Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Understanding the loss mechanisms in high-performance solution-processed small molecule bulk heterojunction solar cells doped with PFN impurity

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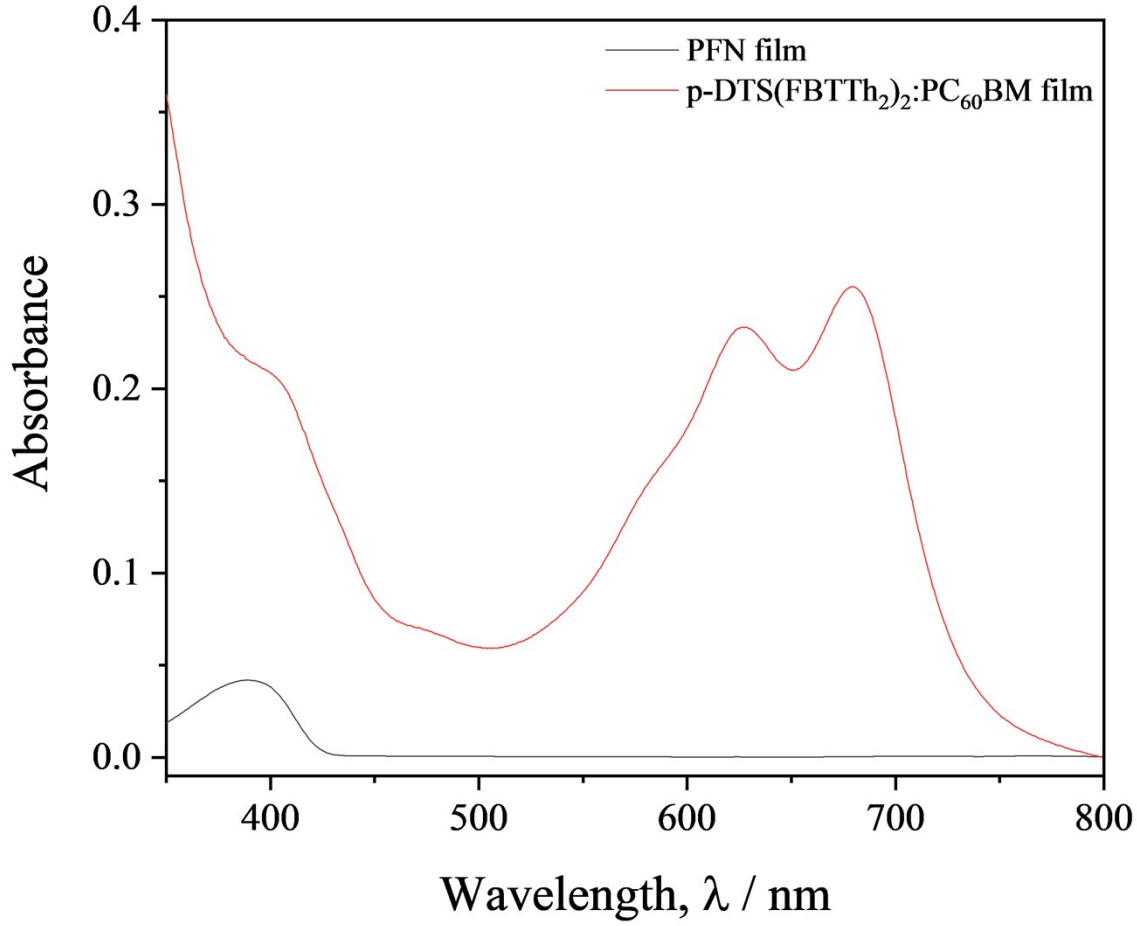

Figure S1. UV-Vis absorption characteristics of PFN film and p-DTS($FBTTh_2$)$_2$:$PC_{60}BM$ BHJ film**.**

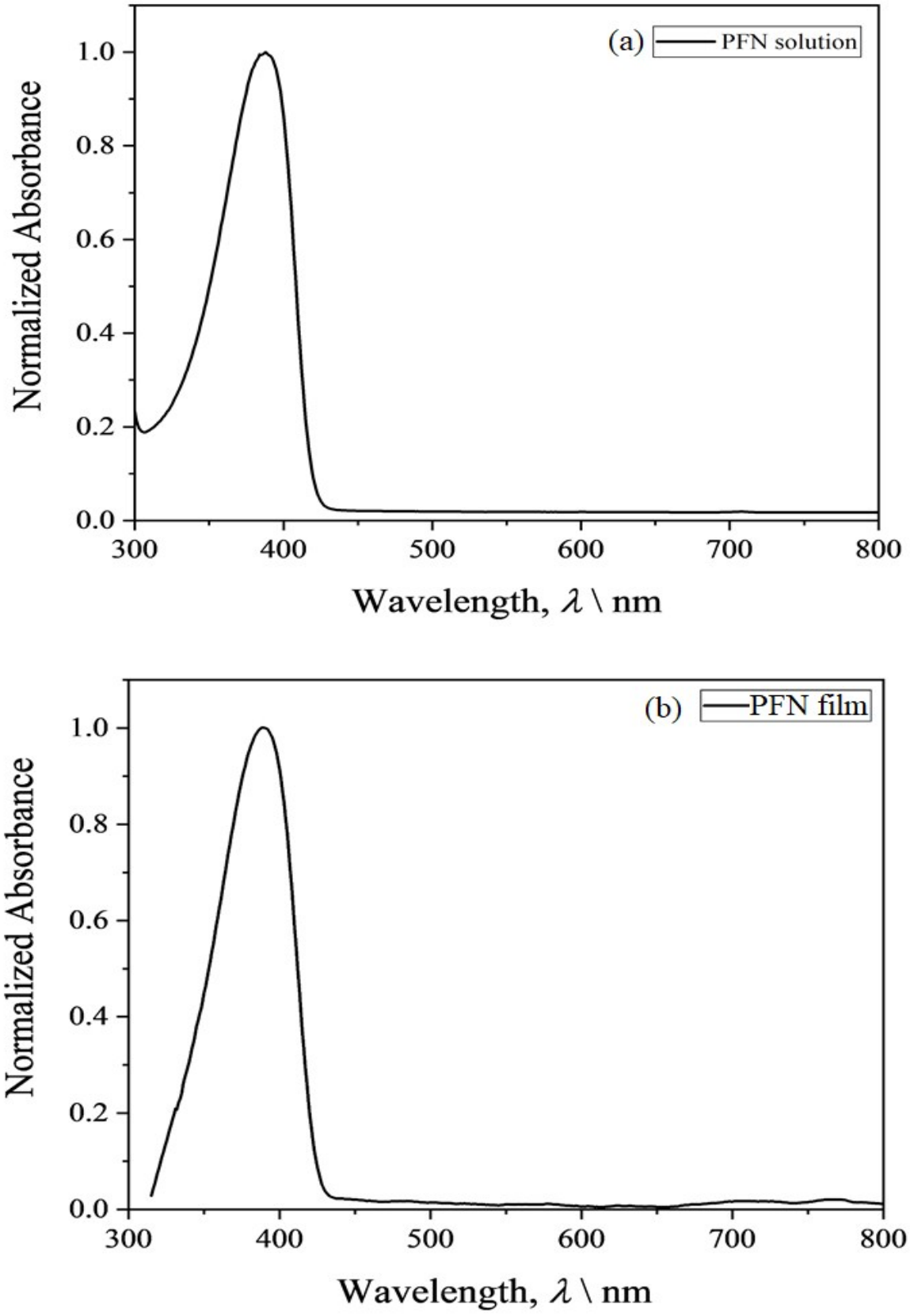

Figure S2. Normalized absorption characteristics of (a) PFN dissolved in 1,2-dichlorobenzene(o-DCB) and (b) PFN film cast from the o-DCB solution.

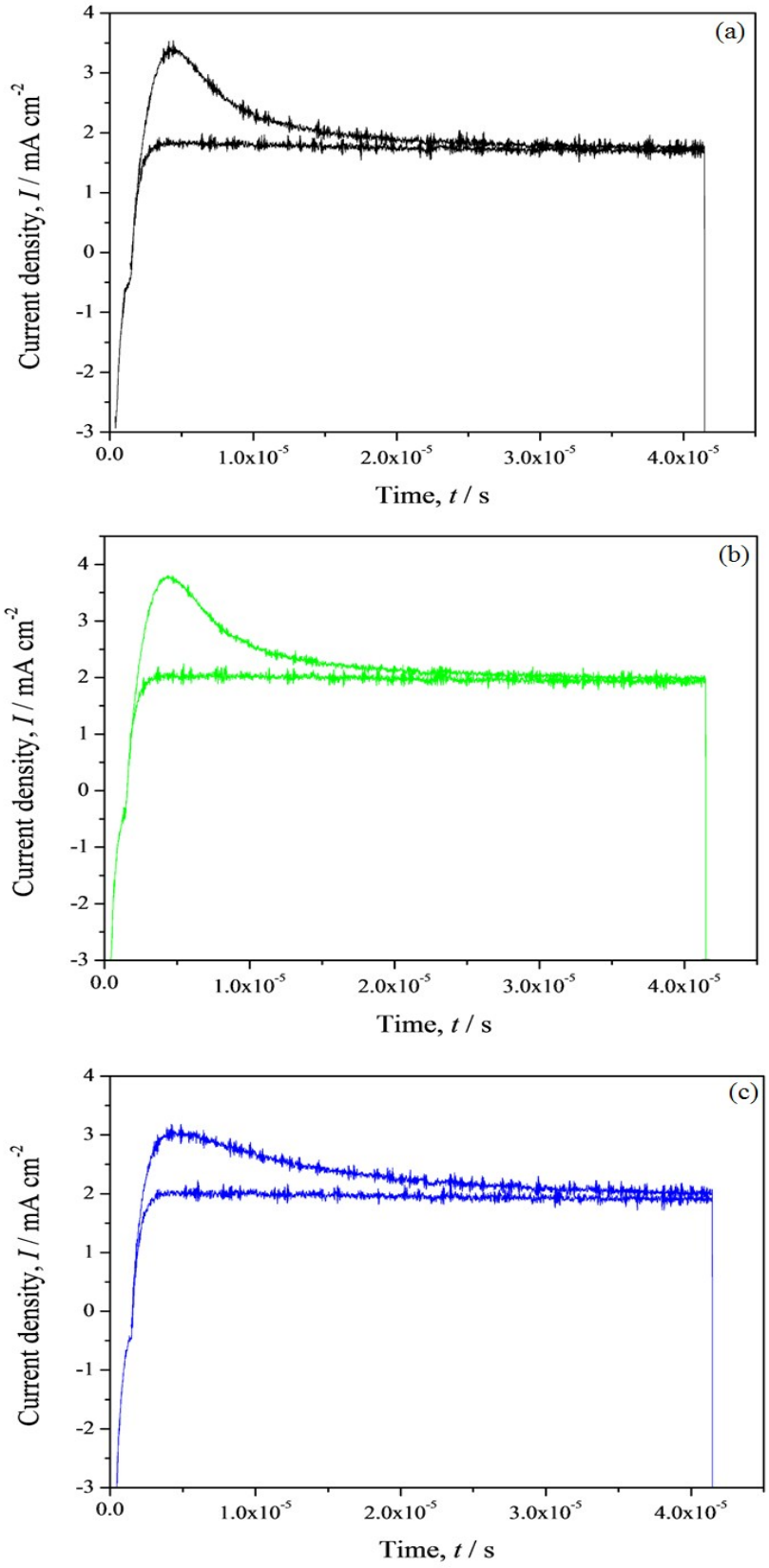

Figure S3. Photo-CELIV curves of the p-DTS(FBTTh$_2$)$_2$:PC$_{60}$BM BHJ solar cell devices (a) without, and with the incorporation of (b) 0.014% wt and (c) 0.029% wt PFN in the bulk heterojunction. The laser energy was 10 μJ. The applied voltage was 2 V with speed rise of 25000 Hz. The delay between photogeneration and charge extraction was 2 μs.