Supporting Information

Preparation of 3D Hierarchical Porous Co_3O_4 Nanostructures with Enhanced Performance in Lithium-Ion Batteries

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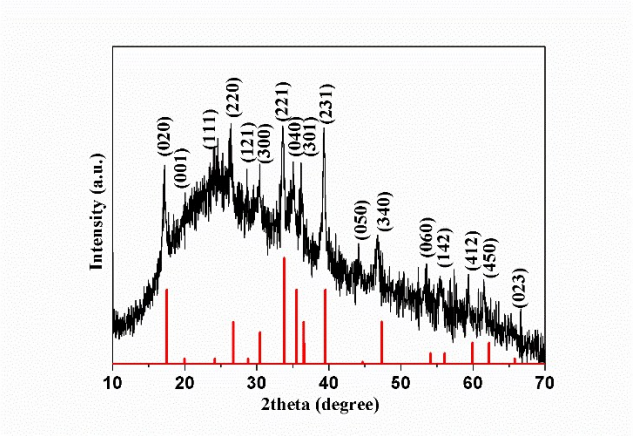

Fig. S1 the XRD pattern of the as-prepared $Co(CO_3)_{0.5}(OH)\cdot 0.11H_2O$ precursor (JCPDF NO. 00-048-0083).

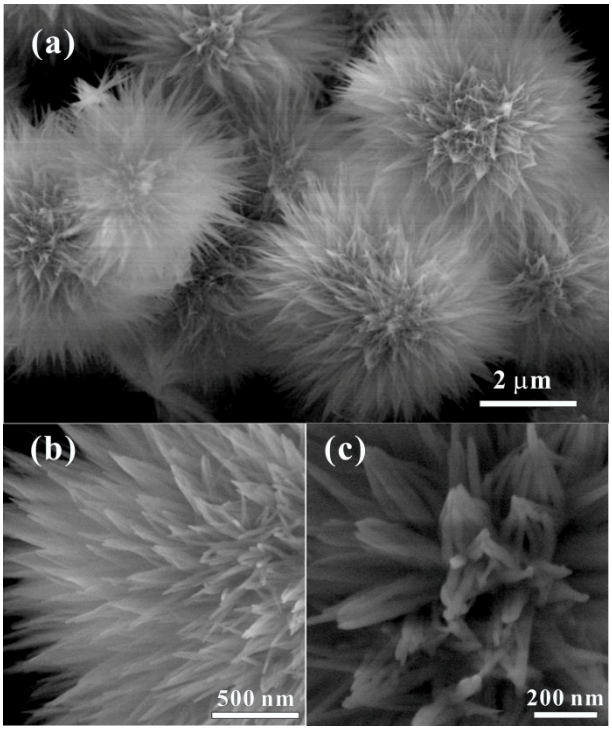

Fig. S2 (a-c) SEM images of $Co(CO_3)_{0.5}(OH)\cdot 0.11H_2O$ precursor.

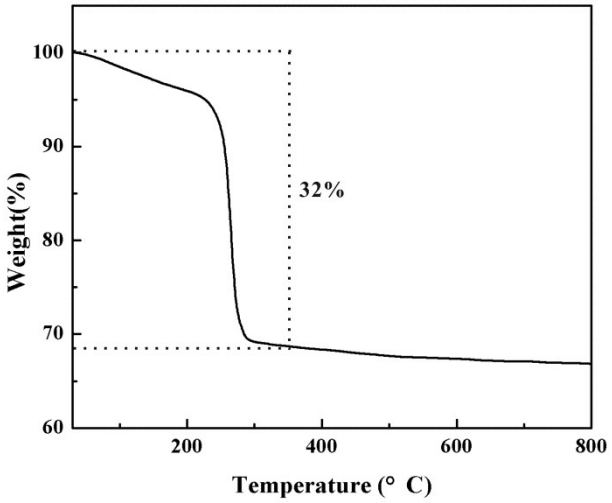

Fig. S3 TGA curves of the as-obtained precursor.

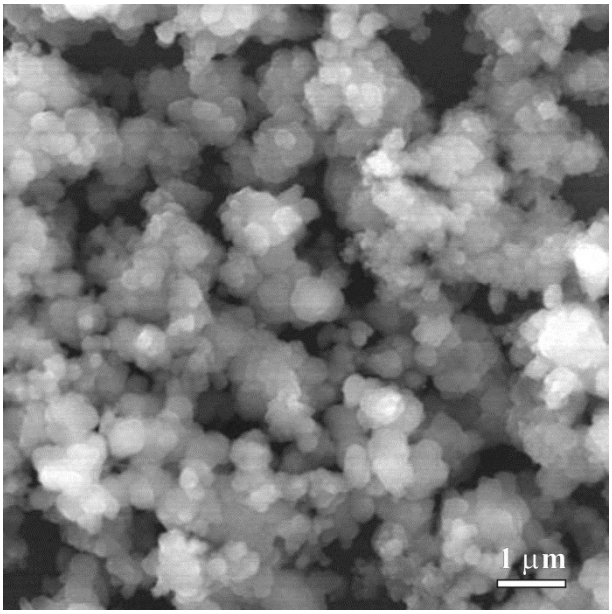

Fig. S4 SEM images of the as-prepared product by the hydrothermal condition without CTAB.

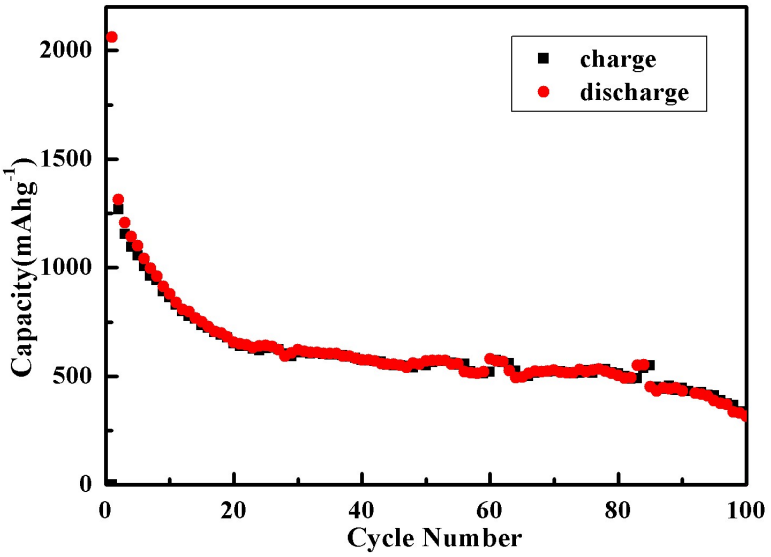

Fig. S5 Cyclic performances of the CPS electrodes at current rate of 0.1 $A \cdot g^{-1}$.

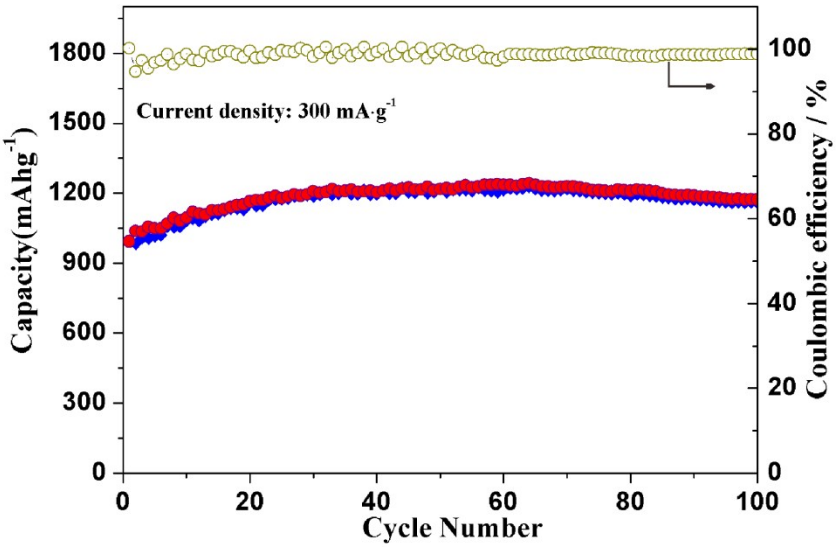

Fig. S6 Cyclic performances of the HCMS electrodes at current rate of 0.3 $A \cdot g^{-1}$

Table S1 Comparison of the LIB performance for different electrodes.

Active material	Charging rate ($mA \cdot g^{-1}$)	Capacity retention (Capacity in $mAh \cdot g^{-1}$)	Cycle No
This work	100	1942	100
	300	1173	100
Co_3O_4 nanowires [1]	111	700	20
Co_3O_4 cages [2]	178	670	50
Co_3O_4 nanosheets[3]	150	631	50
Co_3O_4 hexapods[4]	100	800	40
Co_3O_4/NRGO [5]	100	910	100
Co_3O_4 nanoparticles/N-C [6]	100	892	100
Co_3O_4 hexagonal Plates[7]	200	829	50
Co_3O_4 NPs@SWCNT[8]	100	1286	140

1. References:

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