Supporting Information

Facile synthesis of hierarchical porous Co$_3$O$_4$ nanoboxes as the efficient cathode catalysts for Li-O$_2$ batteries

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Fig. S1 EDX spectra of the PBAs precursors (a) before and (b) after the NaOH treatment.
Fig. S2 XPS spectra of (a) K, (b) Fe and (c) N elements for the PBAs precursor before (black) and after (red) NaOH treatment.

Fig. S3 XPS Co 2p core level spectra of (a) porous PBAs precursors and (b) hollow Co$_3$O$_4$ nanoboxes.
Fig. S4 First discharge-charge curves of Li-O_2 batteries with (a) porous porous Co_3O_4 nanoboxes and (b) EC-300J carbon electrodes at various current densities; (c) Discharge capacity retention of Li–O_2 battery cells with different electrodes at various current densities.

Fig. S5 Cyclic performance of EC-300J carbon electrodes at 0.16 mA cm^{-2} with limited capacity of (a) 500 mAh g^{-1} and (b)1000 mAh g^{-1}, respectively.