

A smart glove with integrated triboelectric nanogenerator for self-powered gesture recognition and language expression

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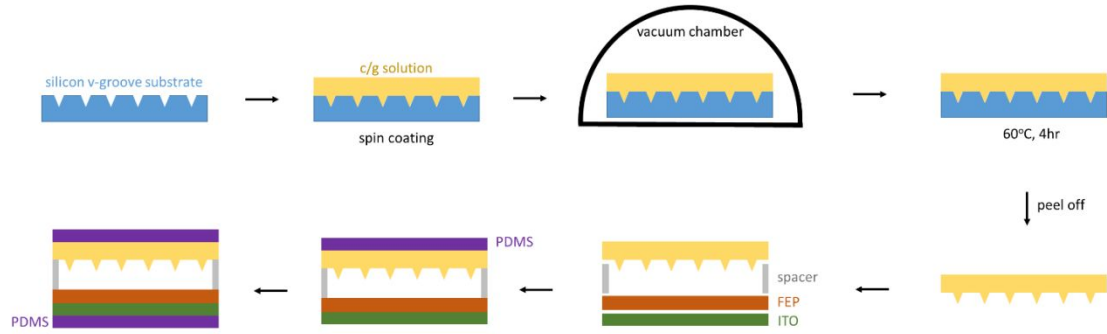


Figure S1. Fabrication process of the TENG. The chitosan/glycerol solutions were spin coated on a silicon v-groove substrate and then put into a vacuum chamber. Later, the sample was put into a hot circulator exact oven at 60 °C for 4 hours. Then, the c/g film was peeled off from the substrate and attached to a donut-shaped double-sided adhesive FEP film, and subsequently to an ITO film. Finally, PDMS mixture was dispensed onto the ITO films and cured at 60 °C to form the substrate for the device.

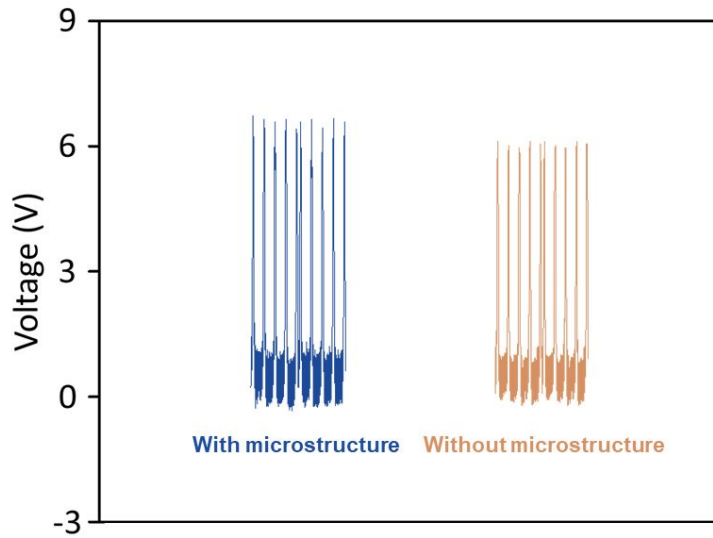


Figure S2. Measurement of electric output characteristics of the TENG with and without microstructure.

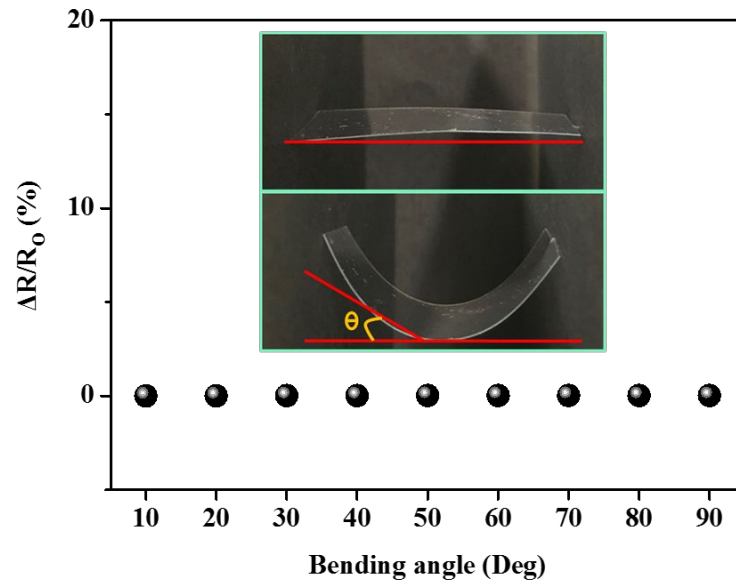


Figure S3. The effect of different resistance on the bending angle performance of the ITO electrode.

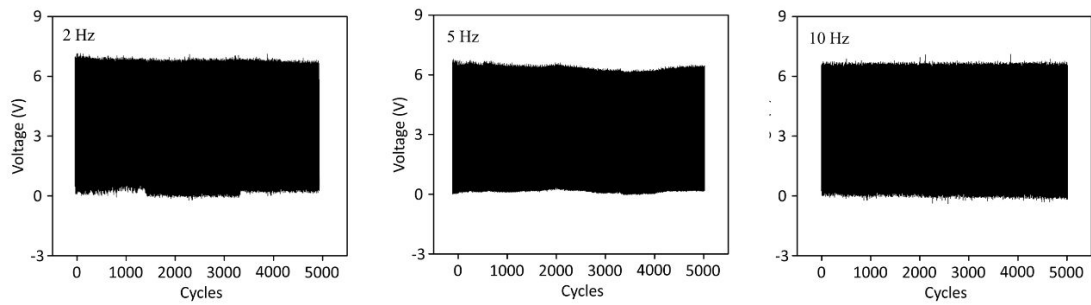


Figure S4. Durability test of the TENG under 5000 cycles when the operating frequency is at 2 Hz, 5 Hz and 10 Hz.

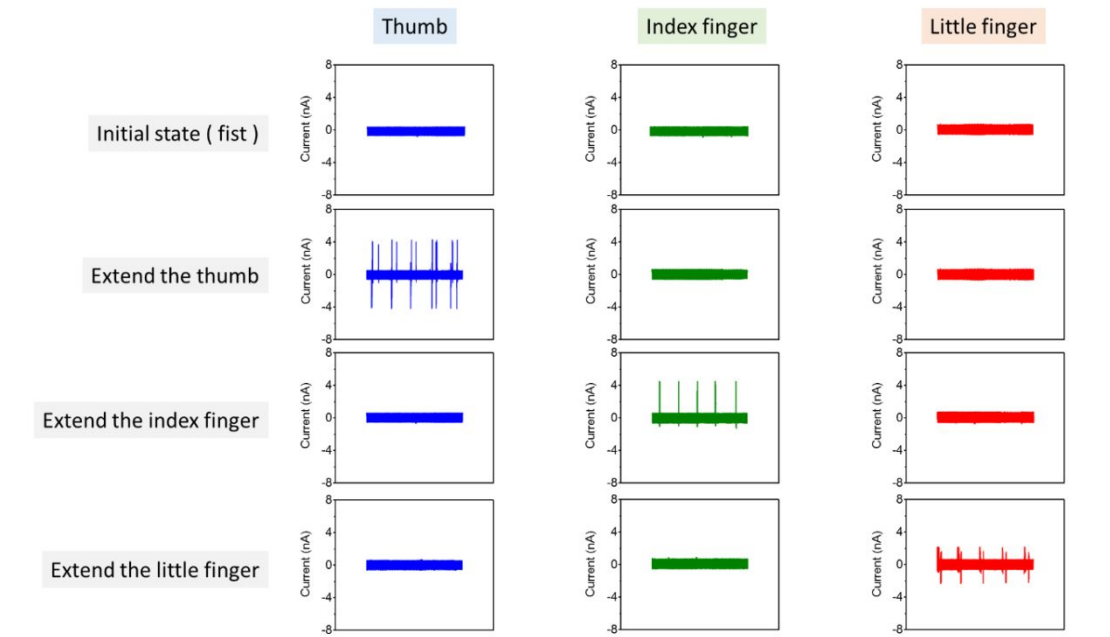


Figure S5. Outputs current of the three TENG mounted on the tendon corresponding to the thumb (blue), the index finger (green), and the little finger (red) when moving different fingers.

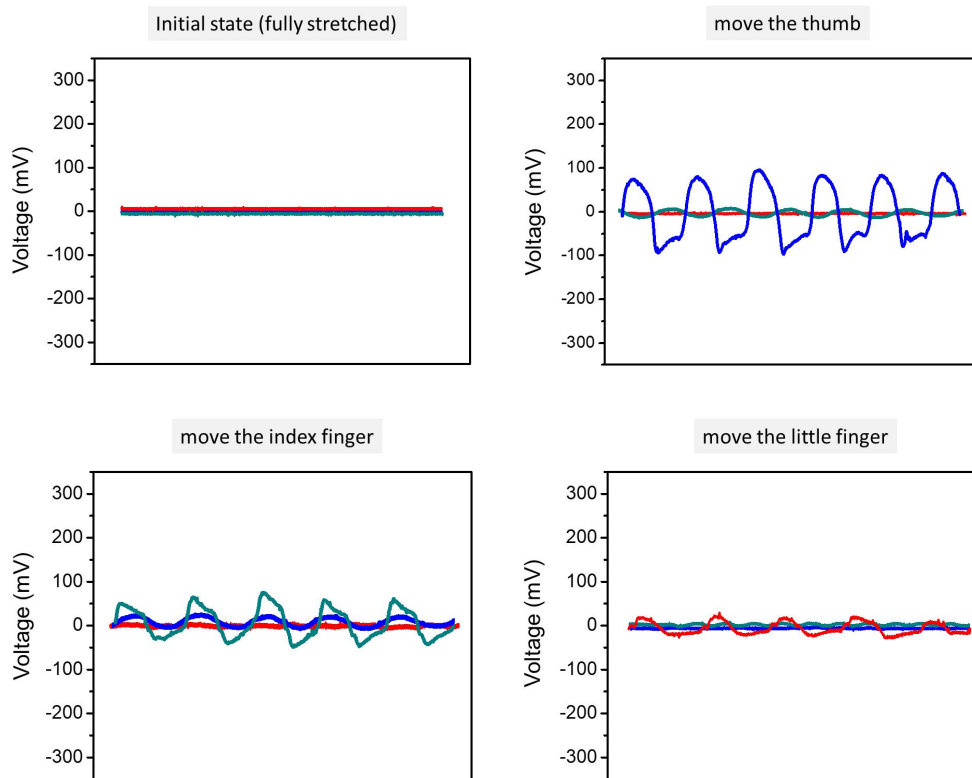


Figure S6. Electrical outputs of the three TENG mounted on the tendon corresponding to the thumb (blue), the index finger (green), and the little finger (red) when moving different fingers.

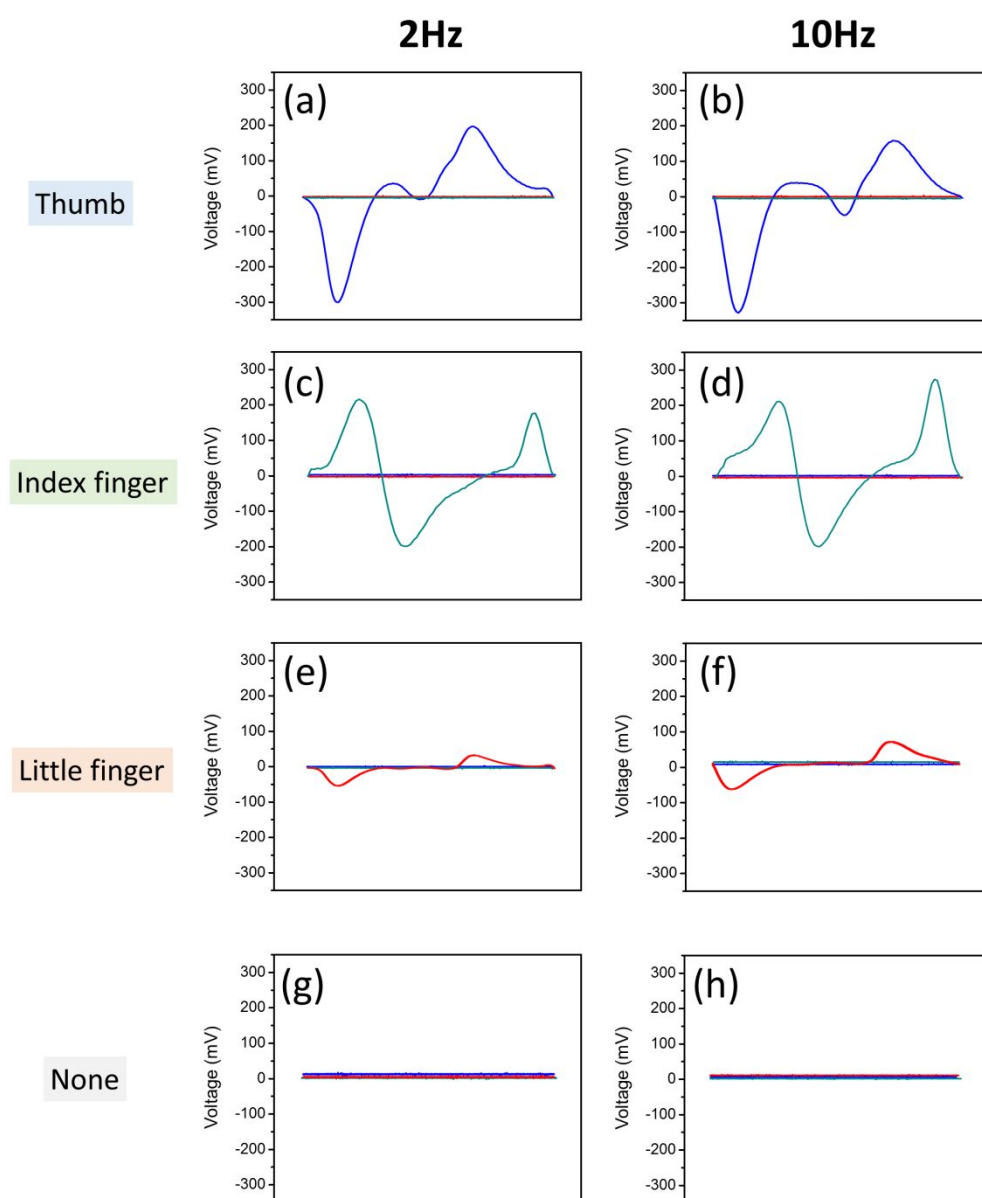


Figure S7. Electrical output of the TENG after operating 5000 cycles at 2 Hz and 10 Hz.