

Supporting Information for

Self-Assembled Poly(ethylene glycol) Buffer Layers in Polymer Solar Cells: Toward Superior Stability and Efficiency

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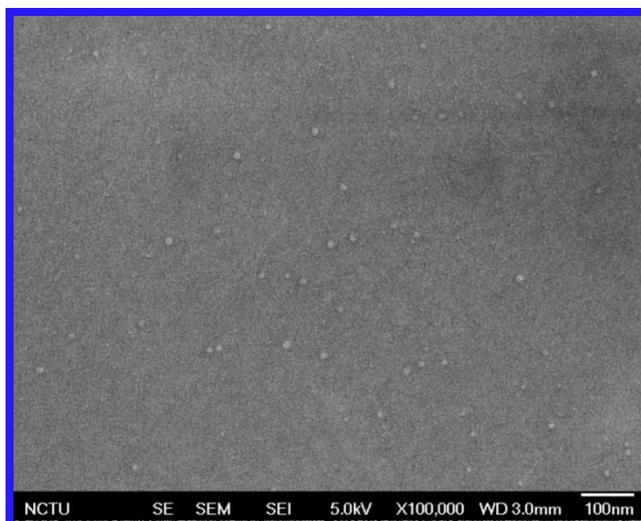


Figure S1. SEM image of the P3HT:PCBM thin film blended with PEG-6000 (1:1:0.1, wt%).

Table S1. Electrical characteristics of the P3HT:PCBM-based devices fabricated with PEGs on PEDOT:PSS and MoO₃ surfaces.

| Substrate (Surface energy) ^[a] | Condition ^[b] | V _{oc} (V) | J _{sc} (mA cm ⁻²) | FF | PCE |
|----------------------------------------------|--------------------------|---------------------|----------------------------------------|-----|-------|
| PEDOT:PSS (77.8 mN m ⁻¹) | Without PEG | 0.49 | 8.36 | 54% | 2.3% |
| | With PEG | 0.59 | 9.25 | 65% | 3.6% |
| MoO ₃ (362.2 mN m ⁻¹) | Without PEG | 0.45 | 6.53 | 53% | 1.6% |
| | With PEG | 0.15 | 0.60 | 26% | 0.02% |

^[a]Surface energies were calculated using the Zisman model. ^[b]Photoactive layer contained either 0 or 10% PEG-400.

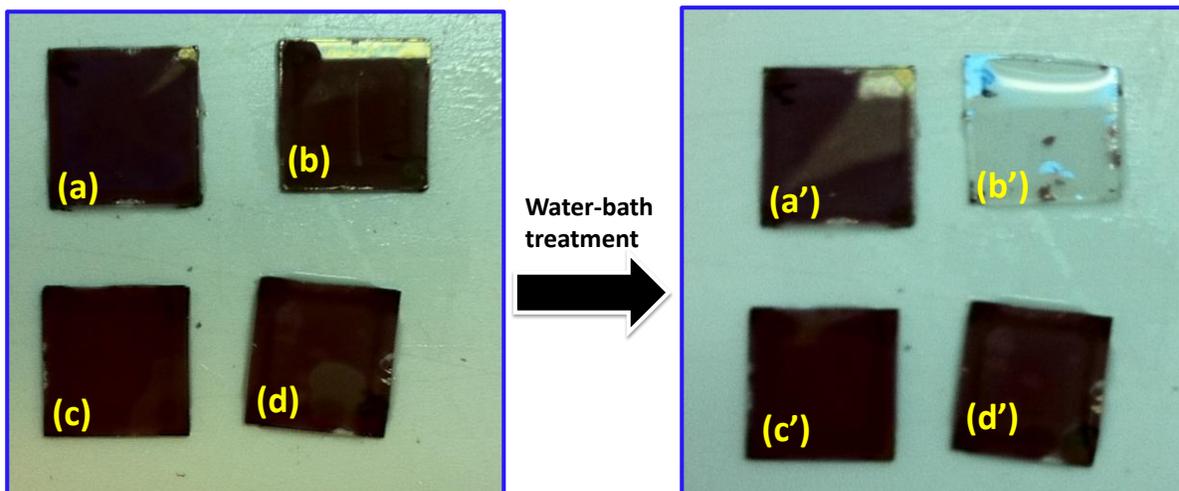


Figure S2. Photographs of P3HT:PCBM films prepared (b, b', d, d') with and (a, a', c, c') without 10% PEG-400, deposited on (a, a', b, b') MoO₃ and (c, c', d, d') PEDOT:PSS, (a–d) before and (a'–d') after water-bath treatment.