Supporting Information

WO_3 with Surface Oxygen Vacancies as Anode Buffer Layer for High Performance Polymer Solar Cells

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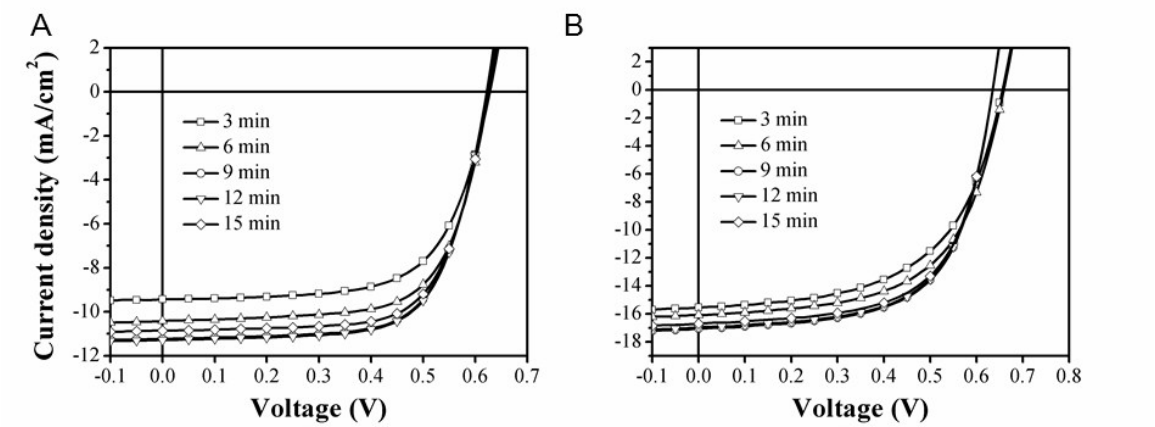

Figure S1. *J-V* curves of the PSCs with WO_3 (V_O) buffer layers under various O_2 plasma treatment time, responsible for the active layers of (A) P3HT:$PC_{61}BM$ and (B) PBDTTT-C:$PC_{71}BM$, respectively.

Table S1. Device parameters of the PSCs with WO_3 (V_O) buffer layers under various O_2 plasma treatment time under the illumination of AM 1.5G, 100 mW/cm^2

Device	Time (min)	V_{OC} (V)	J_{SC} (mA/cm^2)	FF (%)	PCE (%)	R_S (Ω/cm^2)
C	3 min	0.63	9.83	65.42	3.87	9.32
	6 min	0.63	10.42	67.43	4.38	8.93
	9 min	0.62	11.23	68.14	4.76	7.89
	12 min	0.62	11.25	68.34	4.78	7.67
	15 min	0.63	10.86	68.23	4.63	7.97
F	3 min	0.72	16.17	56.95	6.62	9.01
	6 min	0.72	16.73	59.45	7.18	8.09

9 min	0.70	17.08	63.01	7.50	7.01
12 min	0.70	16.98	60.86	7.45	7.07
15 min	0.70	16.71	60.69	7.33	7.20

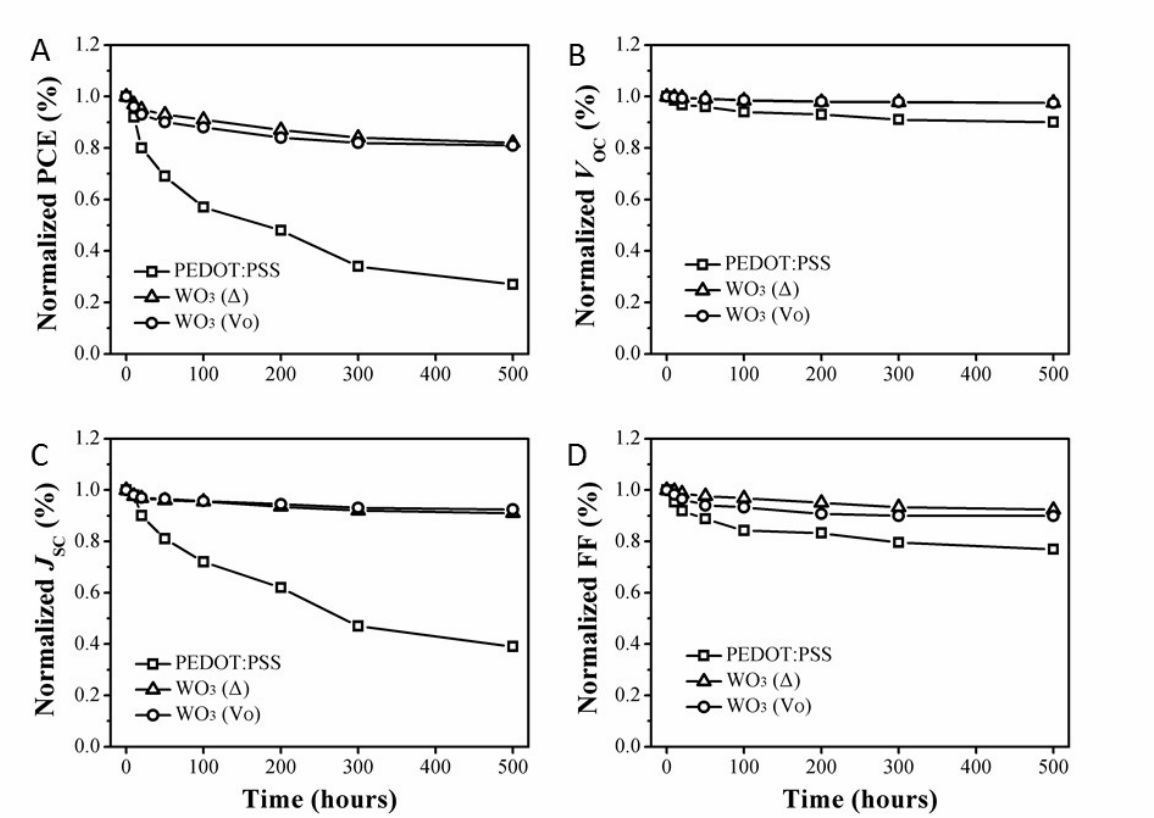

Figure S2. Degradation of normalized (A) power conversion efficiency (PCE), (B) open circuit voltage (V_{OC}), (C) short circuit current density (J_{SC}), and (D) fill factor (FF) values of PBDTTT-C:$PC_{71}BM$ based PSCs devices with different anode buffer layers of PEDOT:PSS, WO_3 (Δ) and WO_3 (V_O), respectively.