

Fast-response adaptive hierarchical mode triboelectric nanogenerator for the random gust energy harvesting

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Supporting Figures:

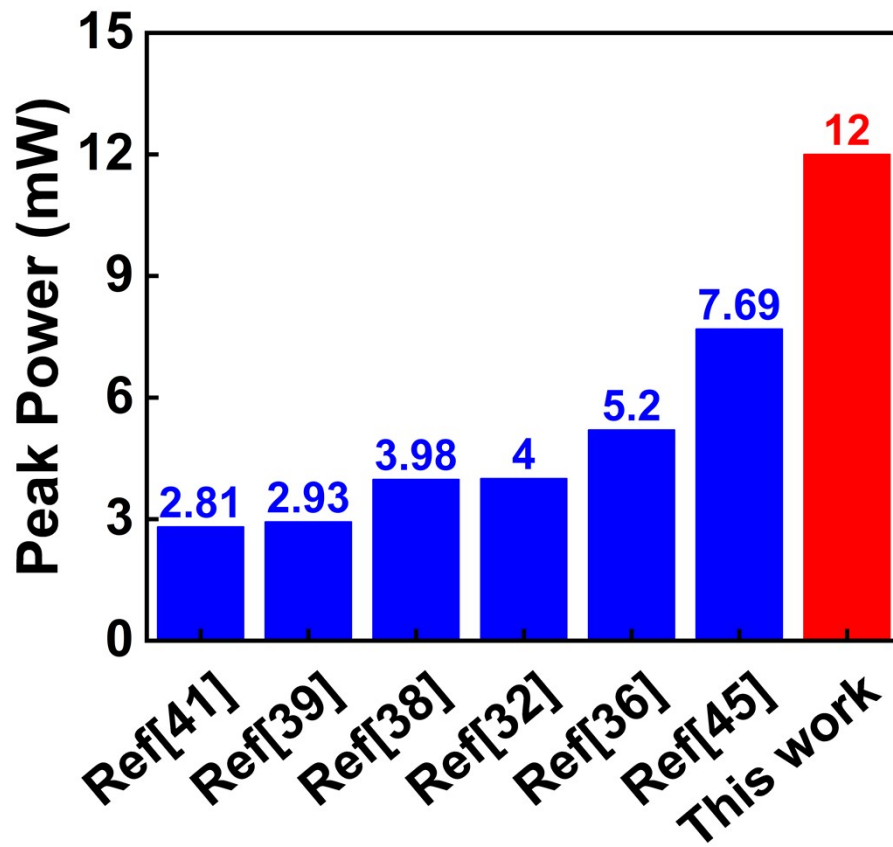


Fig. S1. The peak power compared with other wind energy harvesting TENGs.

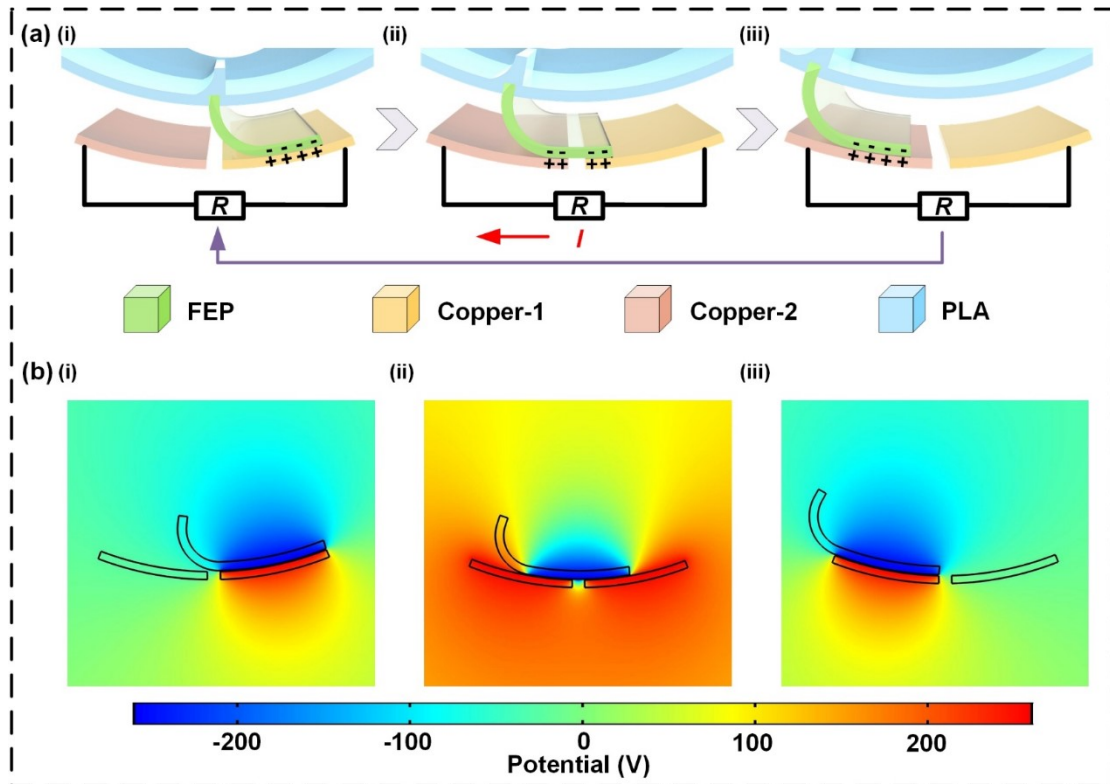


Fig. S2. (a) Triboelectric charge transfer mechanism, (b) schematic diagram of potential simulation in three states.

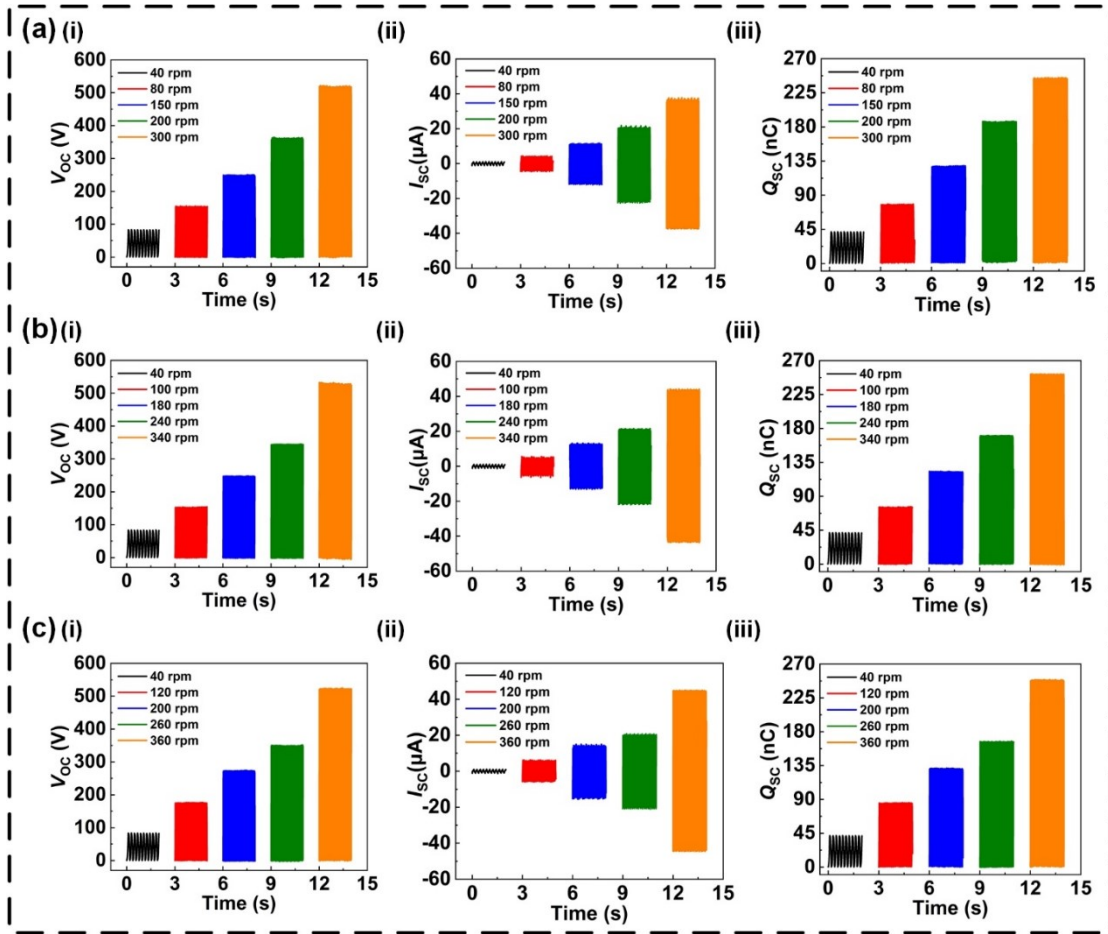


Fig. S3. Output performance under three groups of different spring wire diameters: (a) 40-300 rpm, (b) 60-340 rpm, (c) 80-360 rpm.

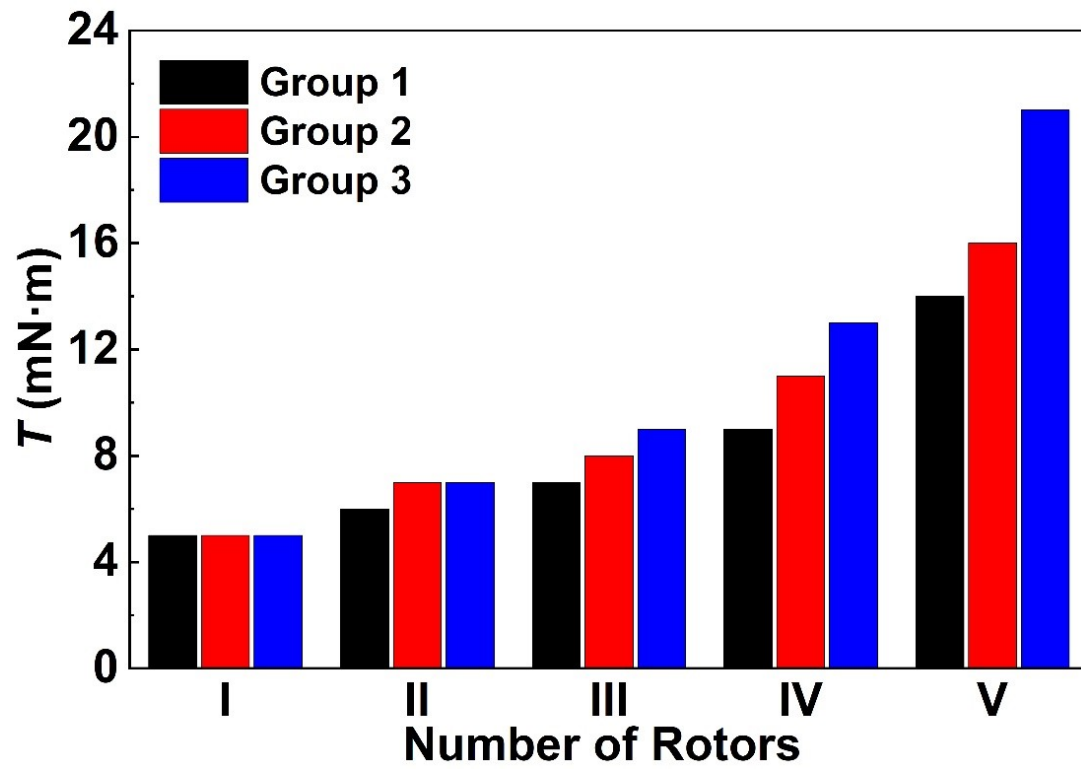


Fig. S4. Torque under three groups of different wire diameter springs.

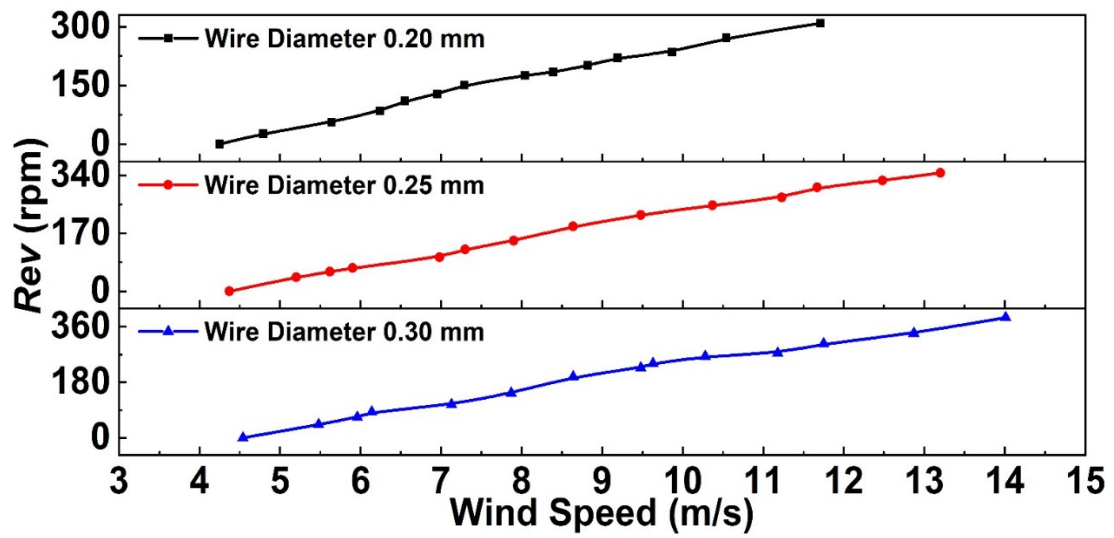


Fig. S5. The relationship between wind speed and rotational speed of FR-TENG under three different wire diameter springs.

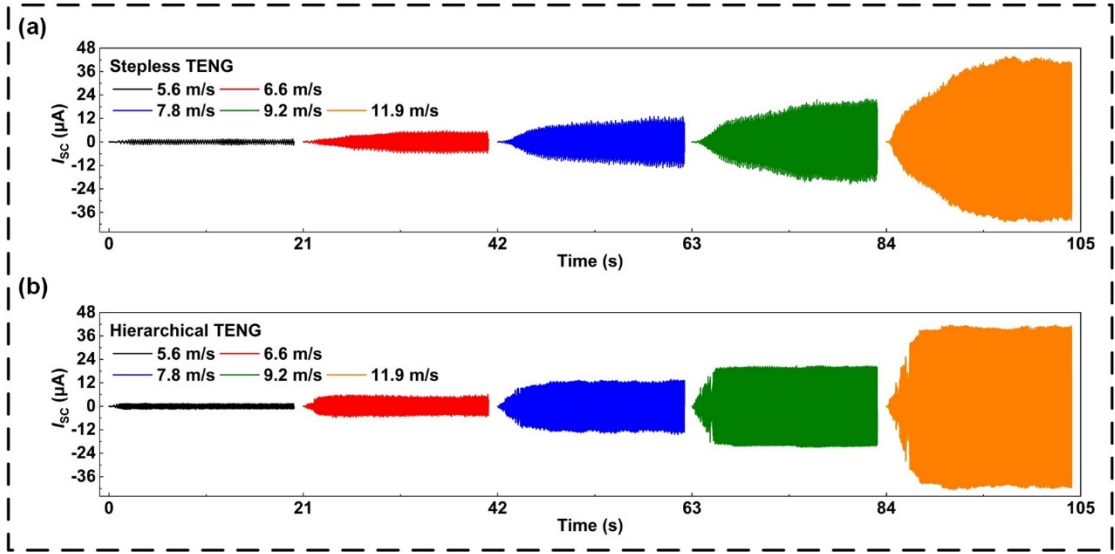


Fig. S6. Output currents of stepless TENG and hierarchical TENG at different wind speeds.

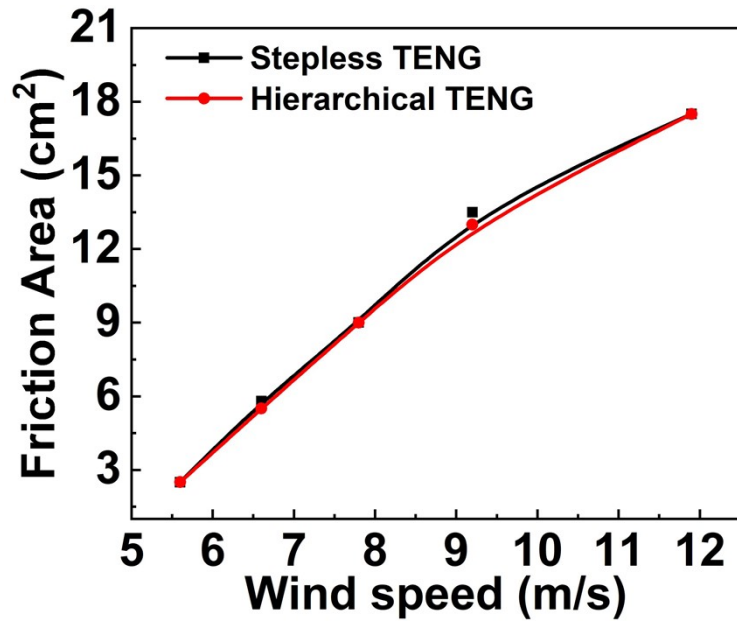


Fig. S7. Comparison of area of stepless TENG and hierarchical TENG at different wind speeds.

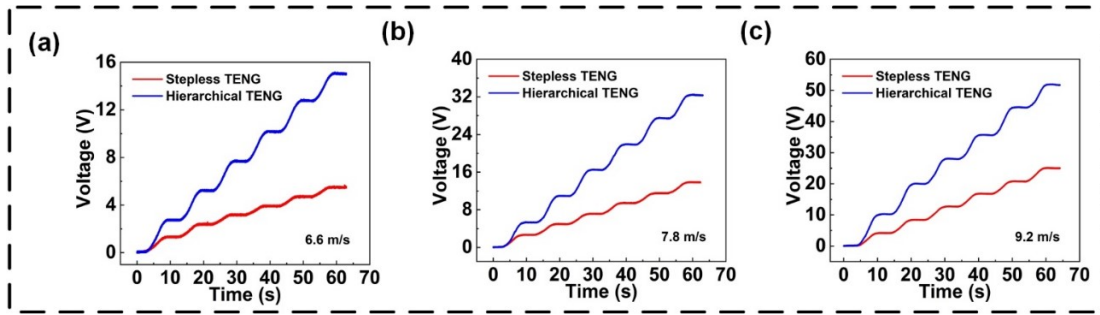


Fig. S8. Comparison of charging capacitance curves of stepless TENG and hierarchical TENG under (a) 6.6 m/s, (b) 7.8 m/s, (c) 9.2 m/s gust.

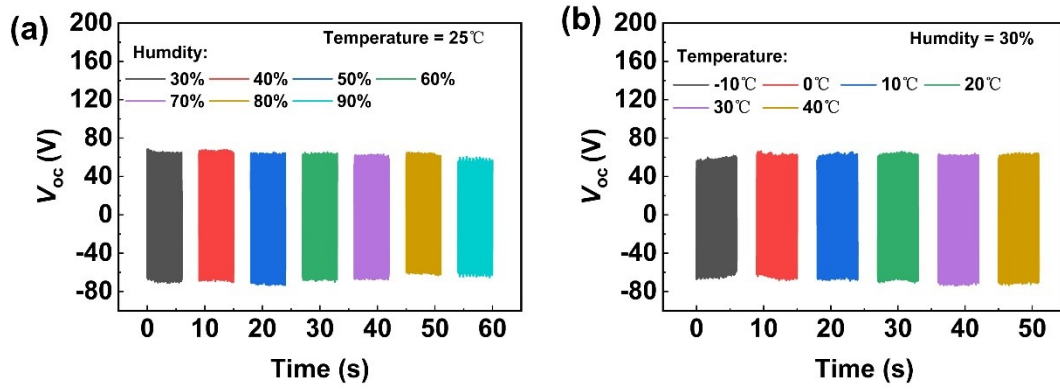


Fig. S9. Experimental testing of FR-TENG in different temperature environments.