Supporting information

Nanomeshes of Highly Crystalline Nitrogen-Doped Carbon Encapsulated Fe/Fe_3C Electrodes as Ultrafast and Stable Anodes for Li-ion Batteries

Jinqiu Zhou, Tao Qian,* Tingzhou Yang, Mengfan Wang, Jun Guo and Chenglin Yan*

College of Physics, Optoelectronics and Energy & Collaborative Innovation Center of Suzhou Nano Science and Technology, Soochow University, No.1 Shizi Street, Suzhou 215006, China.
*Address correspondence to c.yan@suda.edu.cn (C. Yan) and tqian@suda.edu.cn (T. Qian).

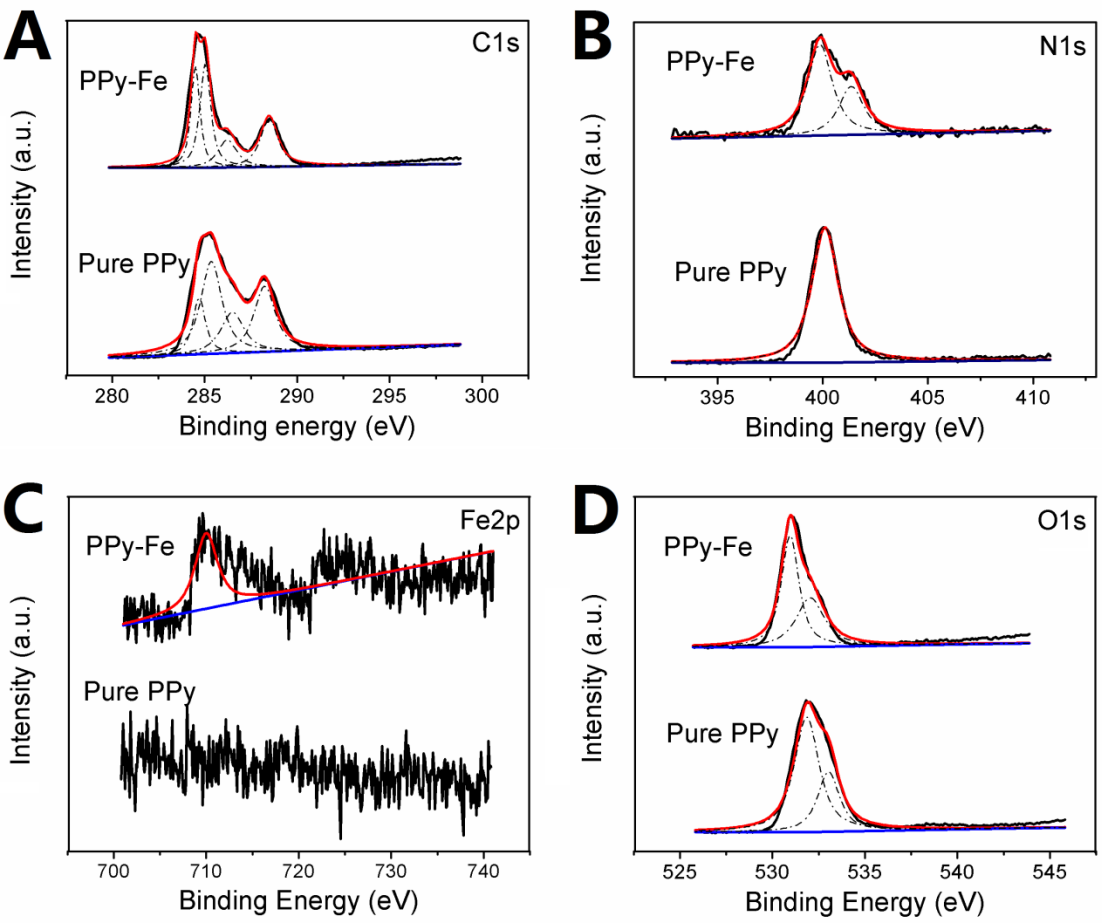

Fig. S1 High resolution of (A) C1s, (B) N1s, (C) Fe2p and (D) O1s XPS spectrum for the PPy-Fe and pure PPy.

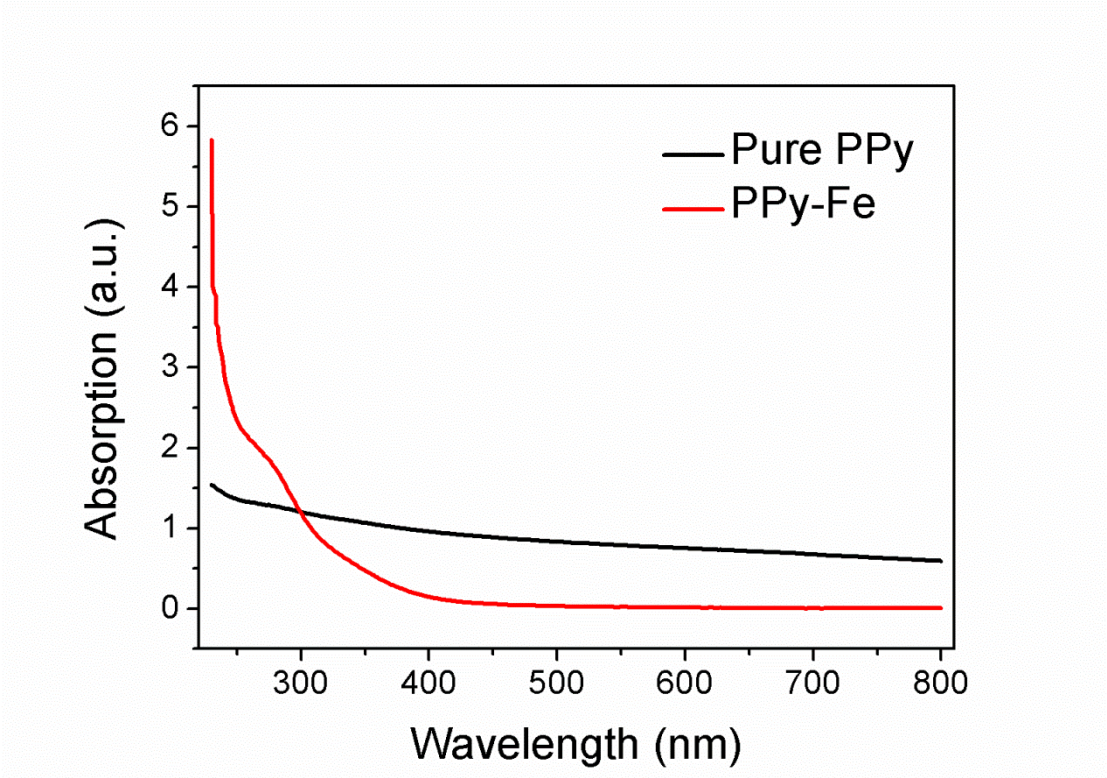

Fig. S2 UV-Vis spectra of pure PPy and PPy-Fe coordination complex. Note: UV-Vis spectra of pure PPy and PPy-Fe coordination complex are collected to further confirm the interaction change during the process of coordination. The curve of PPy-Fe exhibits a tiny shoulder at 275 nm compared with that of pure PPy, which illustrates the coordination bonds in pure PPy and has changed significantly by the addition of excessive $FeCl_2$ and H_2O_2.

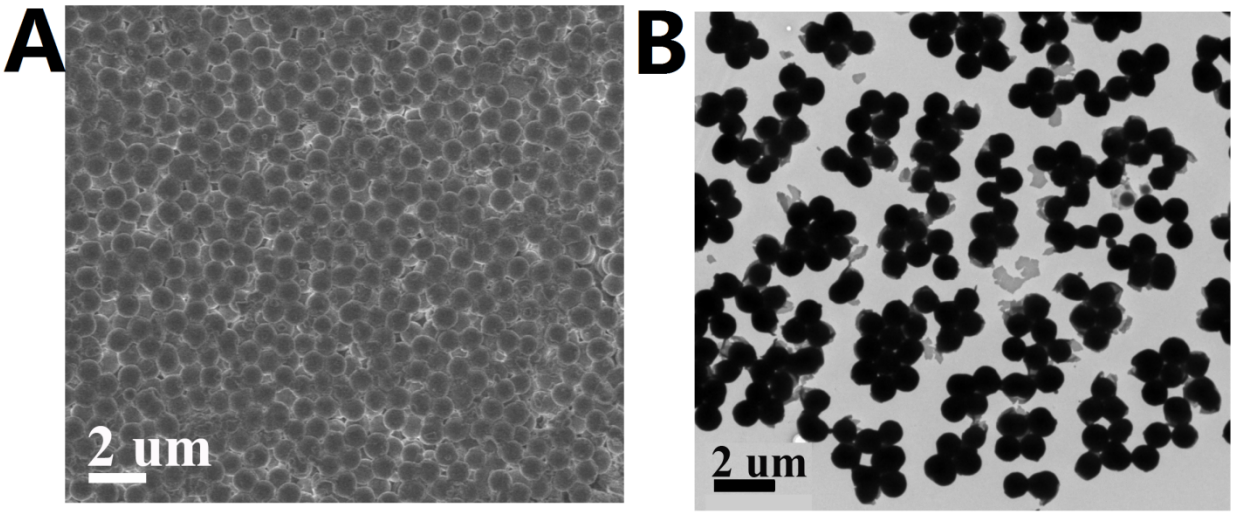

Fig. S3 SEM and TEM images of PPy spheres.

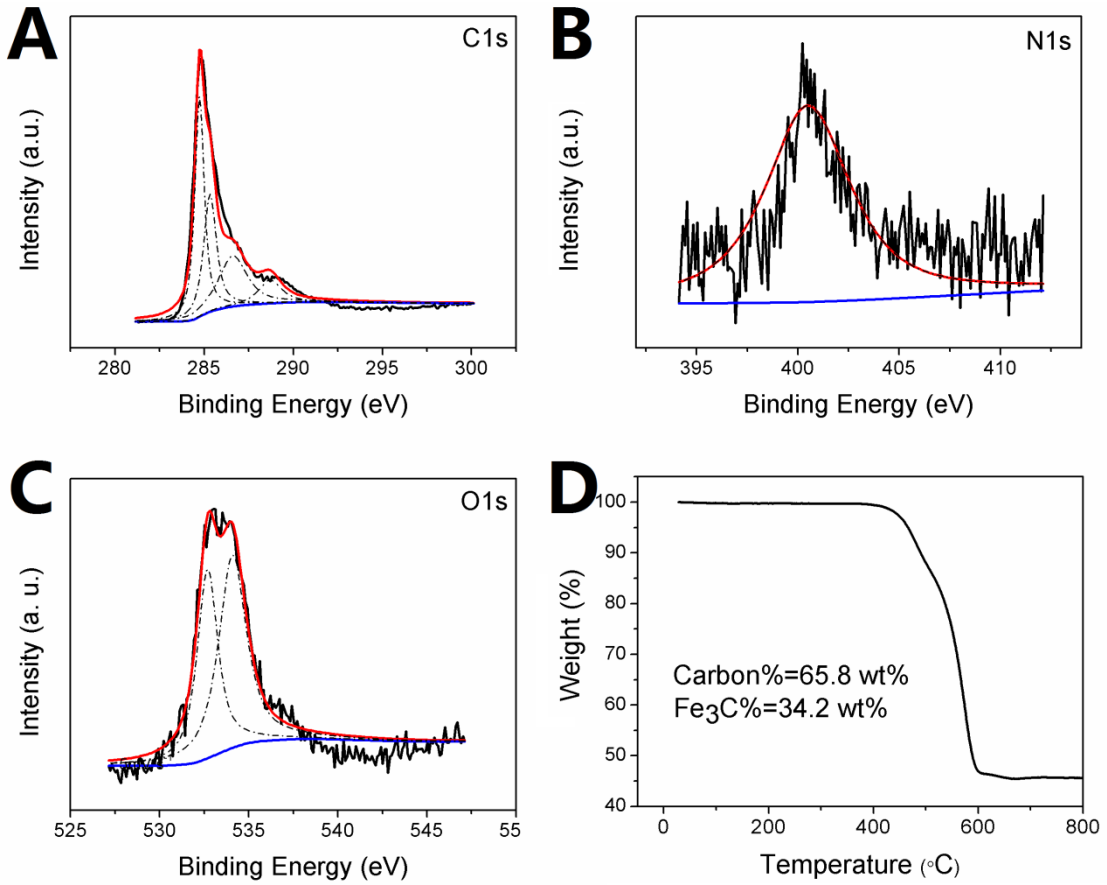

Fig. S4 High resolution of (A) C1s, (B) N1s, (C) O1s XPS spectrum and (D) TGA profile of the N-Fe/Fe_3C@C nanomeshes.

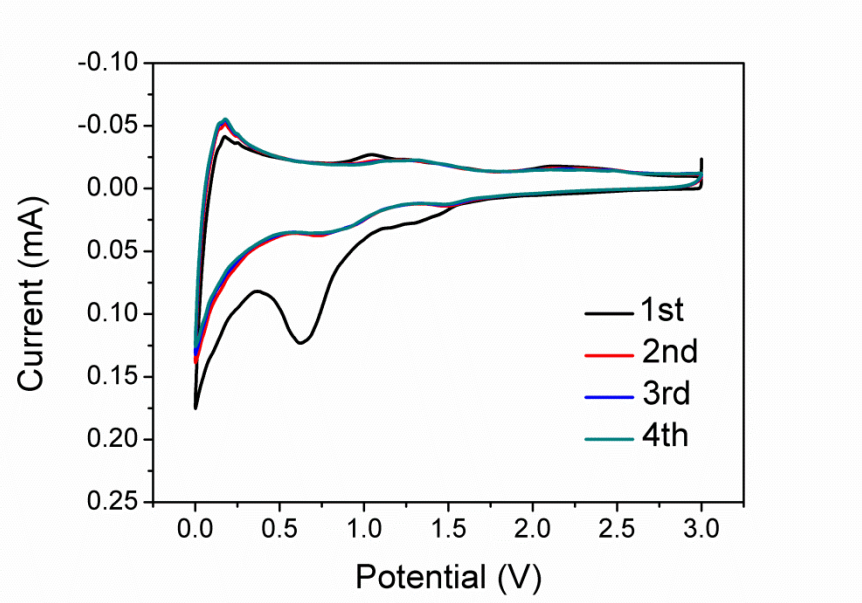

Fig. S5 CV curves of N-doped carbon nanomeshes.