

# ADVANCED MATERIALS

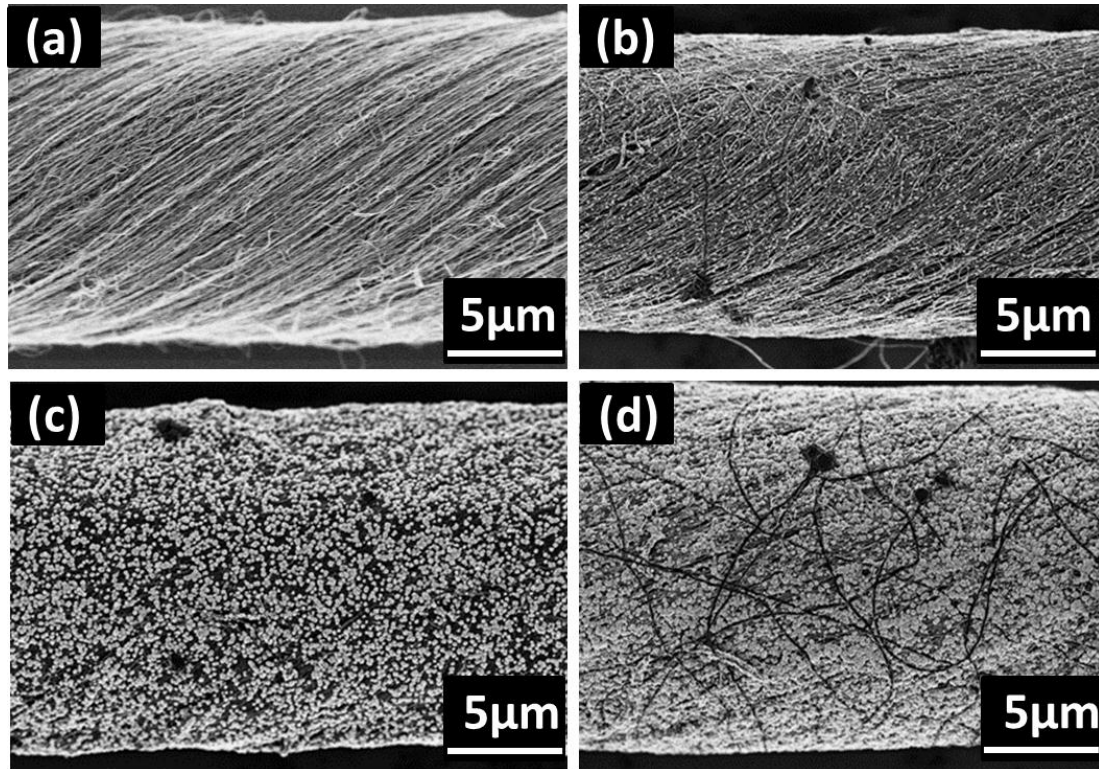
## Supporting Information

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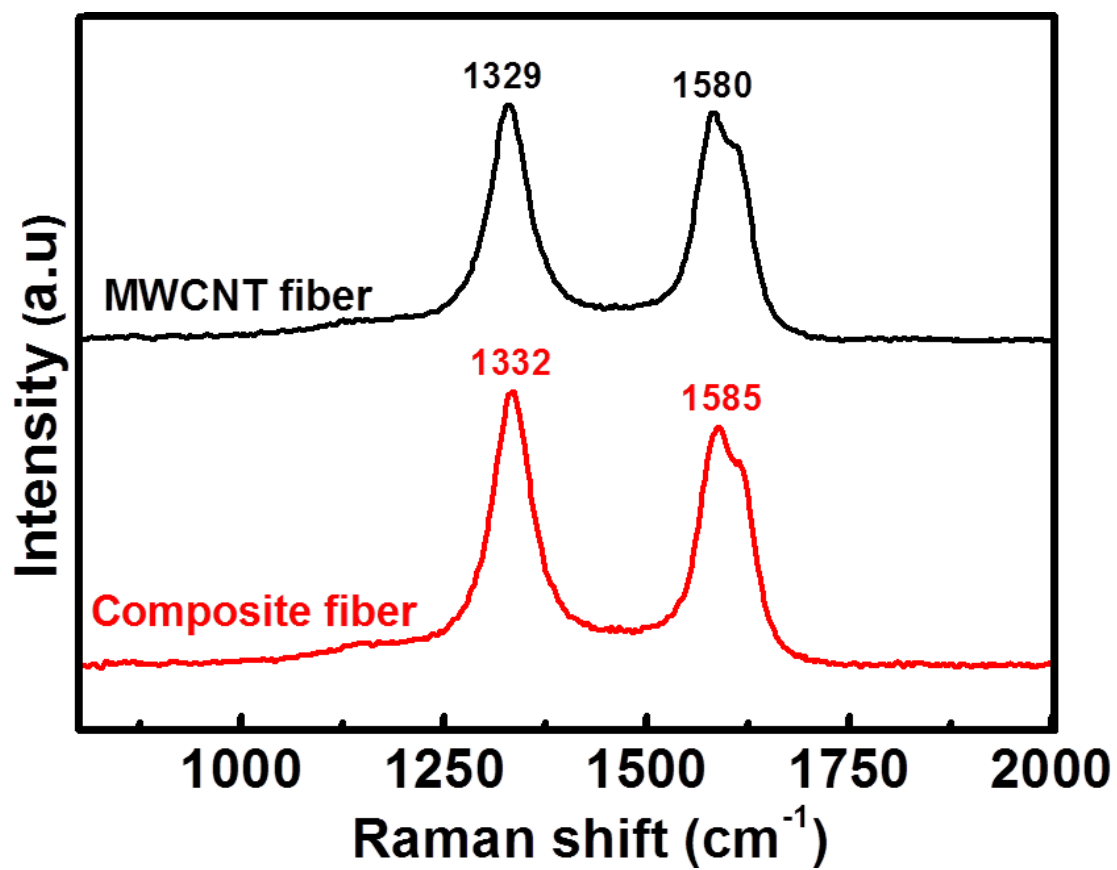
Twisting Carbon Nanotube Fibers for Both Wire-Shaped  
Micro-Supercapacitor and Micro-Battery

*Jing Ren, Li Li, Chen Chen, Xuli Chen, Zhenbo Cai, Longbin  
Qiu, Yonggang Wang,\* Xingrong Zhu, and Huisheng Peng\**

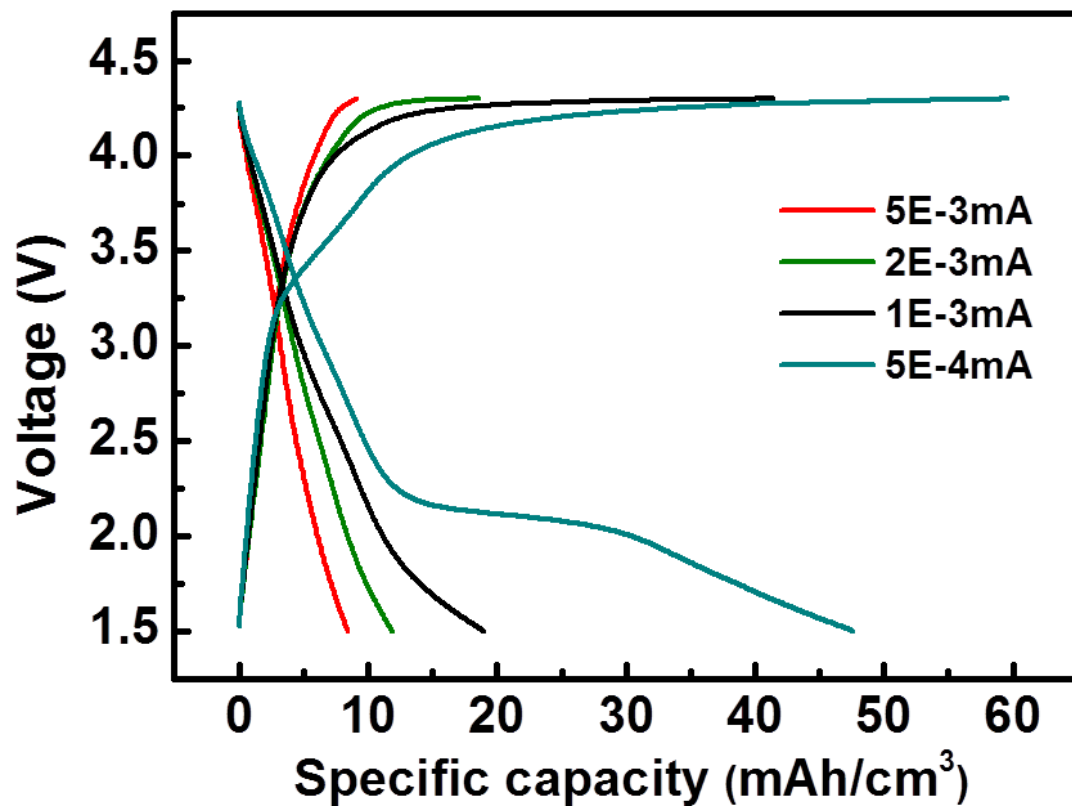
## Supporting Information



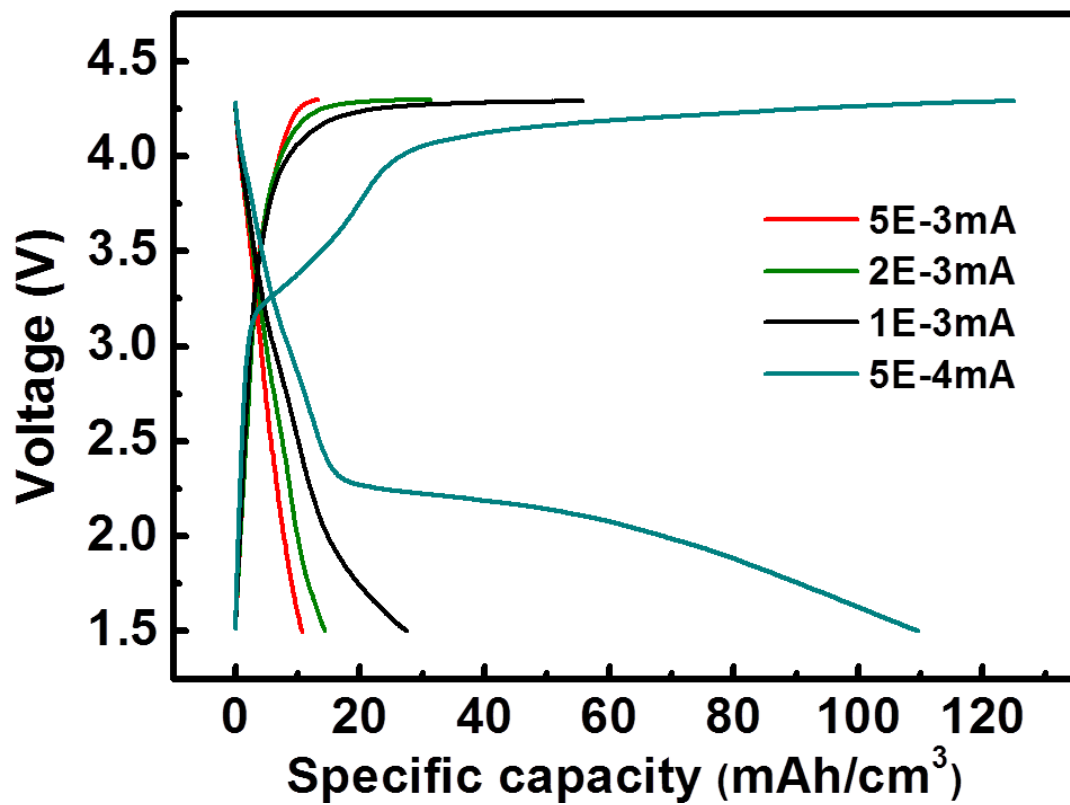
**Figure S1.** Scanning electron microscopy (SEM) images of aligned MWCNT fibers before and after electrodeposition of MnO<sub>2</sub> nanoparticles at low magnifications. **a.** Bare fiber. **b.** Composite fiber with MnO<sub>2</sub> weight percentage of 0.5%. **c.** Composite fiber with MnO<sub>2</sub> weight percentage of 4.1%. **d.** Composite fiber with MnO<sub>2</sub> weight percentage of 8.6%.



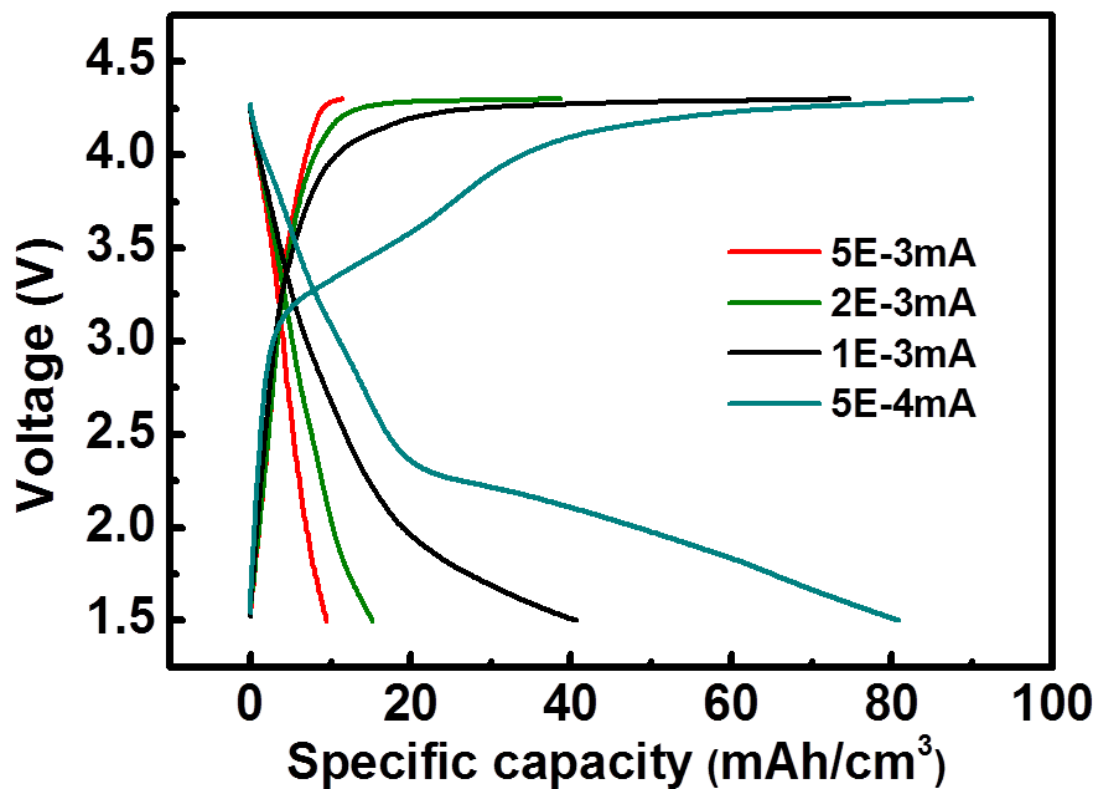
**Figure S2.** Raman spectra of bare MWCNT and aligned MWCNT/MnO<sub>2</sub> composite fibers



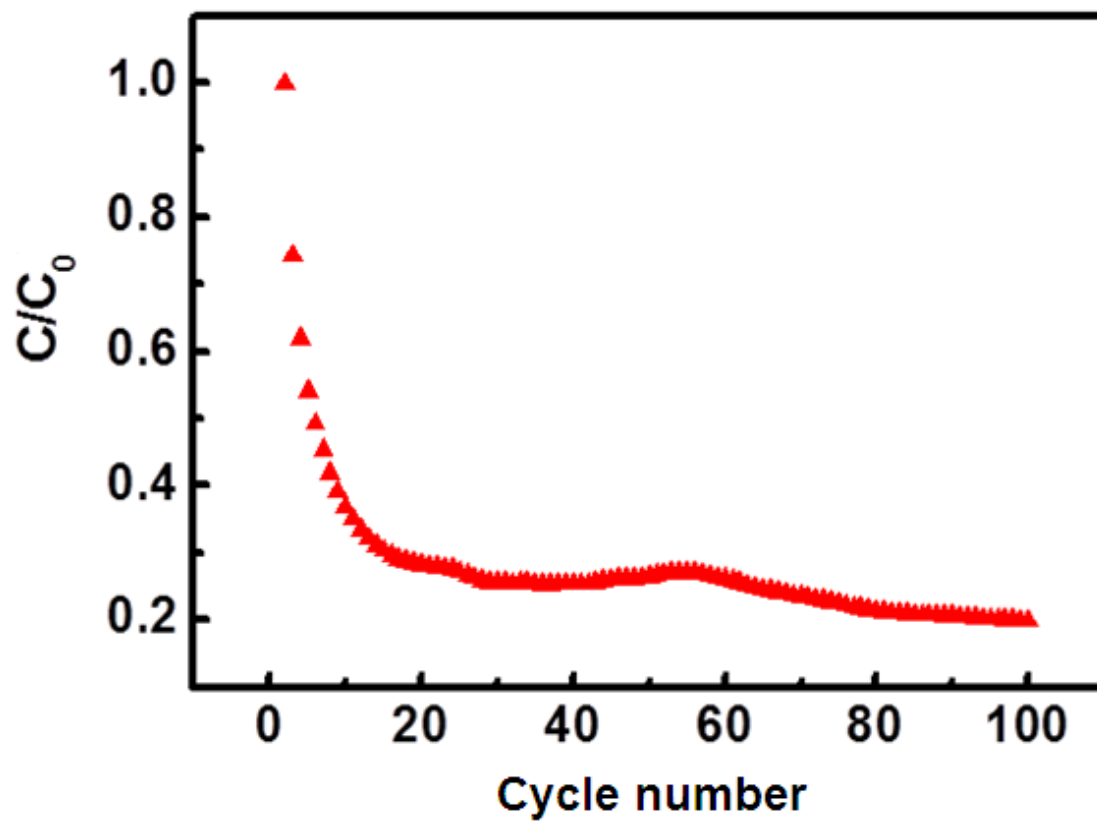
**Figure S3.** Charge and discharge of a battery based on the aligned MWCNT/MnO<sub>2</sub> composite fiber with MnO<sub>2</sub> weight percentage of 0.5% at different currents.



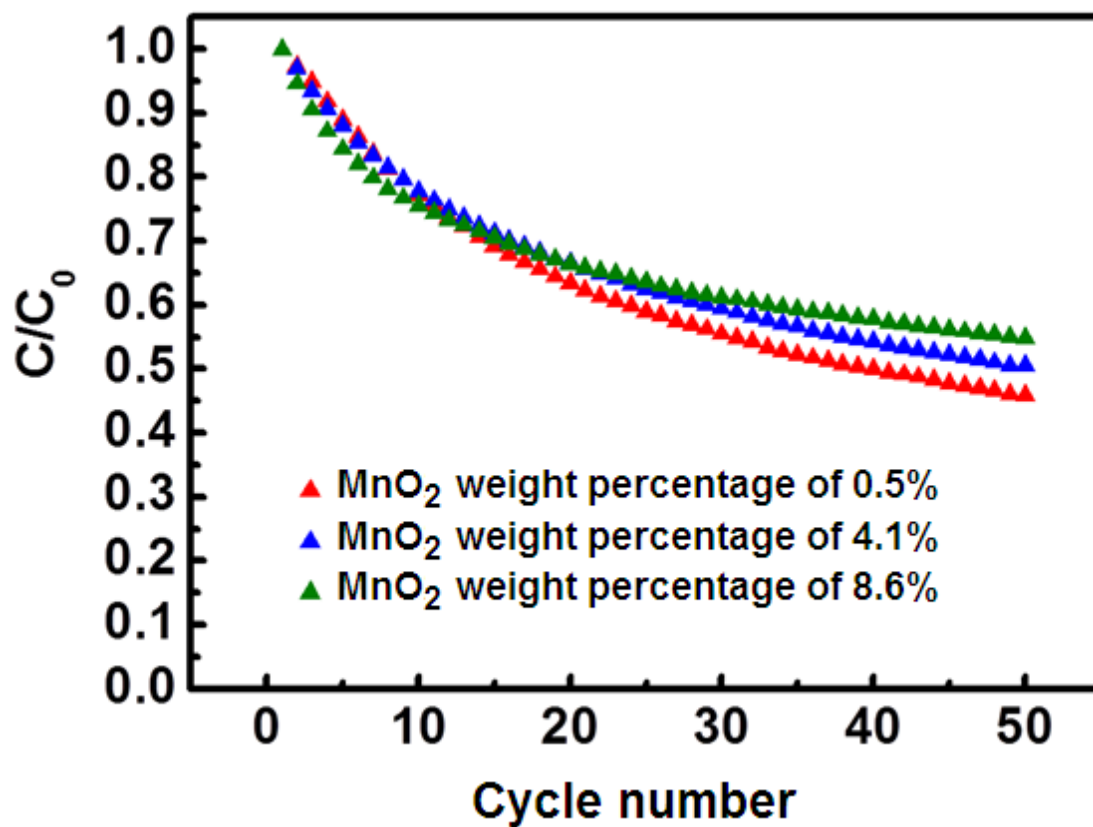
**Figure S4.** Charge and discharge of a battery based on the aligned MWCNT/MnO<sub>2</sub> composite fiber with MnO<sub>2</sub> weight percentage of 4.1% at different currents.



**Figure S5.** Charge and discharge of a battery based on the aligned MWCNT/MnO<sub>2</sub> composite fiber with MnO<sub>2</sub> weight percentage of 8.6% at different currents.



**Figure S6.** Dependence of the ratio of specific capacitance on cycle number for the battery fabricated from bare fibers.  $C_0$  and  $C$  correspond to the specific capacitance at the first and following cycle, respectively.



**Figure S7.** Dependence of the ratio of specific capacitance on cycle number for battery fabricated from composite fibers with different MnO<sub>2</sub> weight percentages.  $C_0$  and  $C$  correspond to the specific capacitance at the first and following cycle, respectively.