Electronic Supplementary Material (ESI) for Nanoscale.

Porous cubes constructed by cobalt oxide nanocrystals with graphene sheets coating for enhanced lithium storage properties

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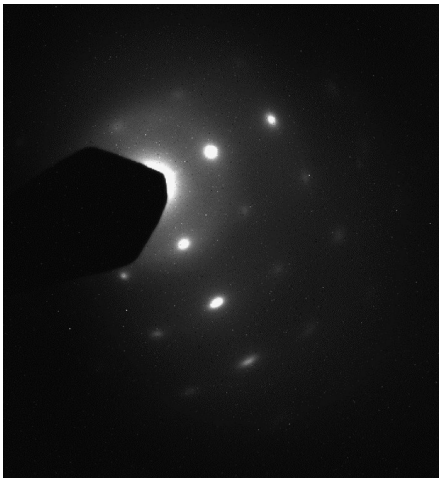

Fig. S1 Selected-area electron diffraction (SAED) pattern of the $Co_3[Co(CN)_6]_2$ cubes.

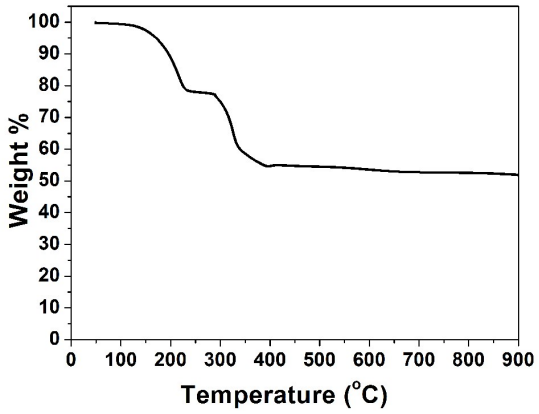

Fig. S2 TGA plot of the $Co_3[Co(CN)_6]_2$ cubes.

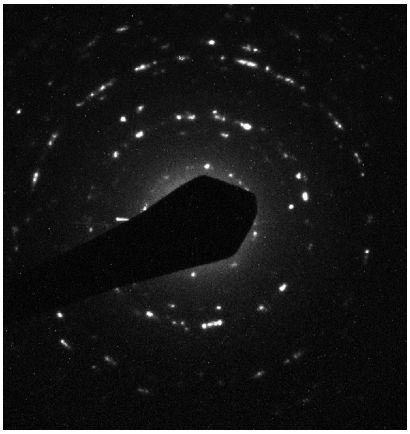

Fig. S3 Selected-area electron diffraction (SAED) pattern of the porous Co_3O_4 cubes.

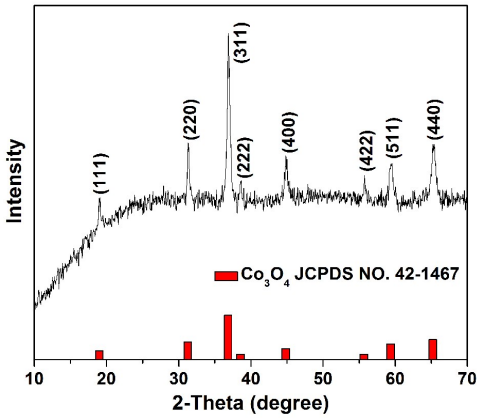

Fig. S4 XRD pattern of the porous Co_3O_4 cubes.

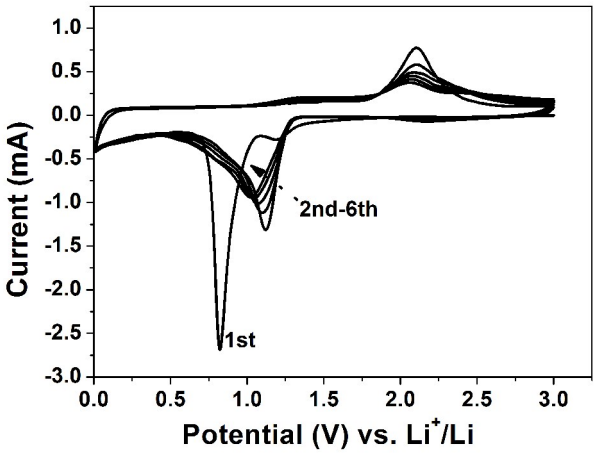

Fig. S5 Representative CV spectra of the porous Co_3O_4 cubes electrode for the first, second, third, fourth, fifth and sixth cycle at a scan rate of 0.1 mV s^{-1} between 0.01 and 3 V.

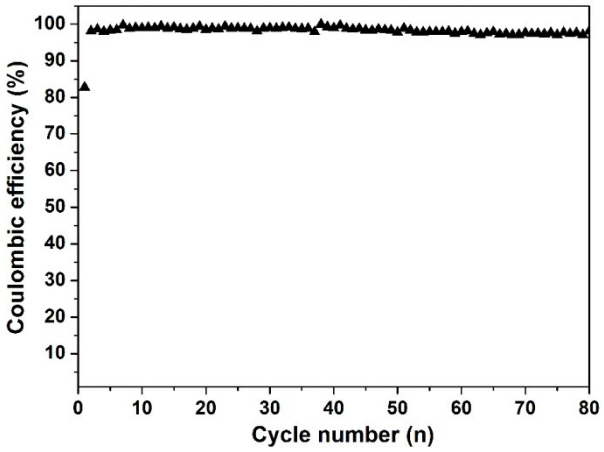

Fig.S6 The coulombic efficiency of Co_3O_4@G electrode.

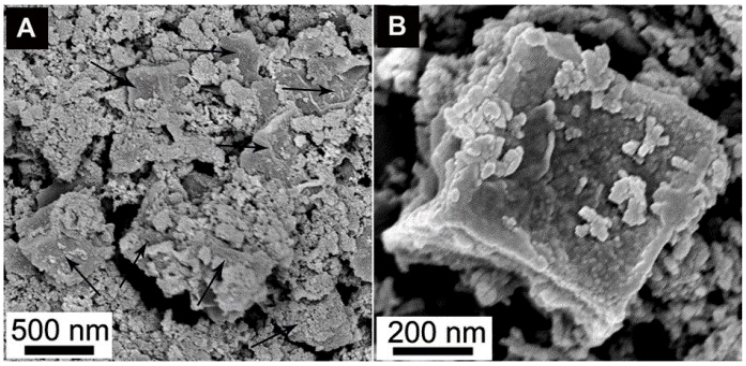

Fig. S7 SEM images (A-B) of Co_3O_4@G electrode after 80 cycles at the current density of 200 mA g^{-1}.

Table S1. Comparison of specific capacities of the current Co_3O_4@G electrode with other hybrid electrode materials reported in literatures.

Materials	Current density	Cycle number	Specific capacity (mA h g^{-1})	Ref.
Graphene anchored with Co_3O_4 nanoparticles	50 mA/g	30	about 935 mA h g^{-1}	1
Multishelled Co_3O_4 hollow spheres	178 mA/g	50	about 866 mA h g^{-1}	2
Porous Co_3O_4 spheres	100 mA/g	80	about 900 mA h g^{-1}	3
Co_3O_4/Carbon nanowires	100 mA/g	20	about 534 mA h g^{-1}	4
Sandwich-like Co_3O_4/TiO_2 composite	100 mA/g	80	about 800 mA h g^{-1}	5
Co_3O_4 hexapods	100 mA/g	40	about 800 mA h g^{-1}	6
Co_3O_4 on the carbon matrix	100 mA/g	80	about 900 mA h g^{-1}	7
Co_3O_4@TiO_2 core-shell nanorods	200 mA/g	80	about 803 mA h g^{-1}	8
Co_3O_4 nanocages	178mA/g	50	about 846 mA h g^{-1}	9

Co_3O_4 nanobelt array	177mA/g	25	about 750 mA h g^{-1}	10
Co_3O_4@G	200 mA/g	80	about 980 mA h g^{-1}	Current study

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