



STRUCTURAL  
CHEMISTRY

**Volume 75 (2019)**

**Supporting information for article:**

**Porous ZnO/Co<sub>3</sub>O<sub>4</sub>/N-doped carbon nanocages synthesized *via* pyrolysis of complex metal–organic framework (MOF) hybrids as an advanced lithium-ion battery anode**

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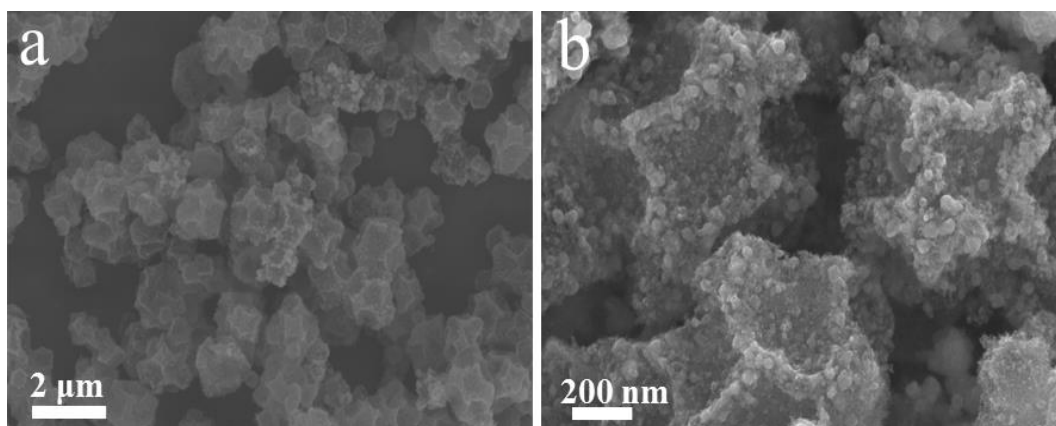
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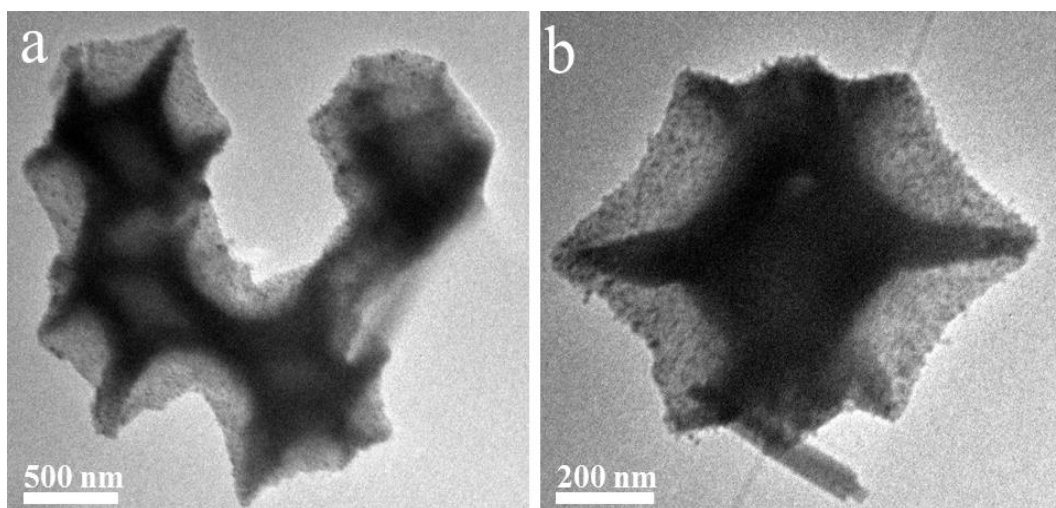
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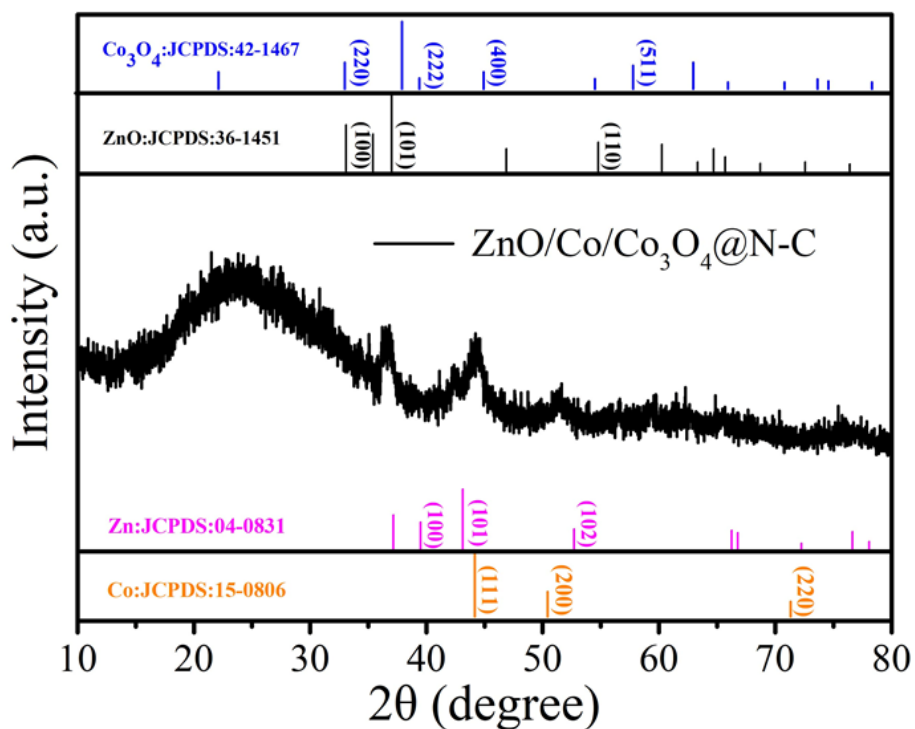
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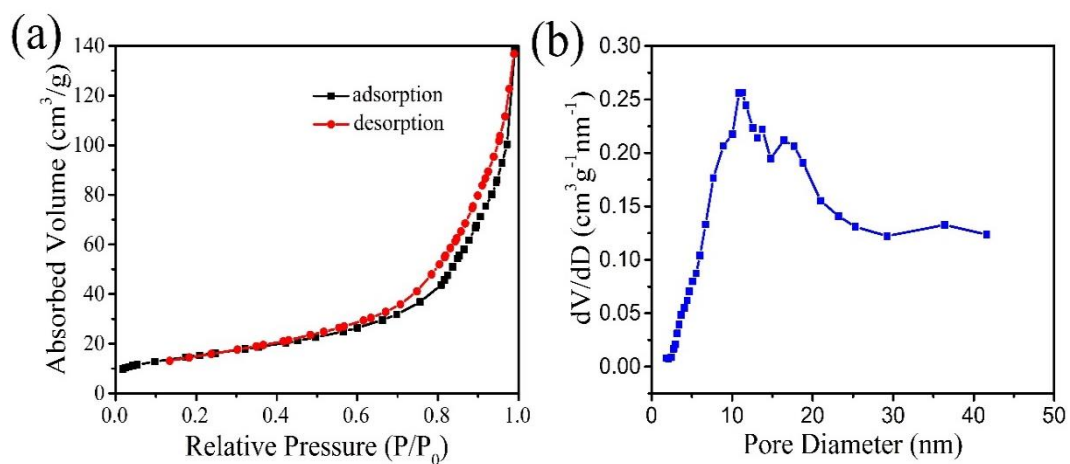
**Figure S1** (a, b) SEM images of the as-prepared ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C.



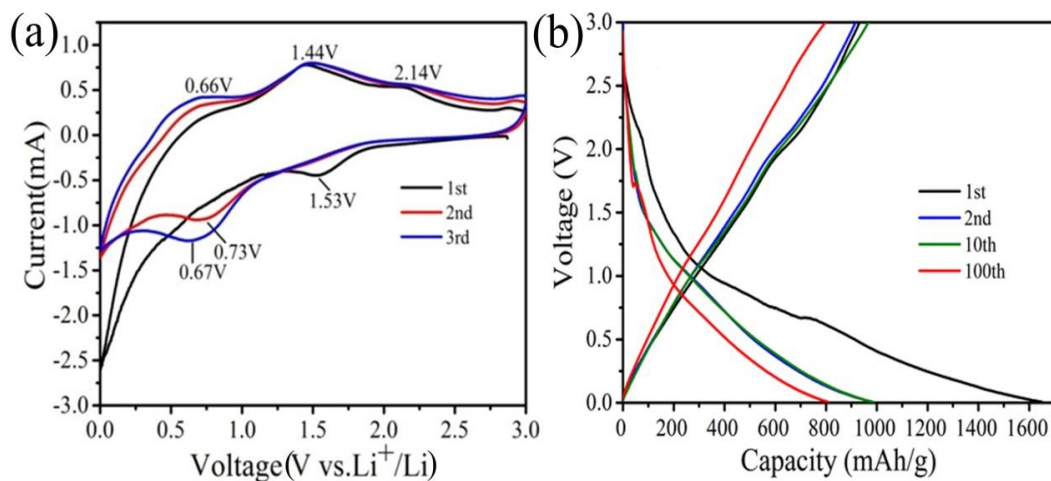
**Figure S2** (a, b) TEM images of the as-synthesized ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C.



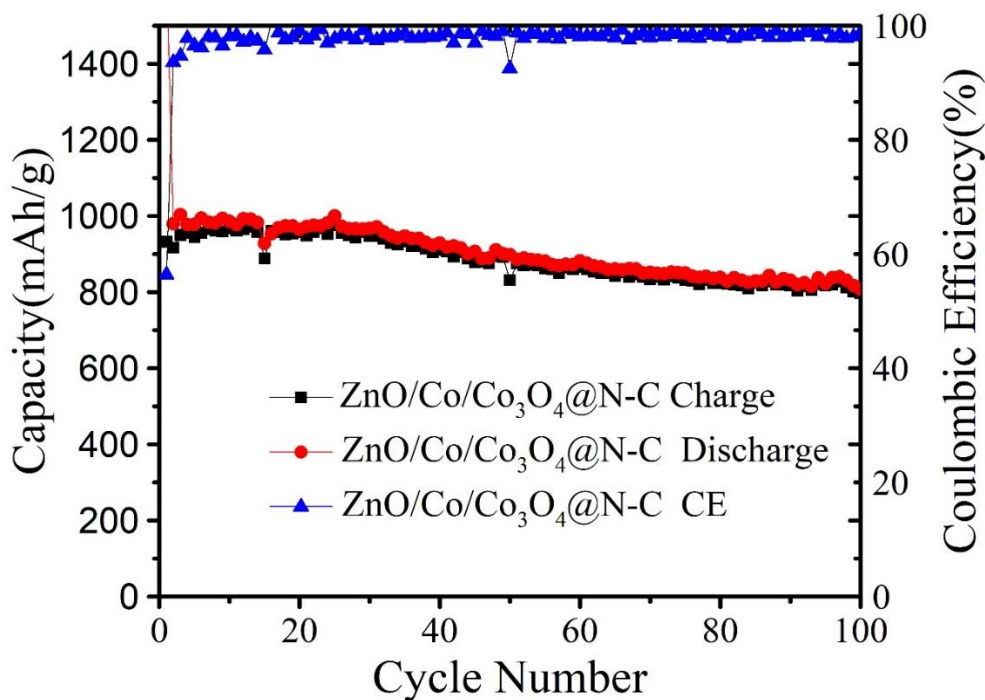
**Figure S3** XRD pattern of ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C.



**Figure S4** (a) Nitrogen adsorption-desorption isotherms and (b) Pore size distribution curve of ZnO-Co<sub>3</sub>O<sub>4</sub>@N-C nanocages.



**Figure S5** (a) Consecutive CV curves of ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C at a scan rate of 0.5 mV/s in the voltage ranges of 0.01-3.0 V. (b) Discharge and charge profiles for the 1st, 2nd, 10th and 100th cycles of ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C.



**Figure S6** Cycle-life performance at 100 mA/g and Coulombic efficiency of ZnO/Co/Co<sub>3</sub>O<sub>4</sub>@N-C.