

Supplementary Information

Design of broadband transparent electrodes for flexible organic solar cells**

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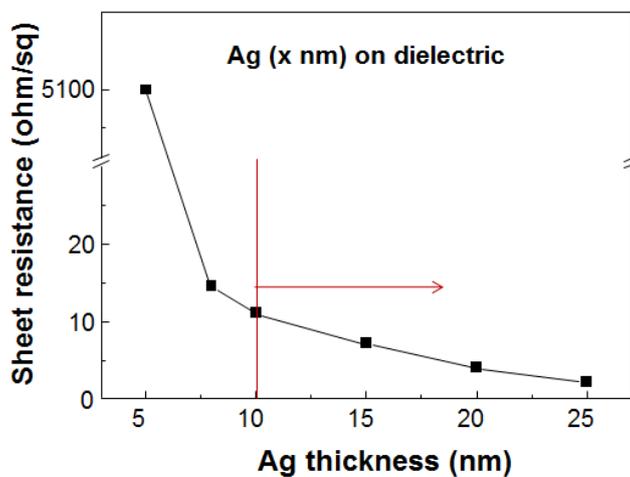


Figure S1. Sheet resistances of Ag films of various thickness on dielectrics.

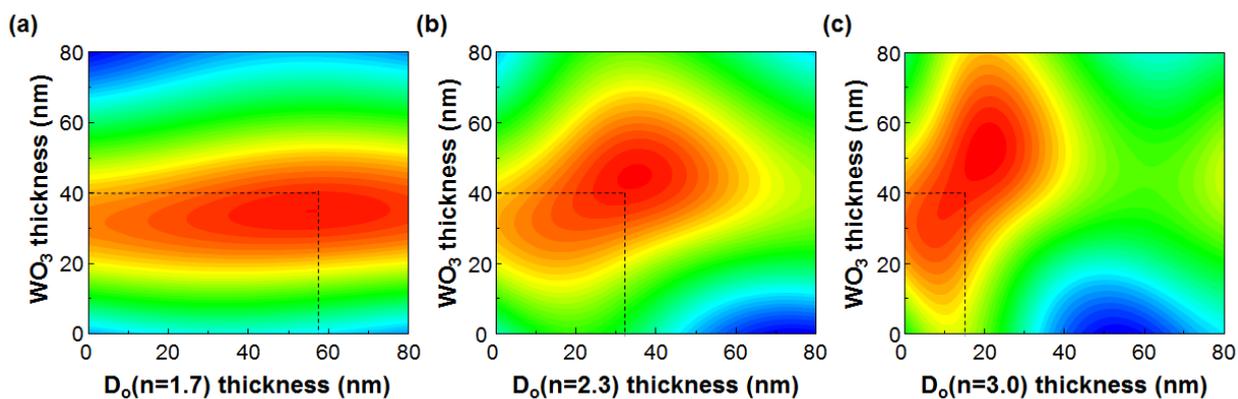


Figure S2. Simulated contour plots of average transmittance (400 ~ 700 nm) for $D_o/Ag/WO_3$ as a function of thickness (a) D_o ($n = 1.7$, $k = 0$), (b) D_o ($n = 2.3$, $k = 0$), (c) D_o ($n = 3.0$, $k = 0$).

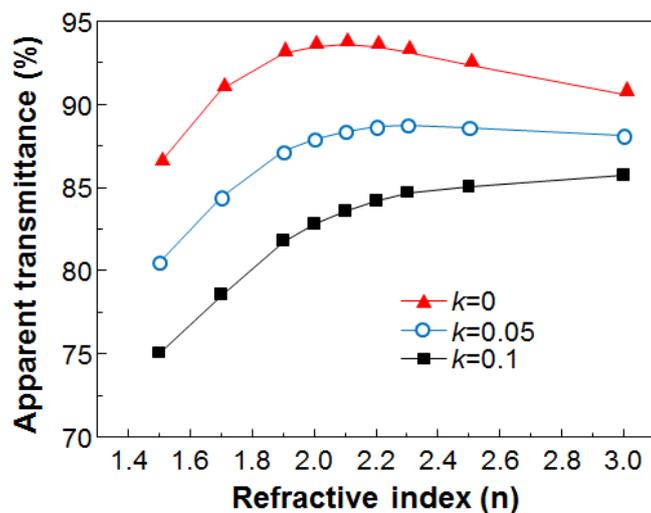


Figure S3. Apparent transmittance of $D_o/Ag/WO_3$ as a function of the refractive index (from 1.5 to 3.0) and extinction coefficient ($k = 0, 0.05, \text{ and } 0.1$) of outer dielectrics.

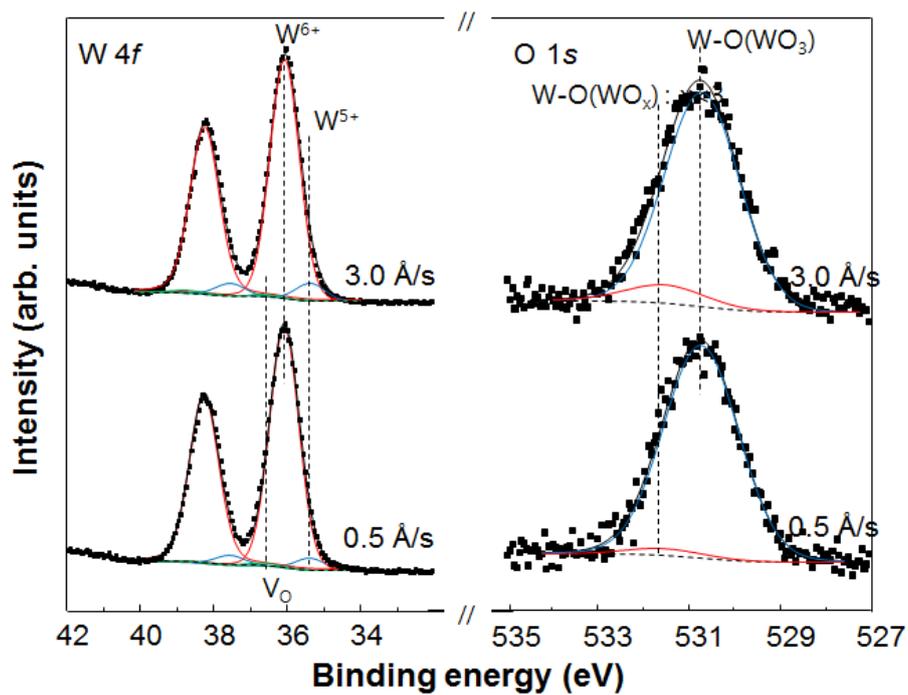


Figure S4. W 4*f* and O 1*s* core-level spectra of WO_{3-x} films deposited at different rates.

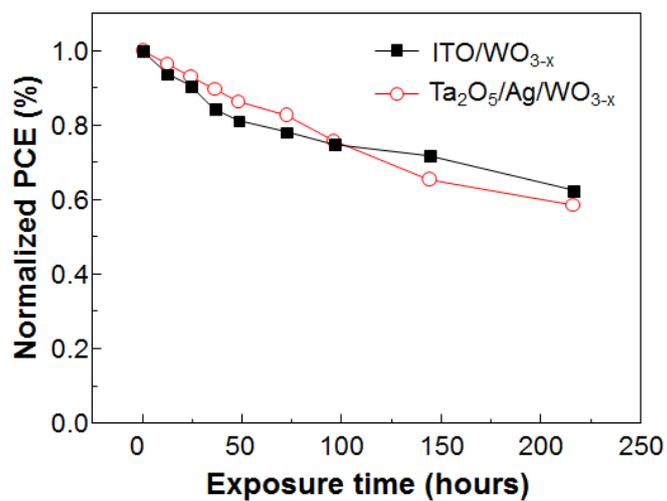


Figure S5. Changes in PCE of device using Ta₂O₅/Ag/WO_{3-x} and ITO/WO_{3-x} electrode during exposure to air.