Electronic Supplementary Material (ESI) for RSC Advances
This journal is © Royal Society of Chemistry 2016

Supplementary Information

Facile controlled synthesis of a hierarchical porous nanocoral-like Co_3S_4 electrode for high-performance supercapacitors

Guijing Liu, Bo Wang*, Lei Wang, Tiefeng Liu, Tiantian Gao and Dianlong Wang*

MIIT Key Laboratory of Critical Materials Technology for New Energy Conversion and Storage, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, No. 92 Xidazhi Street, 150001 Harbin, Heilongjiang Province, China. Fax:86 45186413721; Tel: 86 451 86413751; E-mail: wangdianlonghit@163.com (D. L. Wang), wangbo19880804@163.com (B. Wang)

Figures

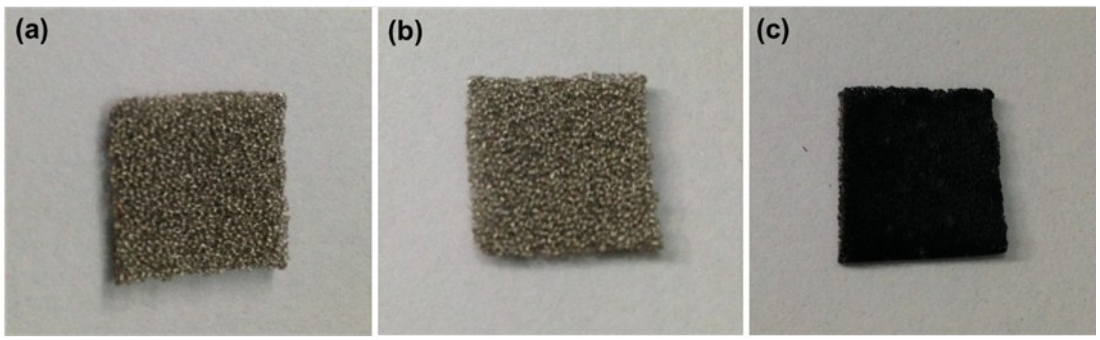

Fig. S1† The digital photographs of (a) bare Ni foam, (b) hydrothermal treated Ni foam and (c) Co_3S_4 electrode grown on Ni foam.

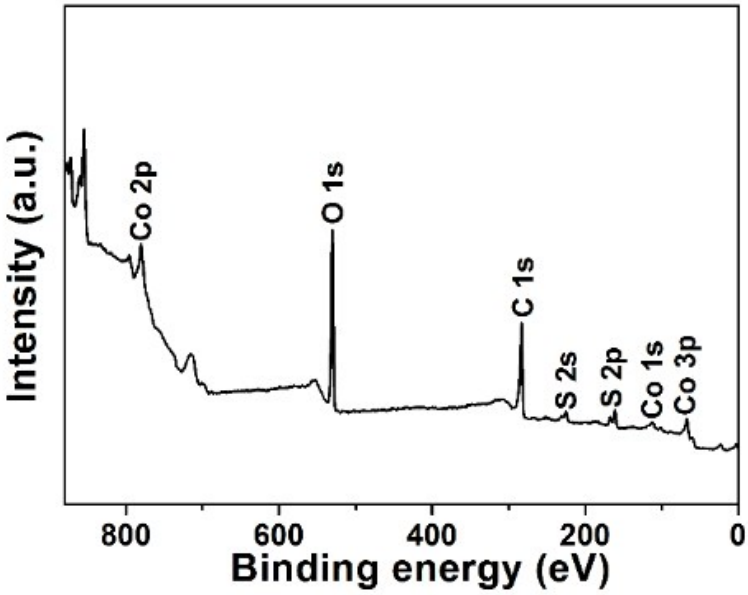

Fig. S2† The XPS survey of Co_3S_4 electrode.

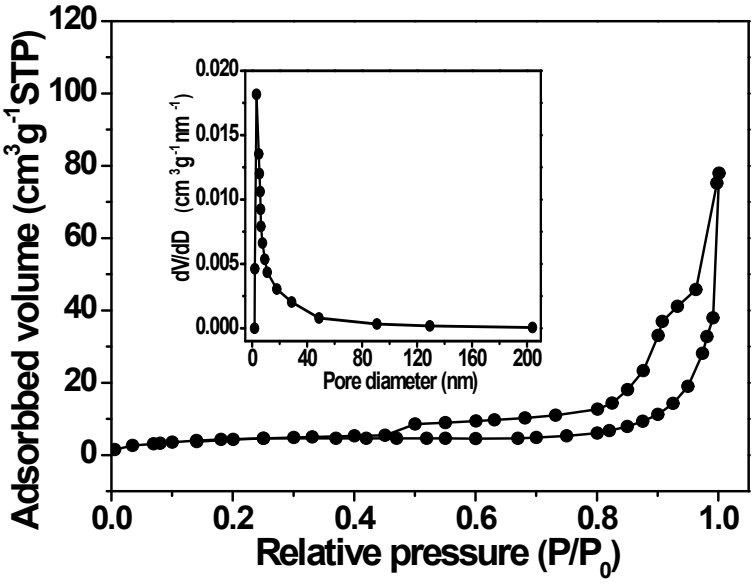

Fig. S3† The N_2 adsorption – desorption isotherm of Co_3S_4 and the inset shows the BJH pore size distribution.

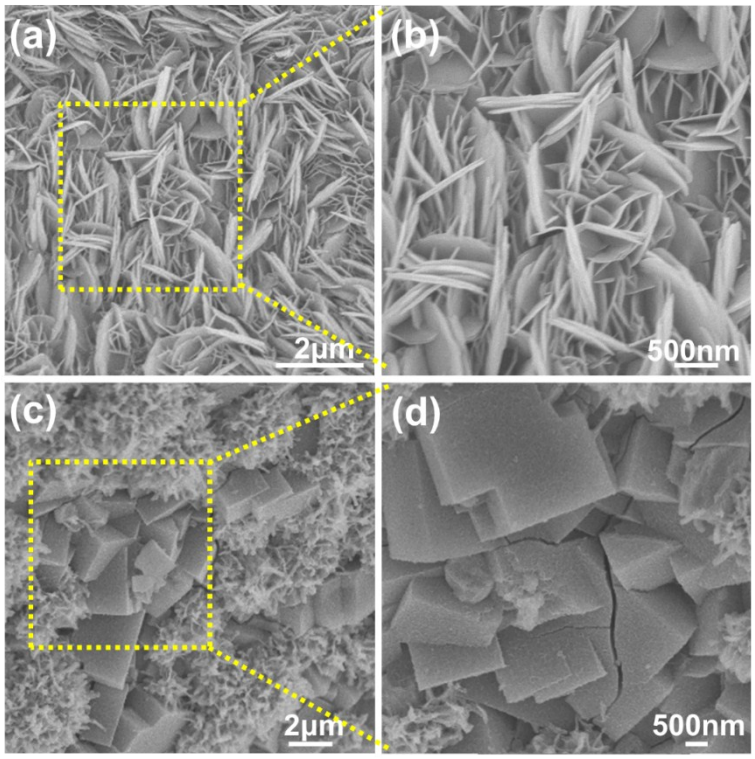

Fig. S4† SEM image of Co_3S_4 electrode at 140 °C (a, b), 180 °C (c, d) at the reaction time 4 h, while keeping all other reaction parameters constant.

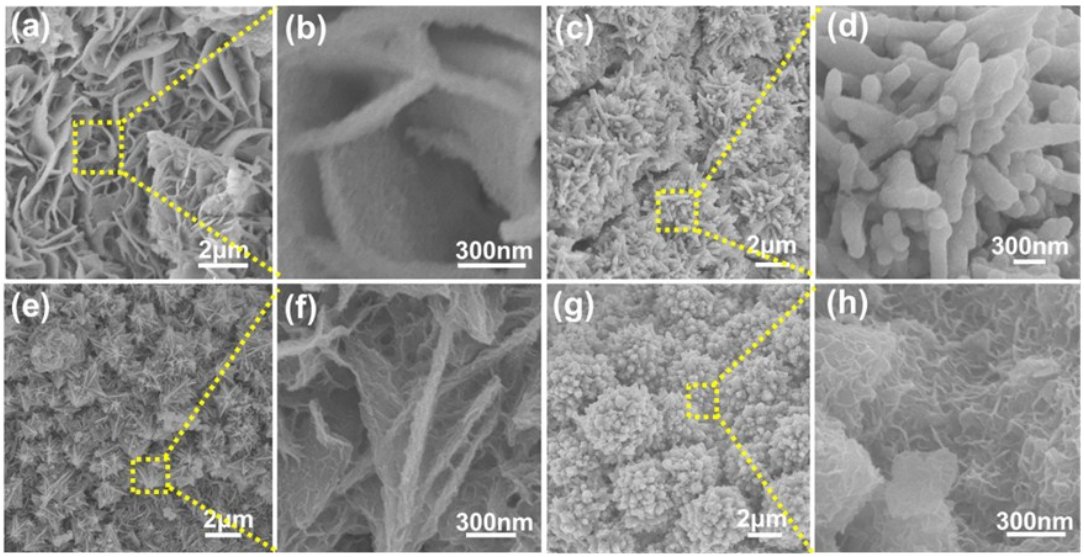

Fig. S5† SEM images of the samples with different ethanol/water volume ratios (R): (a, b) R = 10:30, (c, d) R = 20:20, (e, f) R = 30:10, (g, h) R = 40:0, while keeping the other reaction parameters constant.

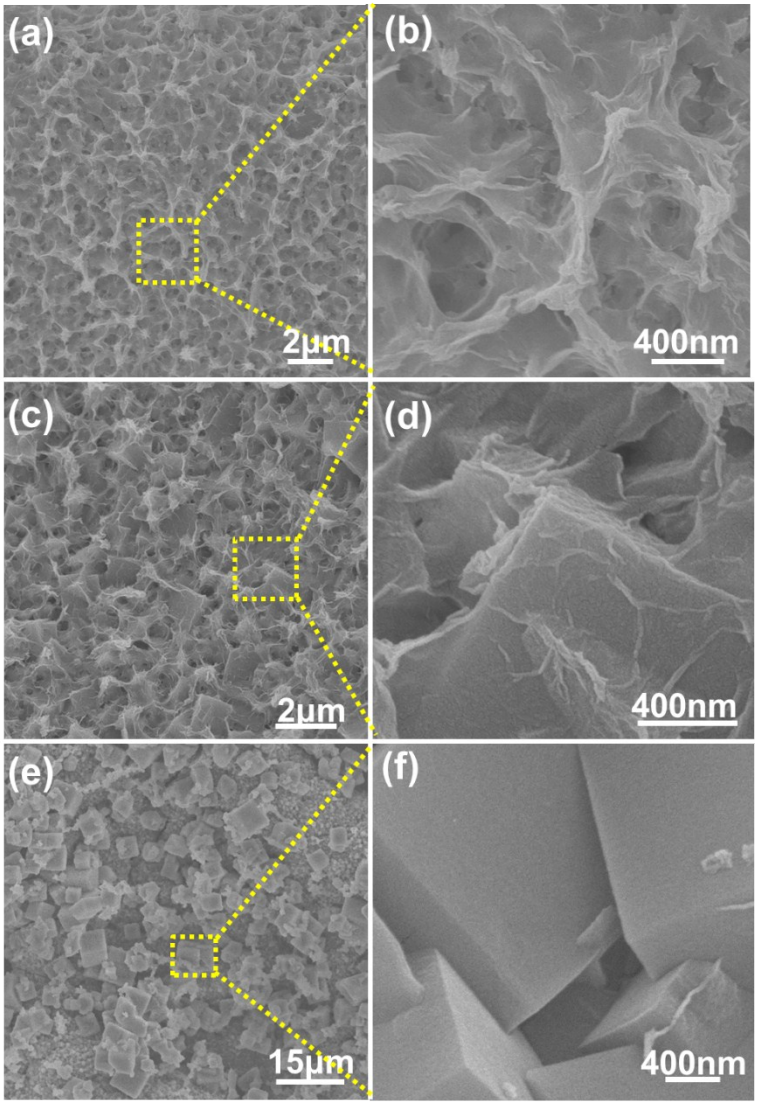

Fig. S6† SEM image of the samples electrode with different pH values: (a, b) pH = 7, (c, d) pH = 8, (e, f) pH = 8.5, while keeping all other reaction parameters constant.

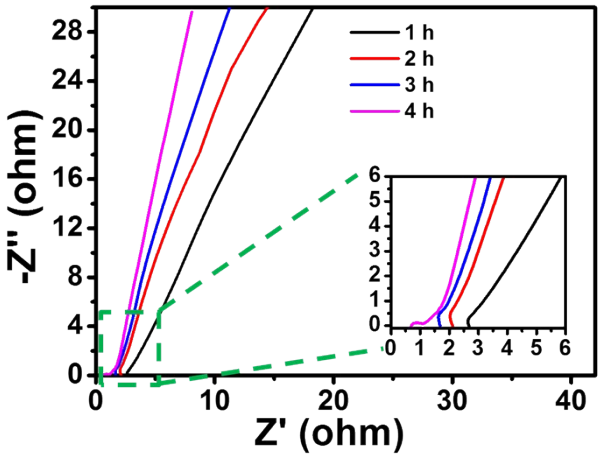

Fig. S7† Nyquist plots of Co_3S_4 electrodes at 1, 2, 3 and 4 h.

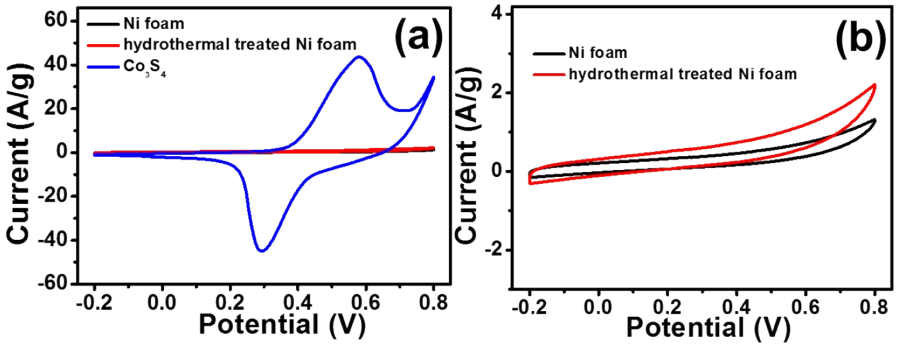

Fig. S8† (a) CV curves of of Ni foam, hydrothermal treated Ni foam and Co_3S_4 at a scan rate of 10 $mV \cdot s^{-1}$. (b) Enlarged CV curves of the Ni foam and hydrothermal treated Ni foam.