Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C

Electronic Supplementary Information for

Utilizing 9,10-Dihydroacridine and Pyrazine-Containing Donor-Acceptor Host Materials for High Efficient Red Phosphorescent Organic Light-Emitting Diodes

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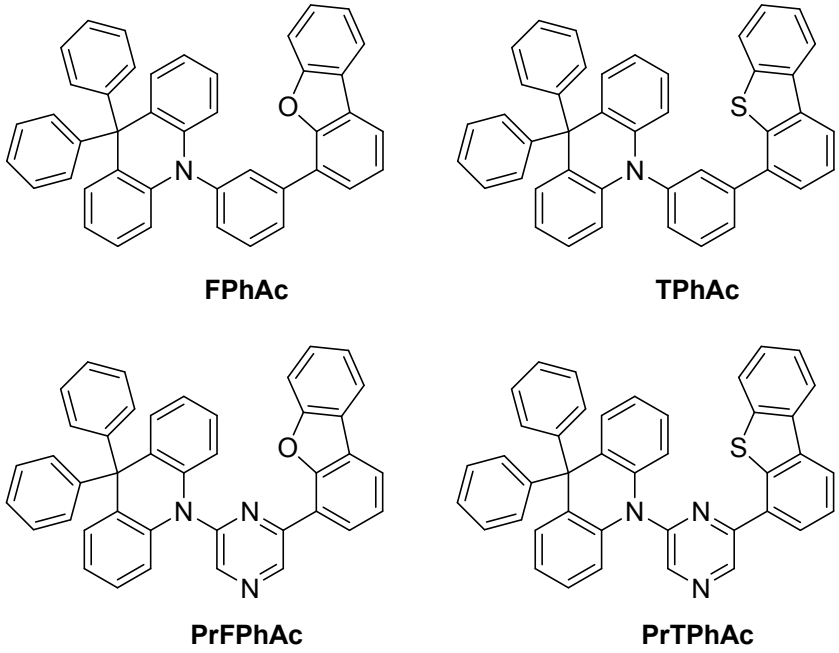
Fig. S4 PL spectra of PrFPhAc and PrTPhAc in different solvents.

Fig. S5 Cyclic voltammograms of PrFPhAc and PrTPhAc.

Fig. S6 Current–voltage characteristics of hole-only and electron-only devices.

Table S2 Summary of hole and electron mobility of PrFPhAc and PrTPhAc.



Scheme S1 Molecular structure of FPhAc, TPhAc, PrFPhAc, and PrTPhAc.

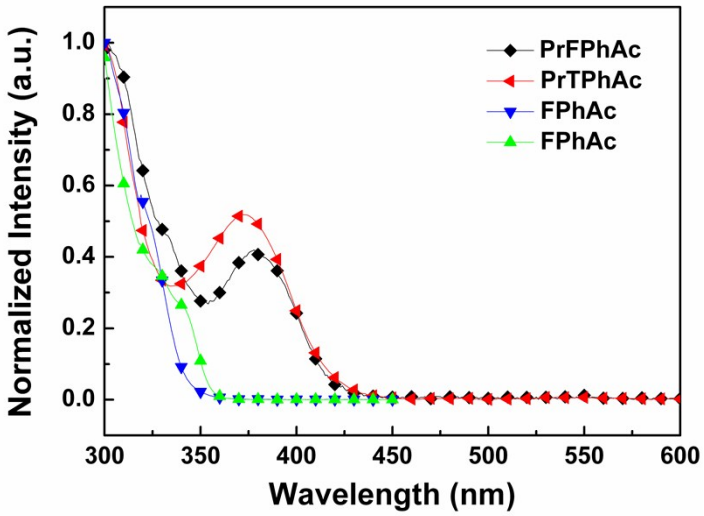


Fig. S1 Room temperature UV-vis absorption of FPhAc, TPhAc, PrFPhAc, and PrTPhAc in toluene solution.

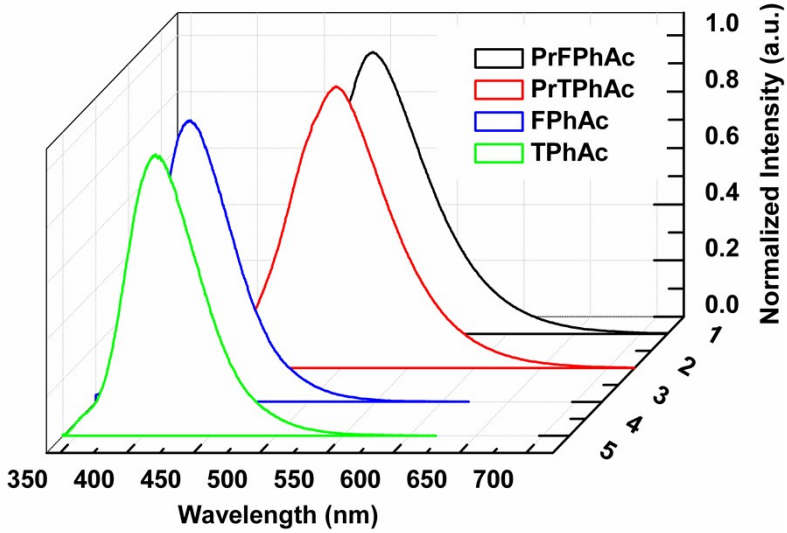


Fig. S2 Photoluminescence (PL) spectra of FPhAc, TPhAc, PrFPhAc, and PrTPhAc in toluene solution at room temperature.

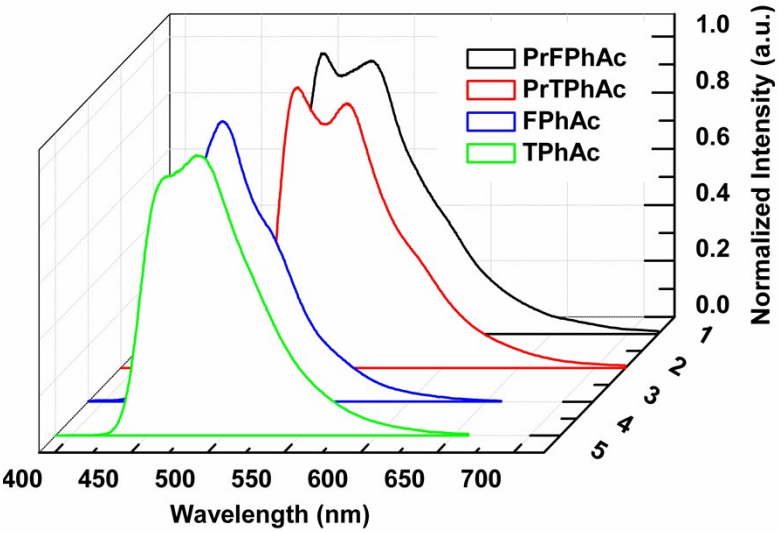


Fig. S3 Phosphorescence (Phos) spectra of FPhAc, TPhAc, PrFPhAc, and PrTPhAc in 2-MeTHF matrix at 77 K.

Table S1 Summary of the physical properties of FPhAc, TPhAc, PrFPhAc, and PrTPhAc.

Host	Abs [a]	PL[a]	T_g[b]	T_d[c]	E_g[d]	E_T[e]	HOMO[f]/LUMO[g]	Ref.
	nm	nm	°C	°C	eV	eV	eV	
FPhAc	300	410	100	394	3.61	2.75	-5.72/-2.11	1
TPhAc	297	408	105	408	3.50	2.68	-5.78/-2.28	1
PrFPhAc	301, 377	498	118	397	2.97	2.47	-6.04/-3.07	This work
PrTPhAc	296, 373	496	123	403	3.00	2.46	-6.02/-3.02	This work

[a] Measured in toluene solution at room temperature. [b] T_g: Glass transition temperature. [c] T_d: Decomposition temperature. [d] E_g: Band gaps, calculated from the corresponding absorption onset. [e] E_T: Measured in 2-MeTHF glass matrix at 77 K. [f] HOMO levels, calculated from UPS data. [g] LUMO levels, calculated from the HOMO and E_g.

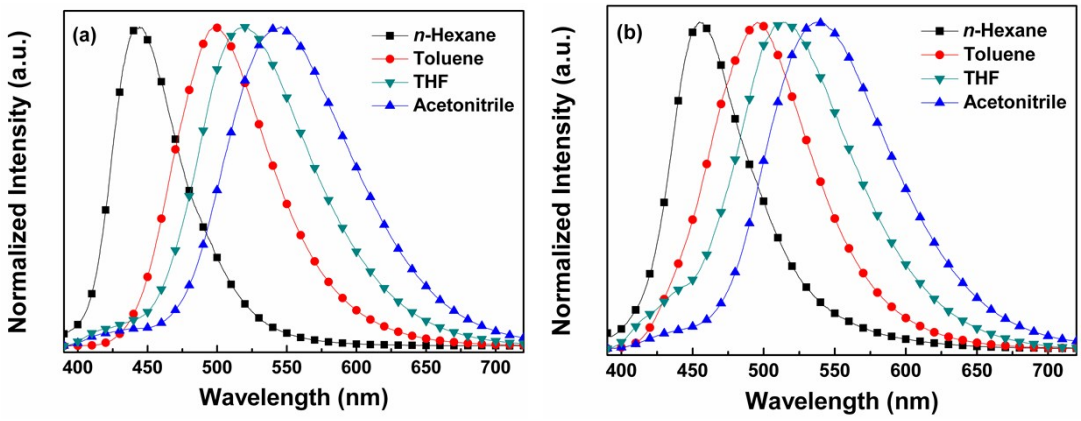


Fig. S4 Fluorescence spectra of PrFPhAc (a) and PrTPhAc (b) in different solvents (10^{-5} M).

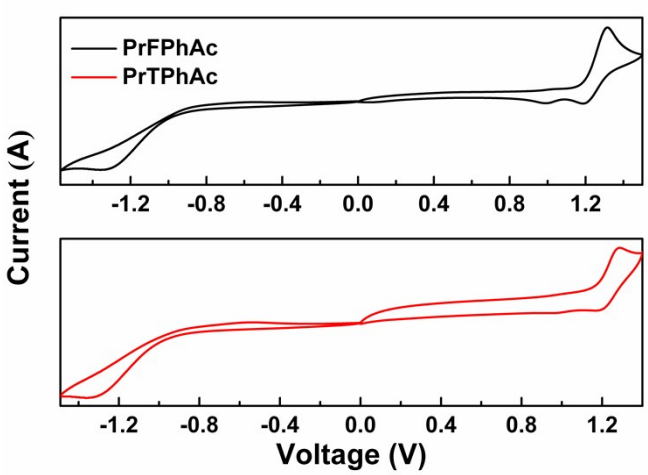


Fig. S5 Cyclic voltammograms of PrFPhAc and PrTPhAc.

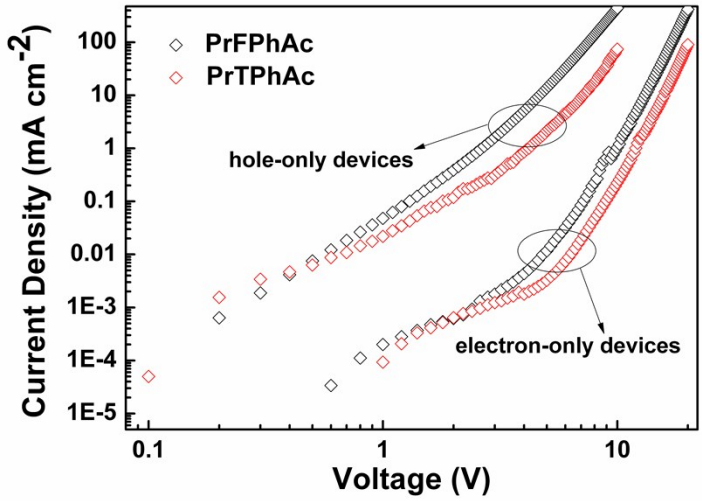


Fig. S6 Current–voltage characteristics of hole-only and electron-only devices.

Table S2 Hole and electron mobility of PrFPhAc and PrTPhAc.

	Hole mobility, μ_h ($cm\ V^{-1}\ s^{-1}$)	Electron mobility, μ_e ($cm\ V^{-1}\ s^{-1}$)
PrFPhAc	6.47×10^{-4}	2.98×10^{-4}
PrTPhAc	1.71×10^{-6}	1.09×10^{-6}

Notes and references

1 X.-Y. Liu, F. Liang, L.-S. Cui, X.-D. Yuan, Z.-Q. Jiang, L.-S. Liao, *Chem. Asian J.*, 2015, *10*, 1402.