Supporting Information for

The Coordination-driven of Self-assembly: Construction of Fe_3O_4/Grapnene Hybrid 3D Framework and Its Long Cycle Lifetime for Lithium-ion Batteries

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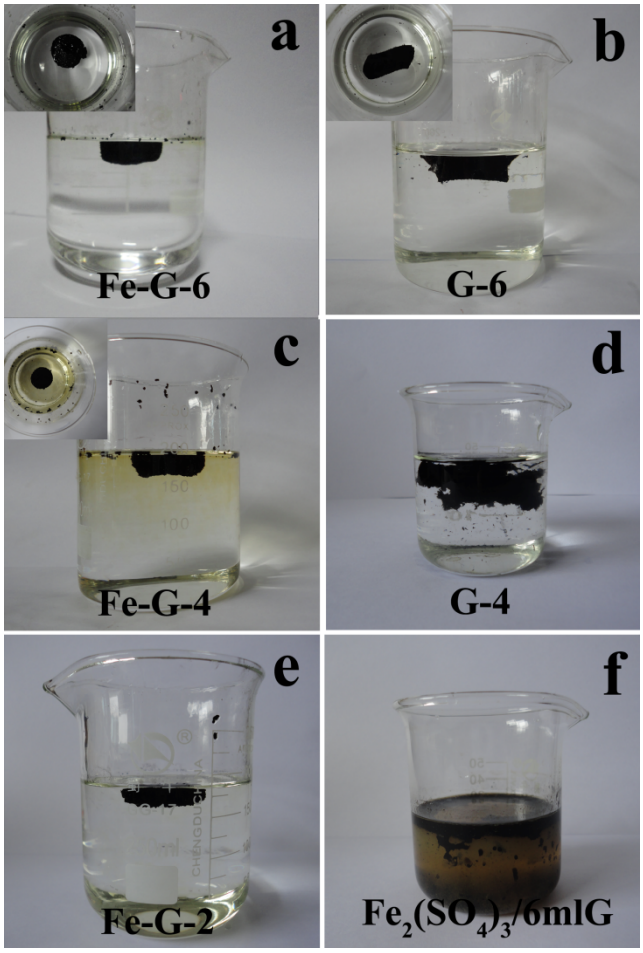

Fig. S1. Digital photographs of Fe_3O_4/Graphene hybrid framework (a, c and e) and pure graphene (b and d) by hydrothermal with different volume of GO solution. a, b)

V_{GO}=6 mL; c, d) V_{GO}=4 mL; e) V_{GO}=2 mL; f) Photographs of the product under the same condition with (a) except the different Fe^{3+} source, indicating the existence of synergistic effect of self-assembly between Fe_3O_4 and graphene

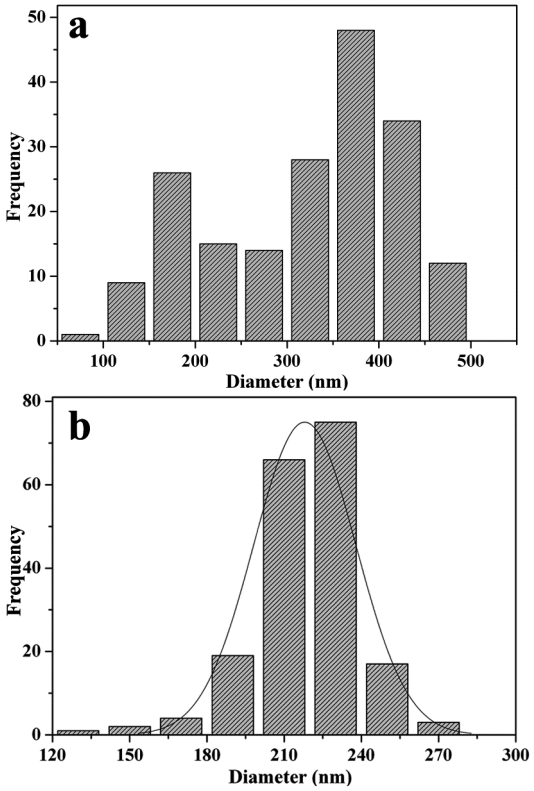

Fig. S2. Size distribution of a) bare Fe_3O_4; b) Fe_3O_4/G hybrid framework

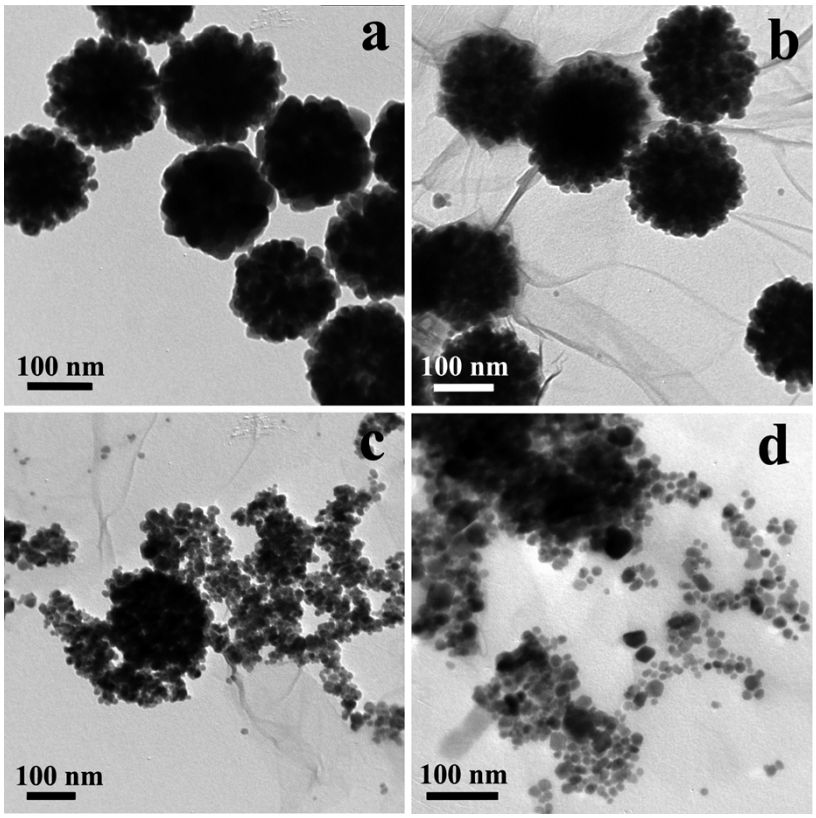

Fig. S3. The TEM images of Fe_3O_4/G with different volume of GO: a) 4 mL; b) 6 mL; c) 8 mL; d) 10 mL.

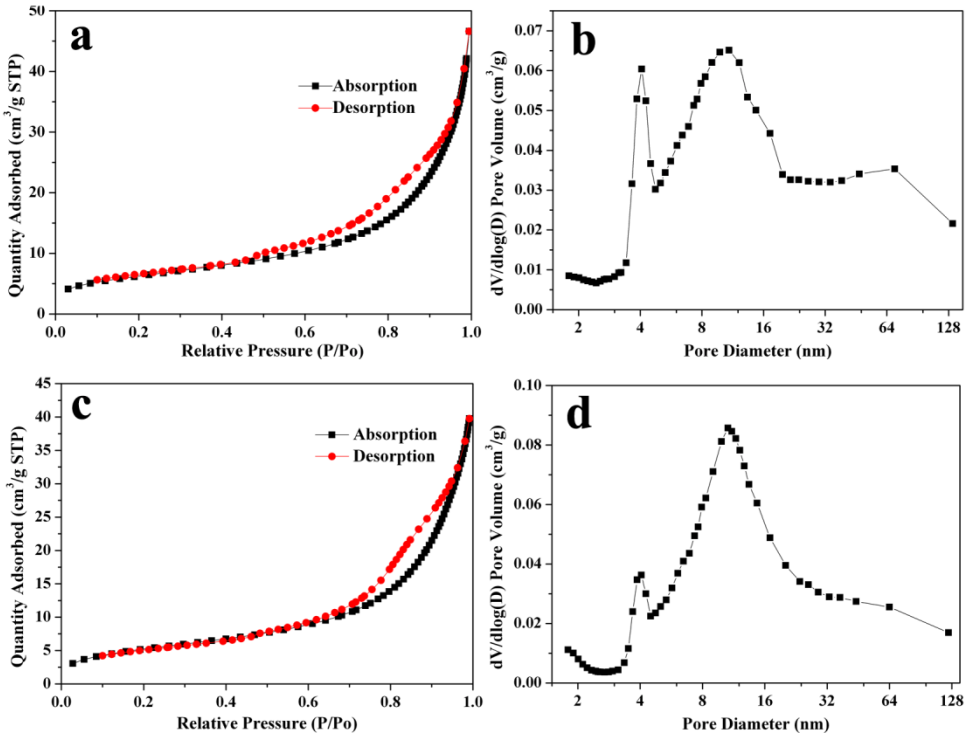

Fig. S4. N_2 adsorption/desorption isotherms and pore size distribution of (a, b) Fe_3O_4-

G mixed and (c, d) bare Fe_3O_4.

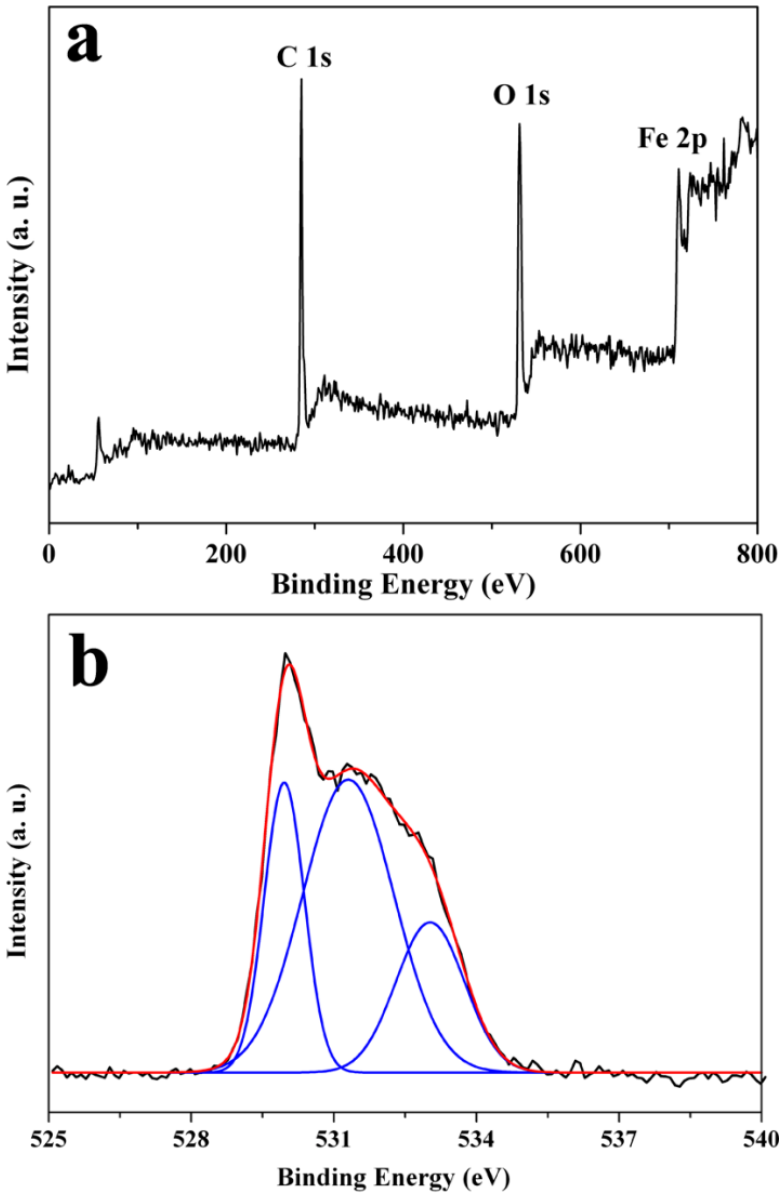

Fig. S5. The full spectrum (a) and core-level O1s (b) XPS spectra of Fe_3O_4/G hybrid framework.

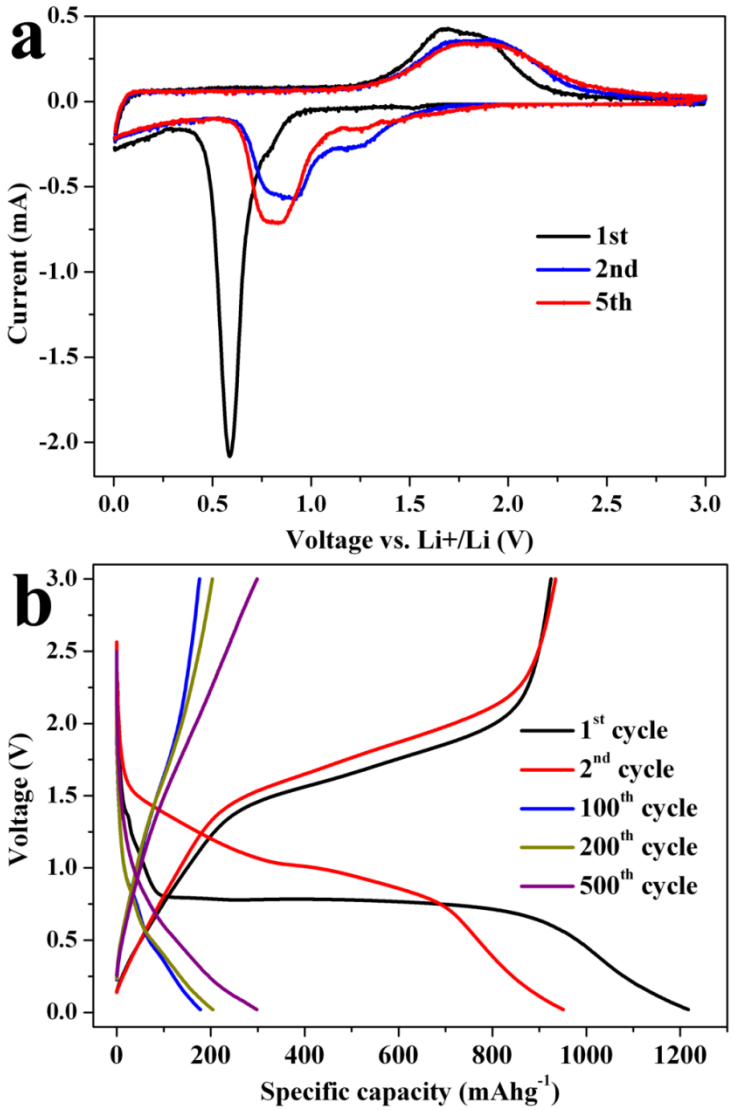

Fig. S6. (a) Cyclic voltammogram curves of bare Fe_3O_4 at a scan rate of 0.1 mVs^{-1}; (b) Charge and discharge profiles of the bare Fe_3O_4 electrode at a current density of 500 mAg^{-1}.