Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supplementary Material

Superior cycling stability of crystalline/amorphous Co_3S_4 core-shell heterostructure for aqueous hybrid supercapacitors

Miaomiao Liang,[a] Mingshu Zhao[a*], Haiyang Wang[a] and Xiaoping Song[a]

[a]School of science, MOE Key Laboratory for Non-Equilibrium Synthesis and Modulation of Condensed Matter, Key Laboratory of Shaanxi for Advanced Functional Materials and Mesoscopic Physics, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, PR China.

E-Mail: zhaomshu@xjtu.edu.cn; Tel&Fax: +86-13186193932

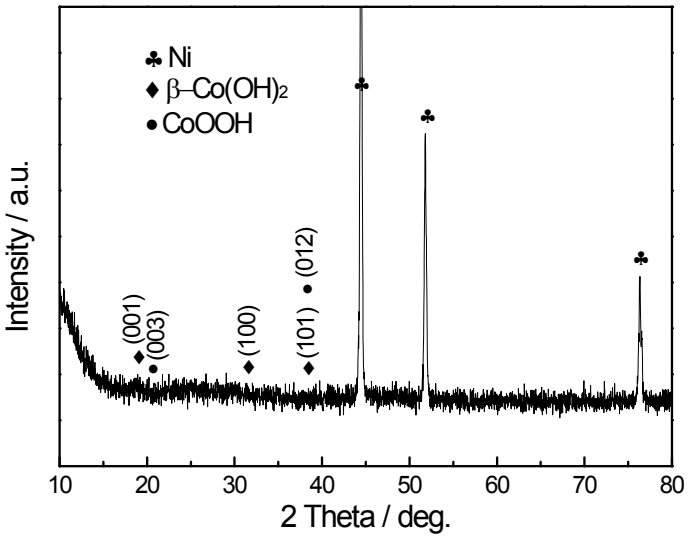

Fig. S1 The XRD pattern of precursor

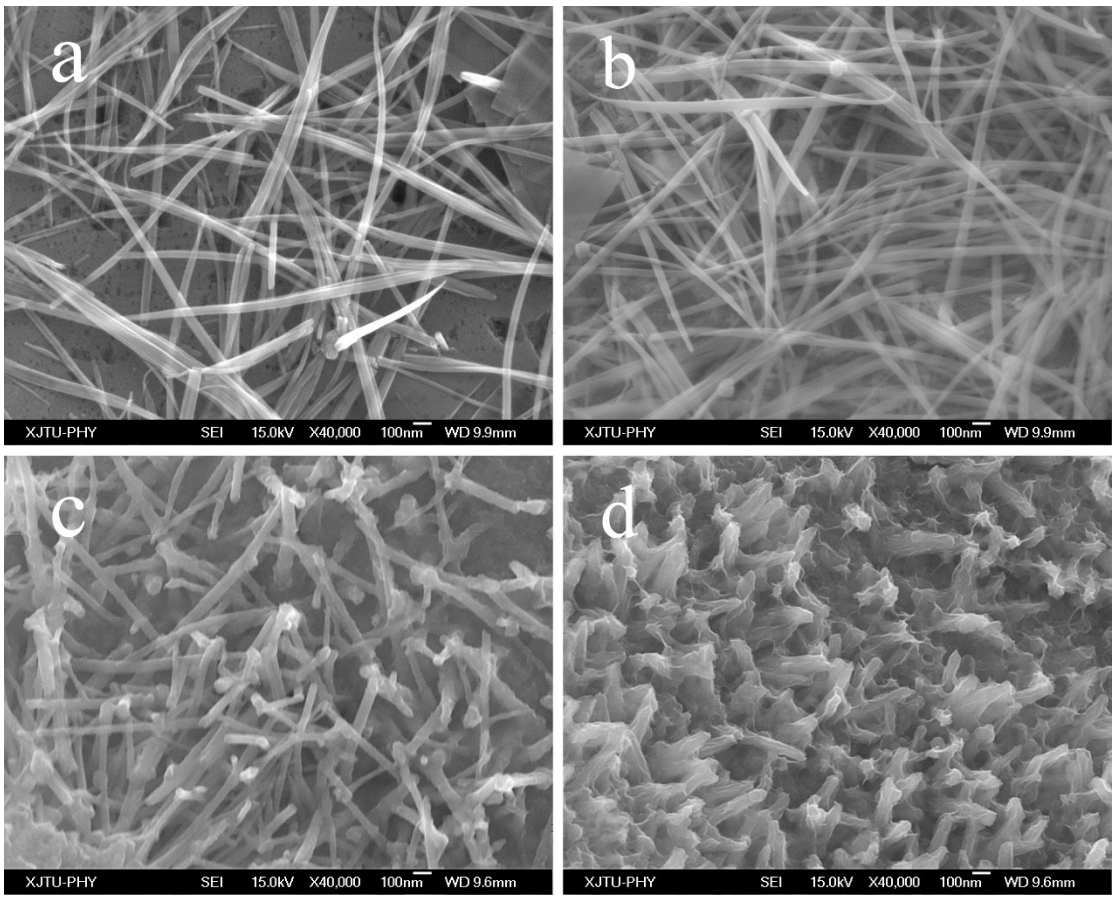

Fig. S2 The SEM images of nanorod precursor after reaction for (a) 4h and (b) 6h, respectively; SEM images of precursor with sulfur treatment times of (c)6h and (d) 12h, respectively.

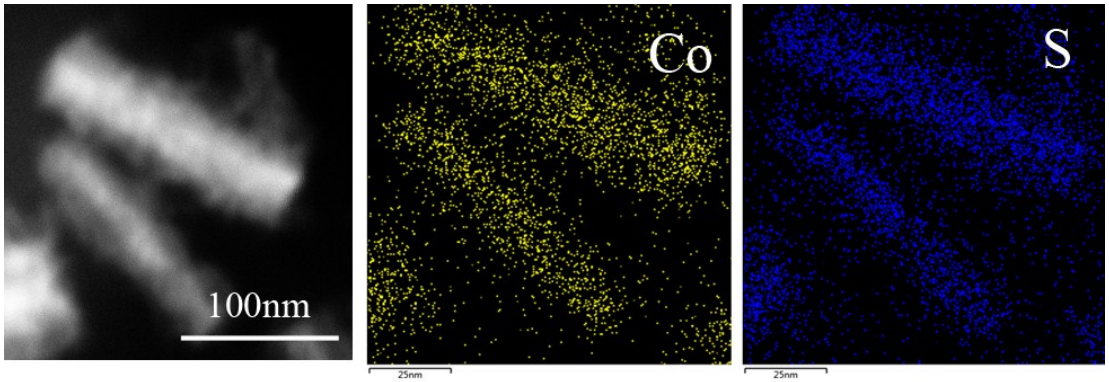

Fig. S3 The STEM image and corresponding EDS elemental mappings

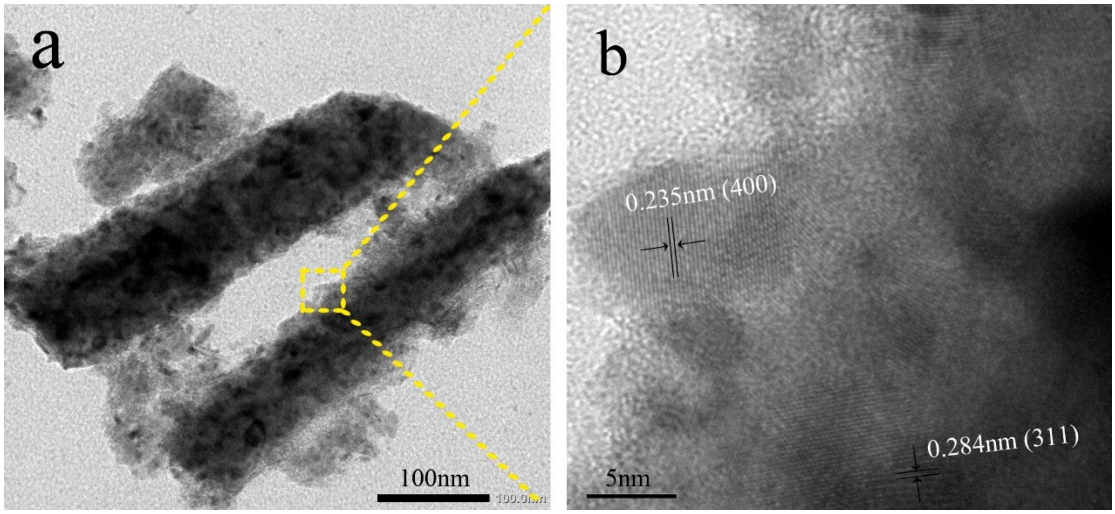

Fig. S4 (a) The TEM and (b) HRTEM images of calcined Co_3S_4 sample

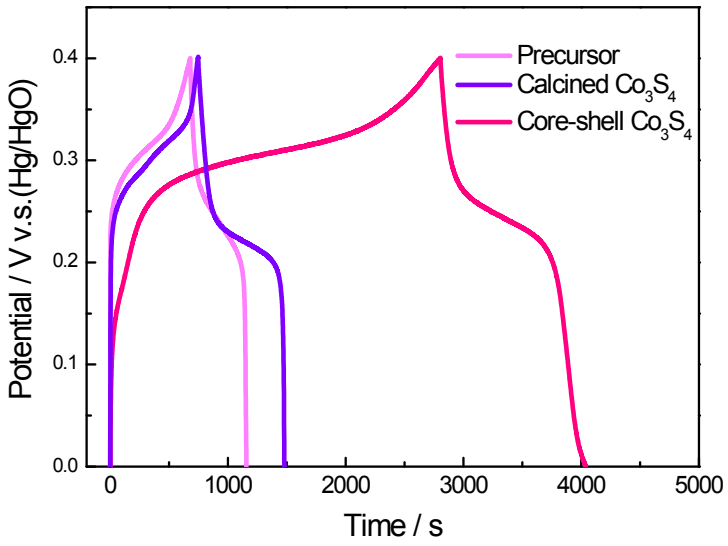

Fig. S5 Comparison of GCD curves of electrodes at a current density of 1 A g^{-1}

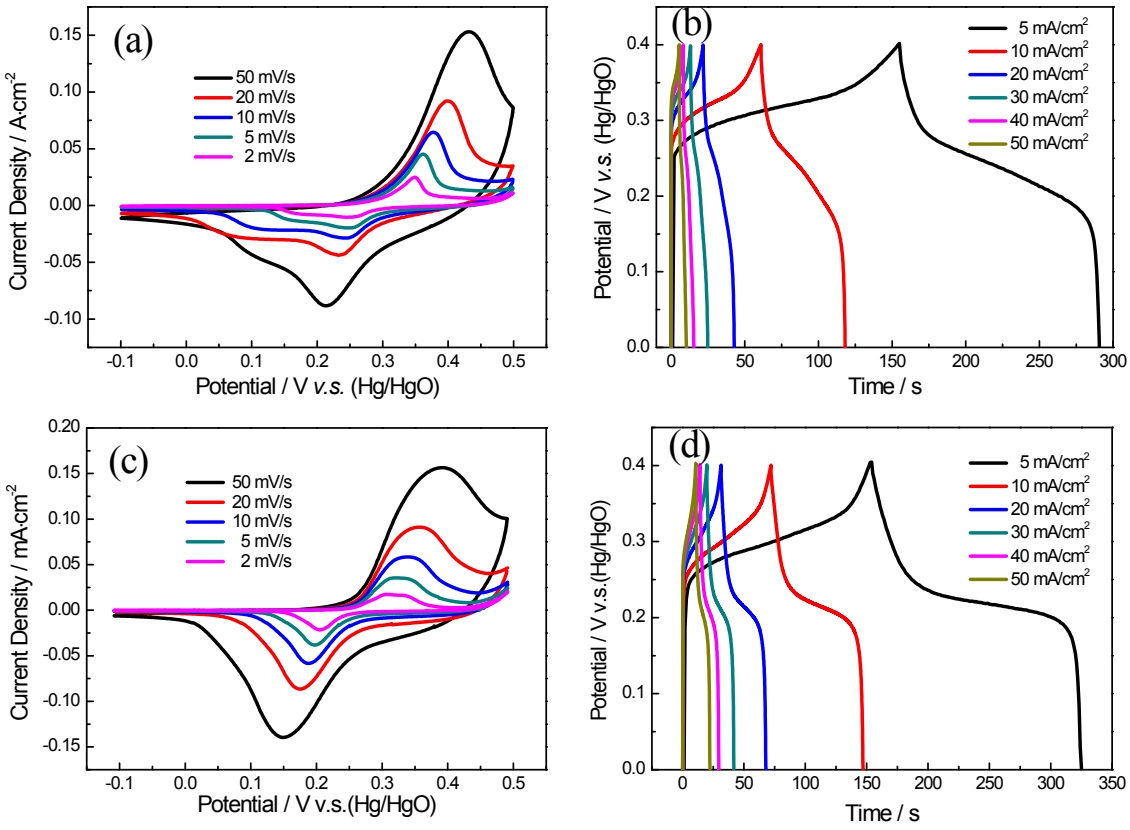

Fig. S6 CV curves and GCD curves of (a), (b) Co-O precursor and (c), (d) the calcined Co_3S_4 electrodes at varied scan rates and different current densities, respectively.

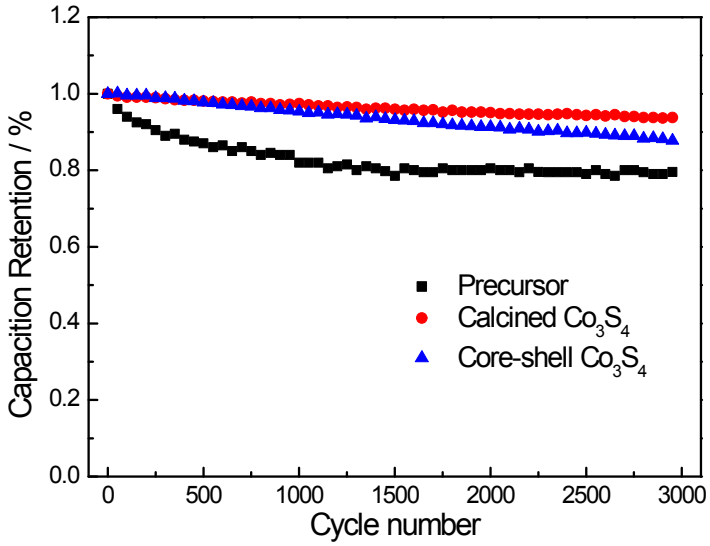

Fig. S7 The long-term cycling property of the Co-O precursor, calcined Co_3S_4 and core-shell Co_3S_4 electrodes at current density of 50 mA cm^{-2}.

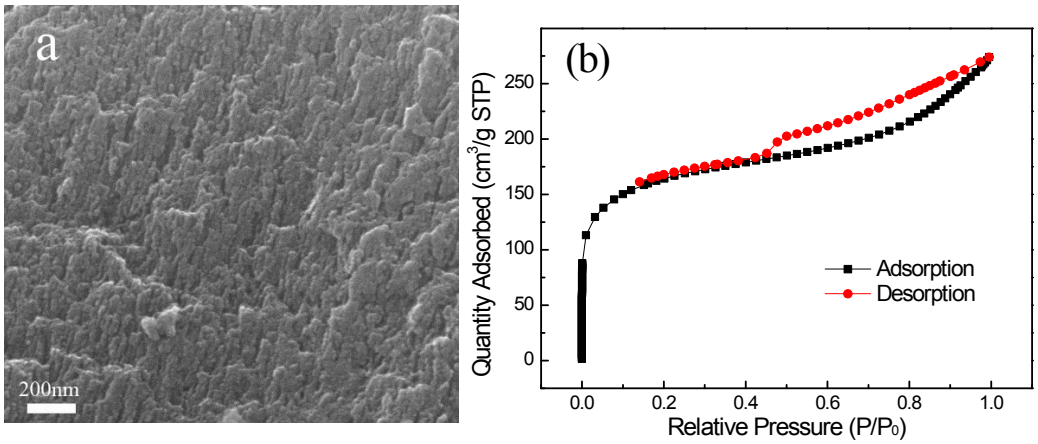

Fig. S8 (a) The surface morphology and (b) Nitrogen adsorption-desorption isotherm of AC

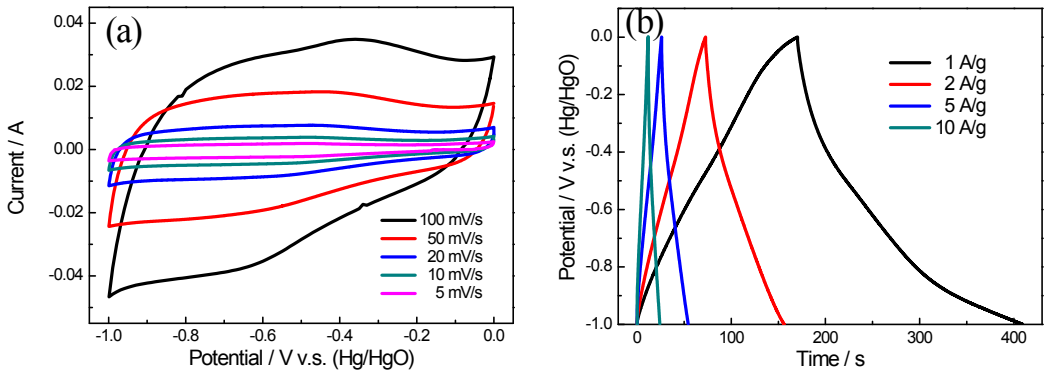

Fig. S9 (a) CV curves of active carbon at varied scan rates from 5-100 mV s^{-1}; (b) GCD plots at various current densities.