

Electronic Supplementary Information (ESI)

Systematic investigation on synthesis and light-absorption broadening of a novel diketopyrrolopyrrole conjugated polymer of low and high molecular weight with thermo-labile groups

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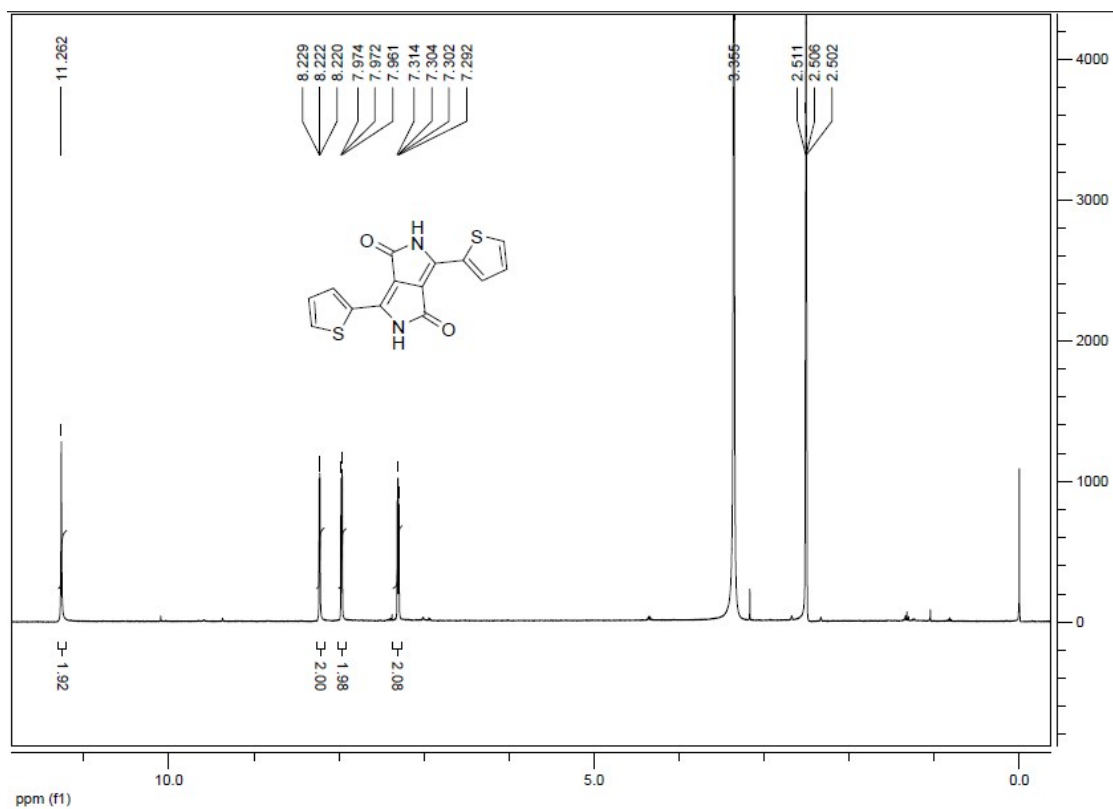


Figure S1. ¹H-NMR chart of DPP-Thio.

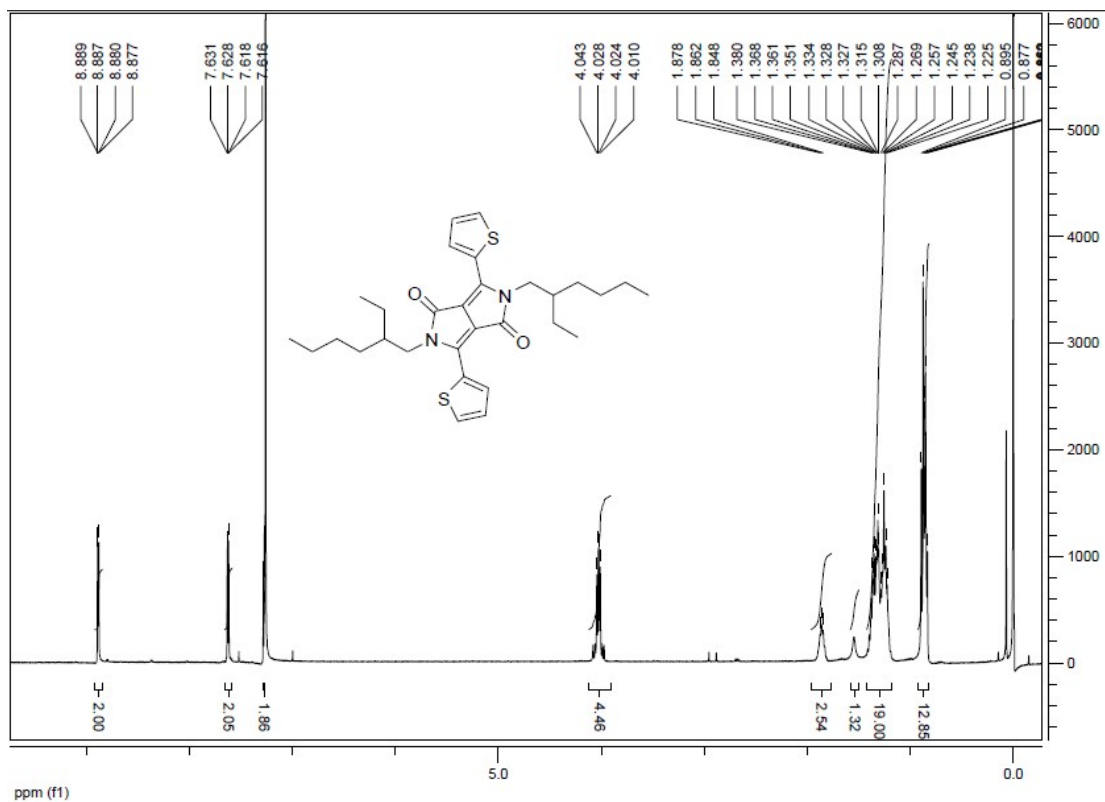


Figure S2. ¹H-NMR chart of DPP-Thio-R.

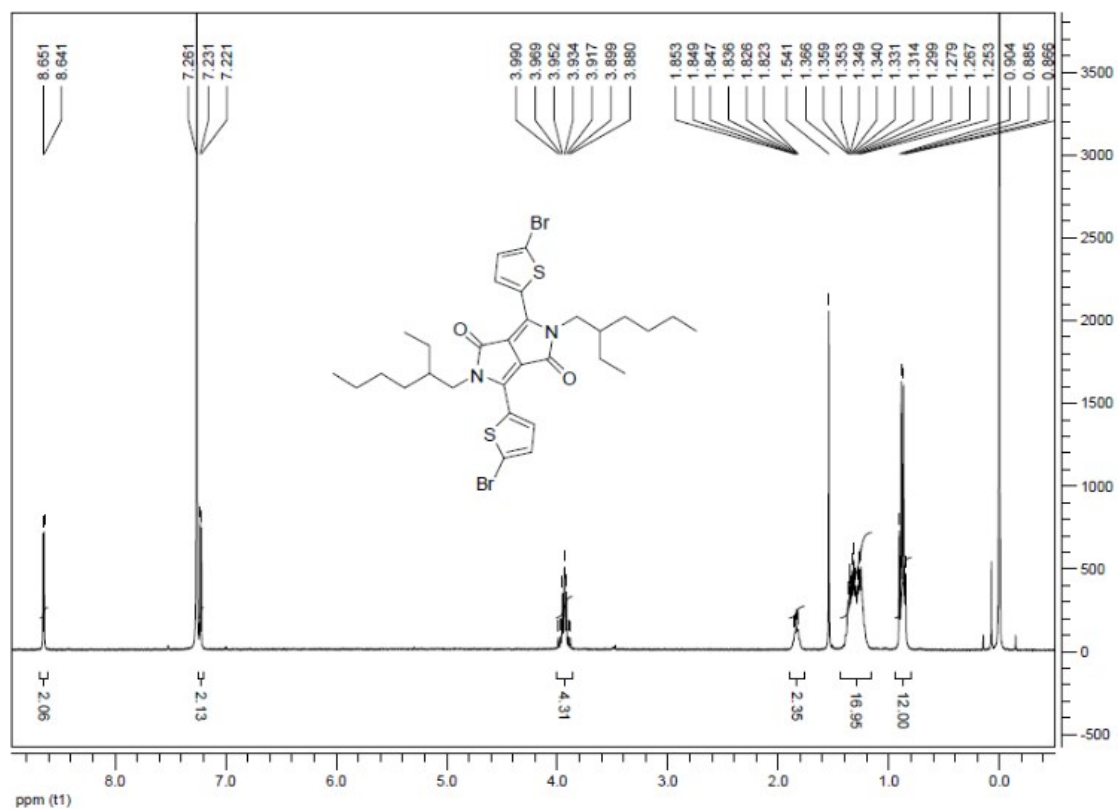


Figure S3. ^1H -NMR chart of DPP-Thio-Br.

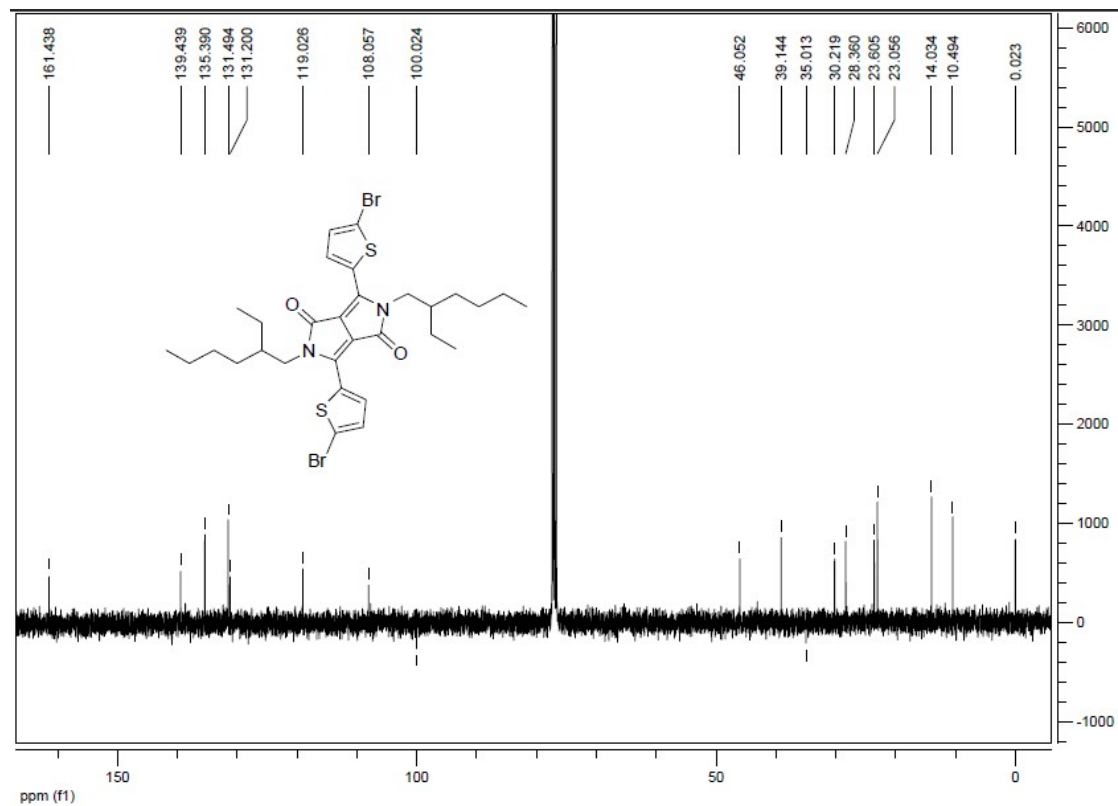


Figure S4. ^{13}C -NMR chart of DPP-Thio-Br.

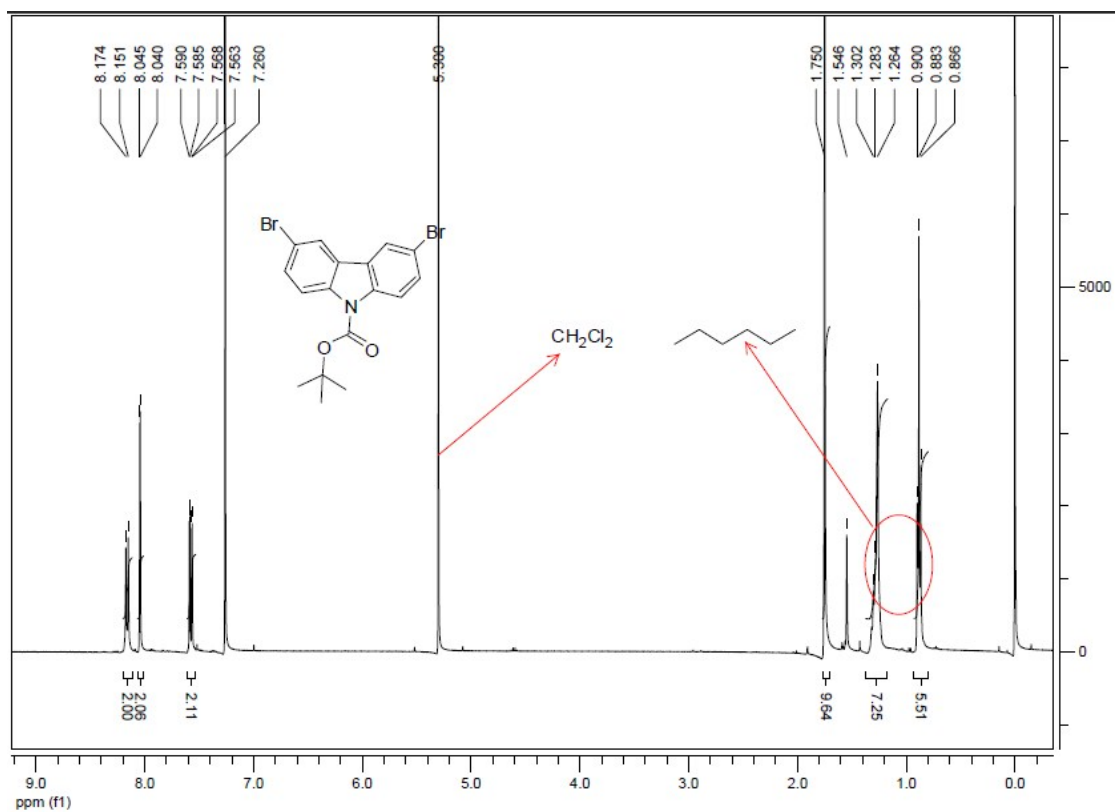


Figure S5. ¹H-NMR chart of Car-Boc-Br.

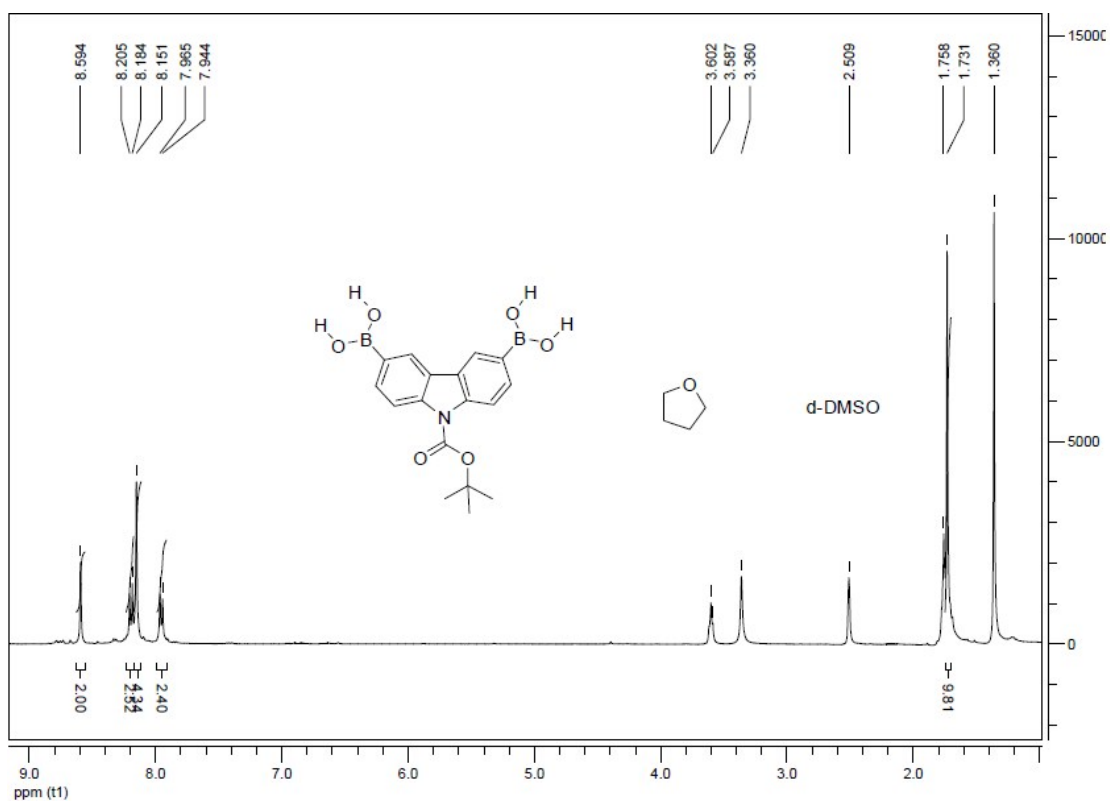


Figure S6. ¹H-NMR chart of Car-Bor in d-DMSO.

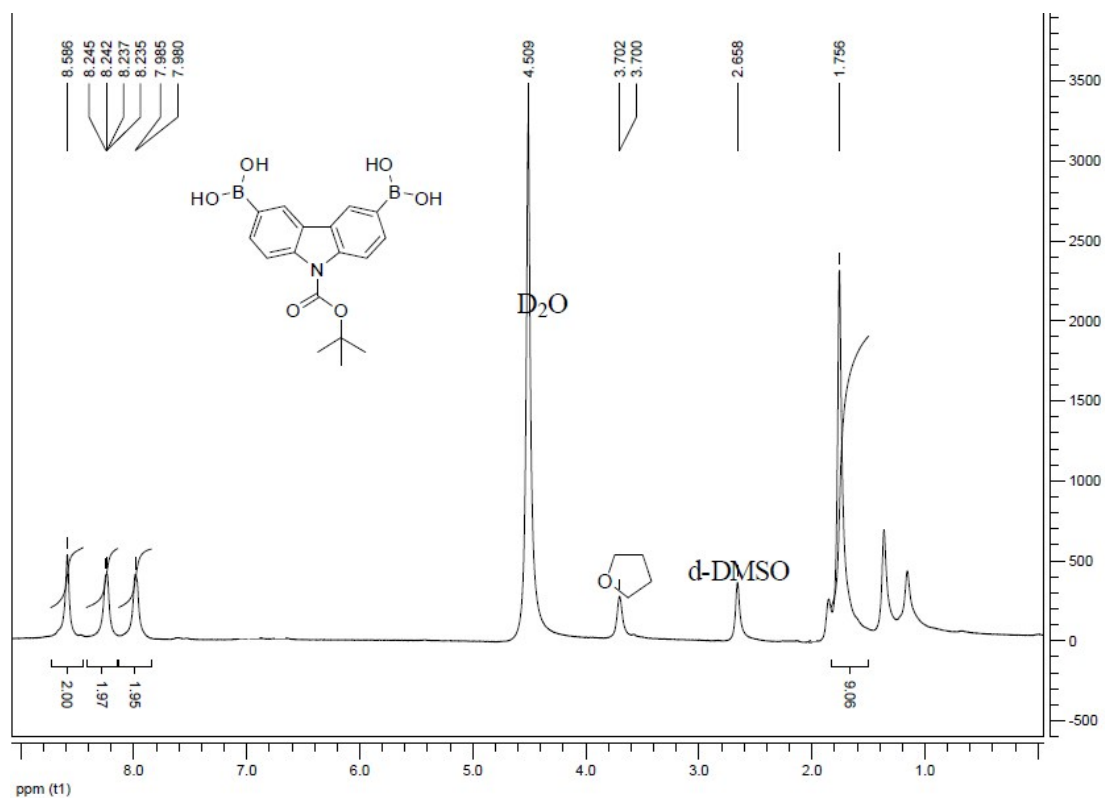


Figure S7. $^1\text{H-NMR}$ chart of Car-Bor in D_2O and d-DMSO.

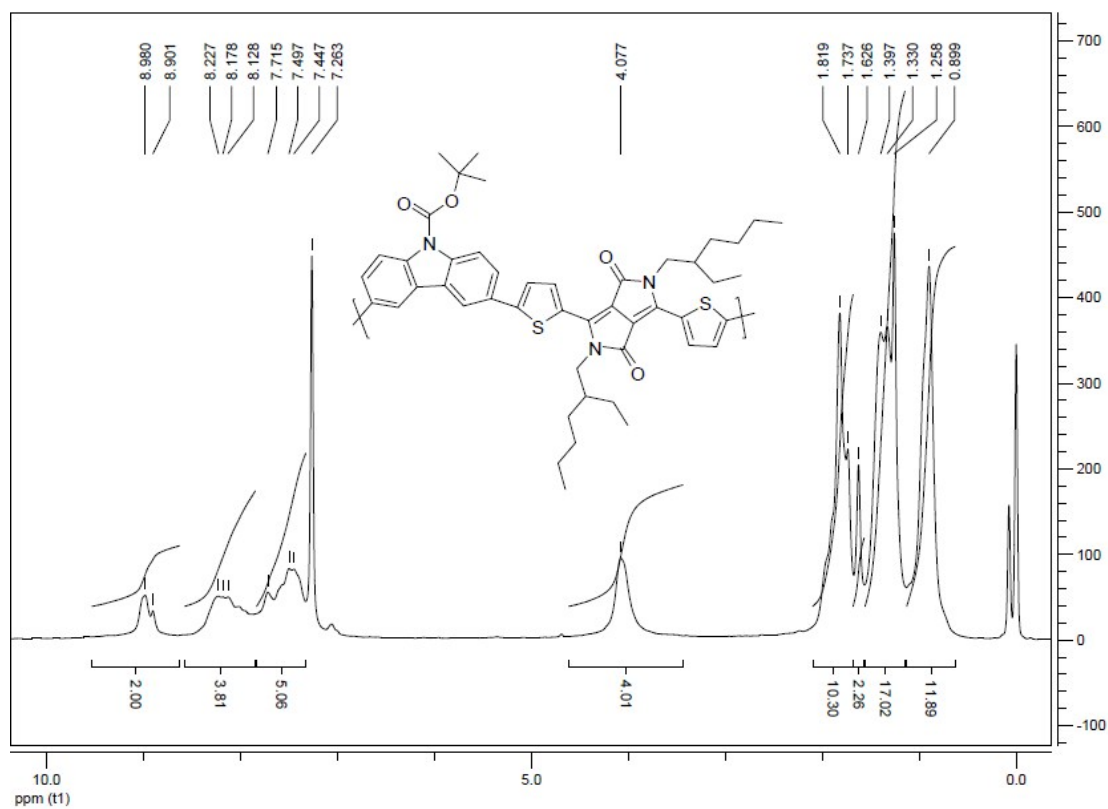
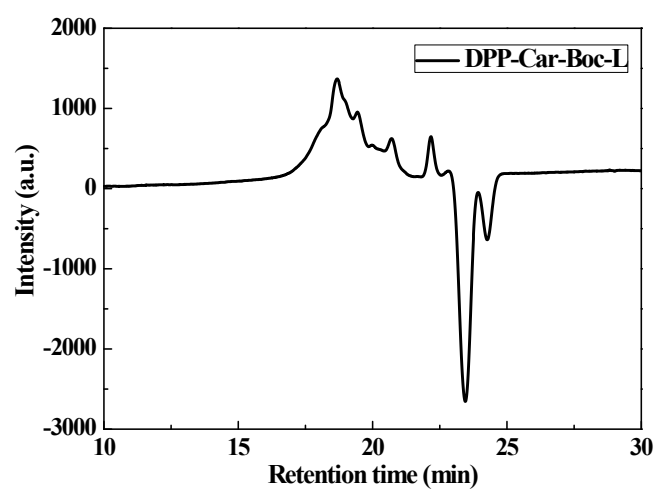


Figure S8. $^1\text{H-NMR}$ chart of DPP-Car-Boc-L.



GPC Results

Peak#:1 (Detector A Ch1)	
[Average Molecular Weight]	
Number Average Molecular Weight(Mn)	2818
Weight Average Molecular Weight(Mw)	3320
Z Average Molecular Weight(Mz)	3883
Z+1 Average Molecular Weight(Mz1)	4463
Mw/Mn	1.17823
Mz/Mw	1.16946
%	100.0000

Detector A Ch1

Figure S9. GPC results of the target conjugated polymer of DPP-Car-Boc-L

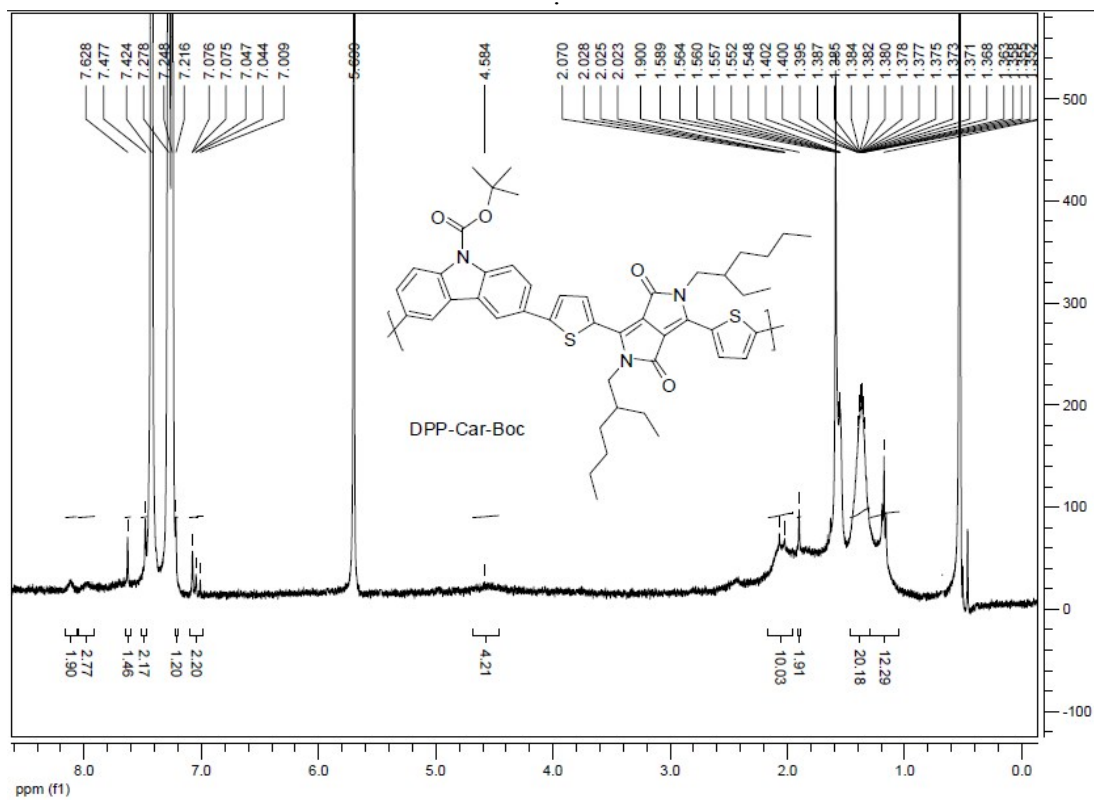


Figure S10. $^1\text{H-NMR}$ chart of DPP-Car-Boc-H in d-chlorobenzene.

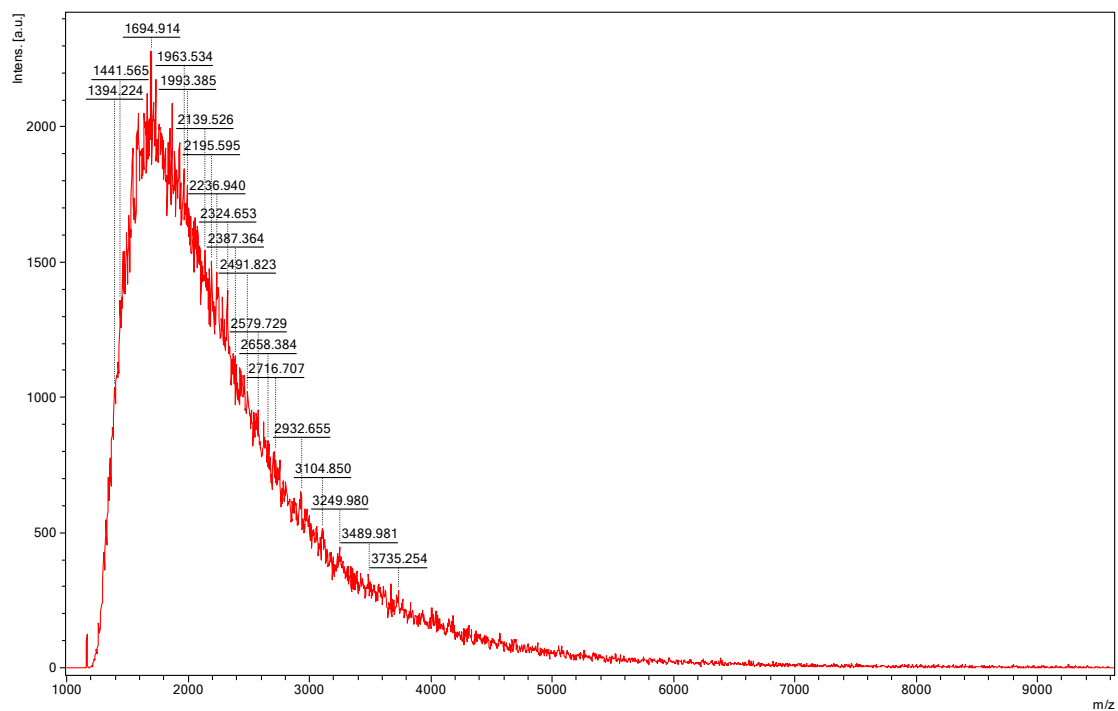


Figure S11. MALDI-TOF spectrum of DPP-Car-Boc-L.

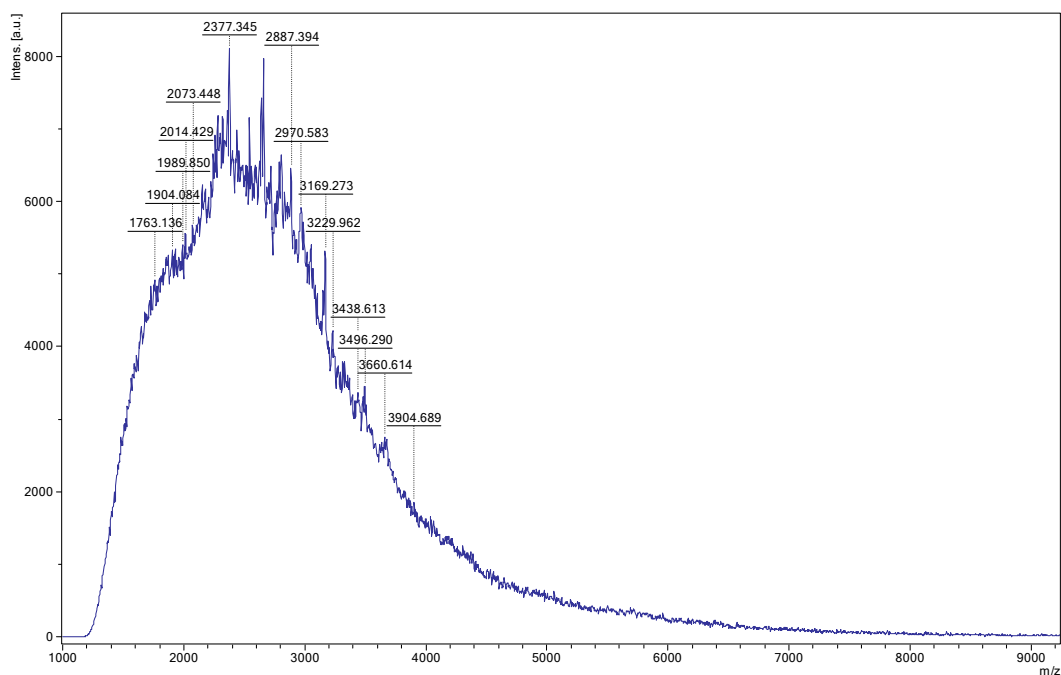


Figure S12. MALDI-TOF spectrum of DPP-Car-Boc-H.

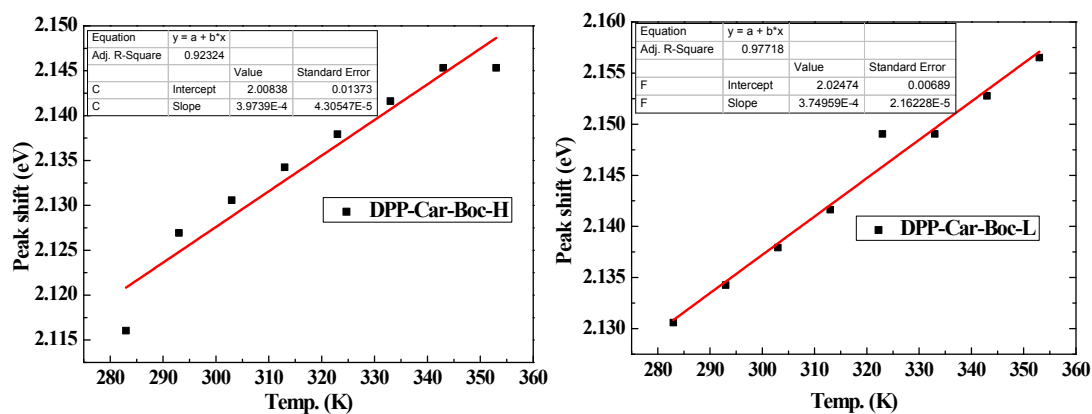


Figure S13. Linear fit of the temperature-dependant absorption maximum of DPP-Car-Boc polymers in chlorbenzene (CB) solution (0.01mg/ml).

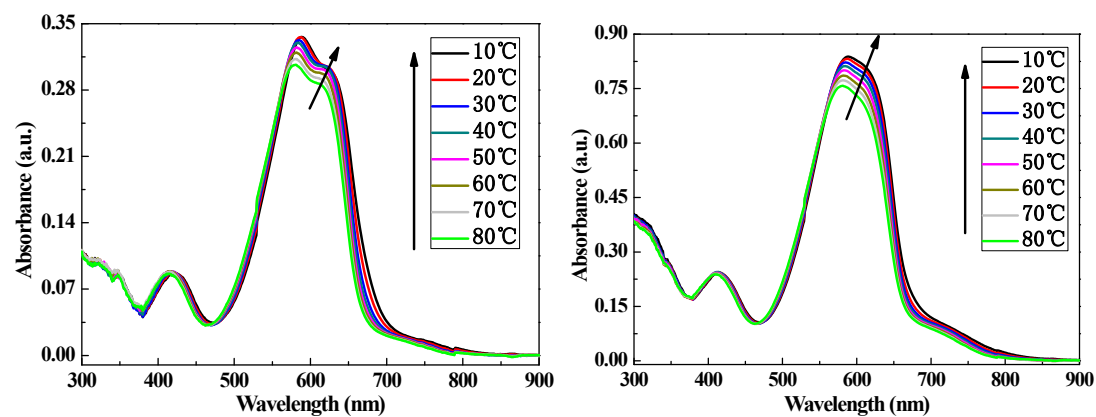


Figure S14. The temperature-dependant absorption properties of DPP-Car-H (Left) and DPP-Car-L (Right) in chlorbenzene (CB) solution (0.01mg/ml).

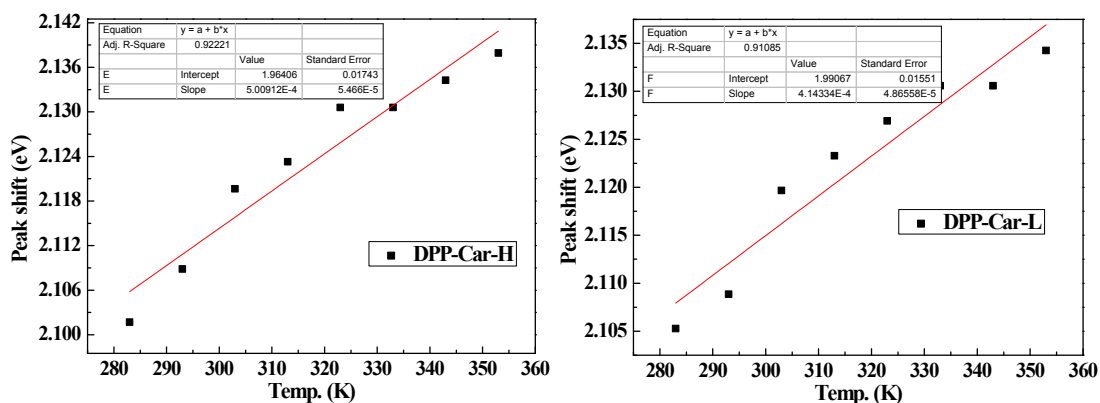


Figure S15. Linear fit of the temperature-dependant absorption maximum of DPP-Car polymers in chlorbenzene (CB) solution (0.01mg/ml).

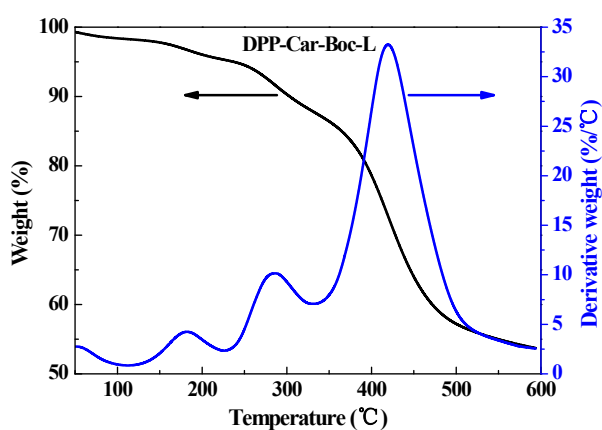


Figure S16. Thermogravimetric analysis of DPP-Car-Boc-L. A derivative weight loss curve has been included to indicate the point with the most apparent weight loss.

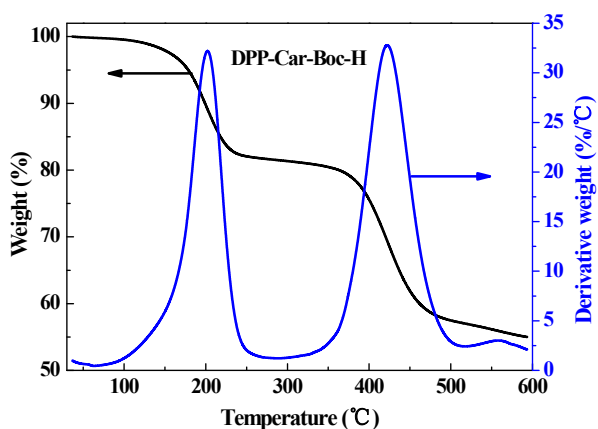


Figure S17. Thermogravimetric analysis of DPP-Car-Boc-H. A derivative weight loss curve has been included to indicate the point with the most apparent weight loss.

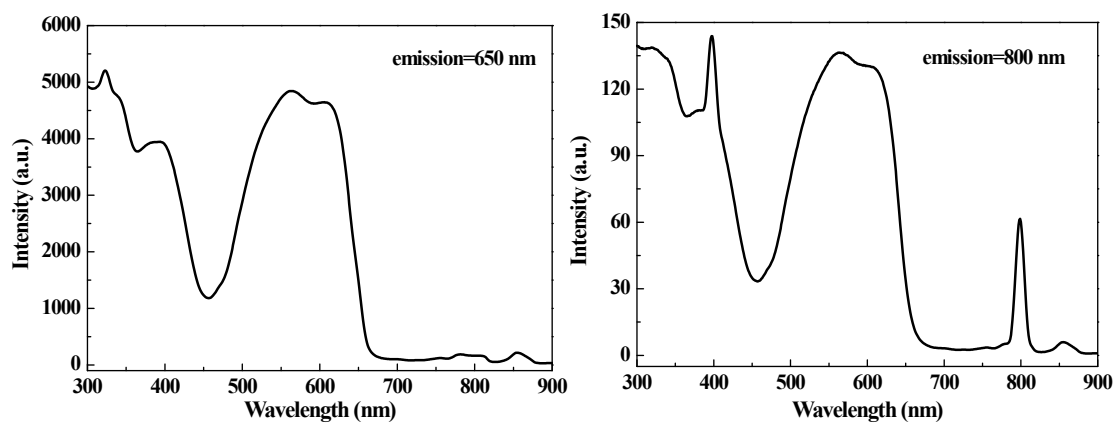


Figure S18. Excitation spectra of DPP-Car-Boc-L in chlorobenzene solution at room temperature.

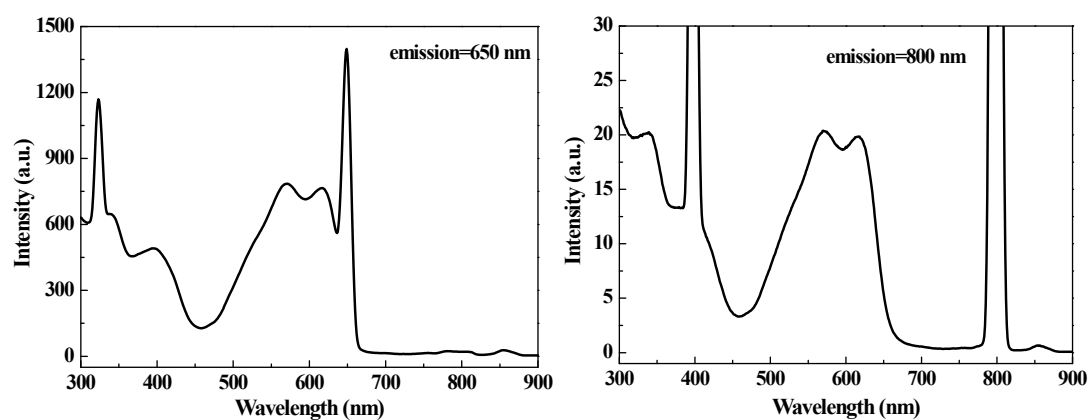


Figure S19. Excitation spectra of DPP-Car-Boc-H in chlorobenzene solution at room temperature.

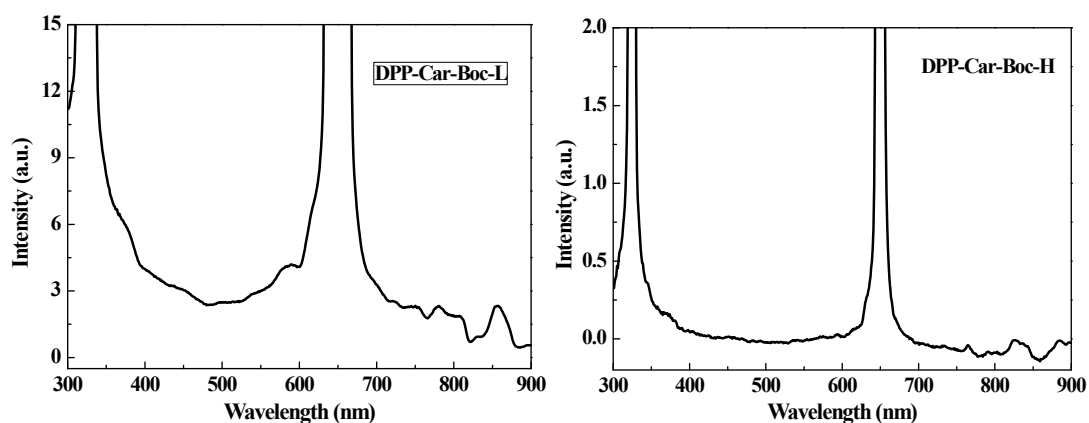


Figure S20. Excitation spectra of DPP-Car-Boc-L (left) and DPP-Car-Boc-H (right) in thin film at room temperature (Emission=650 nm).

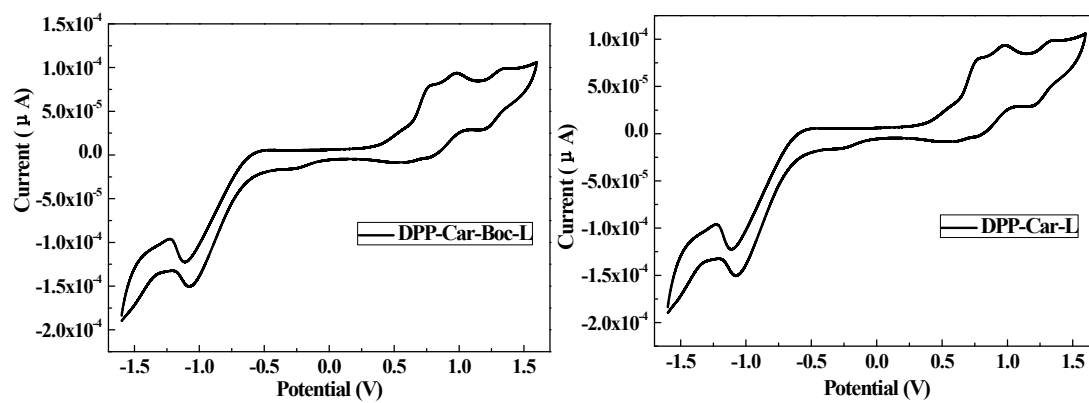


Figure S21. Cyclic voltammograms of DPP-Car-Boc-L (left) and DPP-Car-L (right).