Supporting Information for

LiFePO$_4$/reduced graphene oxide hybrid cathode for lithium ion battery with outstanding rate performance

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Supporting figures

Figure S1. The first three charge/discharge profiles of pure rGO at a current density of 0.06 C.
**Figure S2.** Cycle performance of pure rGO in the voltage range of 2.0~3.8 V at a current density of 0.06 C.

**Figure S3.** (a) Cycle performance and coulombic efficiency of LFP with 15 wt% rGO in the voltage range of 2.0~3.8 V at a current density of 0.06 C, (b) The initial charge/discharge profiles of LFP with 15 wt% rGO at a current density of 0.06 C.
Figure S4. TEM image of LFP with 15 wt% rGO after 53 cycles between 2.0 and 3.8 V in the state of charge (3.8 V).

Figure S5. TEM (a and b) images of LFP with 15 wt% rGO after C-rate testing between 2.0 and 3.8 V in the state of discharge (2.0 V).