

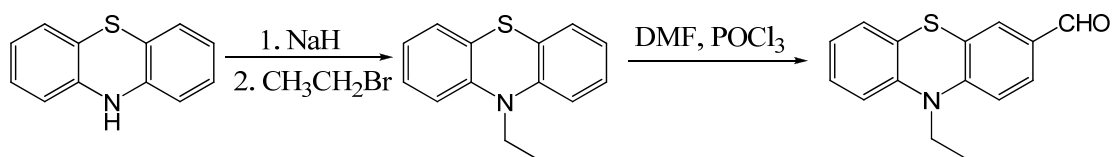
Supporting information:

Effect of Bridge Unit on Mechanochromism of Phenothiazine-Based Schiff Bases

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Scheme S1. The synthetic route for 10-ethyl-10H-phenothiazine-3-carbaldehyde.

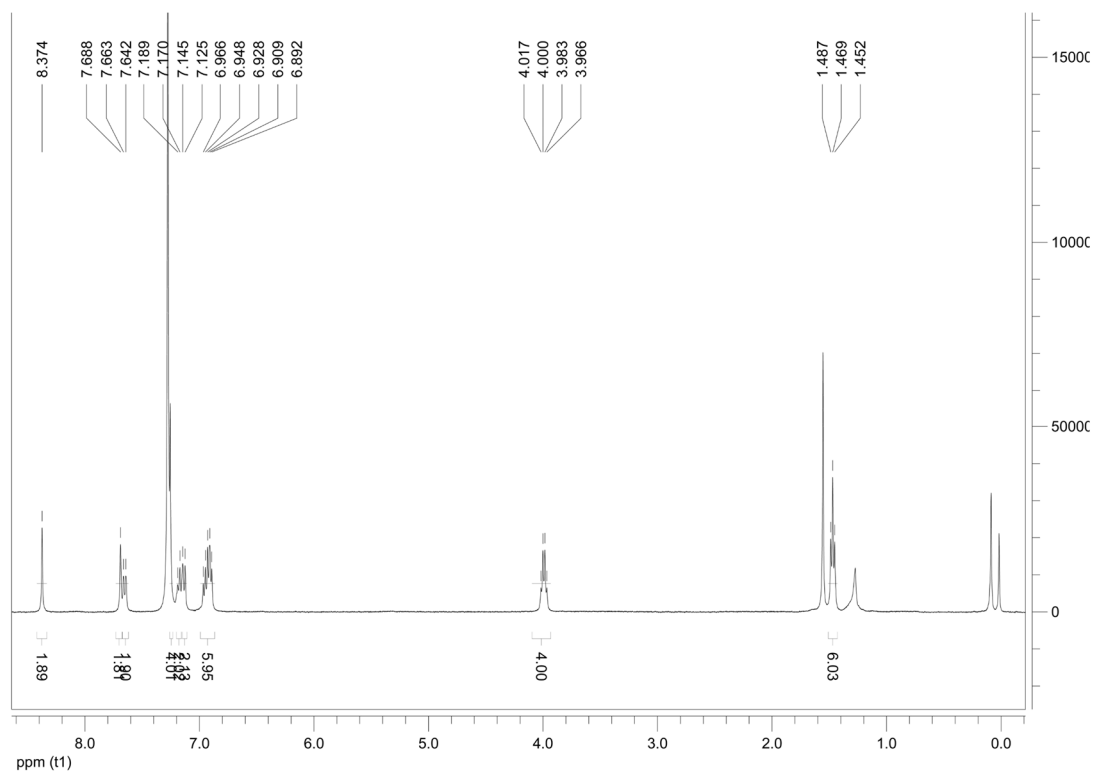


Fig. S1 ¹H NMR (400 MHz, CDCl₃) spectrum of PPD.

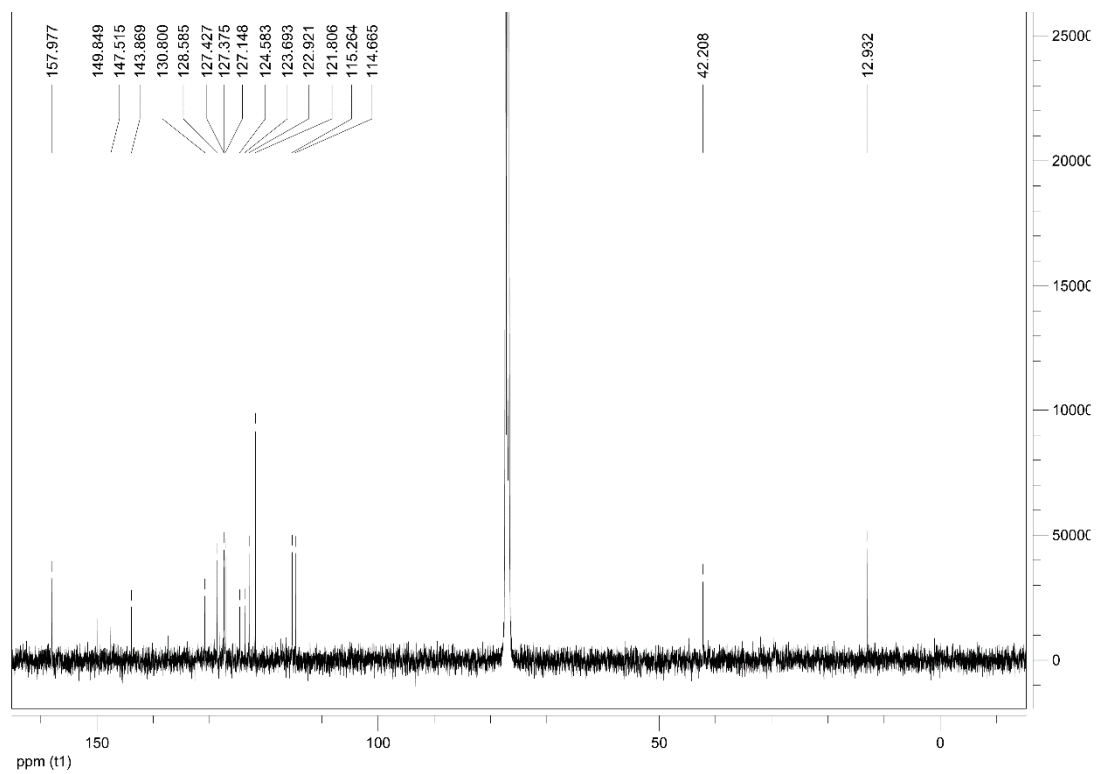


Fig. S2 ^{13}C NMR (100 MHz, CDCl_3) spectrum of PPD.

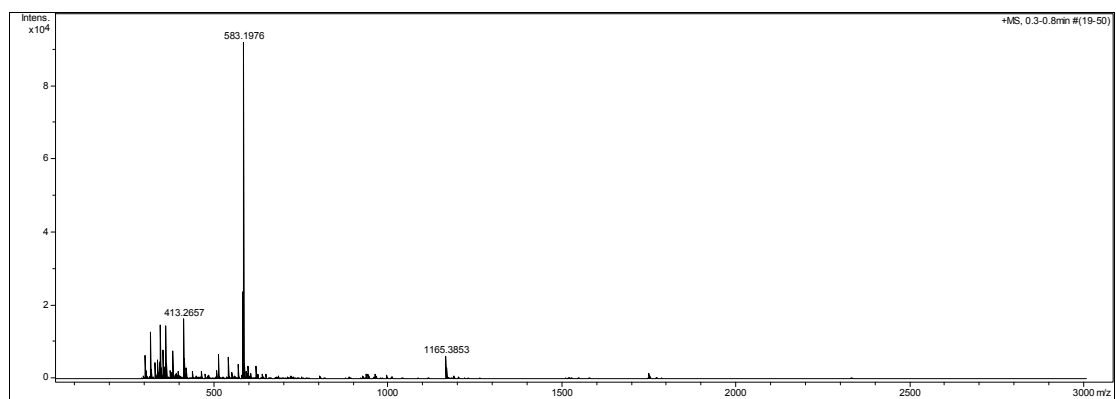


Fig. S3 ESI-TOF-MS spectrum of PPD.

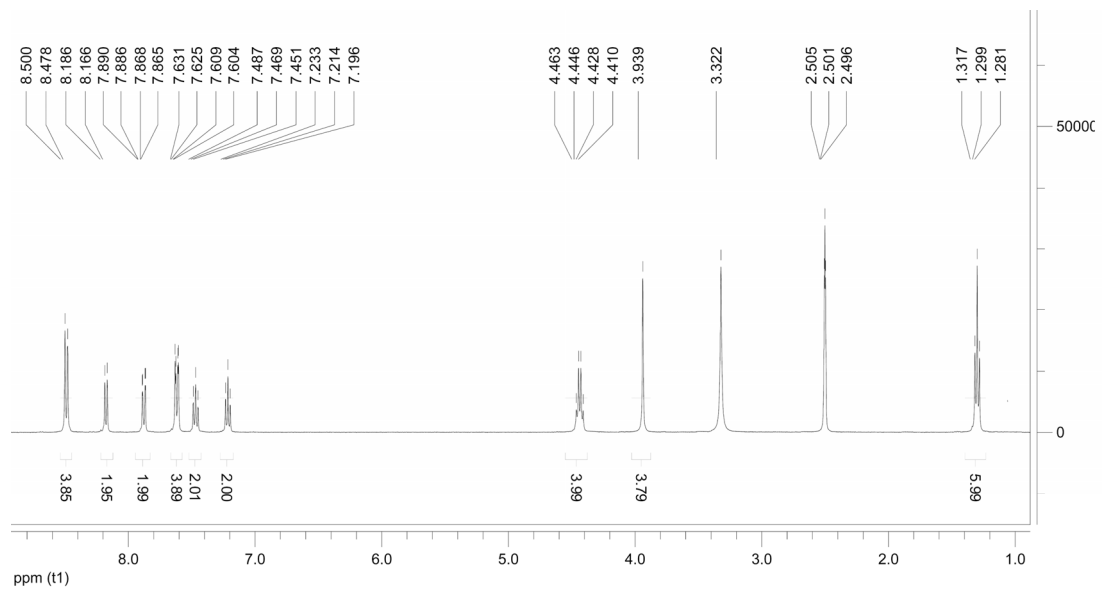


Fig. S4 ^1H NMR (400 MHz, DMSO) spectrum of PED.

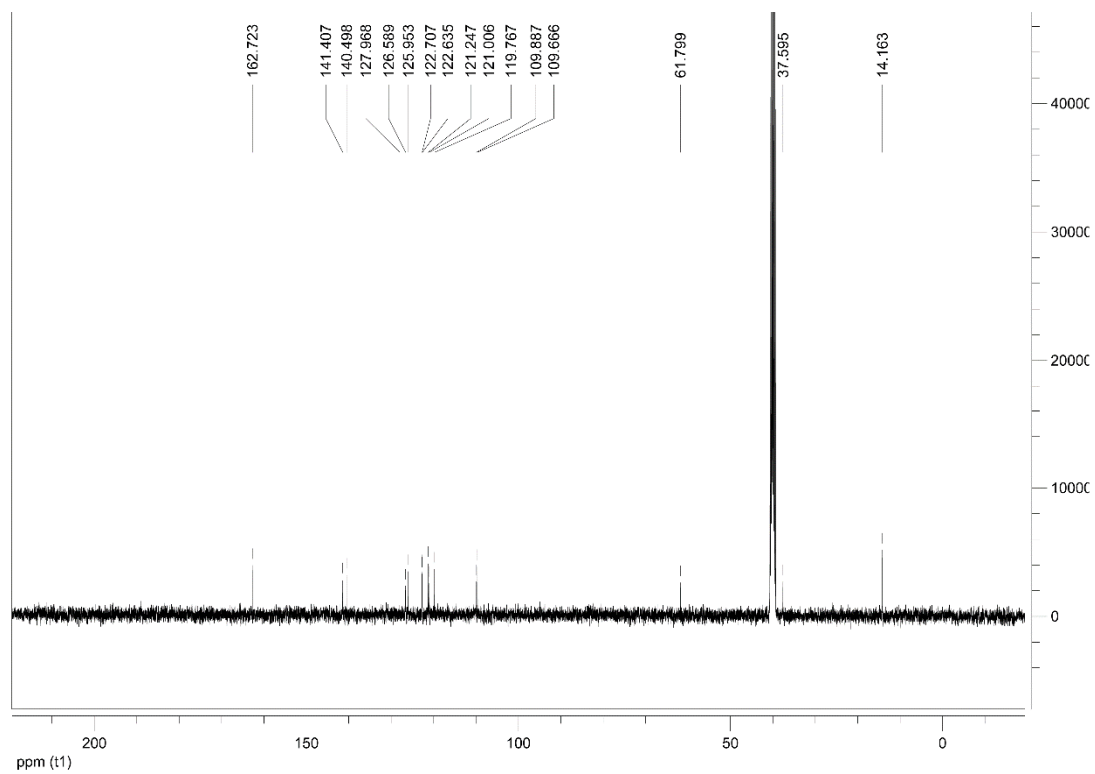


Fig. S5 ^{13}C NMR (100 MHz, DMSO) spectrum of PED.

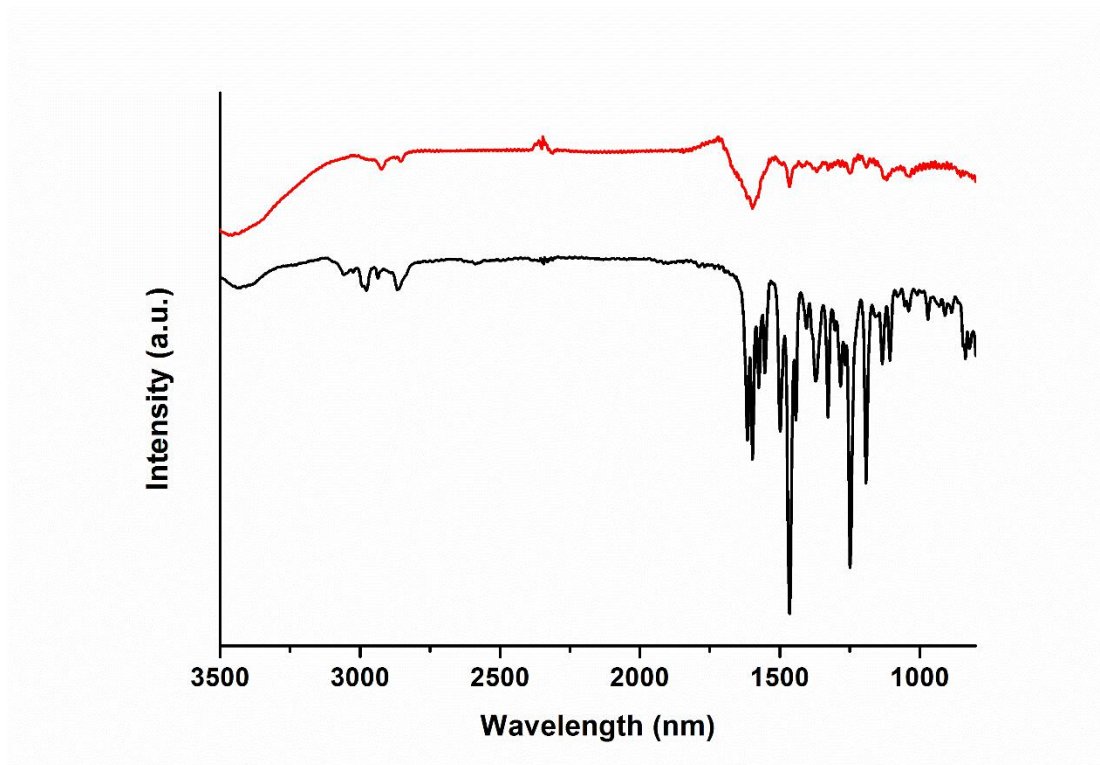


Fig. S6 IR spectra of the ground PPD and fumed PPD.

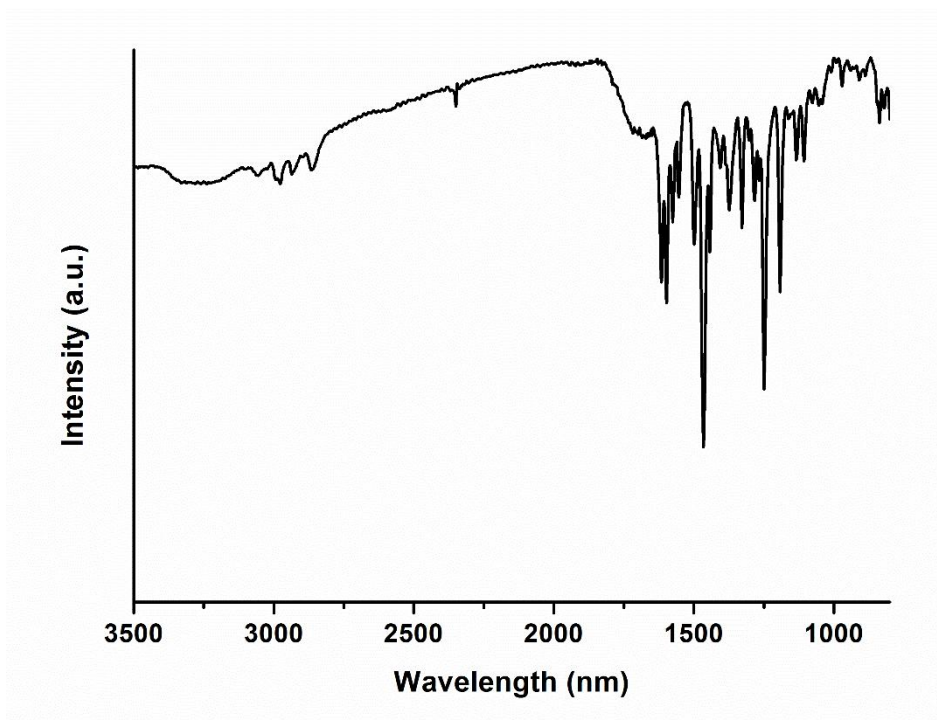


Fig. S7 IR spectra of PED

Table S1 Energy levels and E_g of PED and PPD from experiment and quantum chemical calculation.

	E_{HOMO} (eV) ^a	E_{LUMO} (eV) ^b	E_g (eV) ^c	E_{HOMO} (eV) ^d	E_{HOMO} (eV) ^d
PED	-5.22	-1.82	3.50	-5.12	-1.20
PPD	-4.93	-2.32	2.61	-4.94	-1.80

^a Electrochemical method was used to obtain the HOMO energy levels by comparing with an external reference, the ferrocene/ferrocenium (F_c/F_c^+ , 4.8 eV relative to vacuum). ^b The LUMO energy level was estimated by the equation: $E_{\text{LUMO}} = E_{\text{HOMO}} + E_g$. ^c E_g was determined from the edge of the absorption spectrum. ^d They were obtained by quantum chemical calculation.

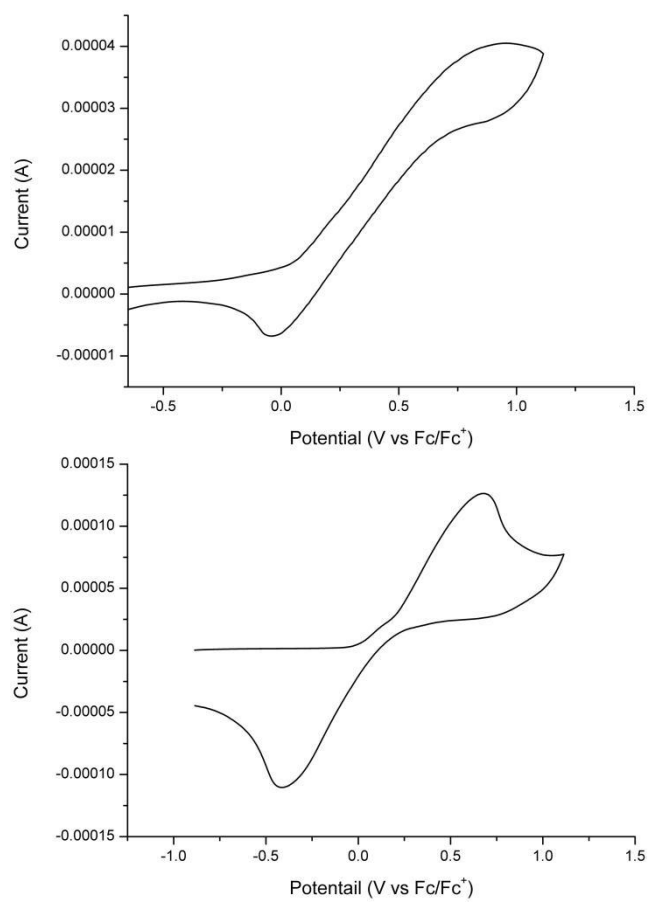


Fig. S8 Cyclic voltammetry of (top) PED and (bottom) PPD

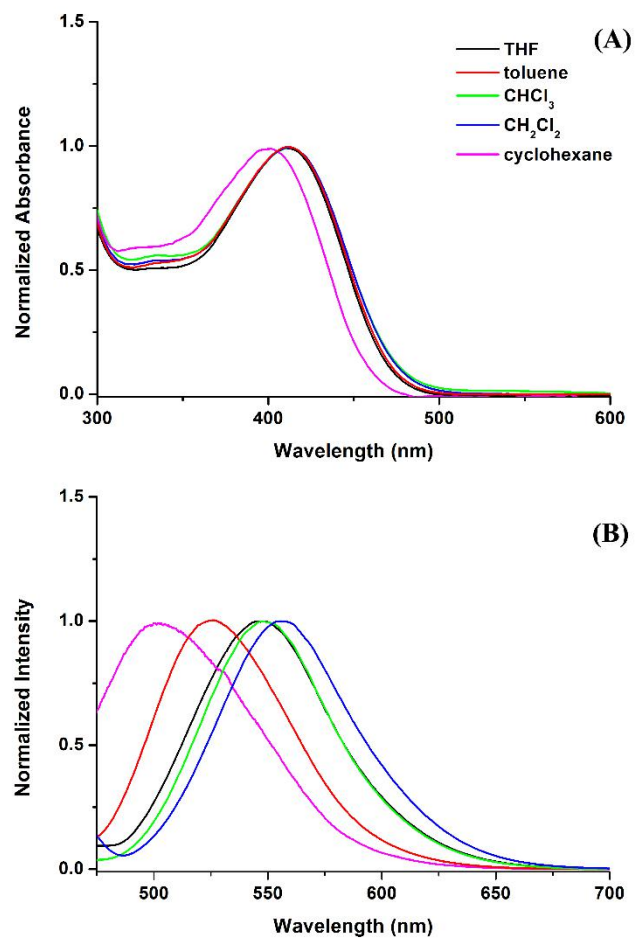


Fig. S9 Normalized solvent-dependent absorption and emission spectra of PPD. Concentration for all examples is 1.0×10^{-5} M, $\lambda_{em} = 400$ nm.

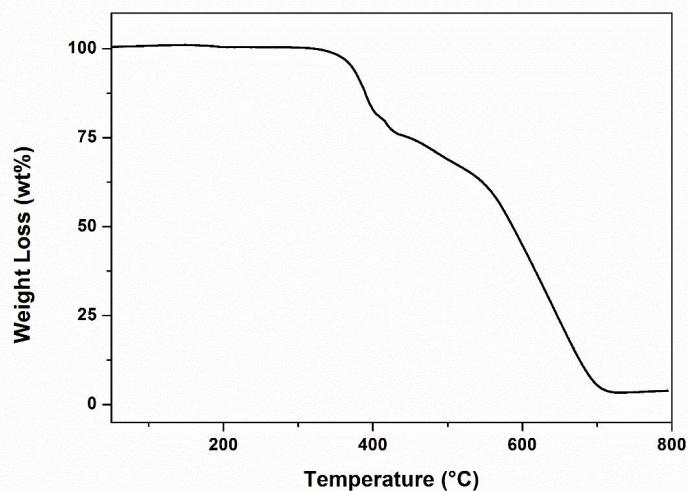


Fig. S10 TG curve of PPD in the experimental range of 50-800 °C.

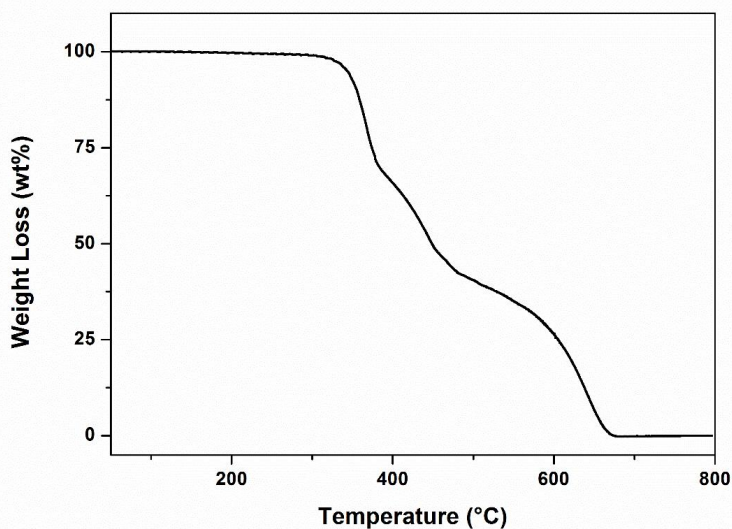


Fig. S11 TG curve of PED in the experimental range of 50-800 °C.

Thermogravimetric analysis had been conducted in the experimental range of 50-800 °C. In the case of PPD, the first stage of weight loss occurred at 340 °C, which was a little higher than that of PED. A residue of 3.2 wt% was found, which would be ascribed to the incomplete calcination and residue carbon. In the case of PED, the first stage of weight loss started at 290 °C, and a residue of 0.30 wt% was detected.



Fig. S12 Photos of PED solid before (left) and after (right) grinding under natural light.

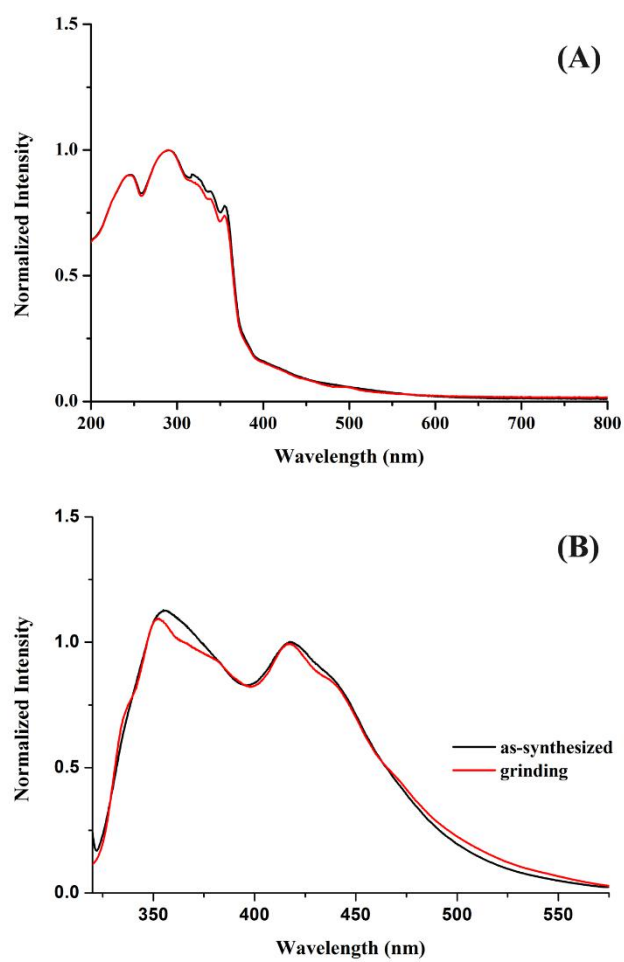


Fig. S13 UV-vis absorption (A) and fluorescence (B) spectra of PED in solid.

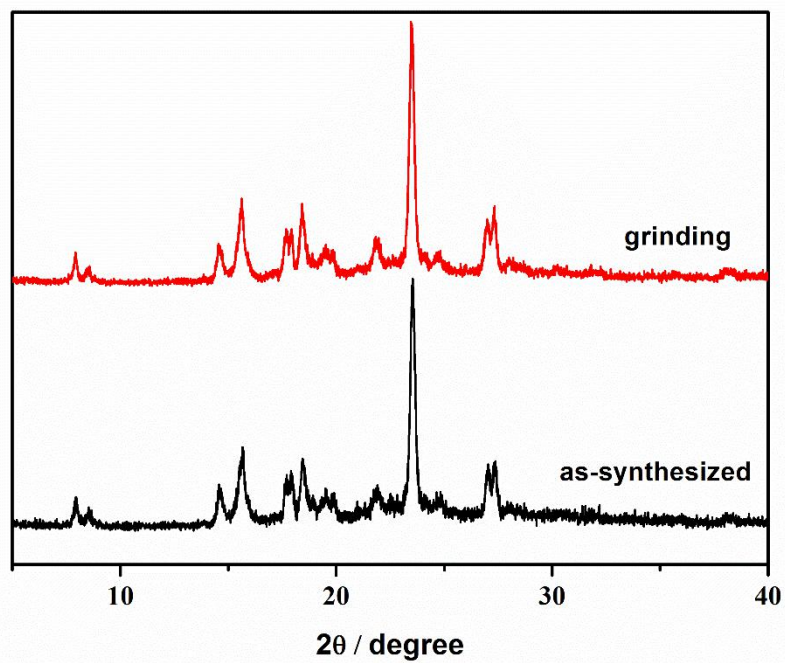


Fig. S14 XRD pattern of the as-synthesized and grounded PED samples.