

## Supporting information

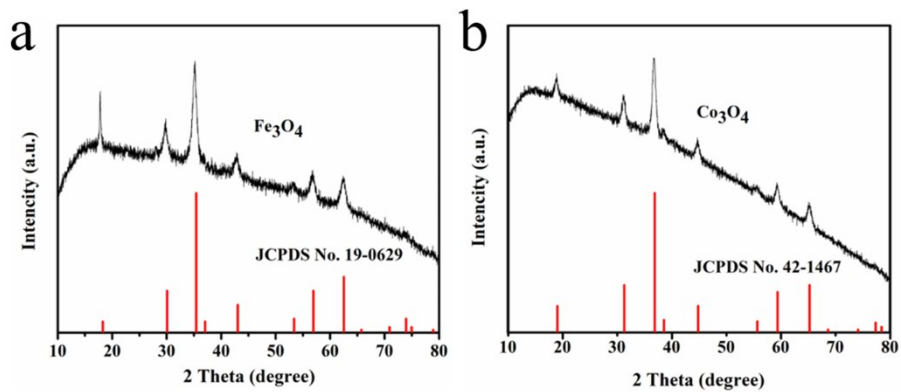
### High-performance bimetallic cobalt iron oxide catalyst for oxygen evolution reaction

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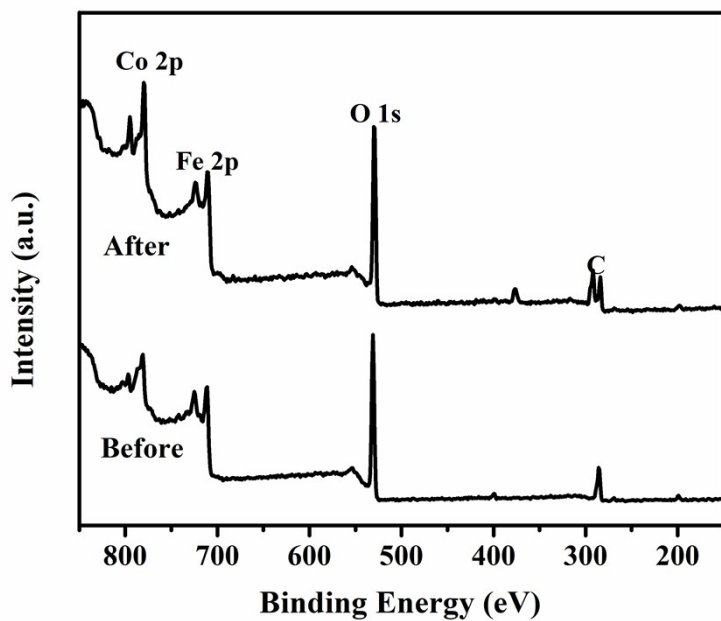
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College of Environmental Science and Engineering, Nankai University, Tianjin,  
300350, China.

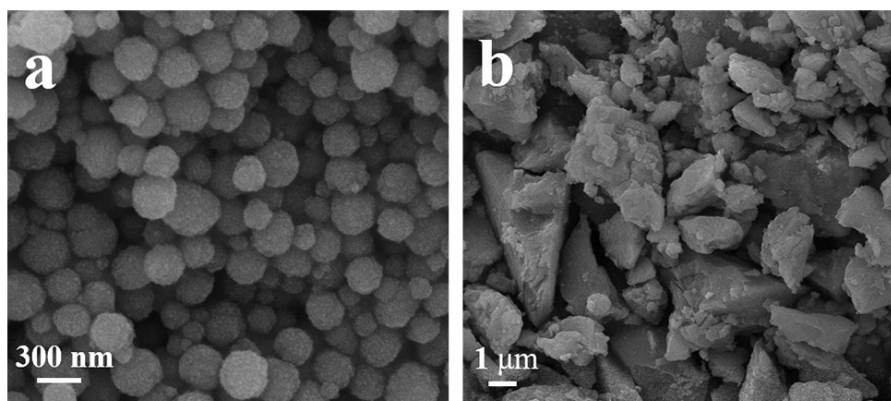
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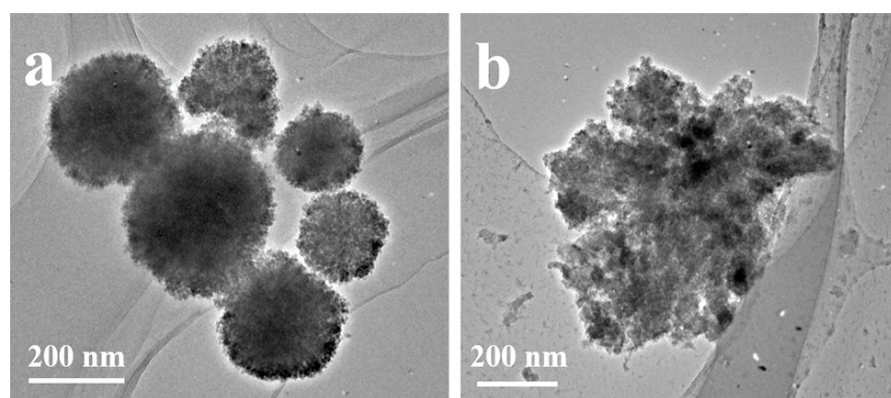
**Fig. S1.** XRD patterns of the responding  $\text{Fe}_3\text{O}_4$  and  $\text{Co}_3\text{O}_4$ .



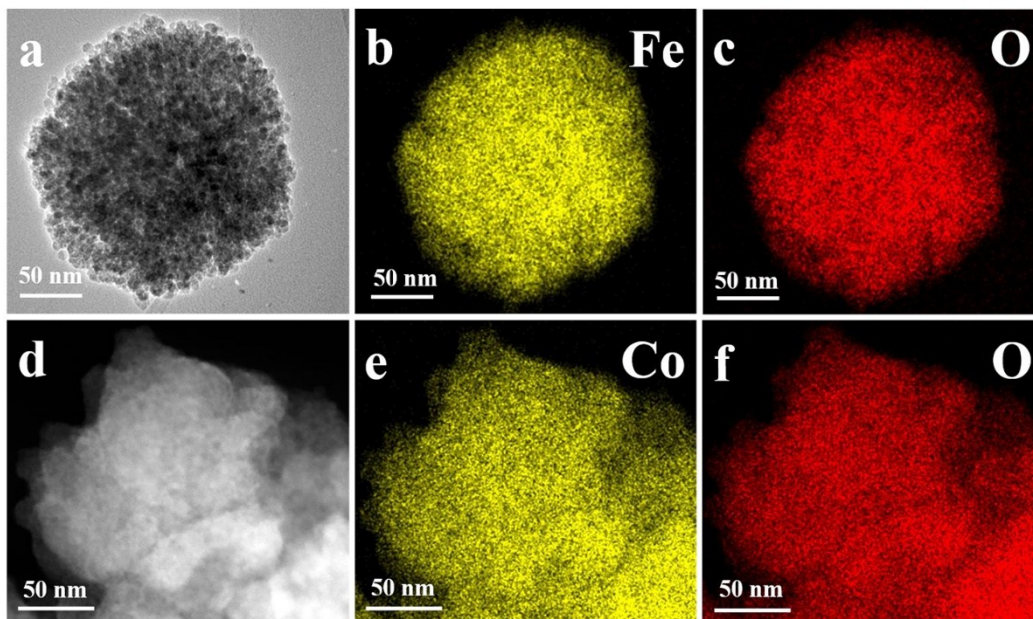
**Fig. S2.** XPS survey spectra of  $\text{CoFe}_2\text{O}_4$  before and after stability test.



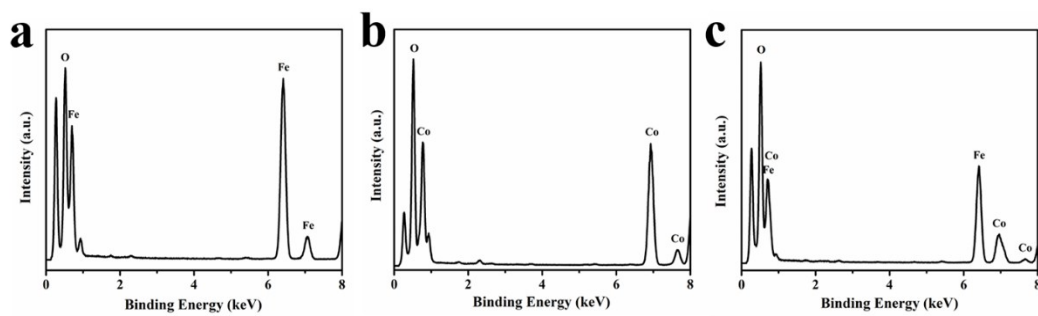
**Fig. S3.** SEM images of the as-prepared  $\text{Fe}_3\text{O}_4$  and  $\text{Co}_3\text{O}_4$ .



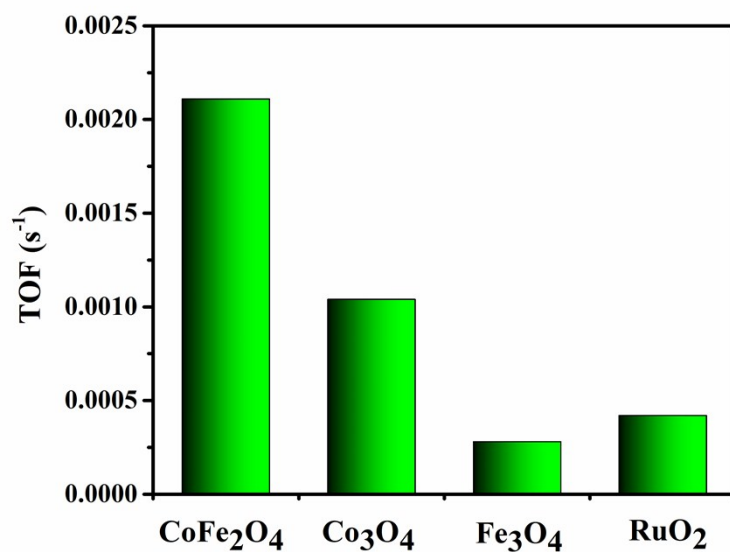
**Fig. S4.** TEM images of the as-prepared  $\text{Fe}_3\text{O}_4$  and  $\text{Co}_3\text{O}_4$ .



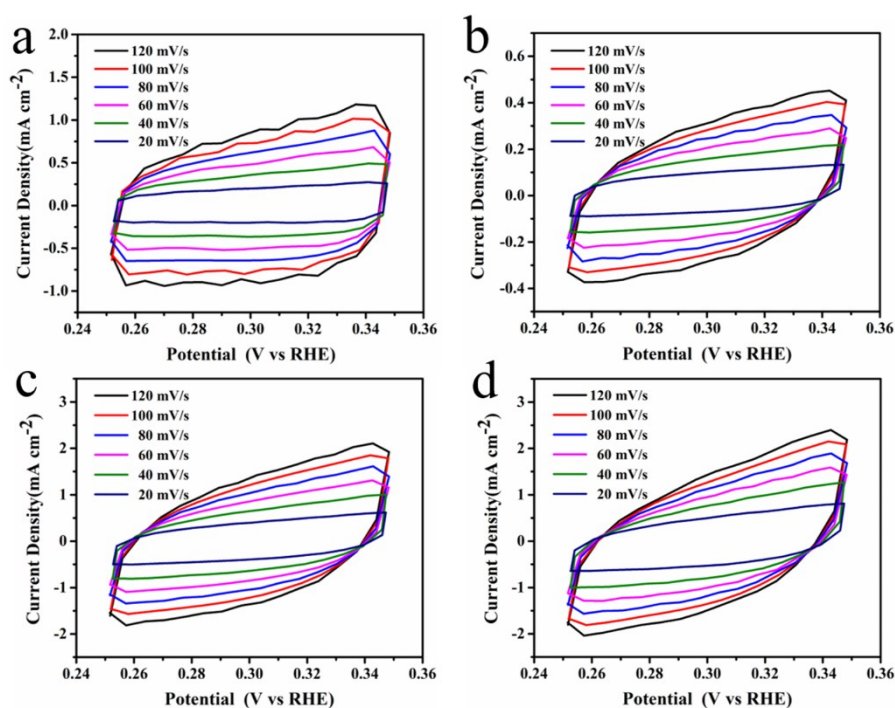
**Fig. S5.** The elemental mappings of the as-prepared  $\text{Fe}_3\text{O}_4$  and  $\text{Co}_3\text{O}_4$ .



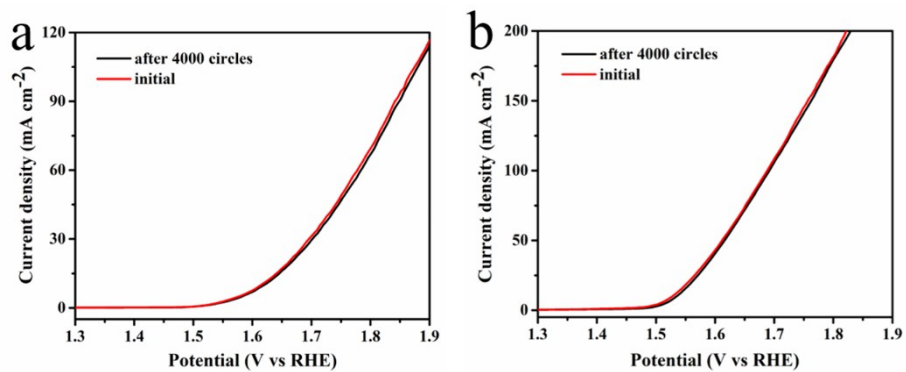
**Fig. S6.** EDX patterns of the as-prepared  $\text{Fe}_3\text{O}_4$ ,  $\text{Co}_3\text{O}_4$  and  $\text{CoFe}_2\text{O}_4$ .



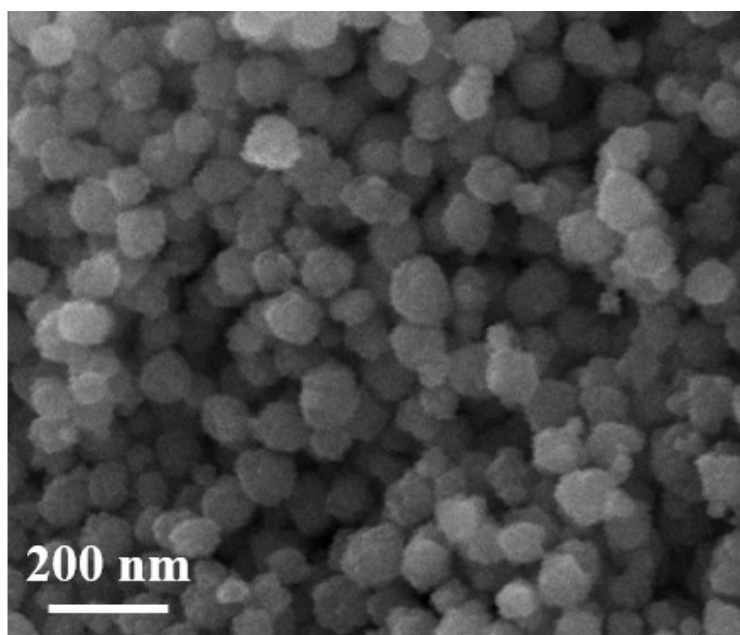
**Fig. S7.** The TOF values of CoFe<sub>2</sub>O<sub>4</sub>, Co<sub>3</sub>O<sub>4</sub>, Fe<sub>3</sub>O<sub>4</sub>, and RuO<sub>2</sub> at the overpotential of 275 mV.



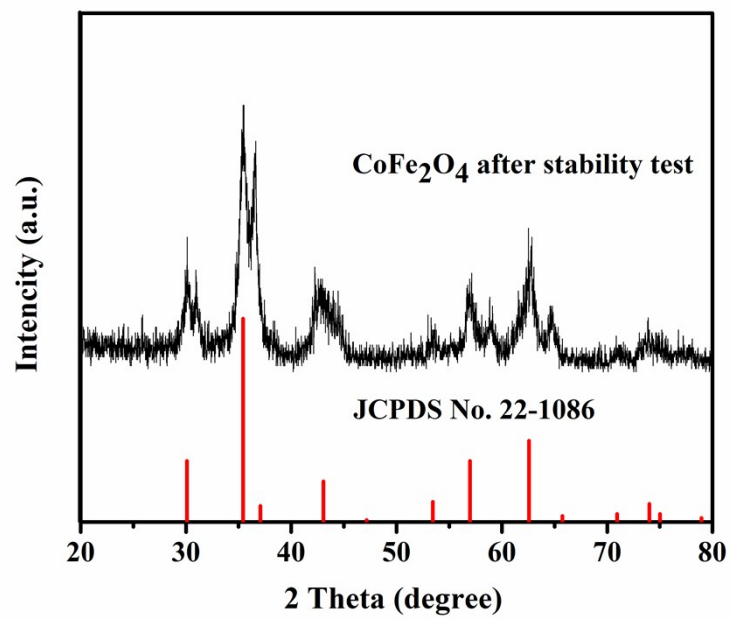
**Fig. S8.** Cyclic voltammety curves with the slew rates of 120, 100, 80, 60, 40 and 20 mV/s of CoFe<sub>2</sub>O<sub>4</sub>, Co<sub>3</sub>O<sub>4</sub>, Fe<sub>3</sub>O<sub>4</sub> and RuO<sub>2</sub>.



**Fig. S9.** Polarization curves of (a) Fe<sub>3</sub>O<sub>4</sub> and (b) Co<sub>3</sub>O<sub>4</sub> after 4000 circles stability in 1 M KOH.



**Fig. S10.** SEM image of CoFe<sub>2</sub>O<sub>4</sub> after stability test.



**Fig. S11.** XRD pattern of CoFe<sub>2</sub>O<sub>4</sub> after stability measurement.