

Electronic Supplementary Information

Self-Assembly of Amphiphilic Random Co-poly(ionic liquid)s: the Effect of Anions, Molecular Weight, and Molecular Weight Distribution

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Table S1 The molecular weight (M_n) and molecular weight distribution (M_n/M_w) of PCMS prepared via reversible addition fragmentation chain transfer (RAFT) polymerization of p-chloromethyl styrene in toluene at 60 °C for 7 h.

Entry	[M]:[BCCDT]:[AIBN]	Conversion(%)	$M_{n,GPC}$ (g/mol)	M_n/M_w
a	100:2:5	86.7	4200	2.14
b	600:6:1	74.2	7100	1.27
c	500:6:1	70.8	8050	1.31
d	1000:6:1	76.3	9900	1.33
e	100:5:1	73.7	1300	1.32
f	500:5:1	88.6	14200	1.85

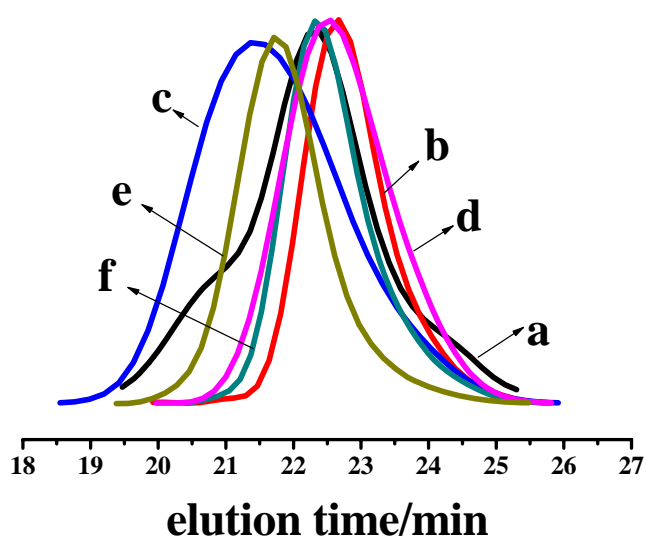


Fig. S1 Typical GPC traces of PCMS prepared via RAFT polymerization (as described in Table S1).

Table S2 Theoretical and experimental composition of the synthesized random ionic copolymer PIL-[Cl]_x[PF₆]_y ($M_n = 7100$, $M_w/M_n = 1.27$).

entry	PIL-[Cl] _x [PF ₆] _y	[Cl ⁻]/[PF ₆ ⁻] feed ratio	[Cl ⁻]/[PF ₆ ⁻] experimental ratio
1	PIL-[Cl] ₁₈ [PF ₆] ₂	9/1	8.54/1
2	PIL-[Cl] ₁₈ [PF ₆] ₃	6/1	5.88/1
3	PIL-[Cl] ₁₈ [PF ₆] ₆	3/1	2.58/1

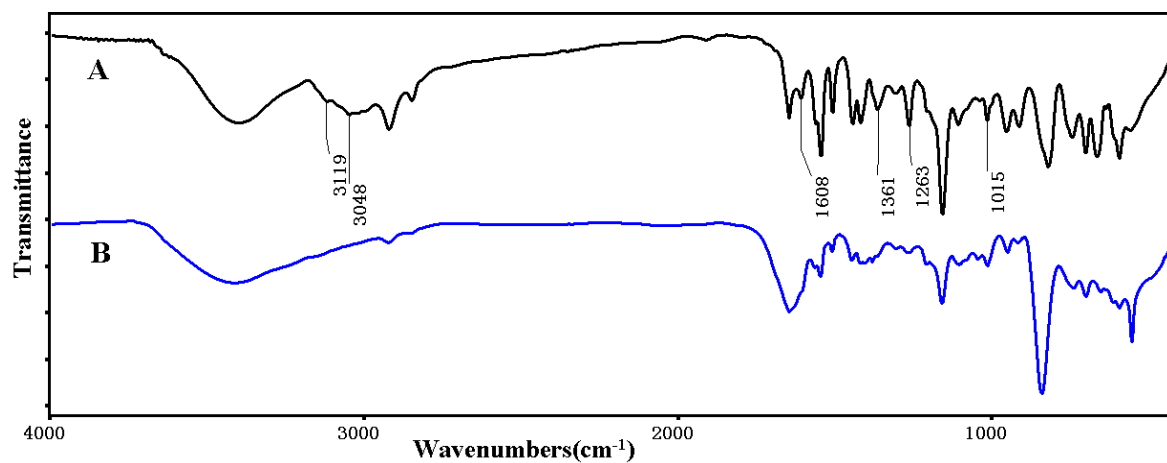


Fig. S2 FT-IR spectra of vinylimidazole-based PIL-[Cl]₁₈[PF₆]₂ ($M_n=8050$, $M_w/M_n=1.31$) before (A) and after (B) self-assembly in aqueous solution.