Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information

Donor-Acceptor Cruciform π-System: high contrast mechanochromic property and multicolour electrochomic behavior

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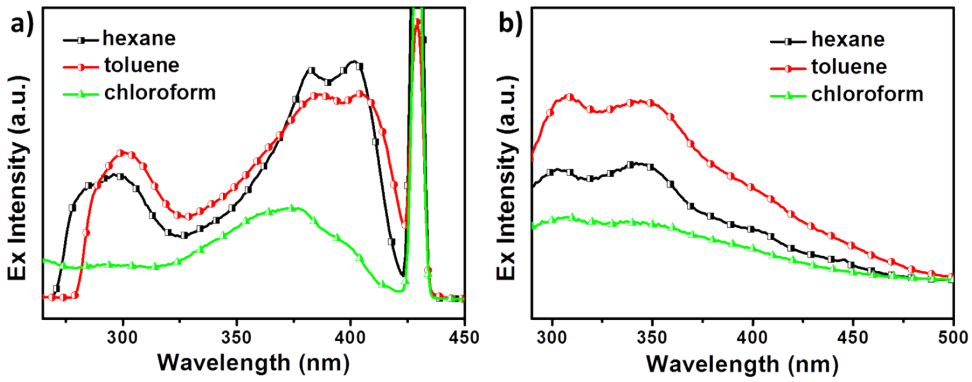

Fig. S1 Excitation spectra of DMCS-TPA in hexane, toluene and chloroform monitored at (a) 430 nm and (b) emission maxima of CT band in different solvents respectively.

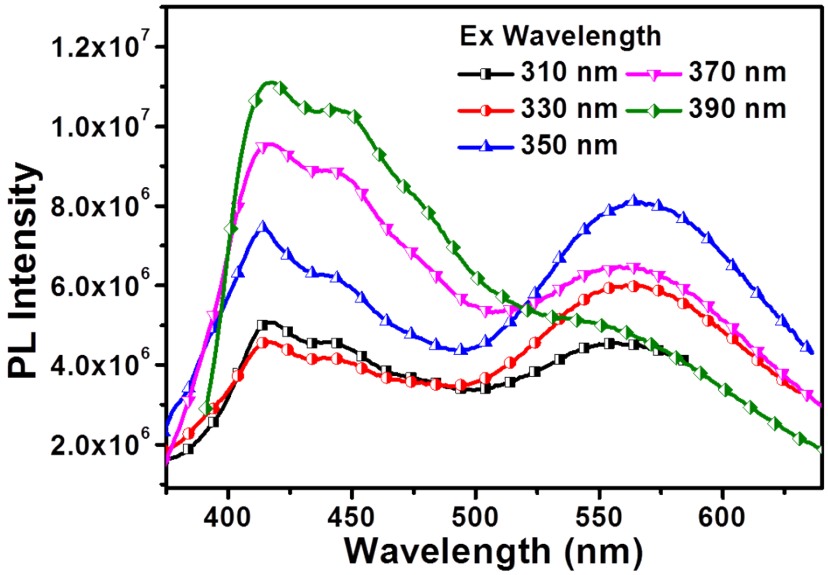

Fig. S2 Dependence of emission spectra as function of excitation wavelength for DMCS-TPA in toluene solution.

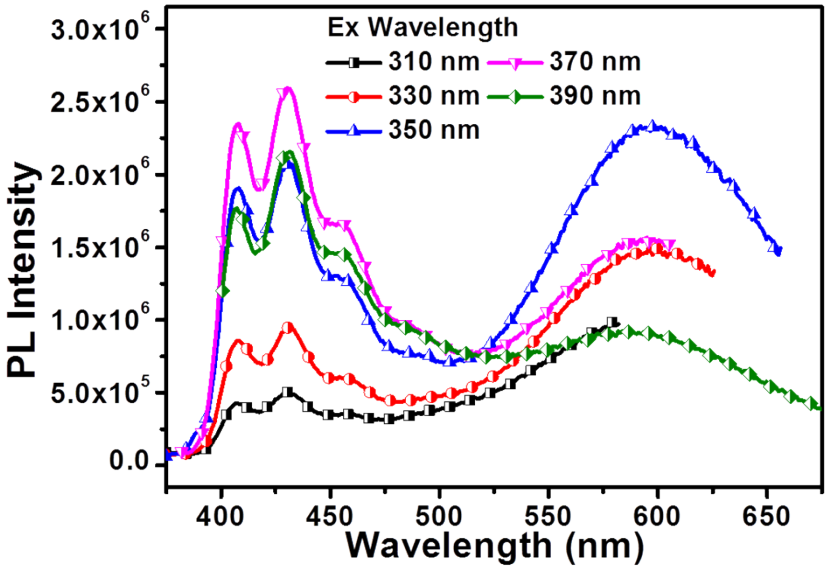

Fig. S3 Dependence of emission spectra as function of excitation wavelength for DMCS-TPA in chloroform solution.

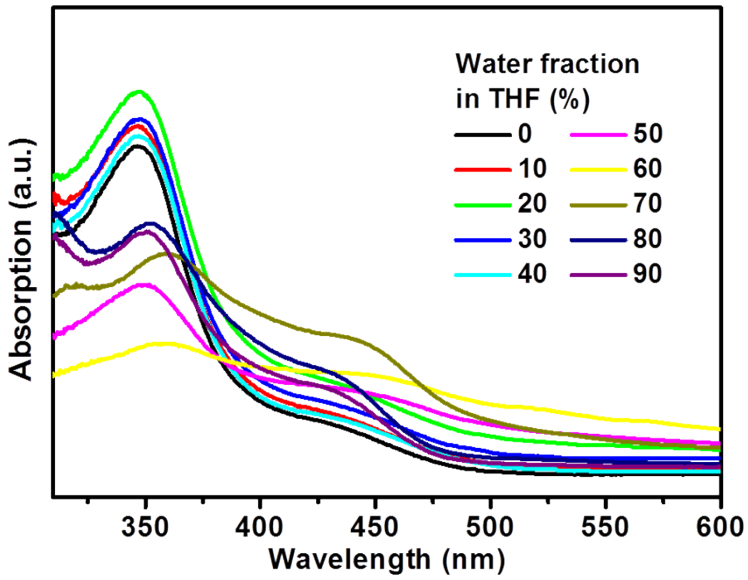

Fig. S4 Absorption spectra of DMCS-TPA (10 μM) in THF-water mixtures with different volume fractions of water.

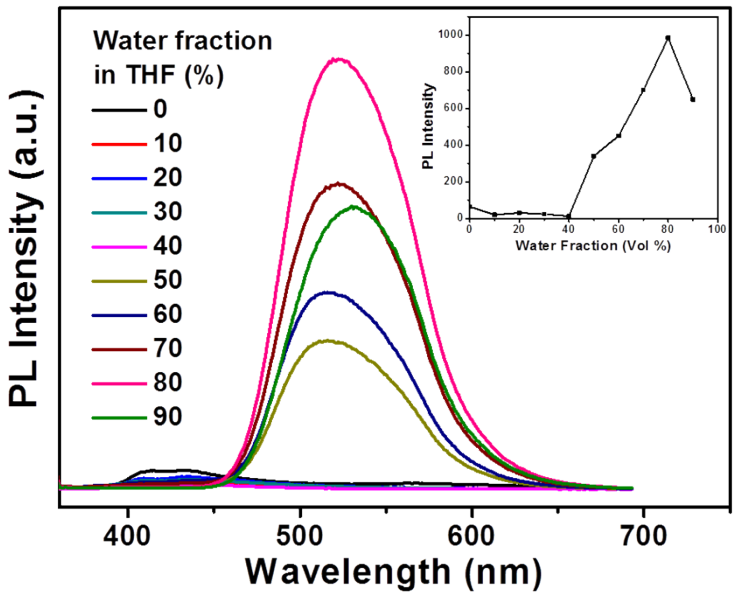

Fig. S5 Photoluminescence (PL) spectra of DMCS-TPA (10 μM) in THF-water mixtures with different volume fractions of water. Inset shows a plot of relative PL intensity against water content.

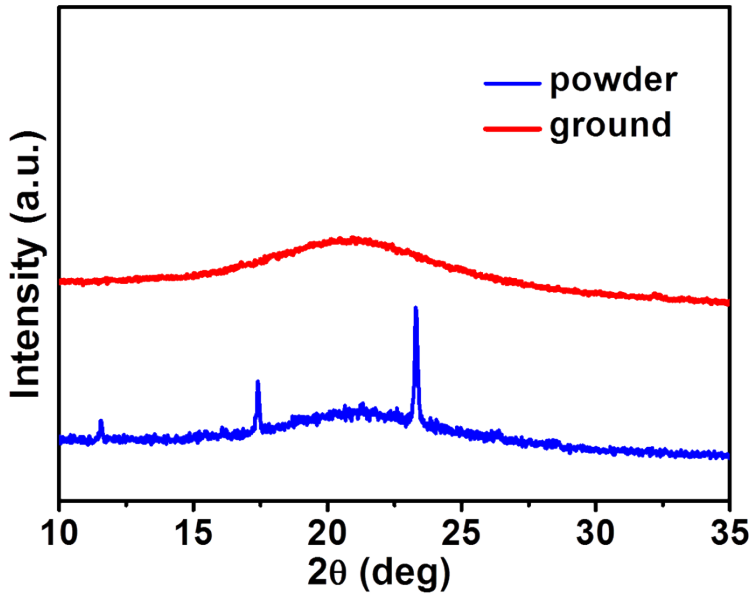

Fig. S6 XRD profiles of DMCS-TPA before and after grinding.

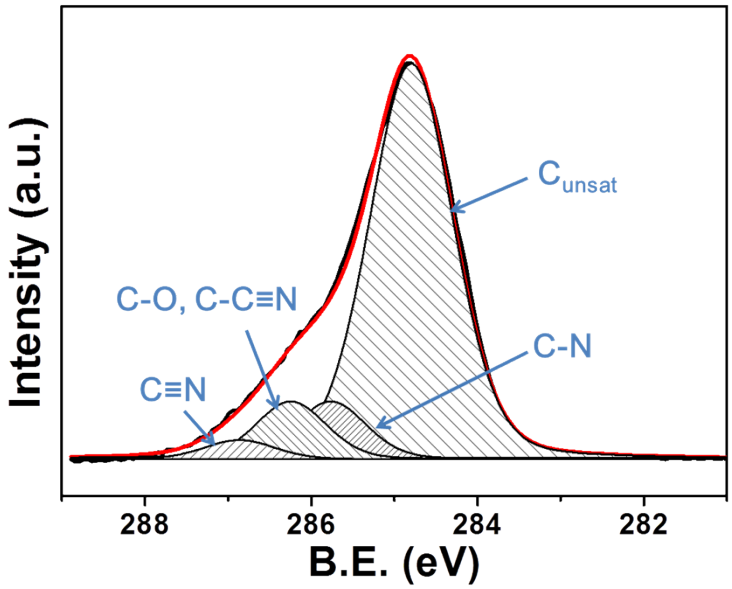

Fig. S7 XP spectra of the C (1s) of DMCS-TPA powder before grinding.

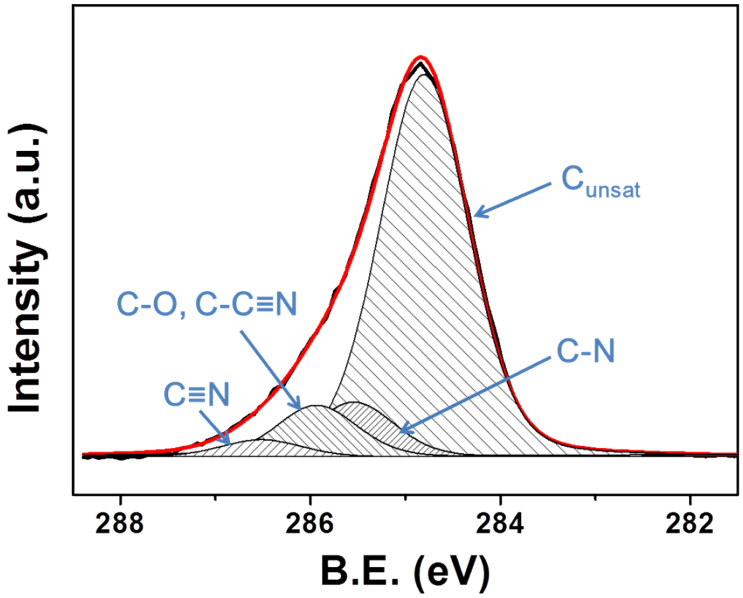

Fig. S8 XP spectra of the C (1s) of DMCS-TPA after grinding.

Table 1 Binding energies and percent composition for the deconvoluted XPS peaks of DMCS-TPA before and after grinding

	powder		ground		
species	**BE (eV)**	**% area**	**BE (eV)**	**% area**	**% area ideal**
C_{unsat}	284.80	77.72	284.80	77.28	77.42
C-N	285.77	9.55	285.54	10.07	9.68
C-O, C-C≡N	286.25	9.55	285.93	9.49	9.68
C≡N	286.86	3.19	286.52	3.17	3.23

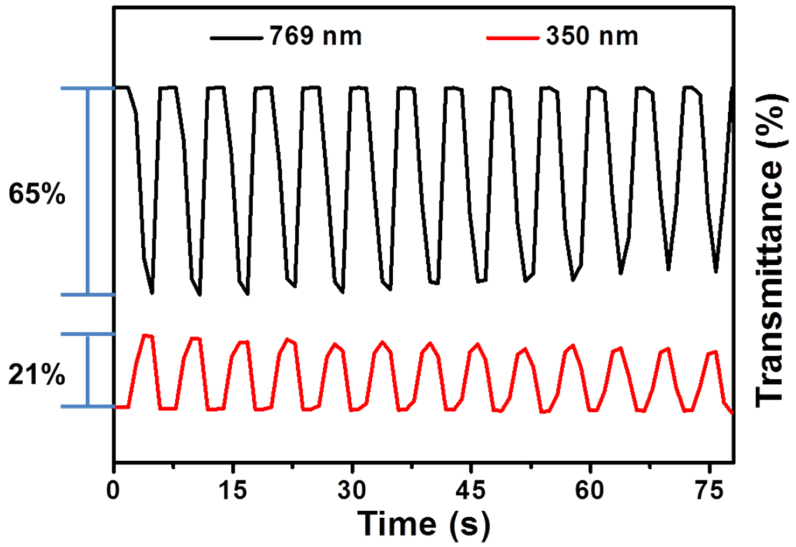

Fig. S9 Optical contrasts of P(DMCS-TPA) film monitored at 350 and 769 nm in ACN solution containing 0.1 M TBAP between 0 and 1.45 V with a residence time of 3 s.