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Support Information

Ligand-free Rutile and Anatase TiO_2 Nanocrystals as Electron Extraction Layers for High Performance Inverted Polymer Solar Cells

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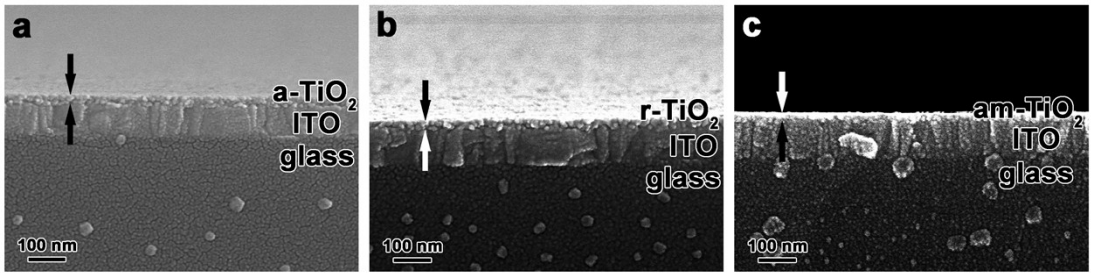

Fig. S1 The cross-sectional SEM images different kinds of TiO_2 layer on ITO glass. a. anatase TiO_2 layer; b. rutile TiO_2 layer; c. amorphous TiO_2. The thicknesses of these three kinds of TiO_2 layers are around 25 nm.

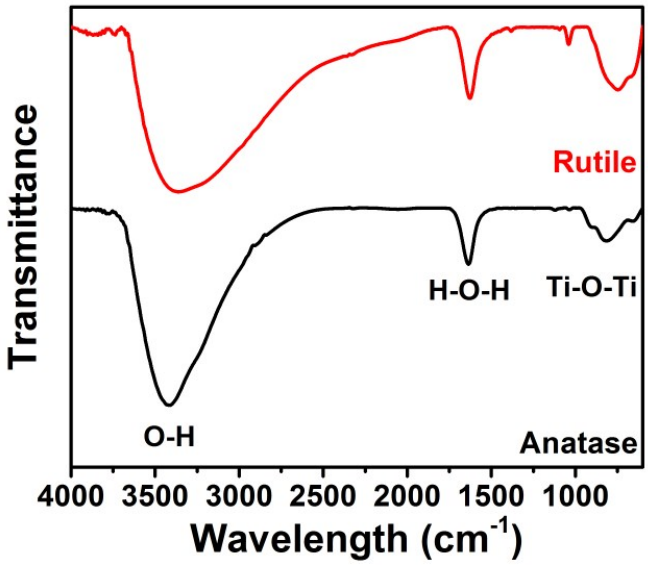

Fig. S2 The FTIR spectra of anatase and rutile TiO_2 nanocrystals.

Fourier-transform infrared spectra (FTIR) of the as-prepared TiO_2 nanocrystals were measured to determine whether ligand chemically capped on the surface of the TiO_2 nanocrystals (Fig. S2). Before FTIR test, the TiO_2 nanocrystals were washed with ethanol for twice. From the FTIR spectra, two large bands centered at 3410 cm^{-1} and 1640 cm^{-1} are attributed to the stretching vibration of O-H and the bending vibration of H-O-H, respectively. The low frequency band in the range of 400-1000 cm^{-1} is observed for the vibration of Ti-O-Ti mode in the TiO_2. Also, the peaks located at 1046 cm^{-1} and 1155 cm^{-1} are attributed to the C-O stretches from ethanol during the synthesis and wash process.