Supporting Information

Pressure sensitive adhesive with controllable adhesion for fabrication of ultrathin soft devices

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KEYWORDS: pressure sensitive adhesive; ultraflexible; electrode; polyethylene terephthalate; Ag nanowire

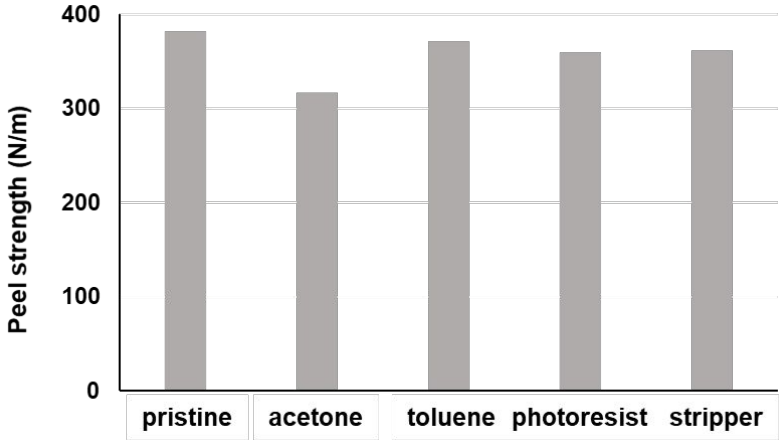

Figure S1. The peel strength of PSA-**1** tape before and after solvent treatment. As the developing and stripping processes for photolithography need less than 1 min, the PSA-**1** tape adhered to a SUS plate was immersed in the various solvents for 1 min and subject to 180° peel test. The little change in peel strength after solvent treatment means that PSA-**1** tape is compatible with the photolithography process.

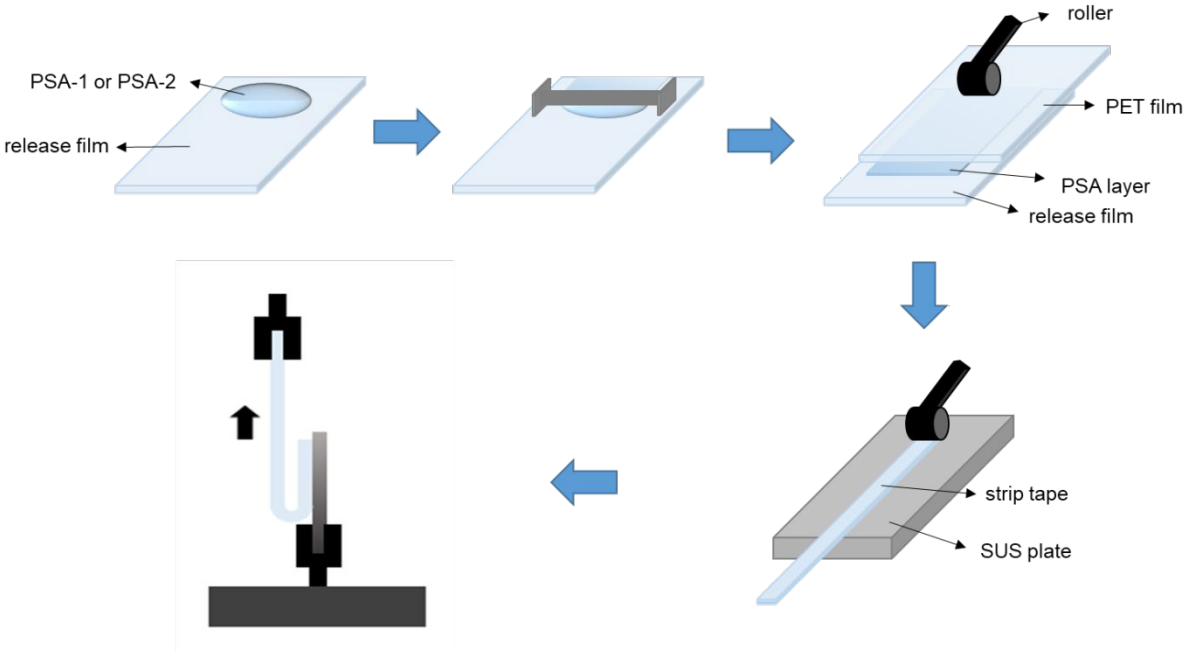

Figure S2. The schematic for the peel strength test.

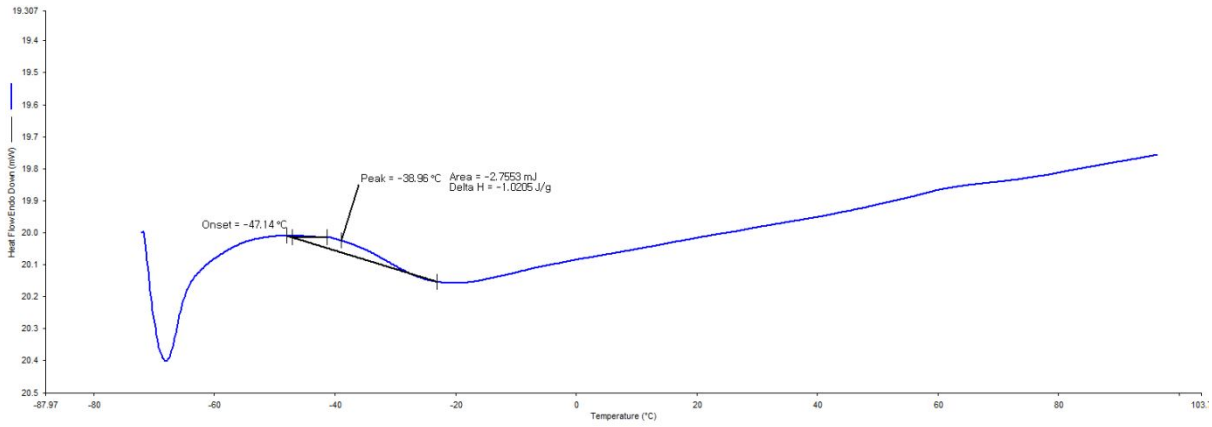

Figure S3. A DSC graph of polymer **1** obtained by increasing the temperature from -70 to 100 °C.

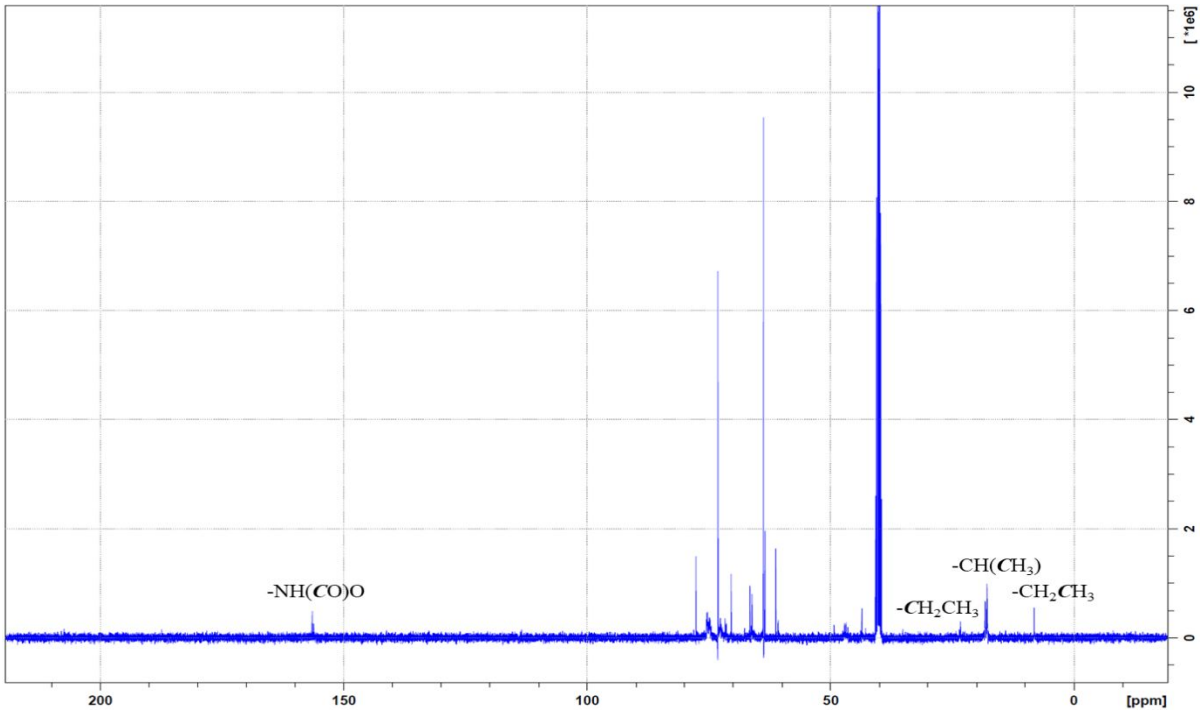

Figure S4. A ^{13}C-NMR spectrum of oligomer MA-**1** in DMSO-d_6.

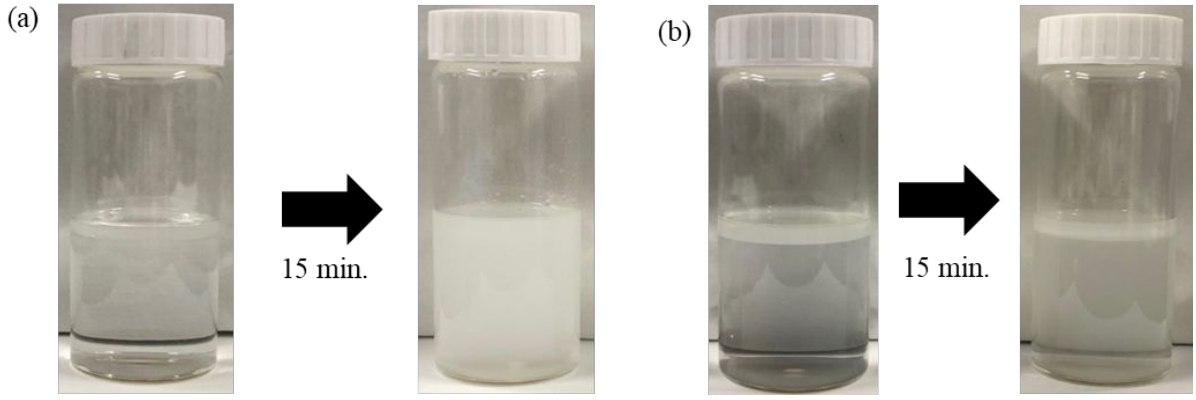

Figure S5. Toluene/water bilayers (a) with and (b) without oligomer MA-**1** 15 min after mixing.

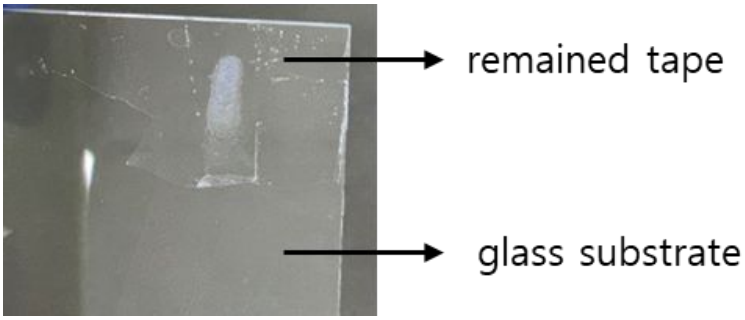

Figure S6. Remainders after detachment of the PSA-**0** tape from a glass substrate.

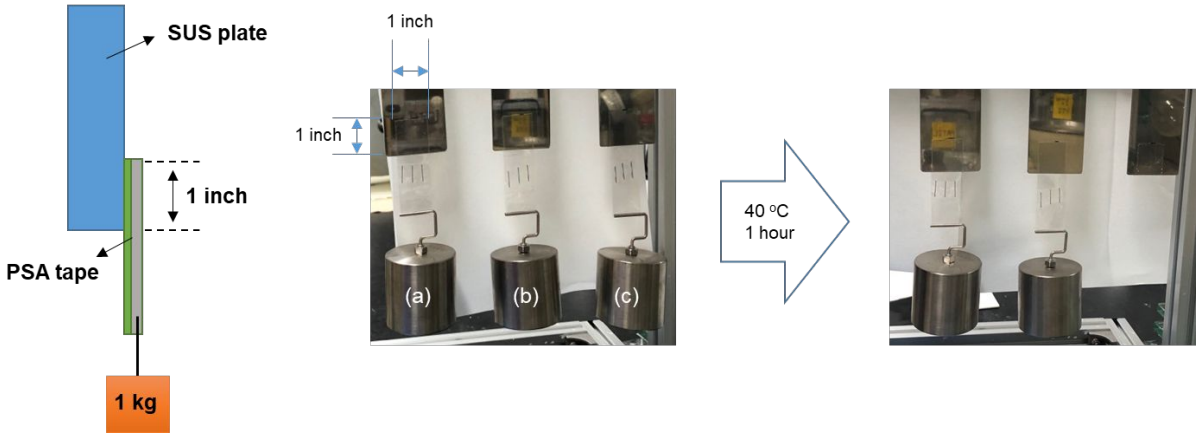

Figure S7. The shear resistance test of (a) PSA-**0**, (b) PSA-**1** and (c) PSA-**2** tapes. The weight with 1 kg was hung to the PSA tapes adhered to a SUS plate in a dimension of 1 inch by 1 inch, which kept in 40 °C for 1 h. While the time to shear failure for the PSA-**0** and PSA-**1** tapes exceeded 1 h (t > 1 h), that for the PSA-**2** tape was 15 min (t = 15 min).

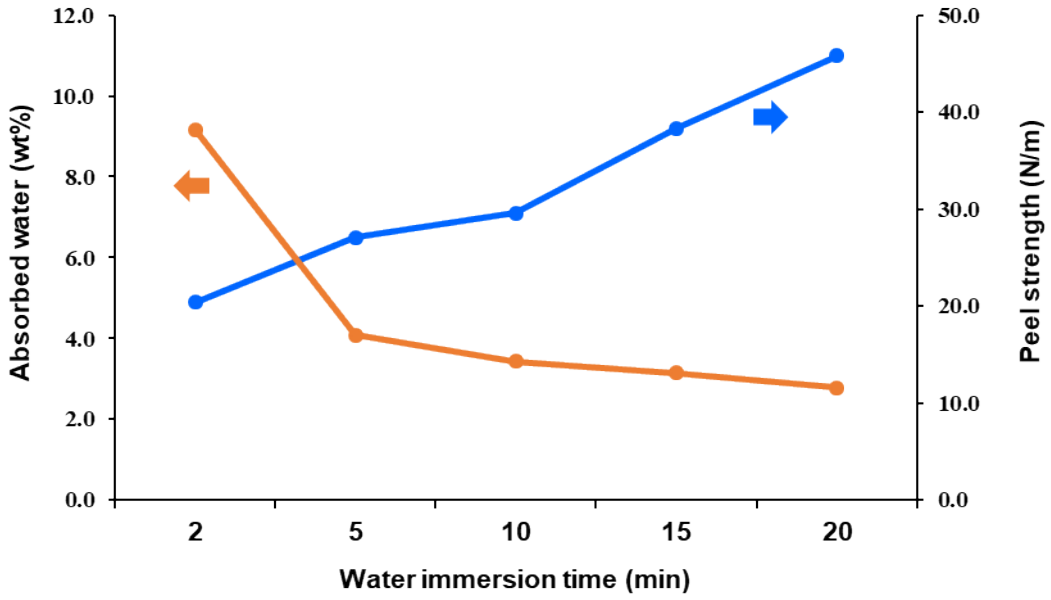

Figure S8. The weight percentage of the absorbed water in wr-PSA and the peel strength of wr-PSA over water immersion time at 25 °C.

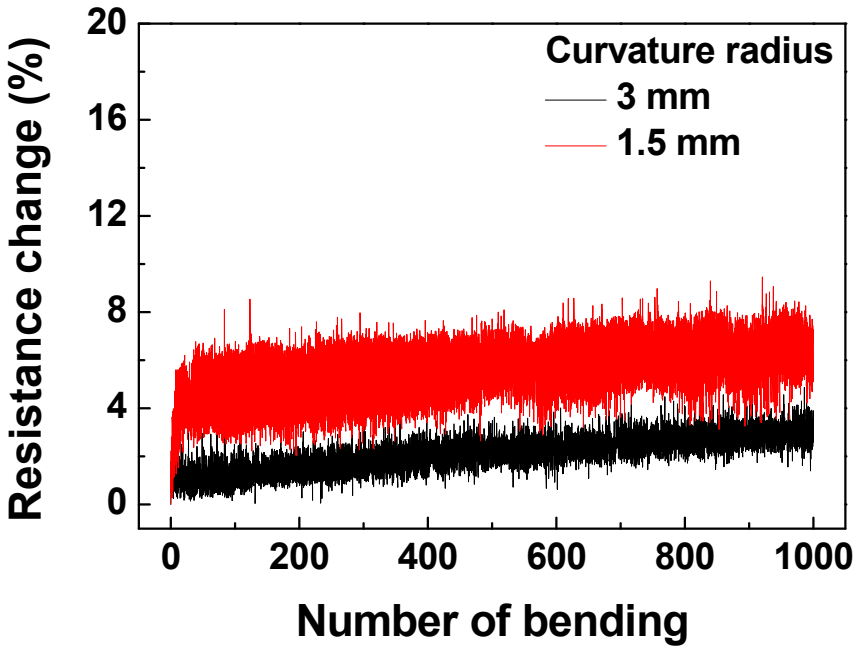

Figure S9. Resistance change of the AgNWs/1.4-μm-thick PET electrode with the bending numbers employing bending radii of 1.5 and 3 mm.

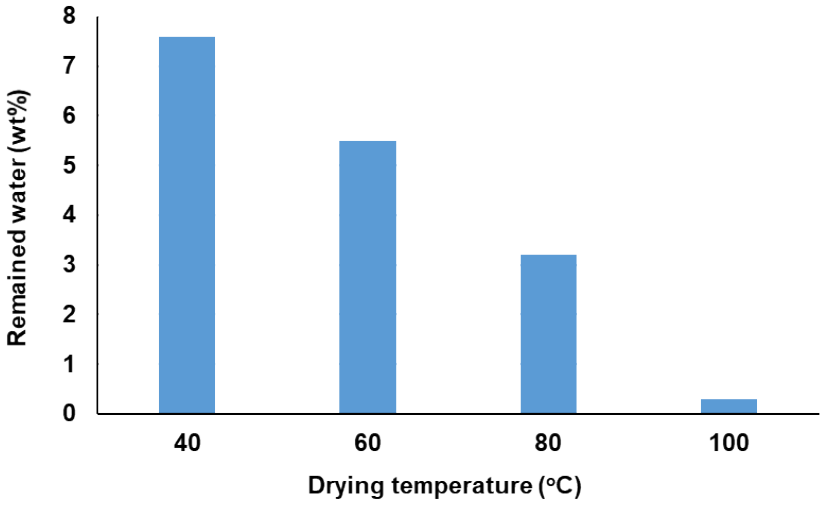

Figure S10. The weight percentage of the remained water in PSA-**1** after drying at 40 °C, 60 °C, 80 °C and 100 °C.

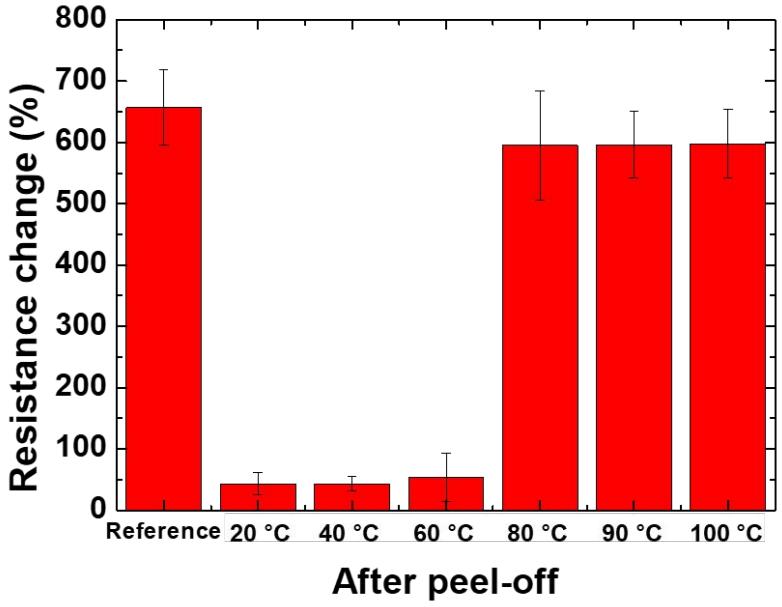

Figure S11. Resistance change of the water-treated AgNWs/1.4-μm-thick PET electrodes upon peeling-off after maintaining at various temperatures for 20 min. The reference refers to samples that did not experience water treatment and drying at high temperatures.