

# Supplementary Materials: Mesogenic Polyelectrolyte Gels Absorb Organic Solvents and Liquid Crystalline Molecules

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Table S1. Swelling degrees of the MPEgels (MPEG6-*p*).

	$\epsilon$	MPEG6-5%	MPEG6-1%	MPEG6-0%
DMSO	46.5	239	2.0	0.9
DMF	36.7	288	96	23
Methanol	32.7	0.3	0.8	0.5
Acetone	20.6	114	1.5	1.1
2-Butanone	18.5	132	32	1.6
1-Butanol	17.5	0.5	0.6	0.3
Cyclopentanone	13.6	134	49	26
1-Hexanol	13.3	0.5	1.1	0.9
CH <sub>2</sub> Cl <sub>2</sub>	8.9	98	45	21
THF	7.6	51	16	7.2
CHCl <sub>3</sub>	4.8	3.7	5.3	6.5
Hexane	1.9	0.2	1.0	0.4

Table S2. Swelling degrees of the MPEgels (MPEG5-*p*).

	$\epsilon$	MPEG5-5%	MPEG5-1%	MPEG5-0%
DMSO	46.5	183	46	3.4
DMF	36.7	193	69	19
Methanol	32.7	0.5	0.3	0.5
Acetone	20.6	91	4.0	0.8
2-Butanone	18.5	105	28	1.3
1-Butanol	17.5	0.8	1.2	0.9
Cyclopentanone	13.6	110	54	19
1-Hexanol	13.3	1.2	3.3	0.6
CH <sub>2</sub> Cl <sub>2</sub>	8.9	59	37	12
THF	7.6	21	6.0	3.5
CHCl <sub>3</sub>	4.8	3.4	6.3	4.3
Hexane	1.9	0.5	1.7	0.1

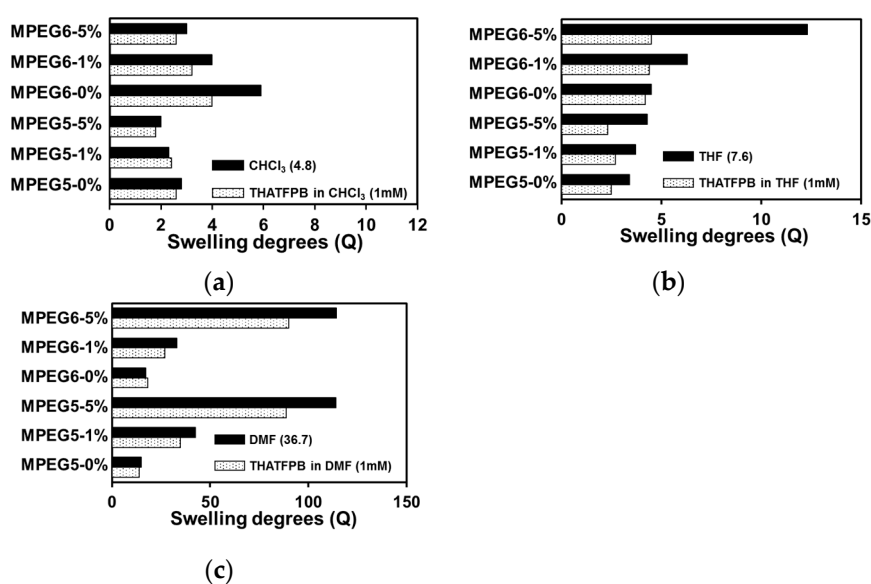
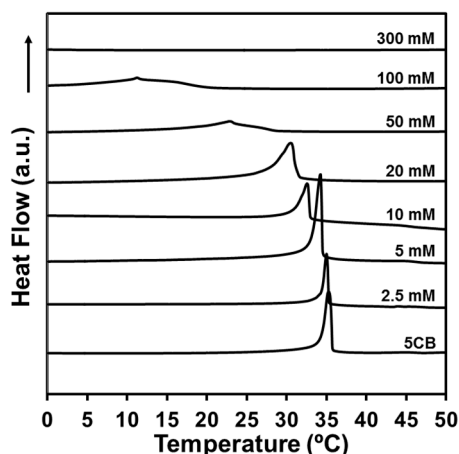
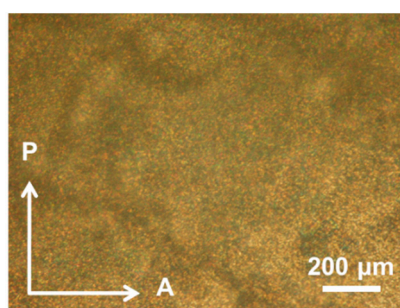


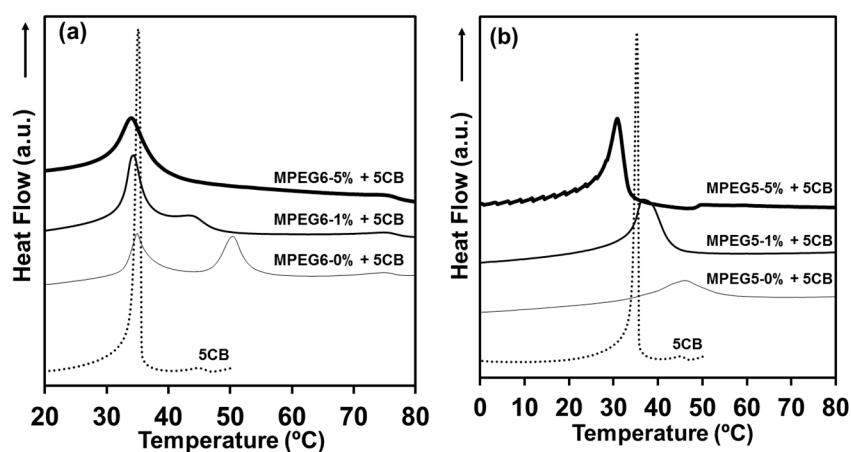
Figure S1. Swelling degrees of the MPEgels with and without the common ion in (a) CHCl<sub>3</sub>; (b) THF; and (c) DMF.



**Figure S2.** DSC thermogram of 5CB with certain concentration of THATFPB upon the cooling process (5 °C/min).



**Figure S3.** A polarizing micrograph of MPEG6-5% in shrunken state at room temperature under crossed-Nicolae.



**Figure S4.** DSC thermograms of MPEGels (a) MPEG6-*p* and (b) MPEG5-*p* absorbing 5CB, upon the cooling process (5 °C/min). A DSC thermogram of 5CB only is also illustrated for comparison.

