

Supplementary Information

Thermally activated delayed fluorescence dendrimers achieving 20% external quantum efficiency for solution-processed OLEDs

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Contents

- 1) **Scheme S1.** Synthetic route of the target molecules tBuTCz-DPyM and MeOTCz-DPyM.
- 2) **Fig. S1.** TGA and DSC curves of tBuTCz-DPyM and MeOTCz-DPyM.
- 3) **Fig. S2.** The AFM topographic images of the solution-processed (a) tBuTCz-DPyM, (b) MeOTCz-DPyM films.
- 4) **Fig. S3.** Cyclic voltammograms of tBuTCz-DPyM and MeOTCz-DPyM in CH₂Cl₂ solution.
- 5) **Table S1.** The data of rate constants of tBuTCz-DPyM and MeOTCz-DPyM.
- 6) **Fig. S4.** ¹H NMR spectrum of tBuTCz-DPyM.
- 7) **Fig. S5.** ¹³C NMR spectrum of tBuTCz-DPyM.
- 8) **Fig. S6.** HRMS spectrum of tBuTCz-DPyM.
- 9) **Fig. S7.** ¹H NMR spectrum of MeOTCz-DPyM.
- 10) **Fig. S8.** ¹³C NMR spectrum of MeOTCz-DPyM.

11) Fig. S9. HRMS spectrum of MeOTCz-DPyM.

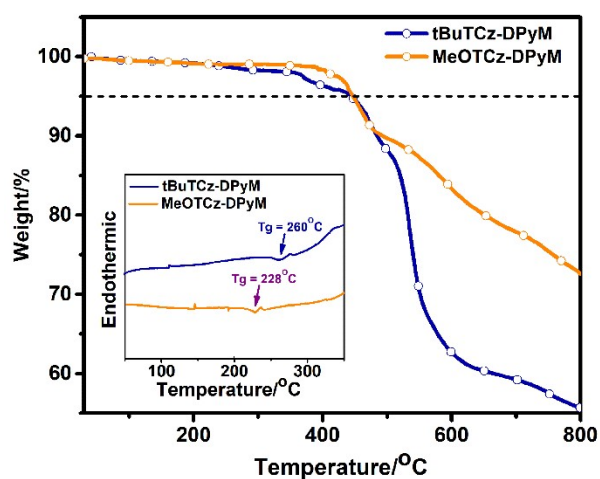
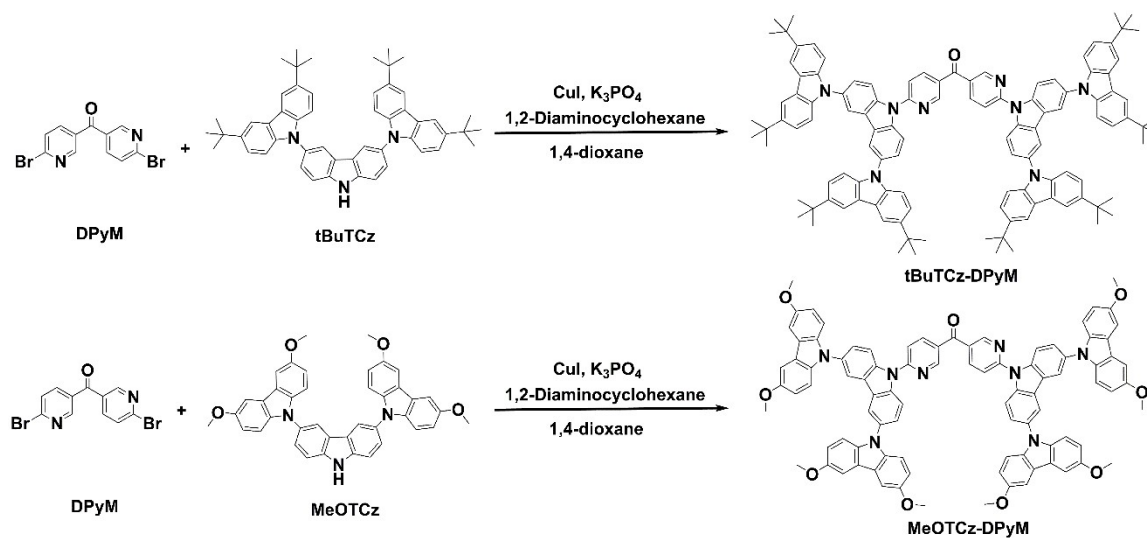


Fig. S1. TGA and DSC curves of tBuTCz-DPyM and MeOTCz-DPyM.

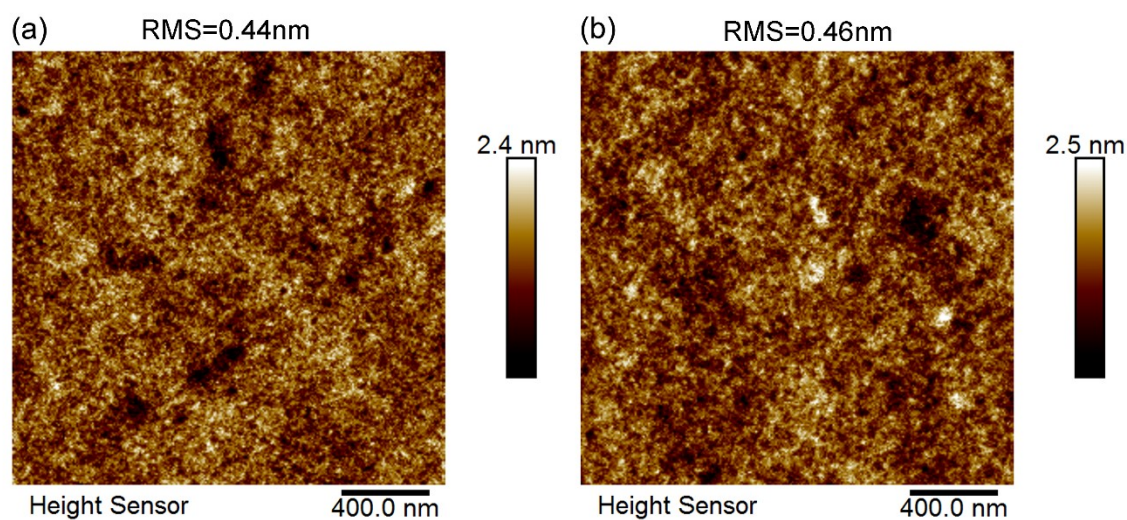


Fig. S2. The AFM topographic images of the solution-processed (a) tBuTCz-DPyM, (b) MeOTCz-

DPyM films.

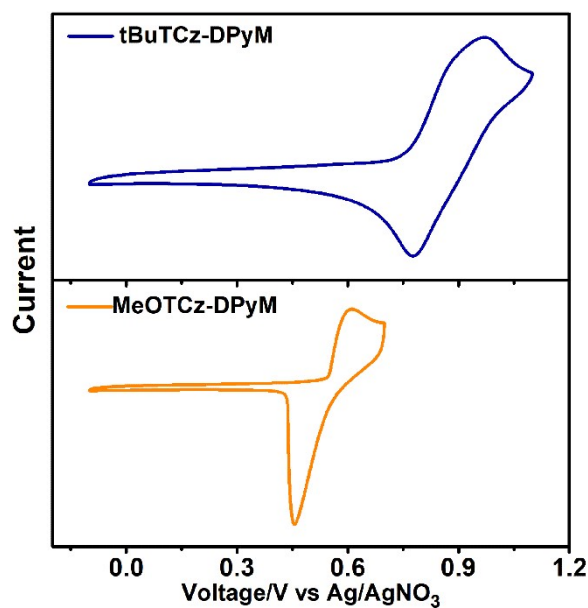


Fig. S3. Cyclic voltammograms of tBuTCz-DPyM and MeOTCz-DPyM in CH_2Cl_2 solution.

Table S1. The data of rate constants of tBuTCz-DPyM and MeOTCz-DPyM

Compound	$\Phi_p^a(\%)$	$\Phi_d^b(\%)$	$k_p^c(10^8 \text{ s}^{-1})$	$k_d^d(10^5 \text{ s}^{-1})$	$k_{rs}^e(10^7 \text{ s}^{-1})$	$k_{nrs}^f(10^7 \text{ s}^{-1})$	$k_{RISC}^g(10^5 \text{ s}^{-1})$
tBuTCz-DPyM	35	28.5	1.4	1.0	5.0	2.9	1.8
MeOTCz-DPyM	30	25	0.6	1.3	1.9	1.6	2.4

^a The prompt portion of total PLQY. ^b The delayed portion of total PLQY. ^c The rate constant of the prompt fluorescence decay. ^d The rate constant of the delayed fluorescence decay. ^e The rate constant of radiative decay. ^f The rate constant of non-radiative decay. ^g The rate constant of RISC.

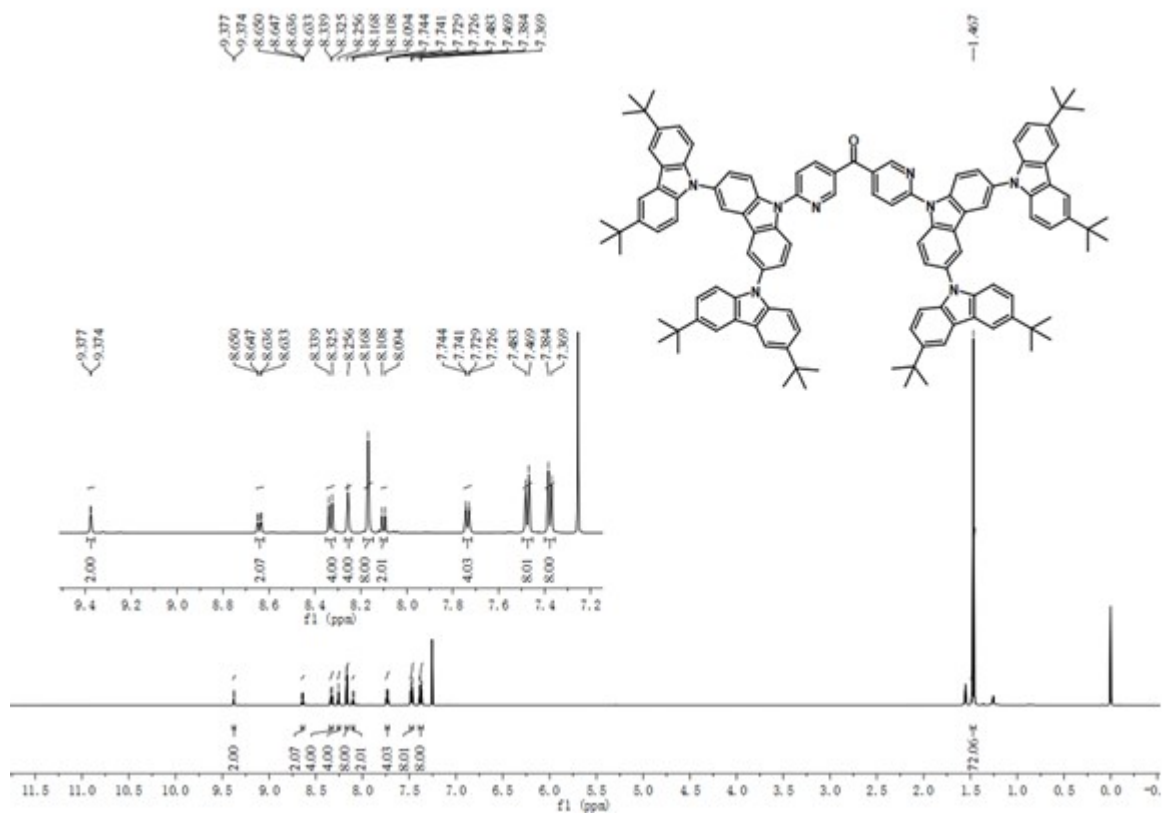


Fig. S4. ^1H NMR spectrum of tBuTCz-DpyM.

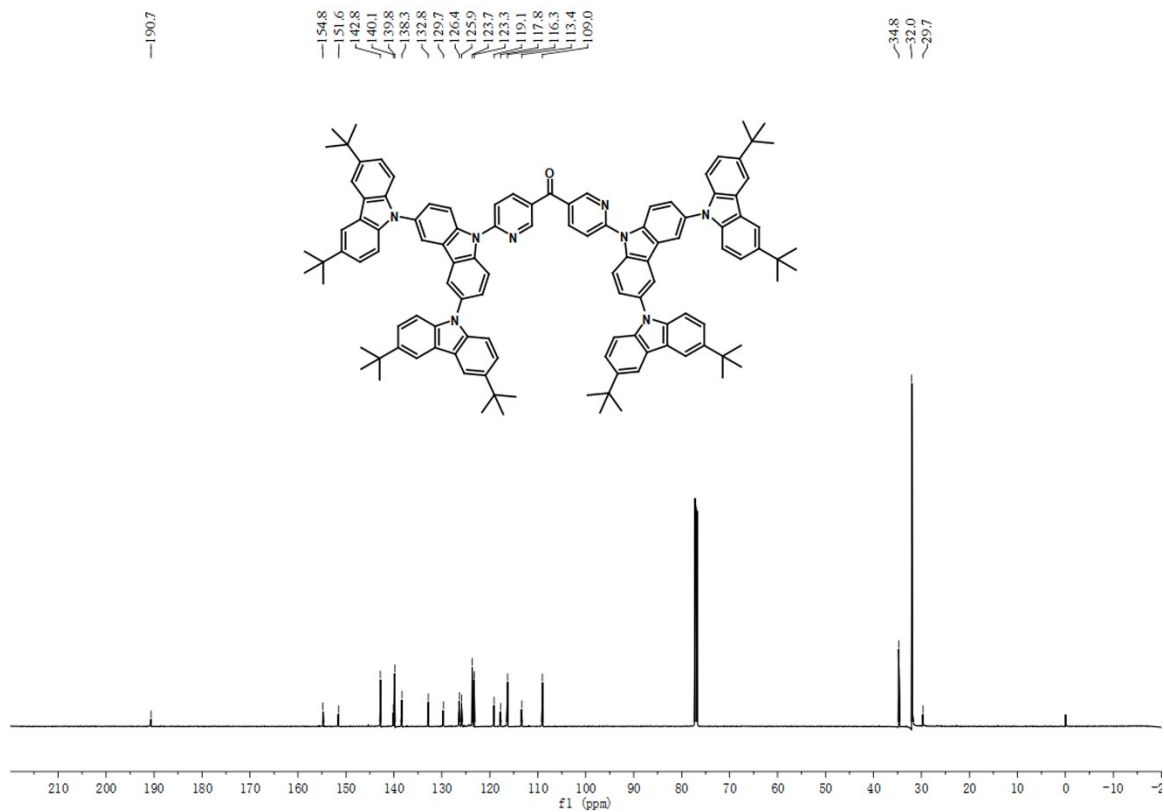


Fig. S5. ^{13}C NMR spectrum of tBuTCz-DPyM.

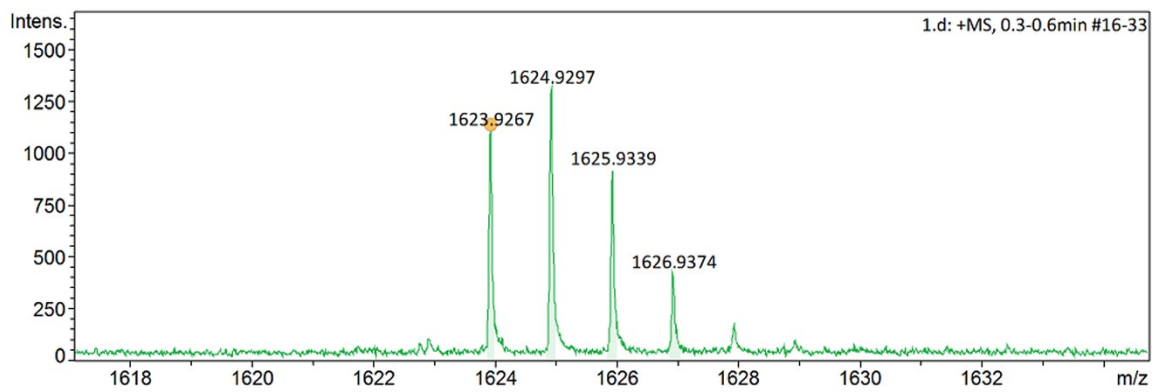


Fig. S6. HRMS spectrum of tBuTCz-DPyM.

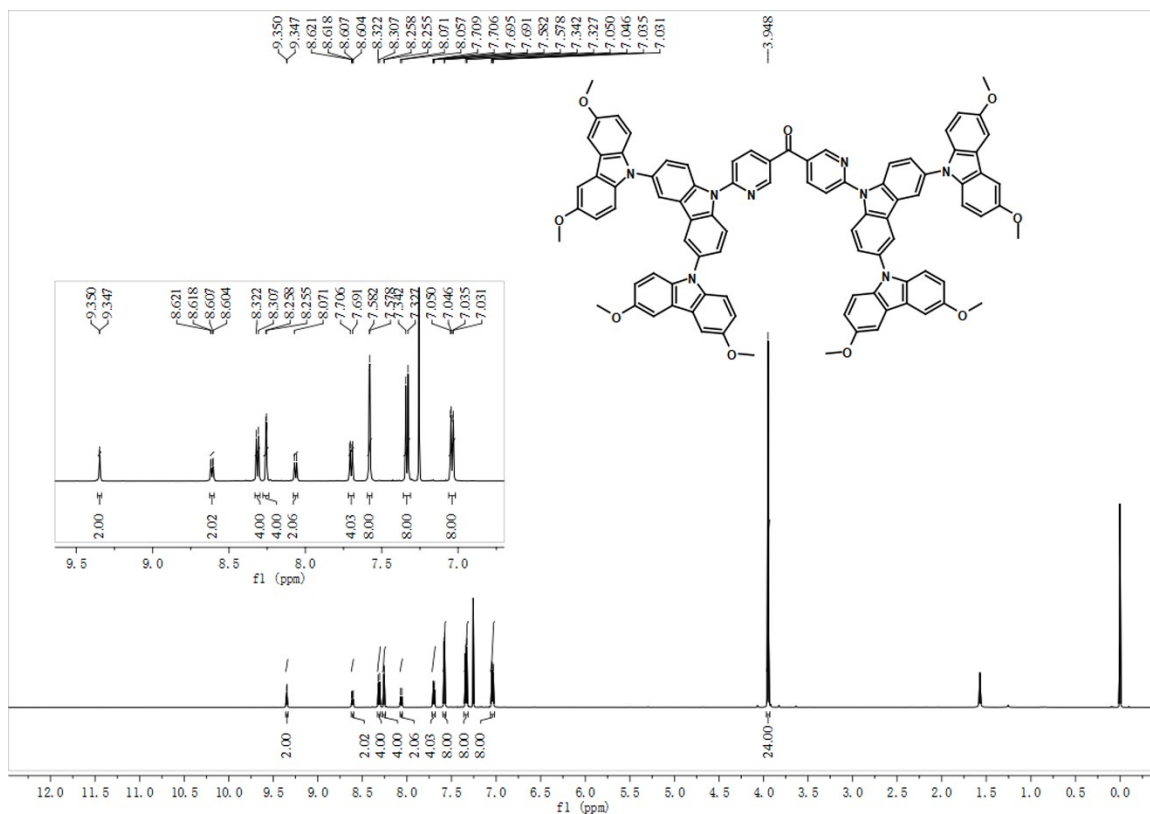


Fig. S7. ^1H NMR spectrum of MeOTCz-DpyM.

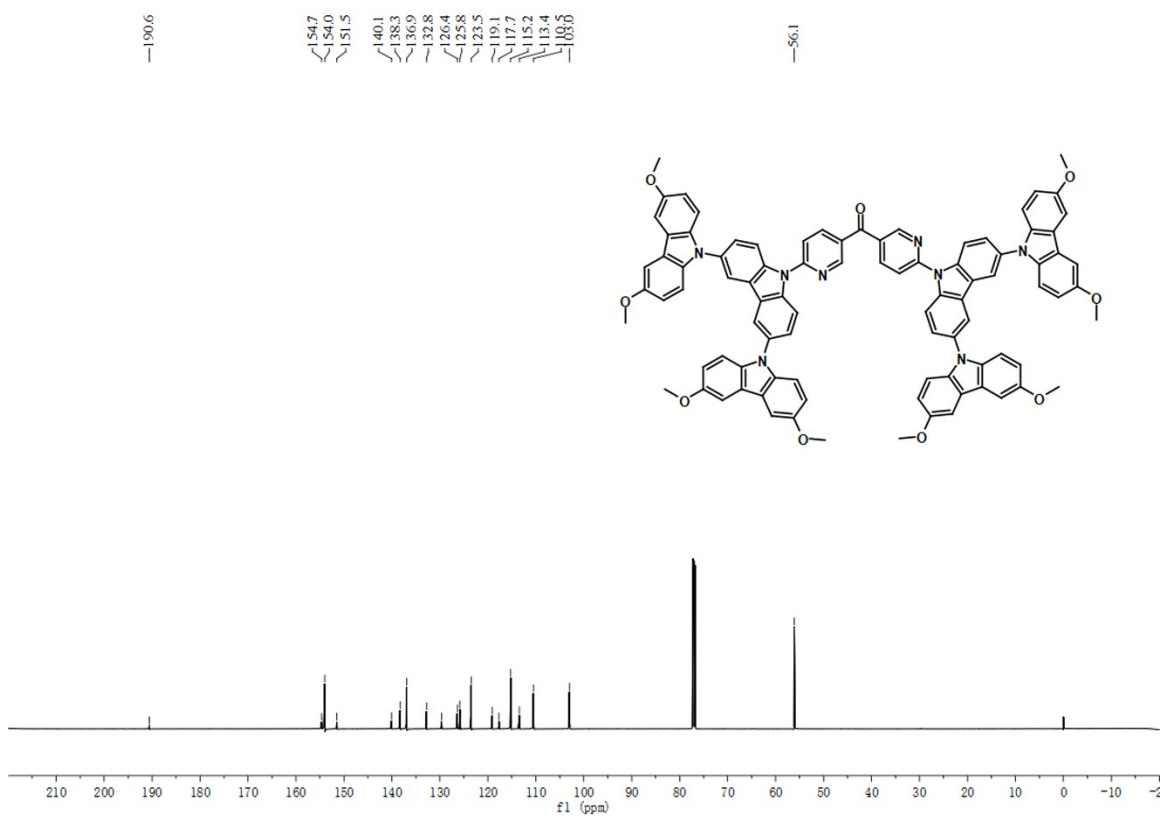


Fig. S8. ^{13}C NMR spectrum of MeOTCz-DpyM.

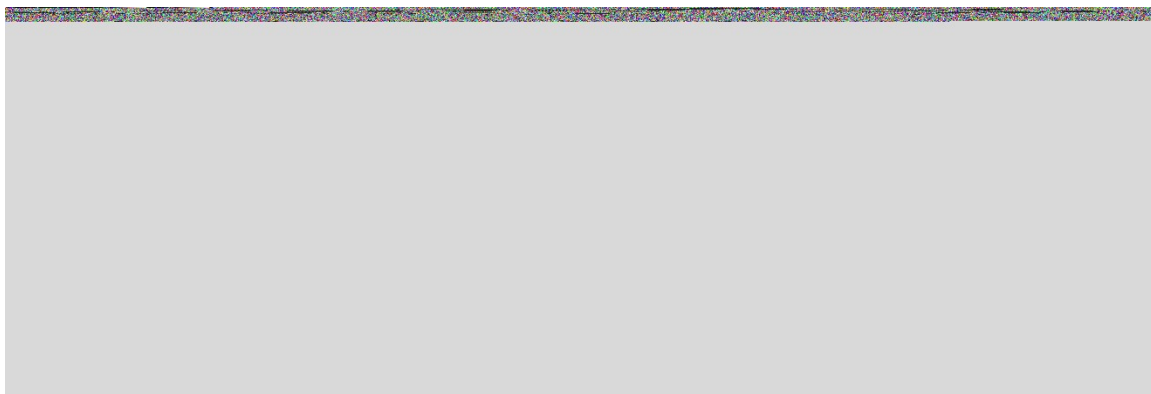


Fig. S9. HRMS spectrum of MeOTCz-DPyM.