Supporting Information for

Graphene-Wrapped Fe$_3$O$_4$ Anode Material with Improved Reversible Capacity and Cyclic Stability for Lithium Ion Batteries

Guangmin Zhou$^a$, Da-Wei Wang$^b$, Feng Li$^a$*, Lili Zhang$^a$, Na Li$^a$, Zhong-Shuai Wu$^a$, Lei Wen$^a$,
Gao Qing (Max) Lu$^b$, and Hui-Ming Cheng$^{a,*}$

$^a$Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, 72 Wenhua Road, Shenyang 110016, P. R. China

$^b$ARC Centre of Excellence for Functional Nanomaterials, AIBN, The University of Queensland, St Lucia, Brisbane 4072, Australia

Figure S1. (a) SEM and (b) TEM images of spindle-shaped FeOOH with GNSs.
Figure S2. XRD profile of the hydrolyzate of FeCl$_3$·6H$_2$O and graphene dispersion.

Figure S3. Thermogravimetric result of GNS/Fe$_3$O$_4$ composite oxidation in air with a heating rate of 10 °C/min, showing the graphene content of 13.3 wt% (calculated from the weight loss of TG result plus the weight gain of Fe$_2$O$_3$ transformed from Fe$_3$O$_4$).
**Figure S4.** SEM image of bare Fe$_2$O$_3$ particles.

**Figure S5.** SEM image of commercial Fe$_3$O$_4$ particles.

**Figure S6.** Cycling performance of the GNS/Fe$_3$O$_4$ composite at a current density of 35 mA g$^{-1}$ for 85 cycles.