Supporting Information

Semi-Curing Combined with Low-Pressure Mechanical Pressing Strategy for Realizing High Adhesion and Low Surface Roughness Ag-NW Transparent Electrodes

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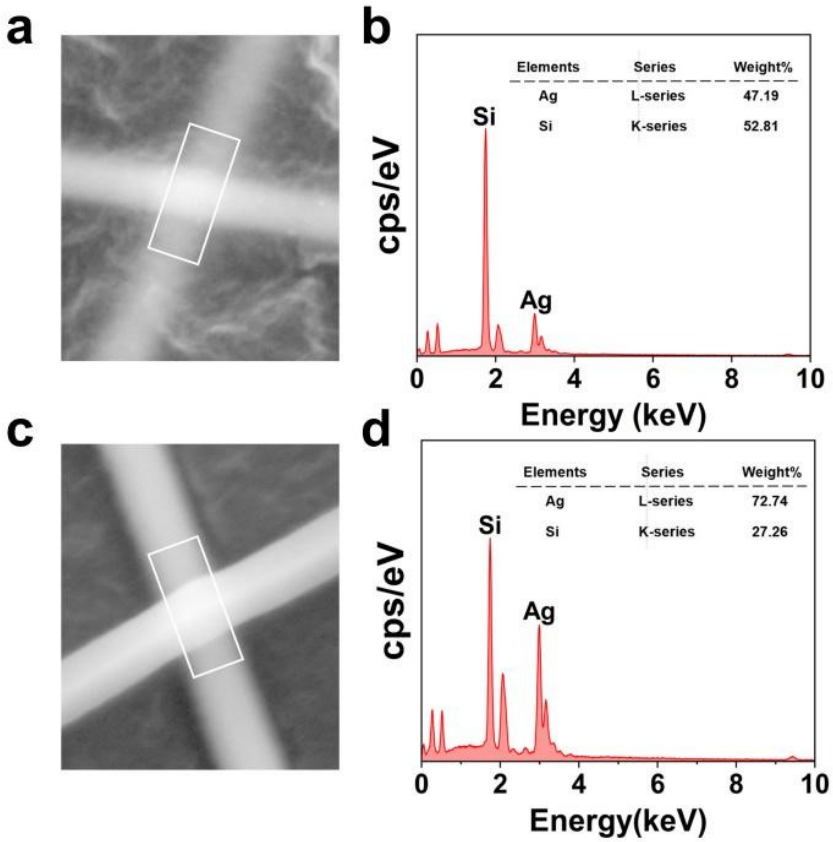

Figure S1. Characterization of silicon content near the NW-NW gaps on (**a-b**) PET/L-PDMS and (**c-d**) PET/S-PDMS substrates.

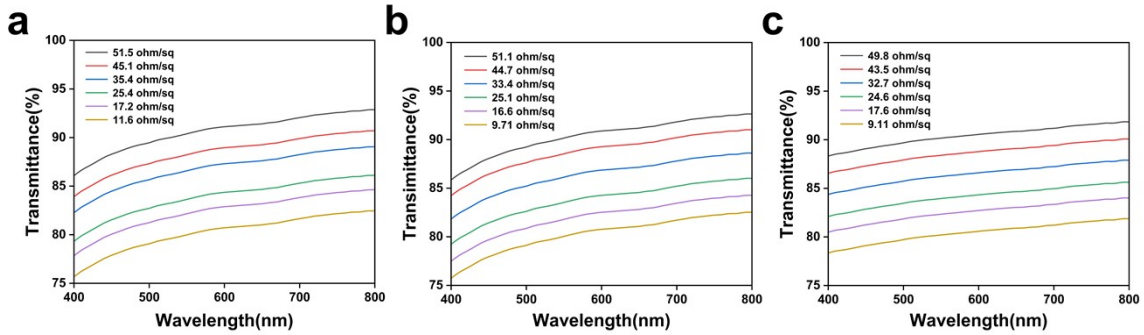

Figure S2. The transmittances of (a)P-PET/S-PDMS/AgNW, （b）PET/S-PDMS/AgNW, （c）PET/AgNW transparent electrodes within the 400-800 nm wavelength range.

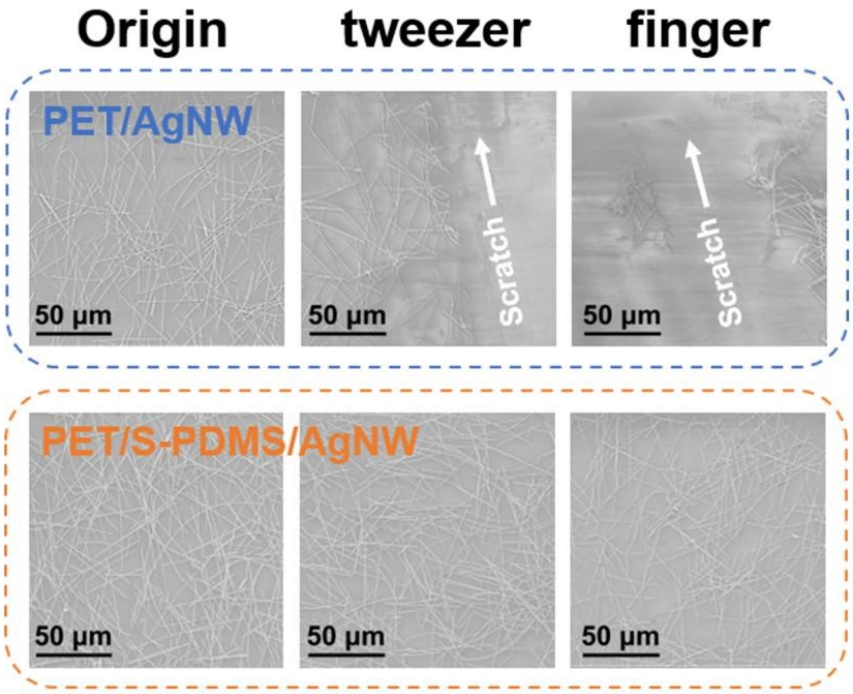

Figure S3. Scratch test on PET/AgNW and PET/S-PDMS/AgNW transparent electrodes simulating real-world conditions.

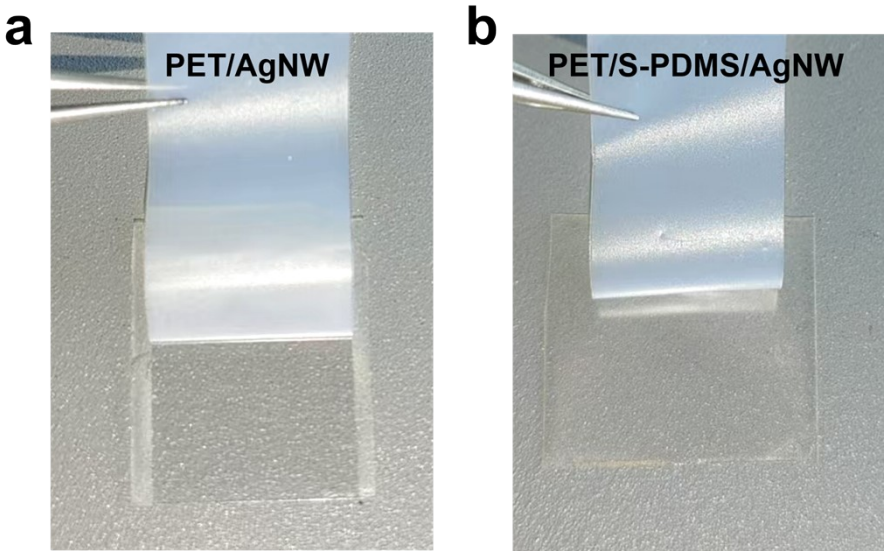

Figure S4. 3M tape peel test of PET/AgNW and PET/S-PDMS/AgNW transparent electrodes.

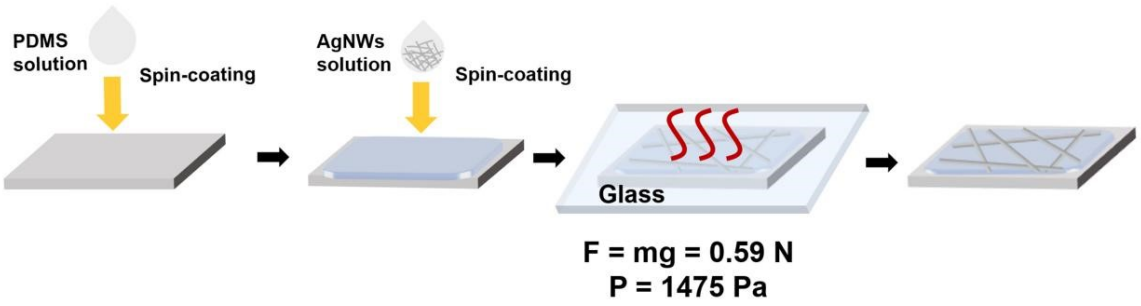

Figure S5. Schematic diagram of the preparation process for P-PET/S-PDMS/AgNW transparent electrodes.

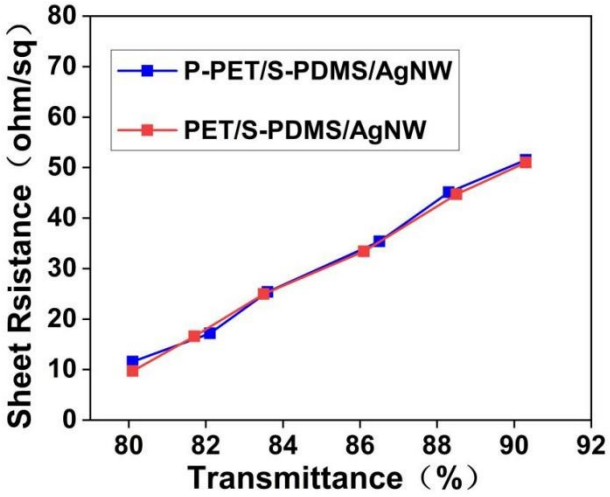

Figure S6. The sheet resistance of PET/S-PDMS/AgNW and P-PET/S-PDMS/AgNW transparent electrodes at different transmittances.

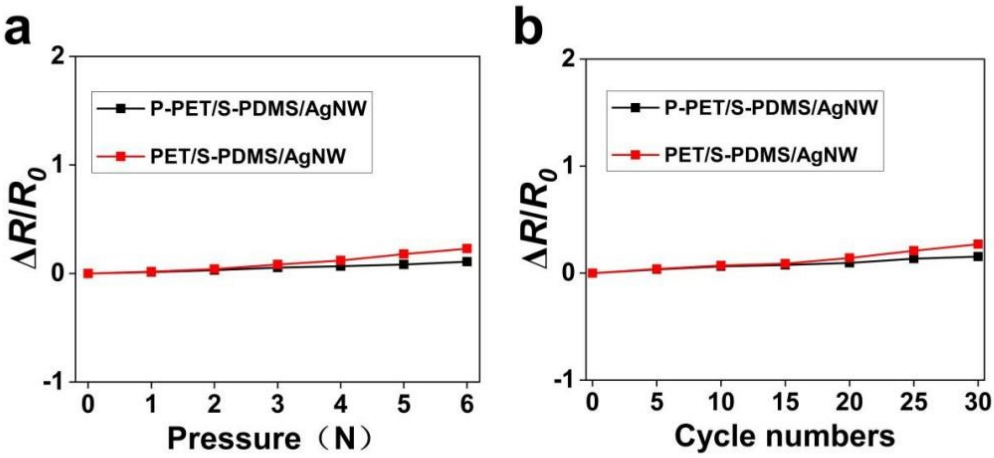

Figure S7. Characterization of the impact of combining semi-curing with the low-pressure mechanical pressing strategy on adhesion enhancement. (a) Trends in sheet resistance PET/S-PDMS/AgNW of and P-PET/S-PDMS/AgNW transparent electrodes with scratching pressure. (b) Trends in sheet resistance of PET/S-PDMS/AgNW and P-PET/S-PDMS/AgNW transparent electrodes with scratching times under 2 N scratching pressure.

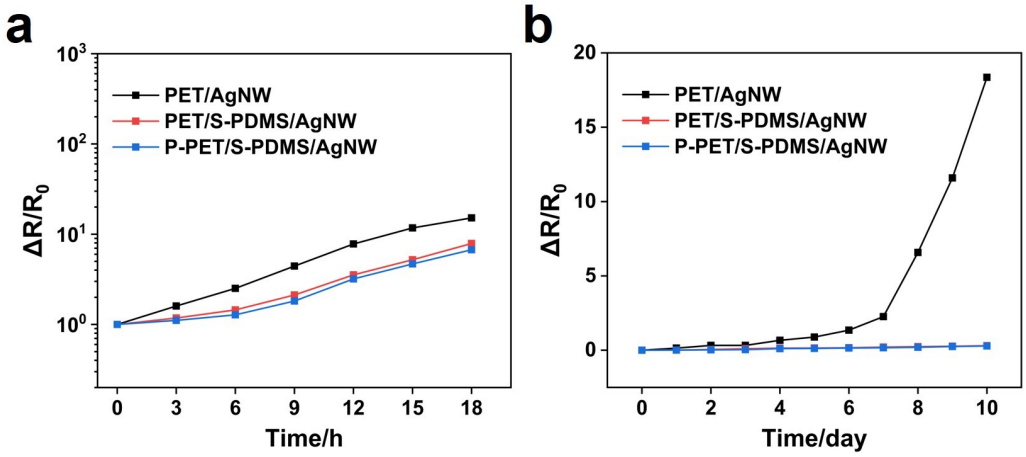

Figure S8. The Stability of P-PET/S-PDMS/AgNW, PET/S-PDMS/AgNW, and PET/AgNW transparent electrodes (a) exposed to H_2S-containing environments (the H_2S atmosphere was created by an aqueous solution of 0.01 M Na_2S + 0.01 M HCl) (b) in springtime atmospheric conditions.

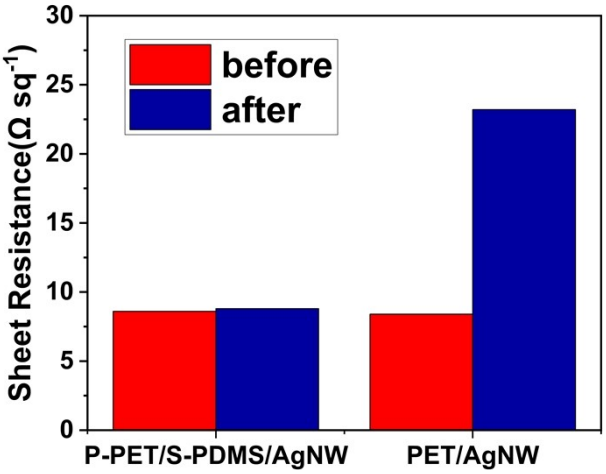

Figure S9. The sheet resistance of P-PET/S-PDMS/AgNW and PET/AgNW transparent electrodes before and after simulated rainfall washout.

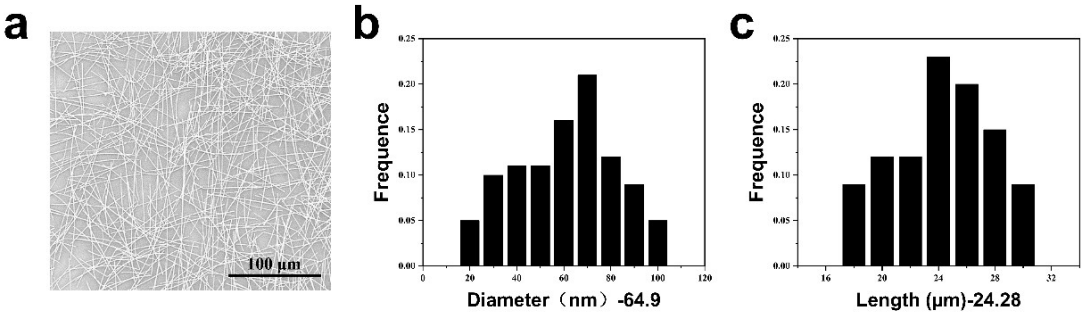

Figure S10. (a) SEM images of Ag NWs. (b) Statistic diameter distribution of Ag NWs extracted from Figure S10a (c) Statistic length distribution of Ag NWs extracted from Figure S10a.

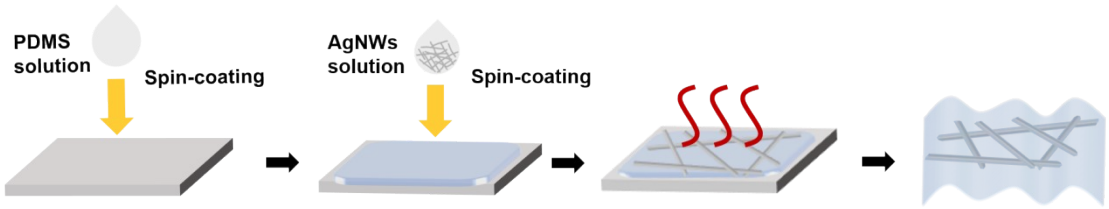

Figure S11. Schematic diagram of the preparation process for S-PDMS/AgNW transparent electrodes.