Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Polymorphism and benzene solvent controlled stimuli responsive reversible fluorescence switching in triphenylphosphoniumfluorenylide crystals

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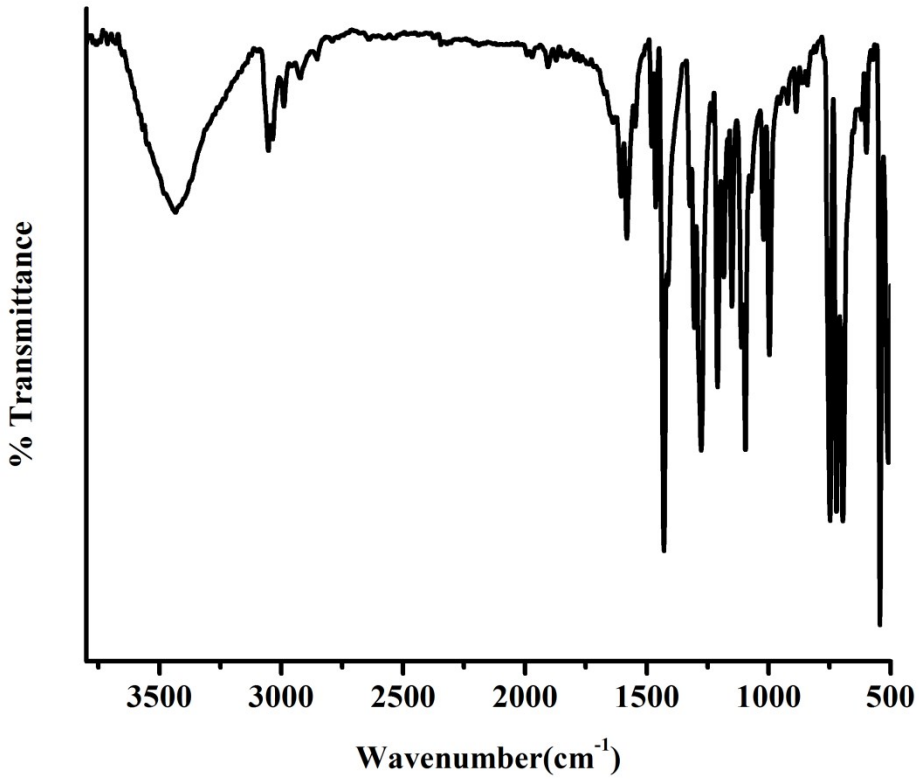

Figure S1. FTIR of TPPFY.

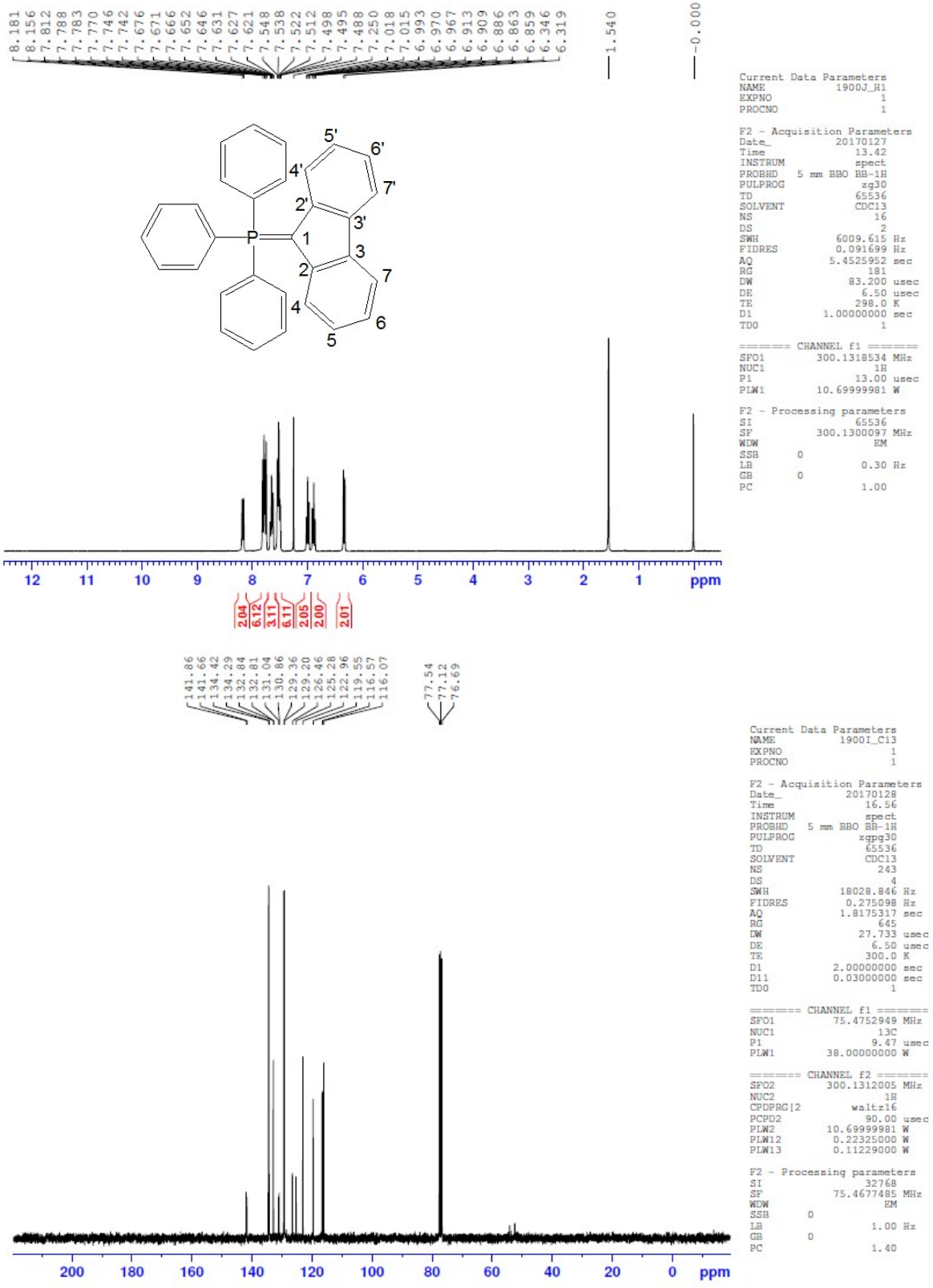

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Fig. S2. ^{1}H and ^{13}C-NMR spectra of TPPFY.

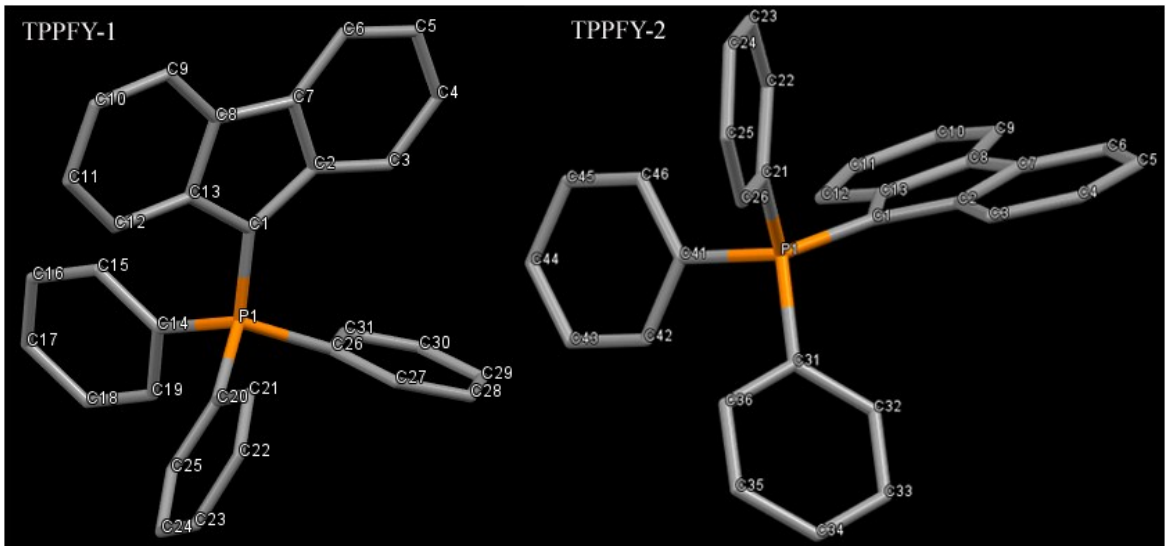
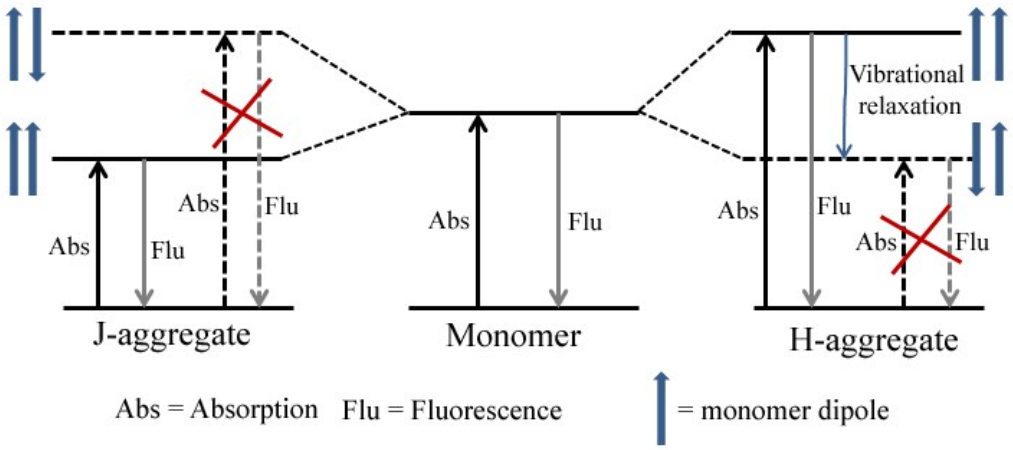


Fig. S3. Molecular structure of TPPFY in TPPFY-1 and TPPFY-2 crystal lattice. C (grey), P (orange). H-atoms are omitted for clarity.

Table S1. Geometric parameters around P atom for TPPFY-1 and TPPFY-2.

Bond distances (Å)	TPPFY-1	Bond distances (Å)	TPPFY-2
P1-C1	1.7160(19)	P1-C1	1.7237(15)
P1-C14	1.810(2)	P1-C21	1.8233(15)
P1-C20	1.8175(18)	P1-C31	1.8096(15)
P1-C26	1.797(2)	P1-C41	1.8065(16)
Bond angles (deg)		Bond angles (deg)	
C1-P1-C14	115.74(9)	C1-P1-C21	109.67(7)
C1-P1-C20	110.78(9)	C1-P1-C31	113.78(7)
C1-P1-C26	110.33(9)	C1-P1-C41	111.33(7)
C14-P1-C20	105.36(8)	C21-P1-C31	106.97(7)
C14-P1-C26	106.94(9)	C21-P1-C41	108.14(7)
C20-P1-C26	107.26(9)	C31-P1-C41	106.71(7)



Scheme S1. Exciton splitting in H- and J-aggregate (forbidden transition is indicated by red cross).

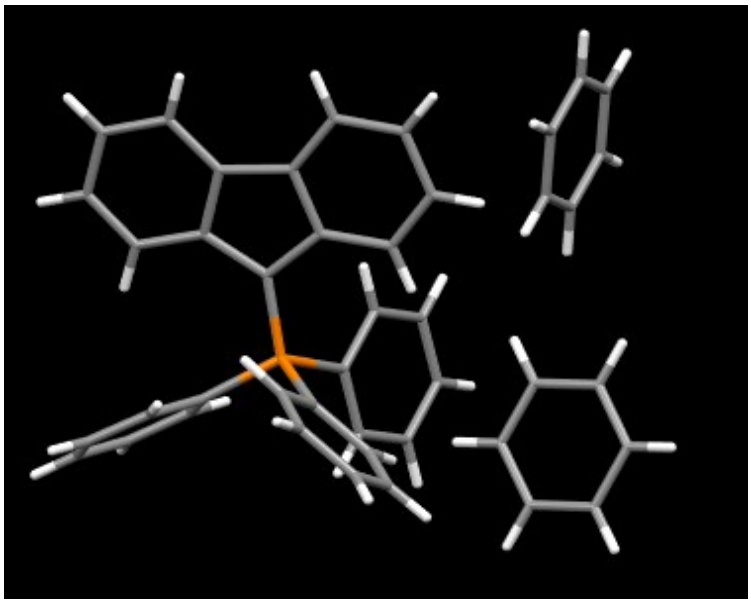


Fig. S4. Molecular structure of TPPFY-2 with benzene molecules included in the crystal lattice. C (grey), P (orange), H (white).

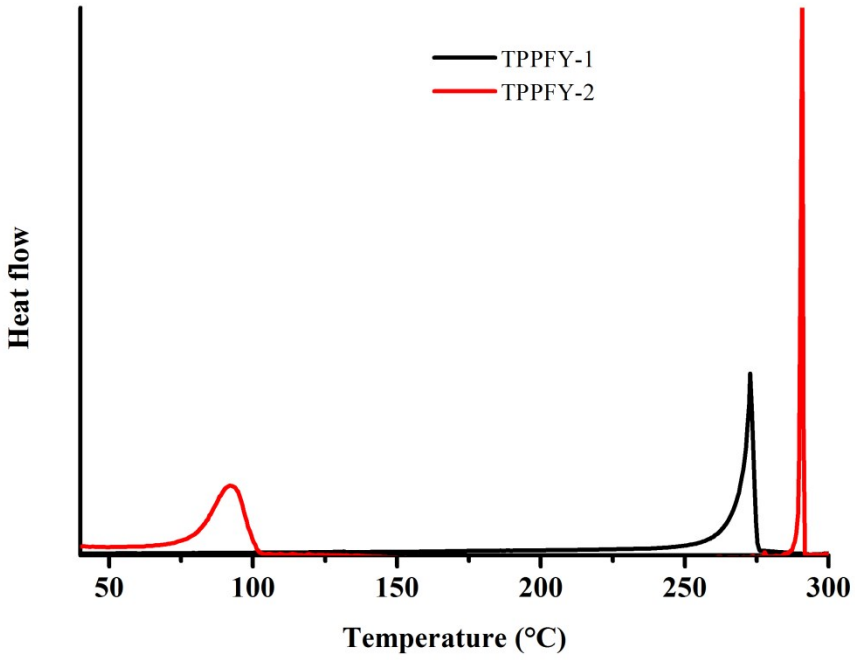


Figure S5. DSC spectrum of TPPFY-1 and TPPFY-2.

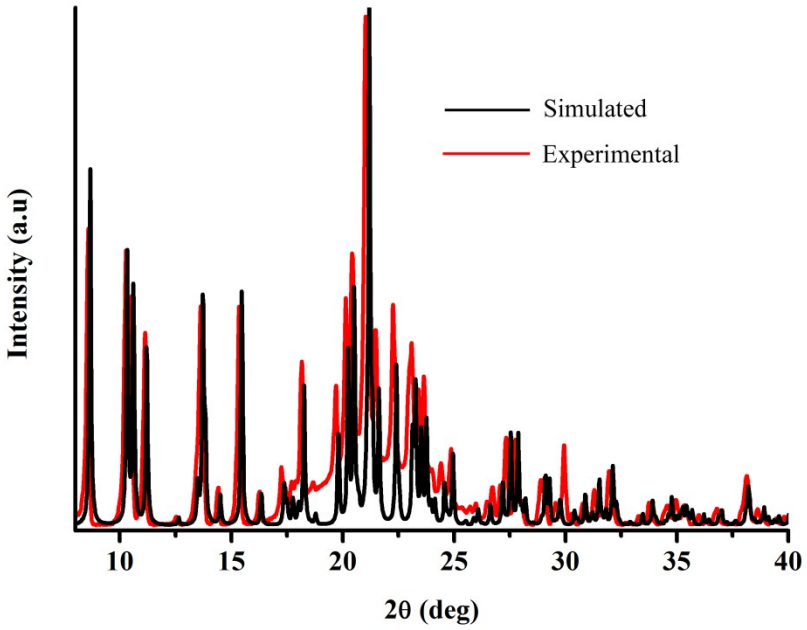


Fig. S6. PXRD pattern of TPPFY-1

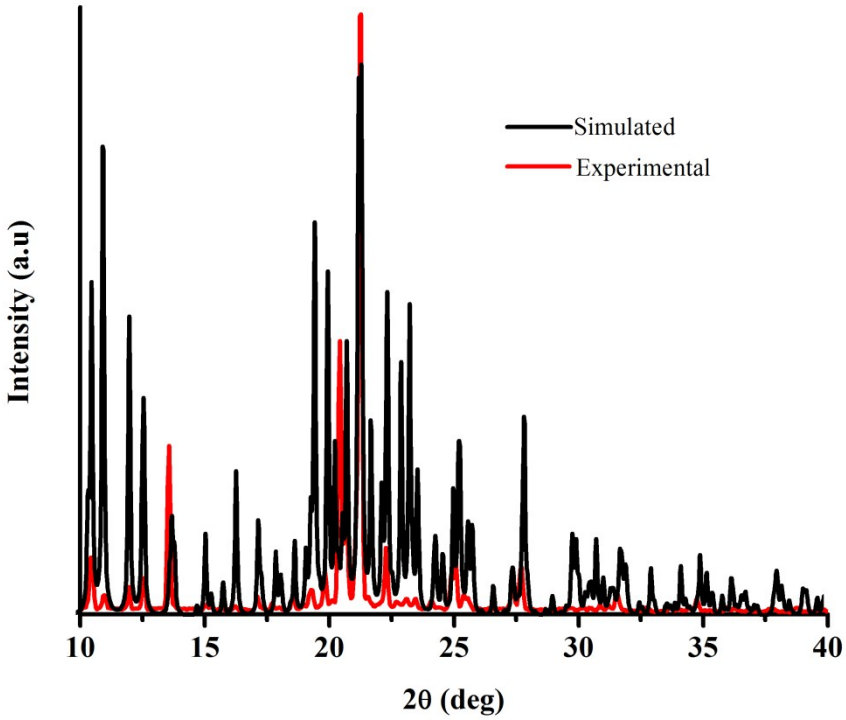


Fig. S7. PXRD pattern of TPPFY-2.