

Supplementary Information

Video S1. The R-TENG drives the calculator.

Video S2. The R-TENG drives the thermohygrometer.

Video S3. The R-TENG drives more than 720 LEDs.

Video S4. The R-TENG drives the electronic clock.

Video S5. The R-TENG drives the thermohygrometer (in a moving car).

Video S6. The R-TENG drives the electronic clock (at the seaside)

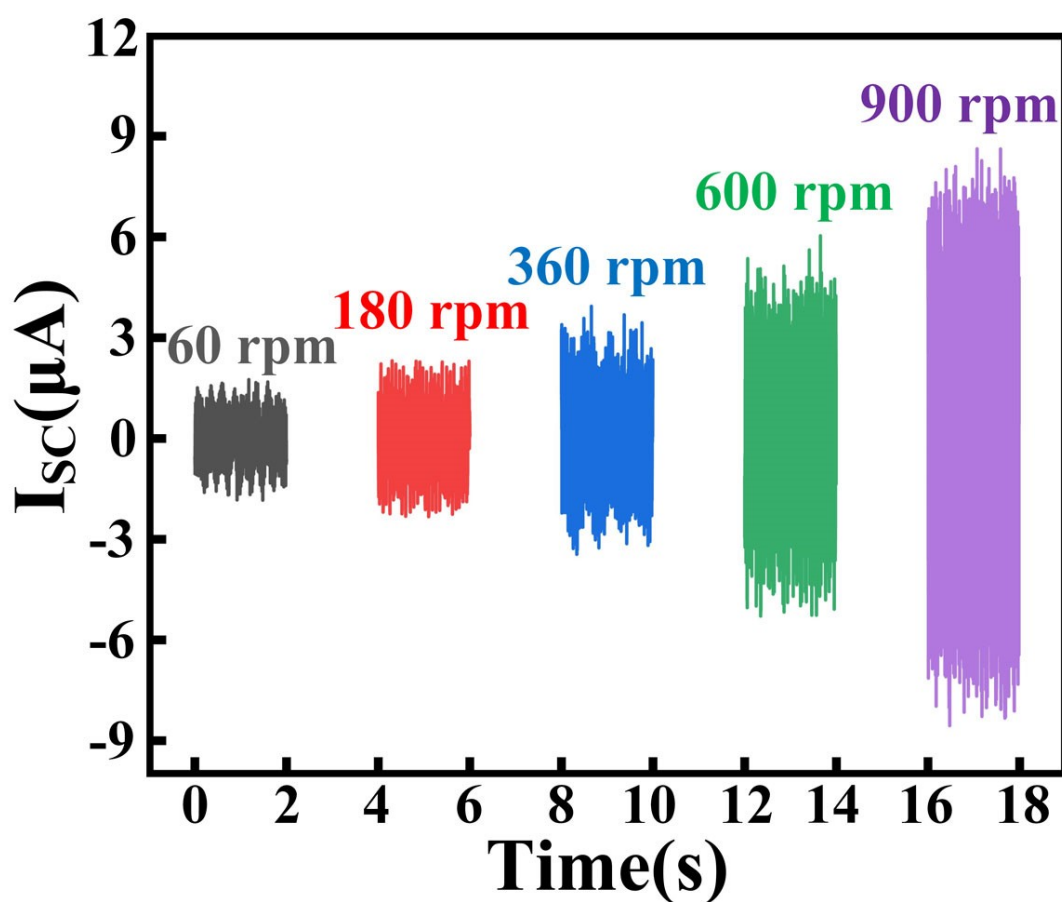


Fig. S1 The I_{sc} of the bottom power generation unit at different rotational speeds.

Table S1 The comparison of previous TENG designs.

Design	Rotor size	Rotation speed(wind speed)	Triboelectric material	Performance	Ref
R-TENG	84 mm	900 rpm 12 m/s	Wool-PTFE- Copper-FKM	1504 V, 67.24 μ A; 742 V, 21.9 μ A	This work

R-DC-TENG	50 mm	10 m/s	Cu-Kapton	450 V, 11 μ A	[31]
C-TENG	140 mm	210 rpm 12.38 m/s	Cotton-FEP-Al	782 V, 8.9 μ A; 600 V	[13]
BD-TENG	80 mm	900 rpm 4 m/s	Cu-FEP	350 V, 38 μ A; 330 V, 7 μ A	[12]
D-TENG (UD-TENG, LD-TENG)		16.3 m/s	Cu-FEP	220 V, 23 μ A; 270 V, 35 μ A	[14]
G-TENG			Cu-FEP	500 V, 15 μ A;	[32]
