sensors

MDPI

*Supplementary Materials*

# A Cantilever Beam-Based Triboelectric Nanogenerator as a Drill Pipe Transverse Vibration Energy Harvester Powering Intelligent Exploitation System

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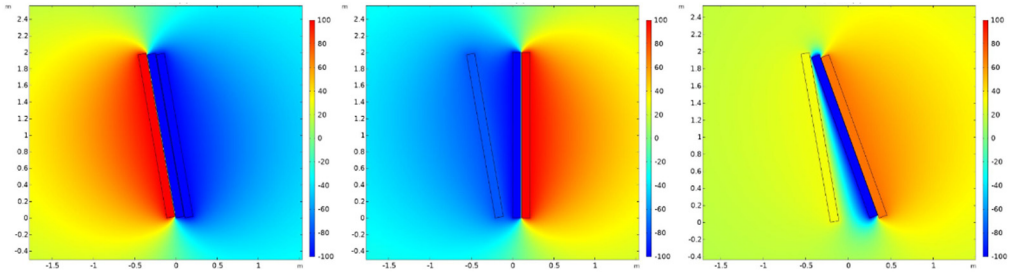

**Figure S1.** Simulations of electric potential distributions for CB-TENG.

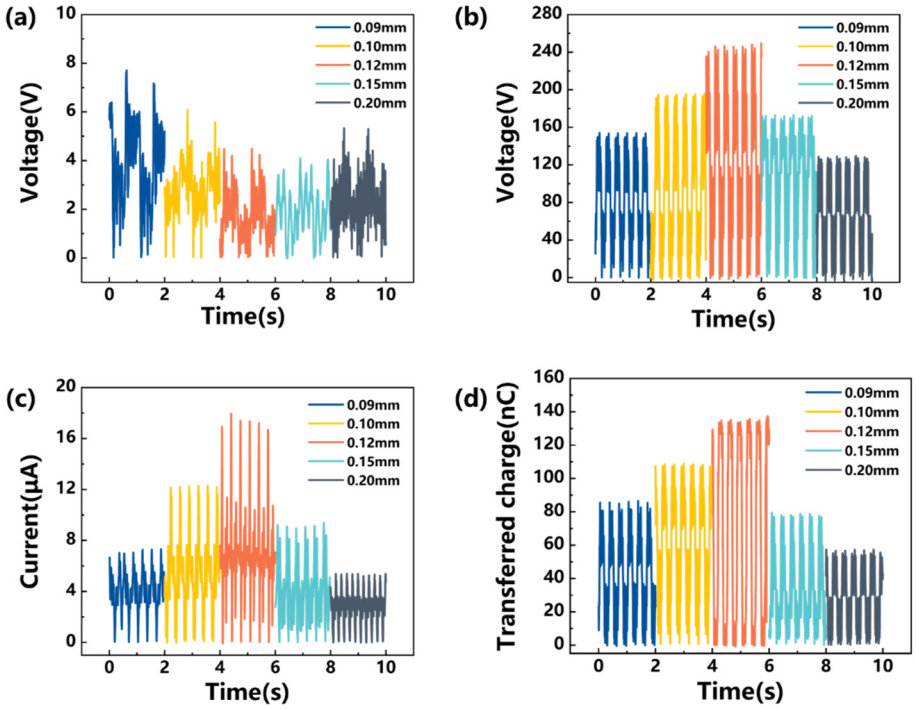


**Figure S2.** The output of CB-TENG with different thickness of spring steel. (a) The open-circuit voltage of CB-TENG at *f*=1.0 HZ,*A*=10 mm with different thickness of spring steel; (b) The open-circuit voltage of CB-TENG at *f*=3HZ *A*=50mm with different thickness of spring steel; (c) The short-circuit current of CB-TENG at *f*=3HZ *A*=50mm with different thickness of spring steel; (d) The transferred charge of CB-TENG at *f*=3HZ *A*=50mm with different thickness of spring steel.

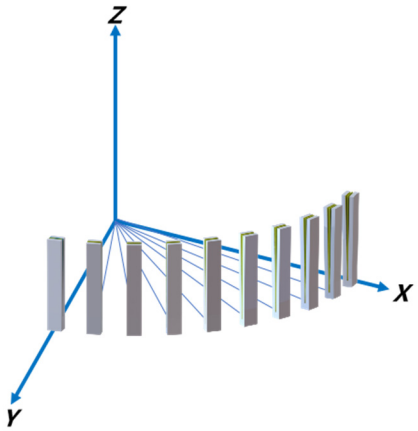


**Figure S3.** The experimental setup of azimuth angle test.

The following demo videos are also uploaded:

**Supplementary Video S1:** The specific vibration mode of CB-TENG.

**Supplementary Video S2:** 204 LEDs are lighted up by array-type CB-TENG.

**Supplementary Video S3:** The array-type CB-TENG powers a sensor.