

Supporting information

Aggregation-Induced Intermolecular Charge Transfer Emission for Solution-Processable Bipolar Host Material via Adjusting the Length of Alkyl Chain

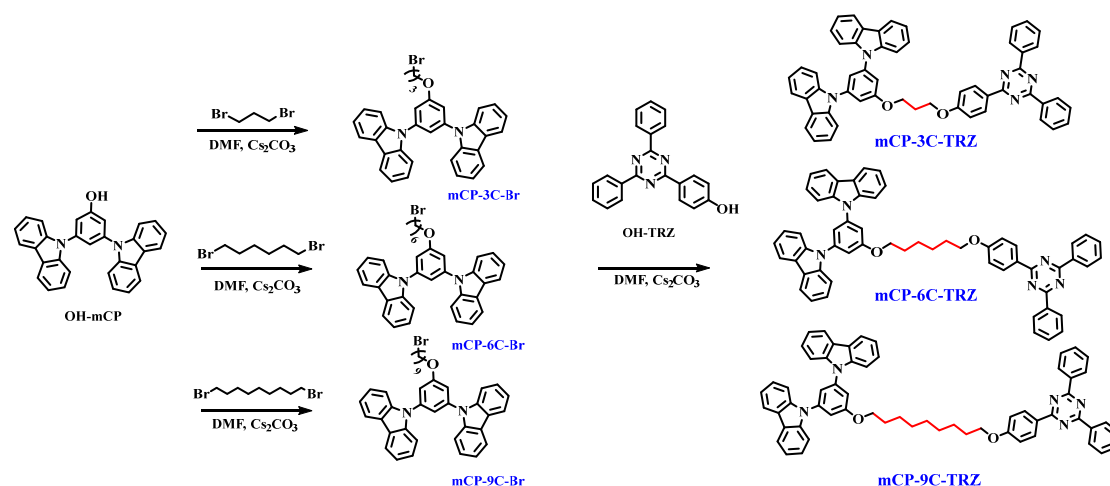
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1. Experimental Section

The synthesis procedure



Scheme S1. Synthesis routes of mCP-3C-TRZ, mCP-6C-TRZ and mCP-9C-TRZ.

All materials and solvents were obtained from commercial suppliers and used without further purification. The 3,5-di(9H-carbazol-9-yl)phenol (OH-mCP), 4-(4,6-diphenyl-1,3,5-triazin-2-yl)phenol (OH-TRZ) and 9,9'-(5-(((6-(4-(4,6-diphenyl-1,3,5-triazin-2-yl)phenoxy)hexyl)oxy)-1,3-phenylene)bis(9H-carbazole) (mCP-6C-TRZ) were obtained according to the literature [1-3].

2. Supplementary Figures

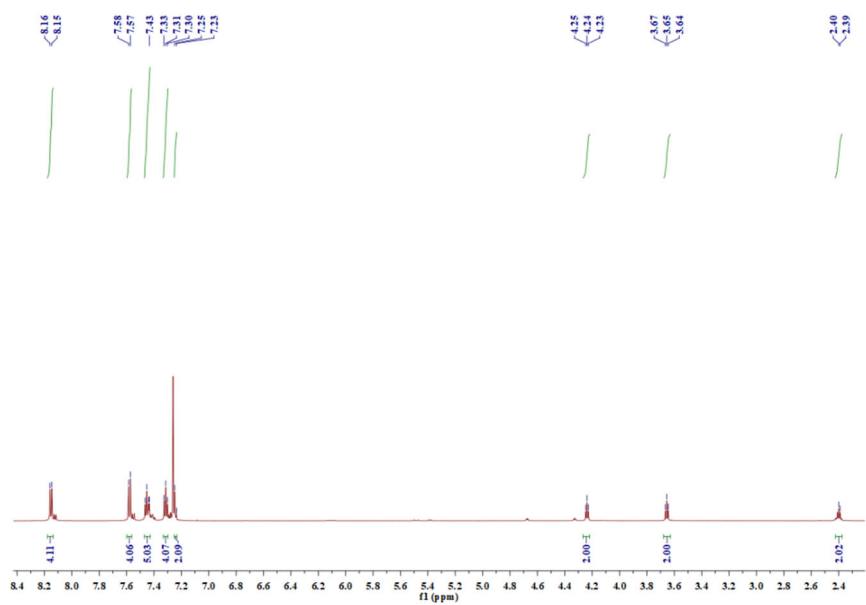


Figure S1. ¹H-NMR spectrum of mCP-3C-Br.

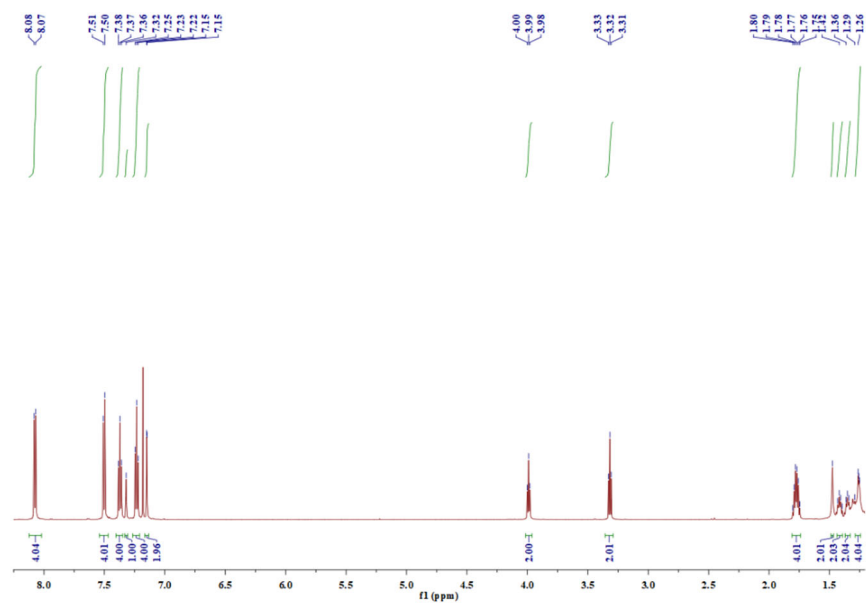


Figure S2. ¹H-NMR spectrum of mCP-9C-Br.

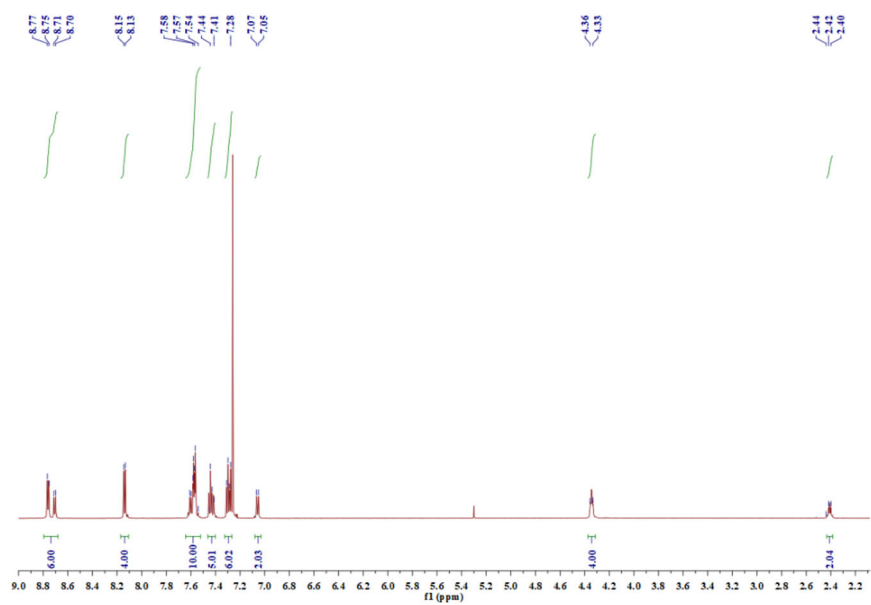


Figure S3. ¹H-NMR spectrum of mCP-3C-TRZ.

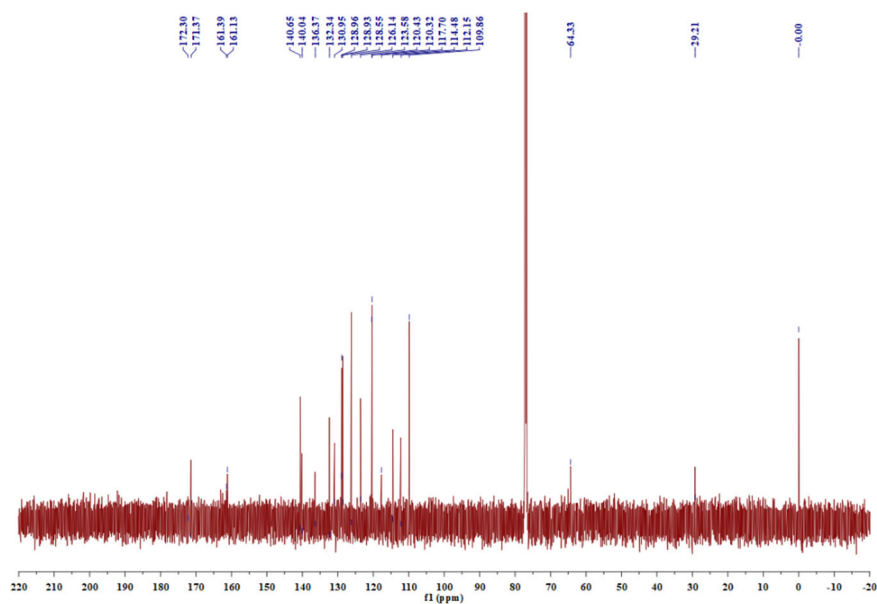


Figure S4. ¹³H-NMR spectrum of mCP-3C-TRZ.

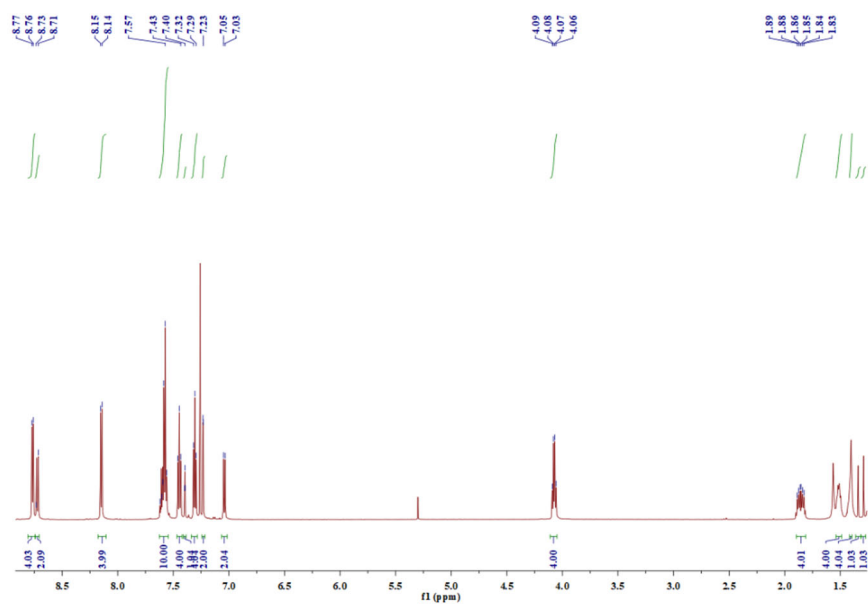


Figure S5. ^1H -NMR spectrum of mCP-9C-TRZ.

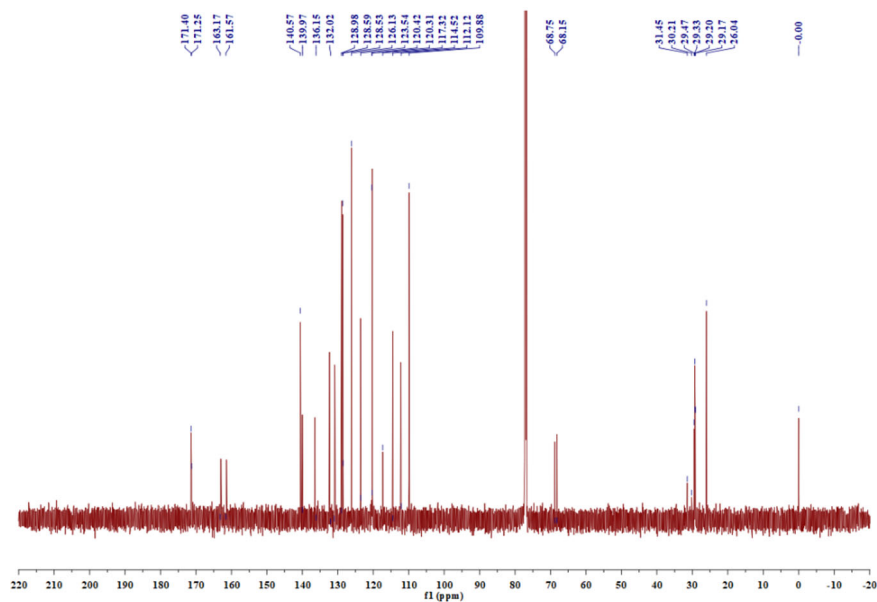


Figure S6. ^{13}C -NMR spectrum of mCP-9C-TRZ.

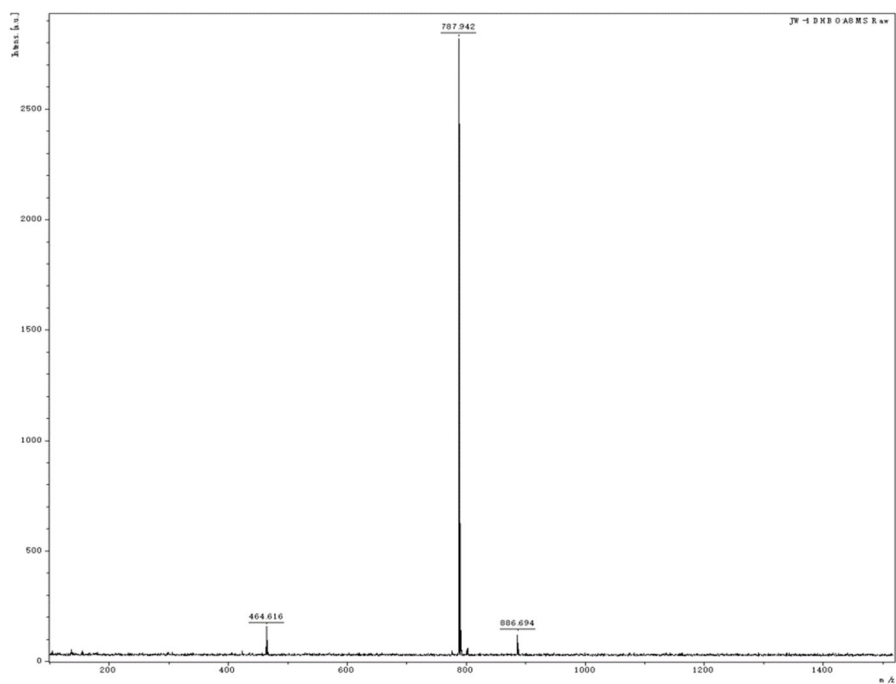


Figure S7. Mass spectrum of mCP-3C-TRZ.

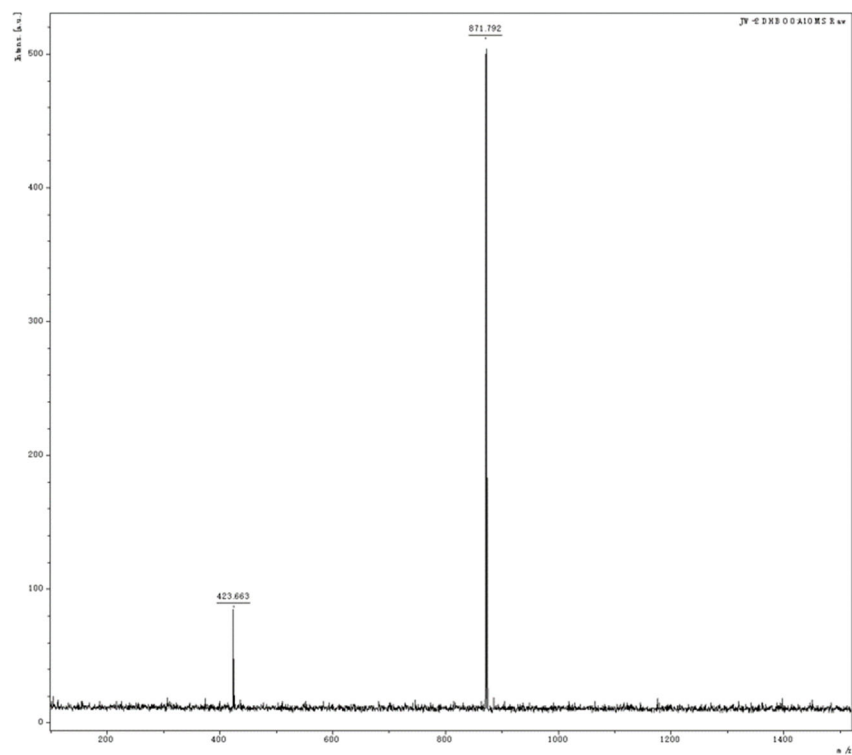


Figure S8. Mass spectrum of mCP-9C-TRZ.

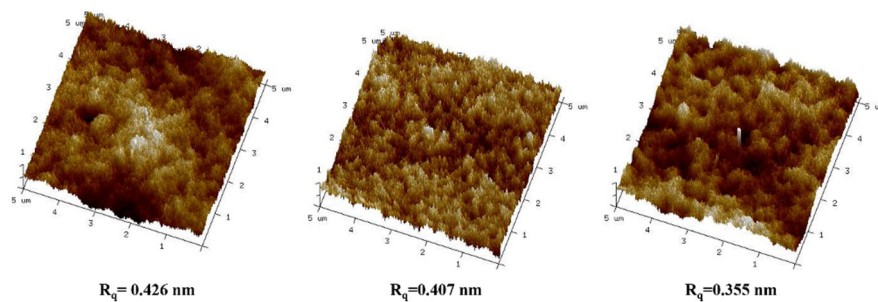


Figure S9. AFM topographic images of the solution-processed neat films of mCP-3C-TRZ, mCP-6C-TRZ and mCP-9C-TRZ.

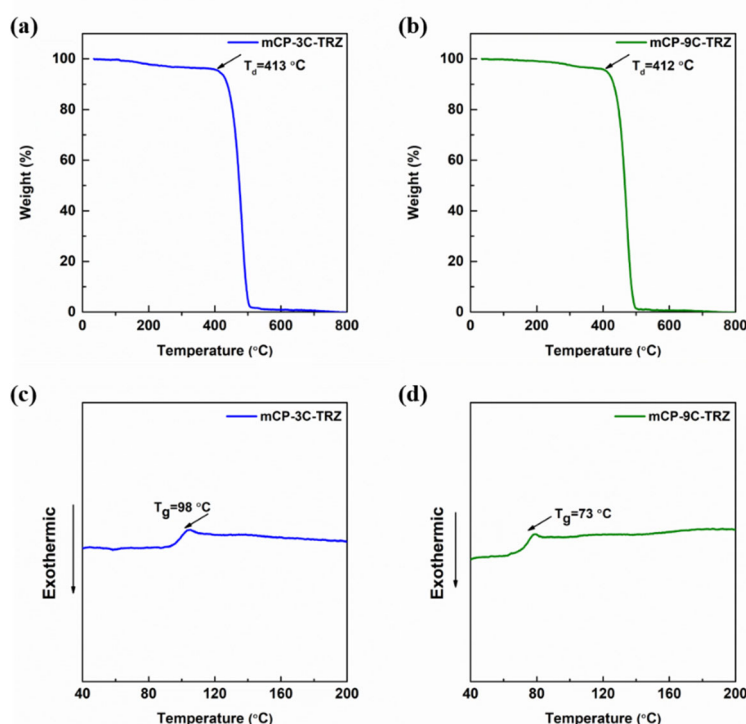


Figure S10. (a) TGA curves and DSC curves of mCP-3C-TRZ (a, c) and mCP-6C-TRZ (b, d) at a heating rate of $10\text{ }^{\circ}\text{C min}^{-1}$ under nitrogen.

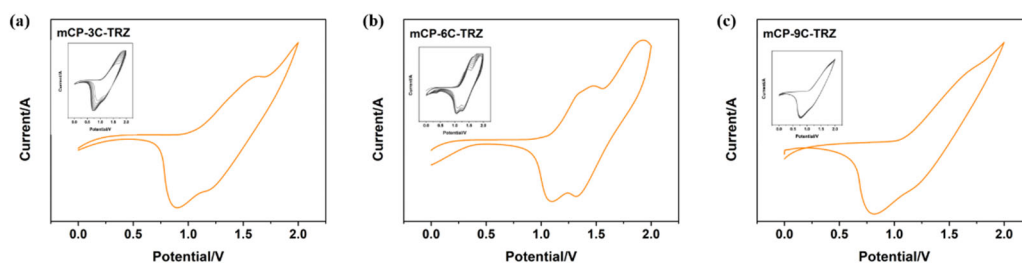


Figure S11. The cyclic voltammetry of mCP-3C-TRZ, mCP-6C-TRZ and mCP-9C-TRZ at room temperature.

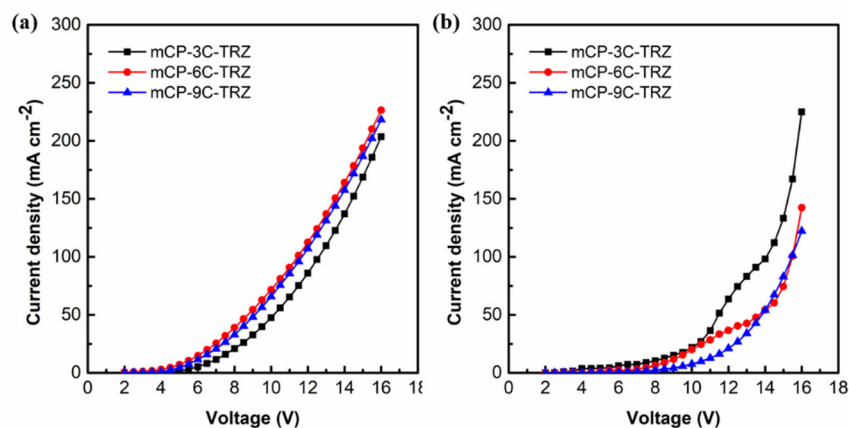


Figure S12. IV characteristics (a) of electron-only devices with a configuration of ITO|Al (50 nm)|EML (40 nm)|TPBi (40 nm)|Cs₂CO₃ (2 nm)|Al (100 nm), and IV characteristics (b) of hole-only devices with configurations of ITO|PEDOT:PSS (40 nm)|EML (40 nm)|MoO₃ (20 nm)|Al (100 nm) based on mCP-3C-TRZ, mCP-6C-TRZ and mCP-9C-TRZ.

3. References

1. Sun, K.; Sun, Y.; Tian, W.; Liu, D.; Feng, Y.; Sun, Y.; Jiang, W. Thermally activated delayed fluorescence dendrimers with exciplex-forming dendrons for low-voltage-driving and power-efficient solution processed OLEDs. *J. Mater. Chem. C* **2018**, *6*, 43-49.
2. Zhao, G.; Liu, D.; Tian, W.; Jiang, W.; Sun, Y. Rational molecular design of novel host material combining intra- and intermolecular charge transfers for efficient solution-processed organic light-emitting diodes. *Dyes Pigments* **2020**, *175*, 108188.
3. Zhao, G.; Wang, B.; Liu, D.; Ma, D.; Chen, H.; Tian, W.; Ban, X.; Jiang, W.; Sun, Y. Aggregation induced intermolecular charge transfer in simple nonconjugated donor-acceptor system. *Org. Electron.* **2021**, *99*, 106309.