Supporting Information for

Rubbery stretchable conductors based on 3D printed silver nanowire and their application in wearable optoelectronic devices

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‡ Xingliang Xu and Yu-Dong Zhao contributed equally to this work.

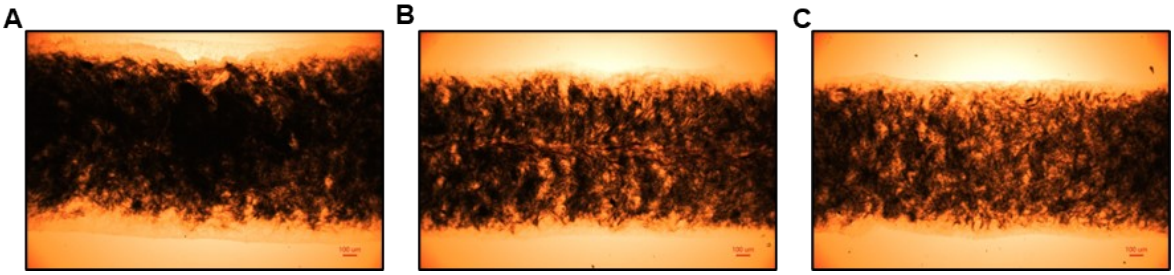

Figure S1. Optical image of the printed lines from pure AgNWs dispersion at different speed. (A) 1 mm/s (B) 3 mm/s (C) 5 mm/s.

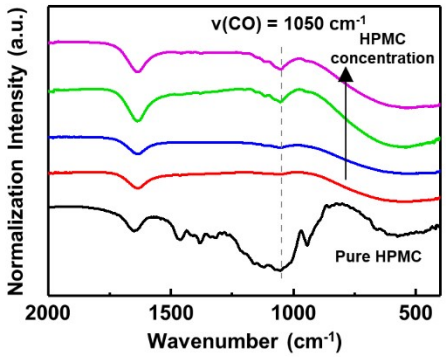

Figure S2. FTIR spectra of AgNWs ink with different HPMC concentrations. The HPMC concentrations are 40 mg/mL, 80 mg/mL, 120 mg/mL, 160 mg/mL respectively along the direction of the arrow.

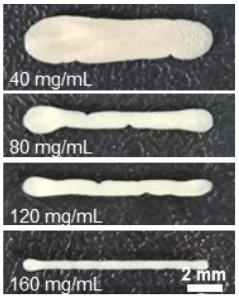

Figure S3. Photographs of the printed lines from AgNWs inks with different concentrations of HPMC.

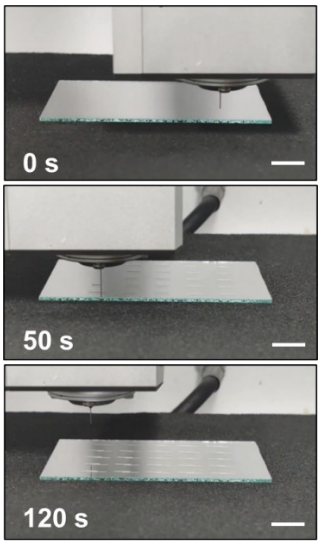

Figure S4. The print process of AgNWs electrode on the glass substrate (scale bar: 1cm).

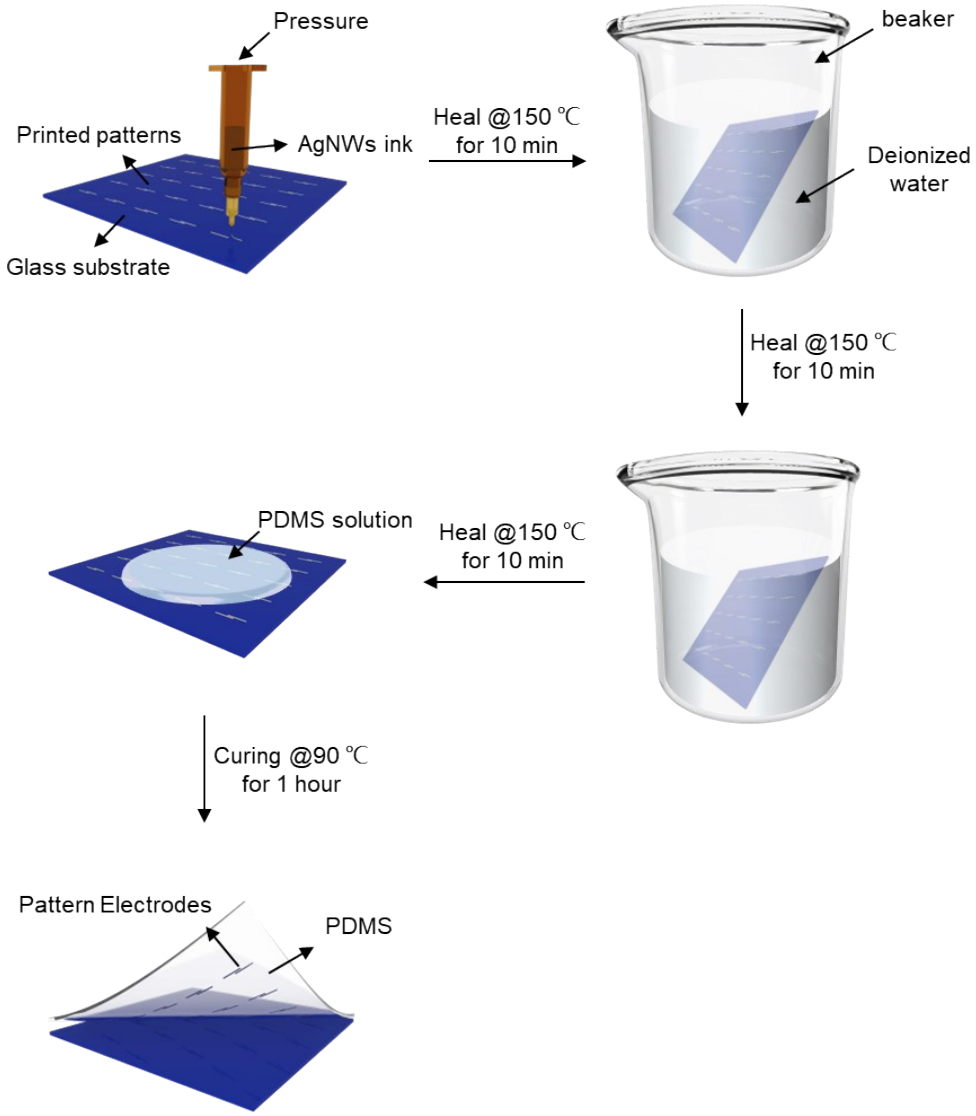

Figure S5. The fabrication process of the printed rubbery electrodes.

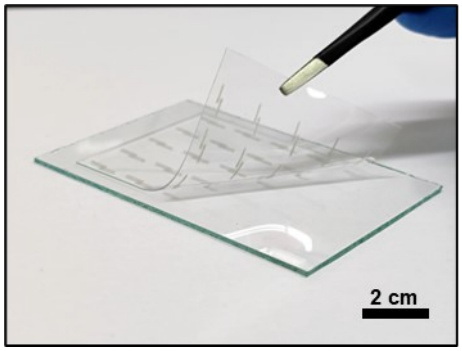

Figure S6. Photograph of the fabricated rubbery electrode array.

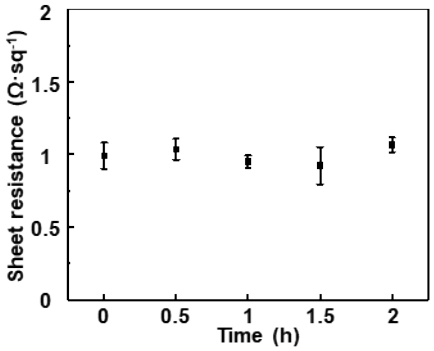

Figure S7. The sheet resistance of electrodes as a function of washing time.

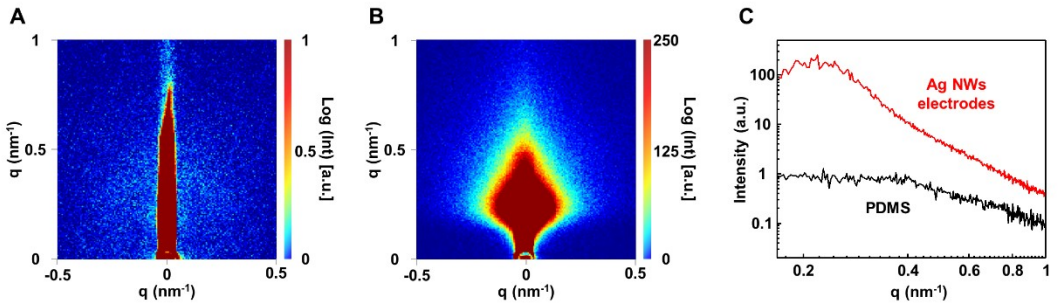

Figure S8. 2D GISAXS data (A) PDMS substrate and (B) AgNWs electrodes at an incident angle of 0.4°. (C) The calculated 1D data of both.

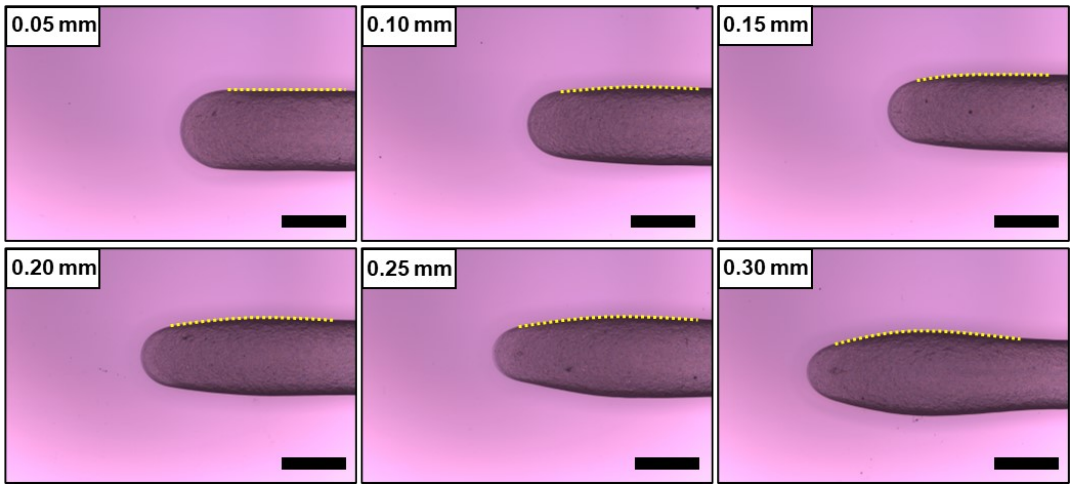

Figure S9. The evolution of boundary curves with different print gap as the yellow dotted line described. Scale bar: 500 μm.

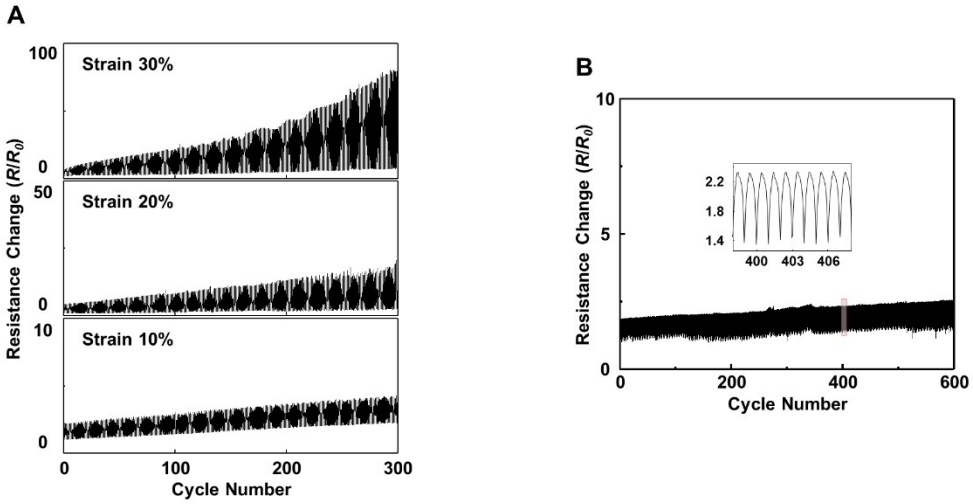

Figure S10. The fatigue test of electrodes. (A) cyclic stretching and releasing test at different strain (10%, 20% and 30%). (B) cyclic bending (bending curvature radius of the electrode is about 1 mm).

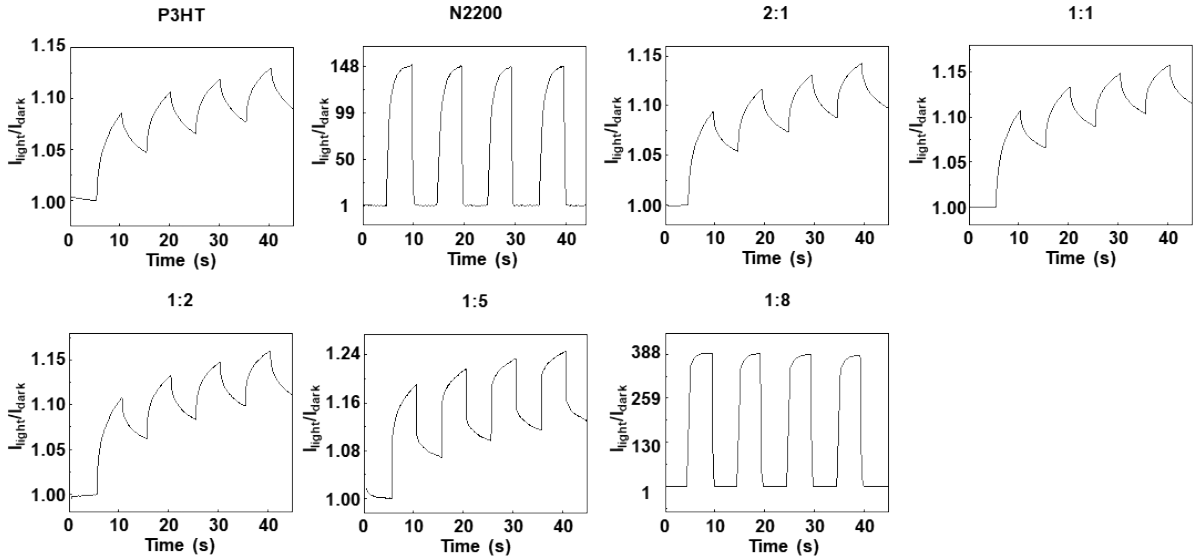

Figure S11. Time-dependent photo response of photodetectors based on different ratios of P3HT and N2200 as the active layers.

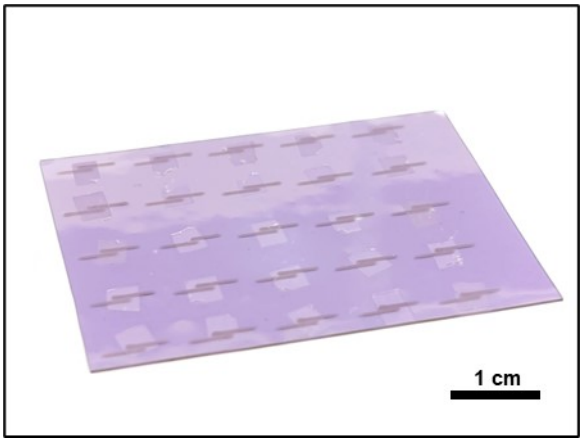

Figure S12. Photograph of the wearable transistor array based on the fabricated rubbery electrodes.

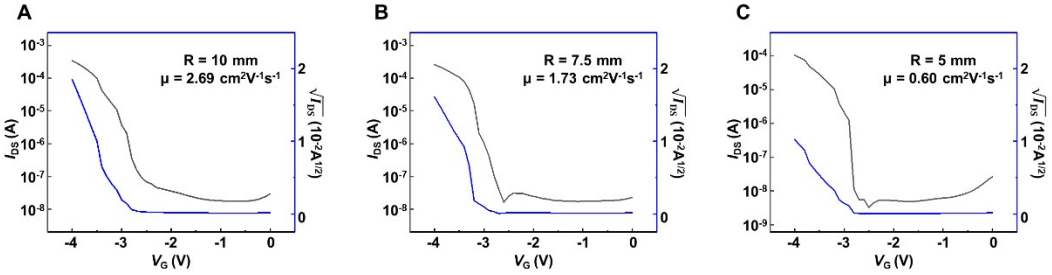

Figure S13. The transfer curves of wearable transistor under different bending radii. (A) R = 10 mm (B) R = 7.5 mm (C) R = 5 mm.