Supporting Information for:

Synthesis of Porous Hollow Fe$_3$O$_4$ Beads and Their Applications in Lithium Ion Batteries

Yu Chen#, Hui Xia&, Li Lu& and Junmin Xue**

#Department of Materials Science and Engineering, &Department of Mechanical Engineering, National University of Singapore, Singapore, 117576

*Corresponding author: msexuejm@nus.edu.sg

Figure S1. Digital images of (A) products in ethanol obtained at different reaction intervals, and (B) products in ethanol obtained at different reaction intervals under a magnetic field.
Figure S2. TEM images of the surface of a bare Fe₃O₄ bead.

Figure S3. XPS spectra of (A) C 1s, (B) O 1s and (C) Fe 2p of bare Fe₃O₄ beads (black lines) and Fe₃O₄/C beads (red lines). (D) Relative atomic percentage for Fe₃O₄ and Fe₃O₄/C beads.
Figure S4. (A, B) SEM images and (C) corresponding XRD pattern of the as-obtained \(\alpha\)-Fe\(\text{2O}_3\) beads.

Figure S5. (A) The typical morphology of a broken Fe\(\text{3O}_4\) bead and (B) an intact Fe\(\text{3O}_4/C\) bead found after 50 cycles of charging/discharging.