Supplementary information

Enlarging d-spacing of graphite and polarizing its surface charge for driving lithium ions fast

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Fig. S1 Differential capacity (dQ/dV) curves of bare graphite and EG during the 1st lithiation. Integrat ed areas are directly related to the amounts of SEI layer.



Fig. S2 XPS depth profiles of C1s spectra of (a) bare graphite, (b) EG* and (c) EG. There were no sig nificant changes of peak at 285 eV with NG. However, the peaks of EG* and EG increased with time.



Fig. S3 TOF-SIMS depth profiles of (a) bare graphite, (b) EG* and (c) EG.



Fig. S4 Galvanostatic lithiation of EG at different C-rates with a fixed current (0.1C) during delithiati on.