Supporting information

In Situ Polymerization of Ethylenedioxythiophene from Sulfonated Carbon Nanotube Templates: Toward High Efficiency ITO-Free Solar Cells

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Author contributions. X. Hu and L. Chen contributed equally to this work.

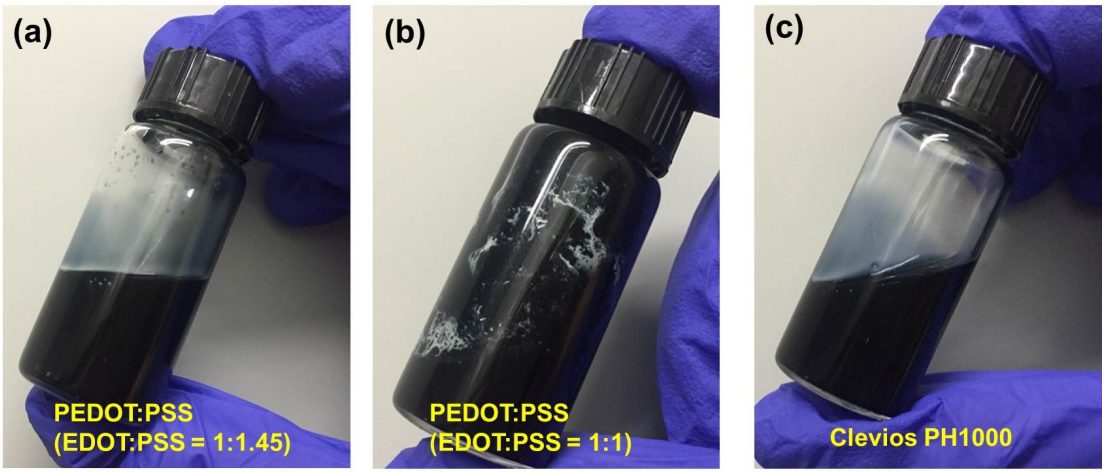
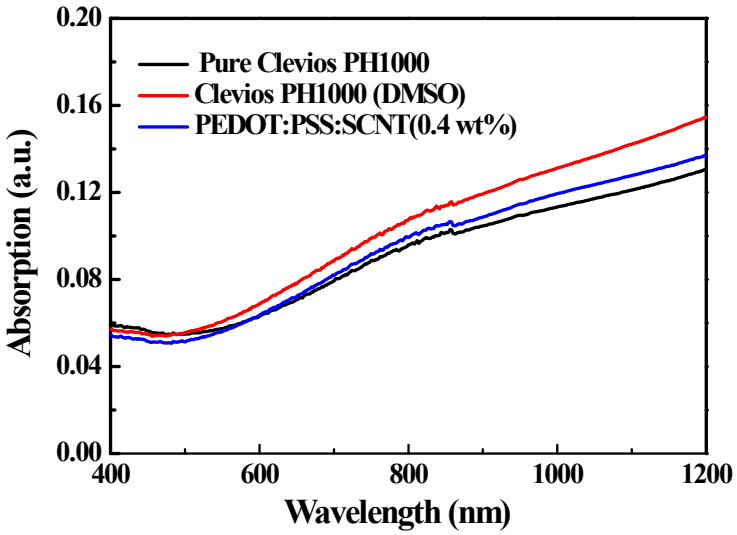
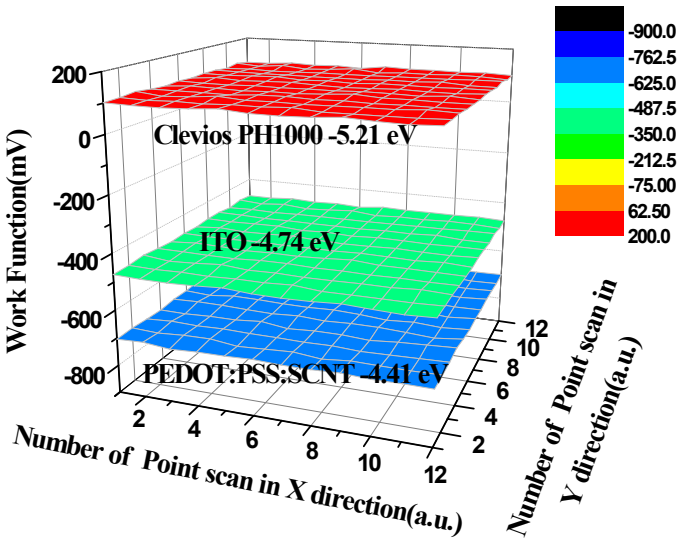


Figure S1. The photographs of home-made PEDOT:PSS via different PSS radio and Clevios PH1000.



Fiugre S2.The absorption spectra of different PEDOT:PSS hybrid films (~70 nm) in the range from 400 nm to 1200 nm.



The work functions of the modified cathode were investigated using a Kelvin probe (KP 6500 Digital Kelvin probe, McAllister Technical Services. Co., Ltd.). The samples were measured in a conditioned chamber where the O_2 level is < 25 ppm. The electronic work functions gap between the samples and standard gold probe shown in **Figure S3.** The actual work function of the samples can be obtained through the equation:

$$WF = WF_0 + \Delta WF$$

Where WF is the sample work function, WF_0 is standard gold probe work function (5.1 ev), andΔWF is the work function gap between samples and standard gold.

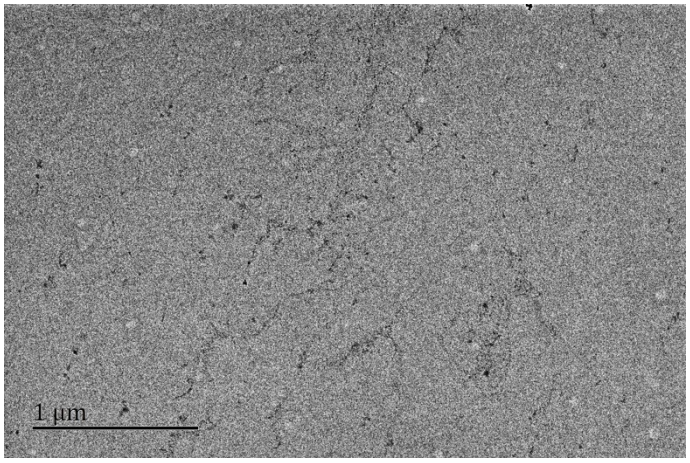


Figure S4. The Transmission Electron Microscope (TEM) image of SCNT.