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A turn-on type mechanochromic fluorescence material based on defect-induced emission: Implication for pressure sensing and mechanical printing

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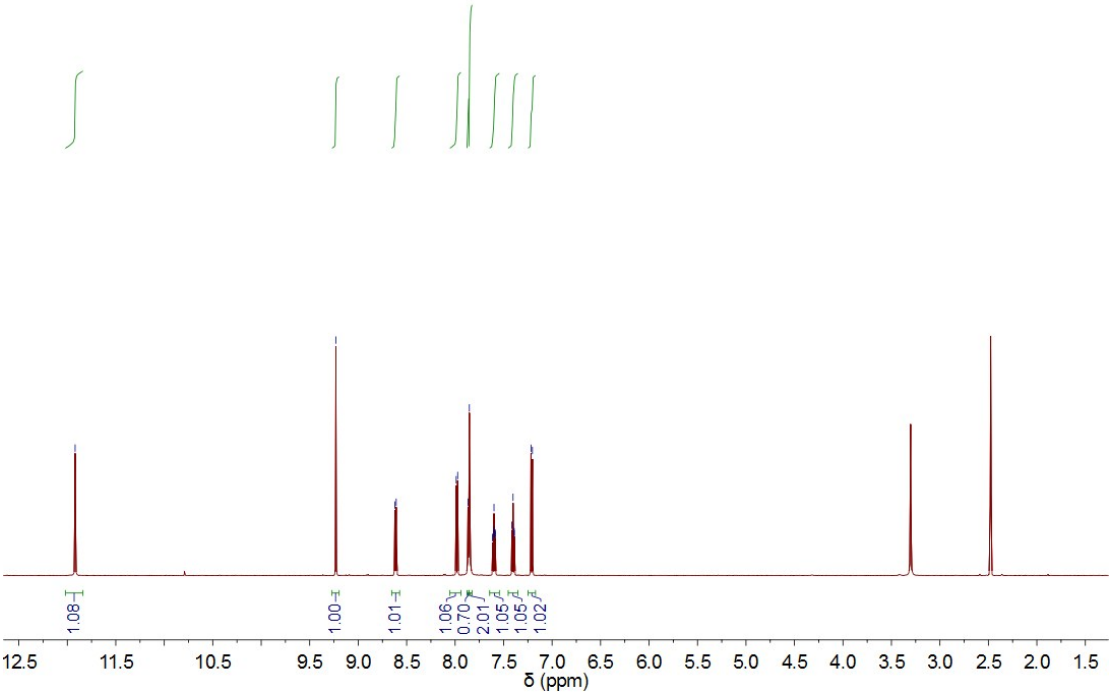

Fig. S1 ^{1}H NMR (600 MHz, 298 K) spectrum of AHM in DMSO-d_6.

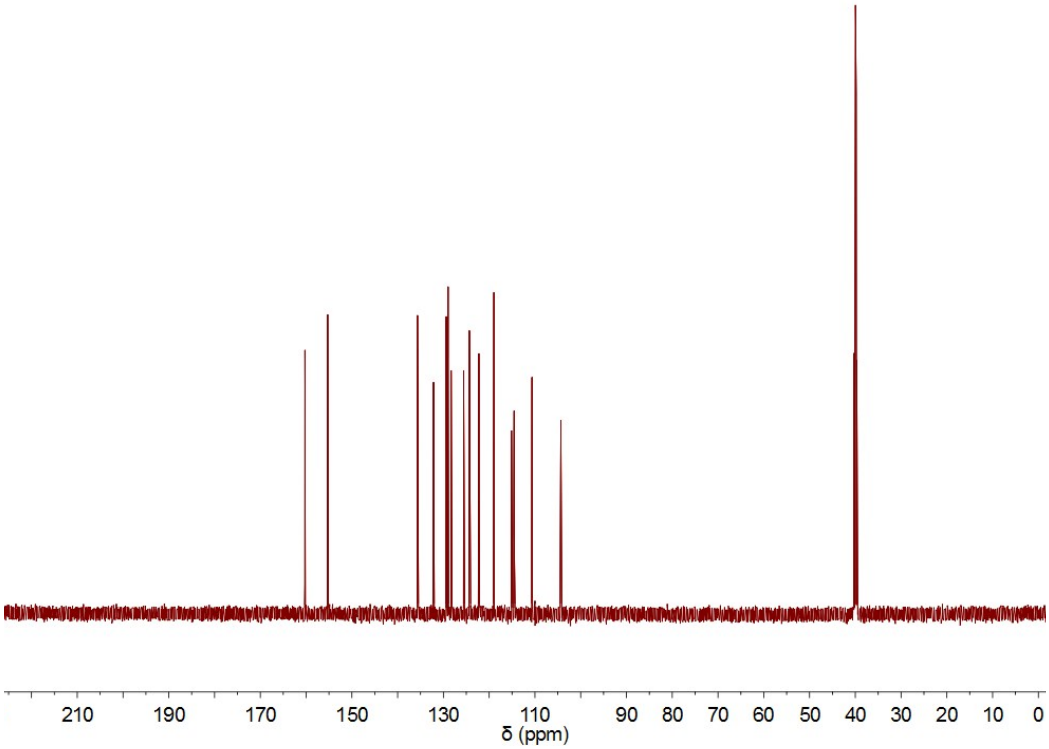

Fig. S2 ^{13}C NMR (600 MHz, 298 K) spectrum of AHM in DMSO-d_6

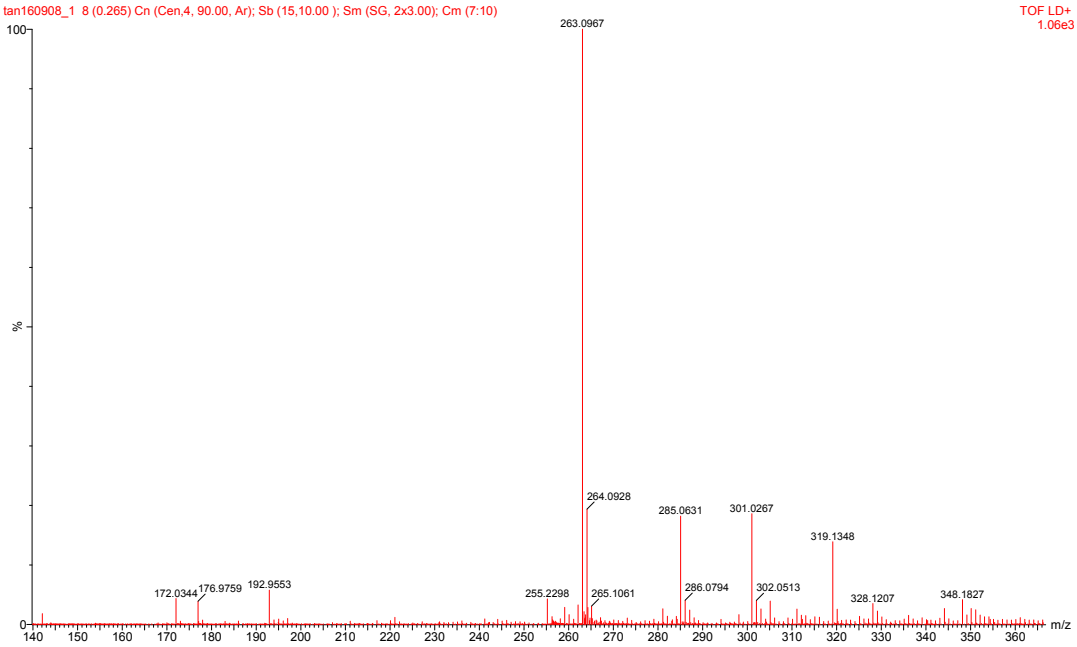

Fig. S3 High resolution mass spectrum of AHM.

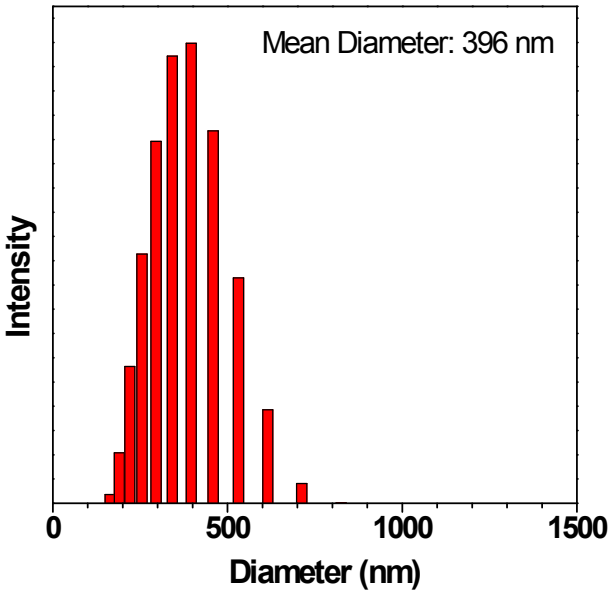

Fig. S4 DLS analysis showing diameter of AHM in THF/water mixtures with 60% f_w.

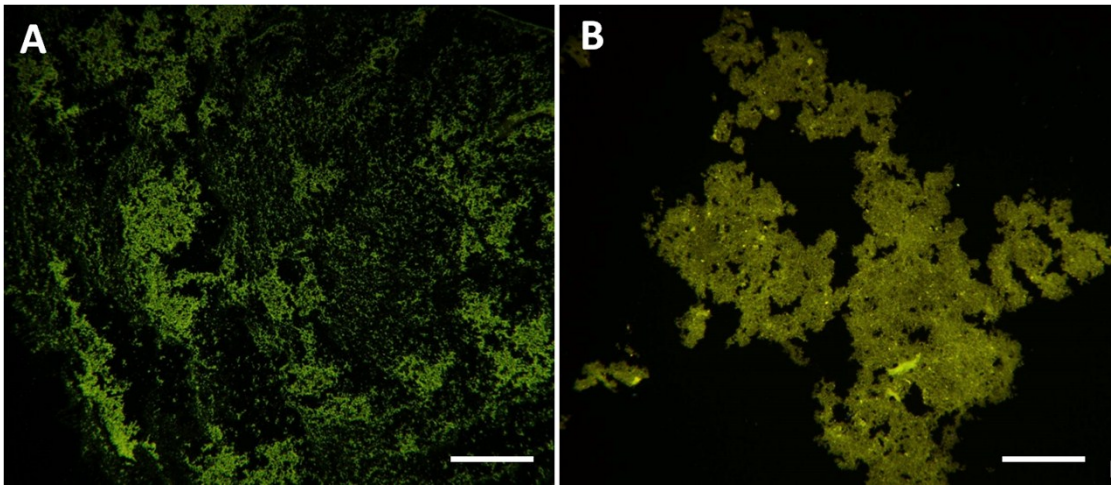

Fig. S5 Fluorescence microscopy images of AHM aggregates collected from THF-water mixtures with f_w of (A) 60% and (B) 99%. Concentration: 100 μM. Excitation wavelength: 365 nm. Scale bar: 200 μm.

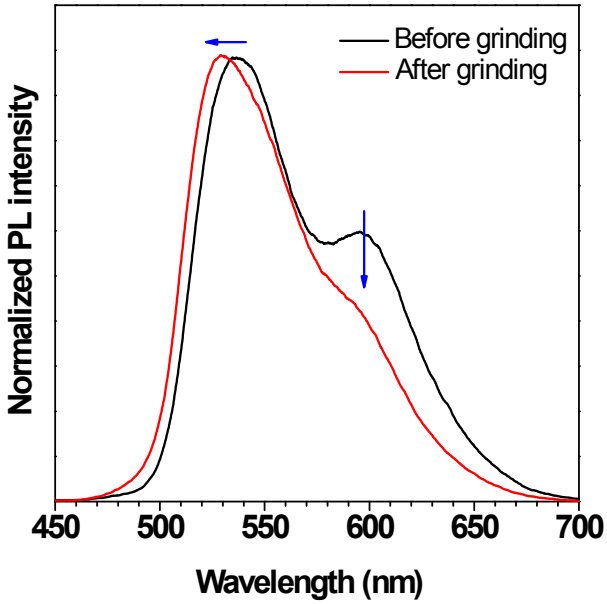

Fig. S6 Normalized PL spectrum of AHM crystals before (black) and after (red) grinding. AHM crystals was obtained by slow evaporation of its THF-ethanol solution.

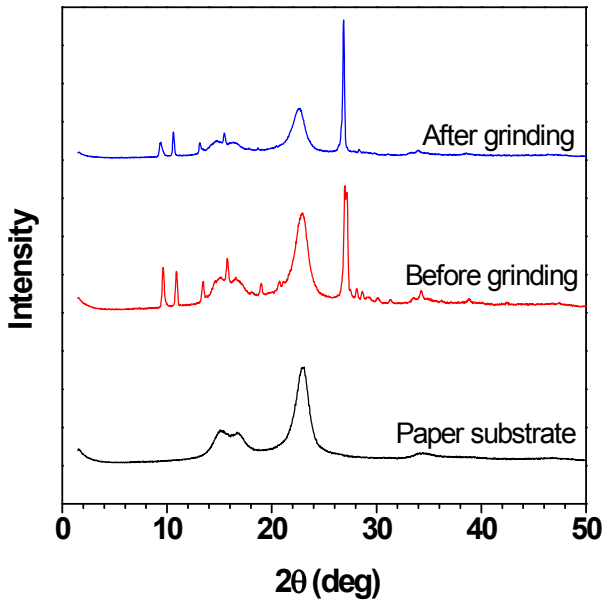

Fig. S7 XRD diffractograms of the paper substrate (black), the pristine crystals (red) and the ground crystals (blue).

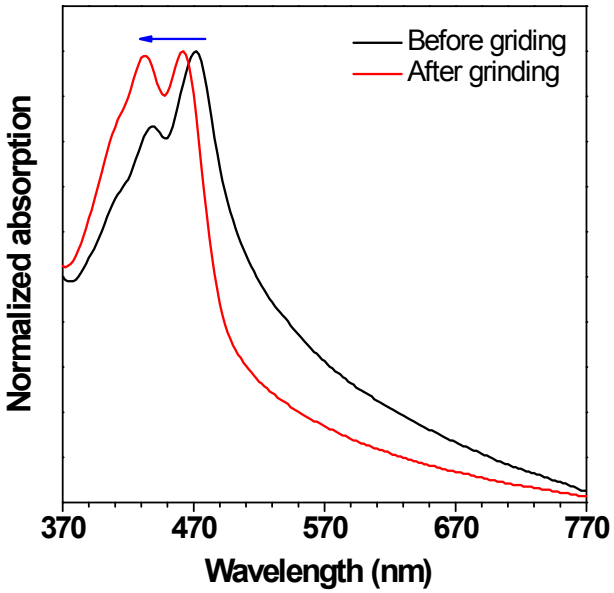

Fig. S8 Normalized UV-vis spectrum of the crystalline film before (black) and after (red) grinding. The film was deposited on a quartz plate by drop-casting (10 mM, THF).

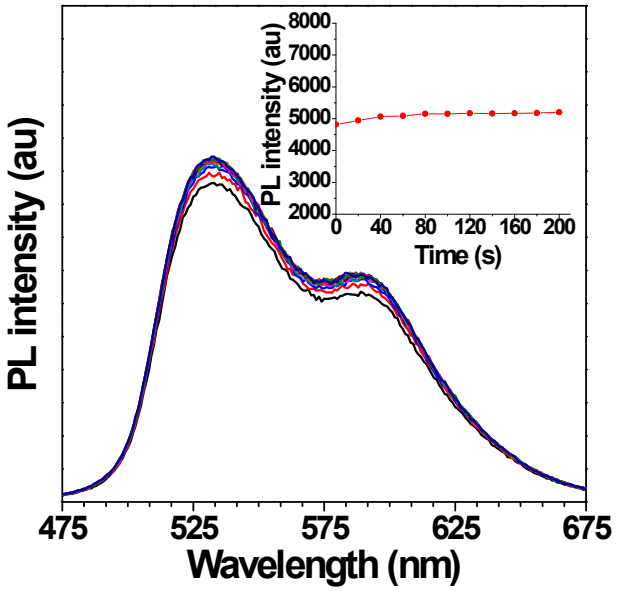

Fig. S9 Time-dependent emission spectra of the ground film exposed to EA vapour. Time interval: 20 s. Excitation wavelength: 370 nm. Inset: plot of the maximum emission intensity *versus* time.

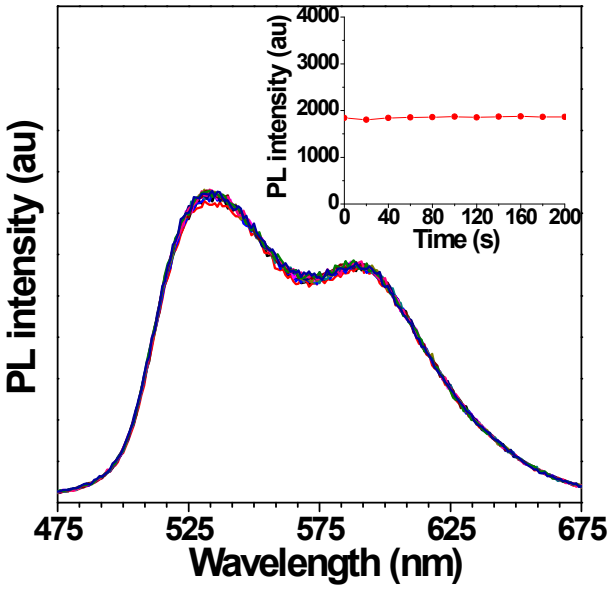

Fig. S10 Time-dependent emission spectra of the ground film exposed to THF vapour. Time interval: 20 s. Excitation wavelength: 370 nm. Inset: plot of the maximum emission intensity *versus* time.

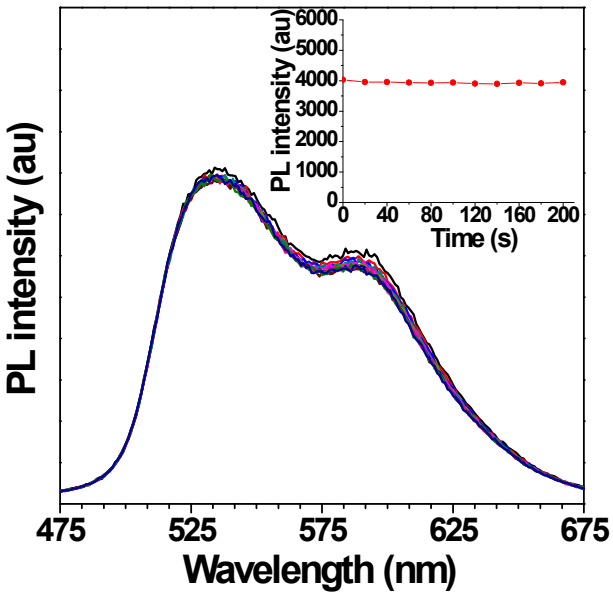

Fig. S11 Time-dependent emission spectra of the ground film exposed to ethanol vapour. Time interval: 20 s. Excitation wavelength: 370 nm. Inset: plot of the maximum emission intensity *versus* time.

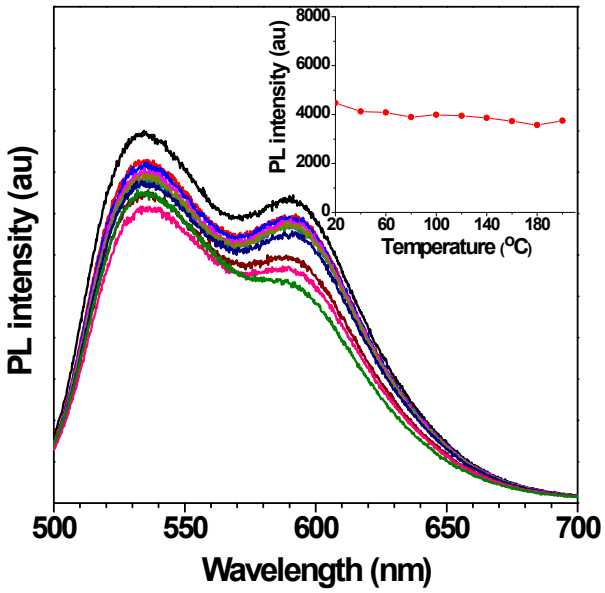

Fig. S12 Temperature dependence of the emission spectra of the ground AHM film. Excitation wavelength: 370 nm. Inset: plot of the maximum emission intensity *versus* temperature.

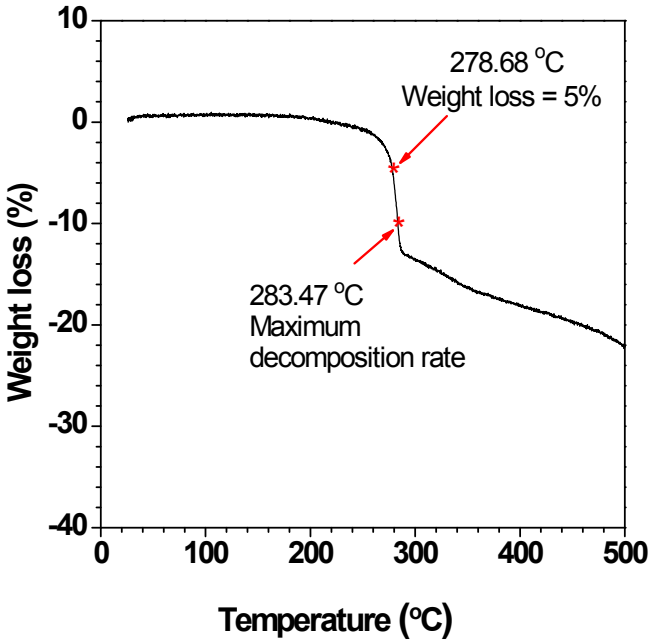

Fig. S13 TGA thermogram of AHM recorded under nitrogen at a heating rate of 10 °C/min.

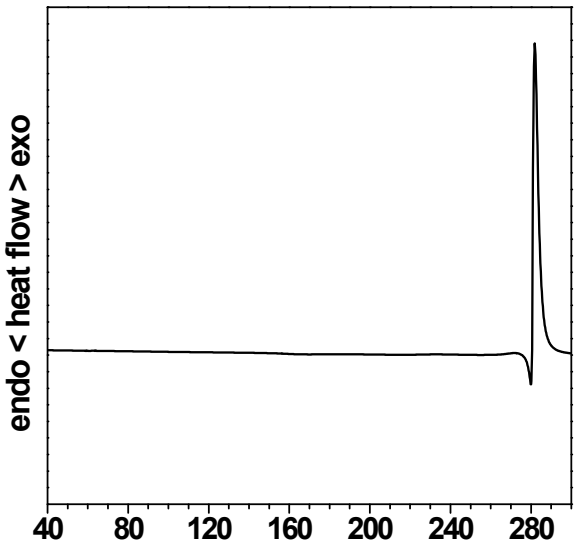

Fig. S14 DSC thermogram of AHM recorded under nitrogen at a heating rate of 10 °C/min.