

# Supporting Information.

## Holey Nickel Hydroxide Nanosheets for Wearable Solid-State Fiber-Supercapacitor

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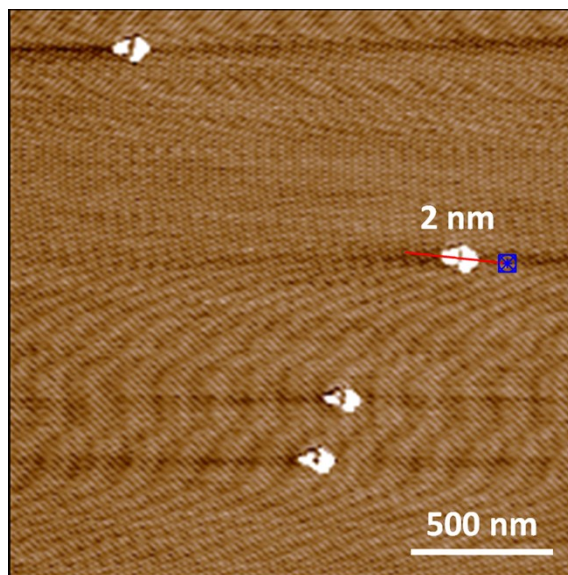
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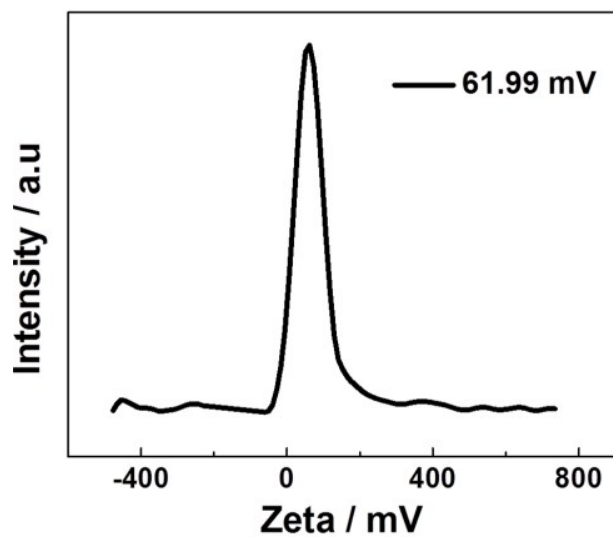
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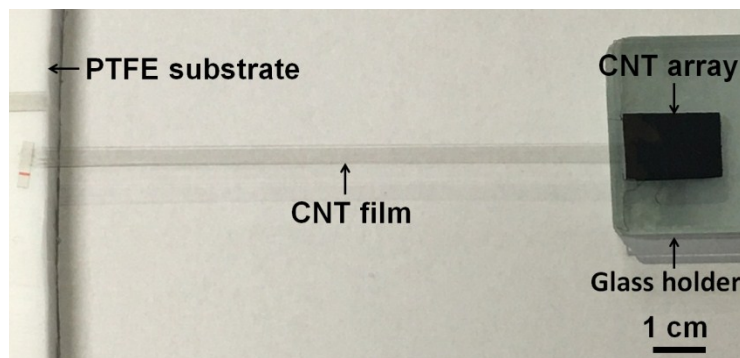
<sup>†</sup>These authors contributed equally to this work.



**Fig. S1.** AFM image of Ni(OH)<sub>2</sub> nanosheets.



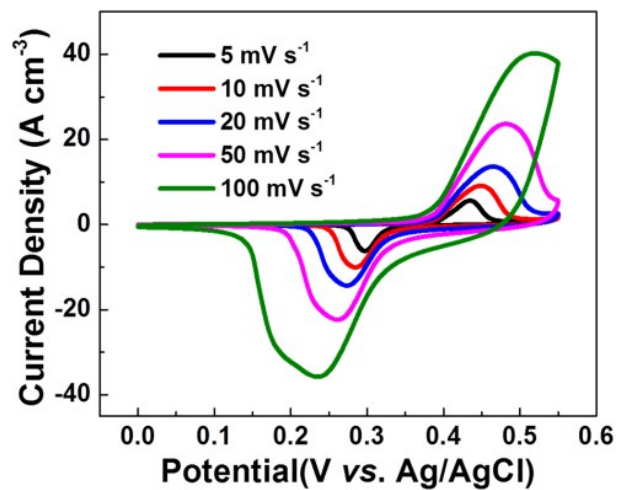
**Fig. S2.** The Zeta potential of Ni(OH)<sub>2</sub> nanosheets that are uniformly dispersed in ethanol at a concentration of 1 mg mL<sup>-1</sup>.



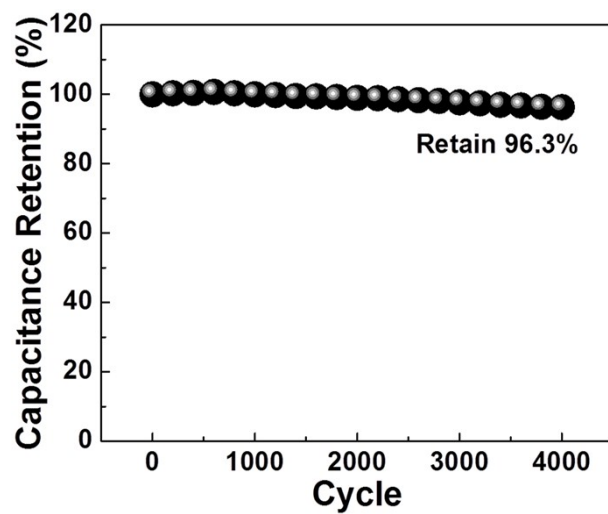
**Fig. S3.** Photograph of a well-aligned CNT film pulled out from vertical CNT array.



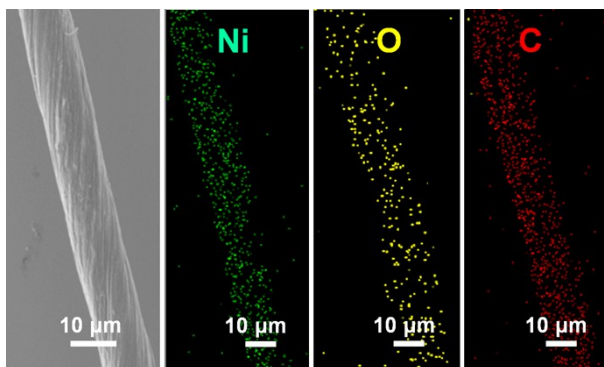
**Fig. S4.** Optical image of a knotted Ni(OH)<sub>2</sub>/CNT fiber.



**Fig. S5.** CV curves of Ni(OH)<sub>2</sub>/CNT hybrid fiber electrode (40 wt%) at different scan rates ranging from 5 to 100 mV s<sup>-1</sup> in 1 M KOH.

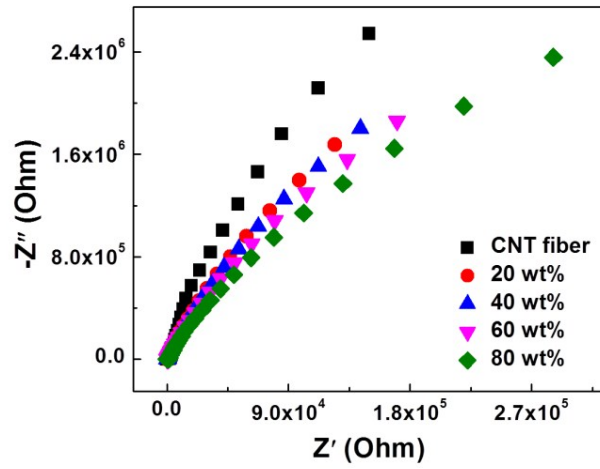


**Fig. S6.** Capacitance retention of the Ni(OH)<sub>2</sub>/CNT fiber electrode after 4000 charge-discharge cycles at a current density of 5.0 A cm<sup>-3</sup>.

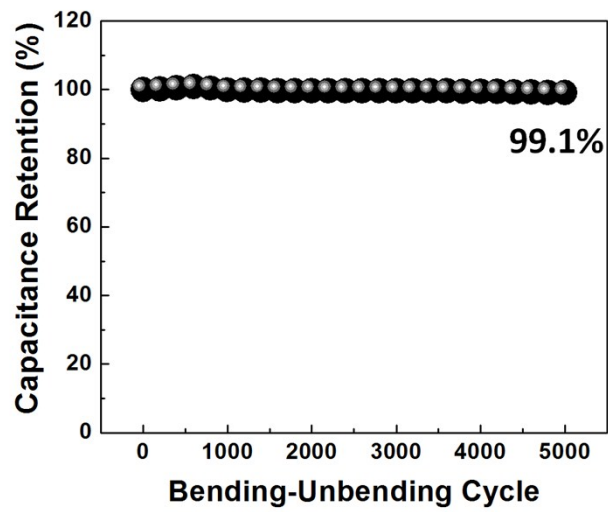


**Fig. S7.** SEM image and EDS mapping of Ni(OH)<sub>2</sub>/CNT fiber after 4000 charge-discharge cycles.

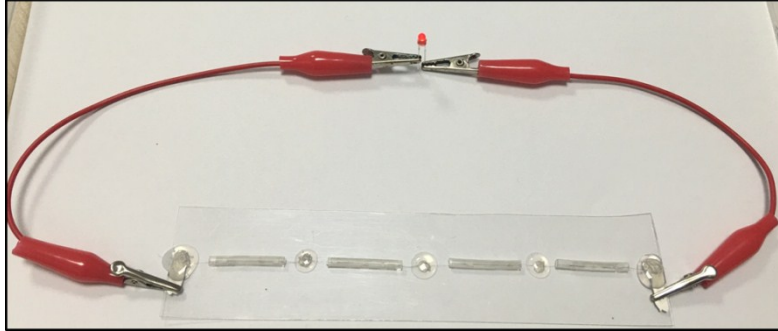




**Fig. S8.** EIS plots of bare CNT fiber and Ni(OH)<sub>2</sub>/CNT hybrid fiber electrodes with different loading amounts of holey Ni(OH)<sub>2</sub> nanosheets (20, 40, 60, and 80 wt%).



**Fig. S9.** Capacitance retention of the hybrid supercapacitor after 5000 bending-unbending cycles at a current density of  $0.8 \text{ A cm}^{-3}$ .



**Fig. S10.** A LED can be lightened up by four hybrid supercapacitors connected in series.