

## Electronic Supplementary Information:

### ***In-situ* growth of spinel CoFe<sub>2</sub>O<sub>4</sub> nanoparticles on rod-like ordered mesoporous carbon for bifunctional electrocatalysis of both oxygen reduction and oxygen evolution**

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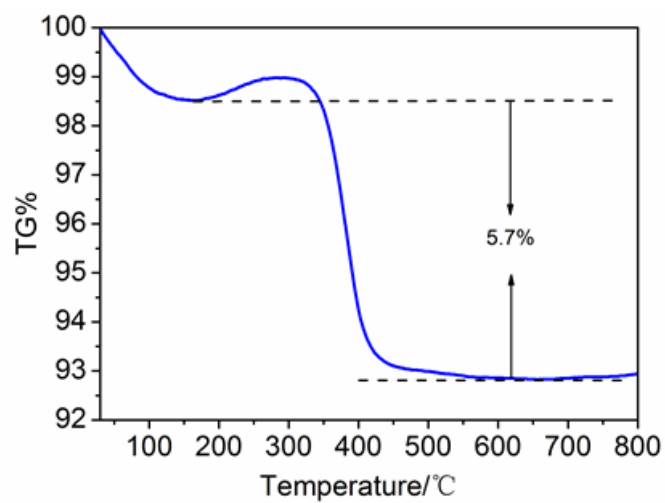
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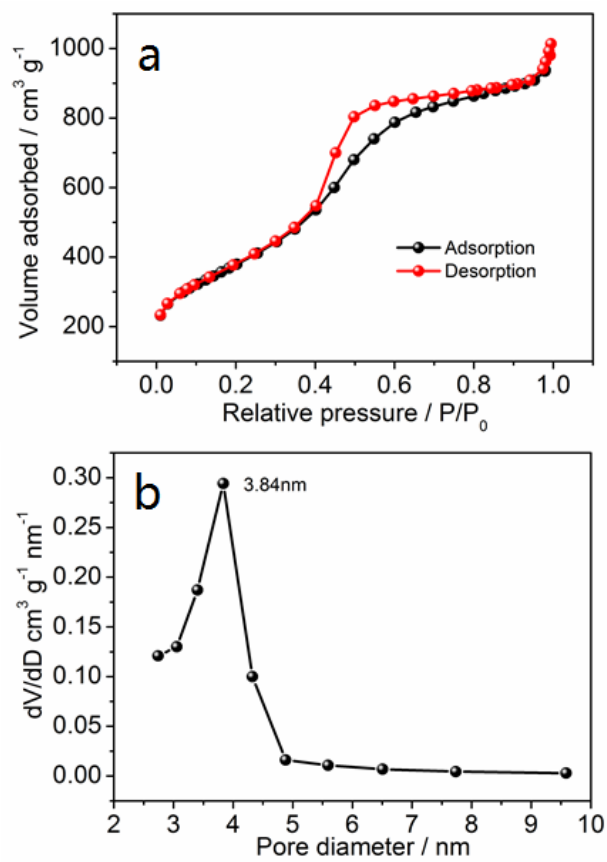
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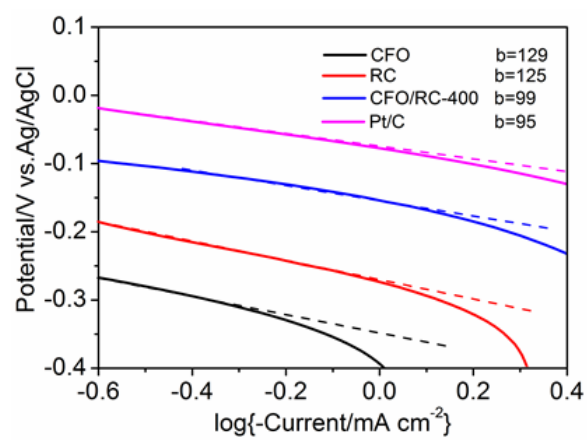
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**Fig. S1** TG curve of CFO/RC-400 nanohybrid in an air flow from 30 to 800°C.



**Fig. S2**  $\text{N}_2$  adsorption-desorption isotherm loop (a) and pore size distribution (b) for pure RC.



**Fig. S3** The corresponding Tafel plots of CFO, RC, CFO/RC-400 nanohybrid and commercial Pt/C calculated from the LSV curves measured in O<sub>2</sub>-saturated 0.1M KOH at a rotating speed of 1600 rpm.

**Table S1.** Comparison of bifunctional electrocatalytic activities of CFO/RC-400 nanohybrid with other non-precious catalysts.

catalysts	ORR		OER		Ref.
	onset potential (V)	limit current density at -0.9V (mA cm <sup>-2</sup> )	onset potential (V)	limit current density at 0.8V (mA cm <sup>-2</sup> )	
CoFe <sub>2</sub> O <sub>4</sub> /RC-400	-0.10	4.86	0.41	25.1	this work
NiCo <sub>2</sub> O <sub>4</sub> /graphene	-0.11	4.25	0.55	19.8	1
CoFe <sub>2</sub> O <sub>4</sub> /graphene	-0.14	6.15	0.54	13.6	2
CoFe <sub>2</sub> O <sub>4</sub> /biocarbon	-0.14	6.11	0.48	17.7	3

### References

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3. S. Liu, W. Bian, Z. Yang, J. Tian, C. Jin, M. Shen, Z. Zhou and R. Yang, *J. Mater. Chem. A*, 2014, **2**, 18012.