Supporting Information

Electrical behaviour of native cellulose nanofibril/carbon nanotube hybrid aerogels under cyclic compression

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Figure S1. Transmission electron microscopy images of FWCNTs dispersed in water.

Figure S2. Scanning electron microscopy images of pristine CNF aerogel and FWCNT/CNF 15/85 wt/wt aerogel.

Figure S3. Cyclic mechanical and electrical compression tests for FWCNT/CNF 25/75 wt/wt (a-d) and FWCNT/CNF 15/85 wt/wt aerogels (e-f).

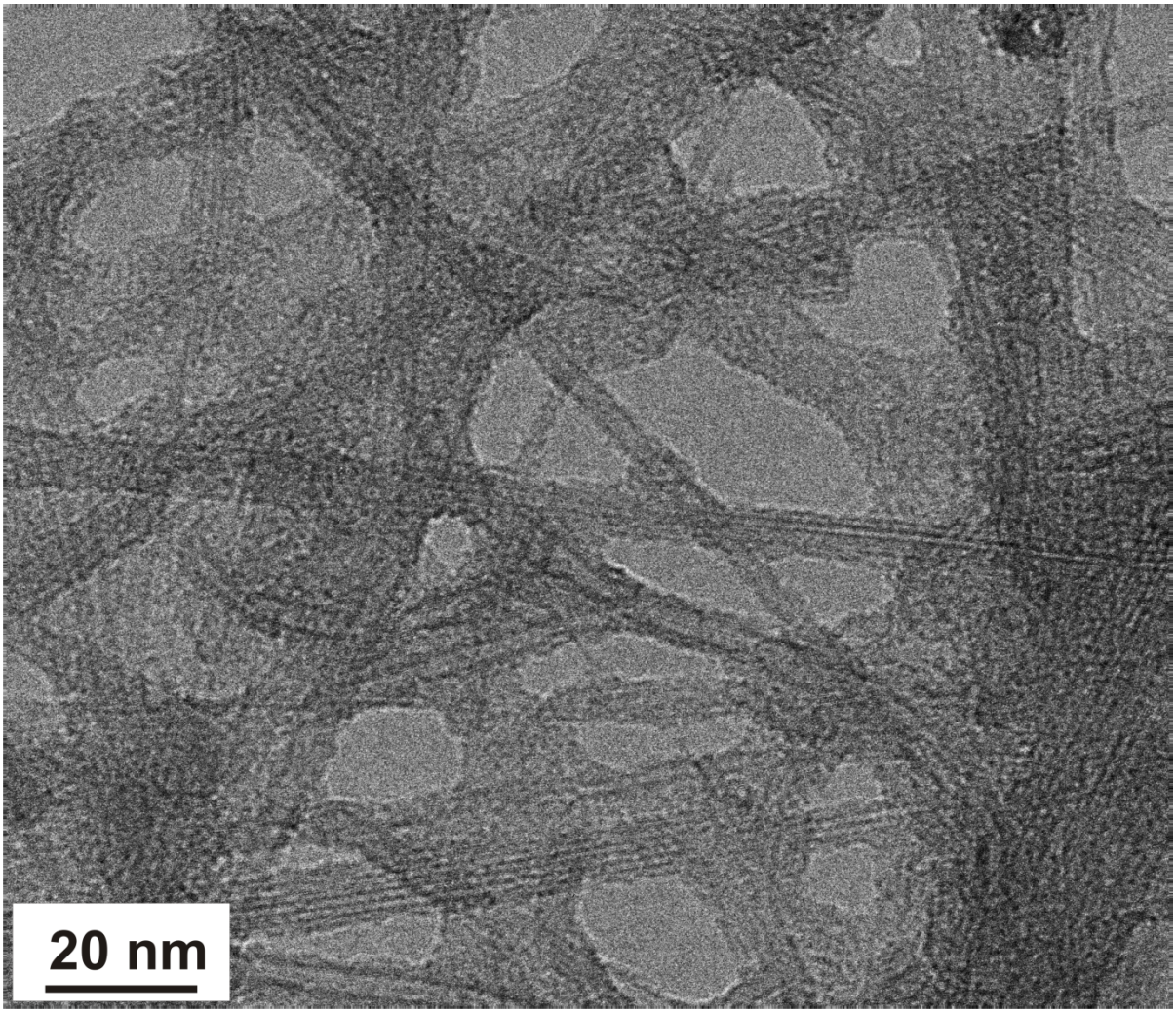

Figure S1. Transmission electron microscopy image of dispersed FWCNT in water from a diluted suspension. It shows individualized FWCNT's diameter of 3.2 nm, as well as their bundles.

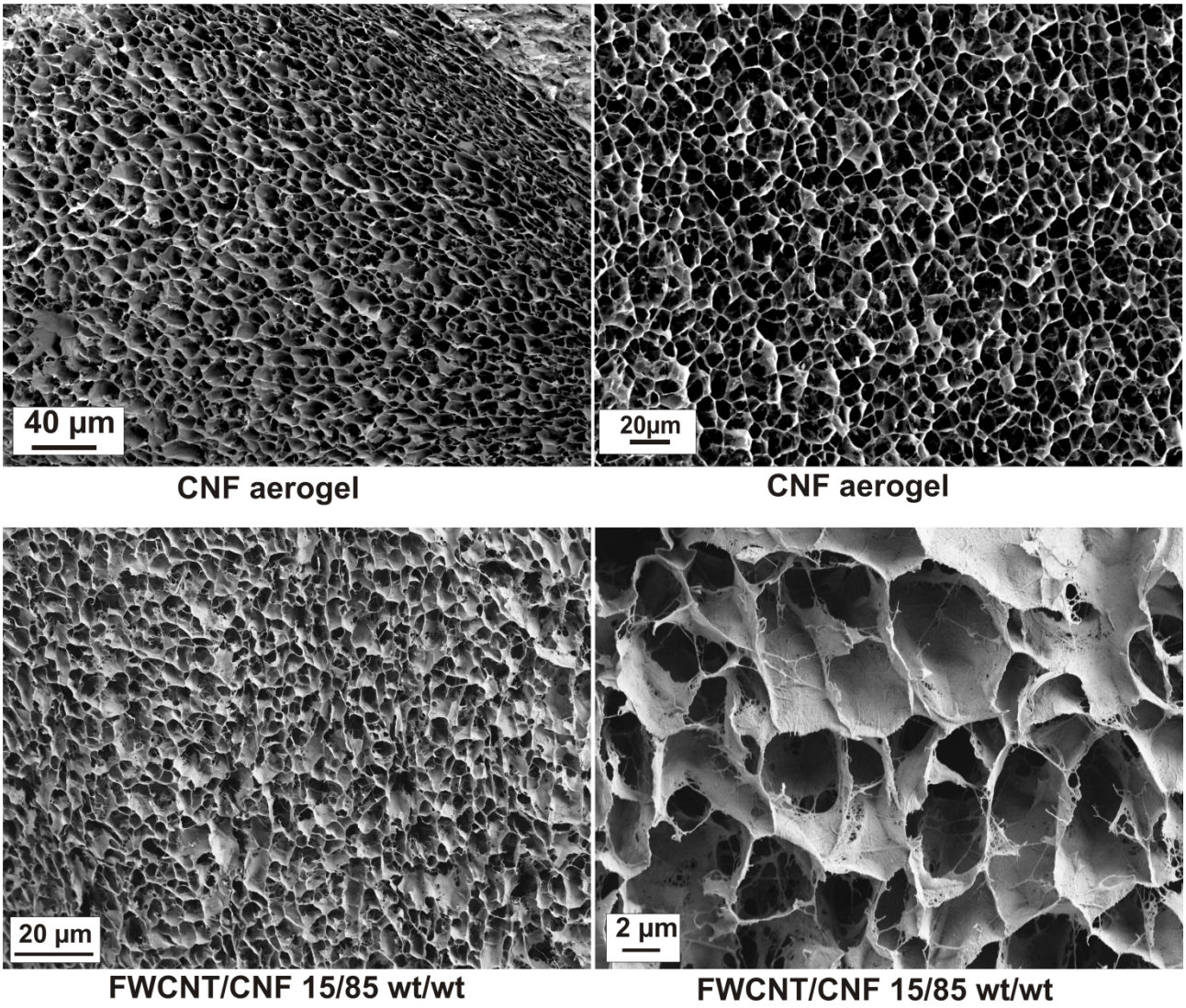

Figure S2. Scanning electron microscopy images of pristine CNF aerogel and FWCNT/CNF 15/85 wt/wt aerogels. The images show cellular structure without and with CNT in the networks.

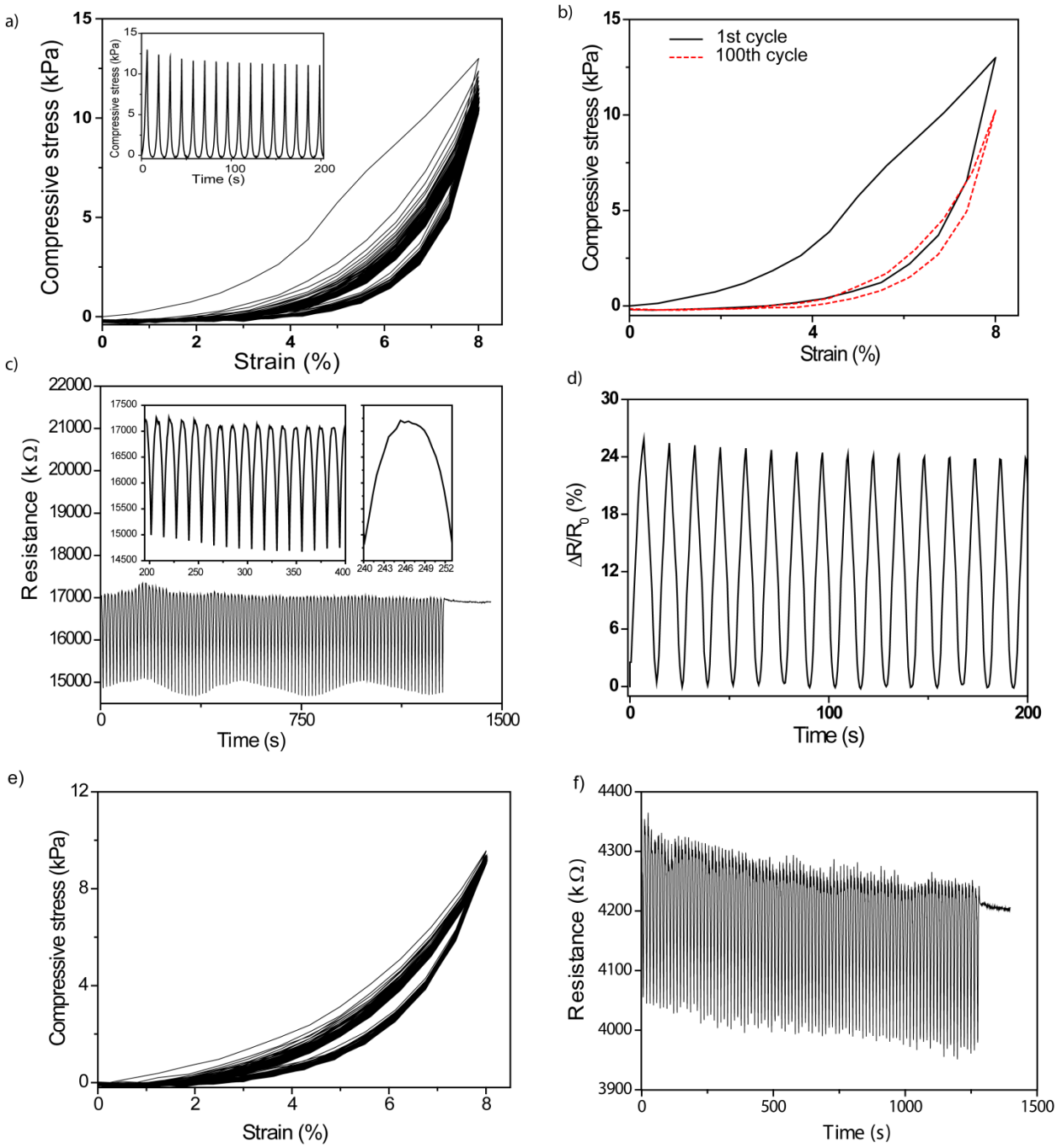

Fig S3. (a) 100 cycled stress-strain curves up to strain 8% of FWCNT/CNF 25/75 wt/wt aerogel and the 16 first cycles compressive stress *vs*. time illustrated (inset). (b) The first and 100th cycles of compressive stress-strain curves of FWCNT/CNF 25/75 wt/wt aerogel. (c) 100 cycled resistance response *vs*. time under cyclic compression up to strain 8% of FWCNT/CNF 25/75 wt/wt aerogel. The insets show the 16 first cycles. (d) Fractional resistance reduction during cyclic compression of FWCNT/CNF 25/75 wt/wt aerogel. (e) 100 cycled stress-strain curves up to strain 8% of FWCNT/CNF 15/85 wt/wt aerogel. (f) 100 cycled resistance *vs*. time under cyclic compression up to strain 8% of FWCNT/CNF 15/85 wt/wt aerogel. Resistance changes irreversibly of FWCNT/CNF 15/85 wt/wt aerogel upon loading and unloading. It gradually decreases under cyclic compression.