

Supporting information for

Ultra-Sensitive Flexible Sandwich Structural Strain Sensors Based on Silver Nanowires Supported PDMS/PVDF Electrospun Membrane Substrate

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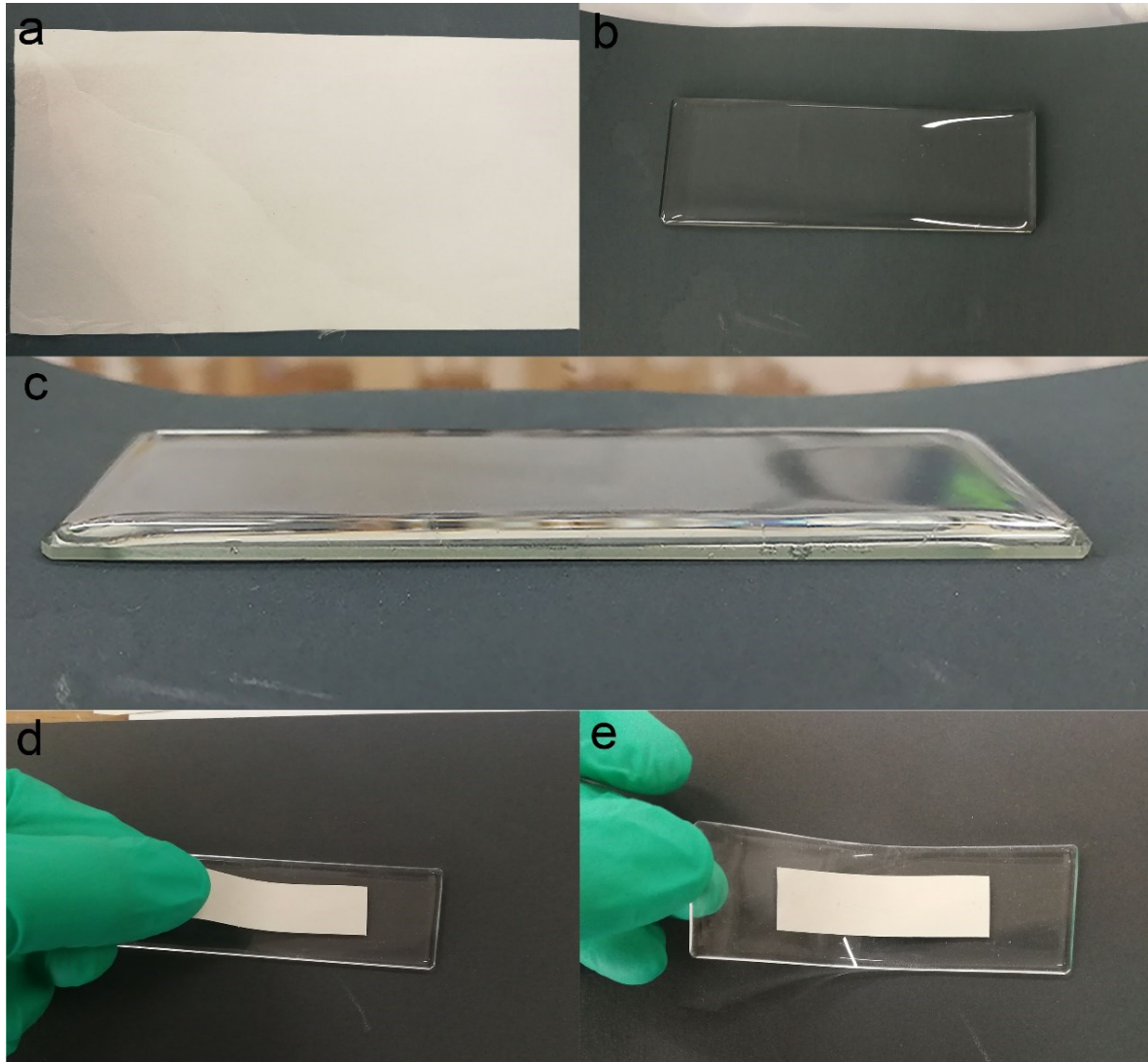


Fig.S1 a) PDMS/PVDF electrospun membrane ; b, c) PDMS after curing on glass slide ; d, e) Conductive layer bonding.

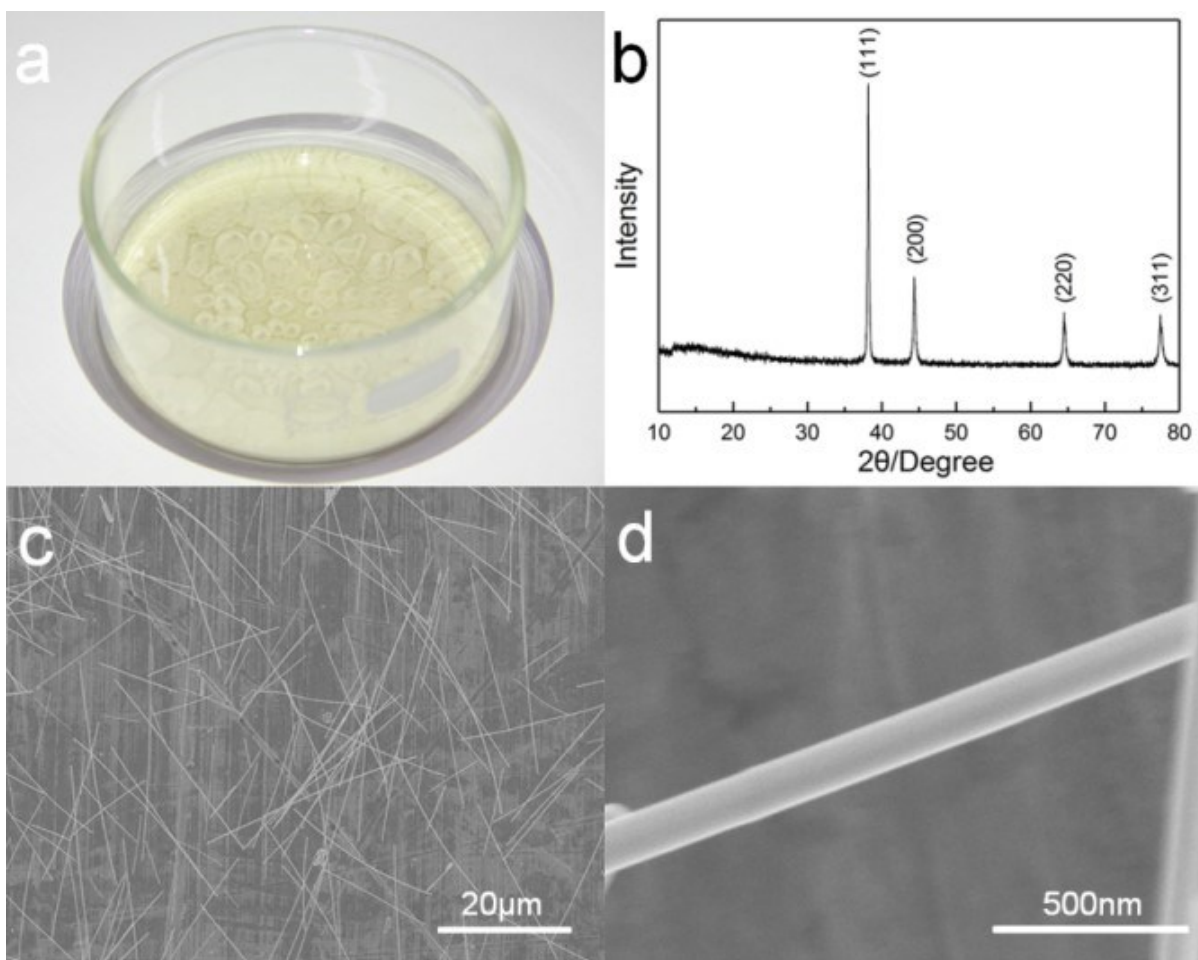


Fig.S2. a) Optical photograph of AgNWs dispersion; b) XRD patterns of AgNWs; and c&d) SEM images of AgNWs.

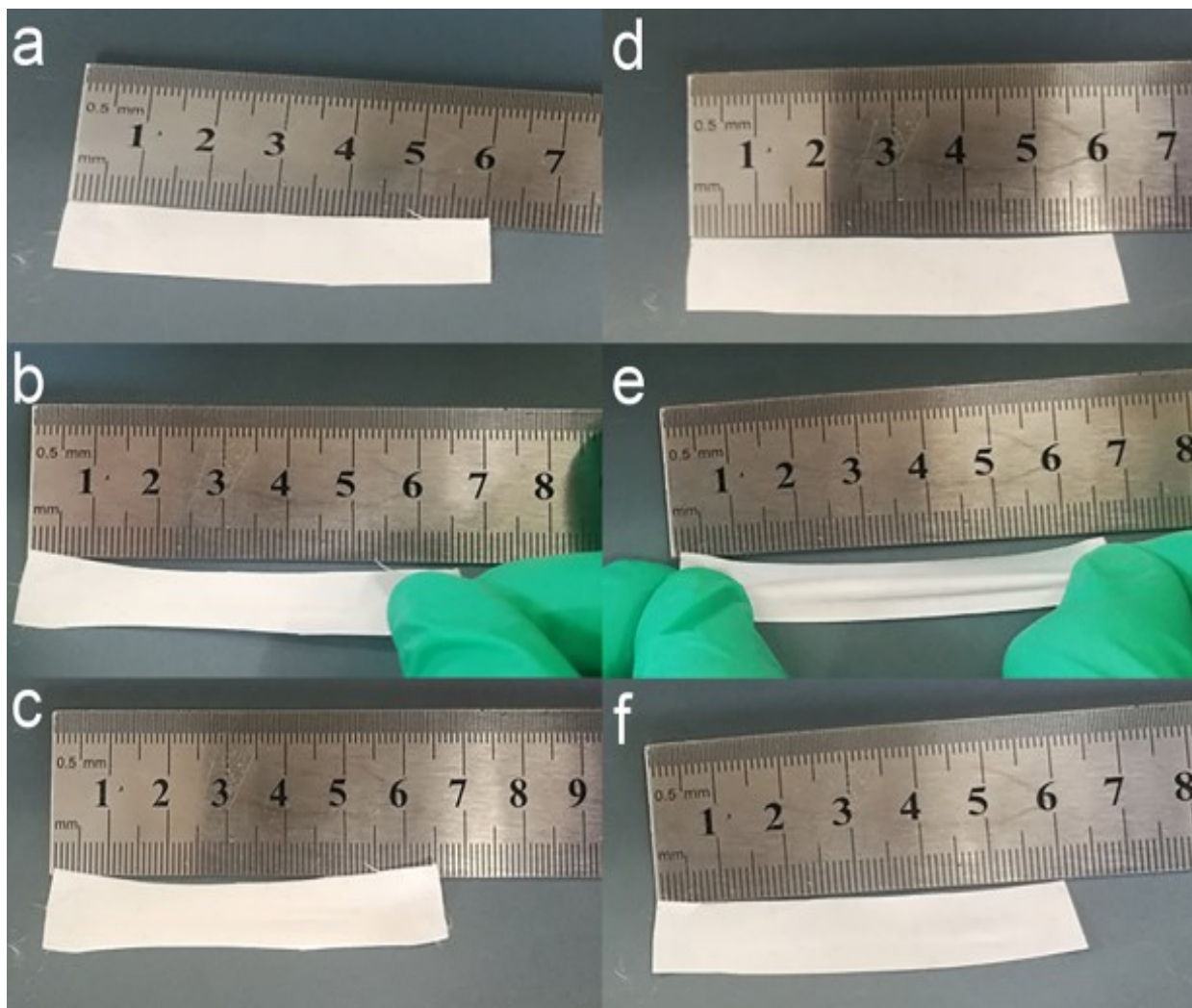


Fig.S3. The elastic resilience comparison between PVDF and PDMS/PVDF electrospun membranes. a) unstretched PVDF(6cm). b) Stretched PVDF(6.5cm) c) PVDF after removing the external force (6.5cm)). d) unstretched PDMS/PVDF (6cm). e) Stretched PDMS/PVDF (6.5cm) c) PDMS/PVDF after removing the external force (6cm)

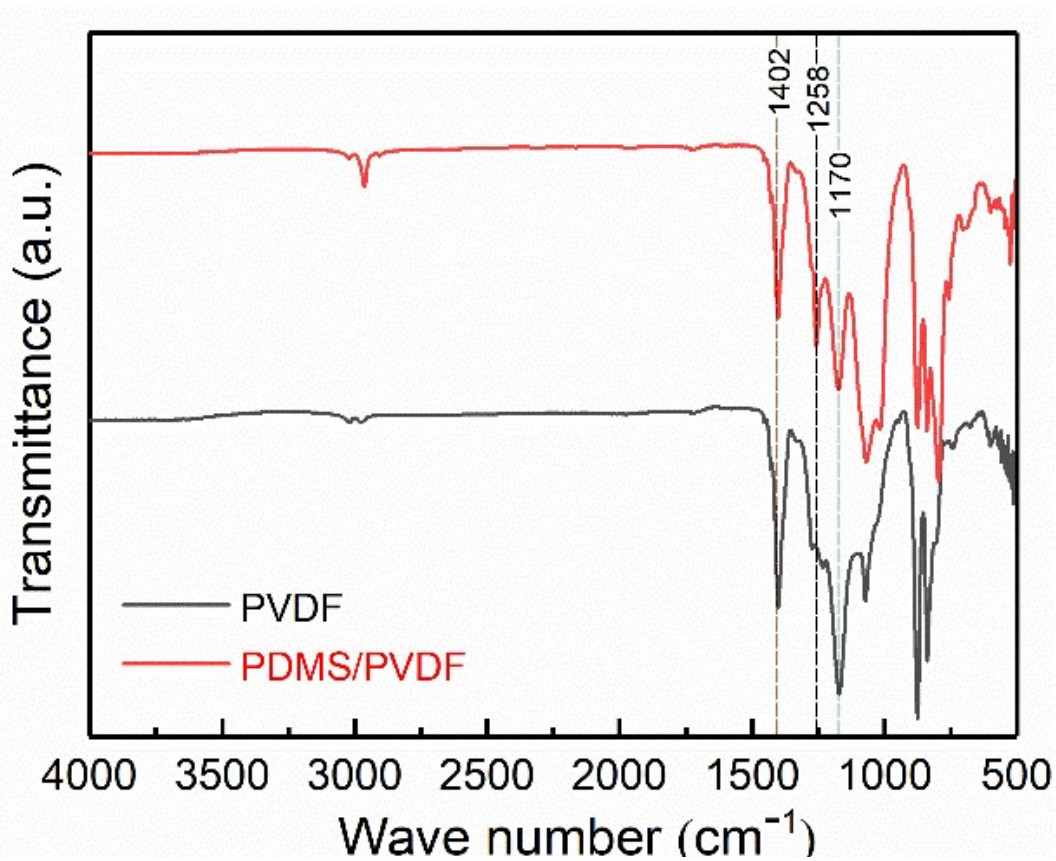


Fig.S4. FTIR of the PVDF and PDMS/PVDF electrospun membranes

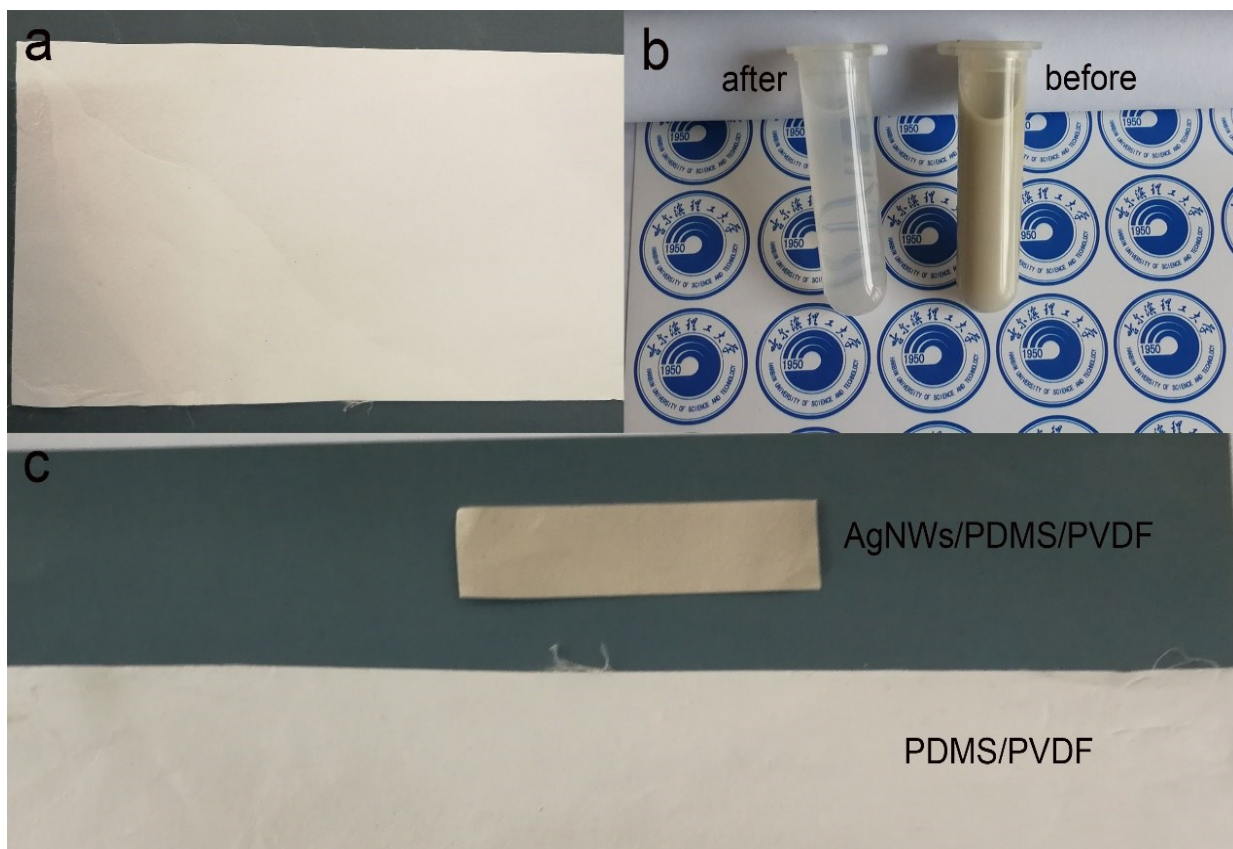


Fig.S5 a) PDMS/PVDF electrospun membrane ; b) Comparison of AgNWs / ethanol solution transparency before and after suction filtration ; c) PDMS/PVDF electrospun membrane loaded with conductive particles AgNWs

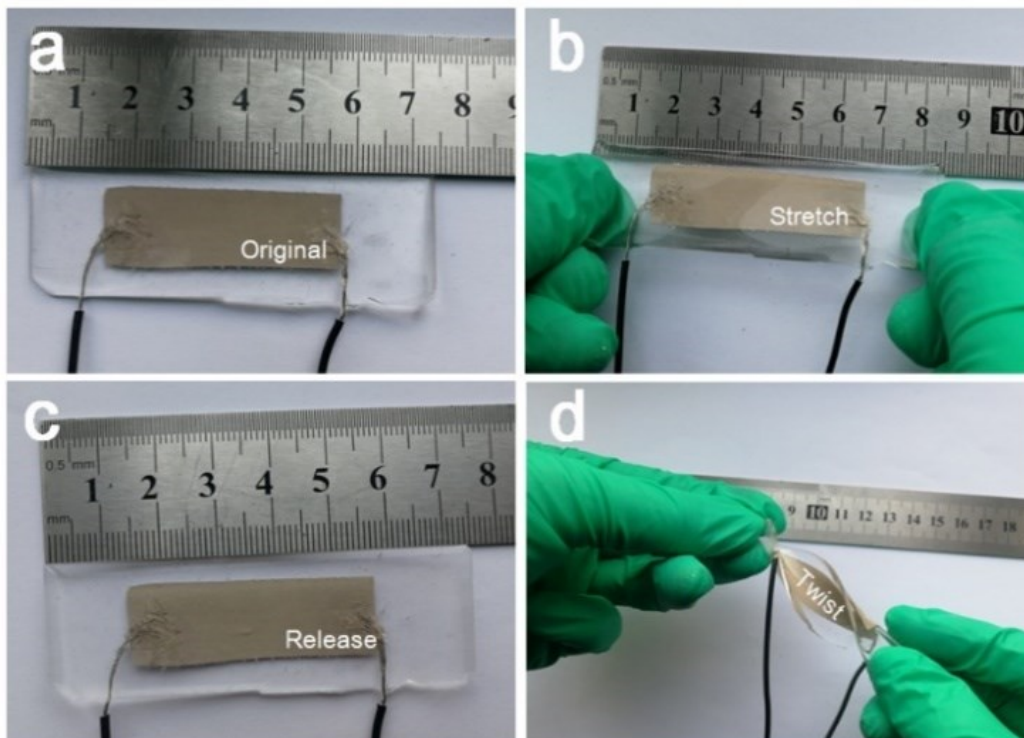


Fig. S6. Digital photos of PPAP flexible strain sensor.

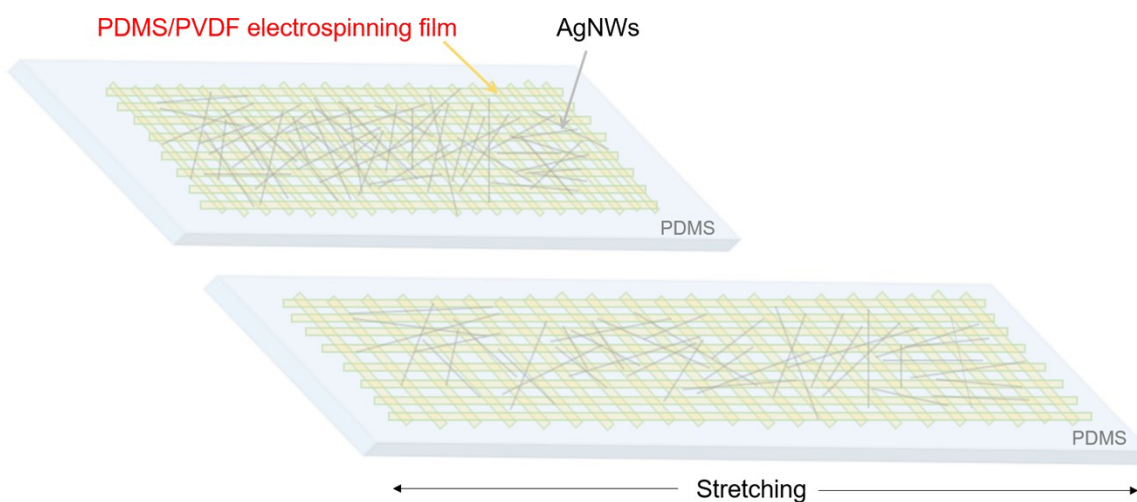


Fig.S7. Schematic diagram of AgNWs arrangement in conductive layer before and after stretching of PPAP flexible strain sensor.

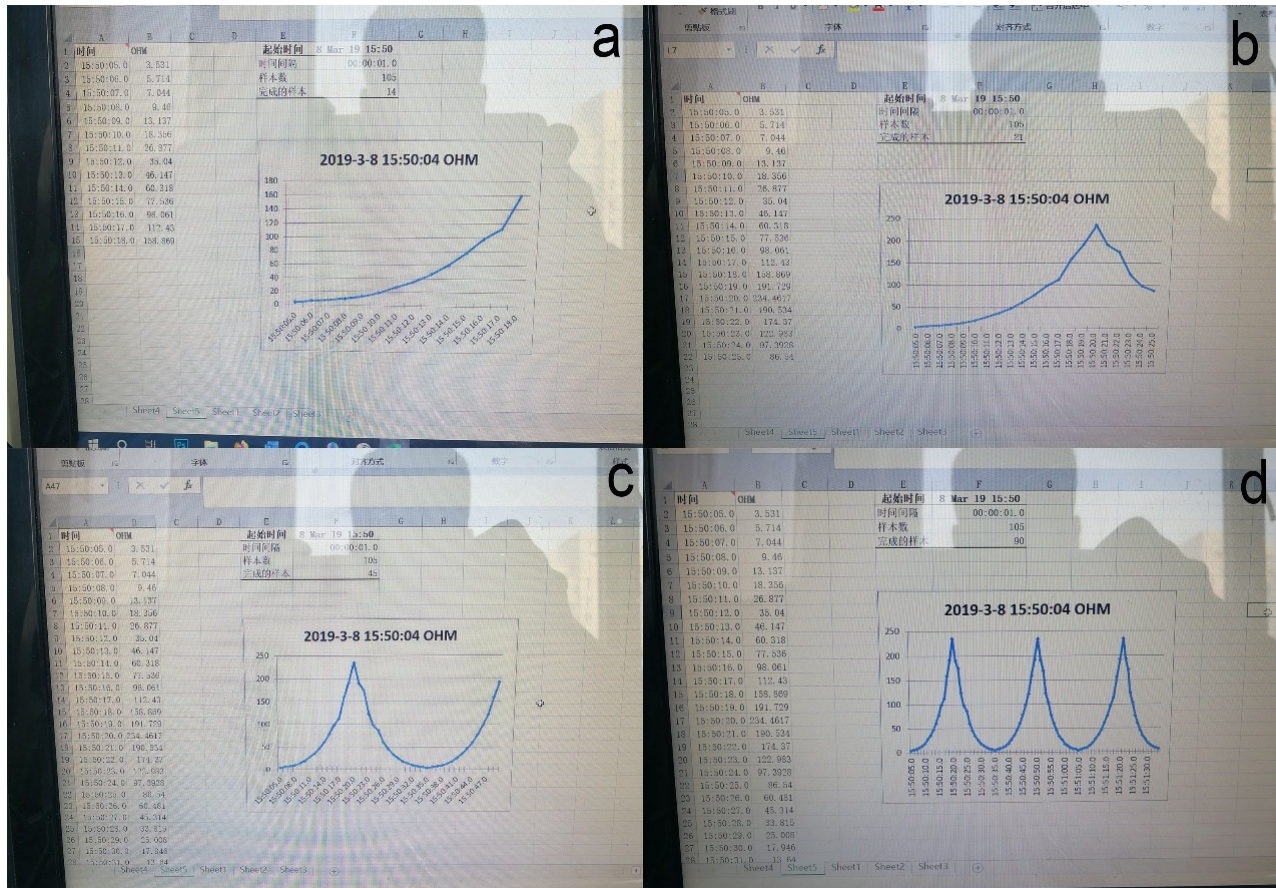


Fig.S8 Instant photos of the PPAP flexible strain sensor containing 0.02g AgNWs in the conductive layer during the tensile-recovery test.

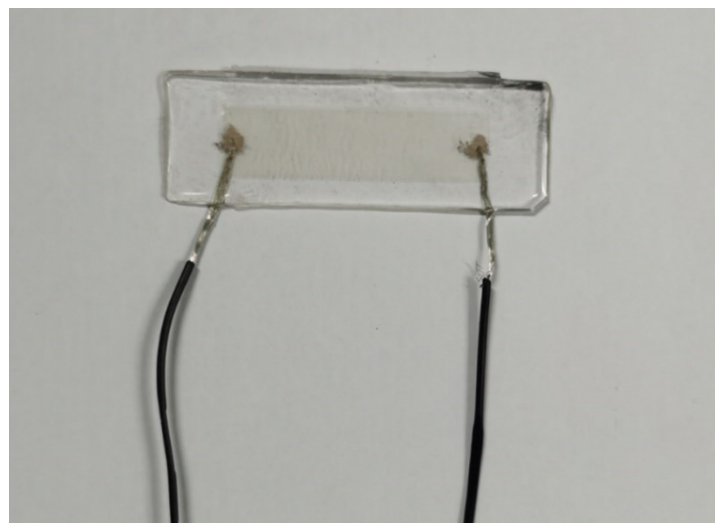


Fig.S9 Sensor with pure PVDF electrospinning membrane as interlayer.

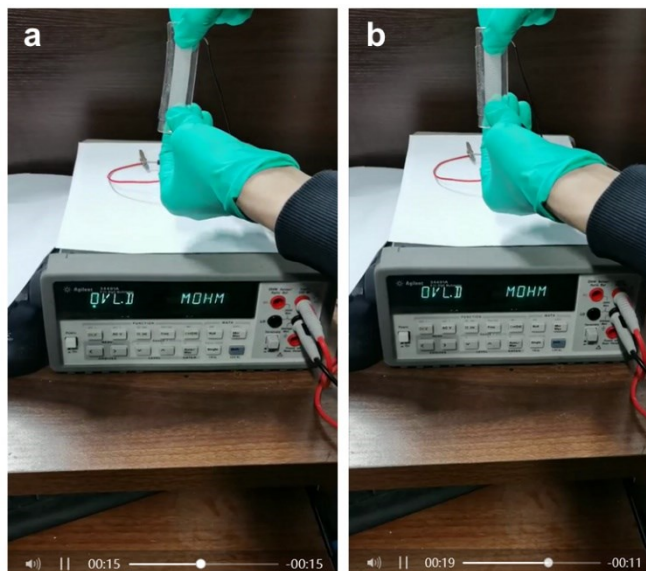


Fig.S10 The resistance value displayed on 34401A multimeter of sensor with pure PVDF electrospinning membrane as interlayer during stretching-releasing process

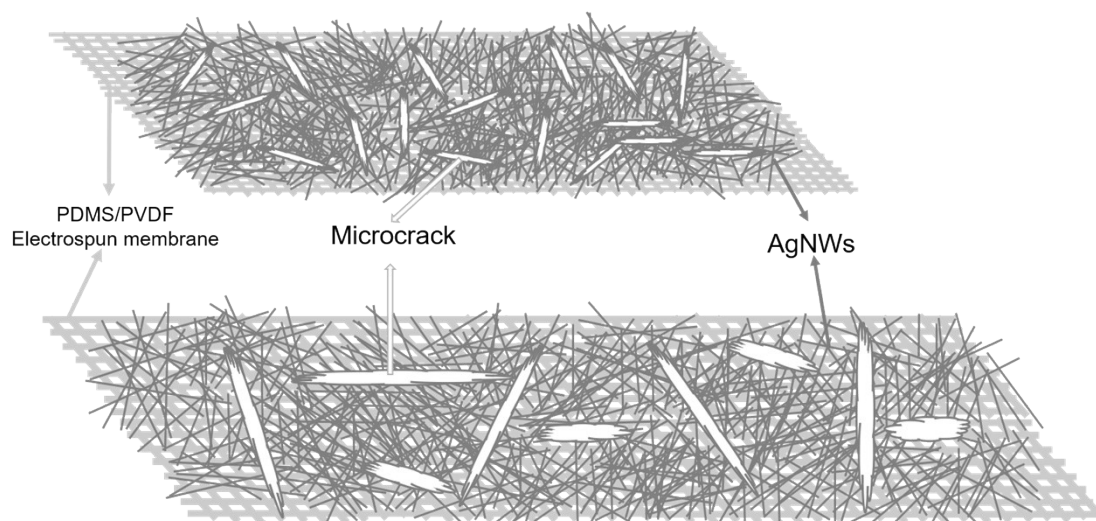


Fig.S11 The schematic illustration figure of the microcrack mechanism.

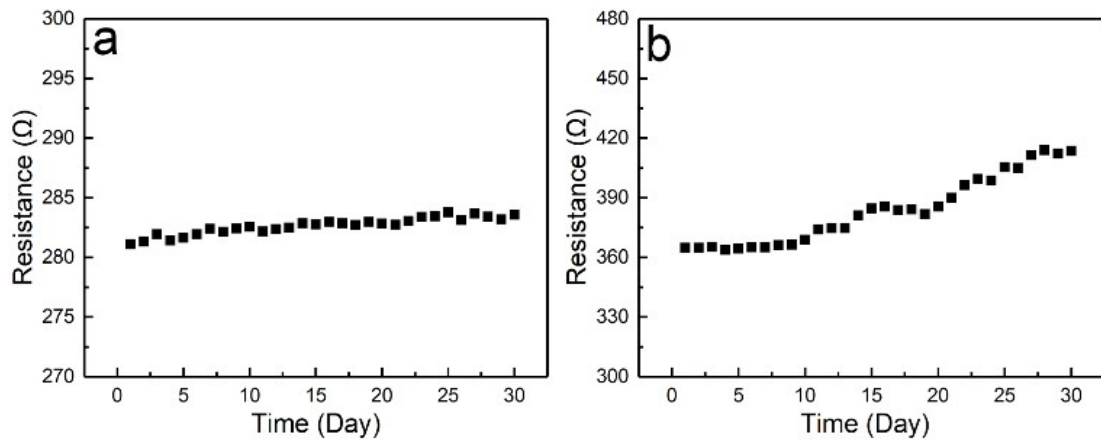


Fig. S12 a) Repeatability test curve of PPAP sensor, and b) Repeatability test curve of sensor with only AgNWs in the conductive layer.