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Supporting Information

For

Hydroiodic Acid Treated PEDOT:PSS Thin Film as Transparent Electrode: An Approach Towards ITO Free Organic Photovoltaics

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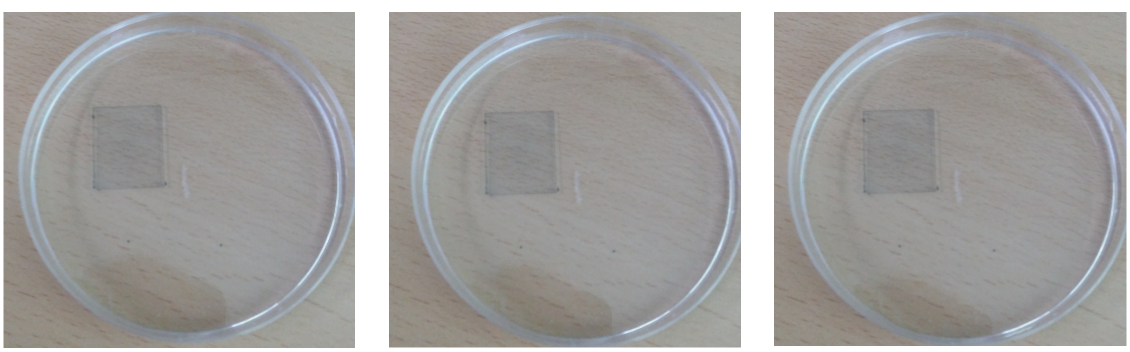
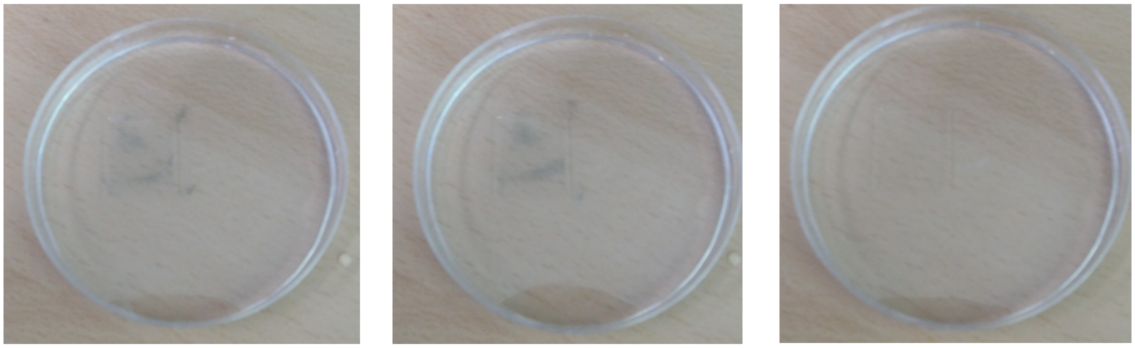


1 min   1 h   12 h

Figure S1. HI treated PEDOT:PSS film dipped into water. The film was highly stable even after 12 h.



1 min 2 min 5 min

Figure S2. As prepared PEDOT:PSS film dipped into water. The film was completely peeled off the glass substrate and dissolved in water just after 5 min.

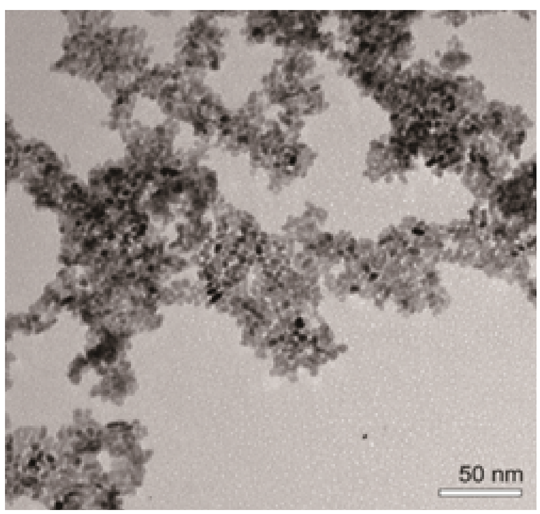


Figure S3. Transmission electron microscopic image of ZnO nanoparticle.

Table S1: The sheet resistance and transmittance of PEDOT:PSS films with different number of layers after multiple treatments.

Number of layer	Sheet resistance (ohm/sq)	Transmittance (%) at550 nm
1	233	95
2	95	92
3	62	88
4	47	81
5	37	72

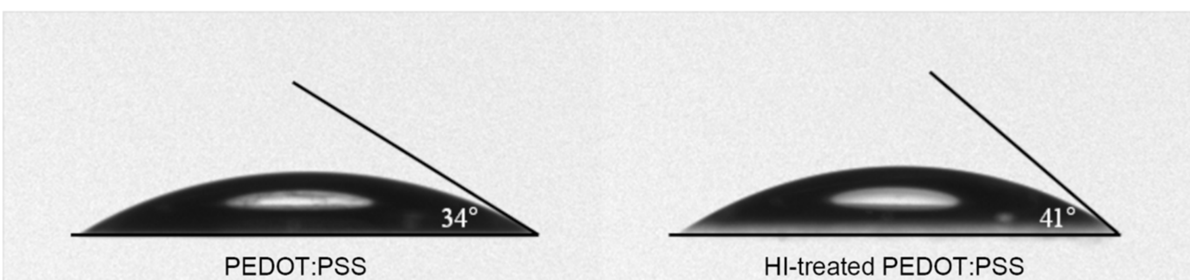


Figure S4. Droplets of deionized water on pristine and HI treated PEDOT:PSS.

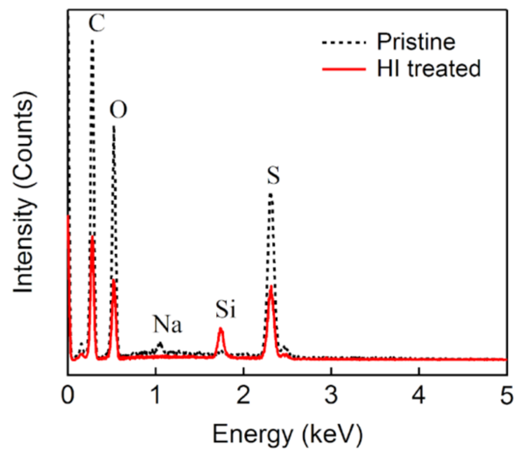


Figure S5. Energy-dispersive x-ray spectra of pristine and HI treated PEDOT:PSS films.

Energy-dispersive x-ray spectroscopy (EDS) analysis showed that three different elements, C, O, S exist both for pristine PEDOT:PSS and HI treated PEDOT:PSS (**Fig. S5**). The HI has a strong peak intensity at about 4 KeV characteristic of I group. The absence of such a band in the EDS spectra of the HI acid treated PEDOT:PSS films suggest that no iodine remains in the PEDOT:PSS films.

Table S2. Additives and their effect on the conductivity of PEDOT:PSS films.

Dopant	Pre/post treatment	Conductivity (S/cm)	Ref.
Dimethylene glycol	Pre	10	1
Sorbitol/NMP/IPA	Pre	48	2
DMSO	Pre	80	3
Salt	Post	100	4
Zwitter ion	Post	100	5
IPA/H_2O	Post	103	6
Ionic liquid	Pre	136	7
DMS	Pre	140	8
Salt	Post	187	9
Sulfurous acid	Post	200	10
DMSO	Pre	680	11
Ionic surfactant	Pre	900	12
HI	Post	1100	This work

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