Electronic Supplementary Material (ESI) for RSC Advances.

Clear Piezochromic Behaviors of AIE-active Organic Powders under Hydrostatic Pressure

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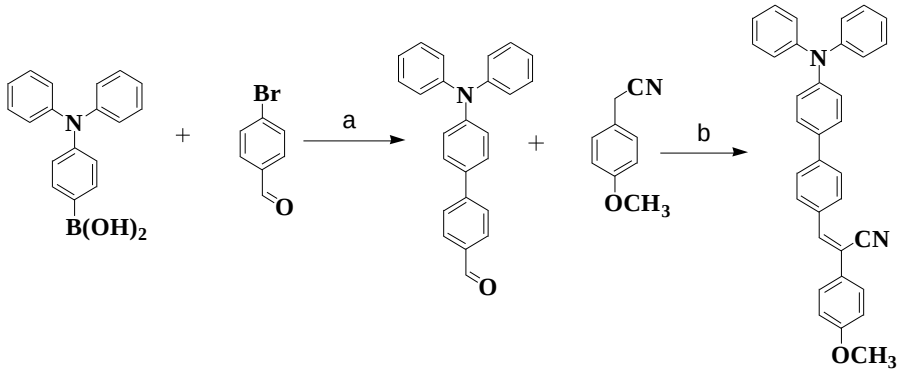
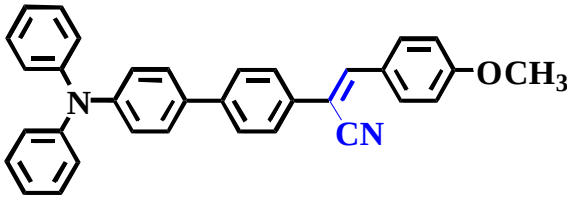
Table S1 Time-resolved emission-decay curves of the crystals β-CN-TPA under different mechanical grinding with Function $I \propto \Sigma_i A_i \exp(-t/\tau_i)$ (A_i and τ_i are the relative weights and lifetimes respectively, i=1, 2). Excitation wavelength 370 nm

	A_1/A_2	λ_{ex}(nm)	τ_1 (ns)	τ_2 (ns)	τ_{av} (ns)	χ^2	Φ_f(%)
Crystal	100%/--	524	2.7	--	2.7	1.172	45
Grinding	100%/--	522	2.4	--	2.4	1.992	46



Scheme S1 Synthesis routes; (*a*) toluene/THF, K_2CO_3 aqueous solution, 90 ºC for 24 h; (b) sodium methoxide, anhydrous ethanol, at the room temperature for 6 h.



Scheme S2 Molecular structures of the *α*-CN-TPA

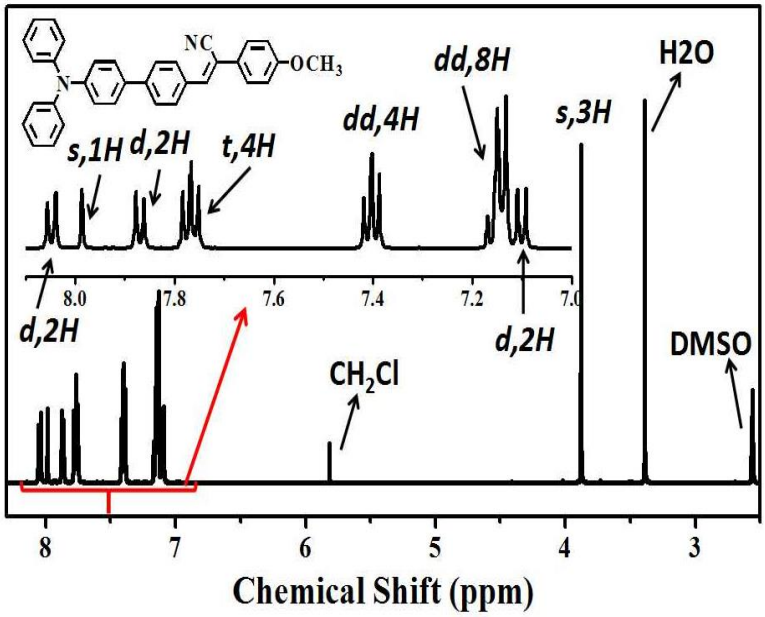


Fig. S1 ^{1}H NMR Spectral of the β-CN-TPA in $CDCl_3$

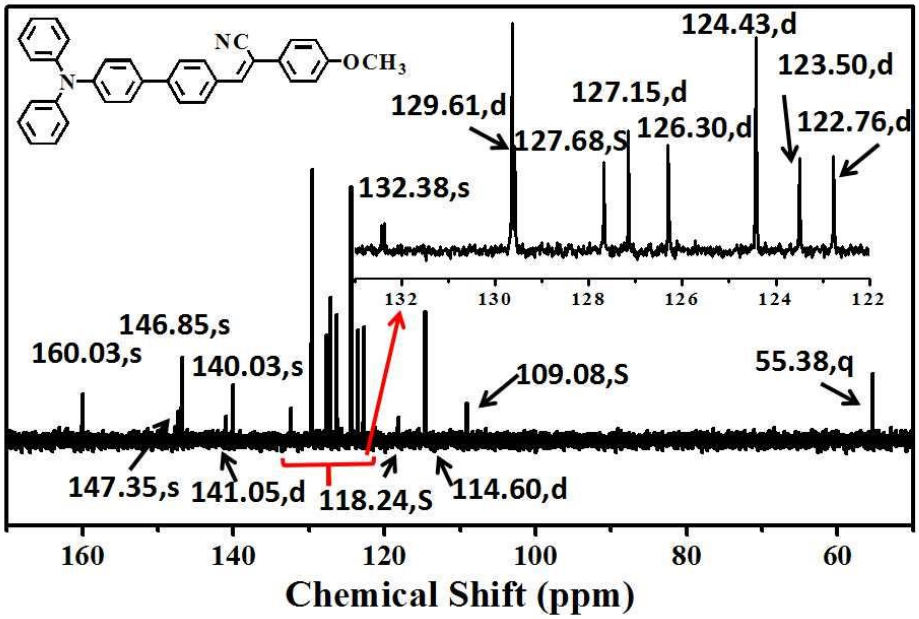
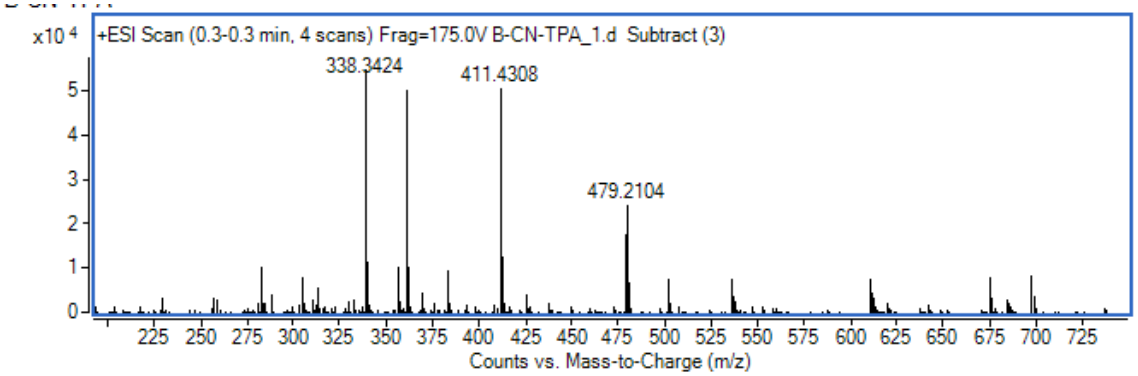


Fig. S2 ^{13}C NMR spectral the β-CN-TPA in $CDCl_3$



Formula (M)	Ion Formula	m/z	Calc m/z	Diff (ppm)	DBE
C34 H26 N2 O	C34 H27 N2 O	479.2104	479.2118	2.91	23

Fig. S3 HRMS spectral of the β-CN-TPA in $CDCl_3$

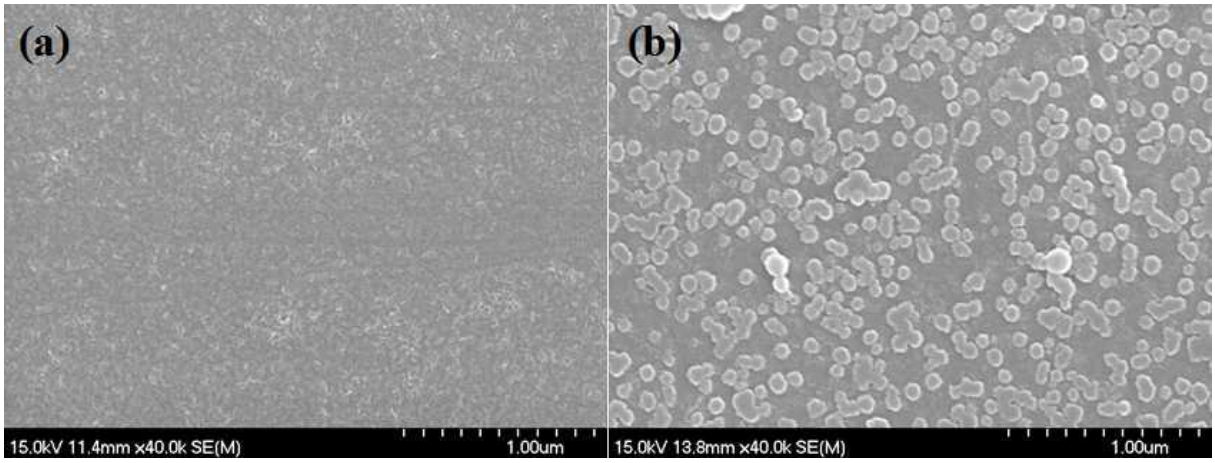


Fig. S 4 SEM images of the spherical nanostructures prepared from THF/H_2O (10:0) and (1:9) mixtures of **β-CN-TPA**. Solution concentration: 10 μM.

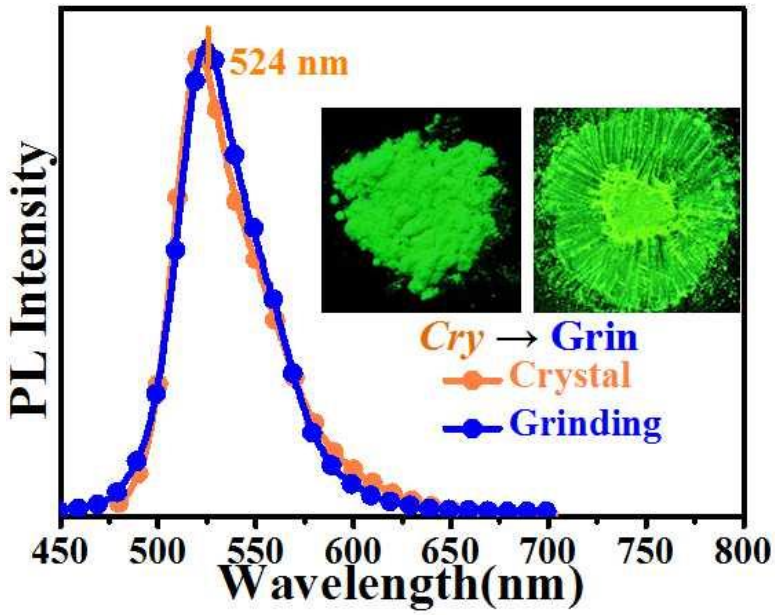


Fig. S5 Fluorescence spectra and photograph (under UV light, 365 nm) of the **β-CN-TPA** crystalline powders and the ground powders.

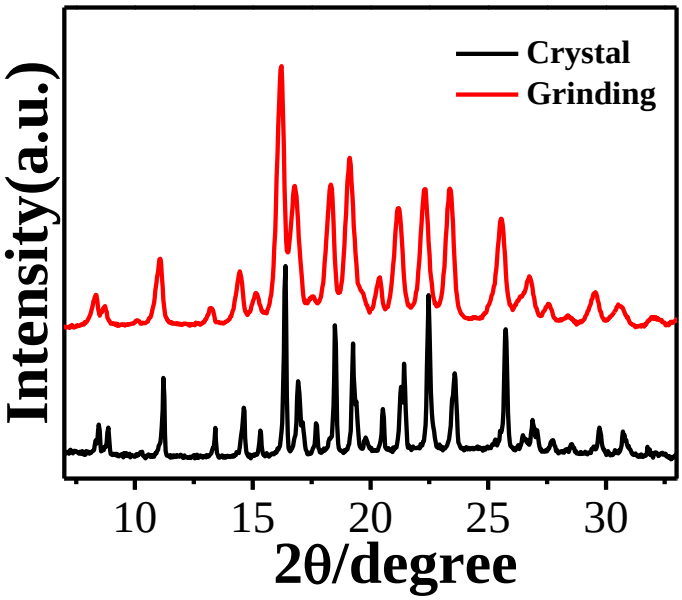


Fig. S6 Powder X-ray diffraction patterns of the **β-CN-TPA** in different state (before and after grinding)

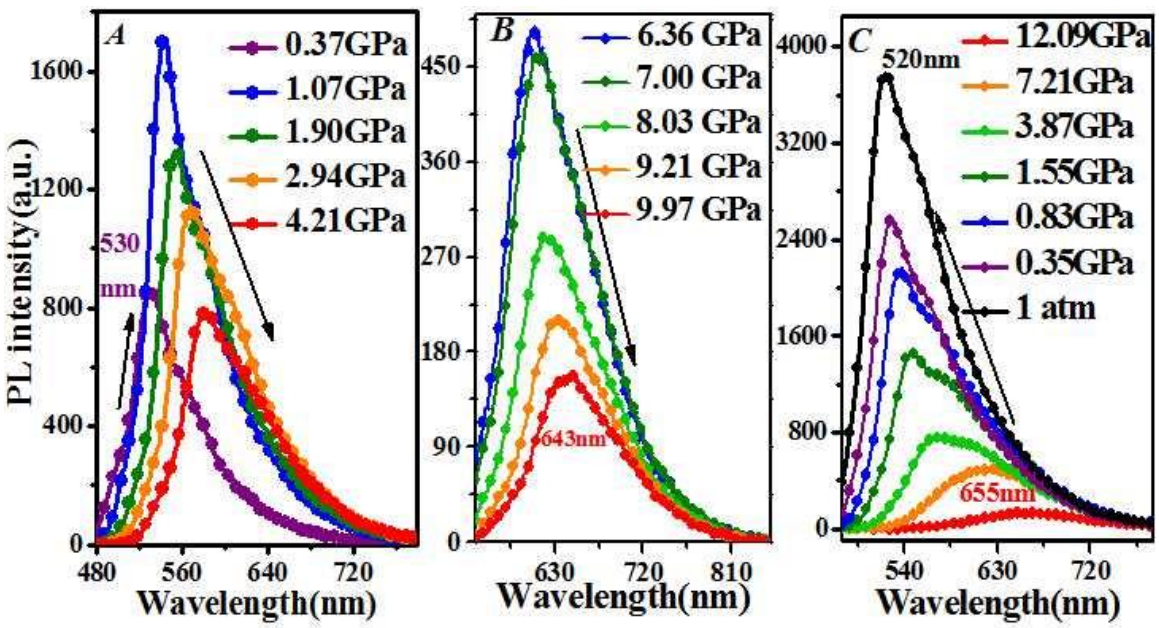


Fig. S7 Fluorescence spectra of the **β-CN-TPA** under the hydrostatic pressure (from the compression to decompression).

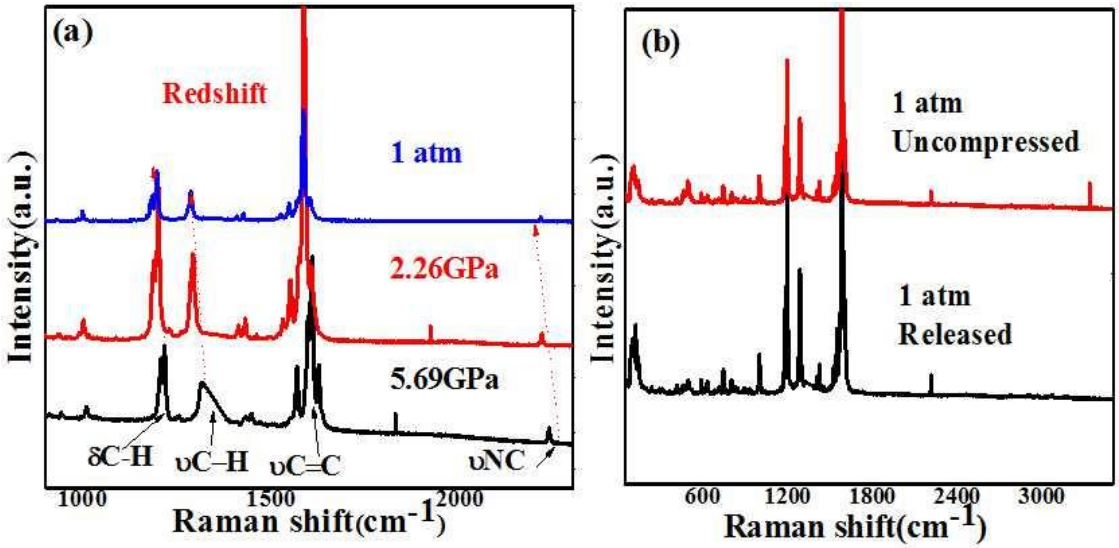


Fig. S8 (*a*) Raman spectra of the **β-CN-TPA** crystal under the hydrostatic pressure from 5.69 GPa to 1 atm in the spectral regions 900-2300 cm^{-1}; (*b*) Comparison of the Raman spectra of the ***β*-CN-TPA** in the original and released states.