Supplementary Information

Zn-Fe-ZIF-Derived Porous $ZnFe_2O_4$/C@NCNTs Nanomposites as Anode for Lithium-Ion Batteries

Jiafeng Wu, Yonghai Song, Rihui Zhou, Shouhui Chen, Li Zuo, Haoqing Hou and Li Wang*

College of Chemistry and Chemical Engineering, Jiangxi Normal University, 99 Ziyang Road, Nanchang 330022, China.

* Corresponding author: Tel/Fax: +86 791 88120861. E-mail: lwanggroup@aliyun.com (L. Wang).

Figure S1. The morphology evolution of Zn-Fe-ZIF, (a) hollow hemisphere (the molar ratio of Zn^{2+} to Fe^{2+} = 3), (b) pumpkin (the molar ratio of Zn^{2+} to Fe^{2+} = 4), (c) hexagonal prisms (the molar ratio of Zn^{2+} to Fe^{2+} = 5).

To further study the morphology evolution of Zn-Fe-ZIF. We carried out contrast experiments which kept the total amount of molar of Zn^{2+} and Fe^{2+} unchanged and the molar ratio of Zn^{2+} to Fe^{2+} was gradually increased to 3, 4 and 5, respectively. Other procedure is the same. Along with the molar ratio of Zn^{2+} to Fe^{2+} increased, the morphology of product changed correspondingly from flower-like to hollow hemisphere-like, pumpkin-like and hexagonal prisms-like.

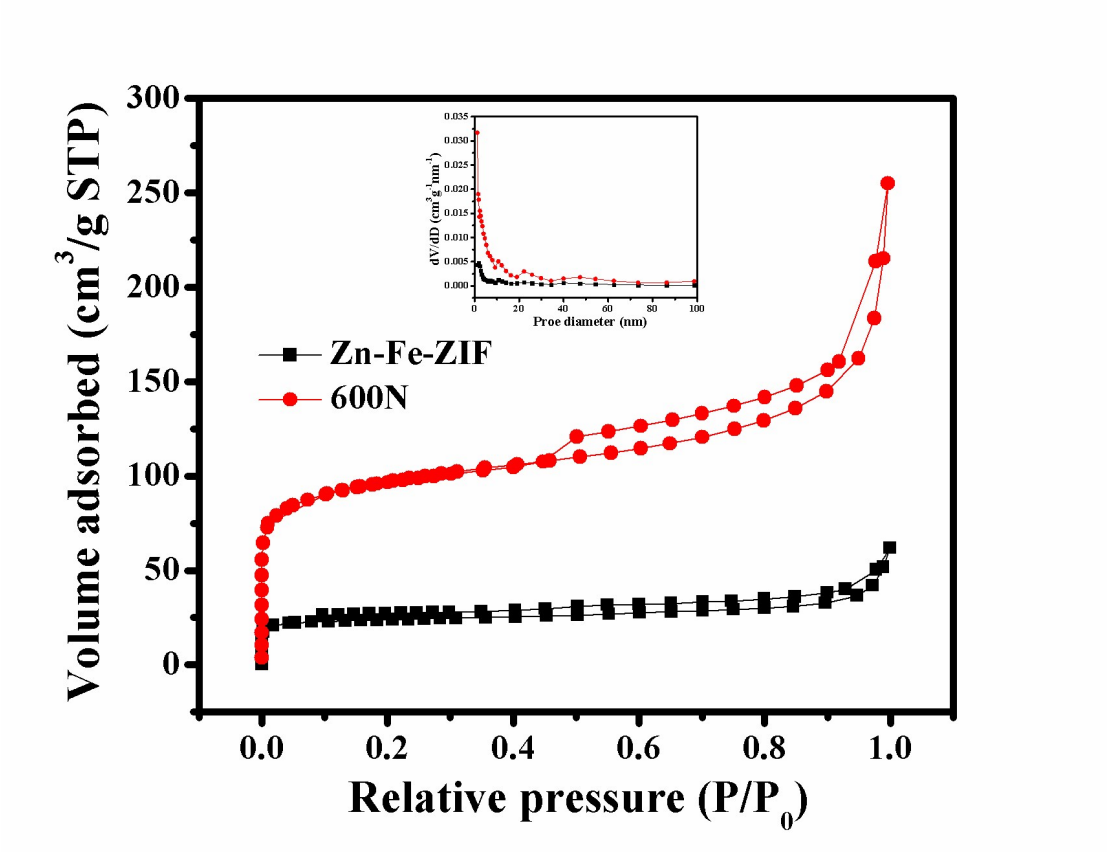


Figure S2. Nitrogen adsorption isothermat for the Zn-Fe-ZIF and 600N sample. The inset is the pore size distribution of the Zn-Fe-ZIF and 600N sample.

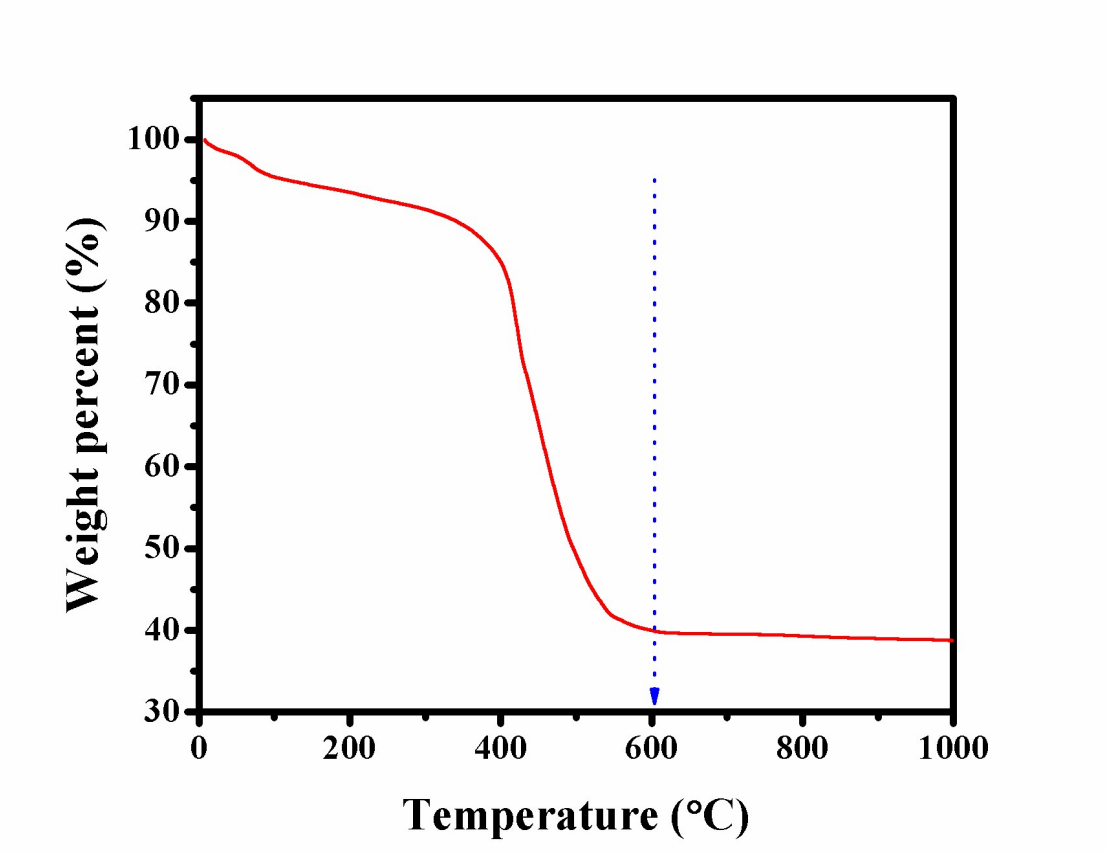


Figure S3. TGA curve of Zn–Fe-ZIF under nitrogen atmosphere. Bull arrow suggested the target temperature (600 °C: very initial state of the transformation).

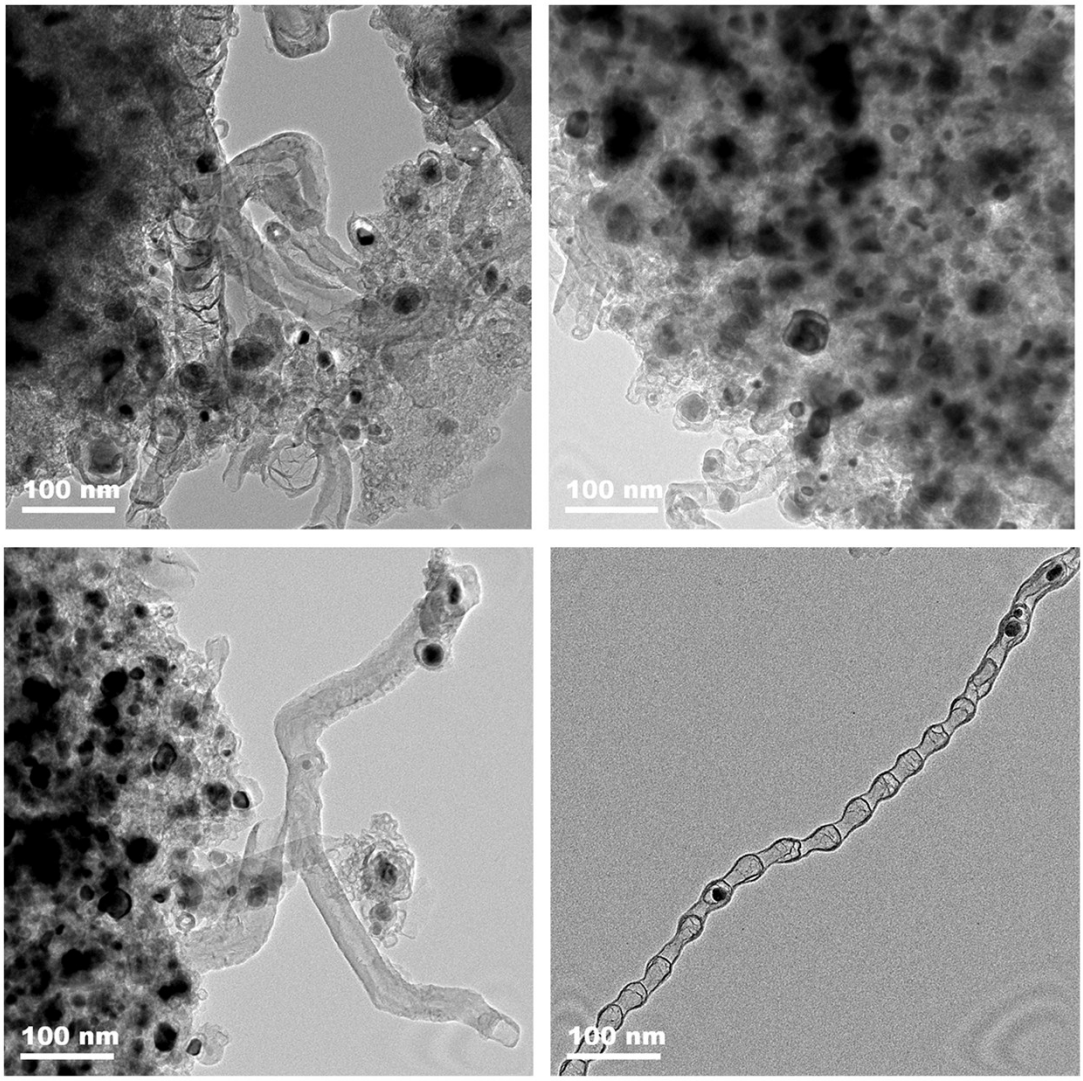
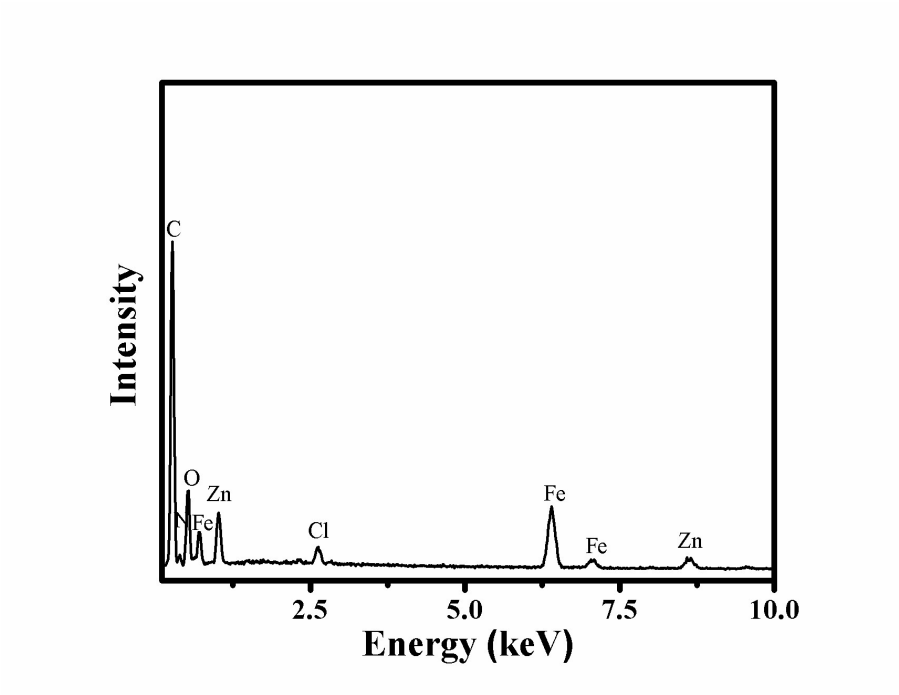


Figure S4. TEM images of 600N.



Element	Weight%	Atomic%
C K	50.08	64.18
N K	10.68	11.74
O K	19.40	18.67
Cl K	1.30	0.57
Fe K	11.92	3.28
Zn K	6.62	1.56
Totals	100.00	100.00

Figure S5. EDS of the 600N sample.