## Hydrothermal Synthesis and Structure Evolution of Hierarchical Cobalt Sulfide Nanostructures

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**Fig. S1** FESEM images of the as-prepared products with different ligands: (a) PVP, (b) SDS, (c) CTAB



**Fig. S2** the FT-IR spectra of the CoS nanostructures obtained from the co-existence of thiourea and PVP.



**Fig. S3** The CV curves of the CoS electrodes in 6M KOH solution electrolyte with various scan rates: (a) 5mV, (b) 10mV, (c) 20mV, (d) 50mV.