Supporting Information

Copper Silicate Hydrate Hollow Spheres Constructed by Nanotubes Encapsulated in Reduced Graphene Oxide as Long-Life Lithium-Ion Battery Anode

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Figure S1 SEM image of CSH hollow spheres.



Figure S2 SEM image of the SiO₂ spheres.



Figure S3 SEM images of CSH hollow spheres obtained at different times: (a, b) 1 h, (c, d) 3 h, (e, f) 16 h.



Figure S4 EDS spectrum of CSH/RGO composite.



Figure S5 XRD pattern of the CSH hollow spheres.



Figure S6 EDS spectrum of CSH hollow spheres.



Figure S7 TGA curves of CSH/RGO composite and CSH hollow spheres.



Figure S8 (a) N_2 adsorption-desorption isotherms and (b) pore size distribution of CSH hollow spheres.



Figure S9 Cycling performance of RGO at the current density of 200 mA/g.



Figure S10 (a, b) TEM images of CSH/RGO composite after 100 cycles.



Figure S11 Cyclic voltammetry curves of CSH/RGO composite at a scan rate of 0.1 mV/s in the voltage range from 0.01 to 3 V (*vs.* Li^+/Li).



Figure S12 (a) Cyclic voltammetry curves of CSH hollow spheres at a scan rate of 0.1 mV/s in the voltage range from 0.01 to 3 V (*vs.* Li^+/Li), (b) charge-discharge profiles of CSH hollow spheres at the current density of 200 mA/g.



Figure S13 Cycling performance of CSH/RGO composite at the current density of 200 mA/g at 60 $^{\circ}$ C.



Figure S14 AC-impedance plots of CSH/RGO composite after 100 and 200 cycles.



Figure S15 SEM images of CSH/RGO composite: (a, b) after 100 and (c, d) 200 cycles.



Figure S16 The XPS spectra for copper silicate: (a) before and (b) after the first discharge process.



Figure S17 The XRD patterns of copper silicate: (a) after the first discharge process and (b) after the first charge process.

Table S1 CHNSO analysis of the CSH/RGO composite.

Sample	N(%)	C(%)	H(%)	S(%)
CSH/RGO	0.69	4.99	1.13	0.00

	Initial	After 100cycles	After 200 cycles
$R_{ct}(\Omega)$	178	194	180

Table S2 The charge transfer resistances of the CSH/RGO composite at initial stateand after 100 and 200 cycles.