Supplementary Information for

Metal Nanowire Percolation Micro-Grids Embedded in Elastomer for Stretchable and Transparent Conductors

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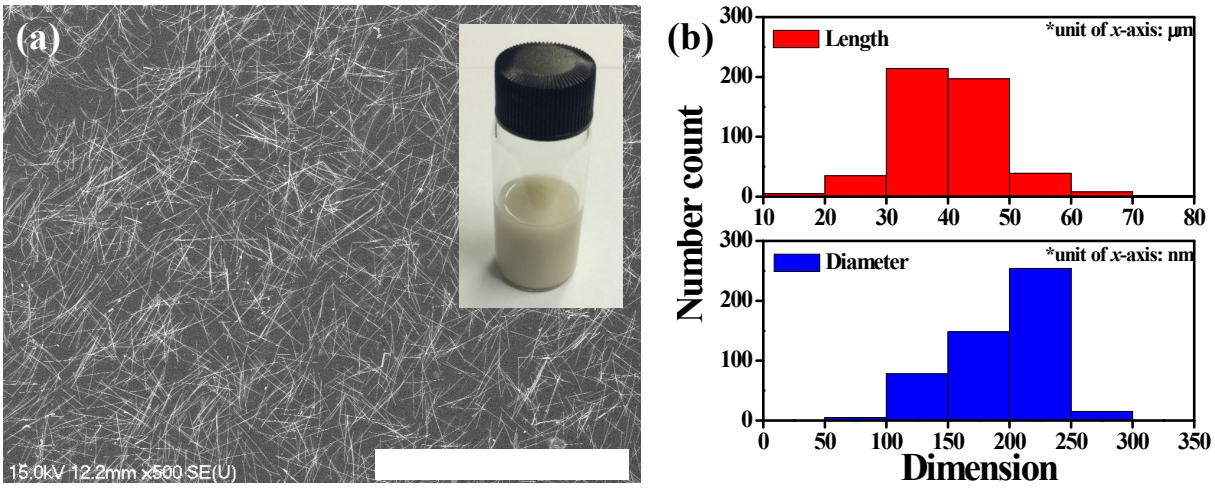

Fig. S1 AgNWs synthesized by $CuCl_2$-mediated polyol process. (a) SEM image of the synthesized AgNWs; scale bar: 100 μm (inset: digital image of AgNW solution for spray-coating), and (b) length and diameter distribution of the synthesized AgNWs (500 AgNWs measured).

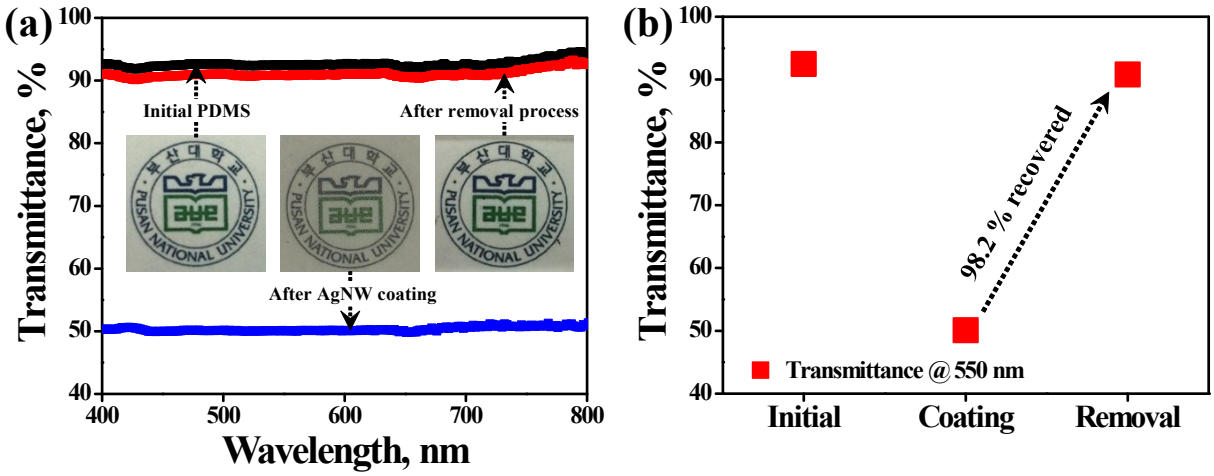

Fig. S2 Adhesive-tape-assisted contact-removal process. (a) transmittance spectra of flat PDMS substrate in three different states; initial (bare), AgNW-coated, and contact-removed (inset: digital images of the flat PDMS substrate in each state on a logo of our institution), and (b) transmittances at 550-nm wavelength of the flat PDMS substrate in each state.

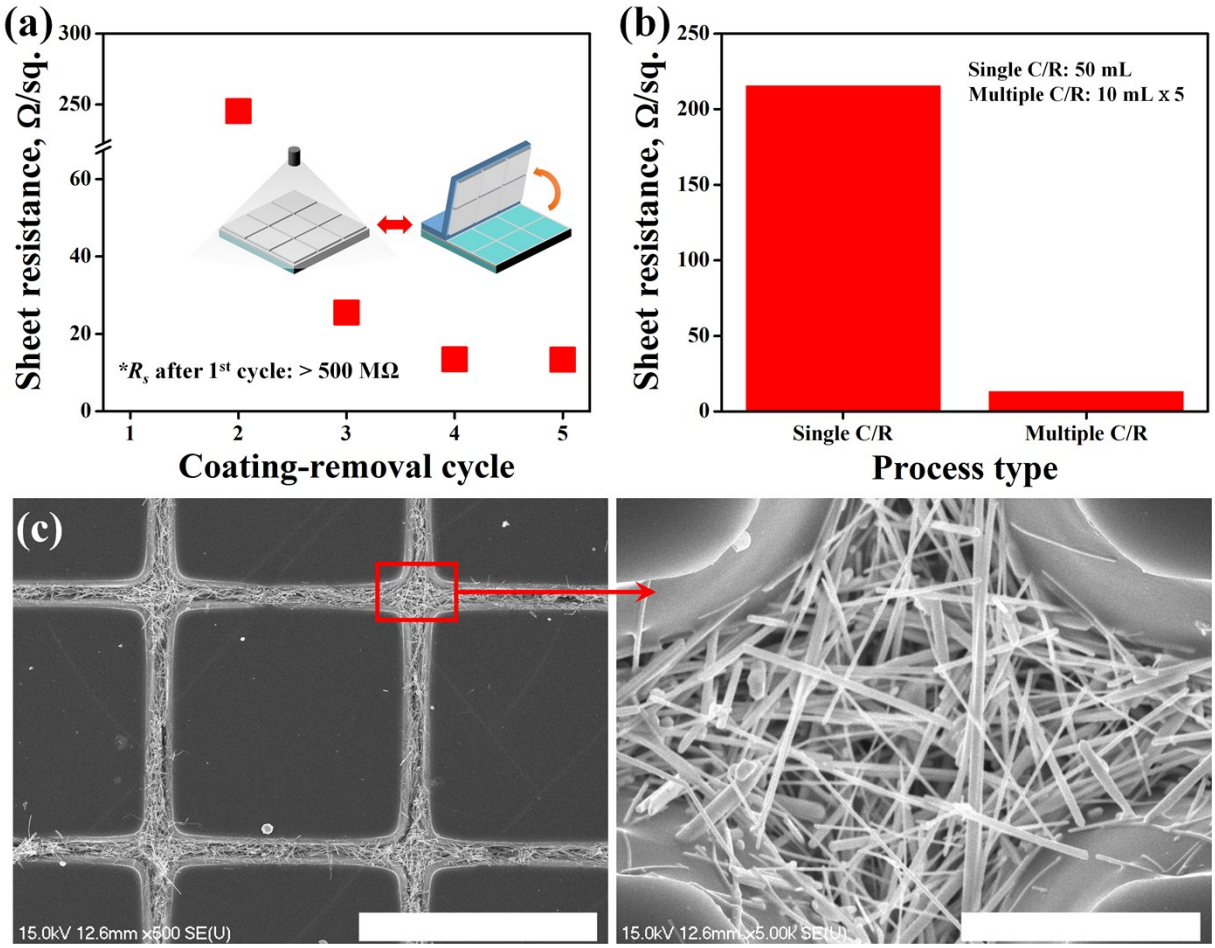

Fig. S3 Sheet resistances of stretchable AgNW micro-grids (a) for different numbers of coating-and-removal (C/R) cycles and (b) processed with single and multiple C/R processes, and (c) SEM images of the device processed with a single C/R process (scale bars: 100 μm (left), 10 μm (right)).

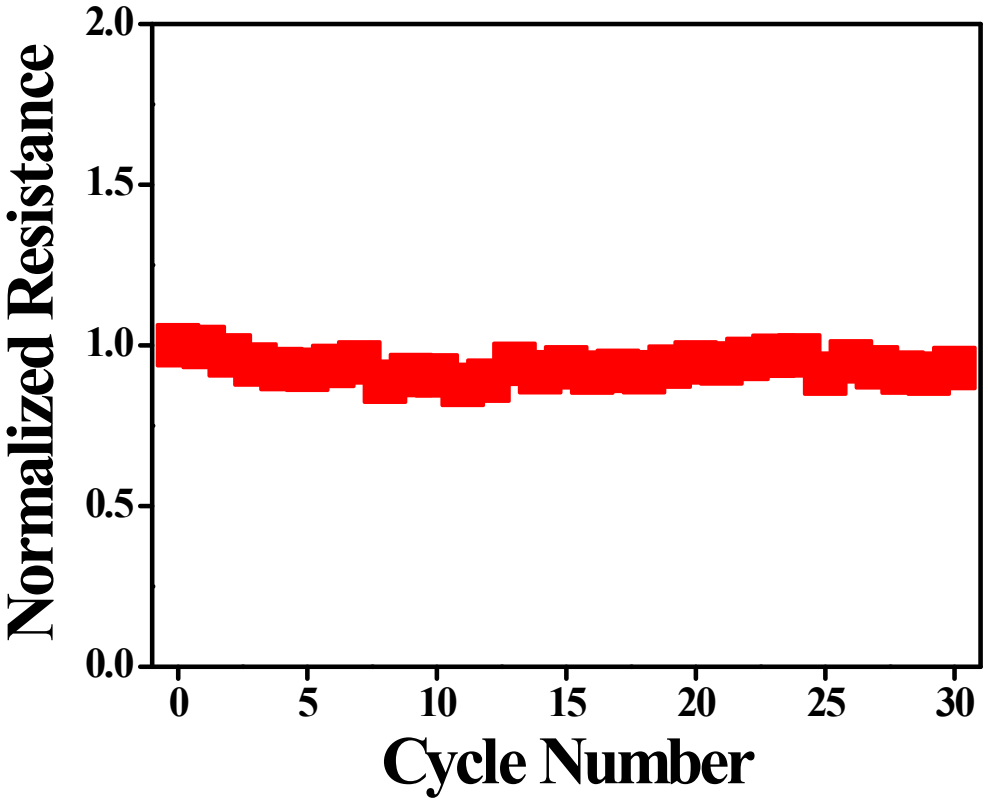

Fig. S4 Normalized electrical resistance in the released state of each cycle under repetitive stretching/releasing for up to 30 cycles with a maximum strain of 30 %.

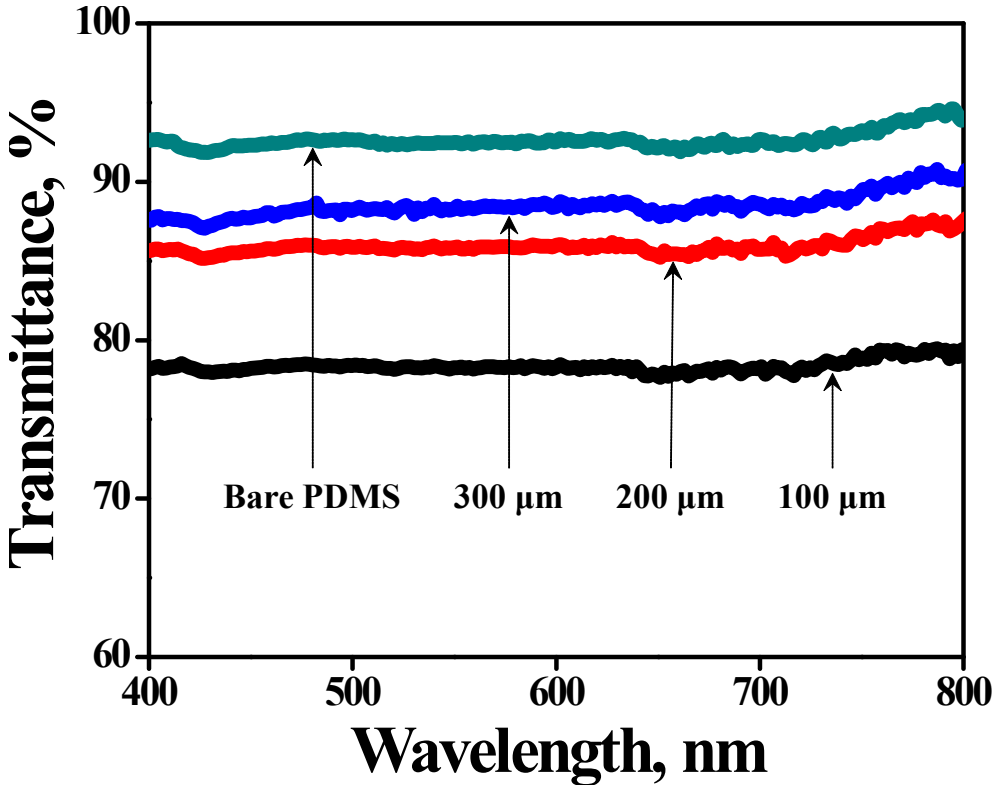

Fig. S5 Transmittance spectra (400 nm to 800 nm) of the fabricated stretchable AgNW micro-grids with different grid-to-grid distance.

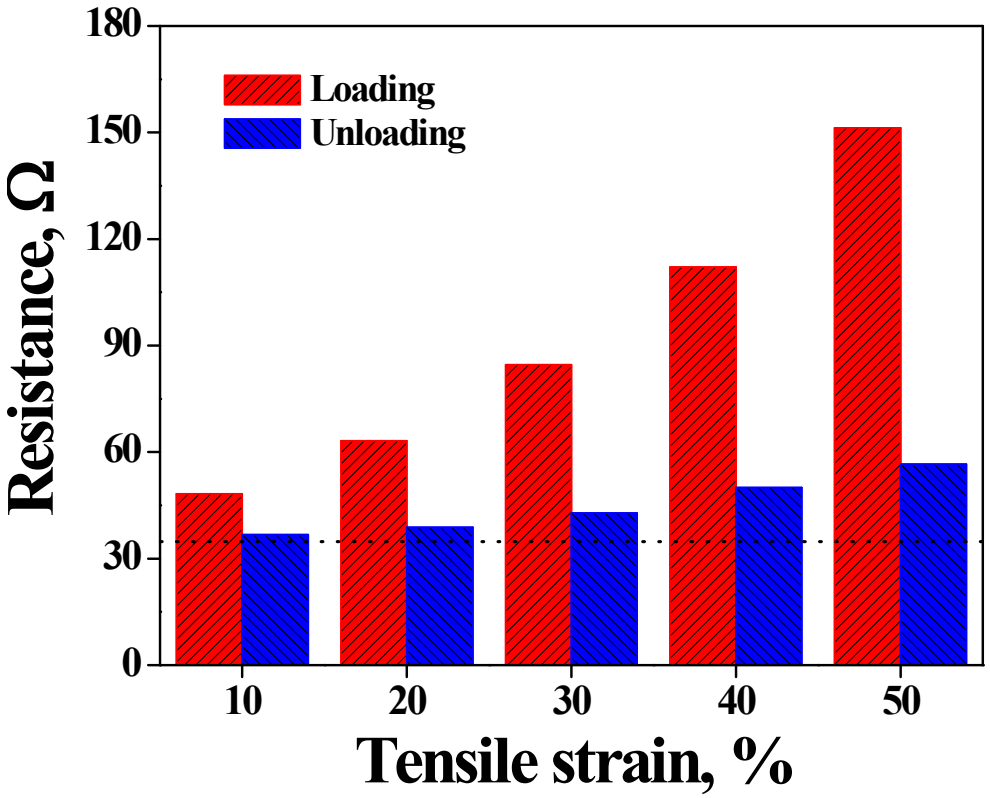

Fig. S6 Electrical resistances of the fabricated stretchable AgNW micro-grids in the loading states under tensile strains of 10 % to 50 % with a step of 10 % and in the corresponding unloaded states (dot line indicates the initial resistance of the device.).