

Supporting information

A Deep Blue TADF Dendron for Efficient Energy Transfer in Green and Red Iridium Light Emitting Dendrimers.

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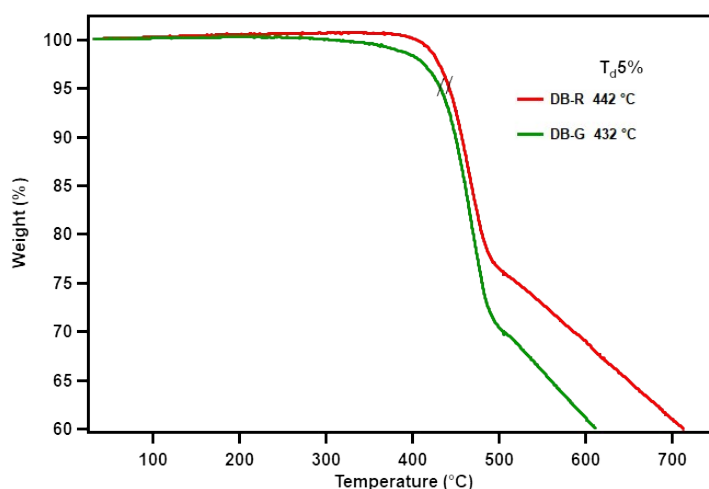


Figure. S1 TGA thermograms of **DB-G** and **DB-R** from 30–700 °C at a heating rate of 10 °C min⁻¹.

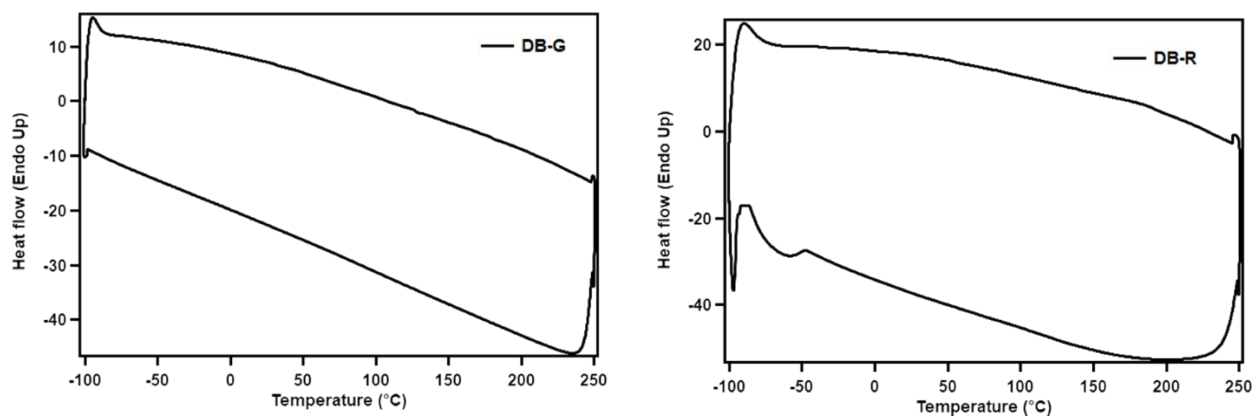


Figure. S2 DSC analysis of (a) **DB-G** and (b) **DB-R**. The measurements were performed in the temperature range of -100 to 250 °C at a scan rate of 100 °C min⁻¹. The second scans are shown.

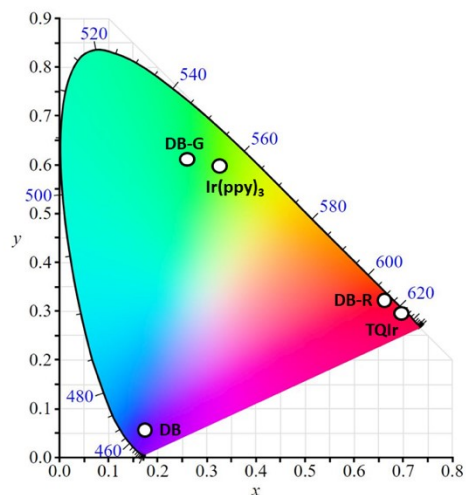


Figure. S3 The 1931 Commission Internationale de l'Eclairage coordinates for **DB-G**, **DB-R**, **TQIr**, **Ir(ppy)₃** and **DB**.

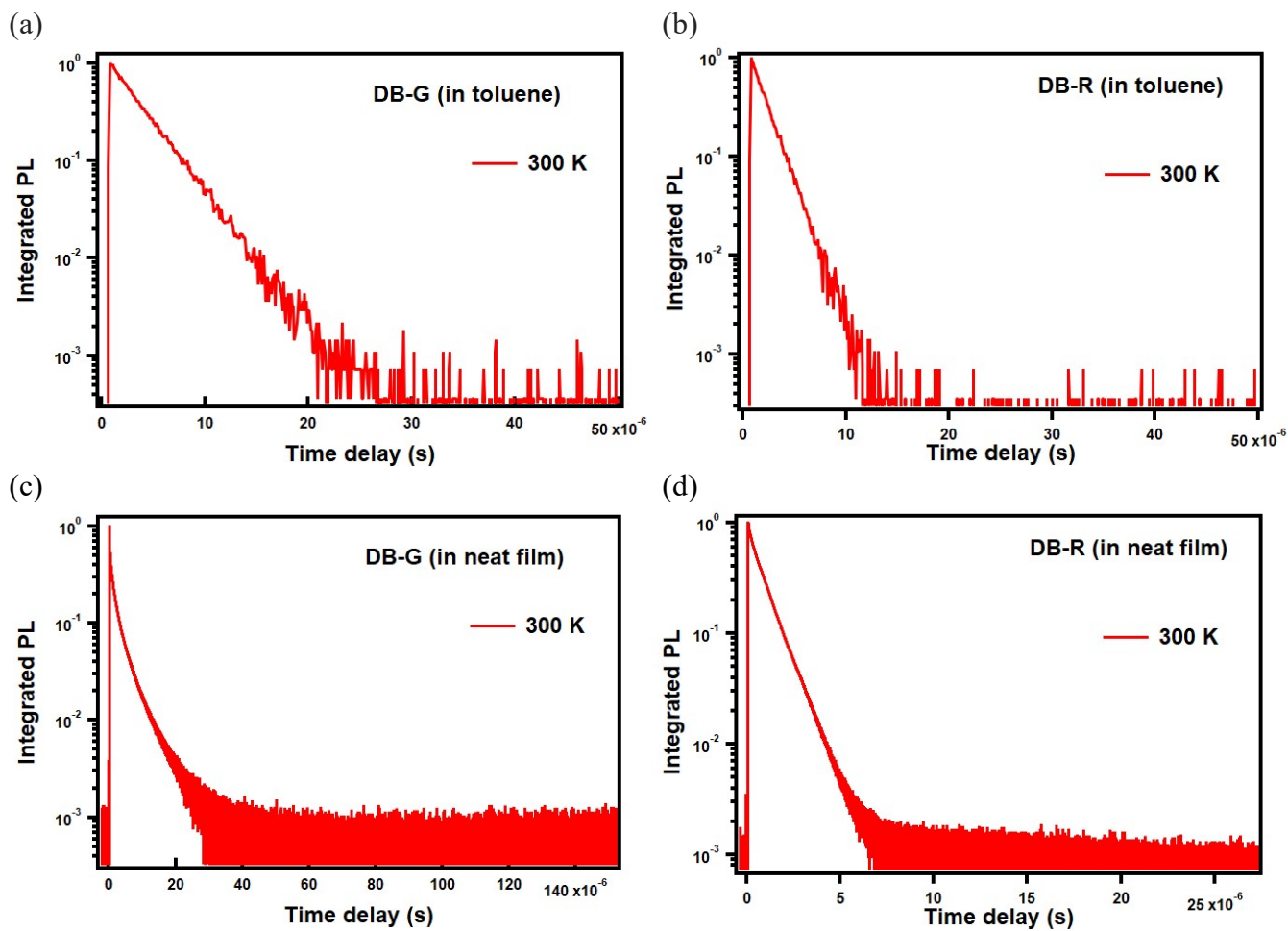


Figure S4. Solution and neat film PL decays of **DB-G** (a and c) and **DB-R** (b and d), respectively at 300 K ($\lambda_{\text{exc}} = 355 \text{ nm}$).

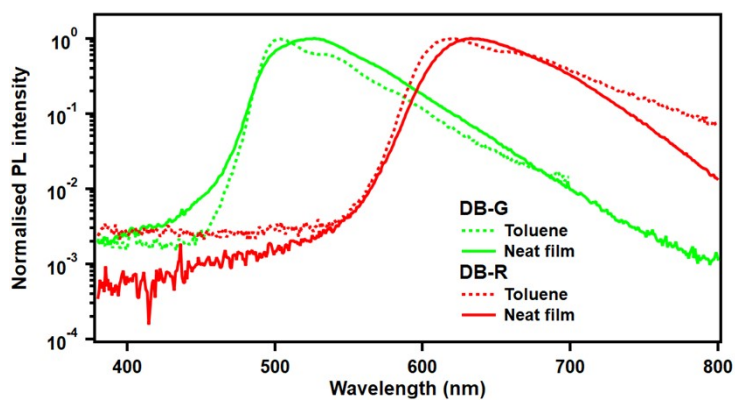


Figure S5. Comparison of the solution and film PL spectra of **DB-G** and **DB-R**.

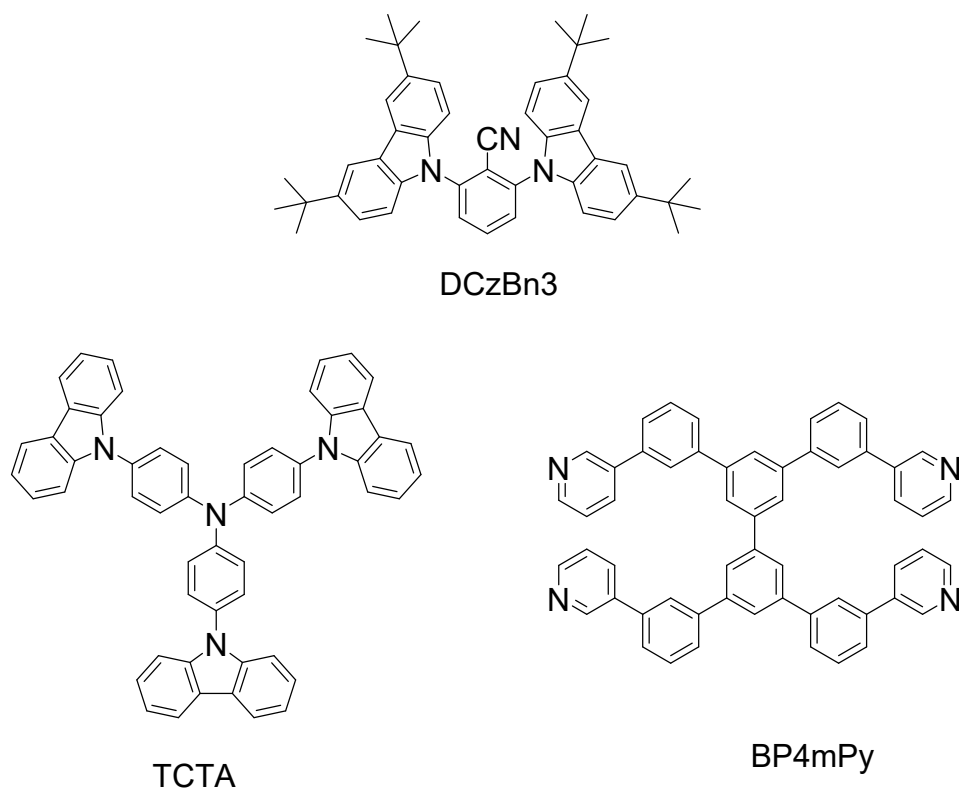


Figure S6. Structures of DCzBn3, TCTA and BP4mPy.

Table S1. Fits to the neat film PL decays of Figure S4

Compound	A_1	τ_1 (μs)	A_2	τ_2 (μs)	A_3	τ_3 (μs)
DB-R	0.46	0.12	0.89	0.90	-	-
DB-G (bi-exp fitting)	0.59	0.65	0.25	3.5	-	-
DB-G (tri-exp fitting)	0.42	0.20	0.41	1.2	0.14	4.8

Table S2: Summary of device performance characteristics of solution processed phosphorescent dendrimer and TADF-sensitised phosphorescent OLEDs.

Reference	Host	Emitter	EQE (%)	Color	CIE
Chemical Engineering Journal 455 (2023) 140747	mCPCN	TriTADF-Ir(dFppy)	16 @ 1000 cd m ⁻²	Greenish-Blue	(0.174, 0.438)
Adv. Funct. Mater. 2022, 32, 2205077	mCPCN	GG	6.2 @ 500 cd m ⁻²	Green	(0.41, 0.56)
Adv. Funct. Mater. 2022, 32, 2205077	mCPCN	BG	11.6 @ 500 cd m ⁻²	Green	(0.32, 0.63)
J. Mater. Chem. C, 2022, 10, 4637	DMAC-DPS	R-D2	9.1 @ 1000 cd m ⁻²	Red	(0.62,0.35)
J. Mater. Chem. C, 2023, 11, 16247	4Cz-SO	Flrpic	13.7	Blue	(0.14,0.12)
Chemical Physics Letters 877 (2025) 142215	CDFDB	Flrpic	20.21	Blue	(0.17,0.40)
Adv. Optical Mater. 2024, 12, 2400640	TCTA	D3	13.3 @ 500 cd m ⁻²	Red	-
Organic Electronics 138 (2025) 107192	TCTA	D2	12.2 @ 500 cd m ⁻²	Green	-