

Supplementary information

Thin Carbon Layer Enveloped Cobalt-Iron Oxide Nanocages as High-Efficiency Sulfur Container for Li-S Batteries

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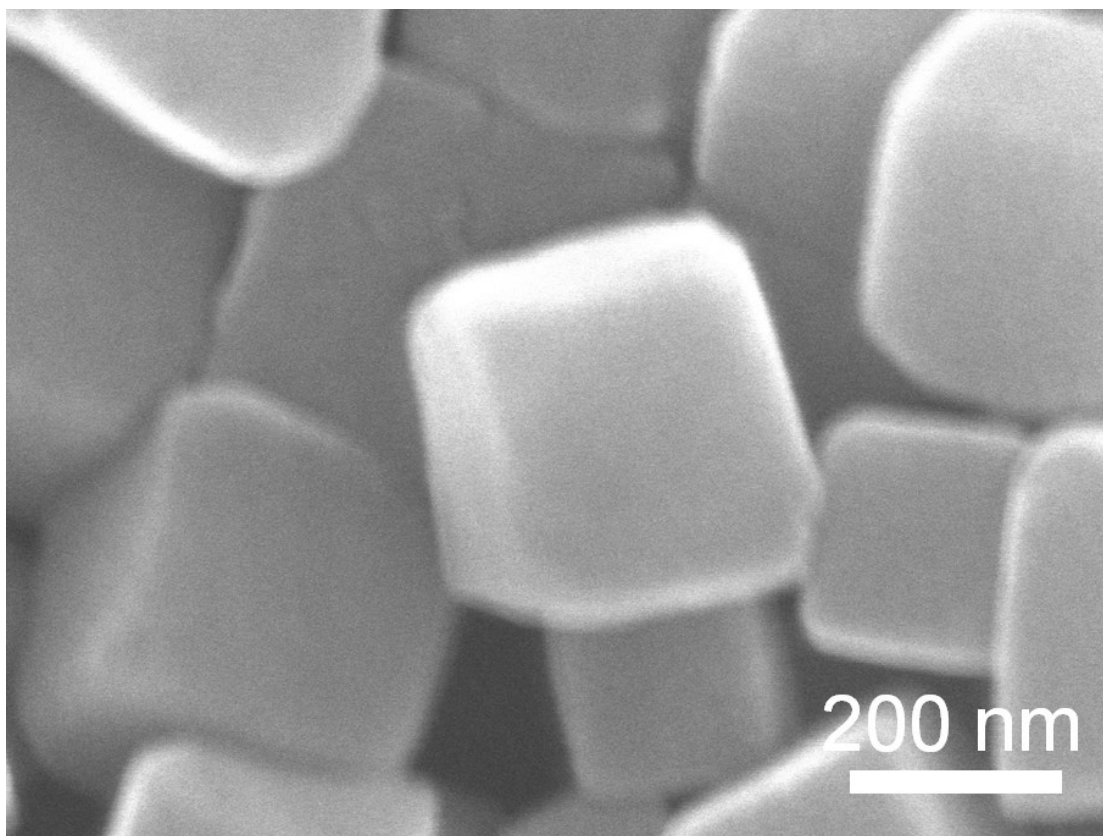


Fig. S1 High magnification SEM image of the Co-Fe PBA precursor.

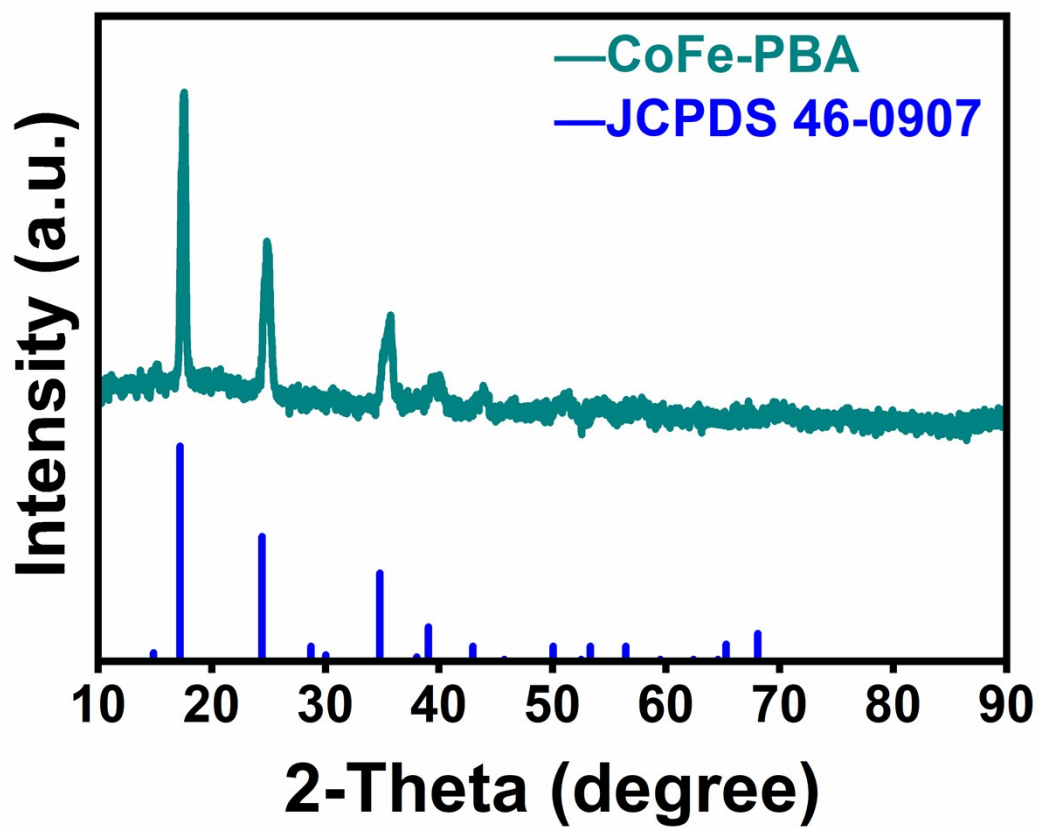


Fig. S2 XRD pattern of Co-Fe PBA precursor.

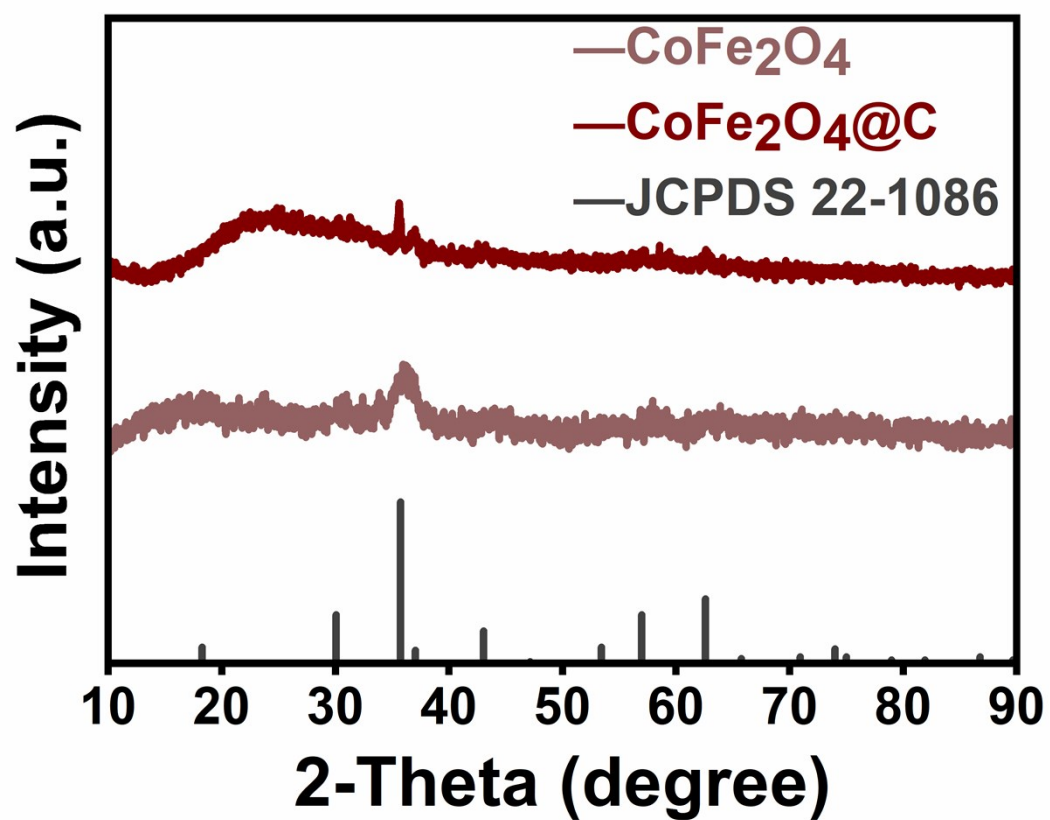


Fig. S3 XRD patterns of CoFe₂O₄ and CoFe₂O₄@C.

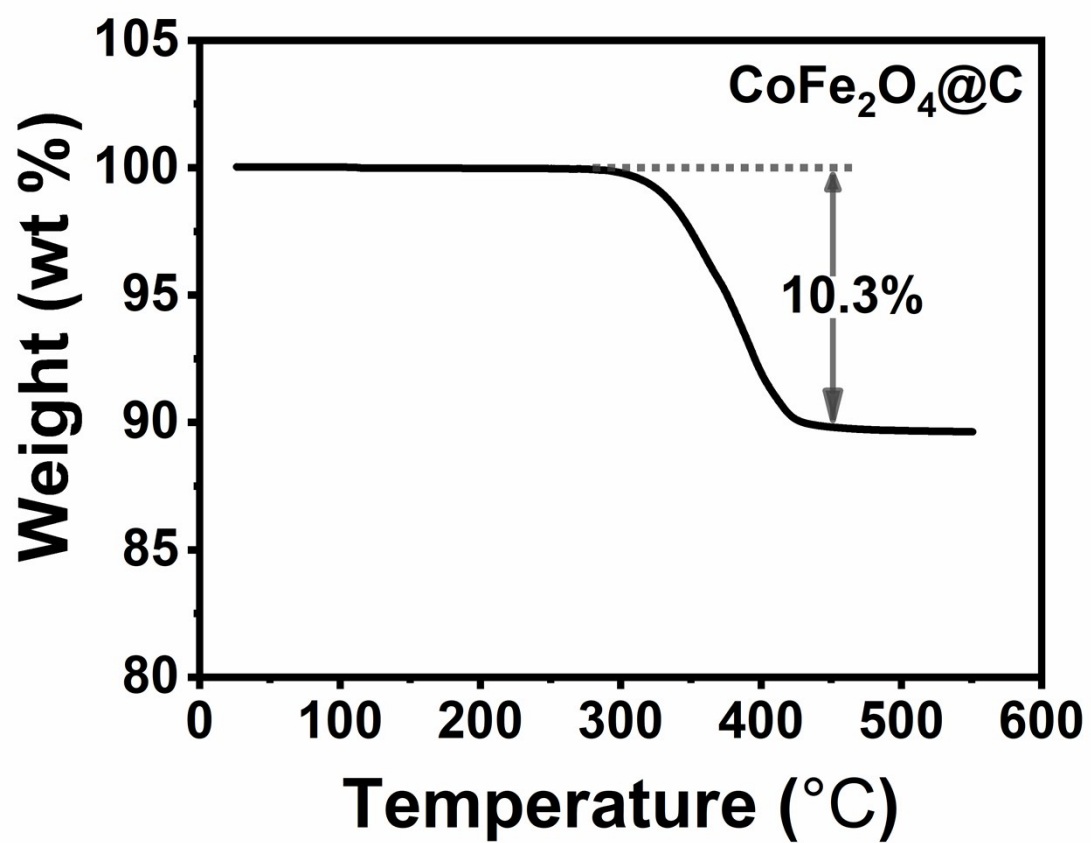


Fig. S4 TGA curve of CoFe₂O₄@C under air atmosphere.

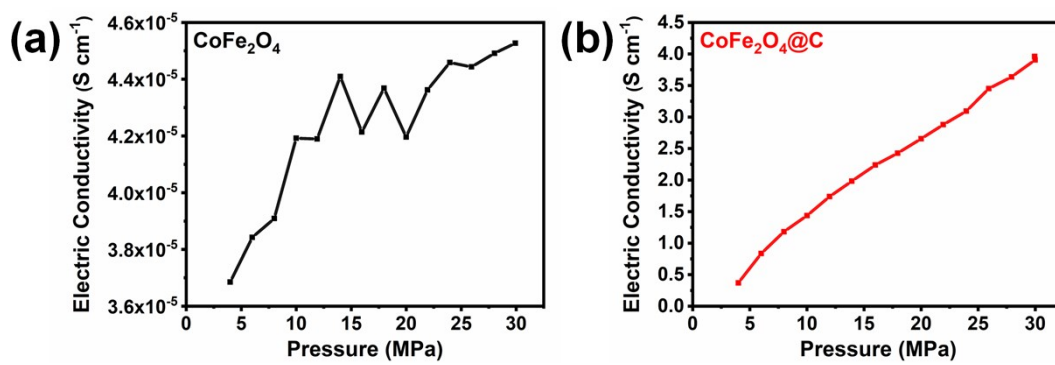


Fig. S5 the electrical conductivity of CoFe₂O₄ and CoFe₂O₄@C.

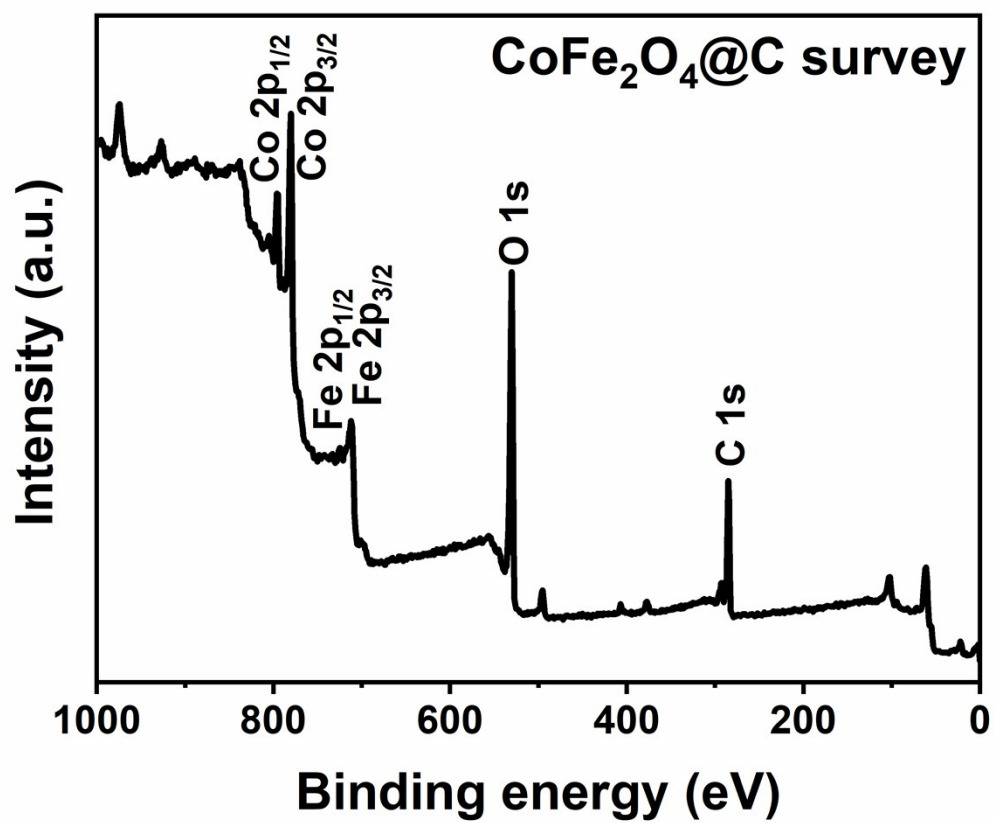


Fig. S6 XPS wide-scan survey of CoFe₂O₄@C.

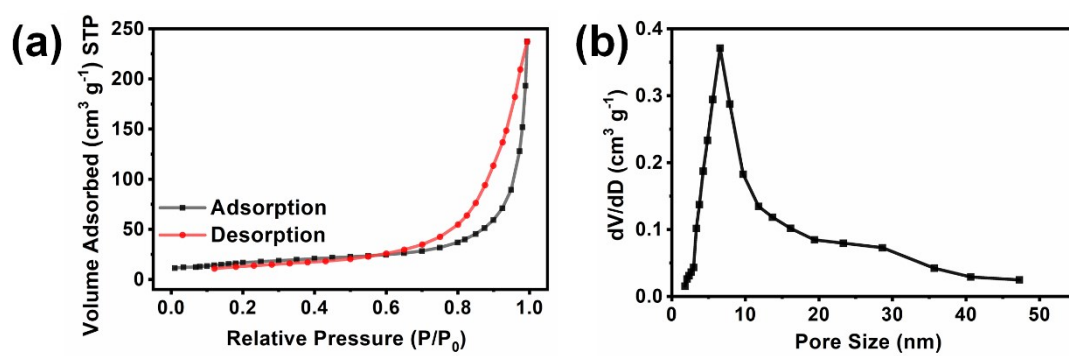


Fig. S7 Nitrogen adsorption-desorption isotherms and pore size distribution of CoFe₂O₄@C.

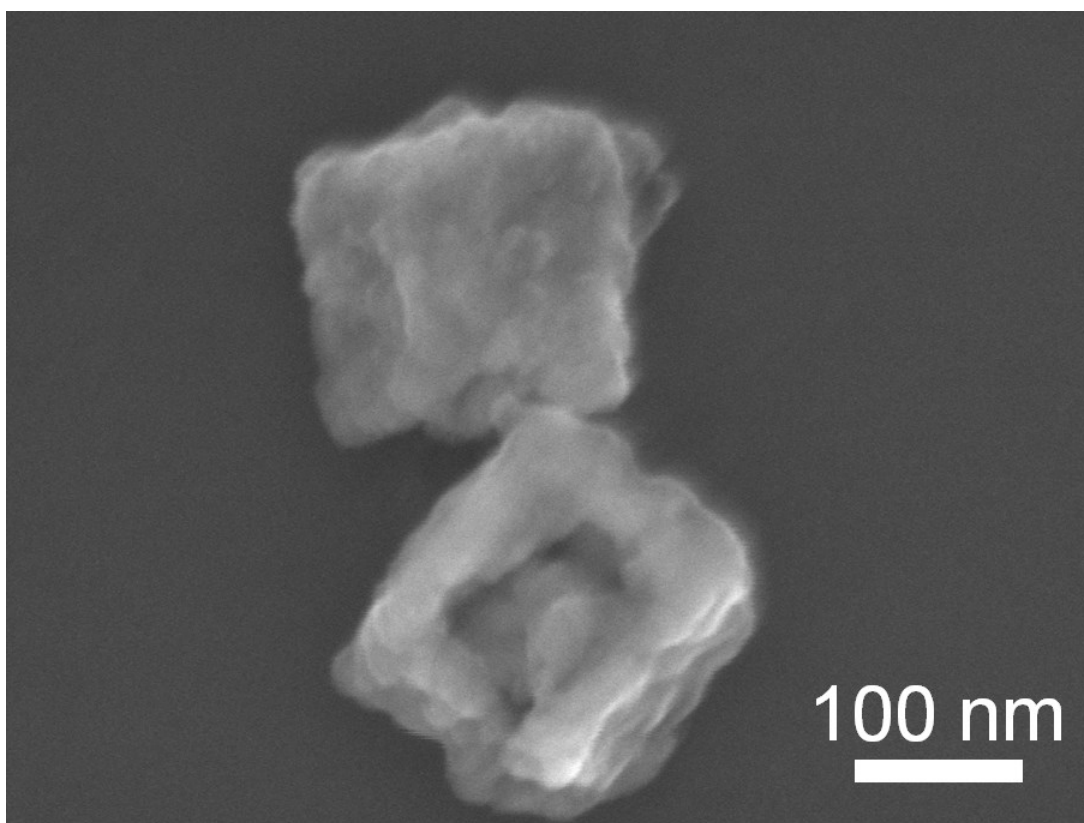


Fig. S8 SEM image of the S/CoFe₂O₄@C composite.

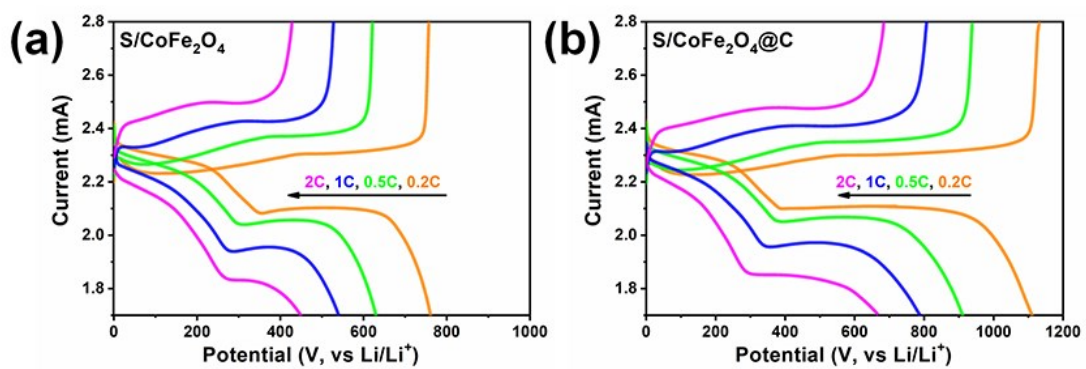


Fig. S9 Discharge/charge profiles at different rates. a) S/CoFe₂O₄ electrode. b) S/CoFe₂O₄@C electrode.

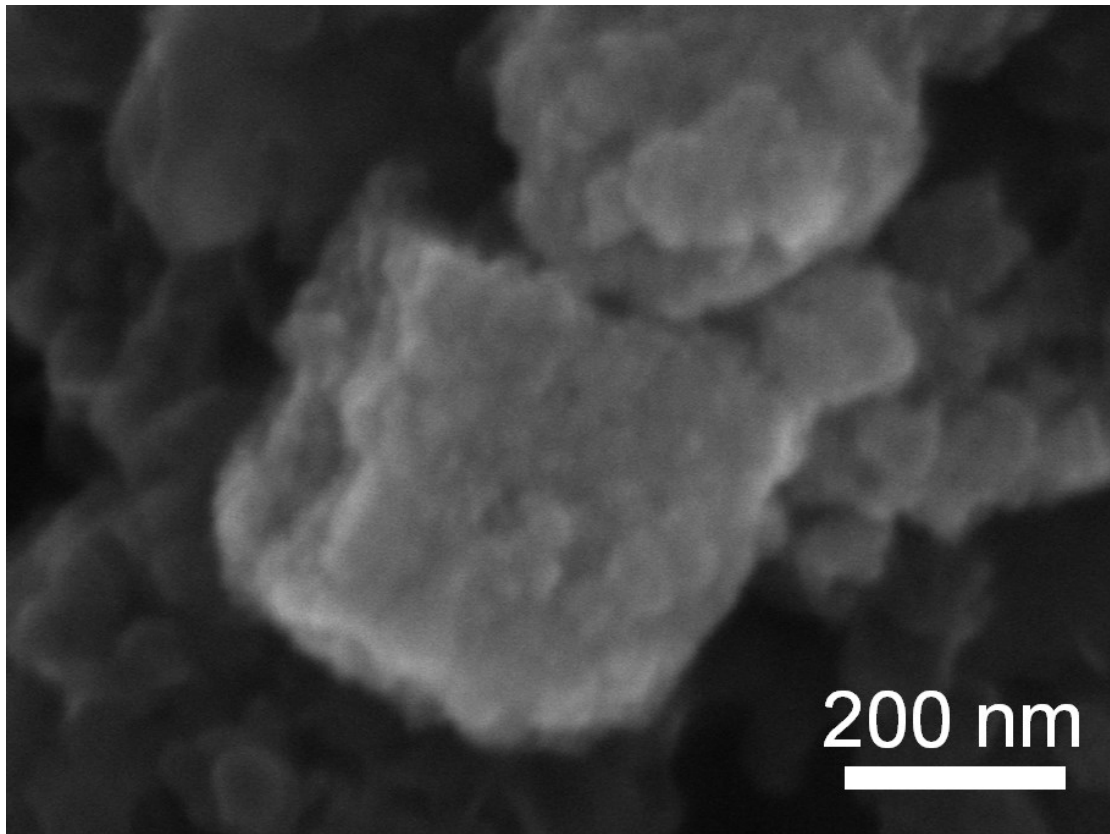


Fig. S10 SEM image of the S/CoFe₂O₄@C composite after 500 cycles at 2 C.

Table S1: The slope of linear fitting equation for S/CoFe₂O₄ and S/CoFe₂O₄@C electrodes

Slope (A (V s ⁻¹) ^{-0.5})	A (cathodic peak)	B (cathodic peak)	C (anodic peak)
S/CoFe ₂ O ₄	0.01298	0.01922	0.04446
S/CoFe ₂ O ₄ @C	0.02358	0.03225	0.06015

Table S2: The comparison of EIS fitting results for S/CoFe₂O₄ and S/CoFe₂O₄@C electrodes

	R_{Ω}	R_{int}	R_{ct}
S/CoFe ₂ O ₄	6.1	43.2	153.9
S/CoFe ₂ O ₄ @C	4.5	34.1	100.8