Synthesis of Uniform TiO$_2$@carbon Composite Nanofibers as Anode for Lithium Ion Batteries with Enhanced Electrochemical Performance

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Supporting Information

Captions

Fig.s 1 (a) TGA/DSC curves of TiO$_2$@carbon composite nanofibers, (b) TGA curves of TiO$_2$ composite nanofibers showing that carbon has been removed completely.

Fig.s 2 Low magnification FE-SEM images of the nanofibers show the high

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uniformity and high yield, while the high magnification FE-SEM images reveal many mesoporosities and interstices in the nanofibers: a) low magnification FE-SEM image of TiO₂@carbon nanofibers;

**Fig.s3** (a) TEM image of TiO₂@carbon nanofibers and high magnification TEM image of single TiO₂@carbon nanofiber (inset), indicating that the nanofibers consist of TiO₂@carbon nanoparticles; (b) TEM image of TiO₂ nanofibers and high magnification TEM image of single TiO₂ nanofiber (inset), indicating that the nanofibers consist of TiO₂ nanoparticles; (c) EDX spectrum and corresponding content table for TiO₂@carbon nanofibers (inset); (d) EDX spectrum and corresponding content table for TiO₂ nanofibers (inset).

**Scheme S1** Charge diffusion mechanism of TiO₂@carbon (a) and pure TiO₂ (b) nanofibers during charge/discharge processes. The insets show high resolution TEM images of the TiO₂@carbon and TiO₂ nanofibers, respectively.
Fig.s1
Fig.s2
Fig.s3
Scheme S1