Supplementary Information

Co_3O_4 nanoplate topochemically transformed from Co(II) coordination polymers with fast and stable reversible lithium storage

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Experimental Section

Preparation of Co_3O_4 nanoparticles

$CoCl_2 \cdot 6H_2O$ (4.76 g), F127 (1.42 g), and urea (0.06 g) are dissolved into 50 mL of ethanol at room temperature. After ultrasonication for 30 min to reach well dispersion, the mixture is heated to 100 ^oC using an oil bath. After reaction for 8 h, the product of precursor is collected by centrifugation and washed with deionized (DI) water and ethanol several times after the solution is cooled down naturally. To obtain Co_3O_4, the resultant precursor product is loaded into a tube furnace and annealed at 400 ^oC for 3 h in air.

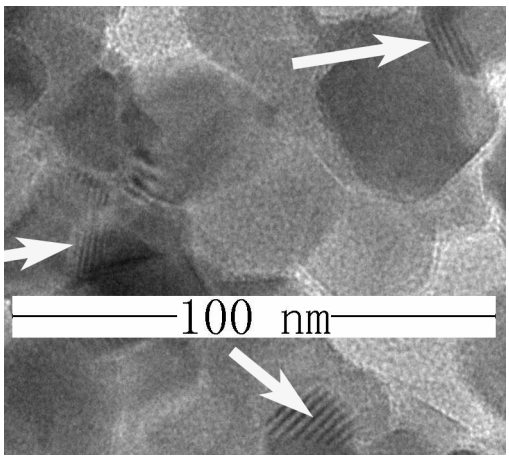

Fig. S1. Enlarged TEM image of Co_3O_4 nanoplates.

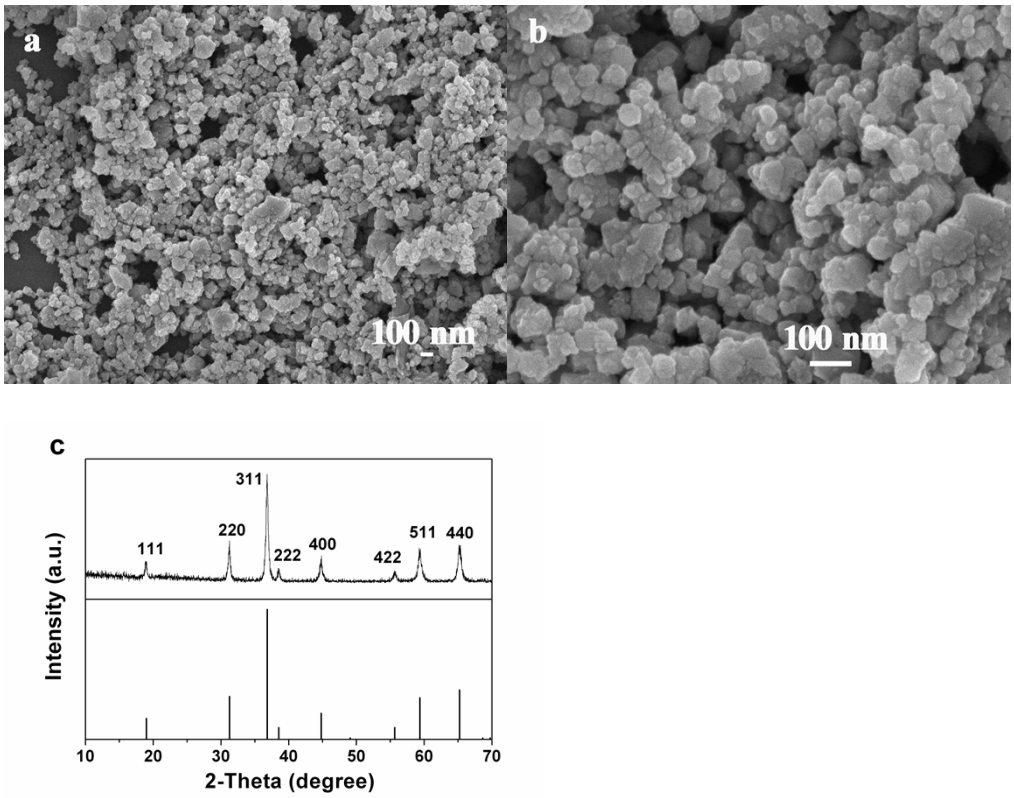

Figure S2. (a, b) Scanning electron microscope (SEM) images and (c) powder X-ray diffraction (XRD) pattern of Co_3O_4 nanoparticles.

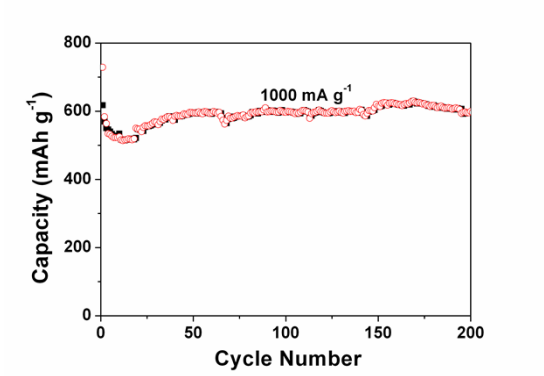

Figure S3. The cyclic performance of Co_3O_4 nanoplates at a high rate of 1000 mA g^{-1}.