

Electronic Supplementary Information

Brownian motor inspired monodirectional continuous spinning triboelectric nanogenerators for extracting energy from irregular gentle water waves

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Supplementary Movies:

Movie S1 Continuous spinning for 20 s.

Movie S2 Continuous spinning under ultra-low frequency excitations.

Movie S3 The CS-TENG excited by water waves.

Movie S4 348 LEDs are constantly lighted up by the CS-TENG.

Movie S5 Continuous self-powered temperature sensing based on the CS-TENG.

Movie S6 Self-powered wind speed sensing based on the CS-TENG.

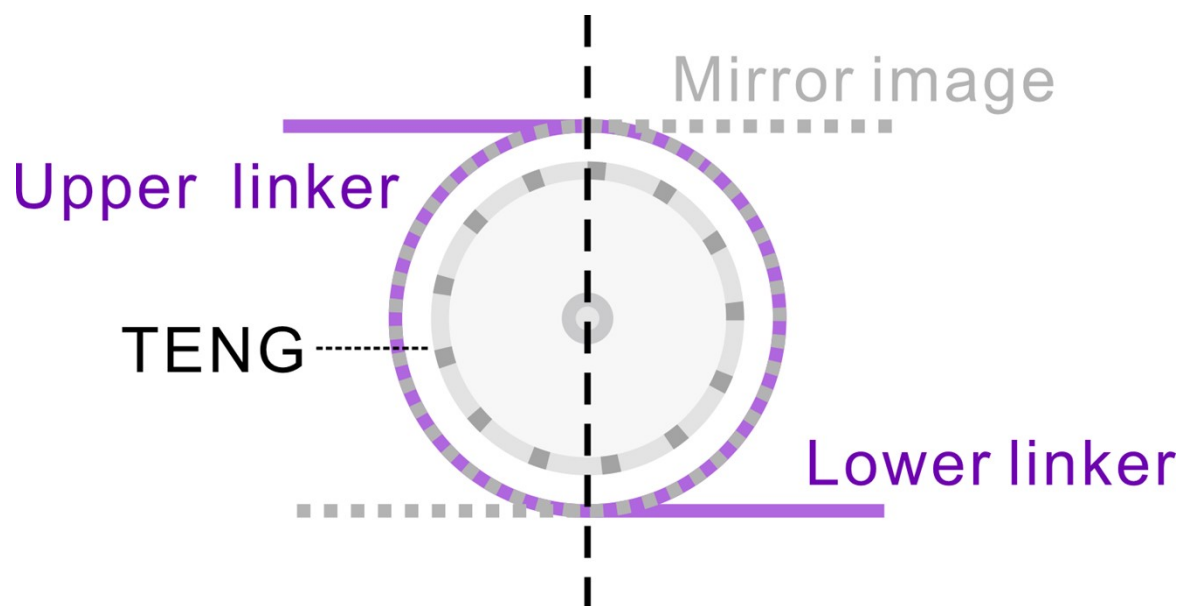


Fig. S1. Schematic illustration of the chiral linkage.

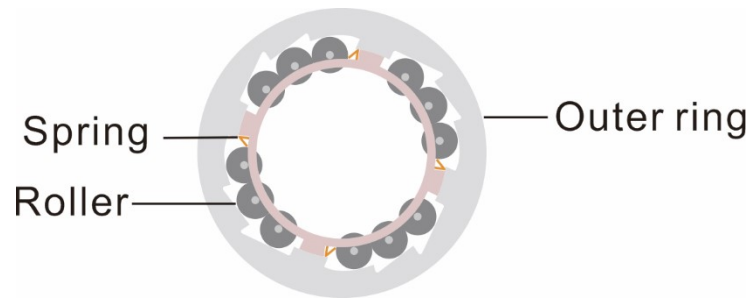


Fig. S2. Detailed structure of the one-way bearing.

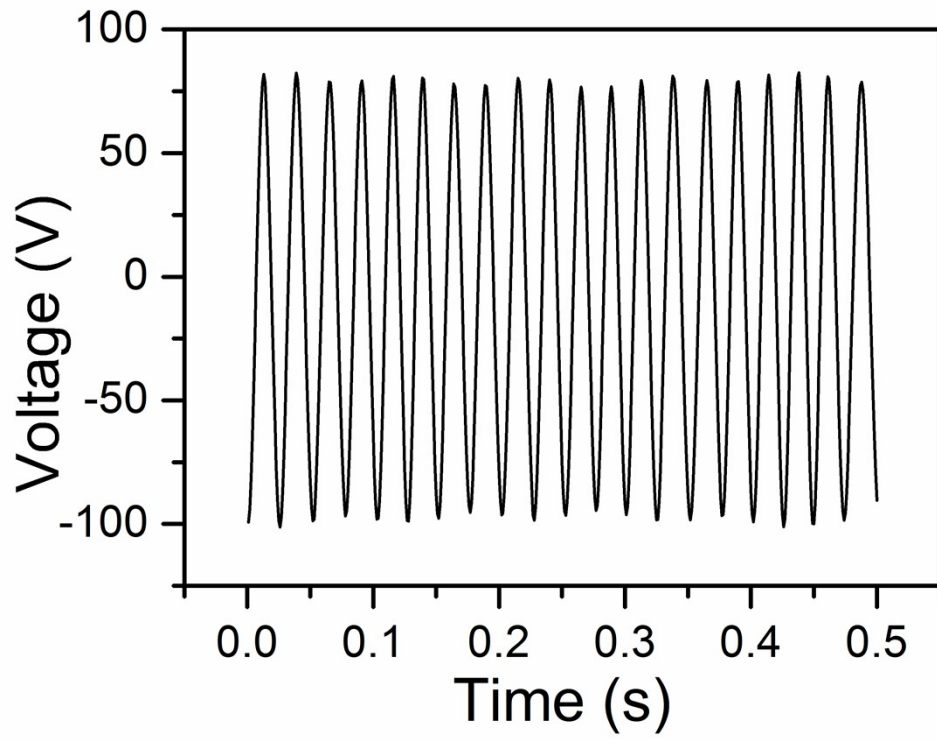


Fig. S3. Open-circuit voltage of the sub-unit under a motor speed of 50 rpm.

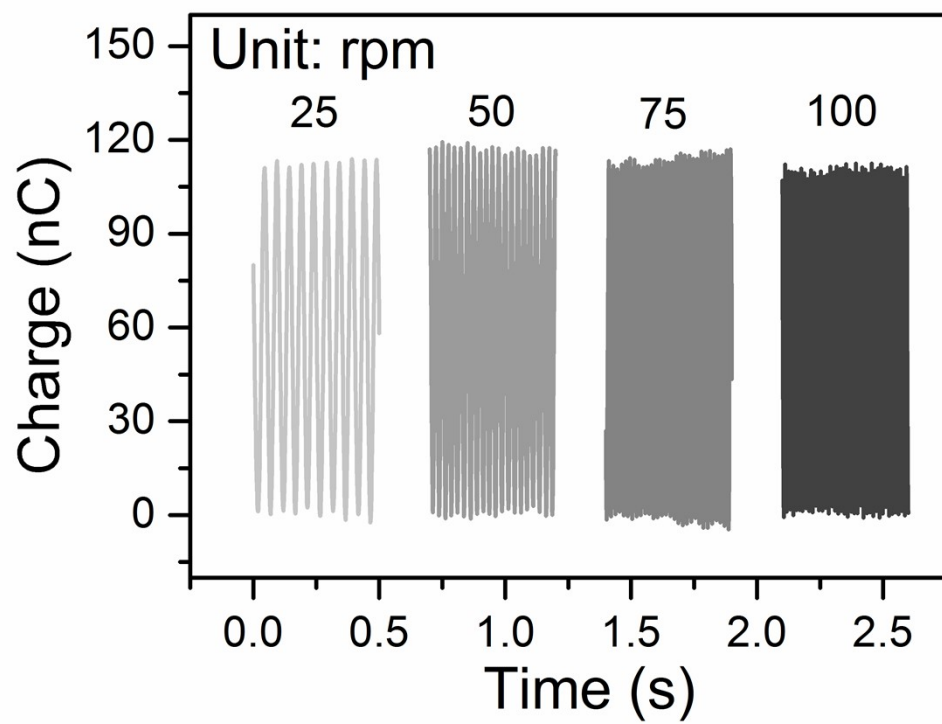


Fig. S4. Transferred charges of the sub-unit under different motor speeds.

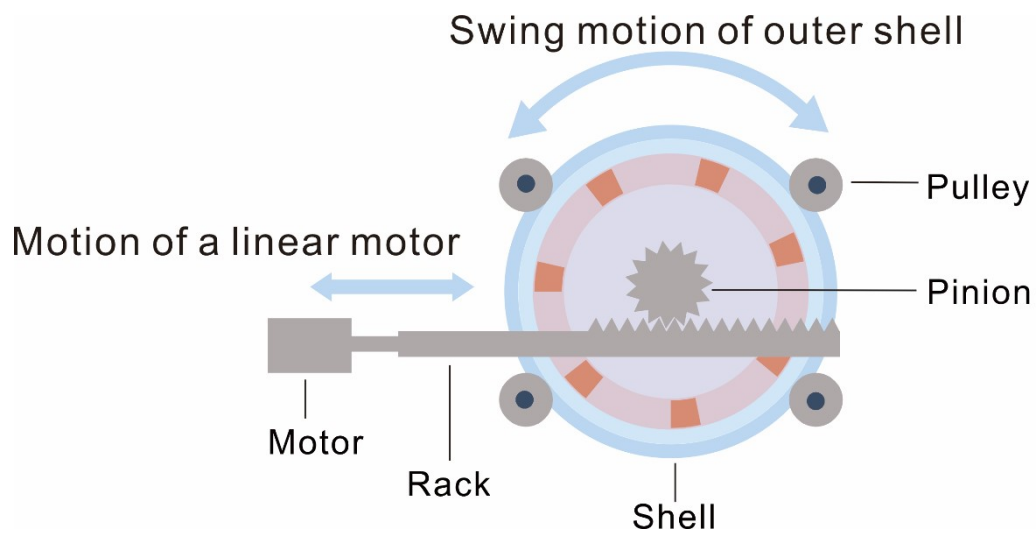


Fig. S5. Basic configuration for the second excitation mode.

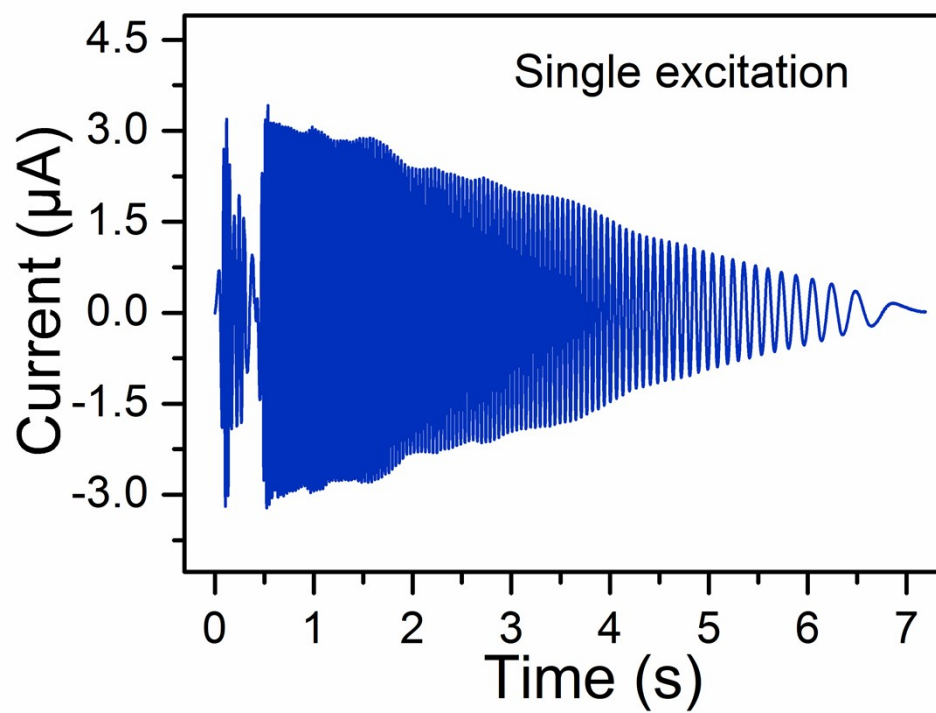


Fig. S6. Short-circuit current curve of the sub-unit after a single excitation with 4 mm spacers.

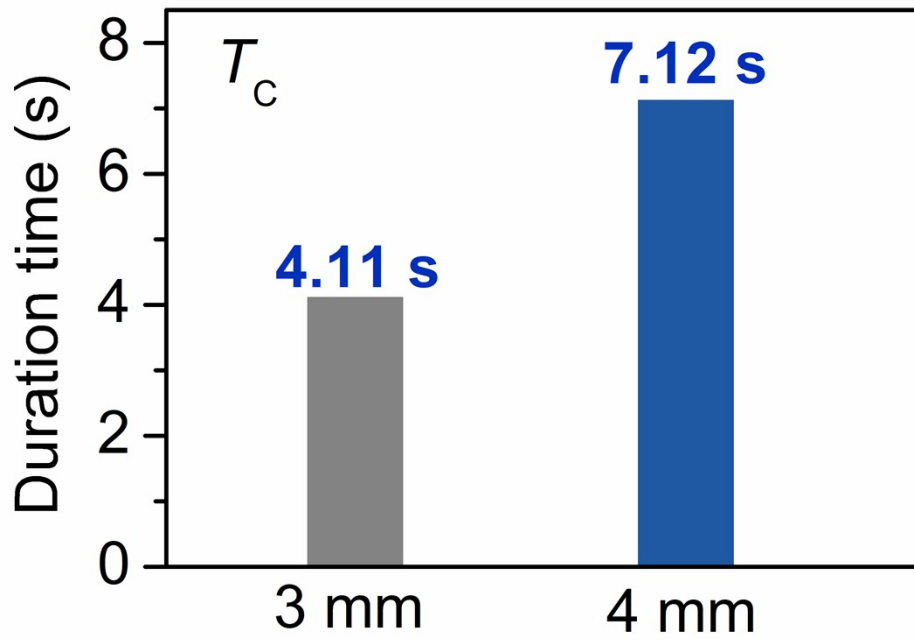


Fig. S7. Duration time of the sub-unit after a single excitation with different spacer thicknesses.

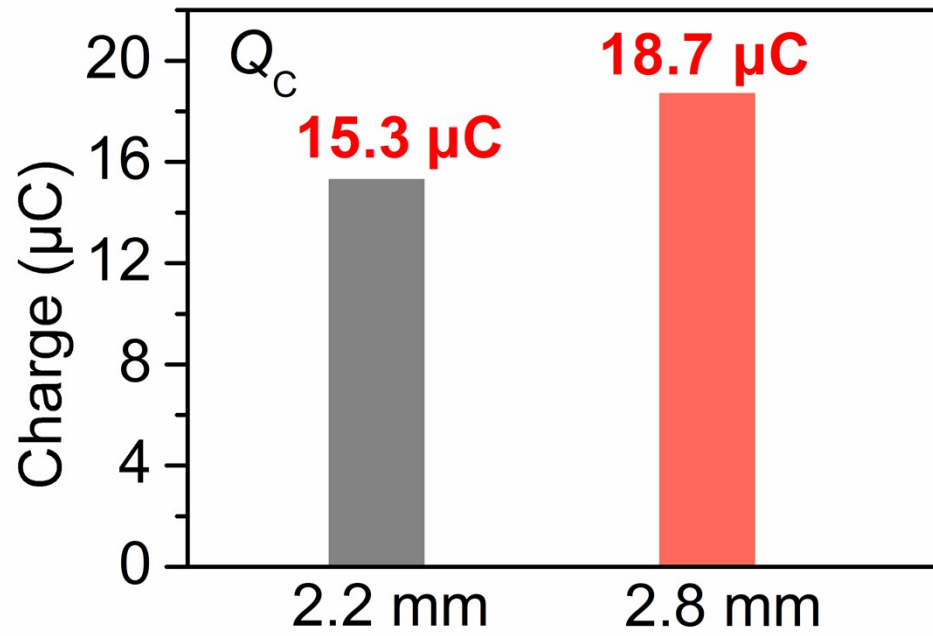


Fig. S8. Integrated charges of the sub-unit after a single excitation with different spacer thicknesses.

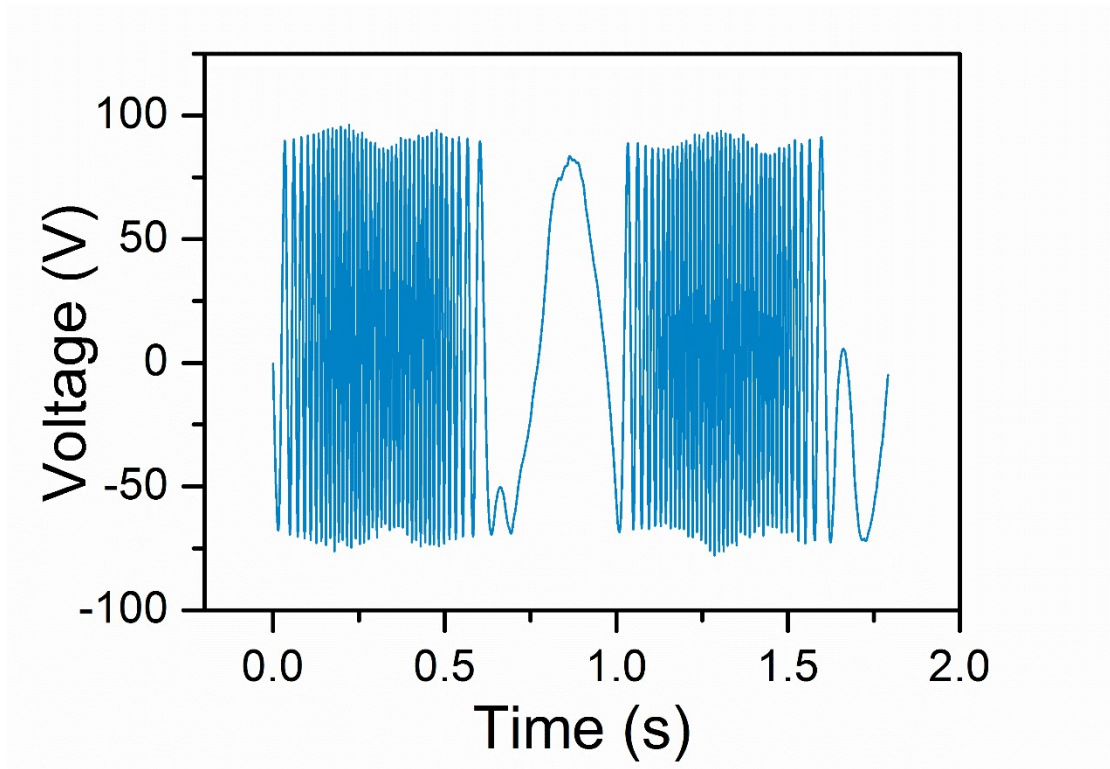


Fig. S9. Open-circuit voltage of the sub-unit under successive excitations.

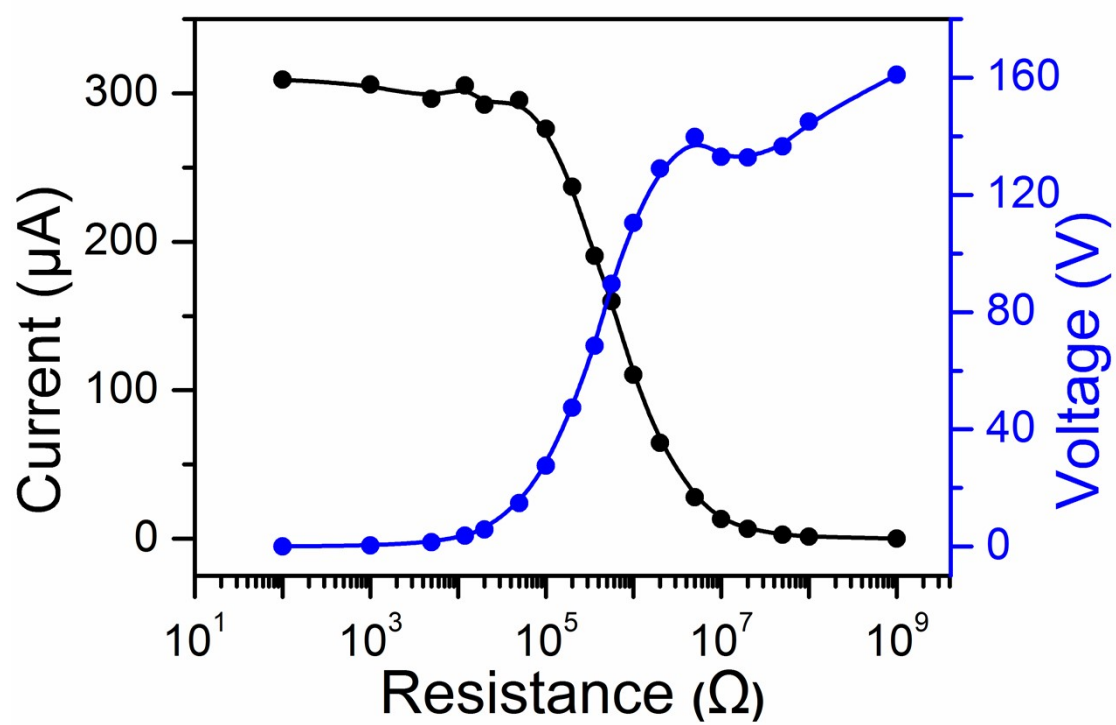


Fig. S10. Peak currents and load voltages of the CS-TENG with various loads in air.

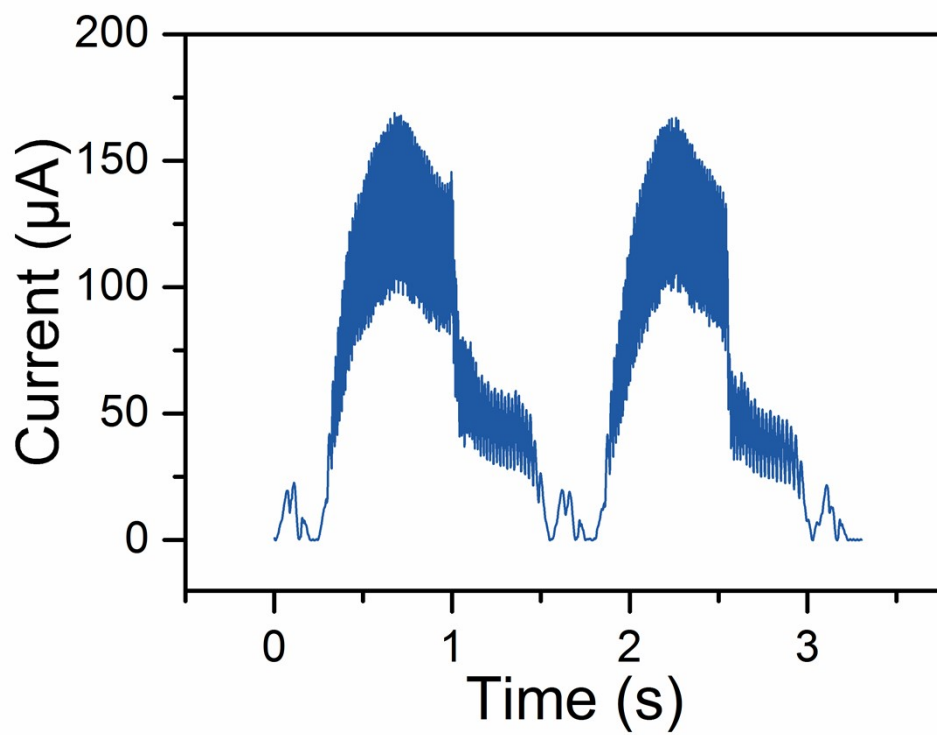


Fig. S11. Rectified short-circuit current curve of the CS-TENG in water.