

Supporting Information

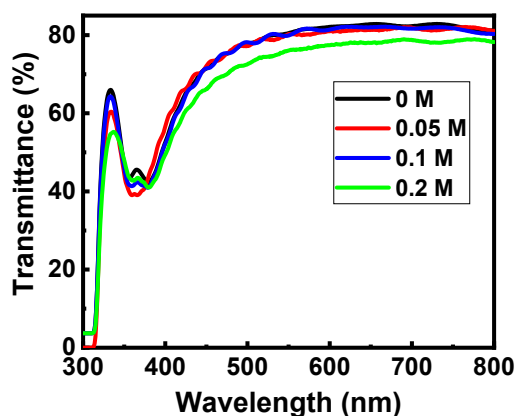


Figure S1. (a) The sheet resistance and T_{550} of PET/AgNWs/sol-gel ZnO films with different concentrations of sol-gel ZnO.

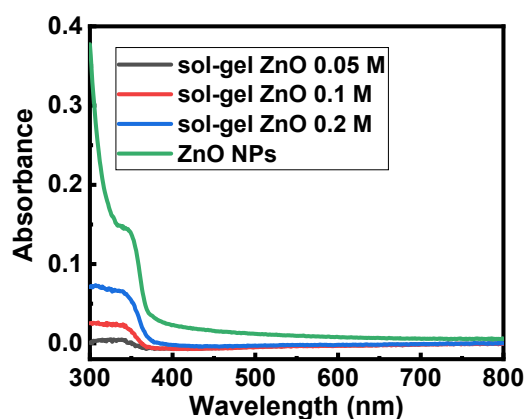


Figure S2. The UV-vis absorption spectra of the ZnO NPs and sol-gel ZnO films with different concentrations.

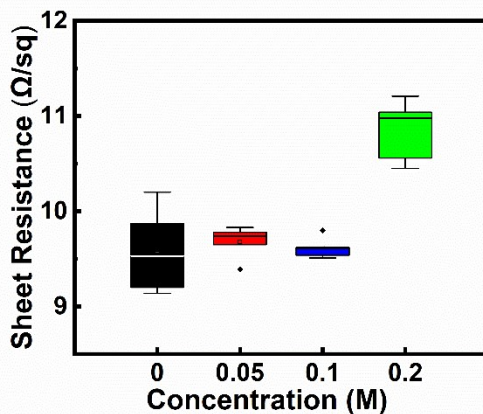


Figure S3. The sheet resistance of the AgNWs/sol-gel ZnO films.

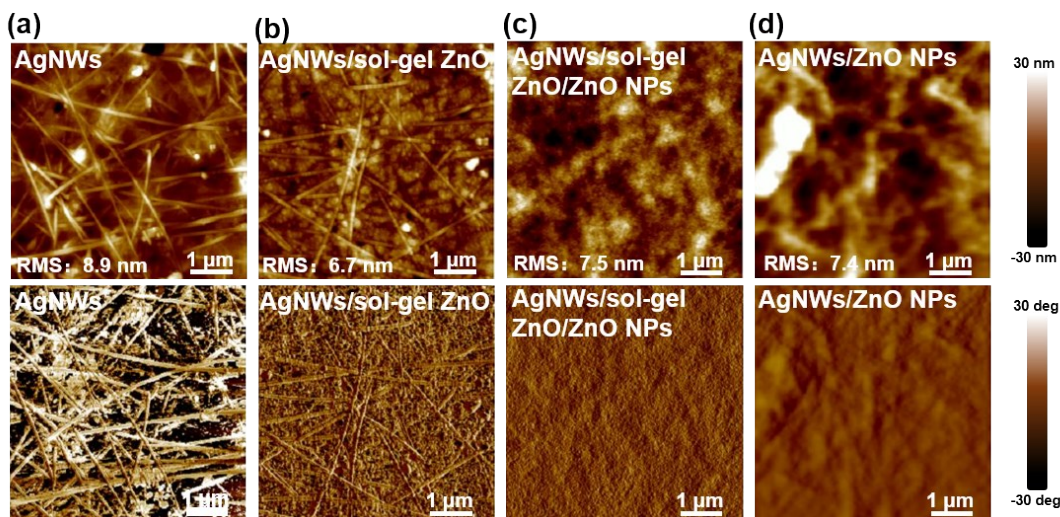


Figure S4. AFM images of (a) the Ag NWs, (b) Ag NWs/sol-gel ZnO, (c) Ag NWs/sol-gel ZnO/ZnO NPs, and (d) Ag NWs/ZnO NPs films.

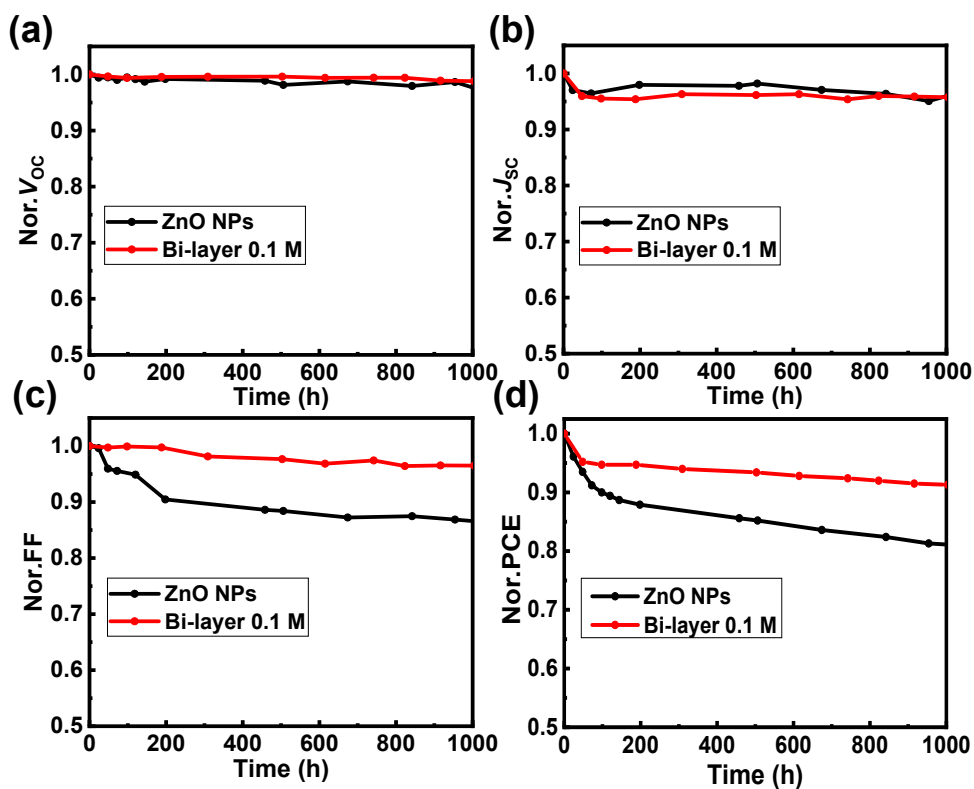


Figure S5. The evolution of normalized (a) V_{OC} , (b) J_{SC} , (c) FF, (d) PCE of the 1 cm² flexible devices.

Table S1. The calculated results of the resistor and capacitor from EIS.

ETL	R_{sheet} (Ω)	R_{CT} (Ω)	C (F)
ZnO NPs	8.14	690	2.81×10^{-6}
Bi-layer 0.1 M	8.42	84	4.66×10^{-8}