Supporting Information

Facile Synthesis of Porous Co_3O_4 Nanoflakes as an Interlayer for High Performance Lithium-Sulfur Batteries

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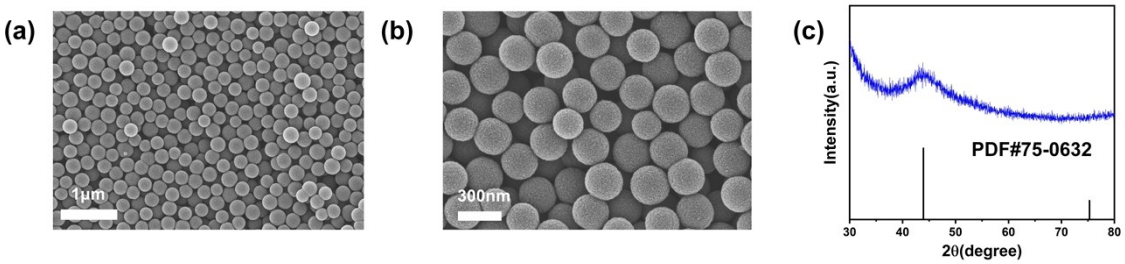

Fig. S1 (a-b) SEM images and (c) XRD of carbon spheres.

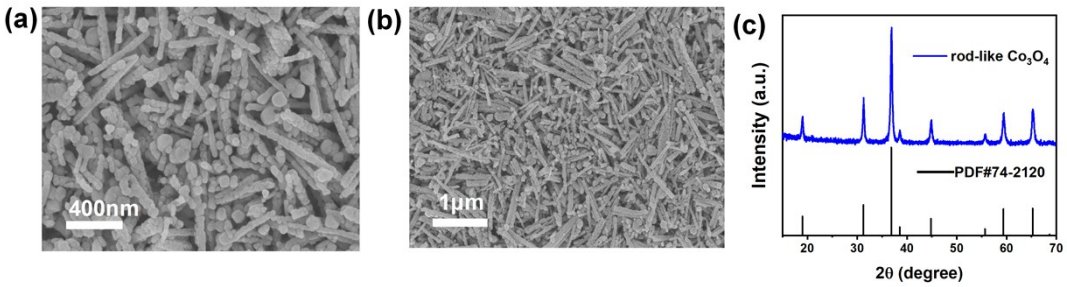

Fig. S2 (a-b) SEM images and (c) XRD of rod-like Co_3O_4.

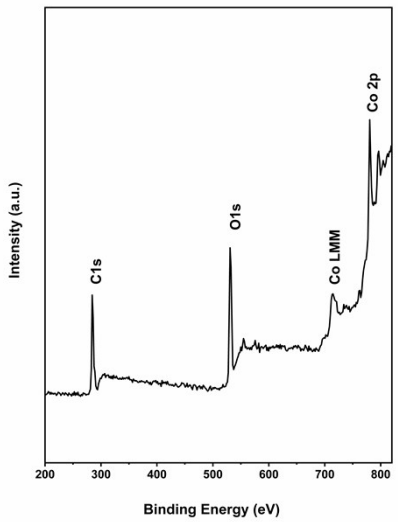

Fig. S3 XPS spectrum of Co_3O_4

Table S1 the relative content of Co^{2+} and Co^{3+} before and after adsorption

Adsorption state	Co^{2+} (%)	Co^{3+} (%)
Before adsorption	40.4	59.6
After adsorption	48.6	51.4

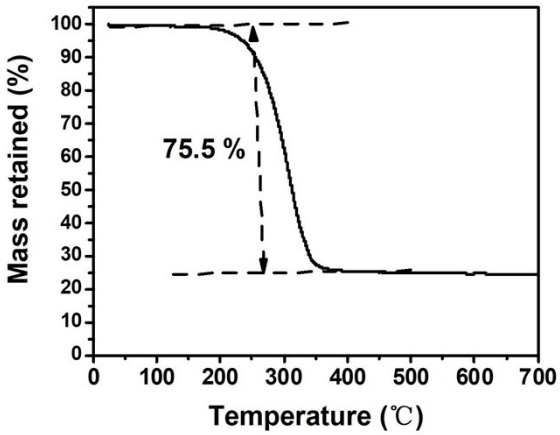

Fig. S4 Thermogravimetric analysis (TGA) curve of cabon black-sulfur cathode with a heating rate of 5 °C min^{-1}.

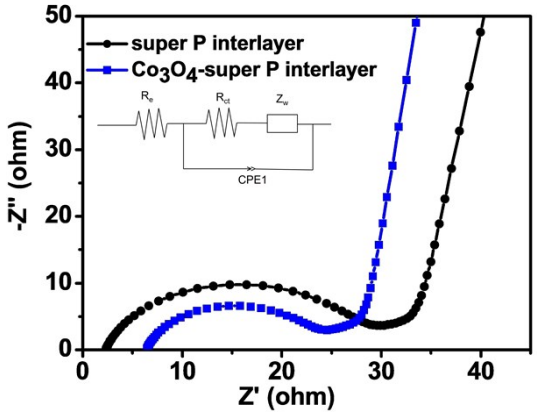

Fig. S5 Nyquist plots of Co_3O_4–super P interlayer and super P interlayer and equivalent circuit (inset).

Table S2 EIS fitting results of cells with Co_3O_4–super P interlayer and super P interlayer

Interlayer	R_{ct} (Ω)	R_s (Ω)
Co_3O_4-super P	19.4	6.4
Super P	26.9	2.3