

## Supporting Information

### **Cross-linked network polypyrrole coating cobalt doped Fe<sub>2</sub>O<sub>3</sub>@carbon cloth flexible anode material for quasi-solid asymmetric supercapacitors**

Zhiwei Li <sup>1</sup>, Minglong Li <sup>1</sup>, Xiaodong Wang <sup>2</sup>, Ning Fu <sup>\*,3</sup>, Zhenglong Yang <sup>\*,1</sup>

*<sup>1</sup>Key Laboratory of Advanced Civil Engineering Materials of Ministry of Education,  
School of Materials Science and Engineering, Tongji University, Shanghai 200092, P.  
R. China;*

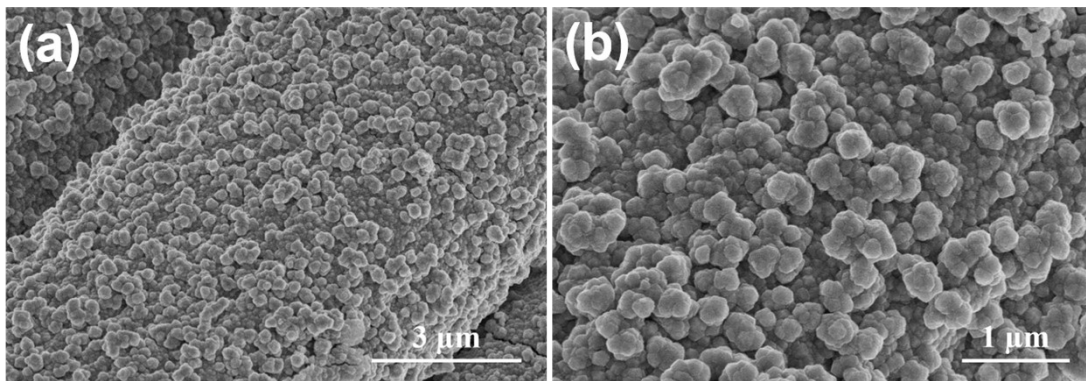
E-mail: yangzhenglong@tongji.edu.cn

*<sup>2</sup>Shanghai Key Laboratory of Special Artificial Microstructure Materials and  
Technology & School of Physics Science and Engineering, Tongji University,  
Shanghai 200092, P. R. China;*

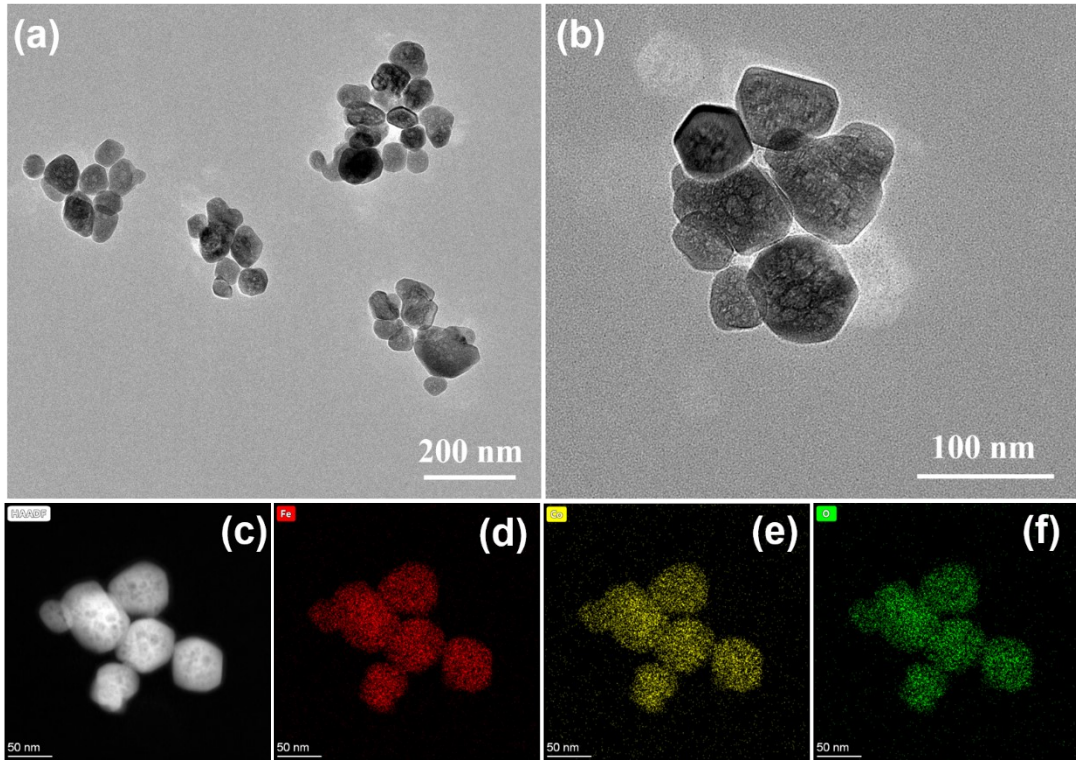
<sup>3</sup>School of Chemical and Environmental Engineering, Anyang Institute of Technology  
Anyang 455000, P. R. China.

E-mail: funing@ayit.edu.cn

*\* Corresponding authors.*



**Figure S1.** (a, b) SEM image of Co-Fe<sub>2</sub>O<sub>3</sub>@CC.



**Figure S2.** (a, b) TEM image, (c-f) EDS mapping of Co-Fe<sub>2</sub>O<sub>3</sub>@CC.

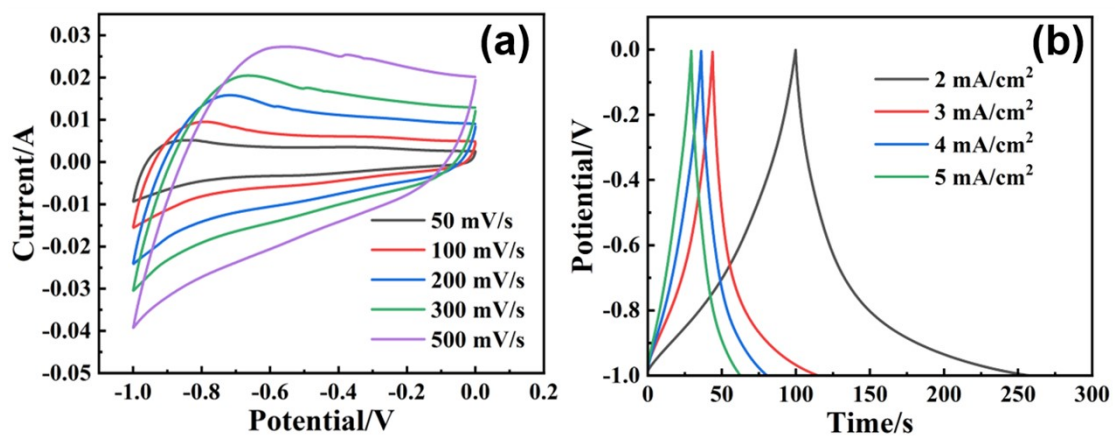
To further illustrate the structural changes of Co doping, we adopted MDI Jade cell refinement to analysis the XRD results. **Table S1** and **Table S2** displayed the change in cell parameters.

**Table S1.** Indexing of Fe<sub>2</sub>O<sub>3</sub> with hexagonal structure (R-3c(167): a=b=5.020Å, c=13.847Å, ρ=5.2647 g/cm<sup>3</sup>). (h k l): Possible reflection of a given unit cell; 2Theta(cal): Calculated angular; 2Theta(obs): Observed angular; Delta: 2Theta(cal)-2Theta(obs); d(cal): Calculated d-spacing; d(obs): Observed d-spacing; I%: relative percentage. (The table only lists some representative parameters)

(h k l)	2Theta(cal)	2Theta(obs)	Delta	d(cal)	d(obs)	Del-d	I%
(1 0 4)	33.051	33.212	-0.161	2.7080	2.6953	0.0128	100
(1 1 0)	35.743	35.717	0.026	2.5100	2.5118	-0.0018	62.3
(1 1 3)	40.892	40.928	-0.036	2.2050	2.2032	0.0018	21.9
(0 2 4)	49.471	49.516	-0.045	1.8409	1.8393	0.0016	35.1
(1 1 6)	53.926	54.082	-0.156	1.6988	1.6943	0.0045	54.8
(0 1 8)	57.242	57.521	-0.279	1.6081	1.6009	0.0071	7.7
(2 1 4)	62.518	62.484	0.033	1.4844	1.4851	-0.0007	29.2
(3 0 0)	64.219	64.038	0.181	1.4492	1.4528	-0.0036	23.8

**Table S2.** Indexing of Co-Fe<sub>2</sub>O<sub>3</sub> with hexagonal structure (R-3c(167): a=b=5.028Å, c=13.746Å, ρ=5.2855 g/cm<sup>3</sup>). (h k l): Possible reflection of a given unit cell; 2Theta(cal): Calculated angular; 2Theta(obs): Observed angular; Delta: 2Theta(cal)-2Theta(obs); d(cal): Calculated d-spacing; d(obs): Observed d-spacing; I%: relative percentage. (The table only lists some representative parameters)

(h k l)	2Theta(cal)	2Theta(obs)	Delta	d(cal)	d(obs)	Del-d	I%
(1 0 4)	33.181	33.213	-0.032	2.6977	2.6952	0.0025	100
(1 1 0)	35.682	35.724	-0.041	2.5142	2.5113	0.0028	66.4
(1 1 3)	40.909	40.933	-0.024	2.2042	2.2029	0.0013	22.5
(0 2 4)	49.518	49.511	0.007	1.8393	1.8395	-0.0002	38.9
(1 1 6)	54.113	54.096	0.017	1.6934	1.6939	-0.0005	55.4
(0 1 8)	57.621	57.571	0.050	1.5984	1.5996	-0.0013	8.6
(2 1 4)	62.517	62.500	0.017	1.4844	1.4848	-0.0004	28.2
(3 0 0)	64.100	64.061	0.040	1.4515	1.4524	-0.0008	24



**Figure S3.** (a) Constant current charge and discharge curves of Co-Fe<sub>2</sub>O<sub>3</sub>@CC at different current densities, (b) Cyclic voltammetry curves of Co-Fe<sub>2</sub>O<sub>3</sub>@CC at different scanning speeds.