

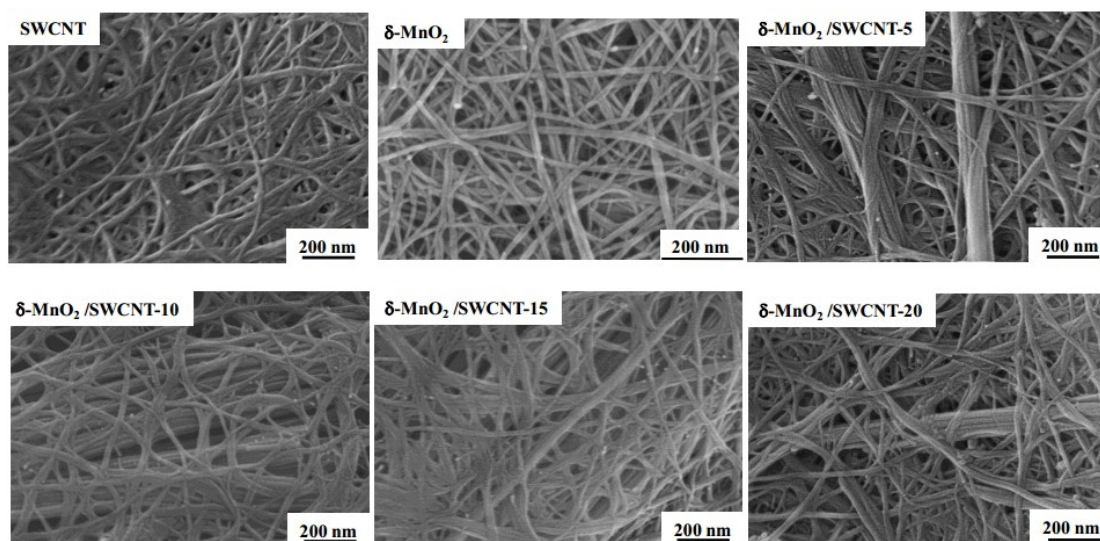
Electronic Supplementary Information

**δ -MnO₂ nanofiber/single-walled carbon nanotube hybrid film for all-solid-state
flexible supercapacitors with high performance**

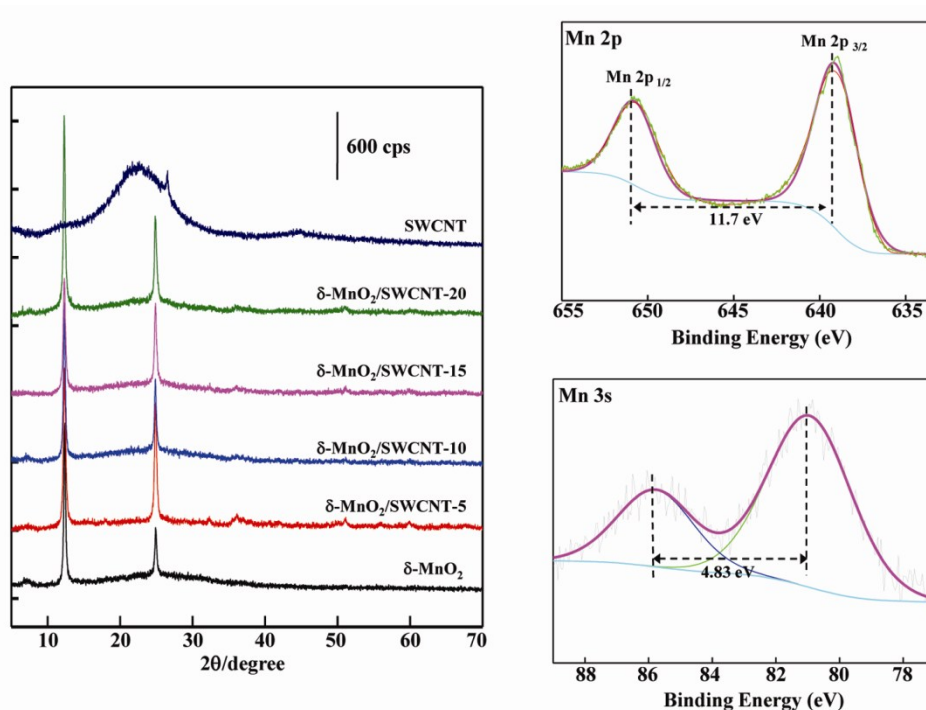
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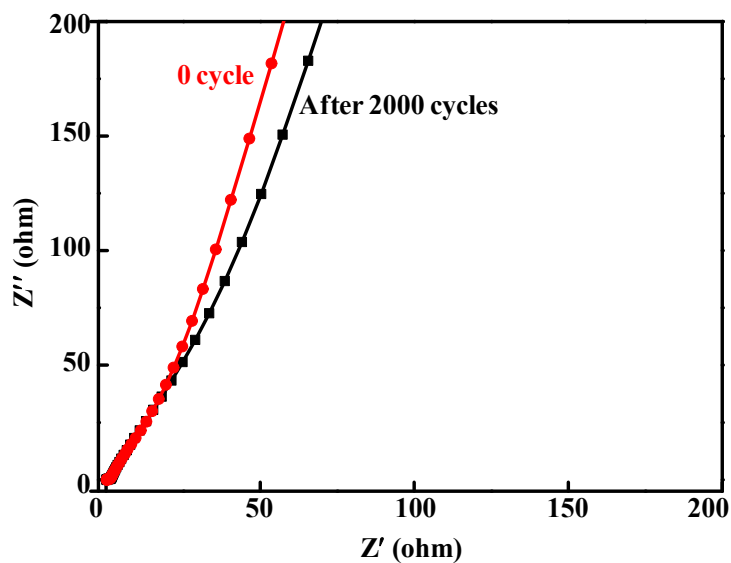
1 **Figure S1.** The FESEM images of SWCNT film, δ -MnO₂ ultralong nanofiber film,
2 and δ -MnO₂/SWCNT-X hybrid film electrodes with different amounts of SWCNT.



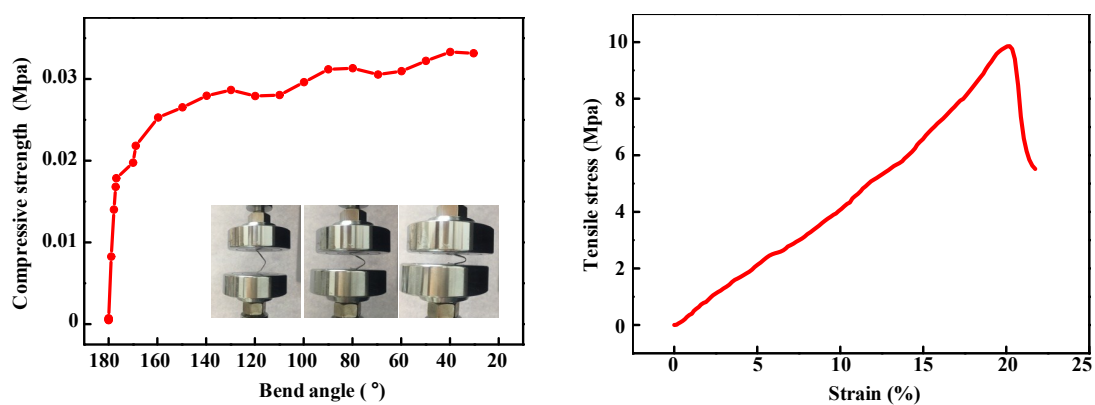
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4 **Figure S2.** The XRD patterns of SWCNT film, δ -MnO₂ nanofiber film, and δ -
5 MnO₂/SWCNT-X hybrid film electrodes with different amounts of SWCNT (left) and
6 XPS spectra of δ -MnO₂/SWCNT-15: Mn 2p spectrum and Mn 3s (right).



1 **Figure S3.** The impedance diagram before and after 2000 cycles for the assembled
2 flexible all-solid-state δ -MnO₂/SWCNT-15 hybrid supercapacitor.



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4
5 **Figure S4.** The mechanical properties of the assembled flexible all-solid-state δ -
6 MnO₂/SWCNT-15 hybrid supercapacitor, compressive strength curves and optical
7 photographs with different bending angles (left) and tensile strength under different
8 strains (right).



1 **Figure S5.** The twisting optical photograph (left) and CV curves (right) before and
2 after twisting for 200 times for the assembled flexible all-solid-state δ -
3 MnO_2 /SWCNT-15 hybrid supercapacitor.

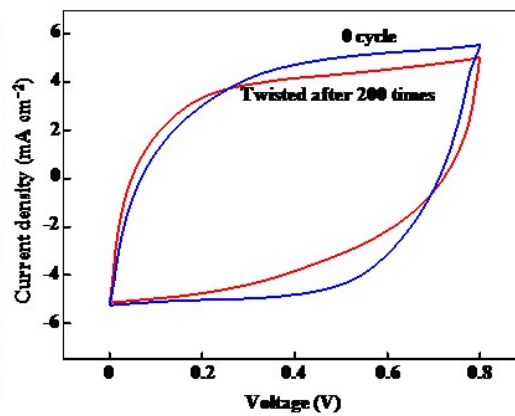
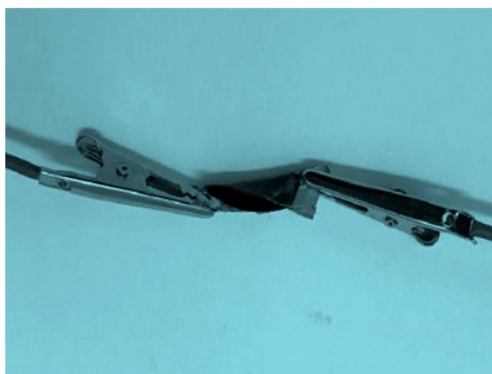


Table S1. The capacitance and rate performance of the carbon nanotube film, δ -MnO₂ nanofiber film, and δ -MnO₂ nanofiber/SWCNT hybrid film electrodes with different carbon nanotube amounts.

Electrode materials	δ -MnO ₂ fiber (mL) 2 mg mL ⁻¹	SWCNT (mL) 1.6 mg mL ⁻¹	Specific capacitance (mF cm ⁻²)	Rate performance (1-10 mA cm ⁻²)
δ -MnO ₂ /SWCNT-5	30	1.875	533	78 %
δ -MnO ₂ /SWCNT-10	30	3.750	906	79 %
δ-MnO₂/SWCNT-15	30	5.625	946	81 %
δ -MnO ₂ /SWCNT-20	30	7.500	828	69 %
δ -MnO ₂	0	30.000	462	73 %
SWCNT	30	0.000	266	87 %

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