Electronic Supplementary Information

Oxygen Vacancies Derived Local Build-In Electric Field in Mesoporous Hollow Co_3O_4 Microspheres Promotes High-Performance Li-Ion Batteries

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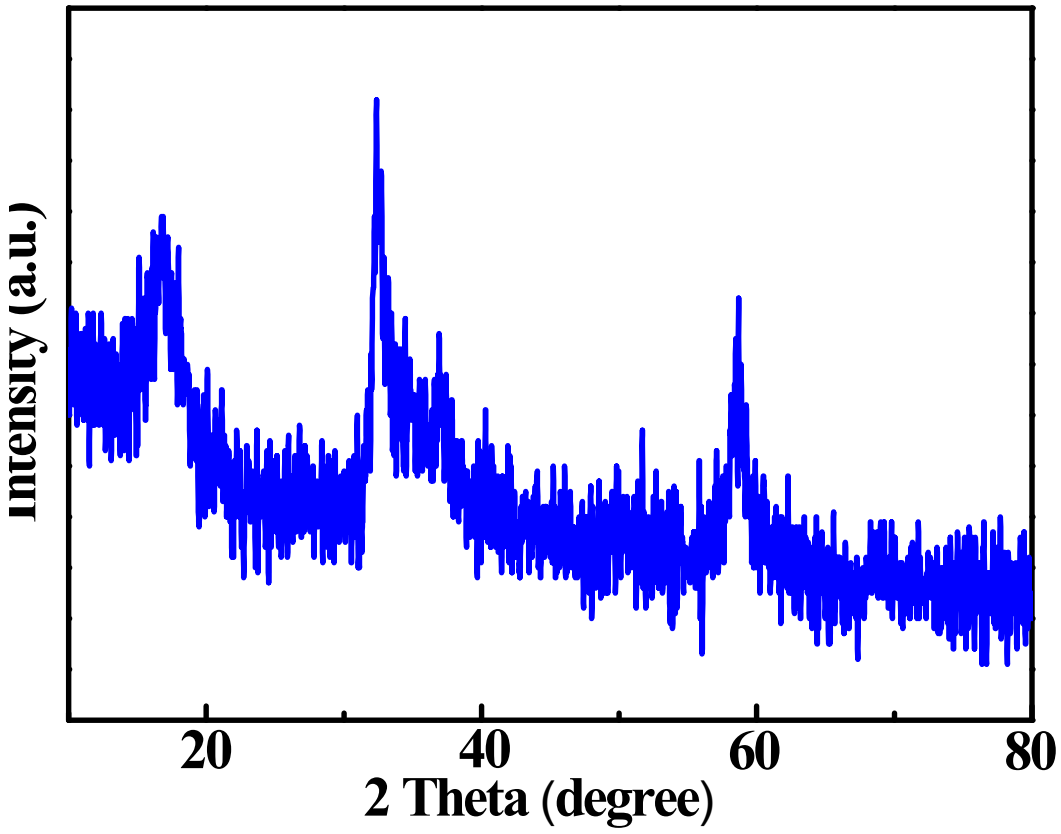

Fig. S1 XRD pattern of the s-CoA, which displays diffraction peaks in accord with those of previously-reported polyols-based metal alkoxides. [Chem. Mater., 2003, 15, 3543]

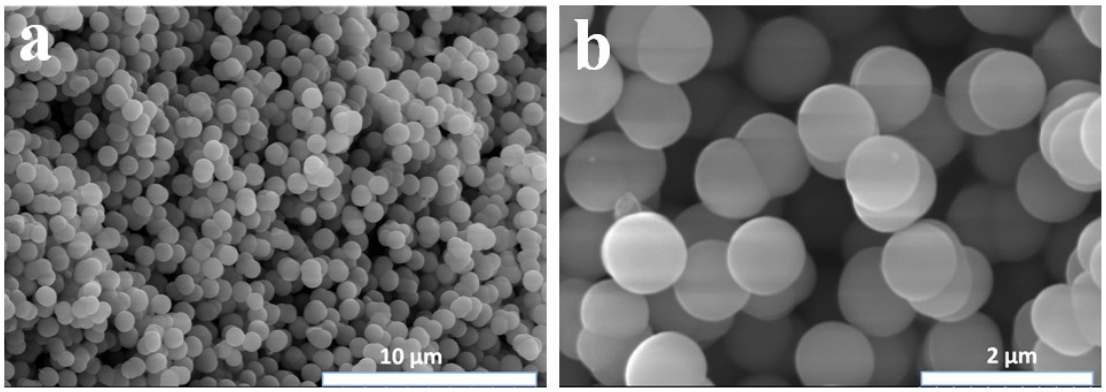

Fig. S2 SEM images of the s-CoA.

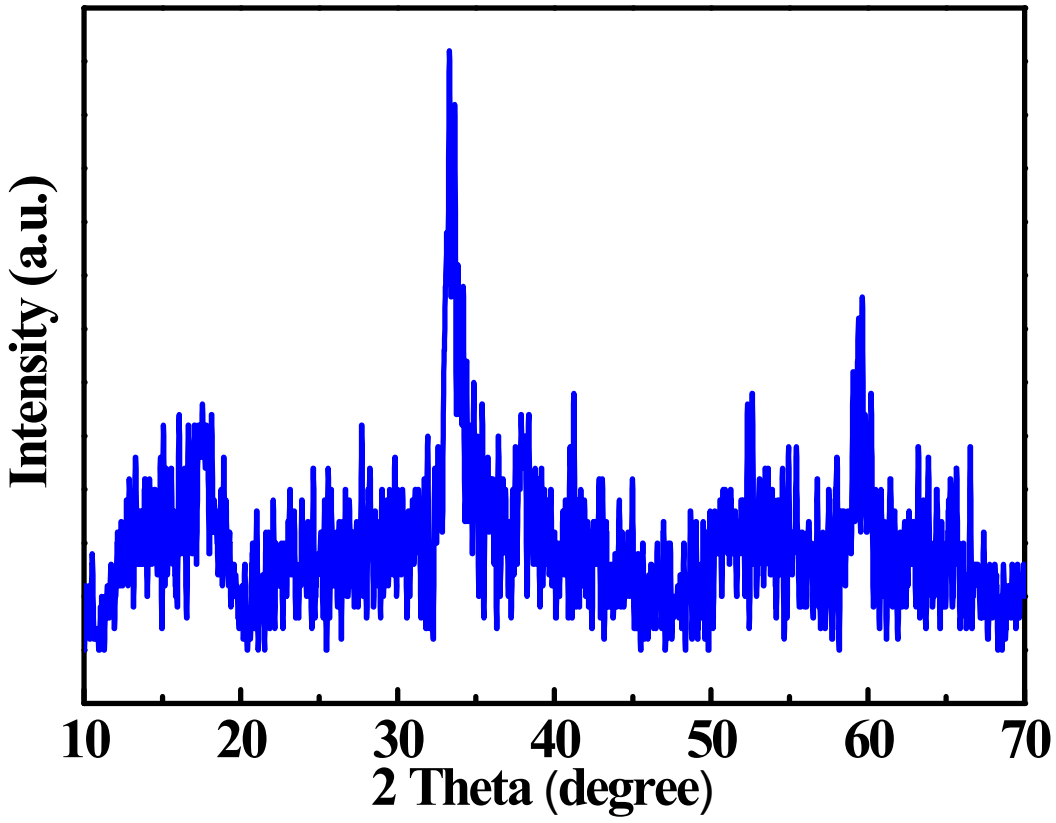

Fig. S3 XRD pattern of the *h*-CoOH.

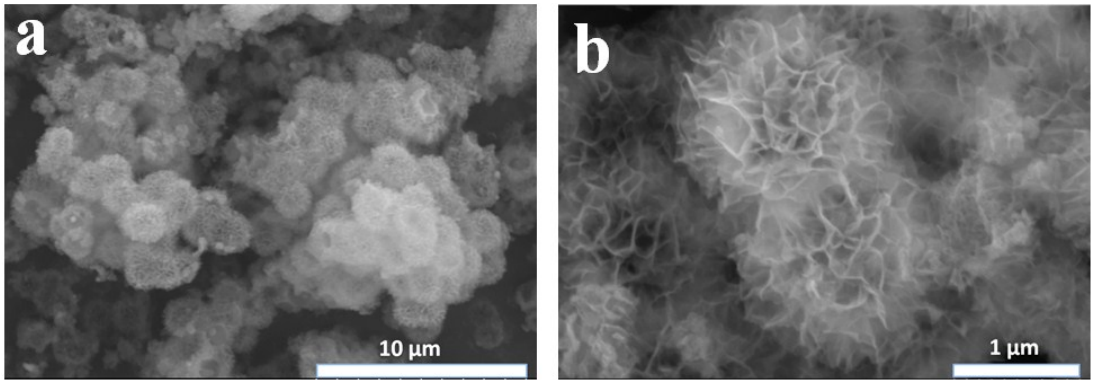

Fig. S4 SEM images of the *h*-CoOH.

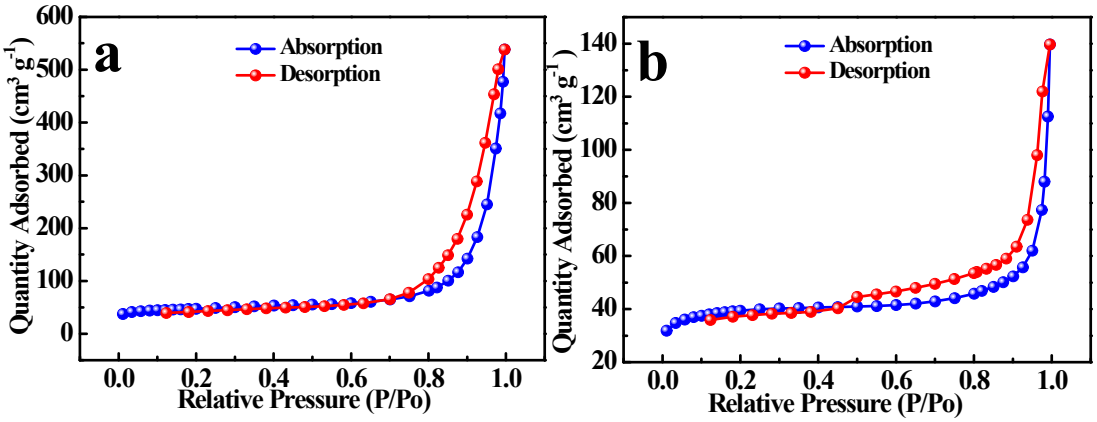

Fig. S5 Nitrogen adsorption-desorption isotherm loops of Co@200 (a) and Co@400 (a).

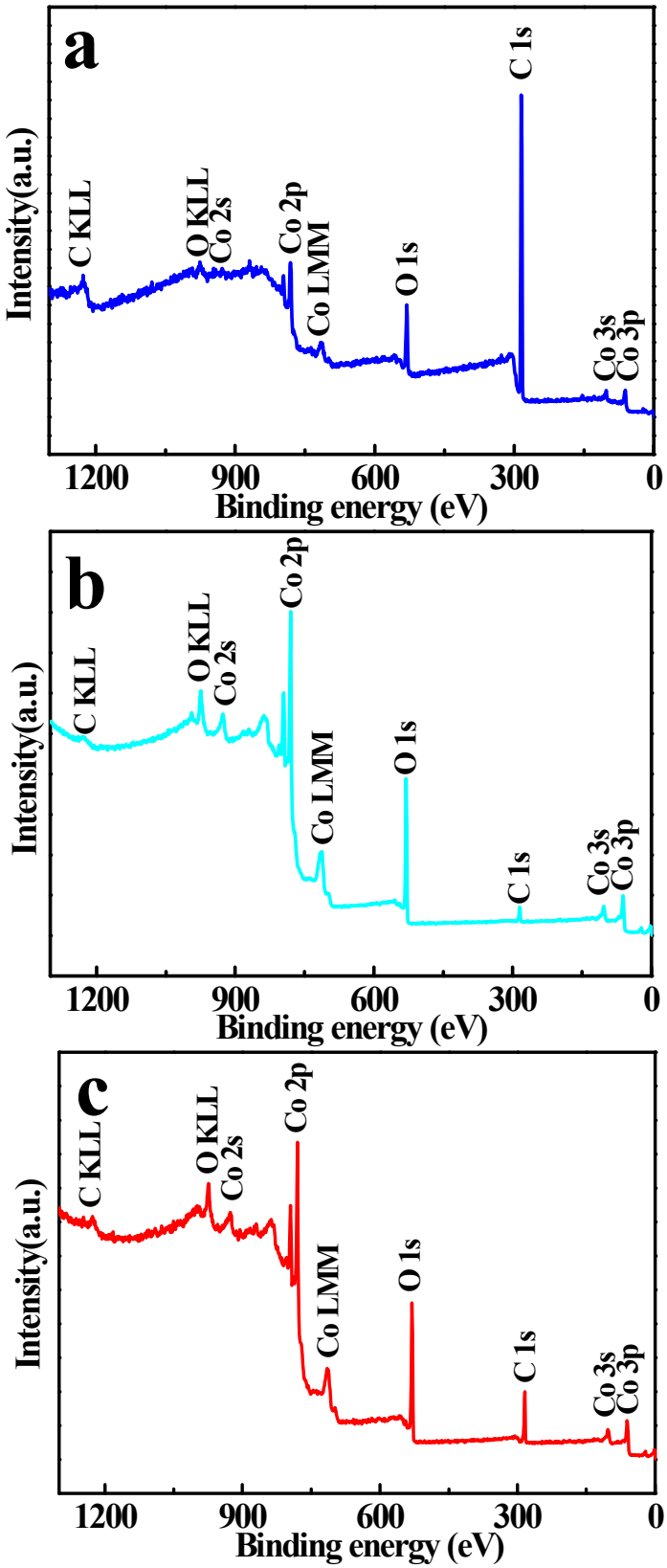

Fig. S6 XPS survey spectra of the as-prepared Co@200 (a), Co@300 (b) and Co@400 (c).

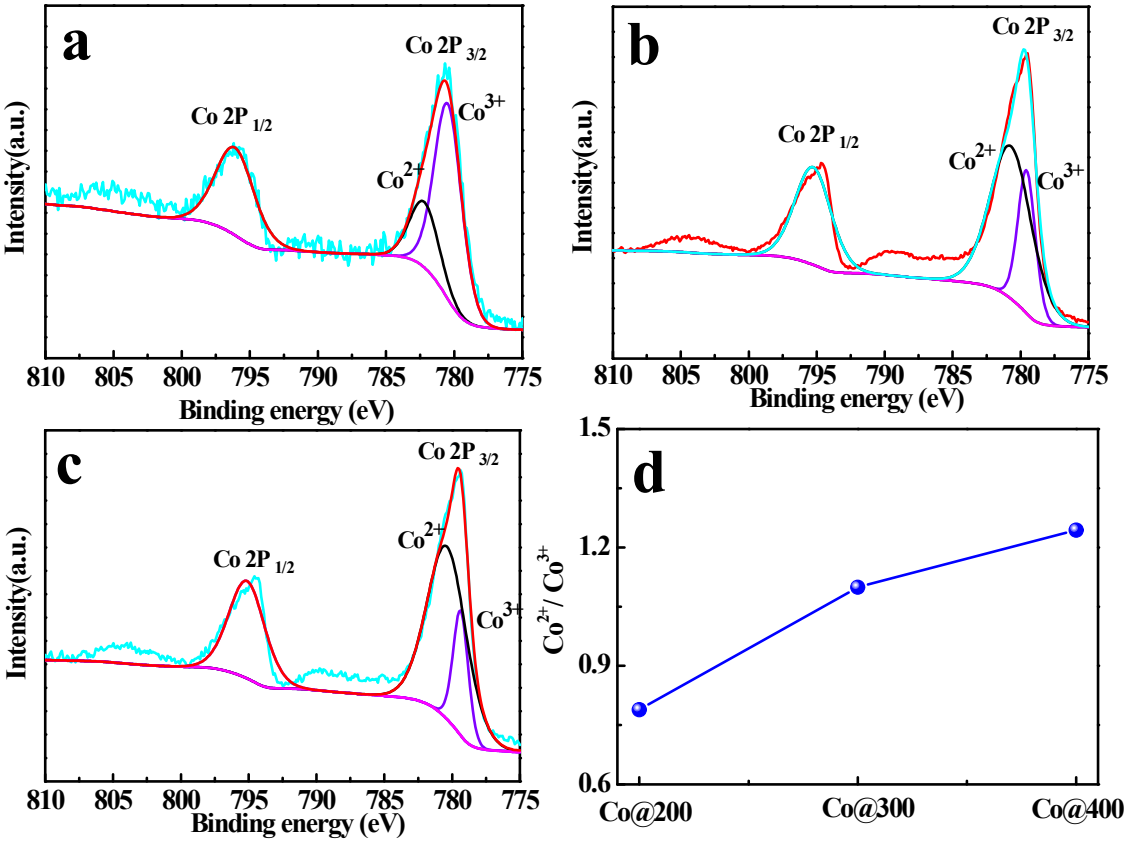

Fig. S7 High-resolution XPS spectra for Co 2p of Co@200 (a), Co@300 (b), and Co@400 (c), and the relationship between the ratio of Co^{2+} to Co^{3+} and the calcination temperature (d).

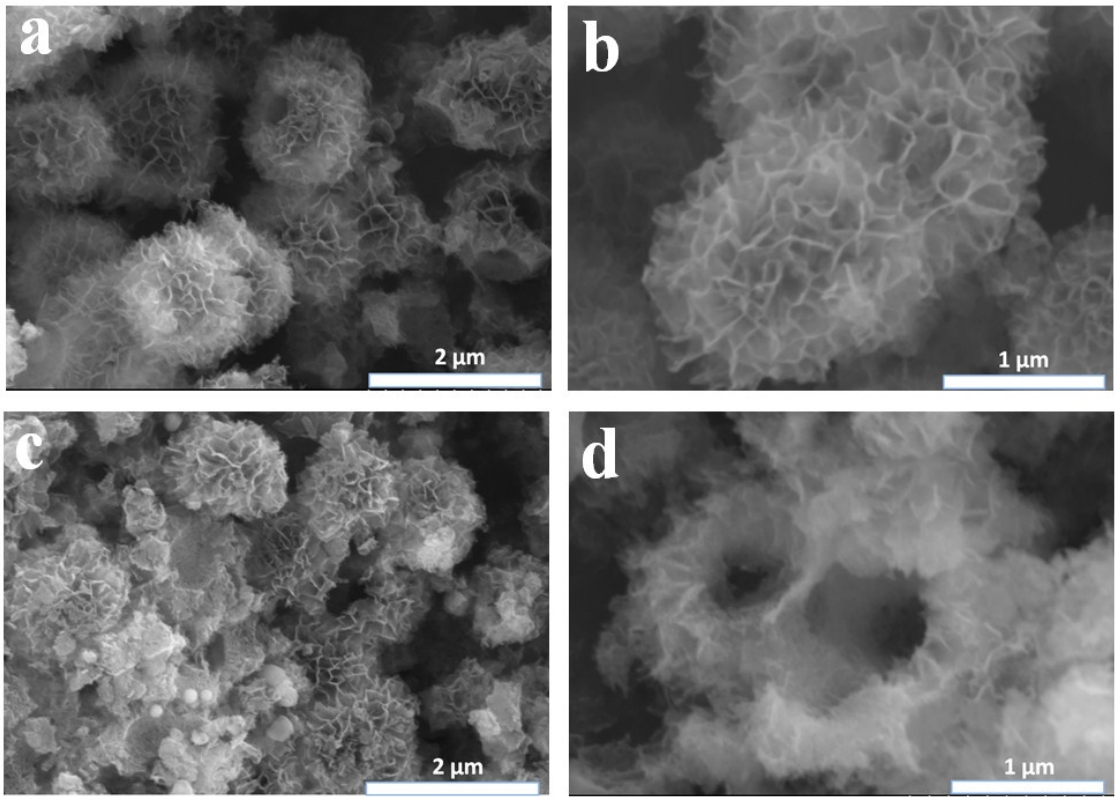

Fig. S8 SEM images of Co@200 (a, b) and Co@400 (c, d).

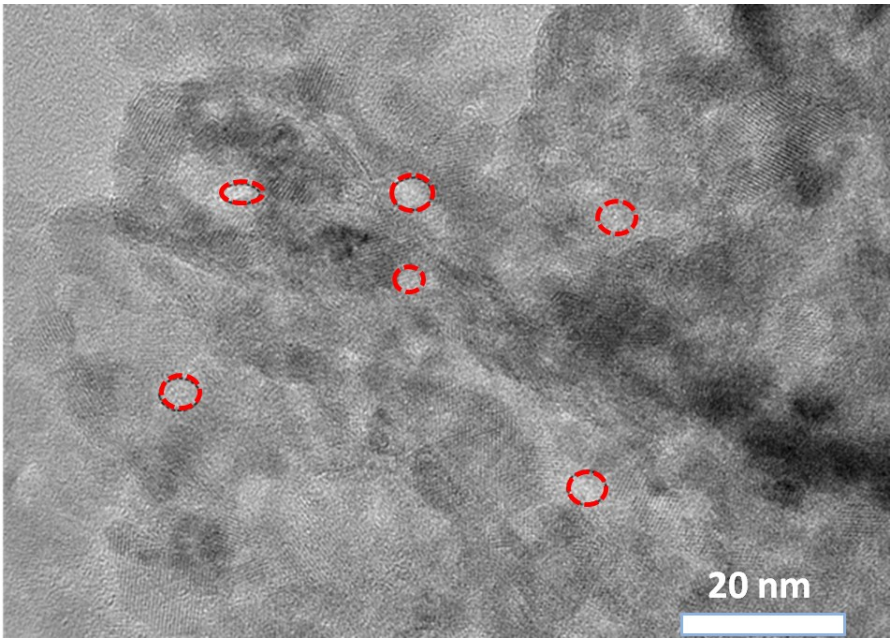

Fig. S9 TEM image of Co@300.

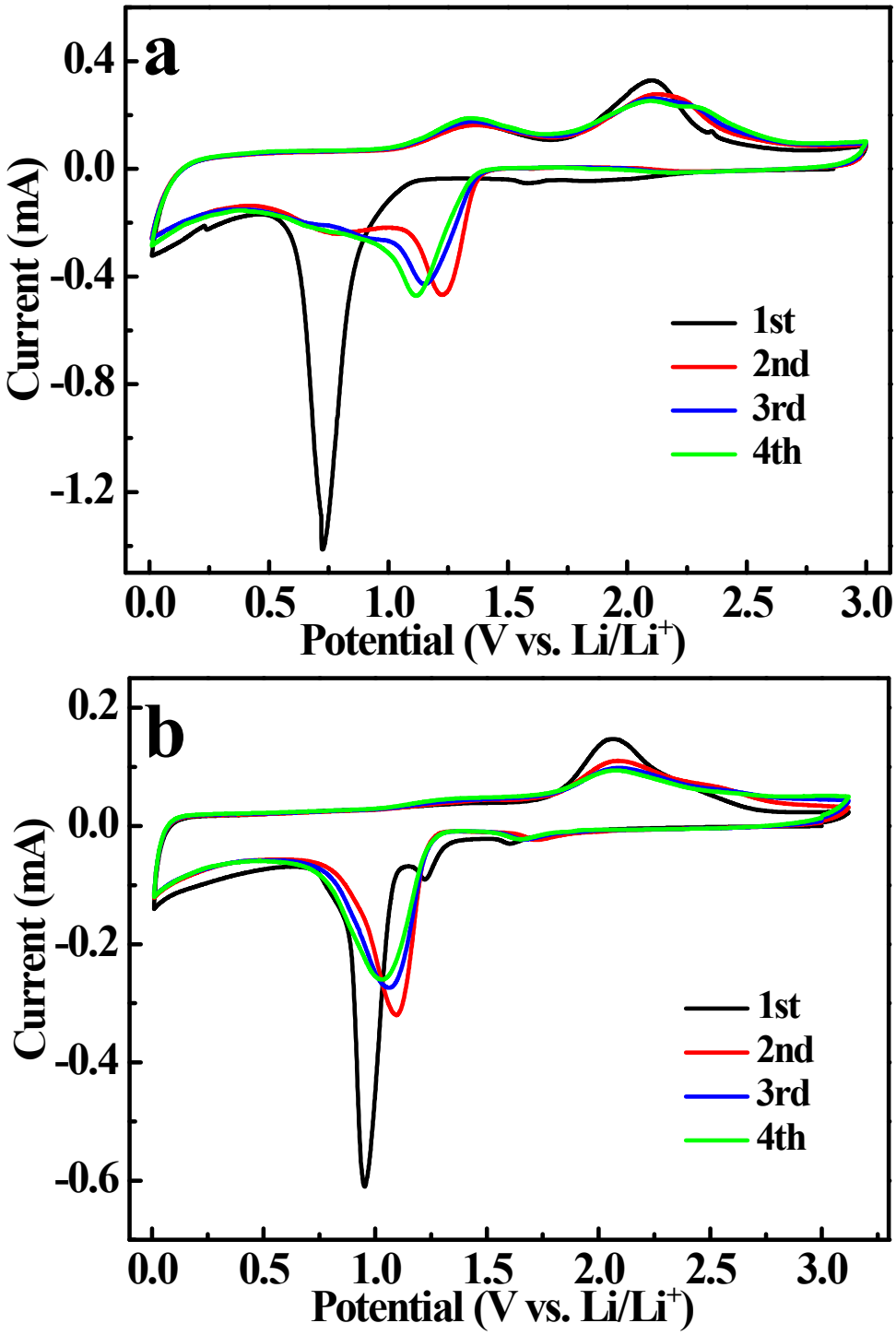

Fig. S10 Cyclic voltammetry curves of Co@200 (a) and Co@400 (b) electrodes for the first four cycles at scan rate of 0.2 mV s^{-1}.

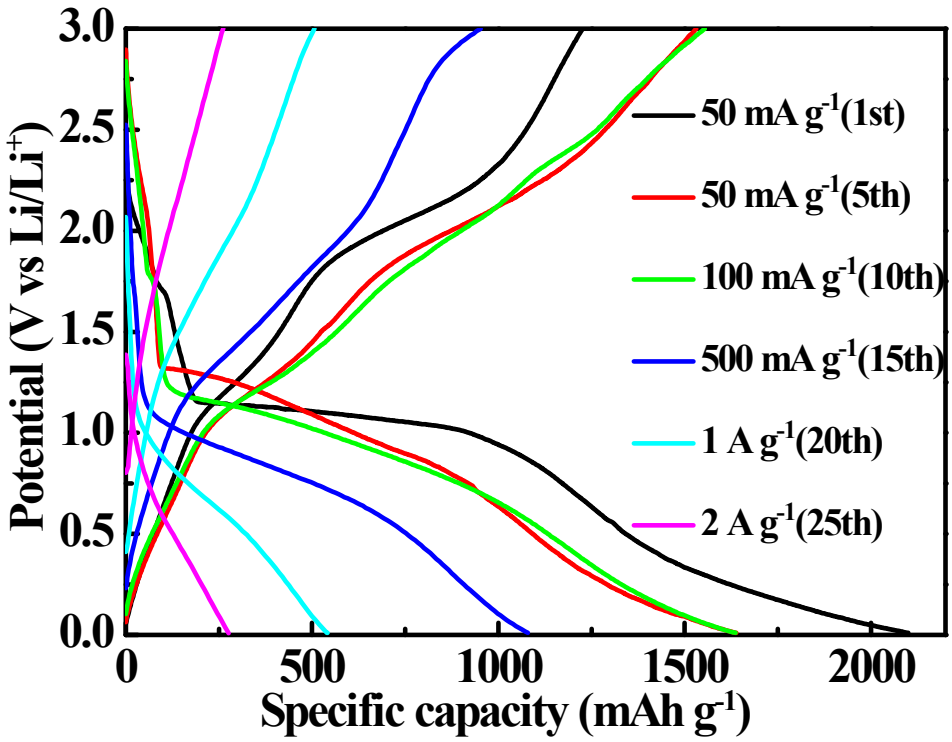

Fig. S11 Charge-discharge profiles of Co@300 electrodes at different current densities.

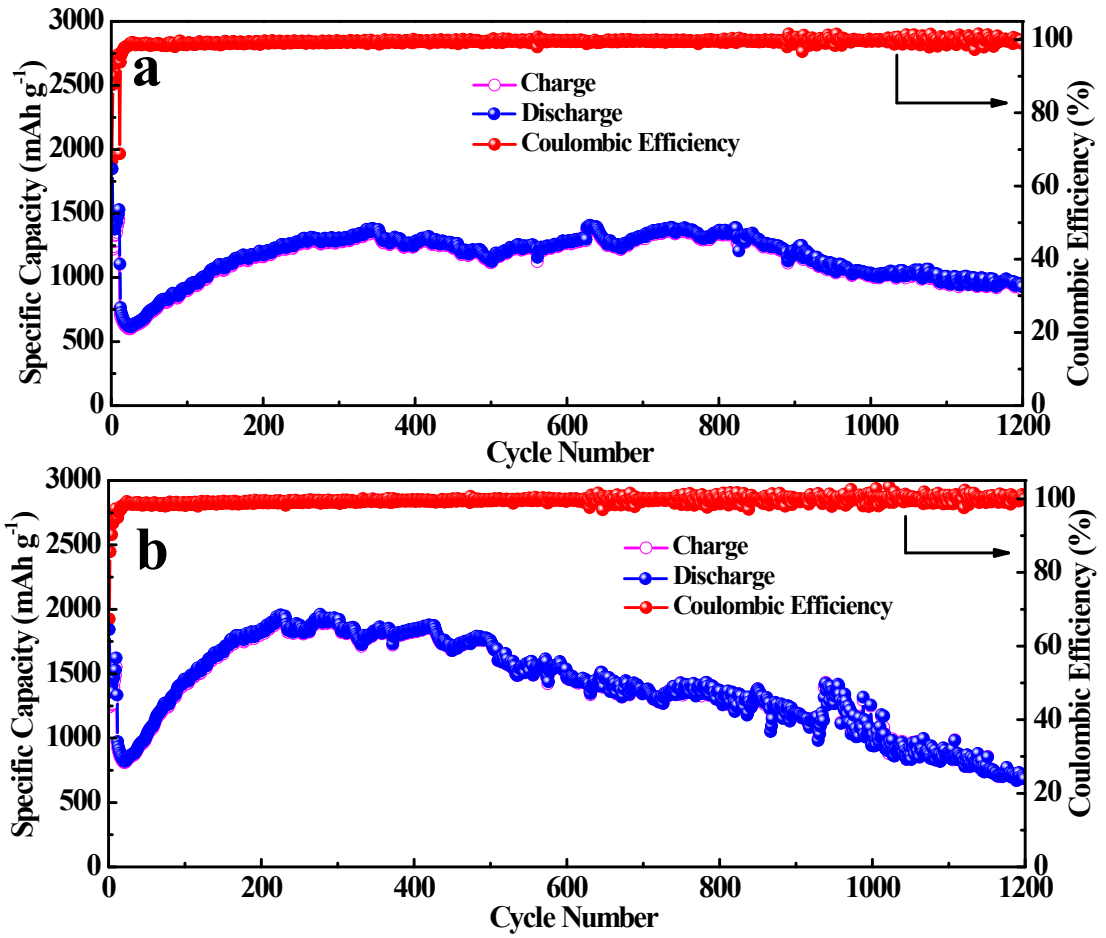

Fig. S12 Cycling performance and coulombic efficiency of Co@200 (a) and Co@400 (b) electrodes at current density of 1.0 A g^{-1}.

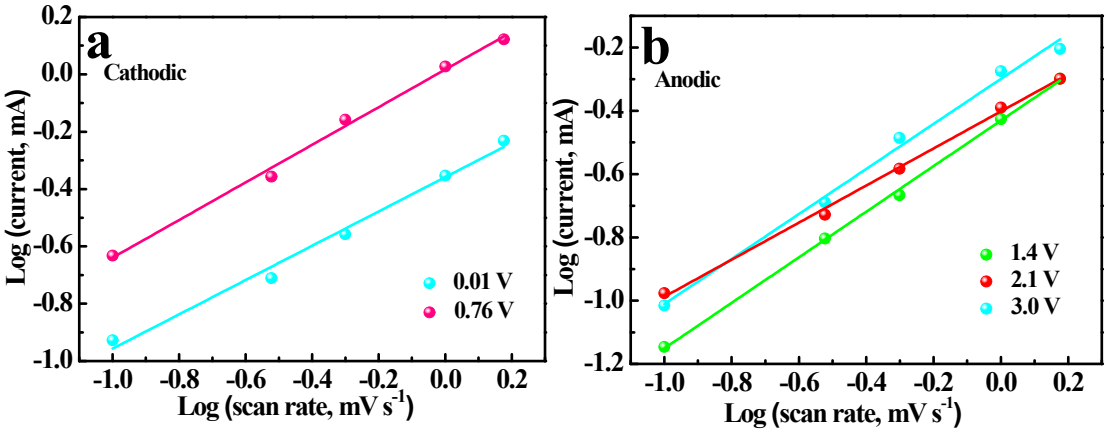

Fig. S13 Current responses plotted against different scan rates of Co@300 electrodes at different potentials for cathodic scans (a), and anodic scans (b).