Electronic Supplementary Material (ESI) for RSC Advances.

CoS_x/C hierarchical hollow nanocages from metal organic framework as positive electrode with enhancing performance for aqueous supercapacitors

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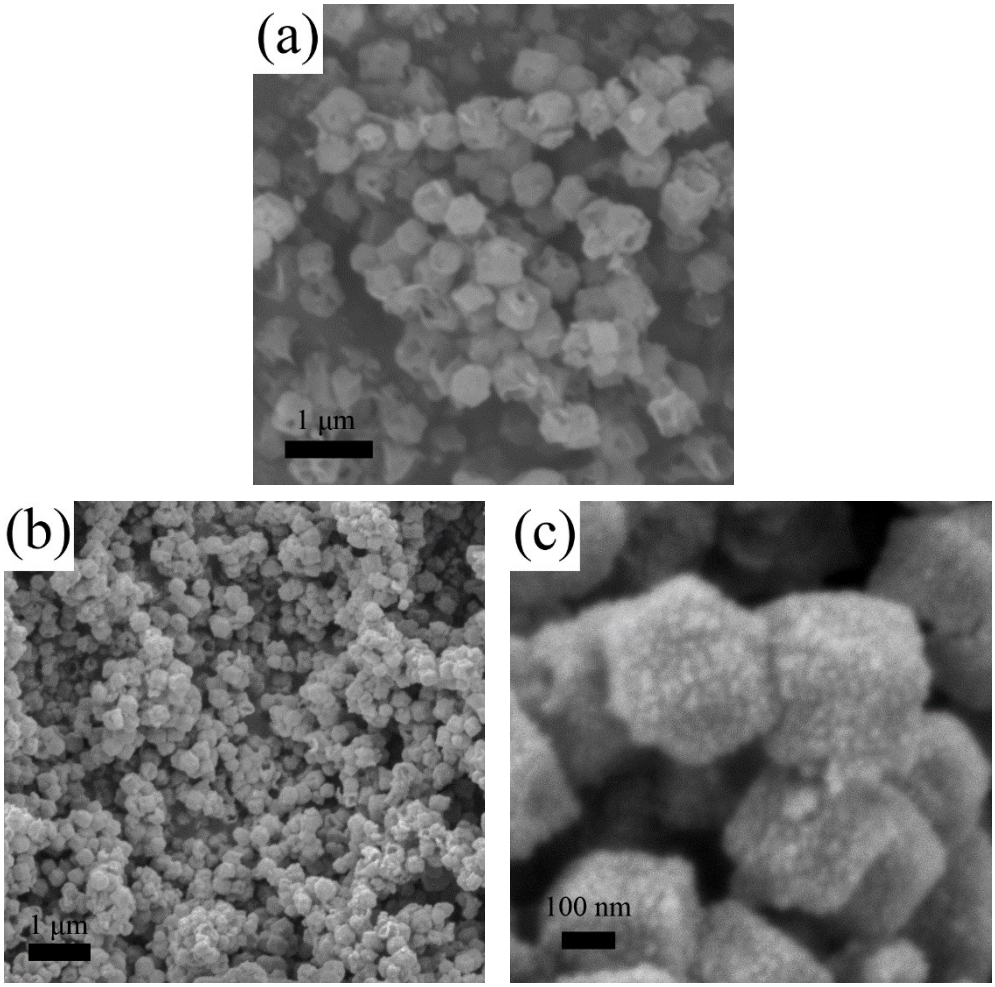
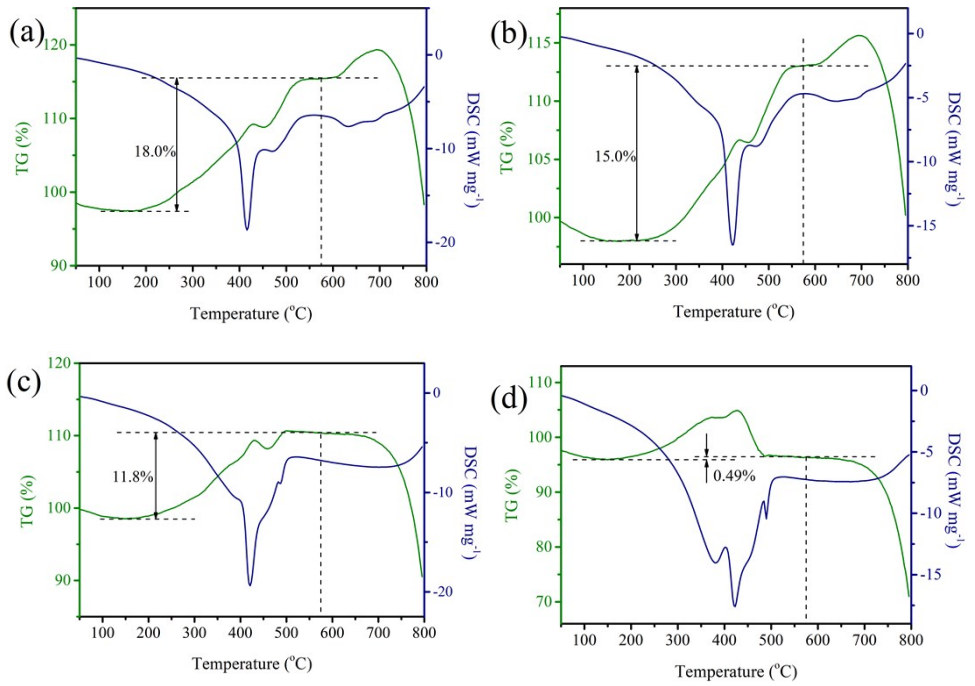


Fig. S1 SEM images of (a) RF hollow shell and (b,c) CoS_x/C-2 hollow nanocages with different magnification



(e)

If temperature raised to 575°C, the content of CoSx remained a, the content of carbon decreased to 0, and the content of composition remained b.

$$m_{Total} = m_{CoSx} + m_{Carbon}$$

At 575 °C

$$m_{Total} = a * m_{CoSx} + 0 = b * (m_{CoSx} + m_{Carbon})$$

$$\frac{m_{Carbon}}{m_{CoSx} + m_{Carbon}} = 1 - \frac{b}{a}$$

Fig. S2 TG-DSC curves of (a) CoS_x, (b) CoS_x/C-1, (c) CoS_x/C-2 and (d) CoS_x/C-3.

(e) The calculation of Carbon content of composition

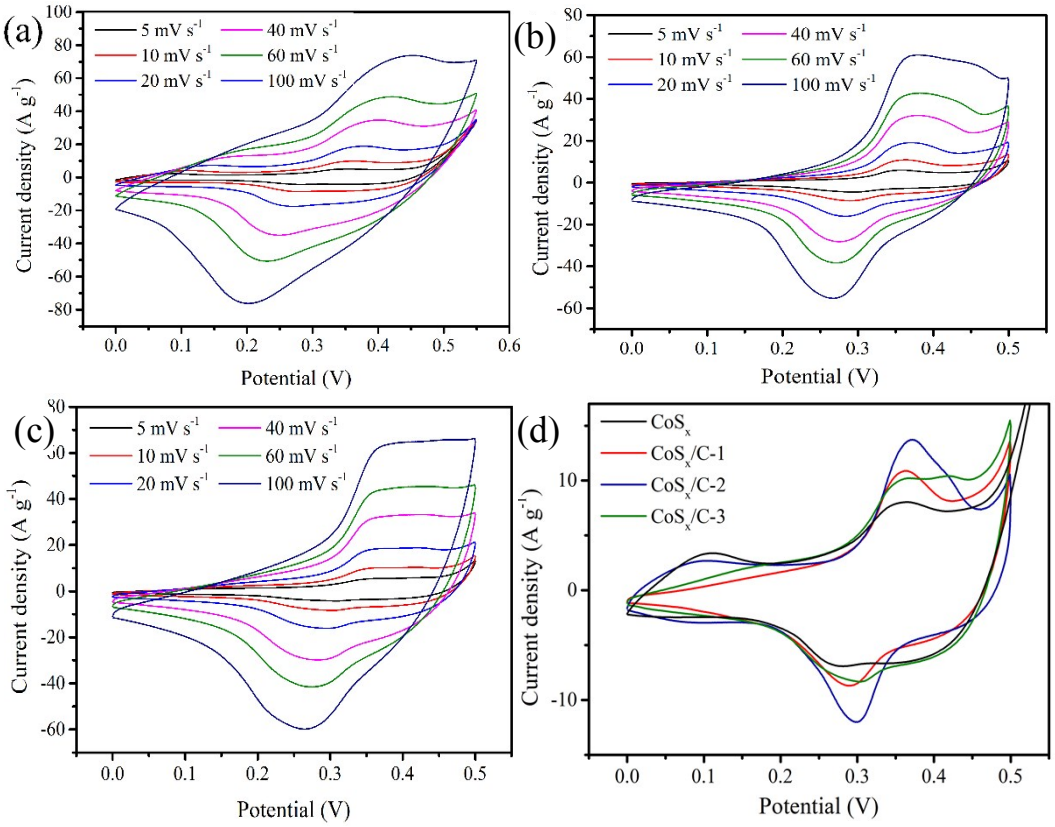


Fig. S3 Comparison of CV curves at different scan rates from 5- 100 mV s^{-1}: (a) pristine CoS. (b) pristine CoS_x/C-1. (c) pristine CoS_x/C-2. (d) Comparison of CV curves at 10 mV s^{-1} for CoS_x, CoS_x/C-1, CoS_x/C-2 and CoS_x/C-3.

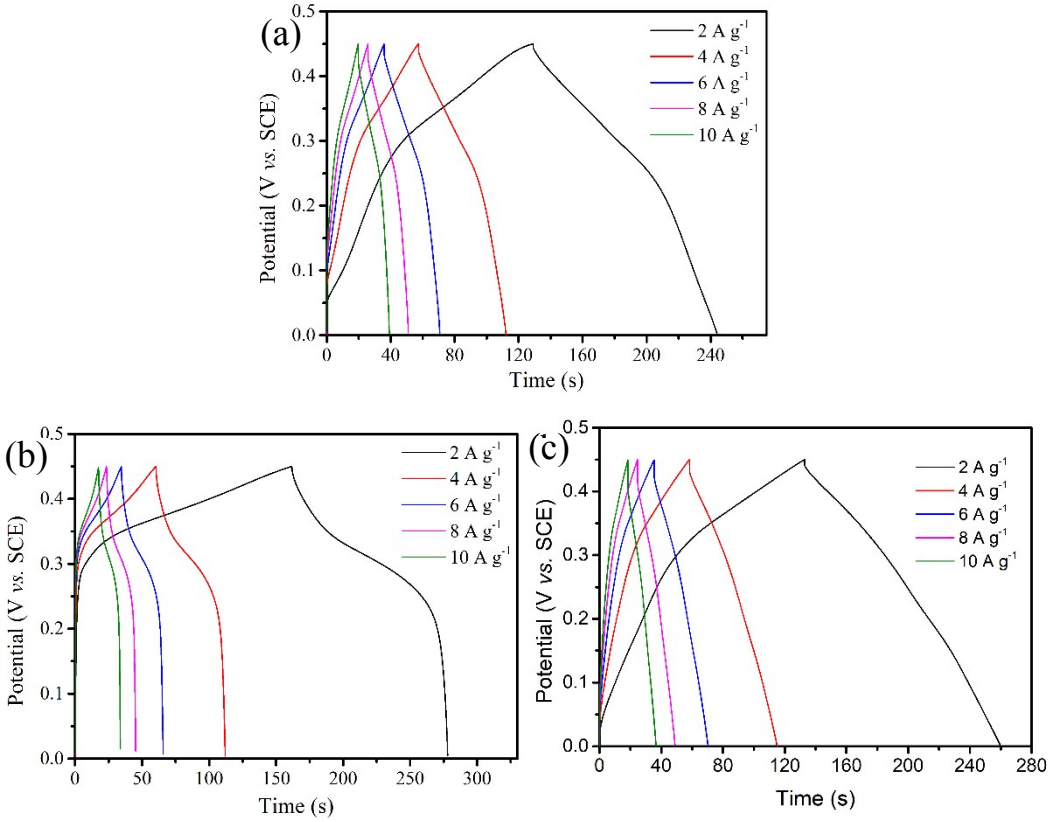


Fig. S4 Galvanostatic charge-discharge curves of (a) pristine CoS, (b) pristine CoS_x/C-1, and (c) pristine CoS_x/C-2.