Ultrafast Excited State Dynamics of a Bithiophene-Isoindigo Copolymer Obtained by Direct Arylation Polycondensation and its Application in ITO-free Solar Cells

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Supporting Information

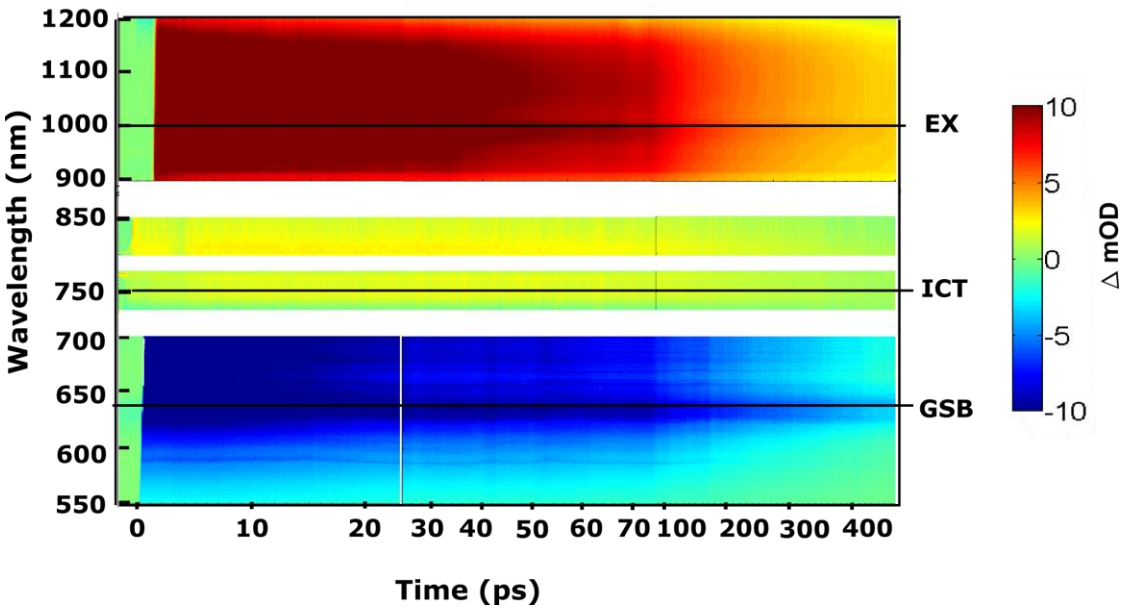

Figure S1 2D plot of transient absorption spectra of P2TI in CB solution. Two distinct ESA absorptions at 1050 nm and 750 nm. The ESA at 1050 nm was assigned to exciton absorption. The ESA signal at 750 nm was assigned to an ICT state in the copolymer, **P2TI.**

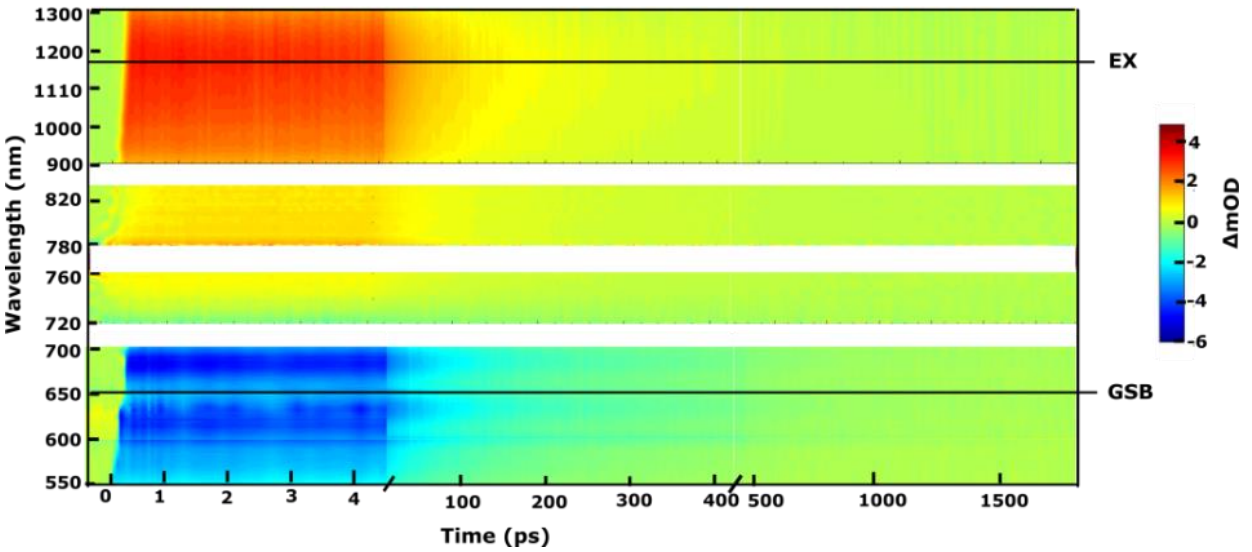

Figure S2 2D plot of transient absorption spectra of pristine **P2TI** film. The broad ESA is assigned to exciton absorption. There is no growing intermediate signal with in our temporal resolution that can be assigned to any intermediate state. The ICT state in the solution is quenched due to the inrechain interaction in the solid state.

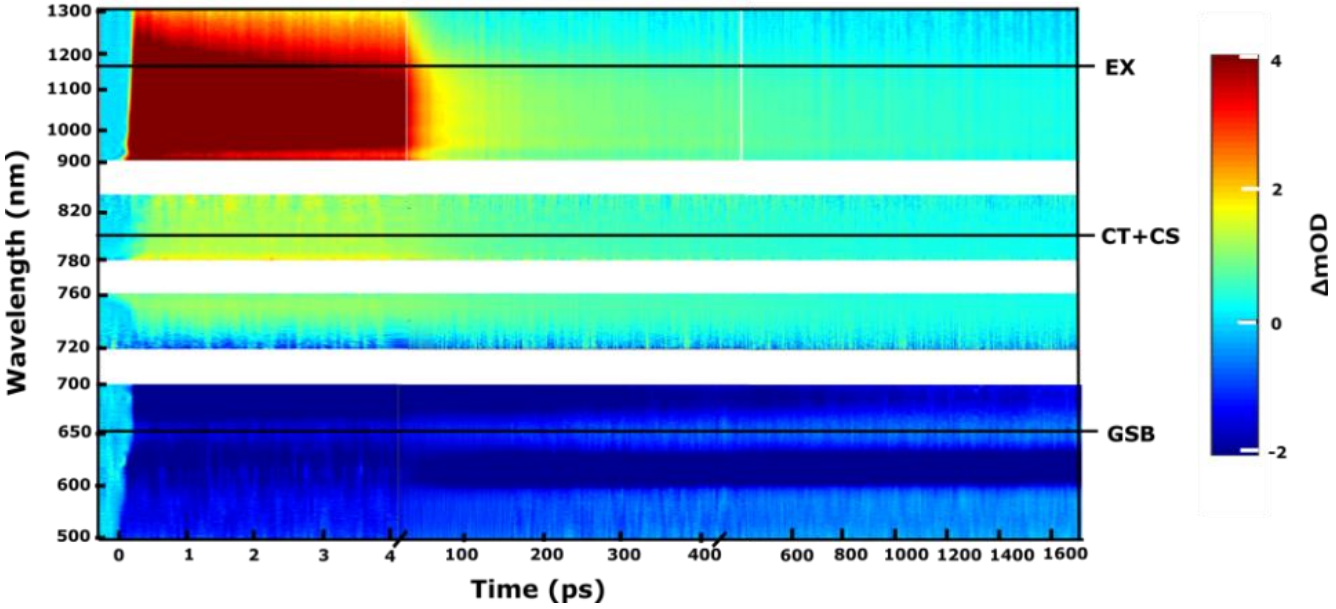

Figure S3: 2D plot of transient absorption spectra of pristine **P2TI**:PCBM71 film. This spectra represents charge generation and recombination dynamics in the solar cells. An exciton absorption signal at 1175 nm which decays fast due to the exciton quenching and a signal at 805 nm that grows with a time constant of 250 fs assigned to charge related species absorption.