Supplementary Information:

Coaxial SnO_2@TiO_2 Nanotube Hybrids: From Robust Assembly Strategies to Potential Application in Li^+ Storage

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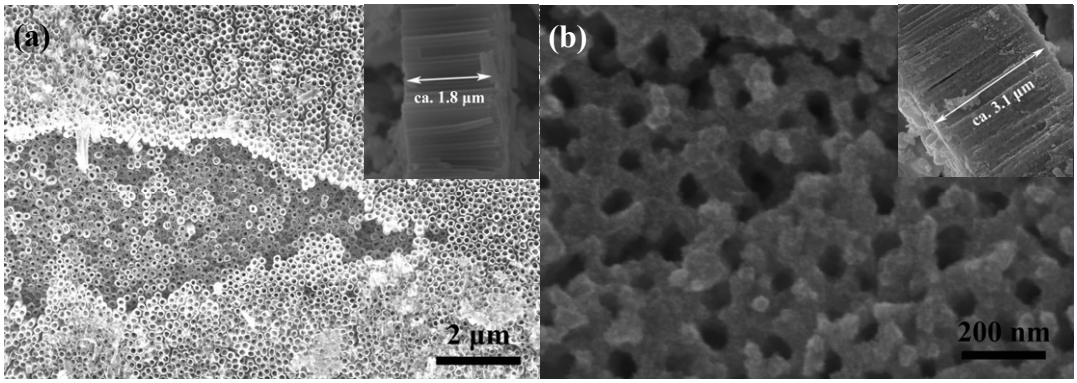

Fig. S1. FESEM images of the synthesized coaxial nanotubes array used for Li^+ storage. a) Top- and cross-section (inset) views of coaxial SnO_2@TiO_2 nanotubes array synthesized with the electrochemical method. b) Top- and cross-section (inset) views of coaxial C/SnO_2@TiO_2 nanotubes array synthesized with the solvothermal method.

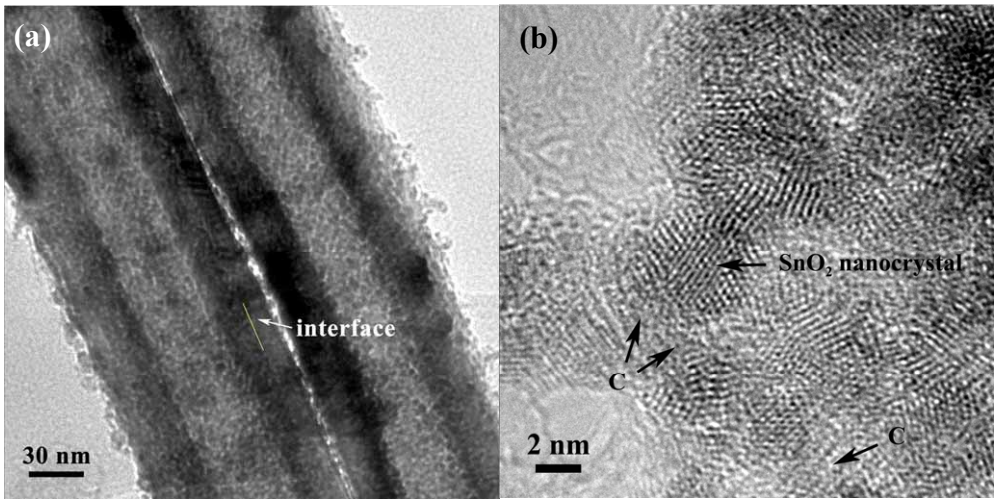

Fig. S2. (a) TEM image of the C/SnO_2@TiO_2 coaxial nanotubes and (b) the HRTEM image of the C/SnO_2 layer at the upper lip region.

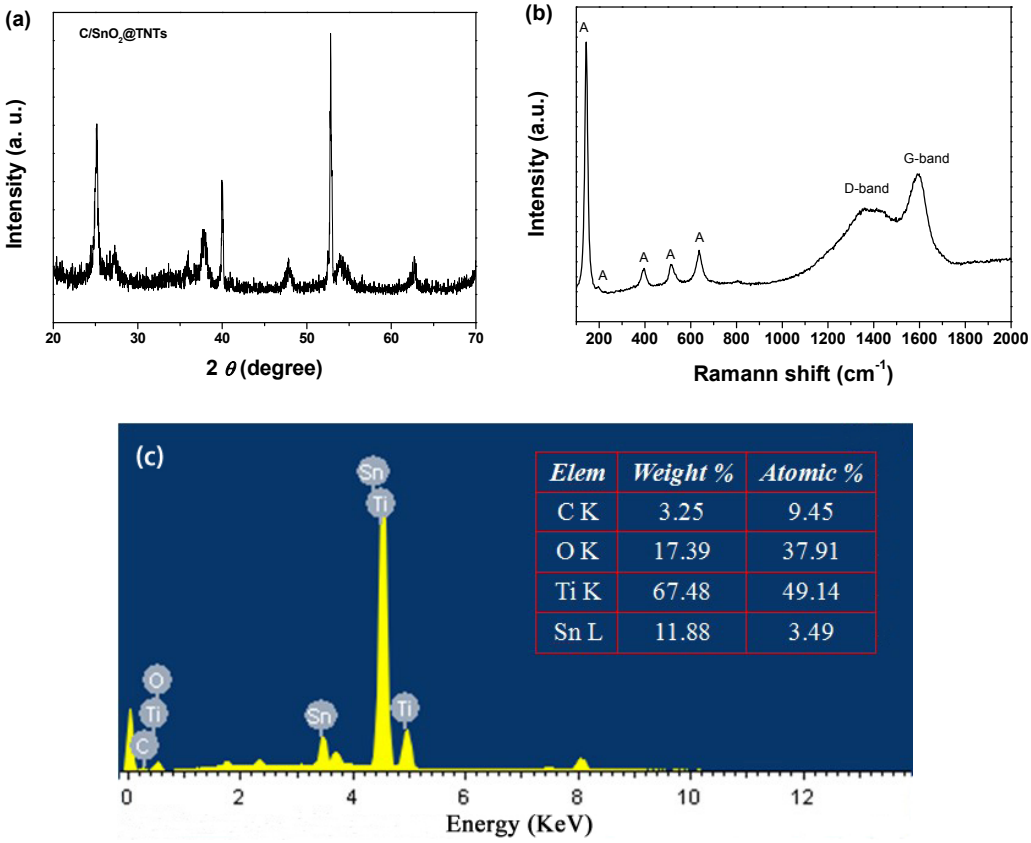

Fig. S3. (a) XRD pattern of the coaxial C/SnO_2@TNTs. (The low content of amorphous carbon in the C/SnO_2@TNTs brought no diffraction peaks corresponding to graphitic or amorphous carbon were observed in the XRD pattern.) (b) Raman spectrum of C/SnO_2@TNTs. The results exhibit two kinds of peaks, namely, the graphite carbon peak (G peak) located at ~1597 cm^{-1} and the disordered carbon peak (D peak) at ~1341 cm^{-1}. Besides, the typical peaks (144, 197, 400, 515, and 640 cm^{-1}) corresponding to anatase phase are also appeared. (c) EDS spectra obtained after C/SnO_2@TNTs scratched from the Ti substrate for eliminating the influence of the substrate.

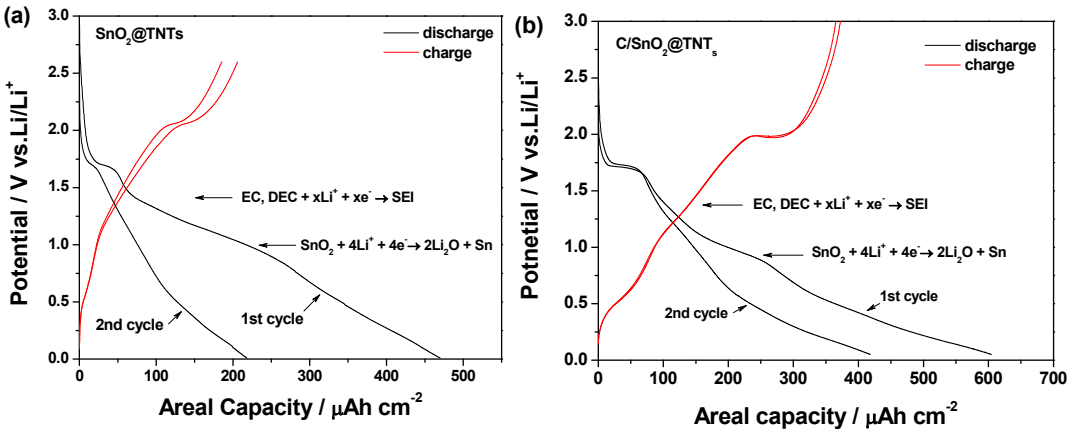

Fig. S4. Selected galvanostatic discharge/charge curves of the electrochemically prepared SnO_2@TNTs (a) and solvothermally prepared C/SnO_2@TNTs (b), respectively.

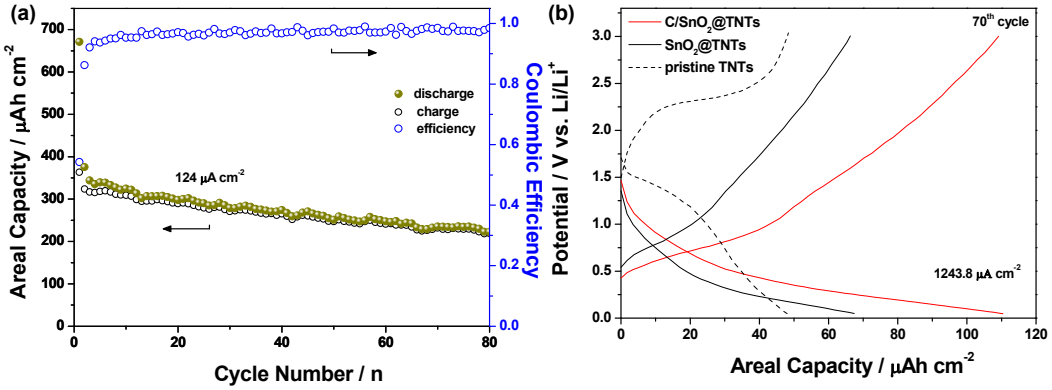

Fig. S5. (a) Cycling performance of SnO_2@TNT_s cycled at a constant current density of ~124 μA/cm^2 and (b) galvanostatic charge-discharge curves for pristine TNTs, SnO_2@TNTs and C/SnO_2@TNTs at a current density of 1240 μA/cm^2 (the 70th cycle)

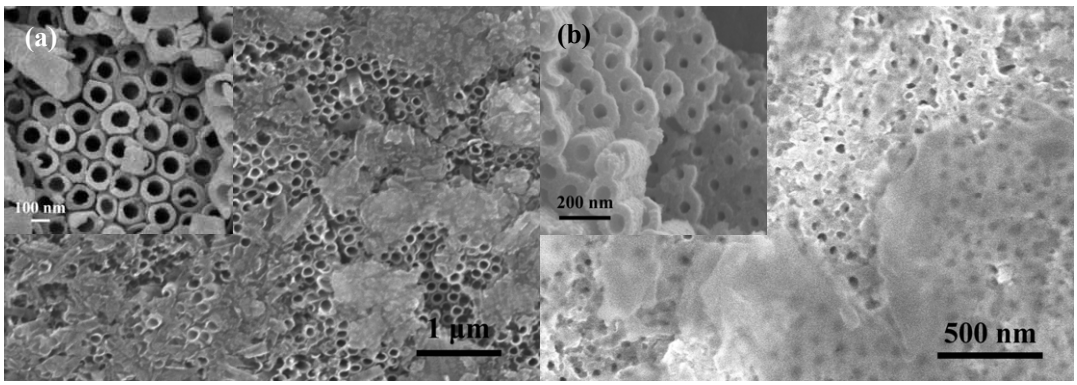

Fig. S6. FESEM images after charge/discharge cycles (insets: higher magnification obtained after scratching): (a) Electrochemically prepared SnO_2@TiO_2 (after 50 cycles); (b) Solvothermally prepared C/SnO_2@TiO_2 (after 80 cycles).