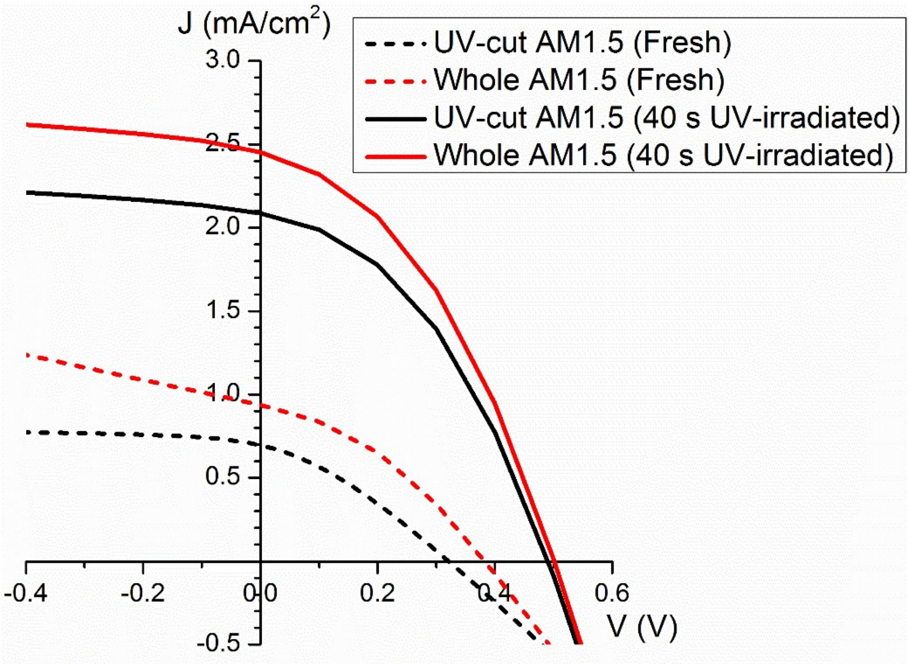

Figure S1: *J-V* curves of an HPV device with a P3HT/ZnO-NRs junction measured before (broken lines) and after UV irradiation for 40 s (solid lines). They were obtained under an AM 1.5 spectrum with a UV-cut filter (black lines) and without a UV-cut filter (red lines). The red broken line was affected by the light soaking effect during the measurement. Irradiation conditions for UV irradiation: AM 1.5, 100 mW/cm^2.

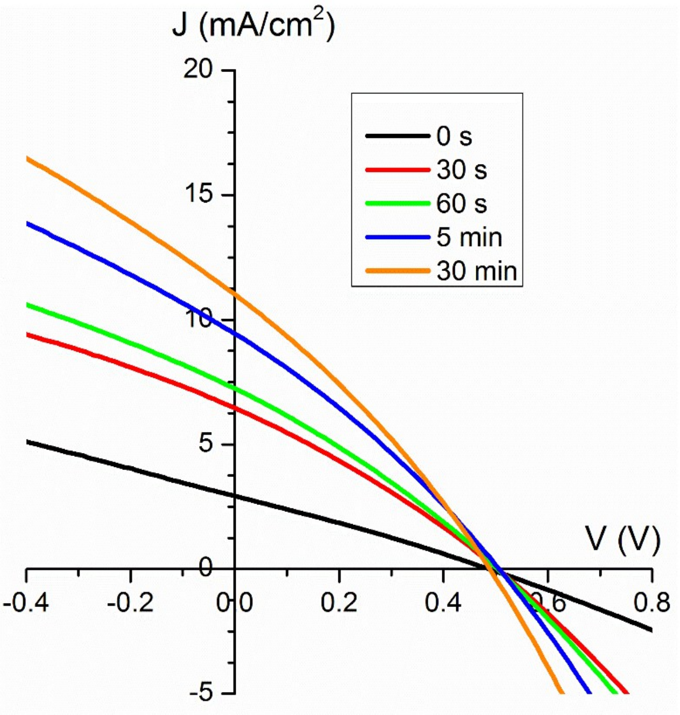

Figure S2: *J*-*V* curves of an OPV device having a P3HT:PCBM bulk heterojunction and ZnO-NRs as an electron accepting layer measured repeatedly after UV irradiation for certain periods. Cumulative UV irradiation times are shown in the legend. Irradiation conditions: AM 1.5, 100 mW/cm^2 for UV irradiation; the same but the UV component was removed for *J*-*V* measurements.