

Electronic Supporting Information (ESI)

Effectiveness of polyvinylpyrrolidone interlayer on zinc oxide film for interfacial modification in inverted polymer solar cells

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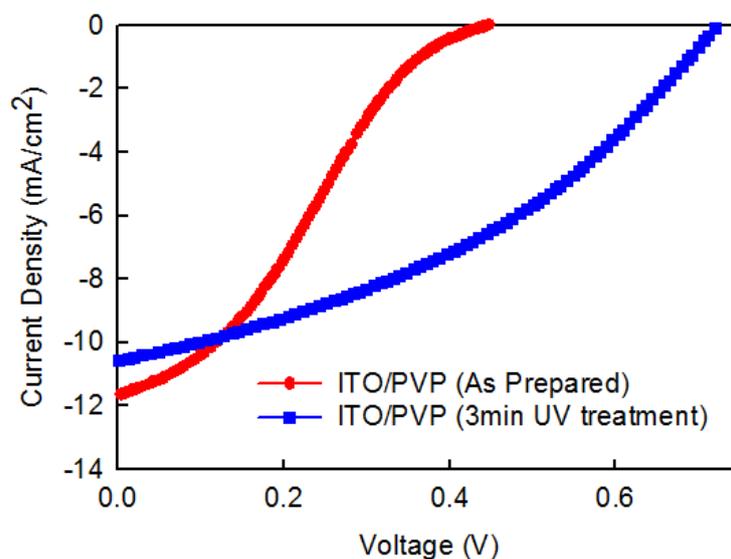
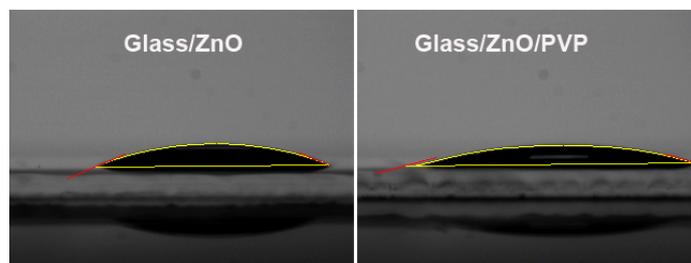


Fig. S1 Current density versus Voltage characteristics of Device C: Glass/ITO/PVP/PTB7:PC₇₀BM/WO₃/Al measured under AM 1.5 G illuminations with intensity of 100mW/cm² in ambient air before and after 3min UV treatment on ITO/PVP electrode through glass side.

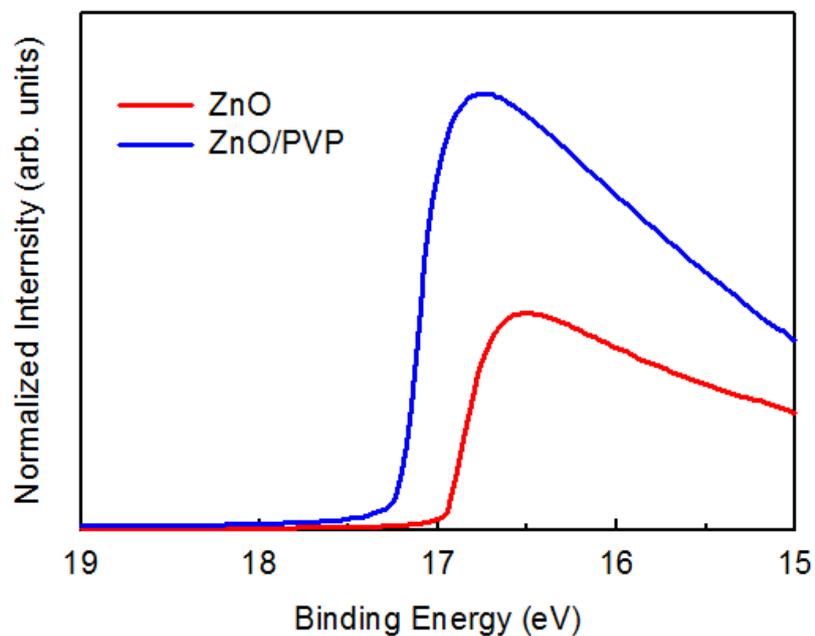
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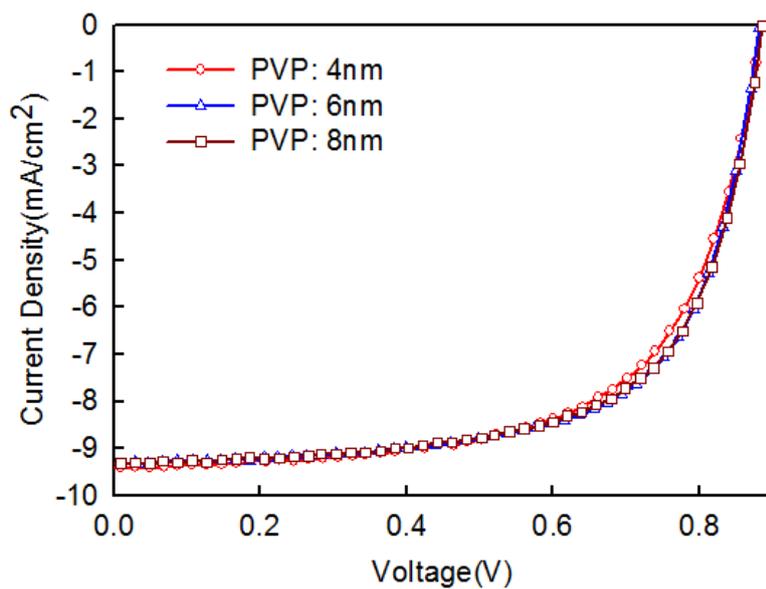
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Fig. S2 Contact angle test of ZnO and ZnO/PVP

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5 Fig. S3 UPS measurement of ZnO (Red solid line) and ZnO/PVP (blue solid line).



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Fig. S4 Current density versus Voltage characteristics of the following device configuration: Glass/ITO/ZnO (30nm)/PVP (4, 6, 8nm)/P3HT: ICBA (80nm)/WO₃ (5nm)/Al (100nm) measured under AM 1.5 G illuminations with intensity of 100mW/cm² in ambient air.

5 **Table S1.** Summary of performance parameters of P3HT: ICBA based solar cells fabricated with different thickness of PVP layer.

Device	Voc (V)	Jsc (mA/cm ²)	F.F (%)	Eff. (%)
ZnO/PVP(4nm)	0.88±0.005	9.41±0.13	63.40±0.1	5.28±0.06
ZnO/PVP(6nm)	0.88±0.003	9.33±0.08	66.32±0.5	5.46±0.03
ZnO/PVP(8nm)	0.88±0.003	9.32±0.02	65.43±0.8	5.40±0.09
ZnO	0.86±0.008	9.16±0.10	64.94±0.2	5.13±0.02