Supplementary Information for

High Rotational Speed Hand-powered Triboelectric Nanogenerator Toward Battery-free Point-of-care Diagnostic System

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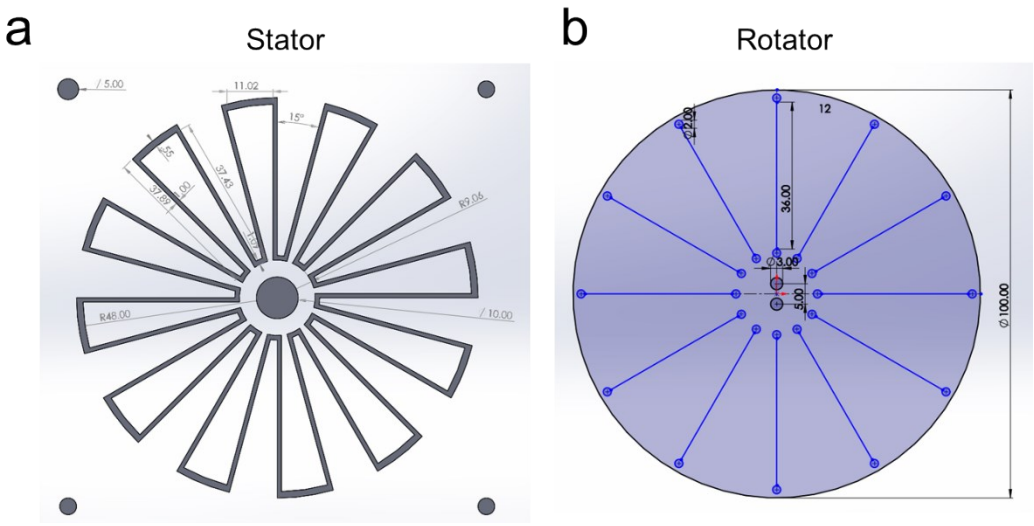

Figure S1. The structural design and of the TENG. (a) The stator part. (b) The rotator part.

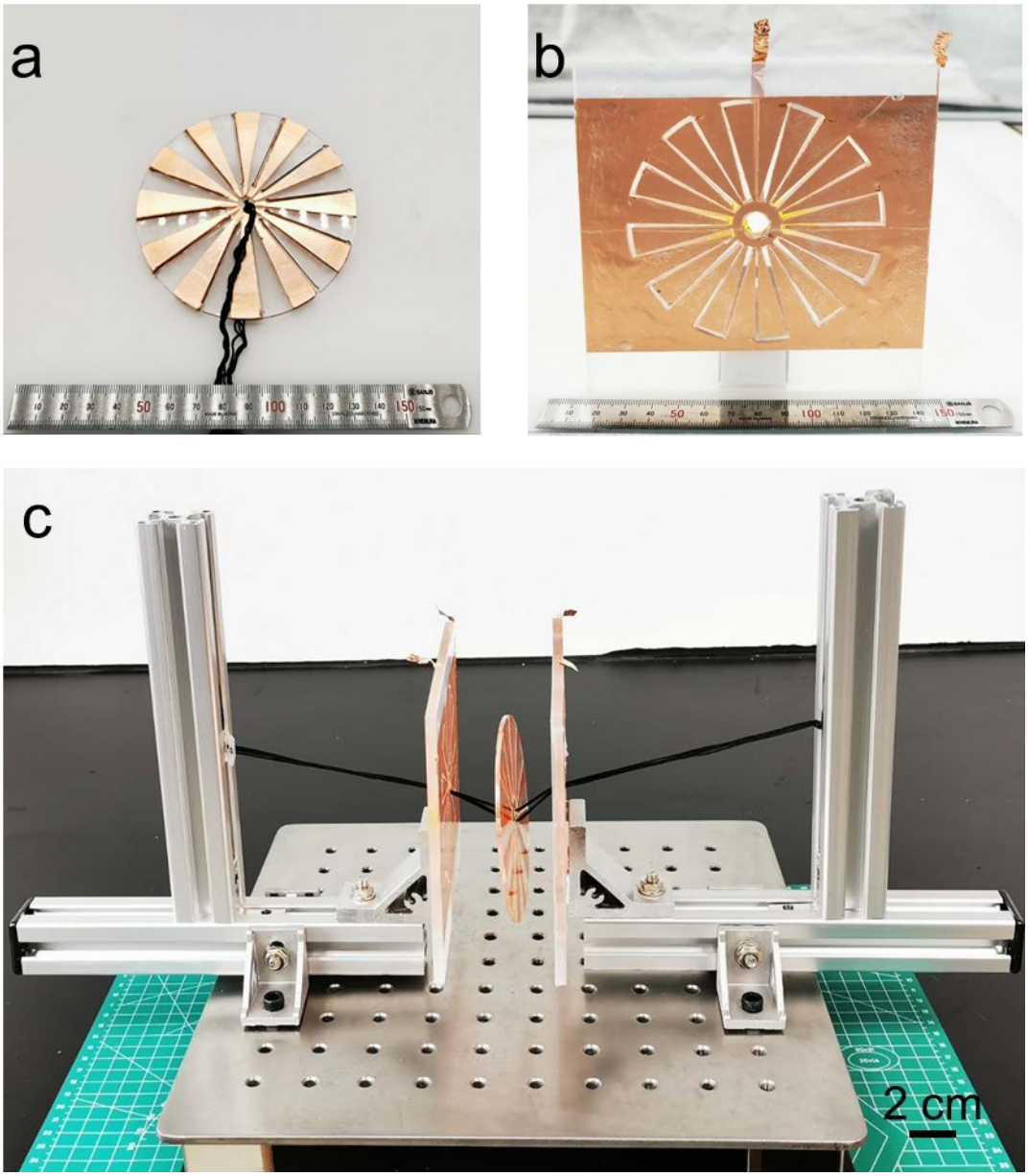

Figure S2. The photograph of the hand-powered TENG. (a) The stator part. (b) The rotator part. (c) Overview of the device.

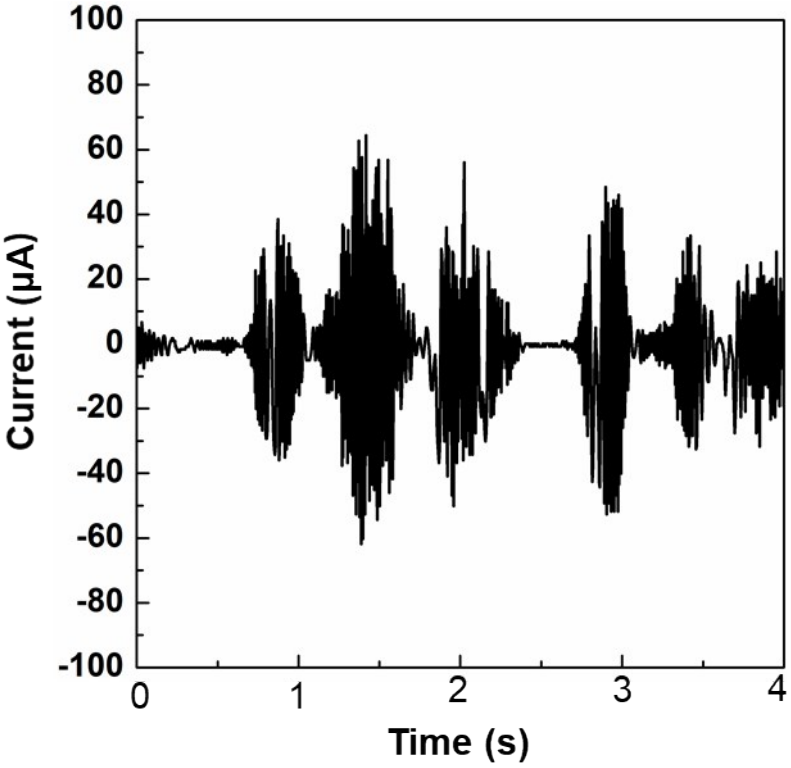

Figure S3. current output of the hand-powered TENG.

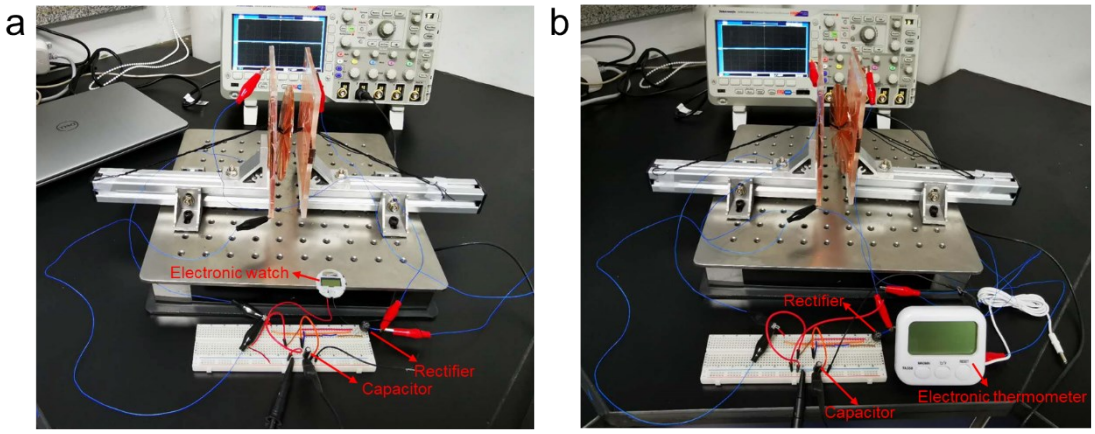

Figure S4. The photograph of the circuit used to power the electronic watch or an electronic thermometer by the hand-powered TENG. (a) The photograph of the circuit used to power the electronic watch. (b) The photograph of the circuit used to power the electronic thermometer.

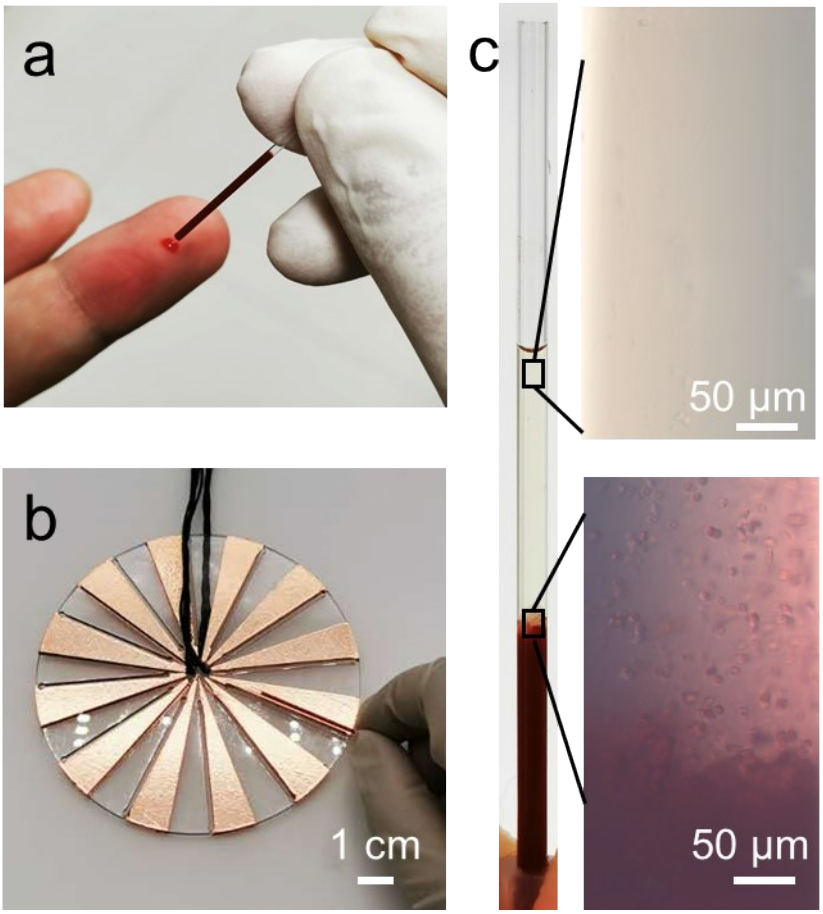

Figure S5. Separation of plasma from the red blood cells. (a) A capillary loaded with 20 µL of human blood. (b) A capillary placed into hollow plastic capillary holders in the rotator. (c) The quality of the plasma evaluated using microscopy.

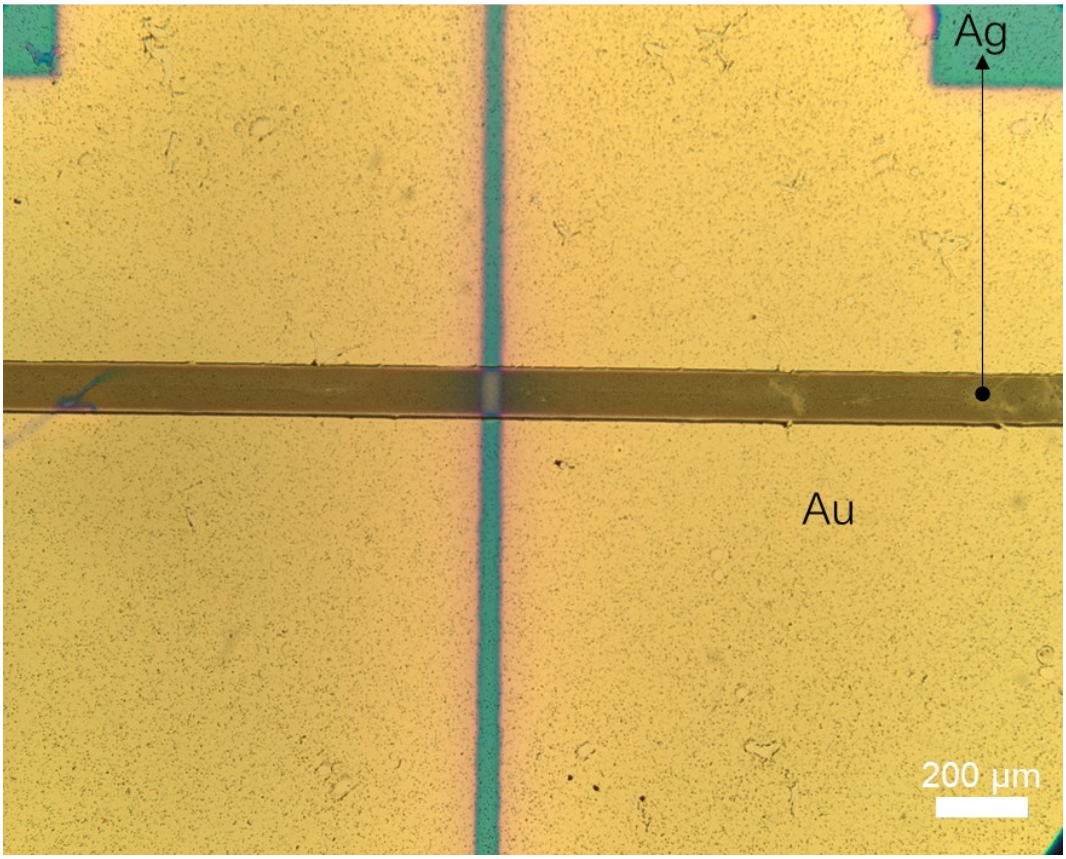

Figure S6. The photograph of the Ag microbelt with Au electrodes on both sides.

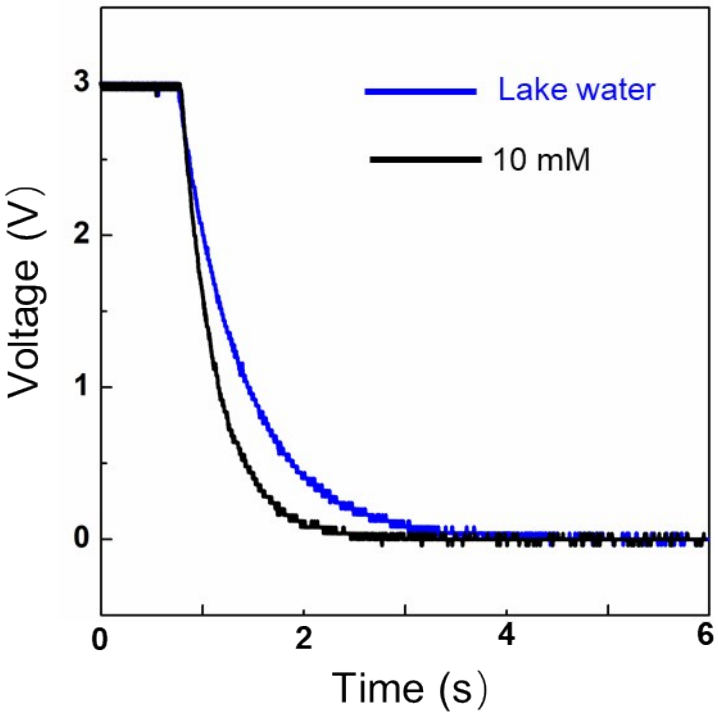

Figure S7. Voltage profile of 100 µF capacitor being charged to 3V and used to power the H_2O_2 sensors with lake water or lake water containing 10 mM H_2O_2.