <sub>2</sub> O <sub>4</sub> hollow nanospheres	0.1 M KOH	220	—	—	—	[6]
NiCo <sub>2</sub> O <sub>4</sub> /Graphene	1 M KOH	250	313	—	35	[7]

## References

- [1] X. Liu, J. Liu, Y. Li, et al., *Chem. Cat. Chem.*, 2014, **6**, 2501-2506.
- [2] H. Shi, G. Zhao, *J. Mater. Chem. C*, 2014, **118**, 25939-25946.
- [3] H. Cheng, Y. Z. Su, P. Y. Kuang, et al., *J. Mater. Chem. A*, 2015, **3**, 19314-19321.
- [4] D. U. Lee, B. J. Kim, Z. Chen, *J. Mater. Chem. A*, 2013, **1**, 4754-4762.
- [5] Z. Zheng, W. Gen, Y. Wang, Y. Huang, T. Qi, *Int. J. Hydr. Energy*, 2017, **42**, 119-124.
- [6] Wang J, Fu Y, Xu Y, et al., *Int. J. Hydr. Energy*, 2016, **41**, 8847-8854.
- [7] Aneeya K. Samantara, Swagatika Kamil, Arnab Ghosh, *Electrochim. Acta*, 2018, **263**, 147-157.