Supporting Information

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

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Figure S1. Scanning electron microscopy (SEM) images of aligned MWCNT fibers before and after electrodeposition of MnO$_2$ nanoparticles at low magnifications. a. Bare fiber. b. Composite fiber with MnO$_2$ weight percentage of 0.5%. c. Composite fiber with MnO$_2$ weight percentage of 4.1%. d. Composite fiber with MnO$_2$ weight percentage of 8.6%. 
Figure S2. Raman spectra of bare MWCNT and aligned MWCNT/MnO$_2$ composite fibers
Figure S3. Charge and discharge of a battery based on the aligned MWCNT/MnO$_2$ composite fiber with MnO$_2$ weight percentage of 0.5% at different currents.
Figure S4. Charge and discharge of a battery based on the aligned MWCNT/MnO$_2$ composite fiber with MnO$_2$ weight percentage of 4.1% at different currents.
**Figure S5.** Charge and discharge of a battery based on the aligned MWCNT/MnO$_2$ composite fiber with MnO$_2$ 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$_2$ weight percentages. $C_0$ and $C$ correspond to the specific capacitance at the first and following cycle, respectively.