

## Supporting Information

**Table 1.** the Li-ion diffusion coefficient of the materials calculated from EIS spectra.

	ZCO-1	ZCO-2	ZCO-3
$D_{Li}(EIS)(cm^2 s^{-1})$	$2.72 \times 10^{-16}$	$9.56 \times 10^{-15}$	$1.96 \times 10^{-15}$

**Table 2.** Comparison of electrochemical properties of the ZnCo<sub>2</sub>O<sub>4</sub> anodes in LIBs.

ZnCo <sub>2</sub> O <sub>4</sub> anodes	Cycling stability (mAh g <sup>-1</sup> )	Current density (mA g <sup>-1</sup> )	Cycle numbers	Ref.
Porous nanostructured	1243.2	100	80	1
Sliced orange-shaped	890	200	130	2
Hollow octahedron	880	200	160	3
Porous nanoribbon arrays	1422	200	80	4
Multimodal porous	919	200	100	5
Ultrathin mesoporous nanosheets	810	1000	200	6
Mesoporous microspheres	536	500	40	7
Nanotubes	1180	200	275	This work

### Reference:

1. M. J. Du, D. He, Y. B. Lou and J. X. Chen, *J. Energy Chem.*, 2017, 26, 673-680.
2. J. Deng, X. Yu, Y. He, B. Li, Q.-H. Yang and F. Kang, *Energy Storage Mater.*, 2017, 6, 61-69.
3. J. Deng, X. Yu, X. Qin, B. Liu, Y.-B. He, B. Li and F. Kang, *Energy Storage Mater.*, 2018, 11, 184-190.
4. Z. Zhang, X. Zhang, Y. Feng, X. Wang, Q. Sun, D. Yu, W. Tong, X. Zhao and X. Liu, *Electrochim. Acta*, 2018, 260, 823-829.
5. S. Hao, B. Zhang, S. Ball, M. Copley, Z. Xu, M. Srinivasan, K. Zhou, S. Mhaisalkar and Y. Huang, *J. Power Sources*, 2015, 294, 112-119.
6. M. M. Zhen, L. Liu and C. Wang, *Micropor. Mesopor. Mat.* 2017, 246, 130-136.
7. L. L. Hu, B. H. Qu, C. C. Li, Y. J. Chen, L. Mei, D. N. Lei, L. B. Chen, Q. H. Li and T. H. Wang, *J. Mater. Chem. A*, 2013, 1, 5596-5602.

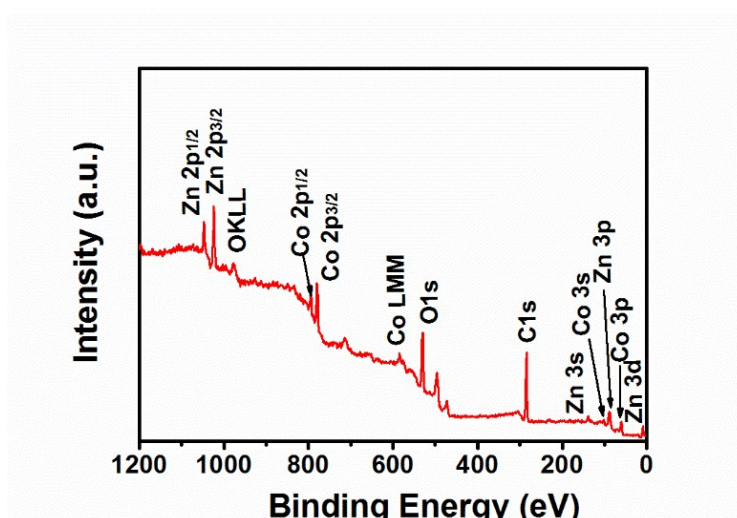


Fig. S1 XPS spectra for the nanotube  $\text{ZnCo}_2\text{O}_4$  samples.

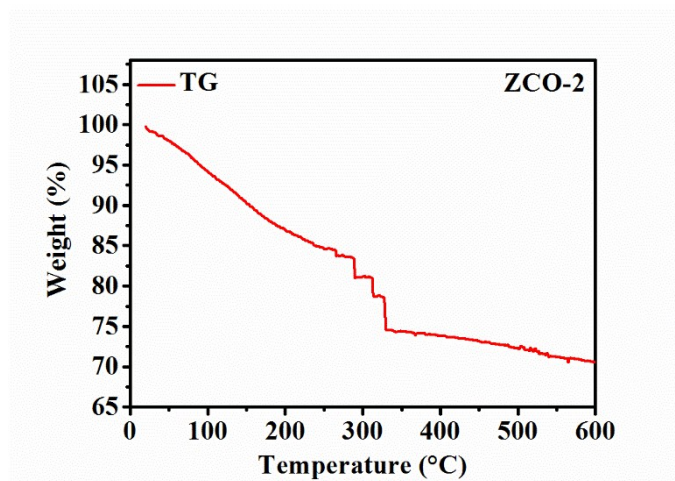


Fig. S2 TG curve for the precursor fibers of ZCO-2 in flowing air