Supporting Information

Sandwich-like CNTs/Si/C Nanotubes as High Performance Anode Materials for Lithium-ion Batteries

Ruiping Liu*, Chao Shen, Yue Dong, Jinlei Qin, Qi Wang, James Iocozzia, Shiqiang Zhao, Kunjie Yuan, Cuiping Han, Baohua Li, and Zhiqun Lin*

Fig. S1 The SEM images of CNTs/SiO$_2$ at different hydrothermal reaction time. (a) 0h, (b) 12h, (c) 18h, (d) 36h, (e) 54h and (f) 72h.
Fig. S2 (a) SEM image of the sandwiched CNTs/Si/C nanotubes. The corresponding EDS results: (b) C, (c) O, and (d) Si. (e) The EDS spectrum.
Fig. S3 Raman spectroscopy results for sandwiched CNTs/Si/C nanotubes.

Fig. S4 Nitrogen adsorption-desorption isotherm of the sandwiched CNTs/Si/C nanotubes. The inset shows the pore size distribution of the sandwiched CNTs/Si/C nanotubes.
Fig. S5 TG curve for sandwiched CNTs/Si/C nanotubes.

Fig. S6 CV curves of cell with CNTs/Si/C as the anode material during different cycles.
Fig. S7 EDS spectrum of CNTs/Si/C anode after 1000 cycles at the current density of 1000 mA/g.

Table S1 Fitting results of cells with CNTs/Si and CNTs/Si/C as anodes

<table>
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<tr>
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<th>Rs</th>
<th>Rct</th>
<th>CPE</th>
<th>W</th>
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