Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Tunable Co_3O_4 hollow structures (from yolk-shell to multi-shell) and their Li storage properties

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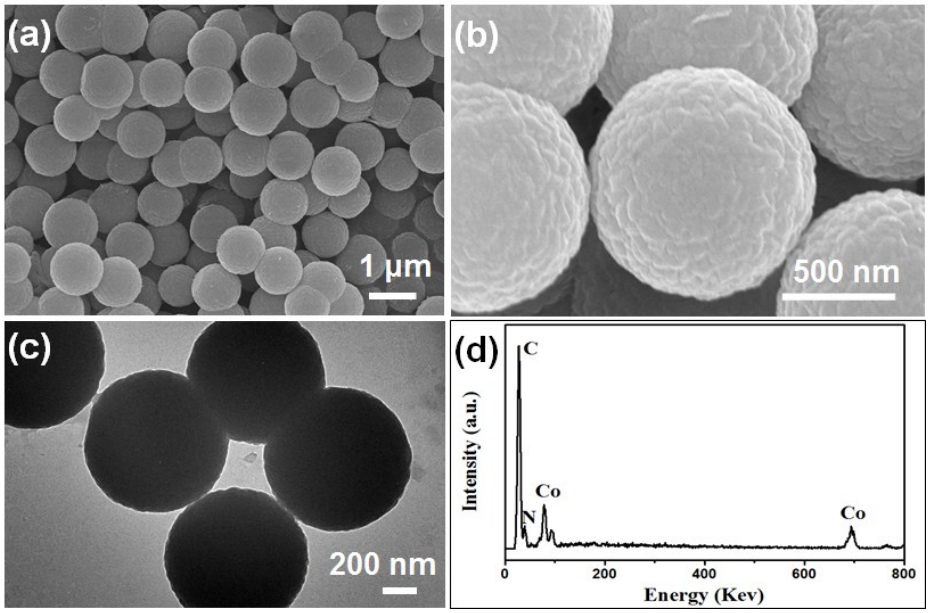

Figure S1. SEM images (a and b), TEM image (c), and EDX spectrum of the as-obtained precursors.

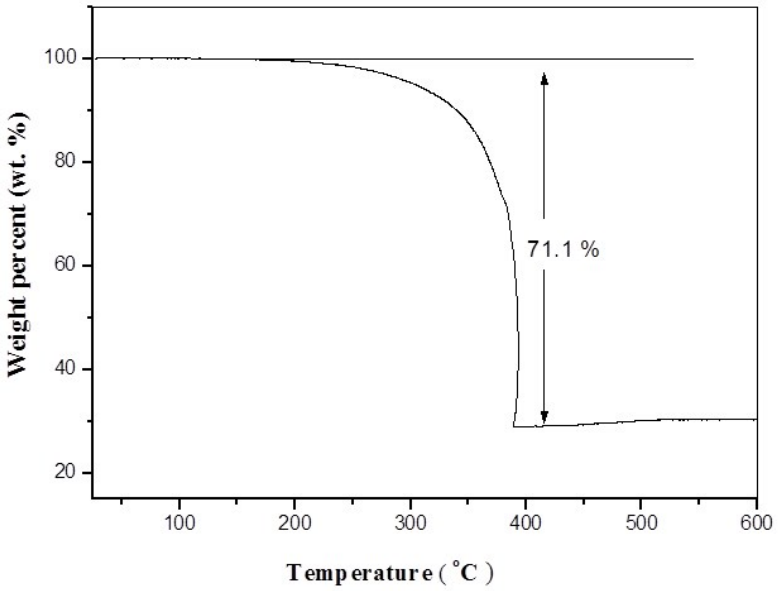

Figure S2. TG of the sphere-like precursor.

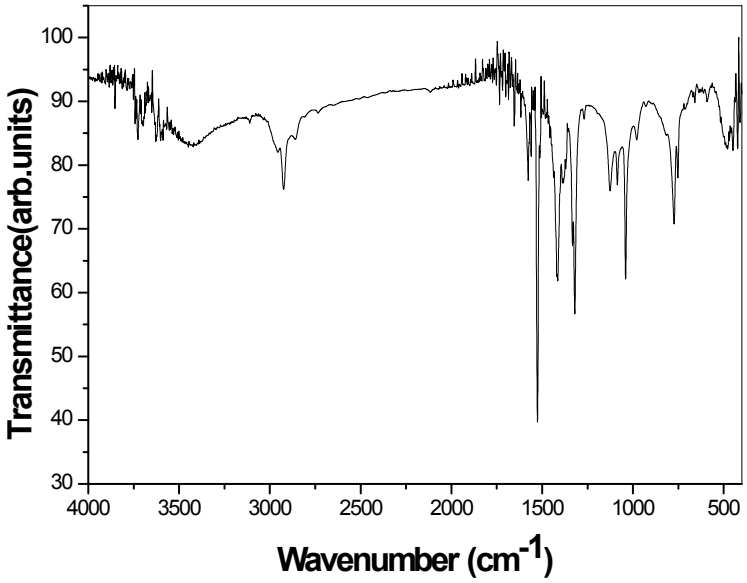

Fig. S3 FTIR spectra of cobalt(Ⅱ) complexes precursors

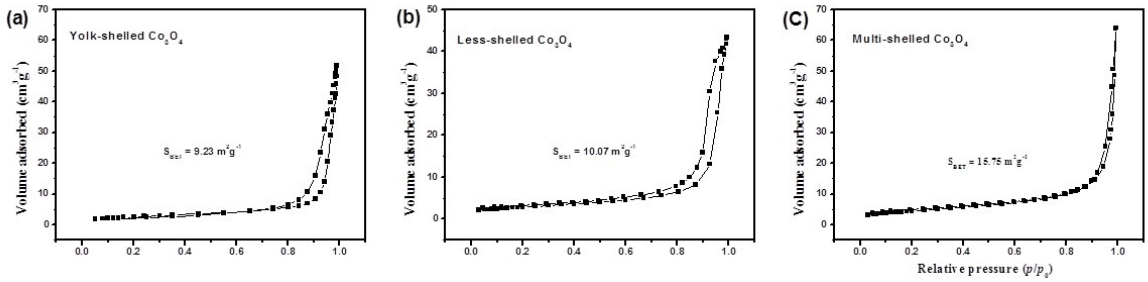

Figure S4. N_2 adsorption-desorption isotherms for the as-obtained Co_3O_4. (a: york-shelled, b: less-shelled, c: multi-shelled Co_3O_4 microspheres hollow microspheres)

Table S1 Comparison of electrochemical performance with multi-shelled Co_3O_4 hollow spheres.

Materials	Current density mA g^{-1}	Cycles	Capability mA g^{-1}
Porous Co_3O_4 hollow tetrahedra[S1]	200	60	1052
Co_3O_4 hexagonal nanorings[S2]	200	60	913
Nanosheet-assembled multi-shelled hollow spheres [S3]	250	50	731
Nanocage Co_3O_4 [S4]	500	100	810
Multi-shelled Co_3O_4 hollow spheres (This work)	1 000	100	1058

Reference:

S1. D. Tian, X. L. Zhou, Y. H. Zhang, Z. Zhou and X. H. Bu, *Inorg Chem*, 2015, **54**, 8159-8161.

S2. P. P. Su, S. C. Liao, F. Rong, F. Q. Wang, J. Chen, C. Li and Q. H. Yang, *J. Mater. Chem. A*, 2014, **2**, 17408-17414.

S3. X. Wang, X. L. Wu, Y. G. Guo, Y. Zhong, X. Cao, Y. Ma and J. Yao, *Adv. Funct. Mater.*, 2010, **20**, 1680-1686.

S4. Y. Wang, B. Wang, F. Xiao, Z. Huang, Y. Wang, C. Richardson, Z. Chen, L. Jiao and H. Yuan, *J. Power Sources*, 2015, **298**, 203-208.