Electronic Supplementary Information

Simultaneous Improvements in Self-cleaning and Light-trapping Abilities of Polymer Substrates for Flexible Organic Solar Cells

Eunwook Jeong[a,b], Guoquing Zhao[a], Myungkwan Song[a], Seung Min Yu[c], Jongjoo Rha[a], Jongmoon Shin[a*], Young-Rae Cho[b*], and Jungheum Yun[a*]

[a]Surface Technology Division, Korea Institute of Materials Science, Changwon, Gyeongnam 51508, Republic of Korea

[b]Department of Materials Science and Engineering, Pusan National University, Busan 46241, Republic of Korea

[c]Jeonju Center, Korea Basic Science Institute, Jeonju, Jeonbuk 54907, Republic of Korea

[*]Corresponding authors: E-mail: jmshin@kims.re.kr, yescho@pusan.ac.kr, jungheum@kims.re.kr

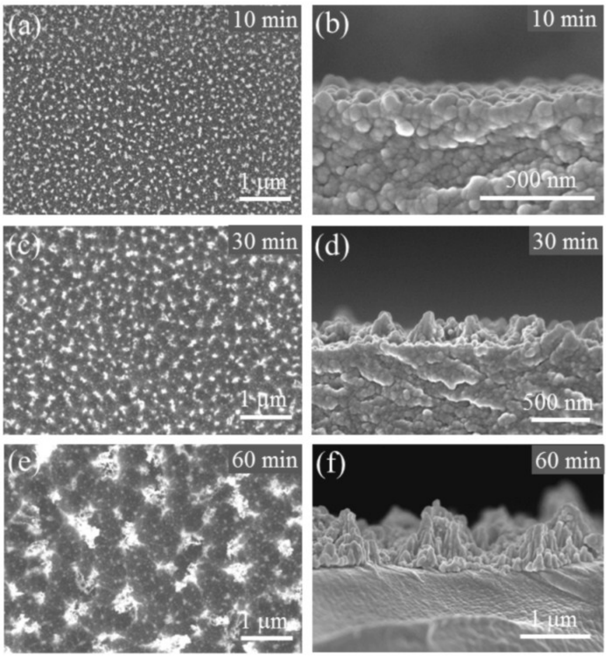

Fig. S1. Plane (a, c, e) and cross-sectional (b, d, f) FE-SEM images of polymer protrusions evolved on the surface of PET substrates as a result of plasma treatment for different periods: (a, b) 10 min, (c, d) 30 min, and (e, f) 60 min.

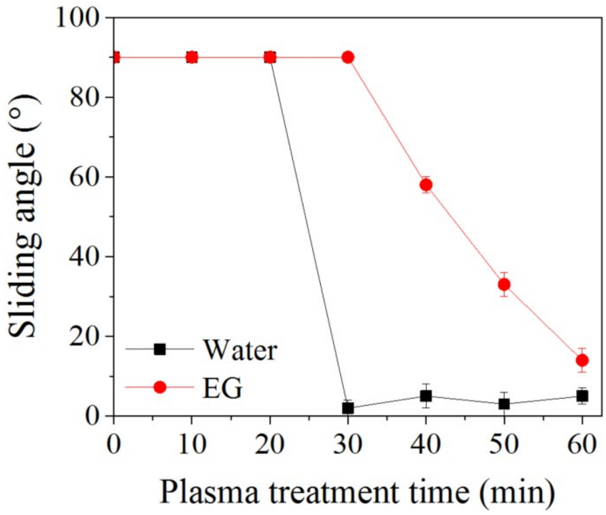

Fig. S2. Change in the sliding angle of water and ethylene glycol on the PFOTS-coated SNA layer fabricated with different plasma-treatment times.

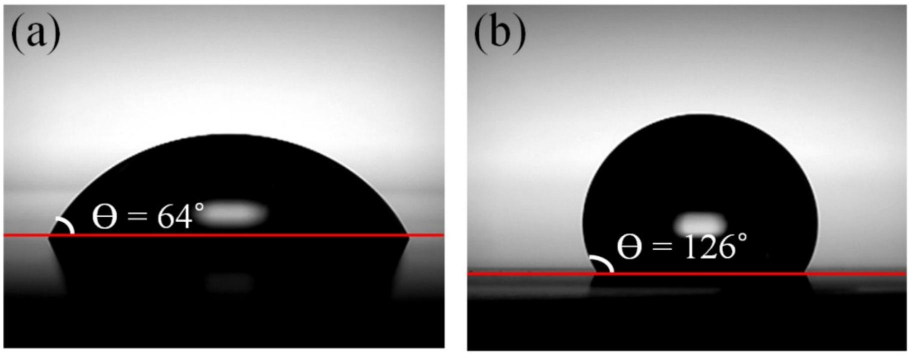

Fig. S3. Photographs and contact angles of hexadecane droplets on (a) a PFOTS-terminated PET surface without an SNA layer and (b) a PFOTS-coated SNA layer fabricated on a PET surface plasma-treated for 30 min.

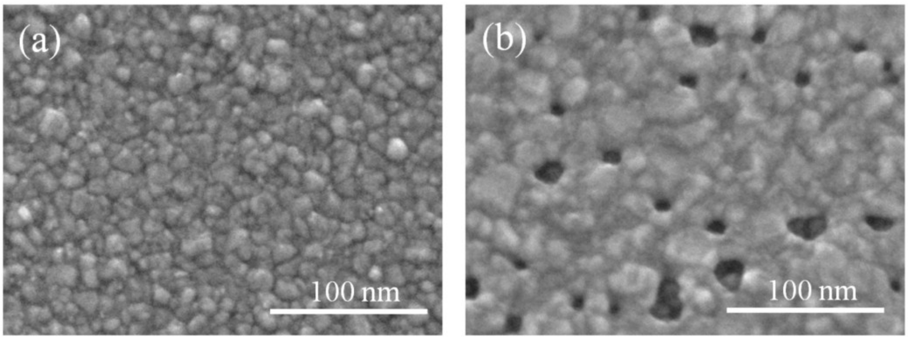

Fig. S4. Plane-view FE-SEM images of (a) ~7 nm Ag(O) and (b) ~7 nm Ag on a 40-nm ZnO film.

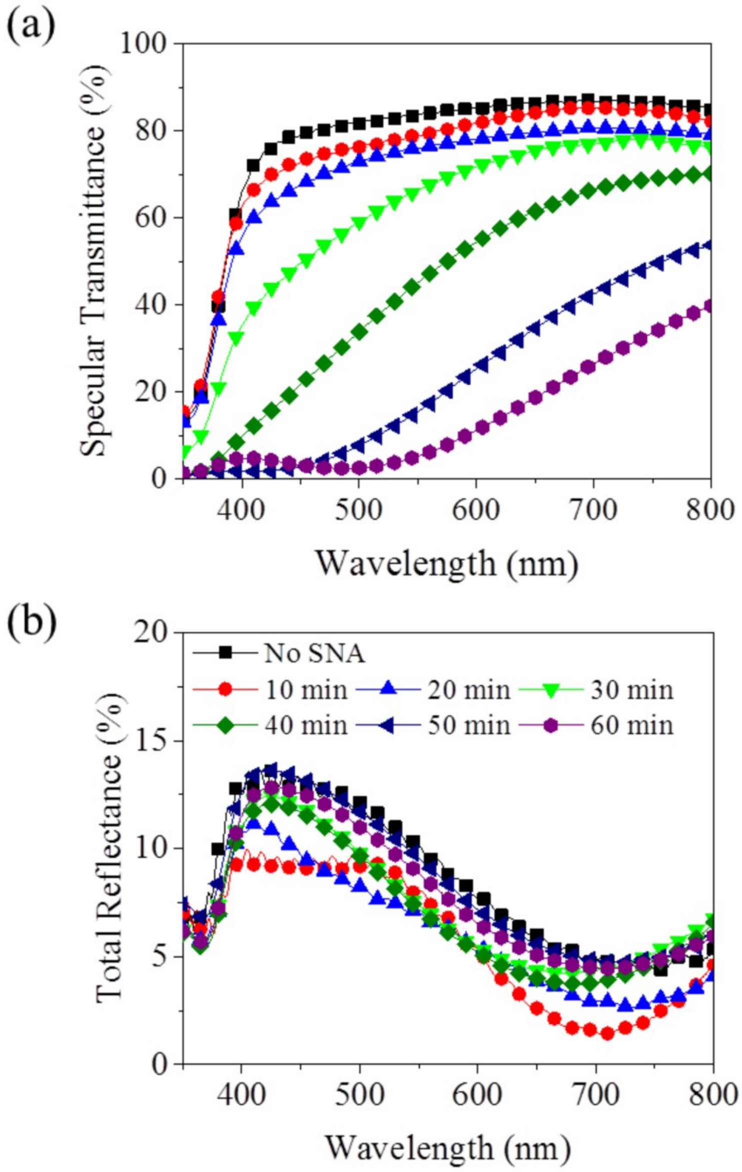

Fig. S5. Optical characteristics of PET substrates coated with SNA and OMO layers. Changes in the (a) specular transmittance and (b) total reflectance spectra of the PET substrates as a function of the plasma-treatment time.