Electronic Supplementary Information for

Formation and its mechanism of nano-monocrystalline γ-Fe_2O_3 with graphene-shell for high-performance lithium ion battery

Jiangtao Hu‡, Wen Li‡, Chaokun Liu, Hanting Tang, Hua Guo, Tongchao Liu, Xiaohe Song, Jiaxin Zheng, Yidong Liu, Yandong Duan* and Feng Pan*

School of Advanced Materials, Peking University Shenzhen Graduate School, Peking University, Shenzhen 518055, China

* Corresponding author: panfeng@pkusz.edu.cn

‡ Jiangtao Hu and Wen Li contributed equally to this work.

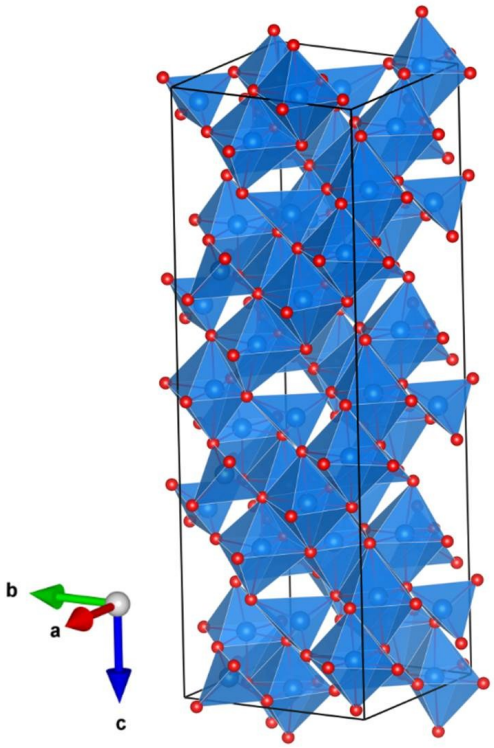

Figure S1. The crystal structure of γ-Fe_2O_3.

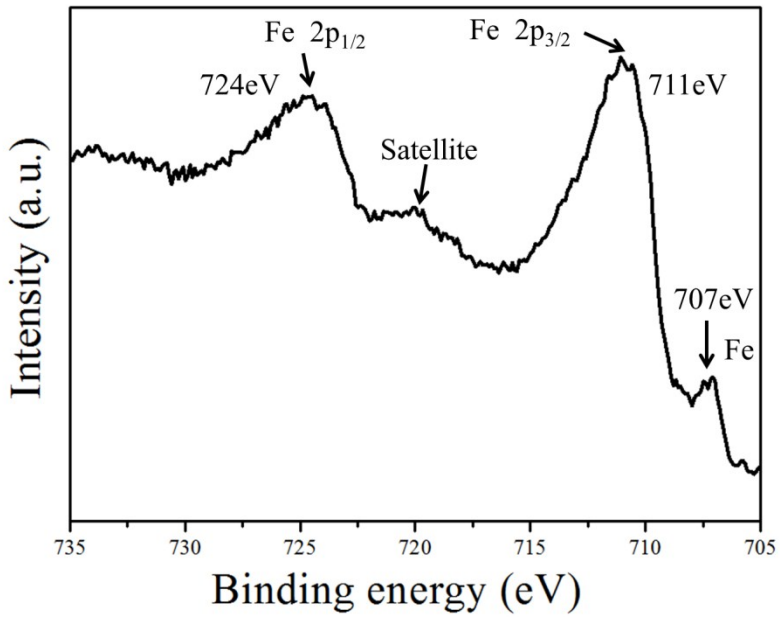

Figure S2. The X-ray photoelectron spectroscopy (XPS) spectra (Fe2p spectra) of monocrystal γ-Fe_2O_3@Graphene.

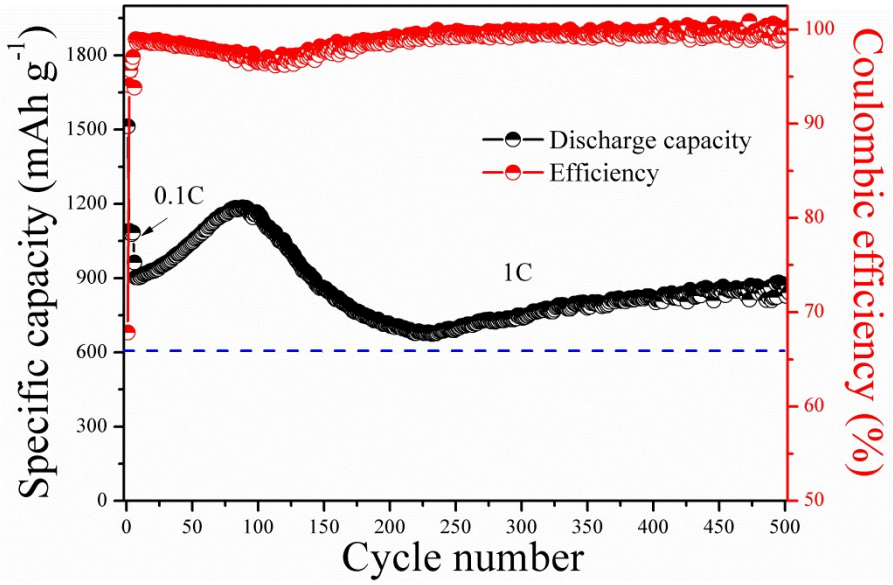

Figure S3. The cycle stability and coulombic efficiency of monocrystalline γ-Fe_2O_3@Graphene at 1C.

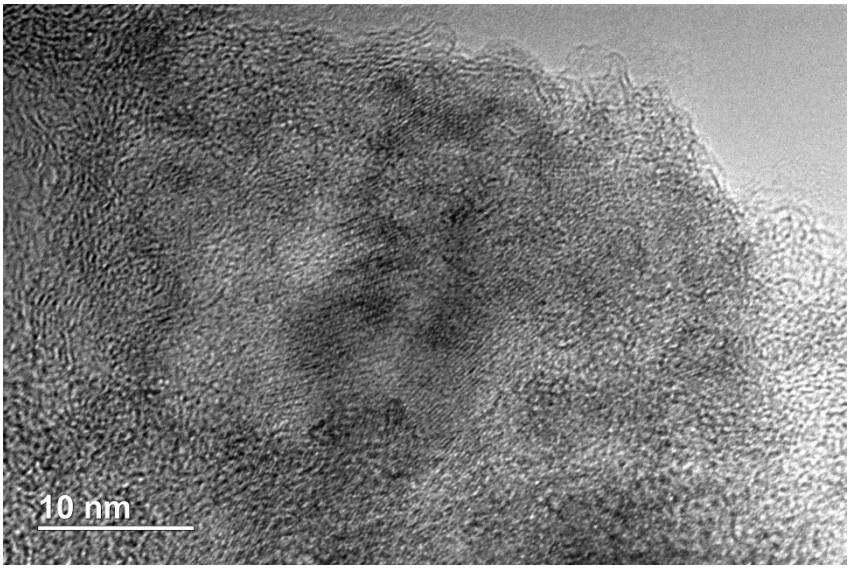

Figure S4. The TEM data of monocrystal γ-Fe_2O_3@Graphene after 100 cycles.

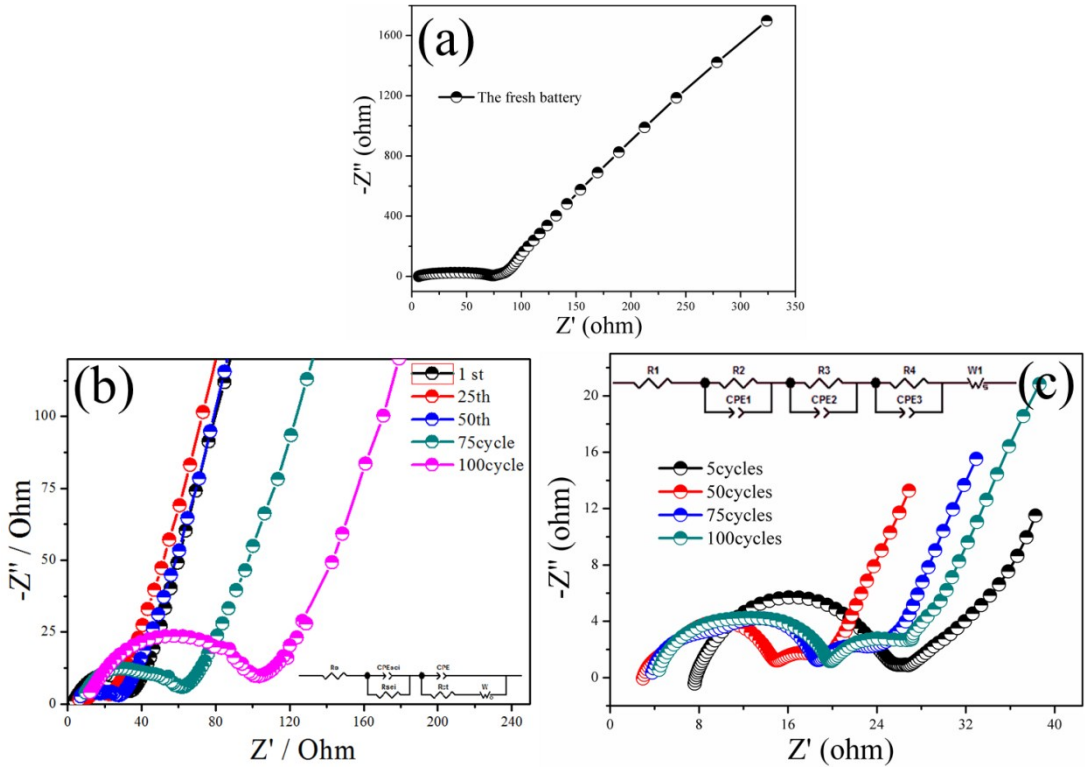

Figure S5. (a) EIS data of monocrystal γ-Fe_2O_3@Graphene with the fresh battery; (b and c) EIS data and equivalent circuit of our previous work (Core-Shell Nanohollow-γ-Fe_2O_3@Graphene) and monocrystal γ-Fe_2O_3 @Graphene after different cycle numbers.