

Supporting Information

***In Situ* Transmission Electron Microscopy Observation of the Conversion Mechanism of Fe₂O₃/Graphene Anode during Lithiation-Delithiation Processes**

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1. Supporting Movies

Movie_S1.mov

In situ TEM movie shows the lithiation of a rhombic Fe₂O₃ nanoparticle anchored on the graphene.

The video was recorded at 4 frames/s.

Movie_S2.mov

In situ TEM movie shows the lithiation of three neighboring Fe₂O₃ nanoparticles anchored on the graphene. The video was recorded at 4 frames/s.

Movie_S3.mov

In situ TEM movie shows the lithiation of a spherical Fe₂O₃ nanoparticle anchored on the graphene. The video was recorded at 4 frames/s.

2. Supporting Figures

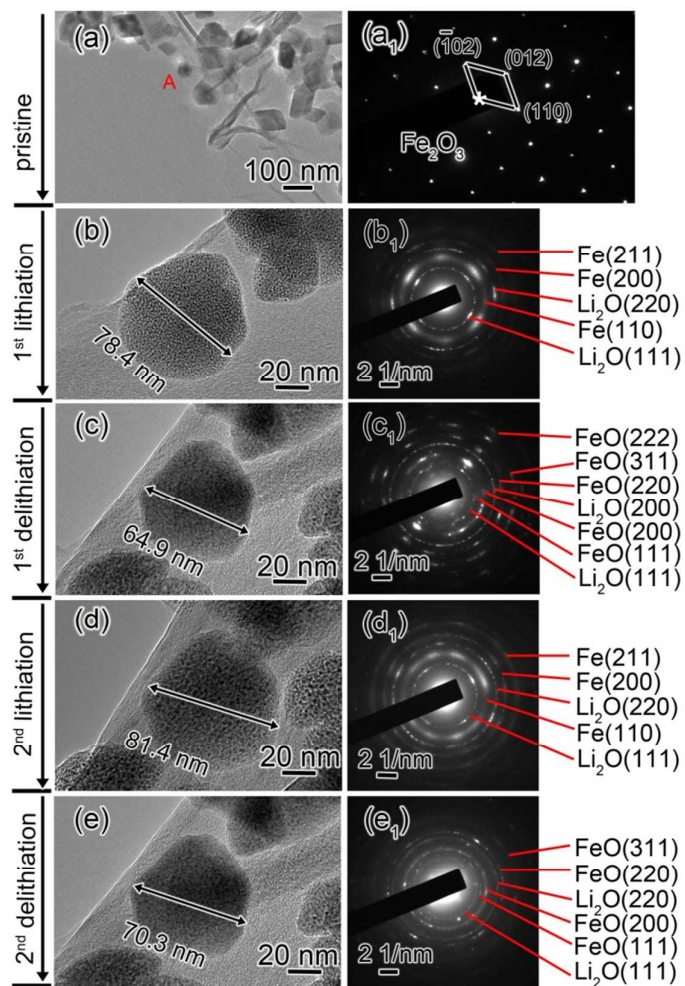


Figure S1. Morphology evolution of an individual Fe_2O_3 nanoparticle upon cycling with the potential of -1 V for lithiation and +3 V for delithiation. (a) TEM image of the pristine Fe_2O_3 /graphene, and particle A was selected as a target. (b) The nanoparticle shows severe volume expansion after the first lithiation. (c) The nanoparticle reduced from 78.4 nm to 64.9 nm after the first delithiation. (d, e) The nanoparticle after the second lithiation/delithiation cycle. (a₁-e₁) The corresponding ED patterns recorded from the marked nanoparticle in (a-e).