Supporting Information

Controllable synthesis of 3D Fe3O4 micro-cubes as anode materials for lithium ion batteries

Yuan Xu \textsuperscript{a,c,1}, Kongjun Zhu \textsuperscript{a,*}, Pengcheng Liu \textsuperscript{b,**,1}, Jing Wang \textsuperscript{a}, Kang Yan \textsuperscript{a}, Jinsong Liu \textsuperscript{a,c}, Jie Zhang \textsuperscript{a,c}, Jun Li \textsuperscript{a,c}, and Zhongran Yao \textsuperscript{a,c}
Figure S1. (a) Survey XPS spectra and (b) O 1s spectra of 3D hierarchical porous Fe$_3$O$_4$-HCNPs.
Figure S2. XRD patterns of nano Fe$_3$O$_4$ particles obtained by nano $\alpha$-Fe$_2$O$_3$ at 350 °C in Ar/H$_2$ (5%).
Figure S3. SEM images of nano Fe₃O₄ particles obtained by nano α-Fe₂O₃ at 350 °C in Ar/H₂ (5%).
Figure S4. (a) CV curves of 3D hierarchical porous Fe$_3$O$_4$-HCNPs at scan speed of 0.1 mV s$^{-1}$. (b) Discharge-charge voltage profiles of 3D hierarchical porous Fe$_3$O$_4$-HCNPs over the voltage range 0.01-3.0 V vs. Li/Li$^+$ at current density of 100 mA g$^{-1}$. 
Figure S5. The SEM images of 3D hierarchical porous Fe₃O₄-HCNPs cycled at 1000 mA g⁻¹ after 100 cycles.
Figure S6. Nitrogen adsorption/desorption isotherms and pore-size distribution curves for 3D Fe$_3$O$_4$-HCNPs.
Figure S7. UV-Vis diffuse reflectance spectra of 3D Fe₃O₄-HCNPs: (a) Absorbance-\(\lambda\) plots with \(\lambda\) ranging from 200 to 800 nm. (b) \((ahv)²-hv\) plots in the corresponding energy range.