Supporting Information for

Spiral Steel Wire Based Fiber-shaped Stretchable and Tailorable Triboelectric Nanogenerator for Wearable Power Source and Active Gesture Sensor

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Supplementary Figures

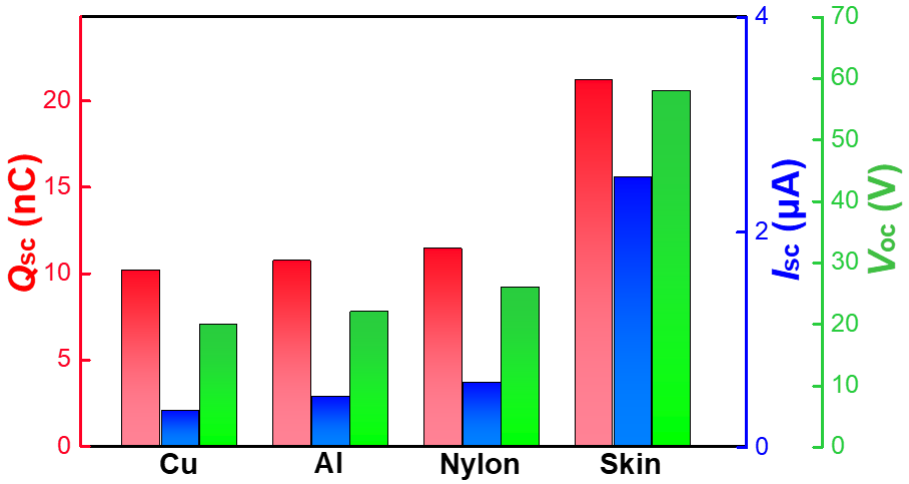

Fig. S1 Short-circuit transferred charge (Q_{sc}), open-circuit voltage (V_{oc}) and short-circuit current (I_{sc}) of the spring based TENG contacting with different materials at 2.0 Hz

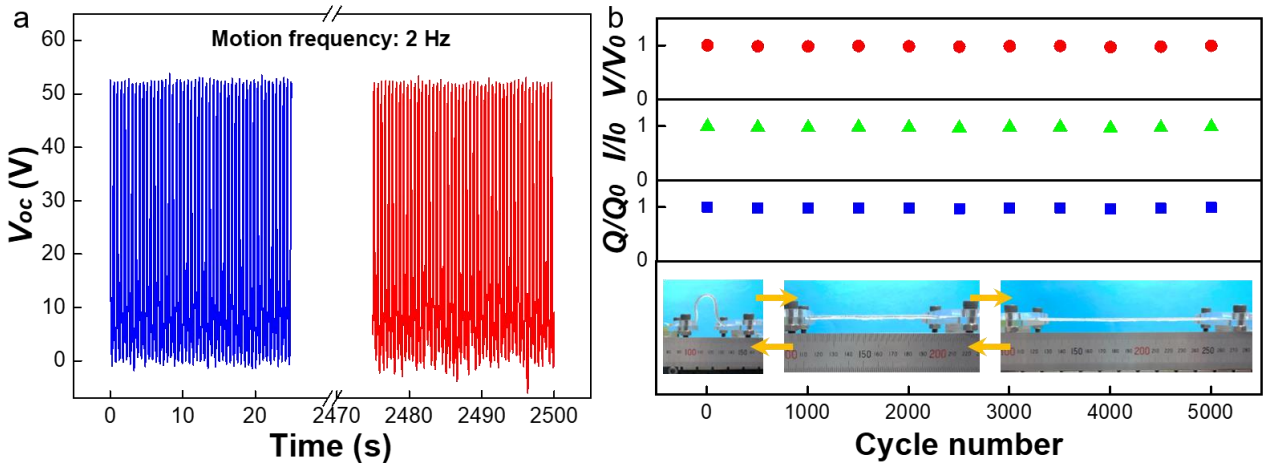

Fig. S2 a V_{oc} of the FST-TENG cycling for 5000 cycles at the working frequency of 2 Hz. **b** Normalized V_{oc}, I_{sc}, and Q_{sc} values of FST-TENG between 180° bended and 50% strain for 5000 cycles. Insets show the photographs of the three status cyclically, including 180° bended, 0° bended and 50% strain

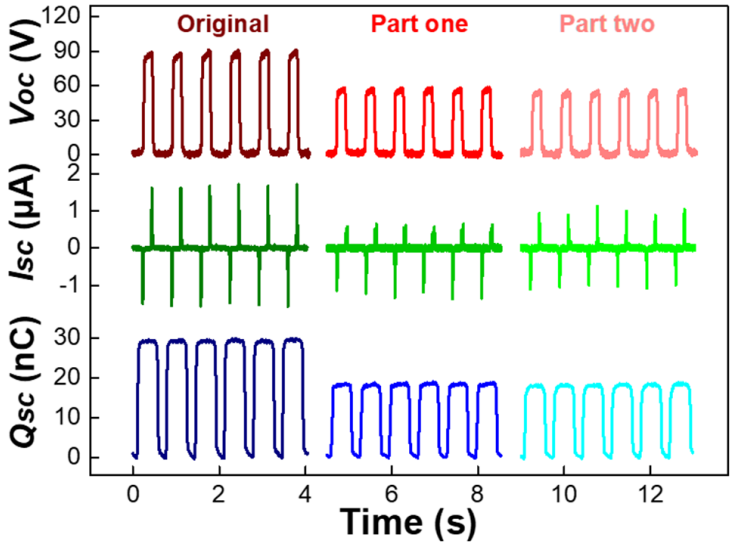

Fig. S3 Demonstration of the tailorability of the FST-TENG

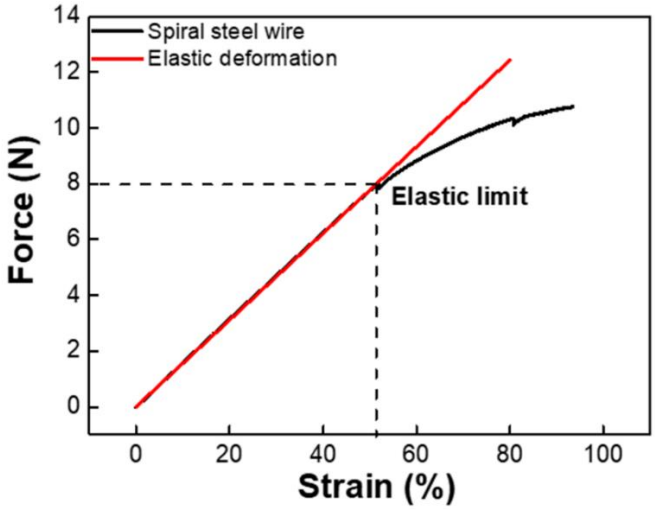

Fig. S4 Stress-strain curve of the spiral steel wire spring

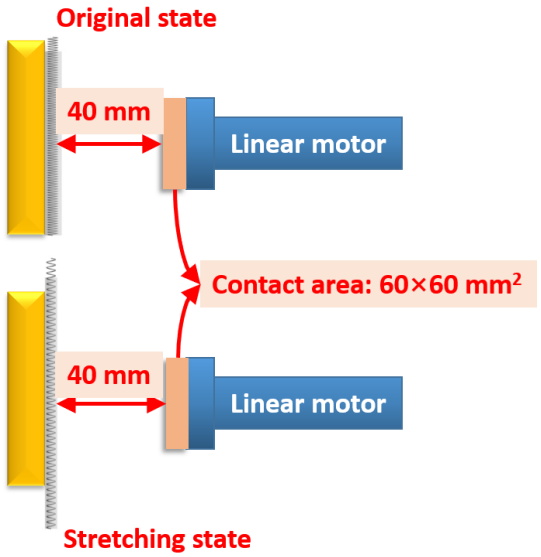

Fig. S5 Schematic diagram of the experimental test method at original and stretching state

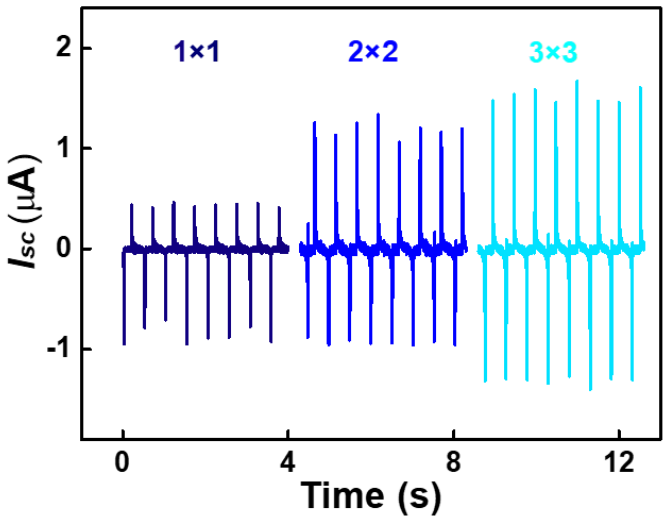

Fig. S6 I_{sc} of the SF-TENG fabric with knitting patterns of 1×1, 2×2, and 3×3 nets

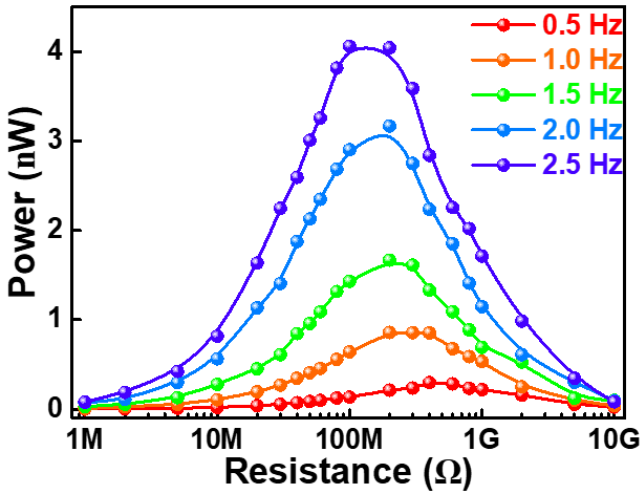

Fig. S7 Dependence of the output power of the SF-TENG fabric under various external load at motion frequencies ranging from 0.5 to 2.5 Hz

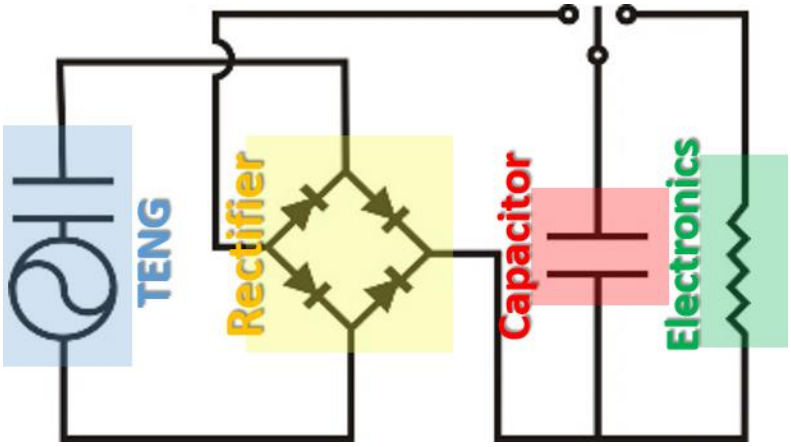

Fig. S8 Equivalent circuit of a self-charging power system based on the SF-TENG fabric as energy harvester for powering electronics

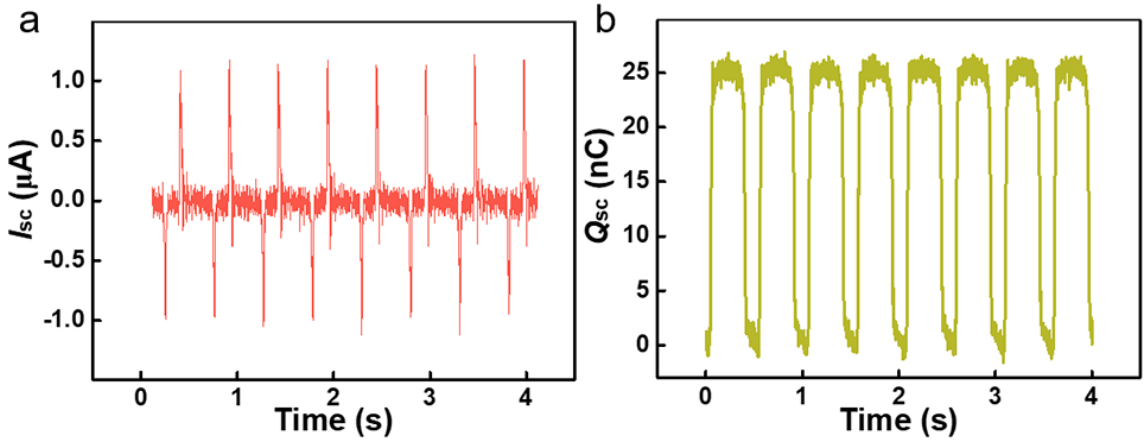

Fig. S9 a I_{sc} and **b** Q_{sc} of the SF-TENG bracelet at the motion frequency of 2 Hz

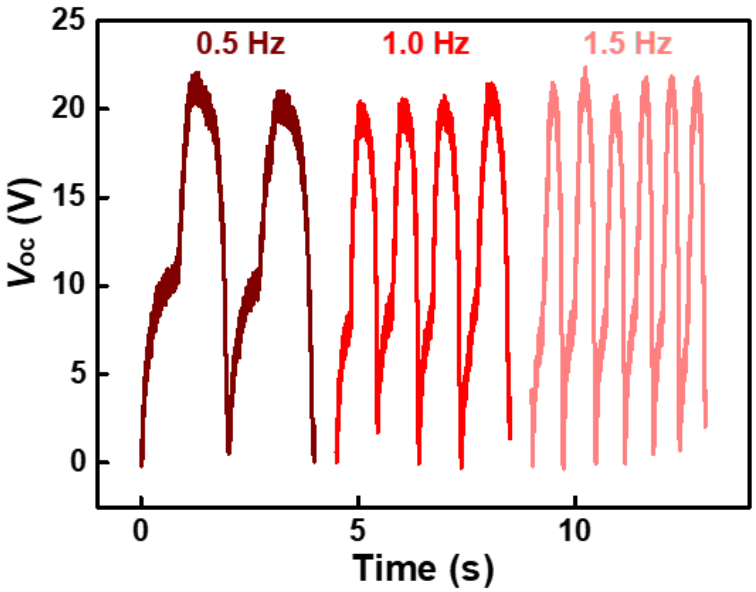

Fig. S10 Open-circuit voltage (V_{oc}) of the smart glove under different frequencies on the same degree of finger bending