

Supporting Information for

## Multiscale tomographic analysis of polymer-nanoparticle hybrid materials for solar cells

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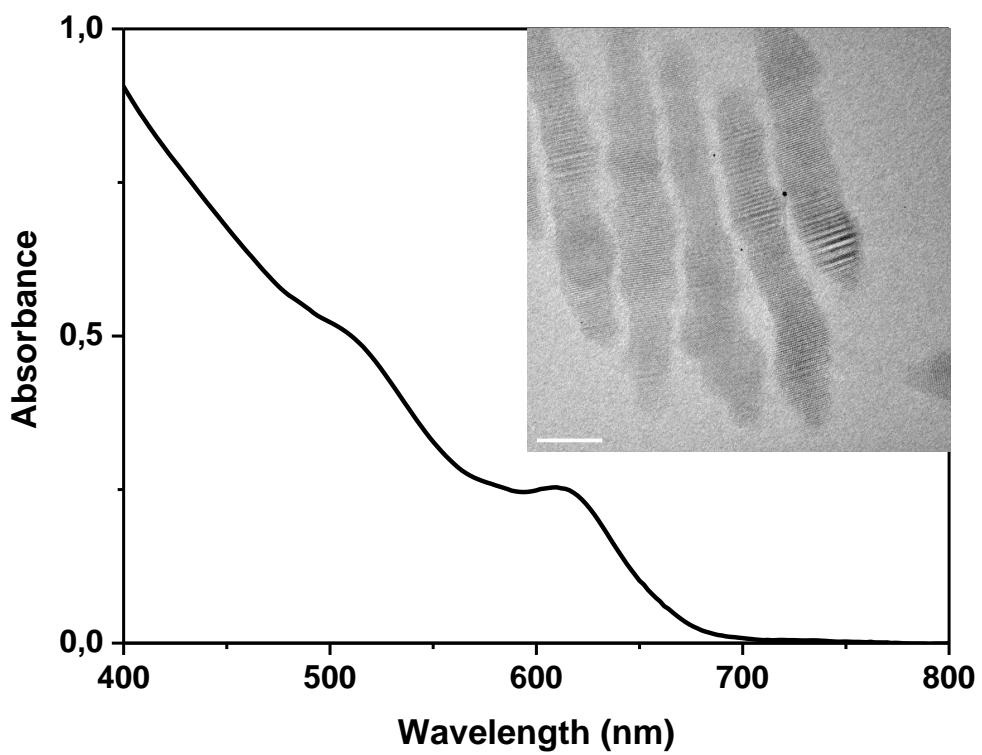
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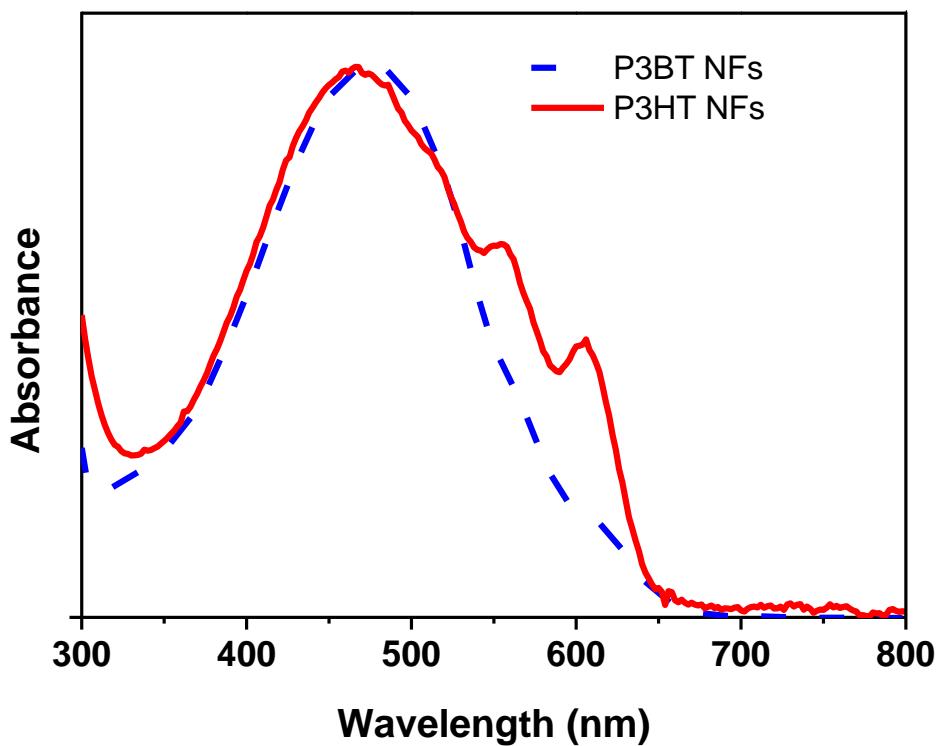
**Table S1:** Summary of the characteristics of the P3HT:CdSe nanorods solar cells studied in this work.

Cell name (number)	Cell description	Amount of CdSe NRs (wt%)	V <sub>oc</sub> (V)	J <sub>sc</sub> (mA/cm <sup>2</sup> )	FF	η (%)
ODCB (Cell 1)	P3HT:CdSe NRs processed from orthodichlorobenzene	90	0.71	4.6	0.45	<b>1.46</b>
CF (Cell 2)	P3HT:CdSe NRs processed from CHCl <sub>3</sub>	90	0.74	0.95	0.35	<b>0.25</b>
P3HT NFs (Cell 3)	P3HT nanofibers:CdSe NRs	83	0.67	3.1	0.4	<b>0.83</b>
P3BT NFs (Cell 4)	P3BT nanofibers:CdSe	75	0.62	3.7	0.44	<b>1.01</b>

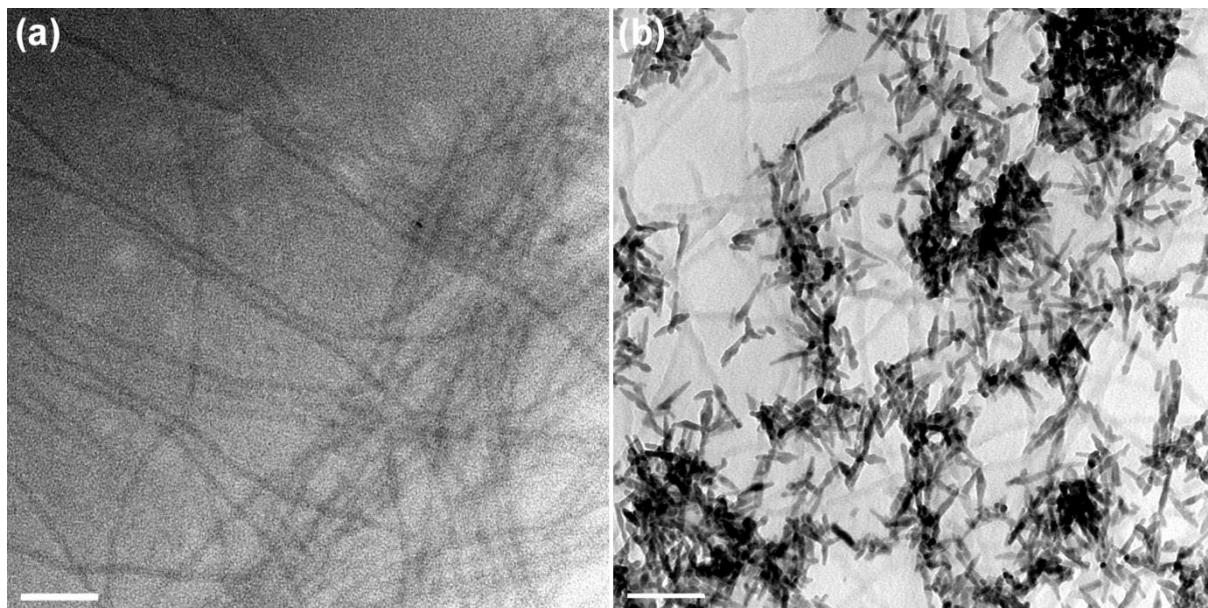
**Figure S1.** UV–Vis absorption spectrum of a representative CdSe nanorods sample used throughout this work and dispersed in chloroform. The inset shows a TEM image of the nanorods obtained using a Jeol 4000 EX microscope operated at 400 keV in bright field mode (scalebar : 10 nm).



**Figure S2.** UV–Vis absorption spectra of a suspension of P3BT (P3HT) nanofibers in orthodichlorobenzene and p-xylene, respectively. The shoulders in the absorption spectra of both solutions corresponding to the vibrational fine structure are indicative of the presence of the nanofibers.



**Figure S3.** (a) TEM image of P3BT nanofibers. The NFs were deposited from NFs suspensions onto the amorphous carbon substrates of the TEM grids by drop-casting. (b) TEM image of a P3BT nanofibers: CdSe nanorods hybrid material processed from orthodichlorobenzene. In order to obtain a sample thin enough for TEM imaging, the blend solution was diluted by a factor ten with respect to the concentration used for preparing the solar cells. The P3BT nanofibers are clearly visible in the background as light grey stripes. Both TEM images were obtained using a Jeol 4000EX operated at 400 keV in bright field mode. The scale bars in the images correspond to 100 nm.



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