Supporting Information:

A New Type of Flexible Energy Harvesting Device Working with Micro Water Droplet Achieves High Output

Dan Gao, Changhong Liu* and Shoushan Fan

Tsinghua-Foxconn Nanotechnology Research Center and Department of Physics, Tsinghua University, 1Qinghua Garden, Beijing 100084, China

**Changhong Liu.* Email: chliu@mail.tsinghua.edu.cn

Supplementary Figure

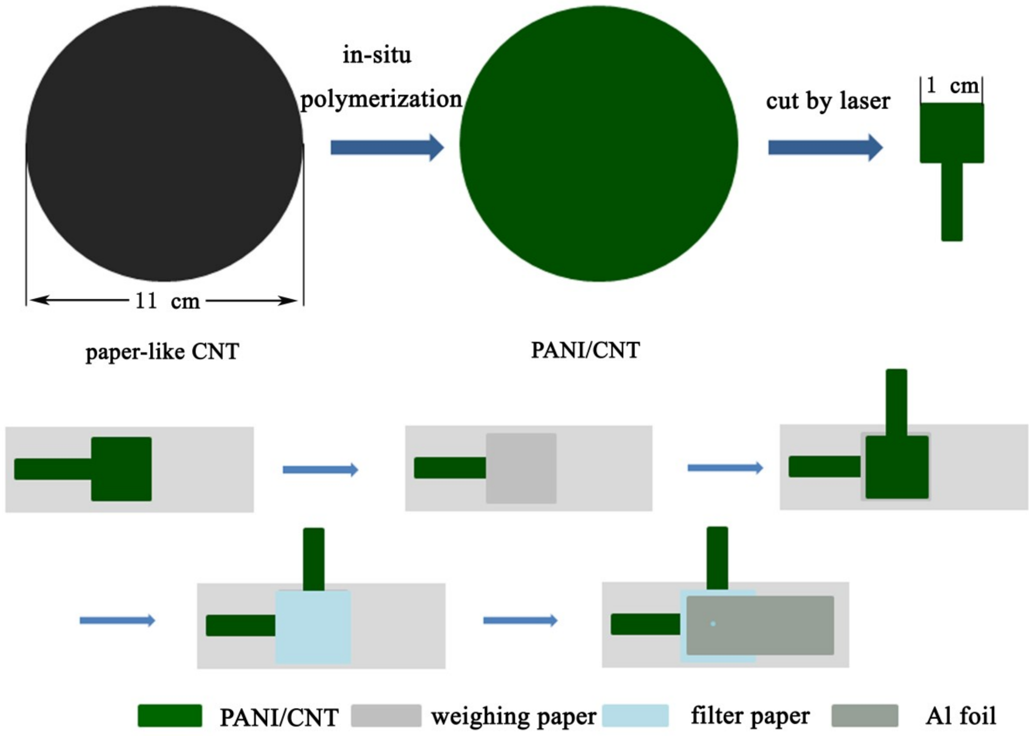

Fig. S1. Schematic showing the preparation of the PANI/CNT electrode and the fabrication of the hybrid device.

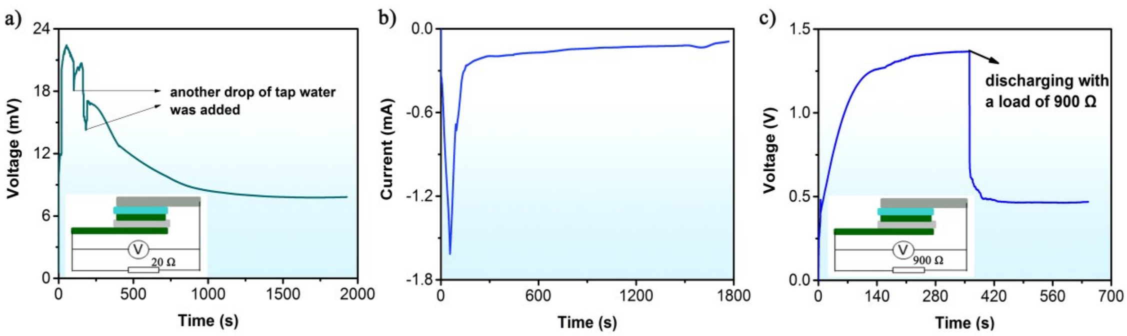

Fig. S2. (a) The variation of discharging voltage with a load of 20 Ω once a drop of tap water was added onto the hybrid device and two more drops of tap water were added one after another. The insert map is the schematic showing the setup of the discharging voltage process. (b) The discharging current was tested with a load of 20 Ω when the open-circuit voltage reached maximum. (c) The variation of open-circuit voltage and discharging voltage with a load of 900 Ω when the hybrid device reached to the maximum output. The insert map is the schematic showing the setup of the discharging voltage process.

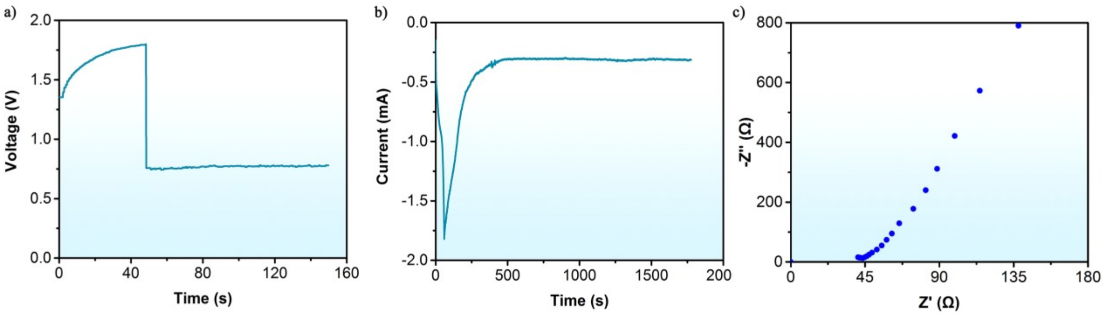

Fig. S3. (a) Galvanostatic charge-discharge curves of the hybrid device after adding a drop of tap water, the current density here was 0.5 mA cm^{-2}. (b) The discharging current variation of the hybrid device with a load of 20 Ω after being charged to 1.8 V through galvanostatic charging, the charging current density here was 0.5 mA cm^{-2}. (c) The Electrochemical impedance spectroscopy of the tap water for the hybrid device at the frequency range from 100 kHz to 0.01 Hz.

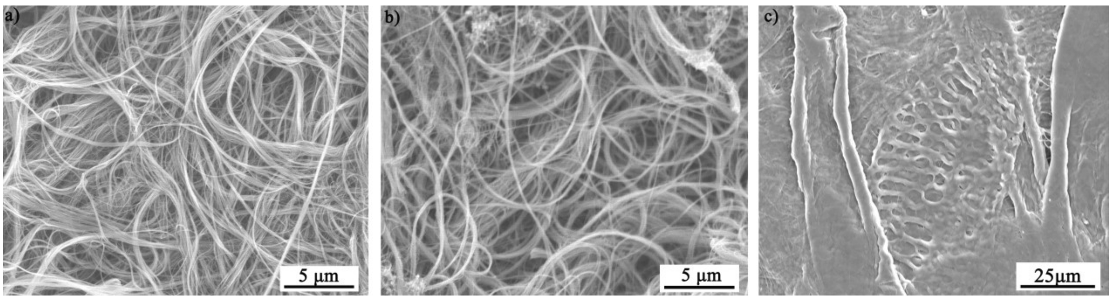

Fig. S4. The SEM images of PANI/CNT electrode (a) unused; (b) used for a month and (c) weighing paper.

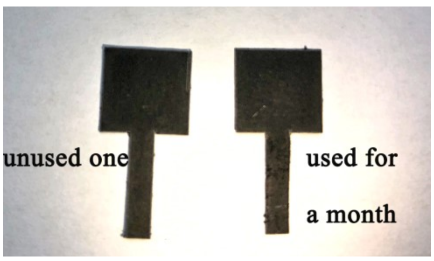

Fig. S5. The photograph showing the PANI/CNT electrodes, the left one was the unused electrode, the right one was the bottom electrode which was used after a month.

Fig. S6. The photographs of (a) and (b) the lateral view of the hybrid device; (c) hybrid device after testing for a month.

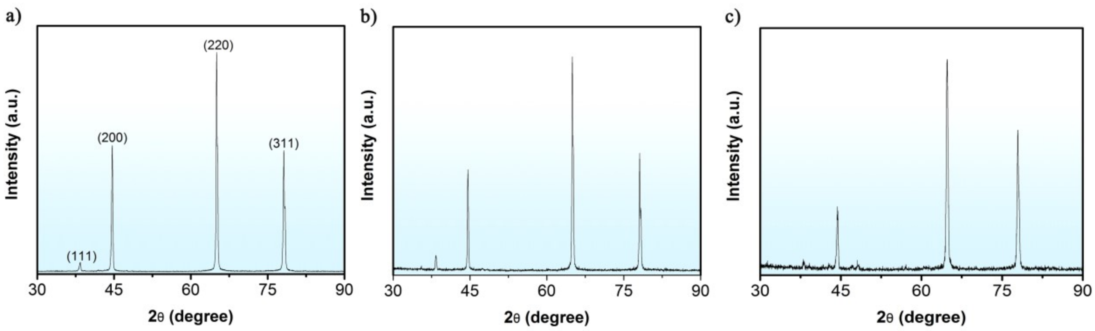

Fig. S7. The XRD images of the Al foil which (a) was not used; (b) was used as electrode to react once and then left for a month; (c) was used as electrode to react for a month every day.

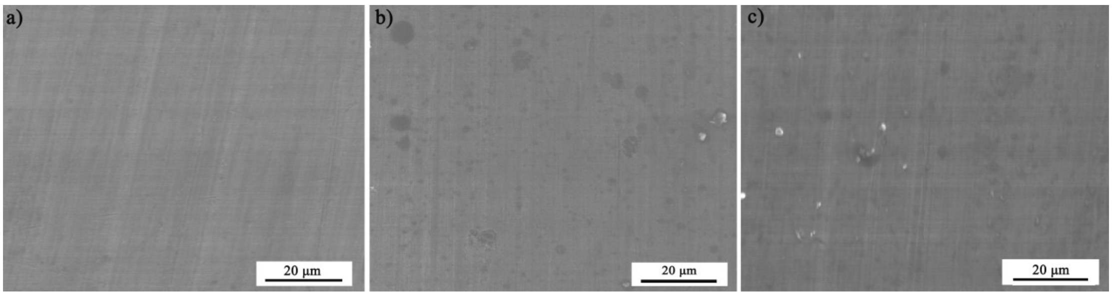

Fig. S8. The SEM images of the Al foil which (a) was not used; (b) was used as electrode to react once and then left for a month; (c) was used as electrode to react for a month every day.