

Supporting Information

Contact-Electrification Between Two Identical Materials: Curvature Effect

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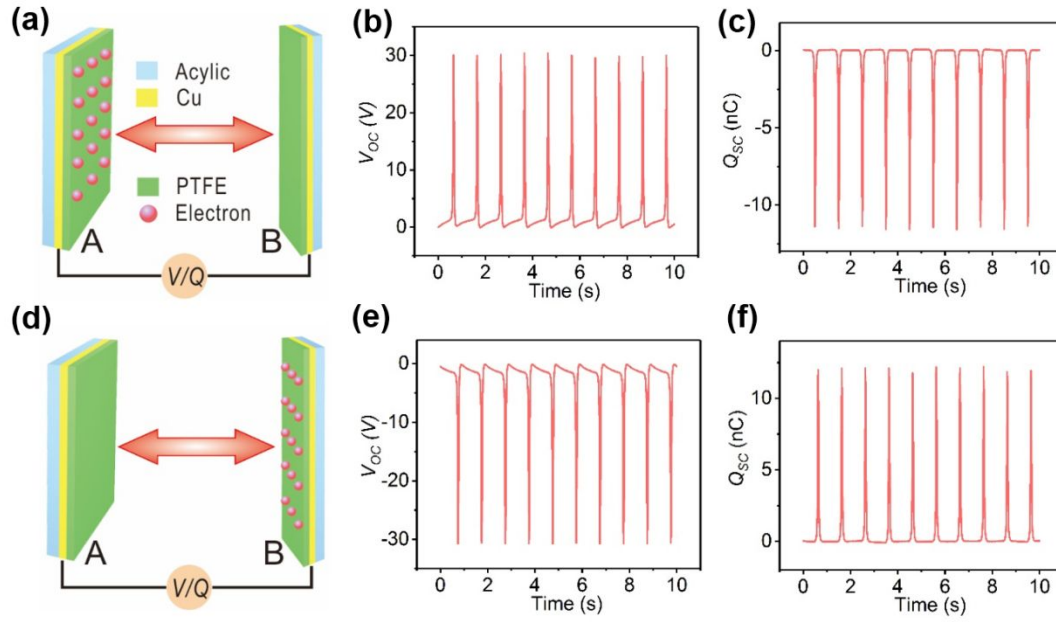


Figure S1. Properties of the PTFE TENG with many initial surface charges. (a)-(c) The diagram, V_{OC} and Q_{SC} of the TENG with initial negative charges on the surface of PTFE-A. (d)-(f) The diagram, V_{OC} and Q_{SC} of the TENG with initial negative charges on the surface of PTFE-B.

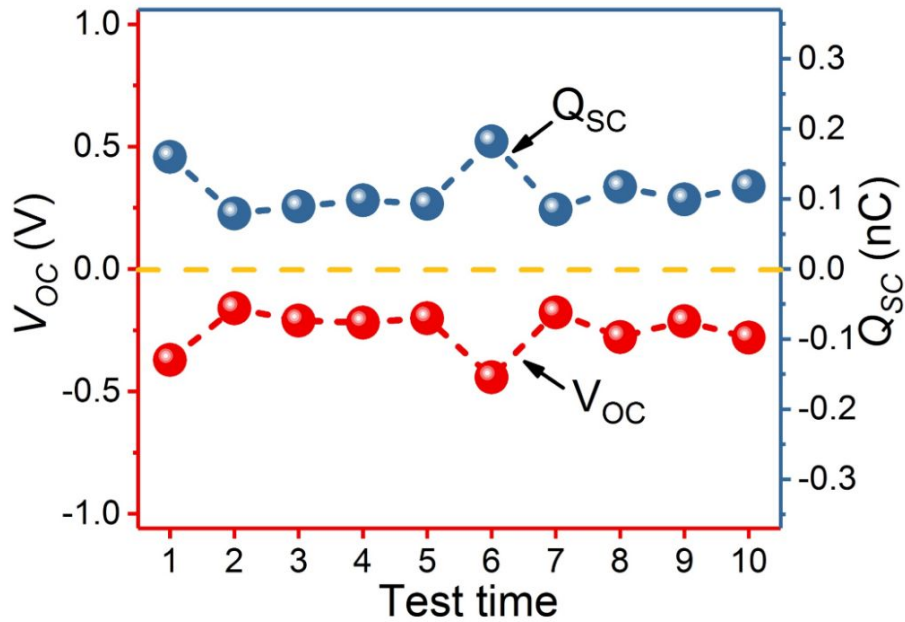


Figure S2. V_{OC} and Q_{SC} of the PTFE TENG (sample 5 in Figure 2b,d) when the surface contact position of parts A and B is kept the same each time. Before each test, the TENG was discharged for 8 hours in the ambient air.

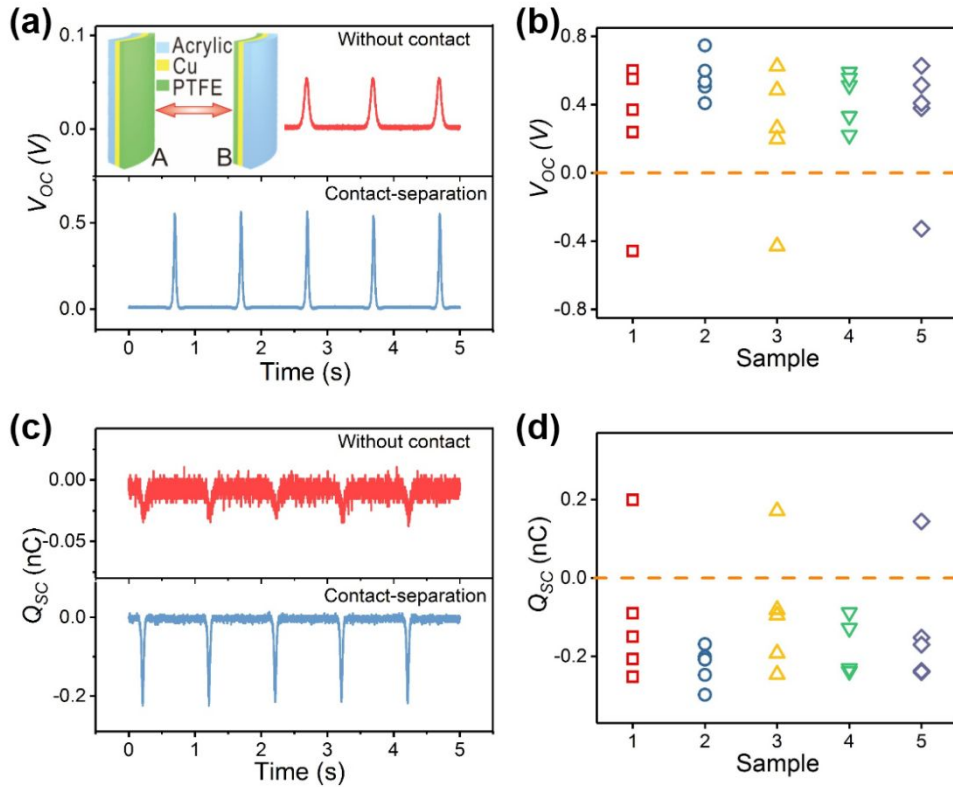


Figure S3. V_{OC} (a-b) and Q_{SC} (c-d) of PTFE TENG with a convex surface (the curvature is 0.20 cm^{-1}) and a concave surface (the curvature is -0.20 cm^{-1}).

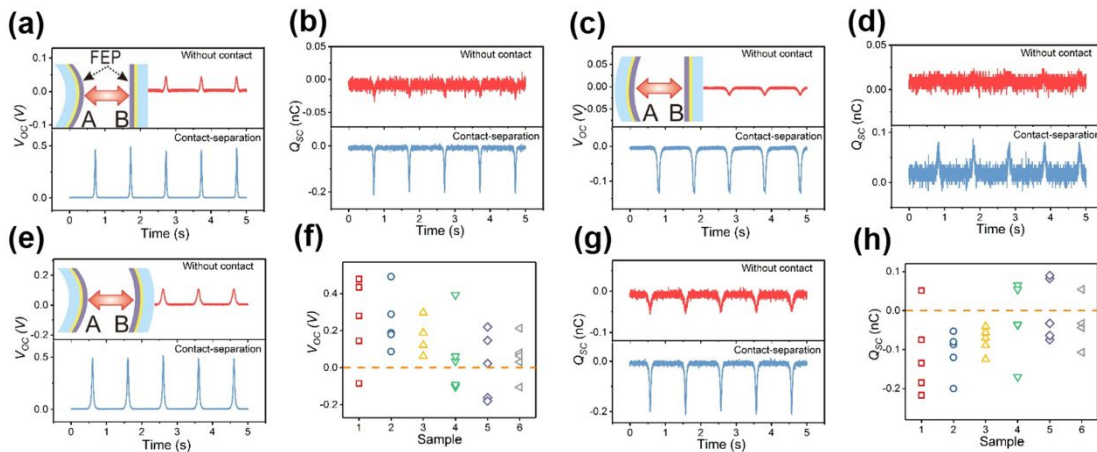


Figure S4. Properties of the FEP TENG with surfaces of different shapes. (a)-(b) Typical V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a flat surface. (c)-(d) Typical V_{OC} and Q_{SC} of the TENG with a concave surface (curvature of -0.07 cm^{-1}) and a flat surface. (e)-(h) V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a concave surface (curvature of -0.07 cm^{-1}).

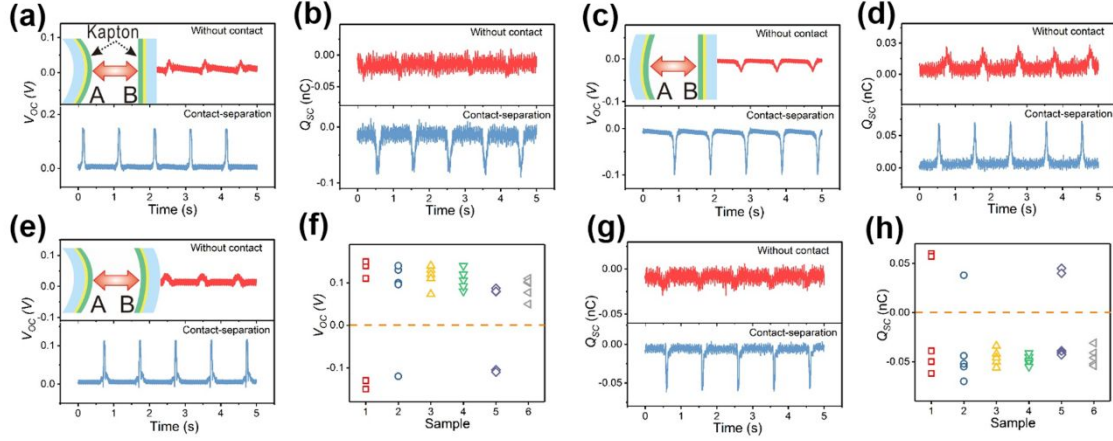


Figure S5. Properties of the Kapton TENG with surfaces of different shapes. (a)-(b) Typical V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a flat surface. (c)-(d) Typical V_{OC} and Q_{SC} of the TENG with a concave surface (curvature of -0.07 cm^{-1}) and a flat surface. (e)-(h) V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a concave surface (curvature of -0.07 cm^{-1}).

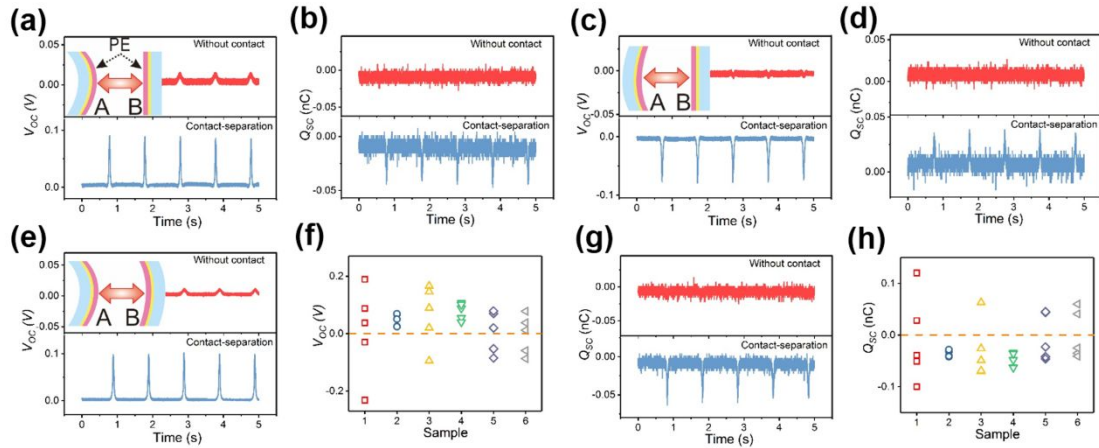


Figure S6. Properties of the polyester TENG with surfaces of different shapes. (a)-(b) Typical V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a flat surface. (c)-(d) Typical V_{OC} and Q_{SC} of the TENG with a concave surface (curvature of -0.07 cm^{-1}) and a flat surface. (e)-(h) V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a concave surface (curvature of -0.07 cm^{-1}).

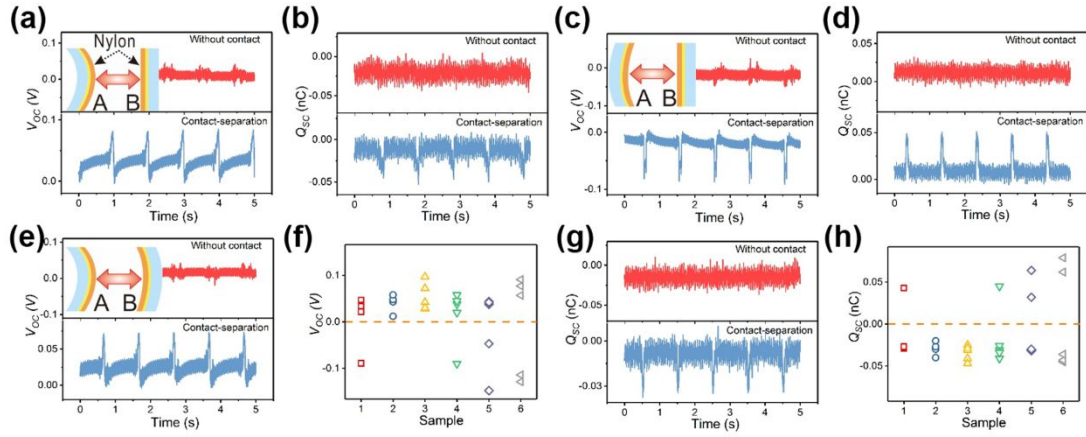


Figure S7. Properties of the Nylon TENG with surfaces of different shapes. (a)-(b) Typical V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a flat surface. (c)-(d) Typical V_{OC} and Q_{SC} of the TENG with a concave surface (curvature of -0.07 cm^{-1}) and a flat surface. (e)-(h) V_{OC} and Q_{SC} of the TENG with a convex surface (curvature of 0.20 cm^{-1}) and a concave surface (curvature of -0.07 cm^{-1}).

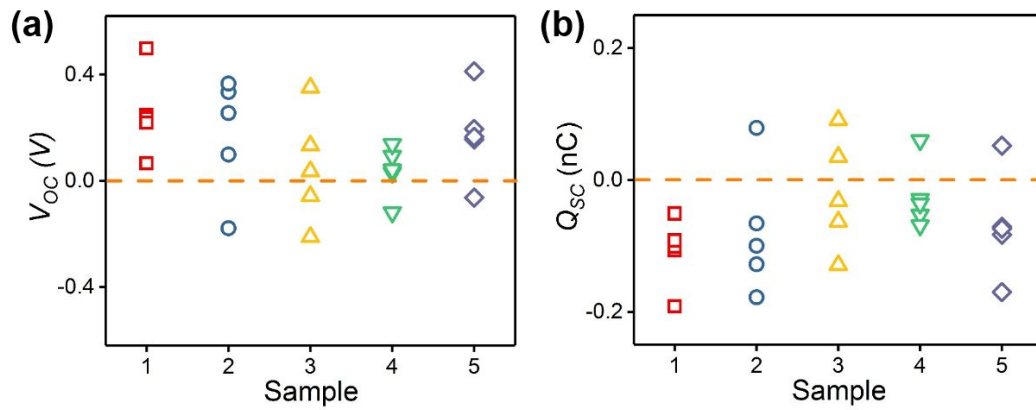


Figure S8. V_{OC} (a) and Q_{SC} (b) of the PTFE TENG with surface curvature of 0.26 cm^{-1} and 0.07 cm^{-1} .

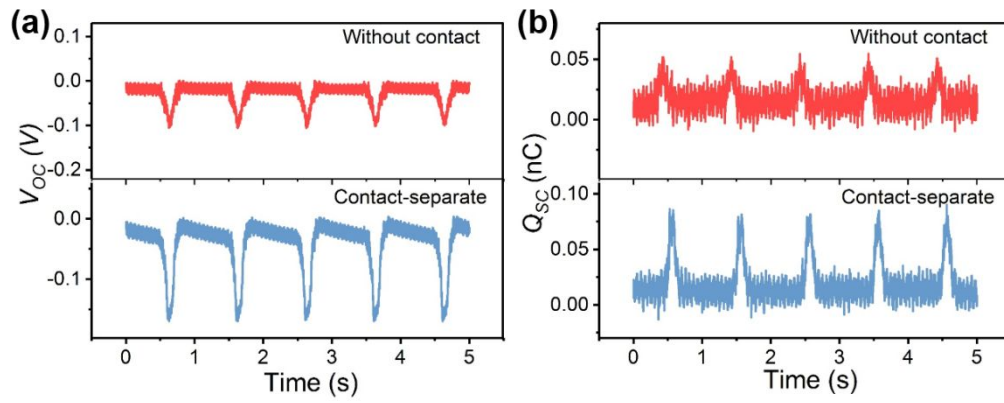


Figure S9. Typical V_{OC} (a) and Q_{SC} (b) of the Kapton TENG with two flat surfaces under atmospheric pressure and at room temperature.

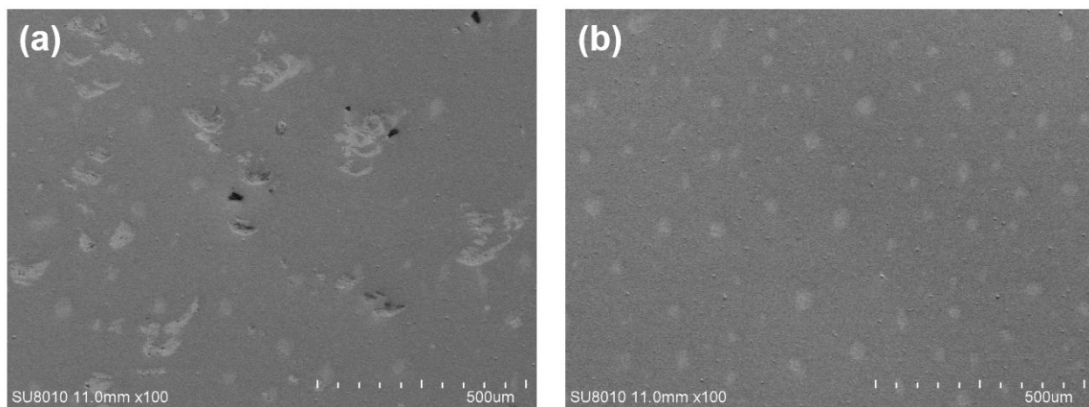


Figure S10. SEM images of the Kapton surface after 388 K measurement.