Supporting information for

AIE-active non-planar phenothiazine-based derivatives with mechanical-induced emission enhancement characteristic

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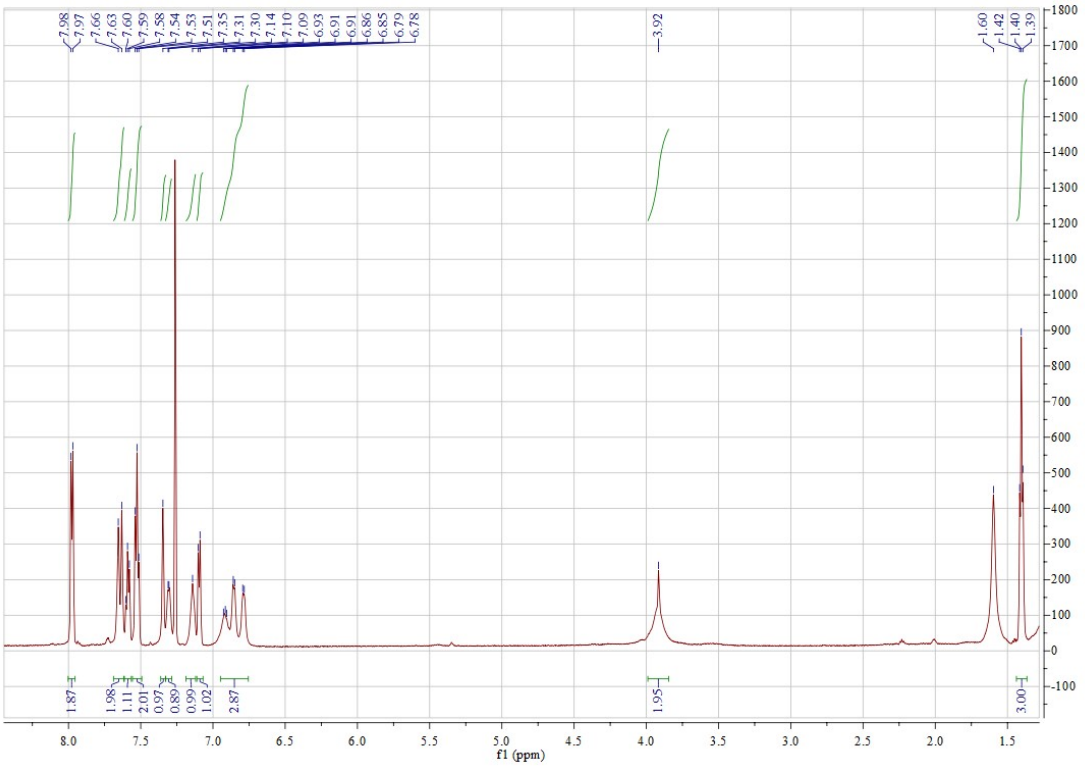
Experimental section measurements and instruments

All the raw materials were purchased from Energy Chemical Works (China) without further purification. All the solvents were purchased from Beijing Chemical Works (Beijing, China) and were of analytical reagent grade; moreover, they were used without further purification. The ^{1}H NMR and ^{13}C NMR spectra were recorded using a Mercury Plus instrument at 600 MHz and 151 MHz by using $CDCl_3$ as the solvent in all cases. The HR-MS spectra were recorded using a Bruker Impact II. The UV-vis absorption spectra were obtained using a VARIAN Cary 5000 spectrophotometer. The absorption spectra of the solids were obtained by measuring their films on the surface of a silica plate. Photoluminescence measurements were obtained using a Cary Eclipse fluorescence spectrophotometer. The fluorescence quantum yields of EPMBS and EPMMBS in solvents were measured by comparing with a standard (quinine in 0.1 N H_2SO_4, $\Phi = 0.546$) and the excitation wavelength was 365 nm. The XRD patterns were obtained using an Empyrean X-ray diffraction instrument equipped with graphite-monochromatized Cu Kα radiation (λ = 1.5418 Å) by employing a scanning rate of 0.0261 s^{-1} in the 2θ range from 5 to 60. The solid fluorescence quantum yields and fluorescence lifetimes were measured using an Edinburgh FLS980 fluorescence spectrophotometer under air at room temperature. Dynamic light scattering (DLS) measurements were performed on the BI-200SM Laser Light Scattering System (Brookhaven). FESEM was performed using a JSM-7500F. The molecular configuration was used to obtain the frontier orbitals of EPMBS and EPMMBS by density functional theory (DFT) calculations at the B3LYP/6-311G (d,p) level with the Gaussian 09W program package. The filter papers loaded EPMBS and EPMMBS were prepared by evenly spraying their $CHCl_3$ solution (5 mg/mL), respectively, and then quickly dried in air.



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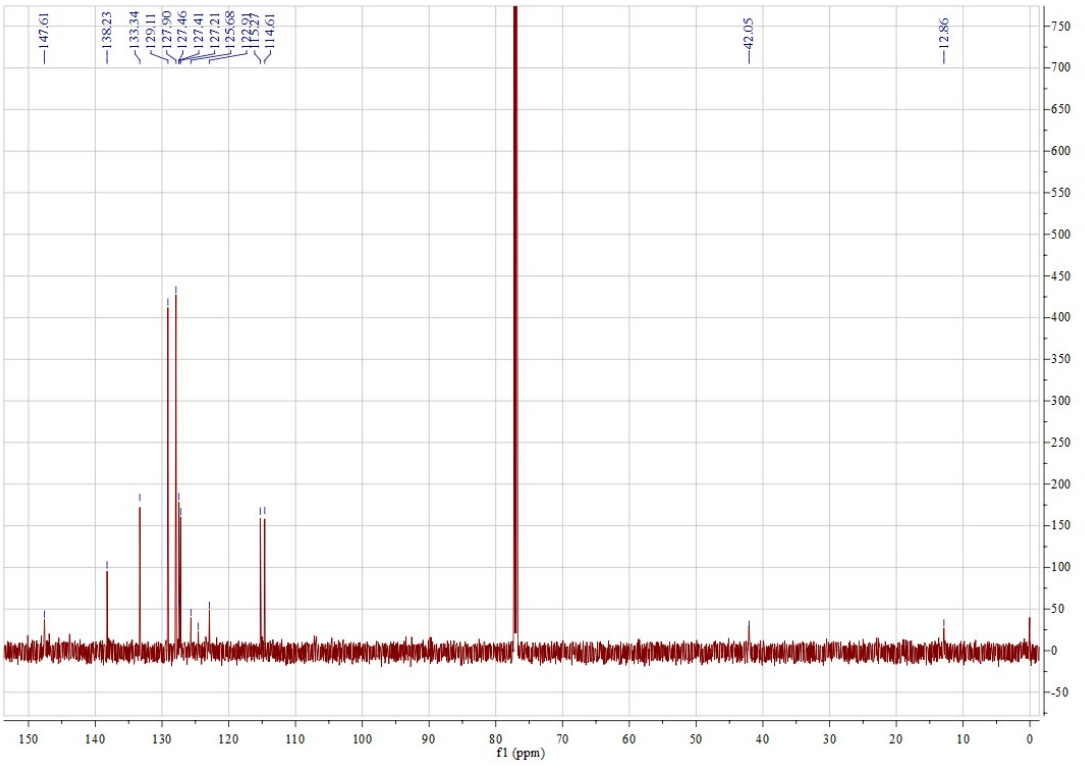
2 Fig. S1 ^{1}H NMR (600 MHz, $CDCl_3$) of compound EPMBS



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4 Fig. S2 ^{13}C NMR (151 MHz, $CDCl_3$) of compound EPMBS

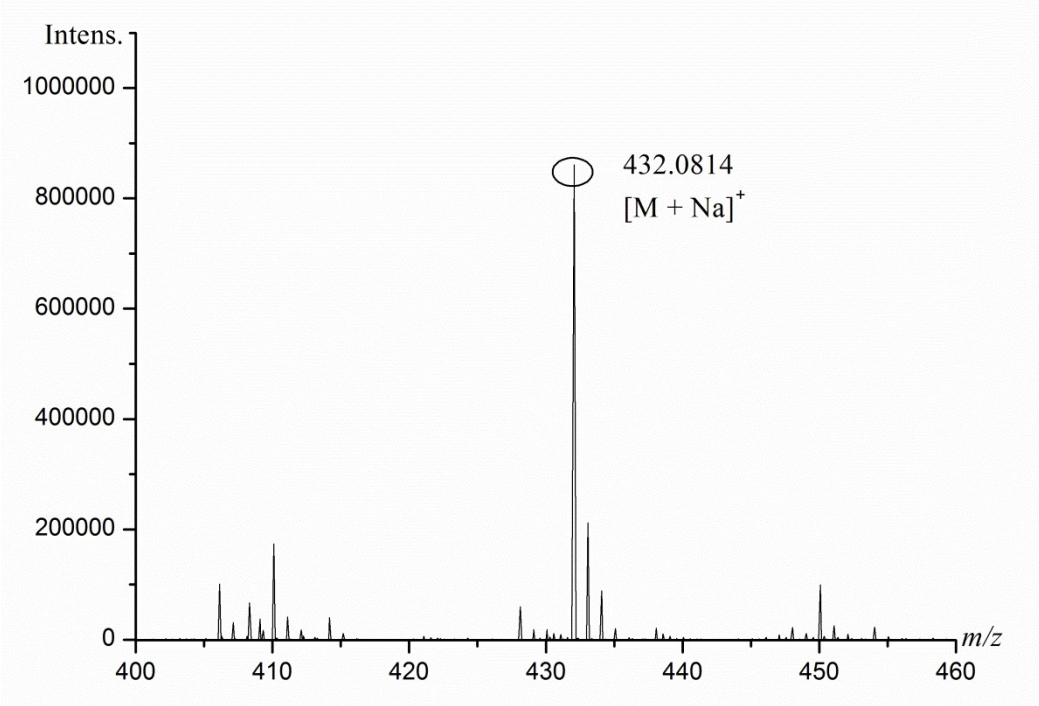

Fig.S3 HR-MS of compound EPMBS in MeOH.

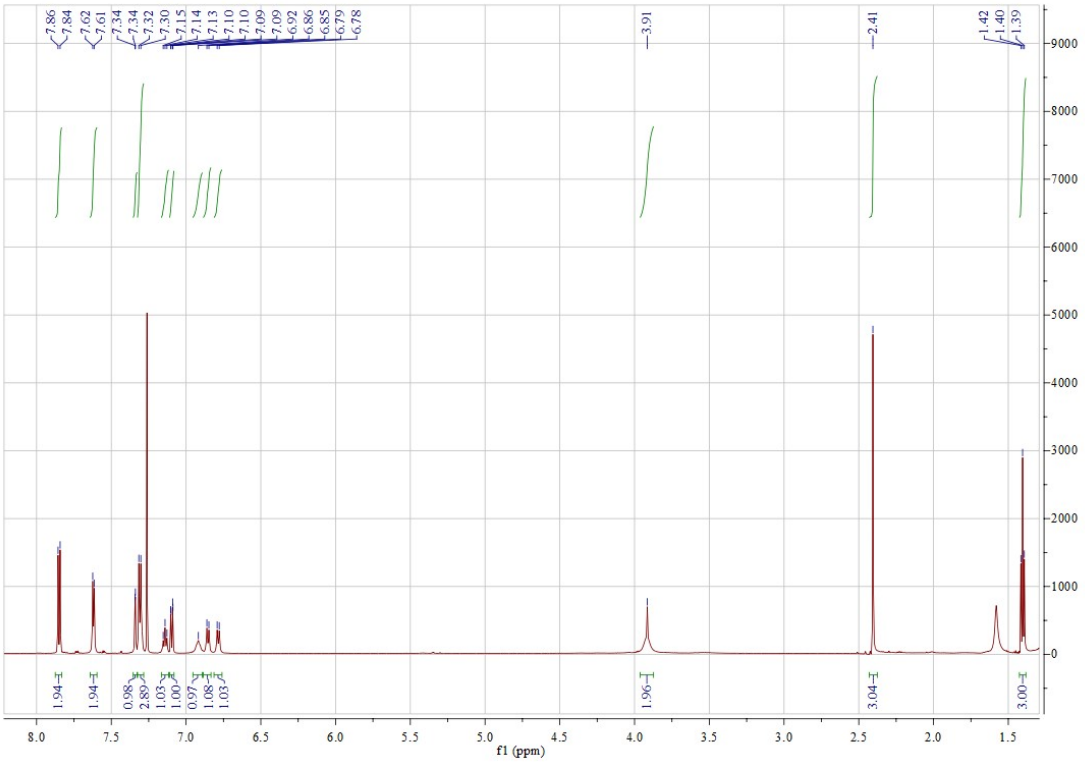

Fig. S4 ^{1}H NMR (600 MHz, $CDCl_3$) of compound EPMMBS

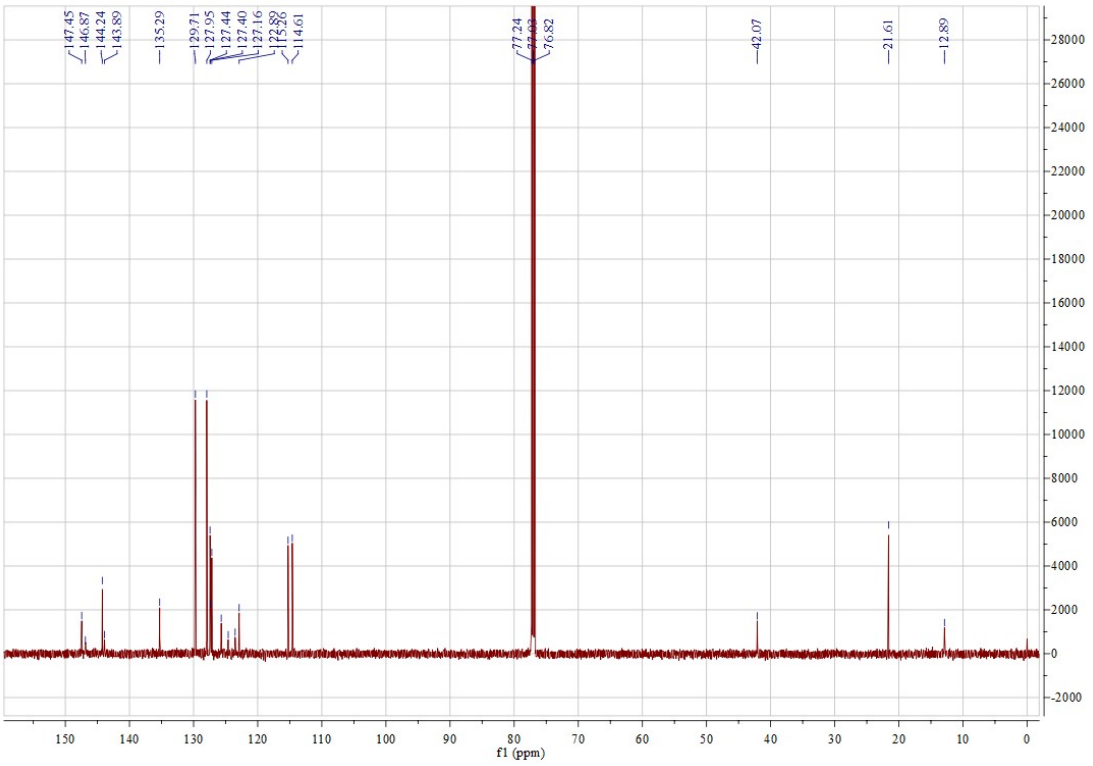

Fig. S5 ^{13}C NMR (151 MHz, $CDCl_3$) of compound EPMMBS

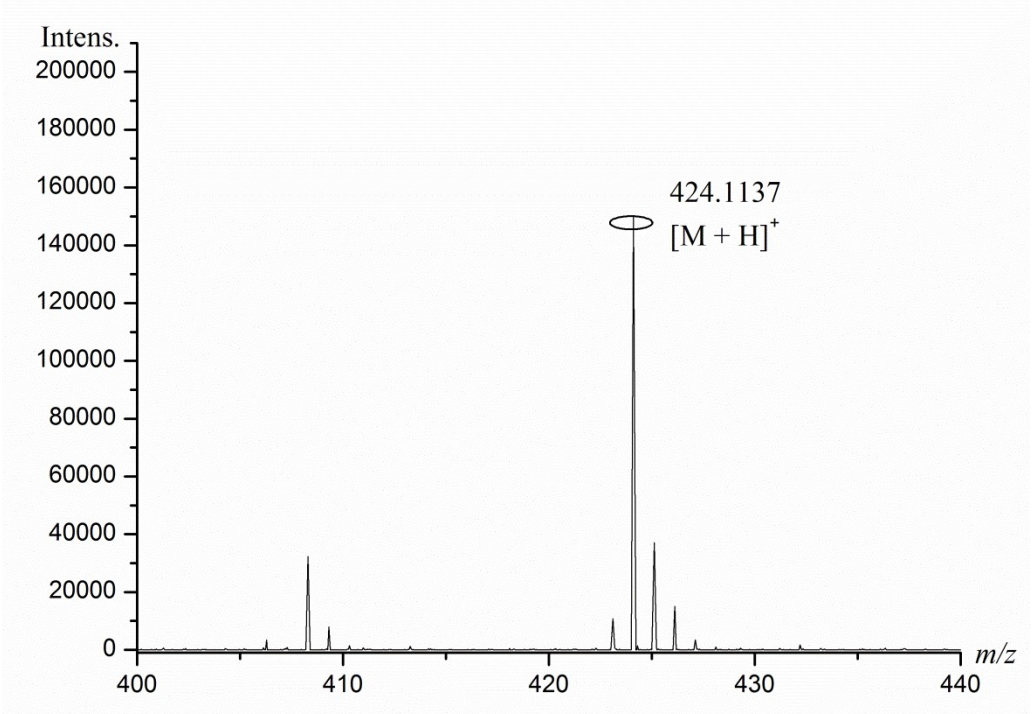

Fig.S6 HR-MS of compound EPMMBS in MeOH.

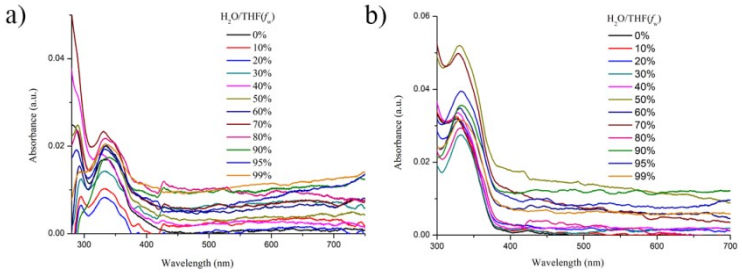

Fig.S7 UV-Vis absorption spectra of EPMBS (a) and EPMMBS (b) (1×10^{-4} M) in THF/water mixtures with different water fractions

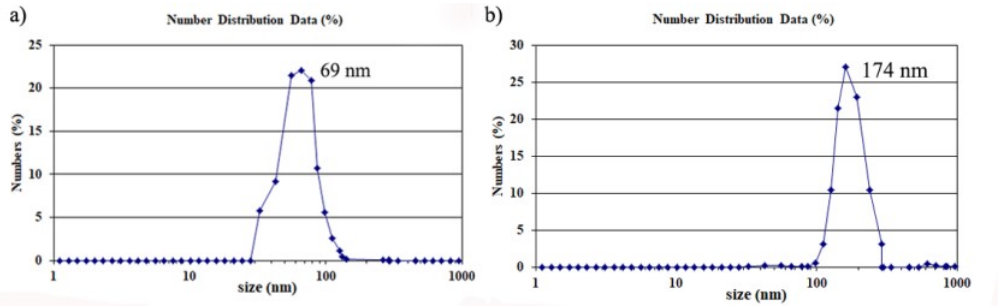

Fig.S8 DLS of EPMBS and EPMMBS in THF/H_2O mixture with f_w = 60%

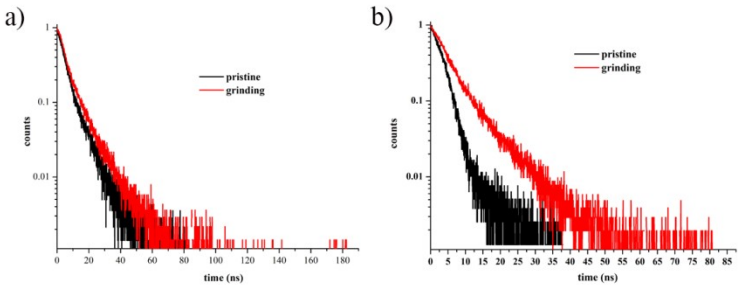

Fig.S9 the fluorescence decay curves of EPMBS (a) and EPMMBS (b) in pristine and grinding states

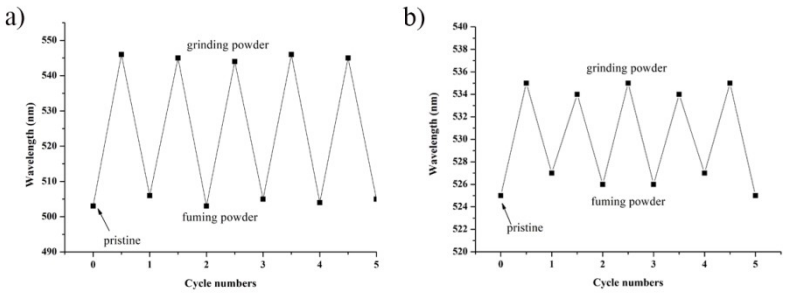

Fig.S10 Maximum fluorescent emission of EPMBS (a) and EPMMBS (b) upon repeating treated by grinding and fuming with DCM in supporting information