

## Supplementary Information

### **Photo-induced healing of stretchable transparent electrode based on thermoplastic polyurethane with embedded metallic nanowires**

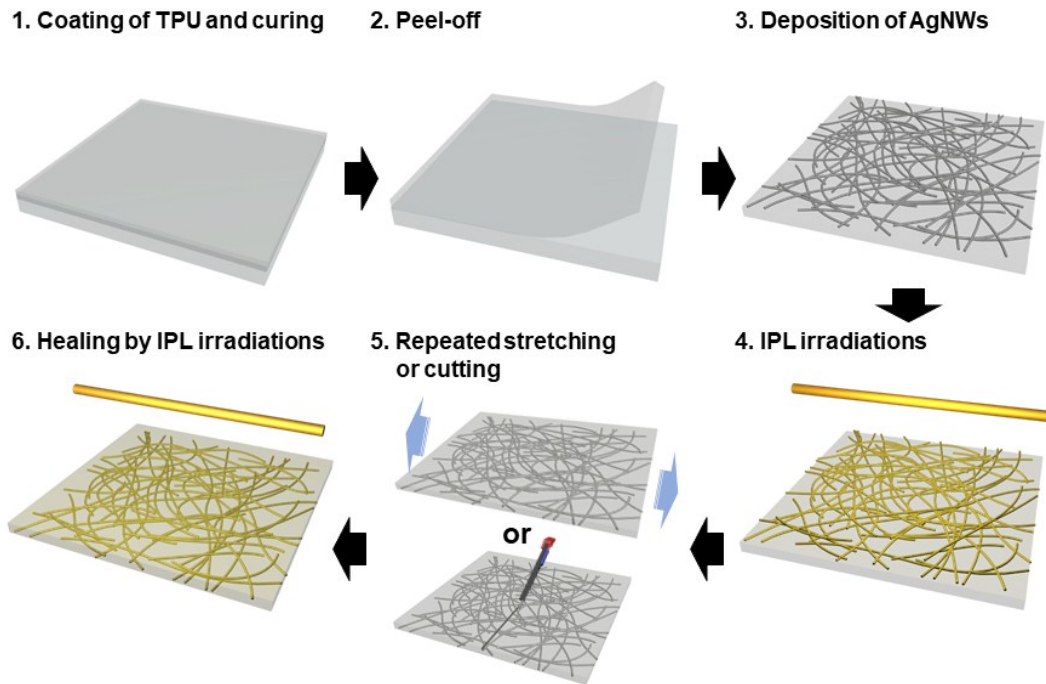
Kwang-Seok Kim,<sup>1</sup> Su Bin Choi,<sup>2</sup> Dae Up Kim,<sup>1</sup> Cheul-Ro Lee<sup>2,\*</sup> and Jong-Woong Kim<sup>2,\*</sup>

<sup>1</sup>Carbon & Light Materials Application Group, Korea Institute of Industrial Technology,  
222 Palbok-ro, Deokjin-gu, Jeonju 54853, Republic of Korea

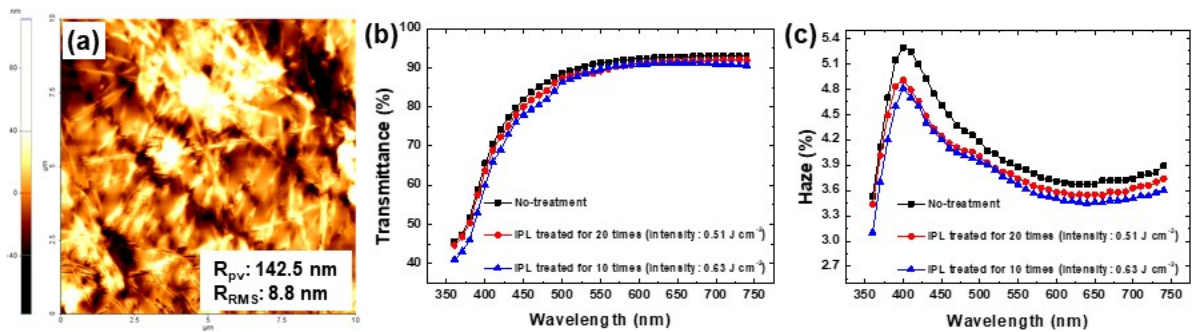
<sup>2</sup>School of Advanced Materials Engineering, Chonbuk National University  
567 Baekje-daero, Deokjin-gu, Jeonju 54896, Republic of Korea

\*Phone: +82 63 270 2304, Fax: +82 63 270 2305, E-mail: crlee7@jbnu.ac.kr (C.-R. Lee)

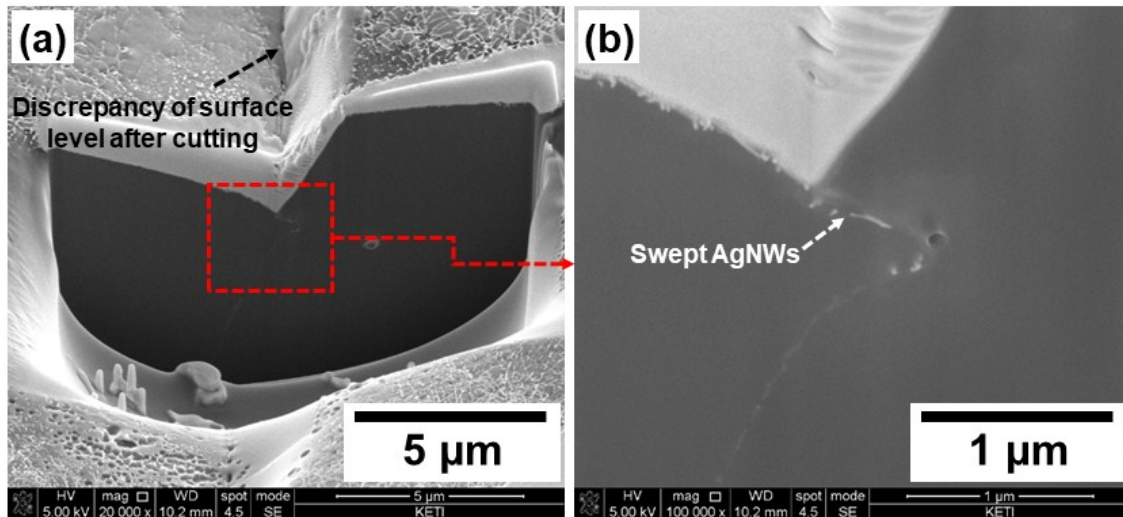
\*Phone: +82 63 270 2292, Fax: +82 63 270 2305, E-mail: wyjd@jbnu.ac.kr (J.-W. Kim)



**Figure S1.** Schematic description of the procedure employed for the fabrication of AgNW/TPU electrode (steps 1 to 4) and the subsequent damage (step 5) and healing processes (step 6).



**Figure S2.** (a) AFM micrograph of the AgNW/TPU electrode after sequential IPL treatments of 20 times at  $0.51 \text{ J cm}^{-2}$  and 10 times at  $0.63 \text{ J cm}^{-2}$ . (b)-(c) Transmittance and haze of the AgNW/TPU electrode at various sequences (no-treatment, after 20 times of IPL treatment at  $0.51 \text{ J cm}^{-2}$ , and after 10 times of IPL treatment at  $0.63 \text{ J cm}^{-2}$ ).



**Figure S3.** Tilt view FESEM images of a partial cross-section of the 5<sup>th</sup> cutting mark on the AgNW/TPU electrode.

Figure S3a shows clearly the discrepancy in the surface levels after repeated cutting. Figure S3b shows the AgNWs swept into the polymer following the cutting with a knife.