## **Electronic supplementary information**

## One-step Synthesis of Hollow C-NiCo<sub>2</sub>S<sub>4</sub> Nanostructures for High-

## performance Supercapacitor Electrodes

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Fig. S1 N<sub>2</sub>-adsorption/desorption (BET) isotherm of the NiCo<sub>2</sub>S<sub>4</sub> control sample.



Fig. S2 CV curves of C-NiCo $_2S_4$ : as-prepared (black) and after 10,000 charge/discharge cycles (red).



Fig. S3 (a) CV curves of the NiCo<sub>2</sub>S<sub>4</sub> control sample at different scan rates, (b) CV curves of C-NiCo<sub>2</sub>S<sub>4</sub> and the NiCo<sub>2</sub>S<sub>4</sub> control sample at a scan rate of 50 mV s<sup>-1</sup>, (c) GCD profiles of the NiCo<sub>2</sub>S<sub>4</sub> control sample at different current densities, (d) GCD profiles of C-NiCo<sub>2</sub>S<sub>4</sub> and the NiCo<sub>2</sub>S<sub>4</sub> control sample at a current density of 1 A g<sup>-1</sup>, (e) EIS of C-NiCo<sub>2</sub>S<sub>4</sub> and the NiCo<sub>2</sub>S<sub>4</sub> control sample, and (f) stability of C-NiCo<sub>2</sub>S<sub>4</sub> and the NiCo<sub>2</sub>S<sub>4</sub> control sample, and (f) stability of C-NiCo<sub>2</sub>S<sub>4</sub> and the NiCo<sub>2</sub>S<sub>4</sub> control sample at a current density of 25 A g<sup>-1</sup> for 10,000 GCD cycles.



Fig. S4 CV Curves (a) and GCD curves (b) of the AC/NF electrode in 6 M KOH electrolyte within a potential window of -1.2 to 0 V.