Supporting Information for

Nitrogen-Doped TiO_2-C Composite Nanofibers with High-Capacity and Long-Cycle Life as Anode Materials for Sodium-ion Batteries

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Supplementary Figures

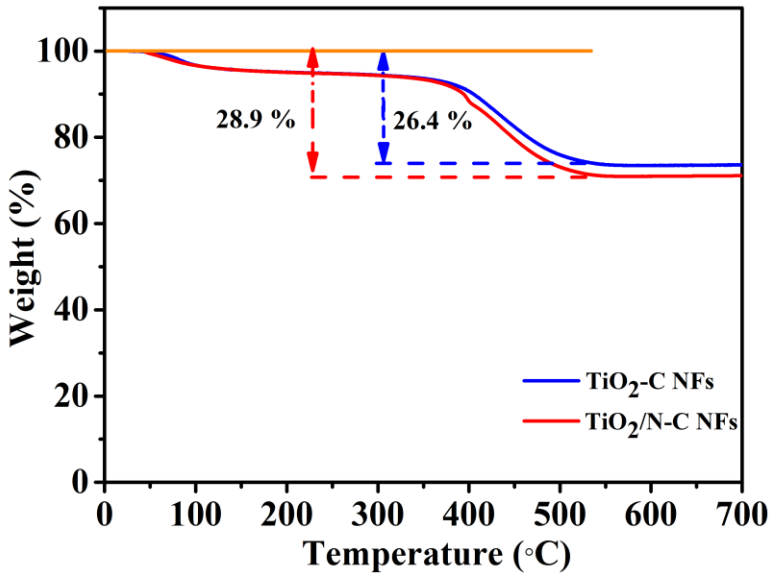

Fig. S1 TGA curves of TiO_2/N-C NFs and TiO_2-C NFs

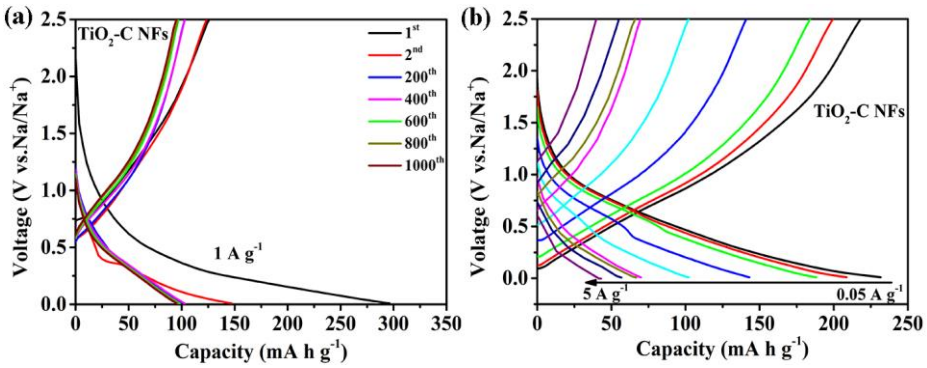

Fig. S2 a Continuous discharge and charge curves of TiO_2-C NFs electrode under a current density of 1 A g^{-1}. **b** Charge-discharge curves of TiO_2-C NFs at 0.05-5 A g^{-1} in the range of 0.01-2.5 V

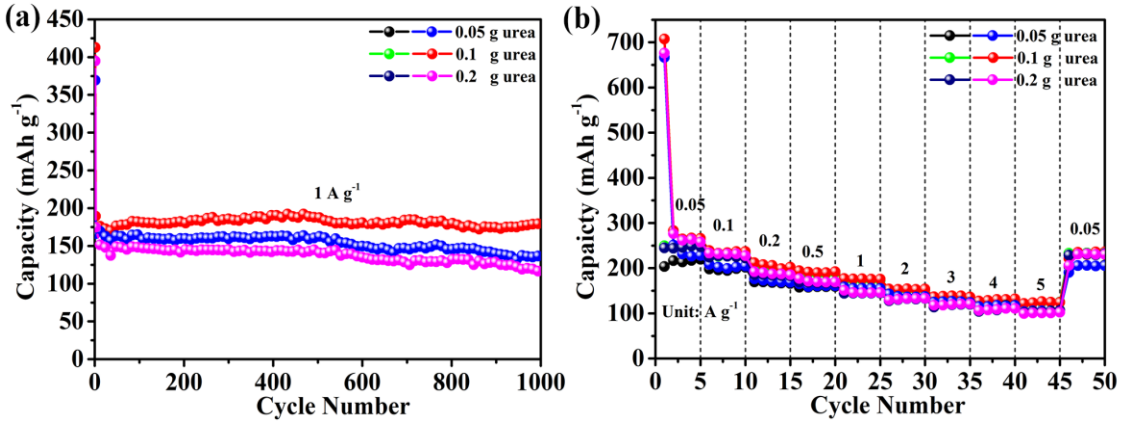

Fig. S3 The electrochemical performances of TiO_2/N-C NFs added with different amounts of urea: **a** Cycle performance at current densities of 1 A g^{-1}. **b** rate capability

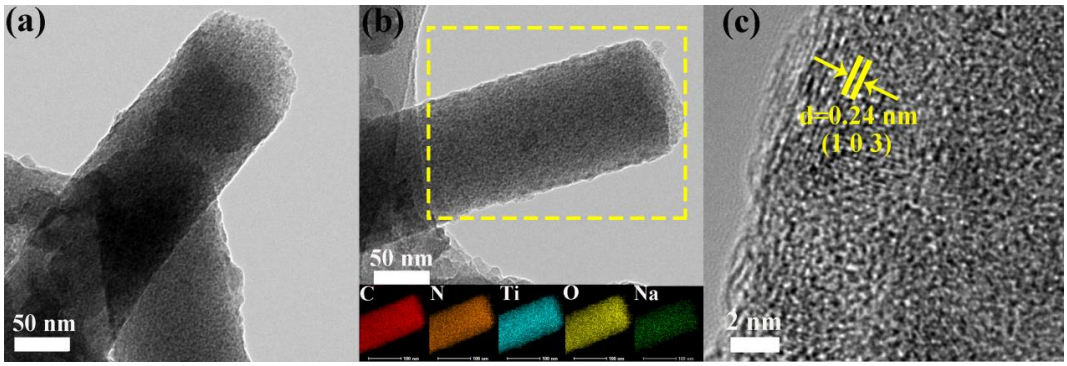

Fig. S4 a, b TEM images and **c** HR-TEM image of the TiO_2/N-C NFs electrode after cycling for 1000 cycles at 1 A g^{-1} in SIBs (the EDS elemental mapping of the area, marked by the yellow rectangle in image **b**)

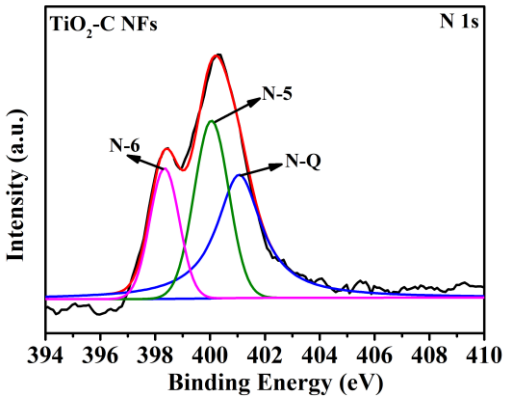

Fig. S5 High-resolution N 1s spectra of TiO_2-C NFs

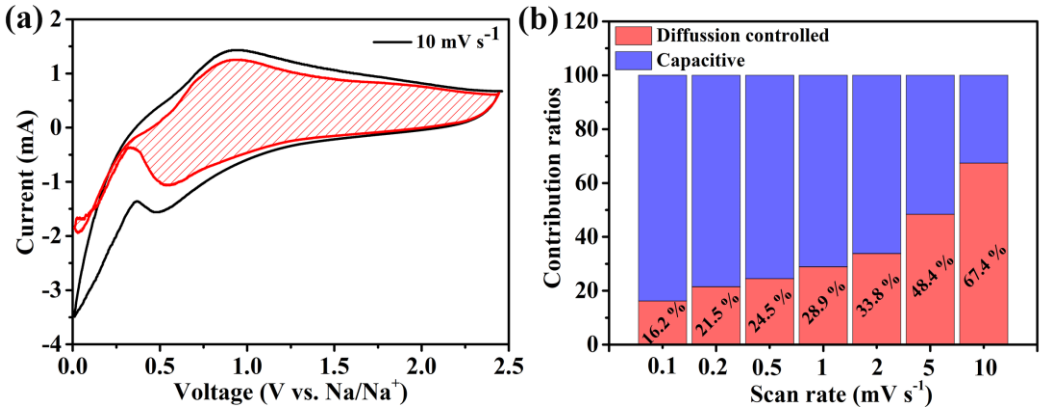

Fig. S6 a Black curve shows the CV curve of TiO_2-C NFs and the red shaded part indicates the capacitive contribution measured at 10 mV s^{-1}. **b** Diagram of capacitive contribution to the total capacity at different scan rate of TiO_2-C NFs

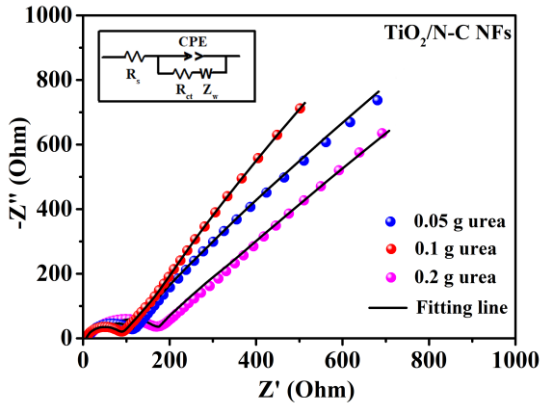

Fig. S7 Nyquist plots and equivalent circuit of the TiO_2/N-C NFs with different amounts of urea in SIBs the first cycle at 0.05 A g^{-1}

Table S1 Comparison of the electrochemical performance of TiO_2/N-C NFs with previously reported TiO_2-based materials as anode in sodium ion batteries

Materials	Rate Performance ($mAh\ g^{-1}$/ $A\ g^{-1}$)	Cycle Performance ($mAh\ g^{-1}$(cycle number)$A\ g^{-1}$)	References
Nitrogen-doped mesoporousTiO_2 Nanofibers	310/0.067 108/3.35	110(500^{th})/3.35	[S1]
Nitrogen-Doped TiO_2 nanospheres	185/0.2 156/5	162(1000^{th})/1	[S2]
Anatase TiO_2@C composites	230/0.033 80/6.68	148(500^{th})/0.5	[S3]
Anatase TiO_2/PVDF	229.8/0.168 102.1/6.72	180(500^{th})/0.335	[S4]
MesoporousTiO_2 nanosheets anchored on graphene	190.8/0.05 88.9/1.67	130(2000^{th})/1.675	[S5]
N-doped carbon coated TiO_2 nanoparticles	204.8/0.168 84.9/3.35	122.1(3000^{th})/3.36	[S6]
Olive-like anatase TiO_2	267/0.336 110/6.72	125 (1000^{th})/3.36	[S7]
Defect-rich $TiO_{2-\delta}$/mooncake-shaped carbon	330/0.05 98.1/5	88.5(5000^{th})/10	[S8]
TiO_2@CNT@C Nanorods	230/0.05 115.5/4	153/(1000^{th})/1	[S9]
TiO_2 particles/carbon	311.5/0.05 91.3/6.4	241(500^{th})/0.4	[S10]
Nitrogen-doped TiO_2-C composite nanofibers	**268.5/0.05 124.5/5**	**179.2(1000^{th})/1 118.1(2000^{th})/5**	**this work**

Table S2 Simulated impendence parameters (R_s and R_{ct}) of the TiO_2/N-C NFs with different amounts of urea in SIBs

Samples	0.05 g urea	0.1 g urea	0.2 g urea
R_s (Ω)	7.51	7.33	8.26
R_{ct} (Ω)	104.3	85.5	170.2

Reference

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