

## Supporting Information

### **Solution processable new donor materials based on thiophene and triphenylamine for bulk heterojunction solar cells**

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## UV and PL spectra

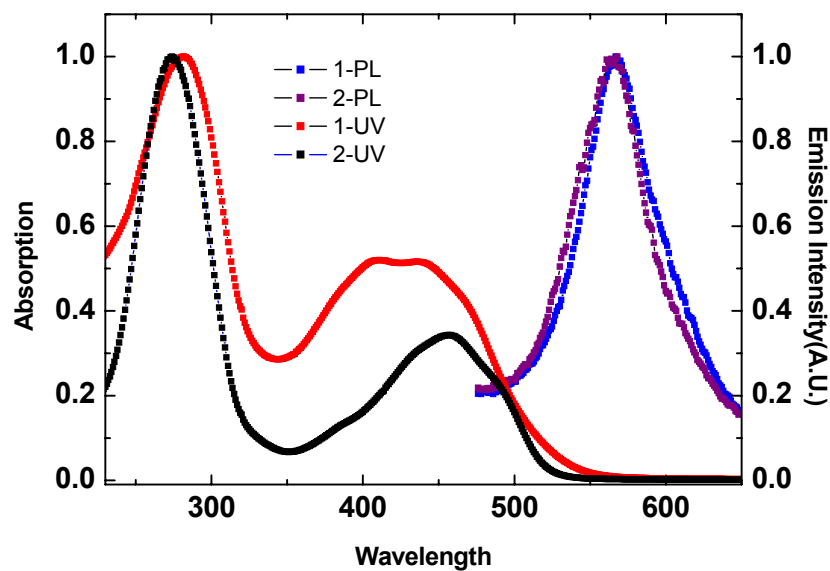


Fig. S1 UV and PL spectra of **1** and **2** in quartz solid film.

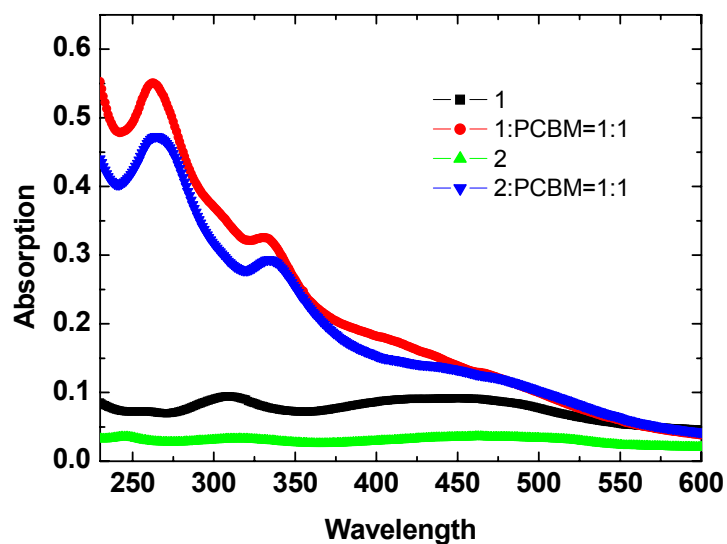
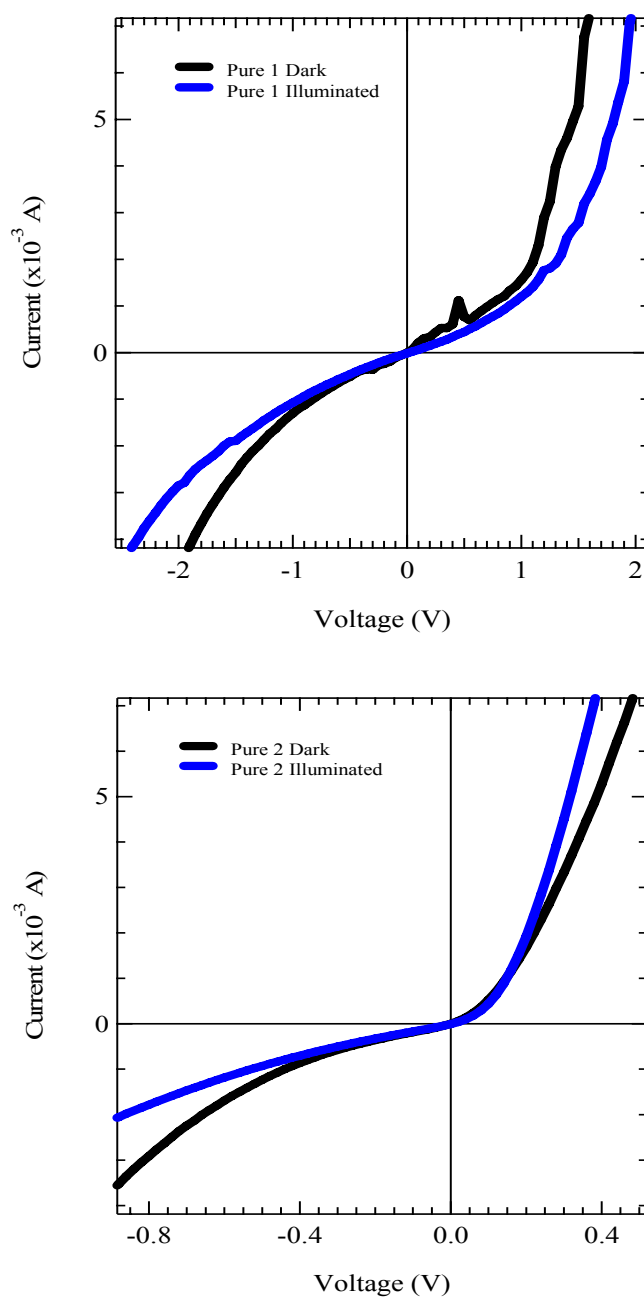


Fig. S2 UV spectra of pure **1** or **2** in solid film and **1** or **2**/PCBM=1:1 blend film.

## Single component based device



**Fig. S3** I-V curves of single component devices with pure 1 (top) and 2 (bottom) under simulated AM 1.5 solar irradiation at  $100 \text{ mWcm}^{-2}$ .

## TGA data of 1 and 2

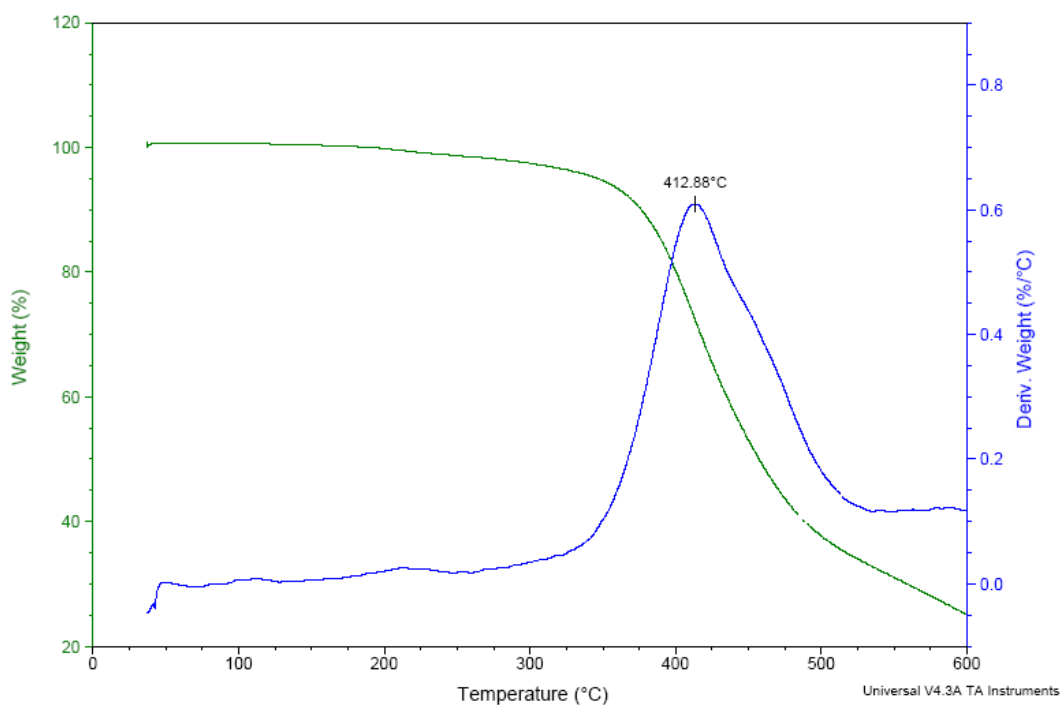


Fig. S4 TGA data of 1.

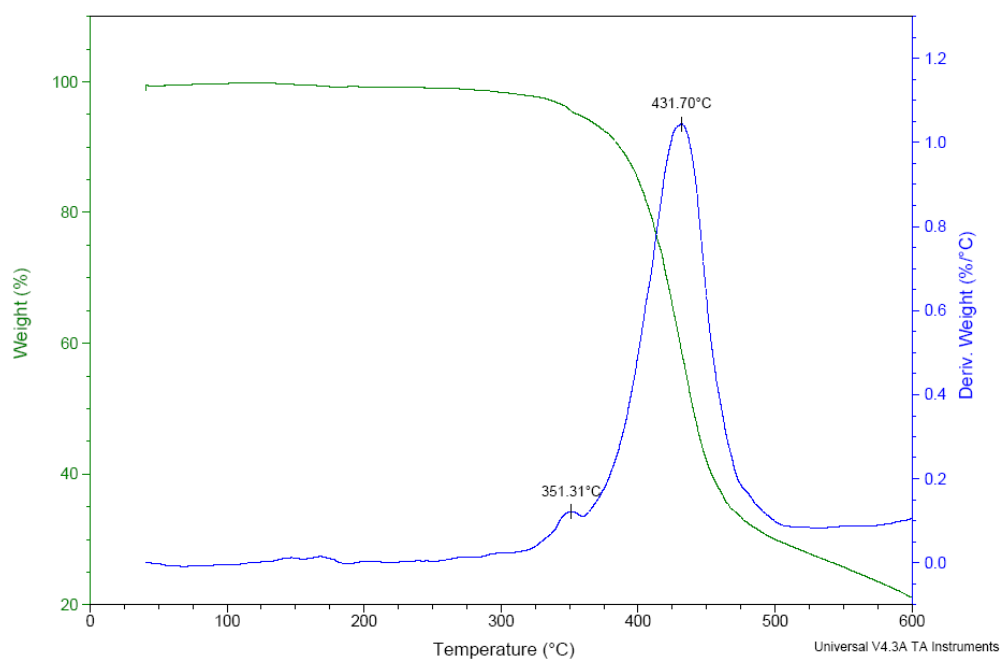


Fig. S5 TGA data of 2.

## DSC data of 1 and 2

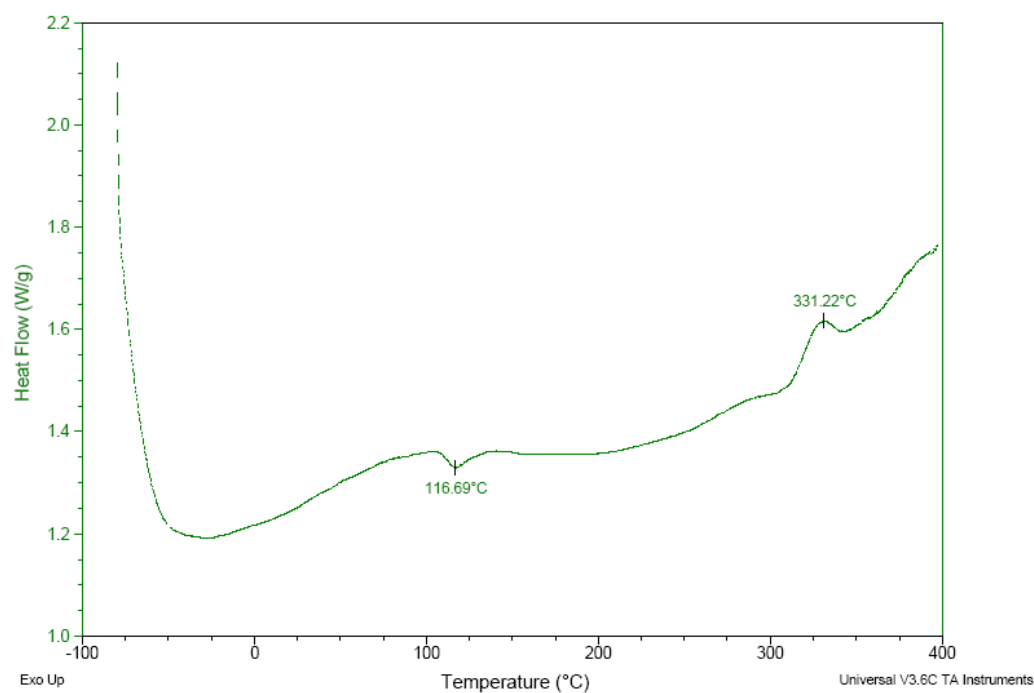


Fig. S6 DSC data of 1.

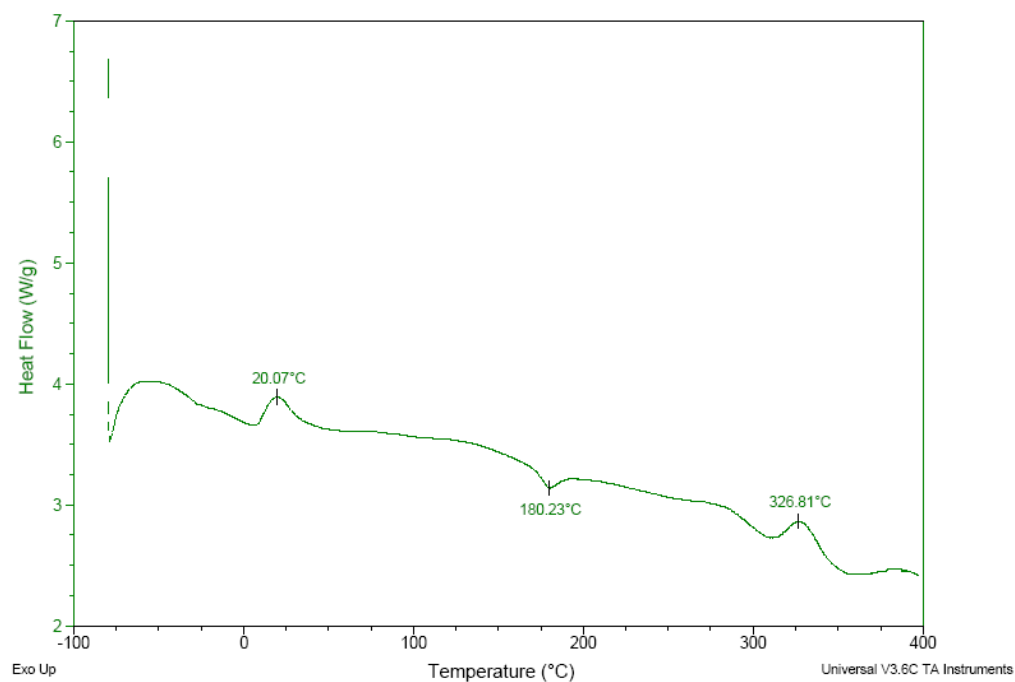
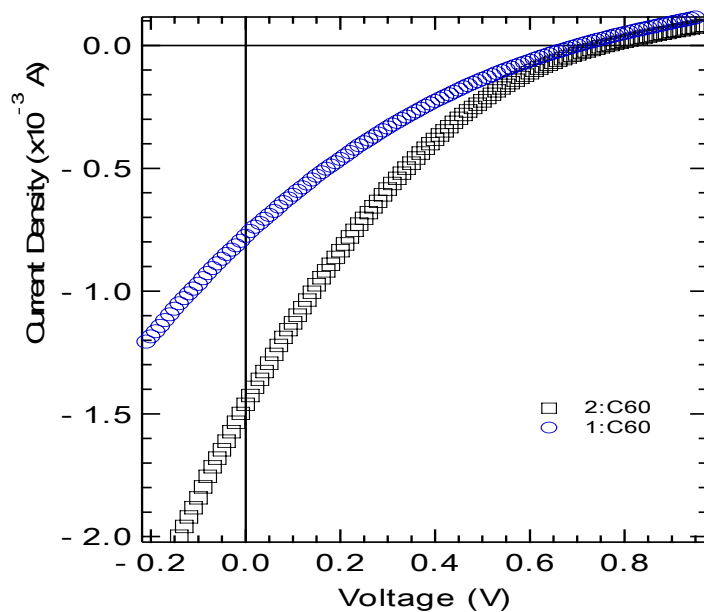


Fig. S7 DSC data of 2.



**Fig. S8** I-V curves of bilayer devices with **1** and **2**/C<sub>60</sub> under simulated AM 1.5 solar irradiation at 100 mWcm<sup>-2</sup>.