Supporting Information

Controllable Polymeric Pseudo-Crown Ether Fluorescent Sensors: Responsiveness and Selective Detection of Metal Ions

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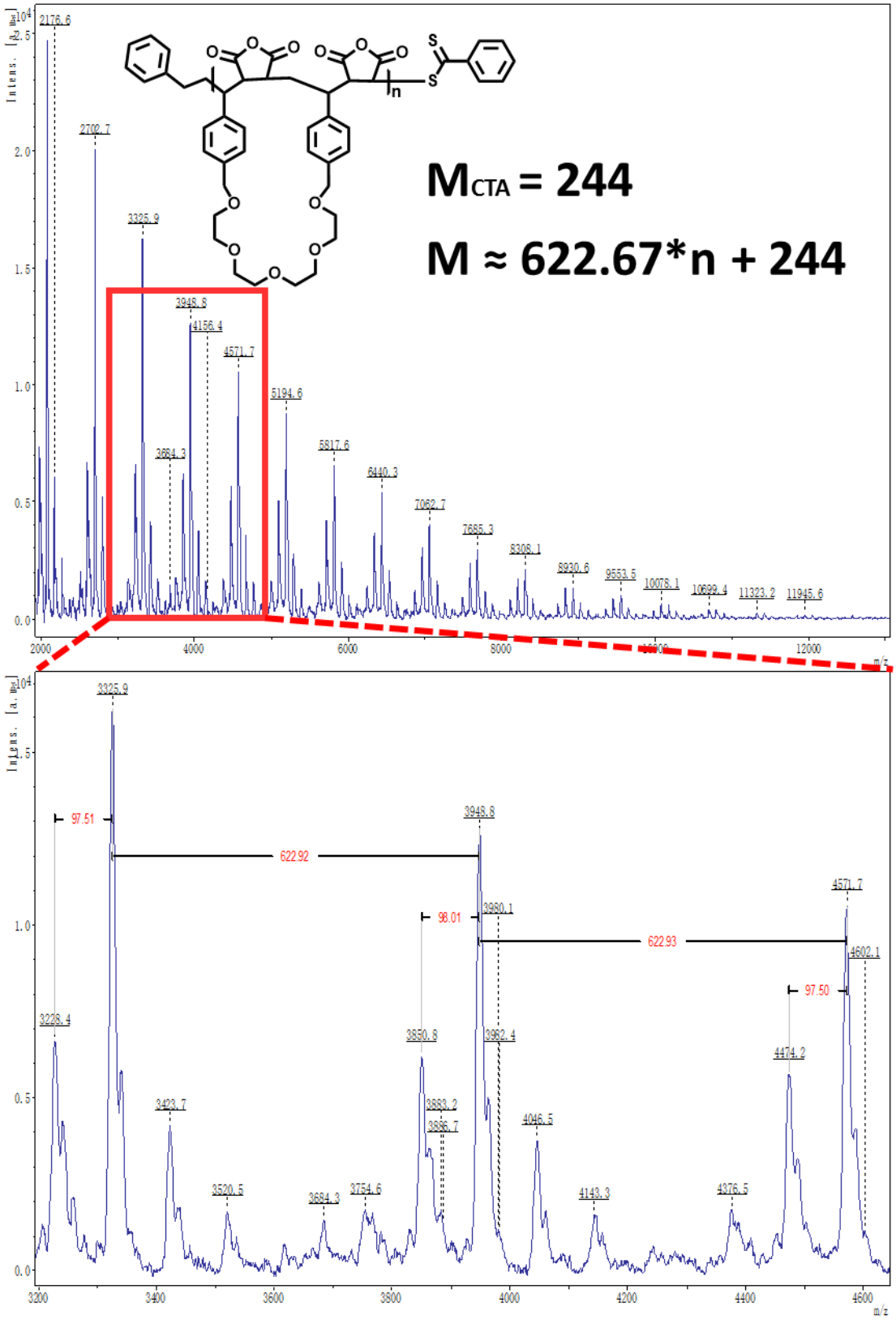


Figure S1. MALDI-TOF mass spectrum of copolymer **PDSM1** (top) and an enlarged zone (bottom)

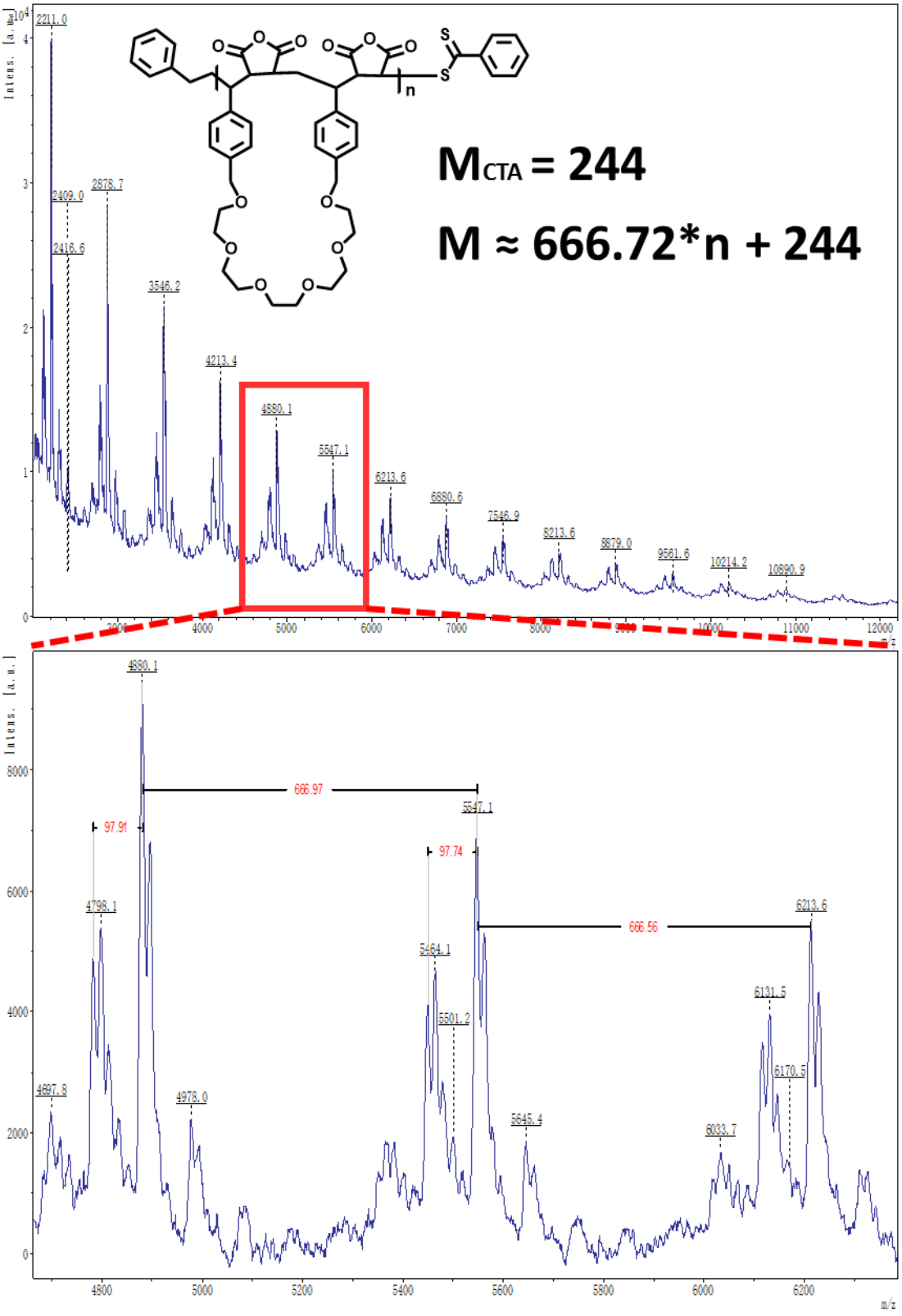


Figure S2. MALDI-TOF mass spectrum of copolymer **PDSM2** (top) and an enlarged zone (bottom)

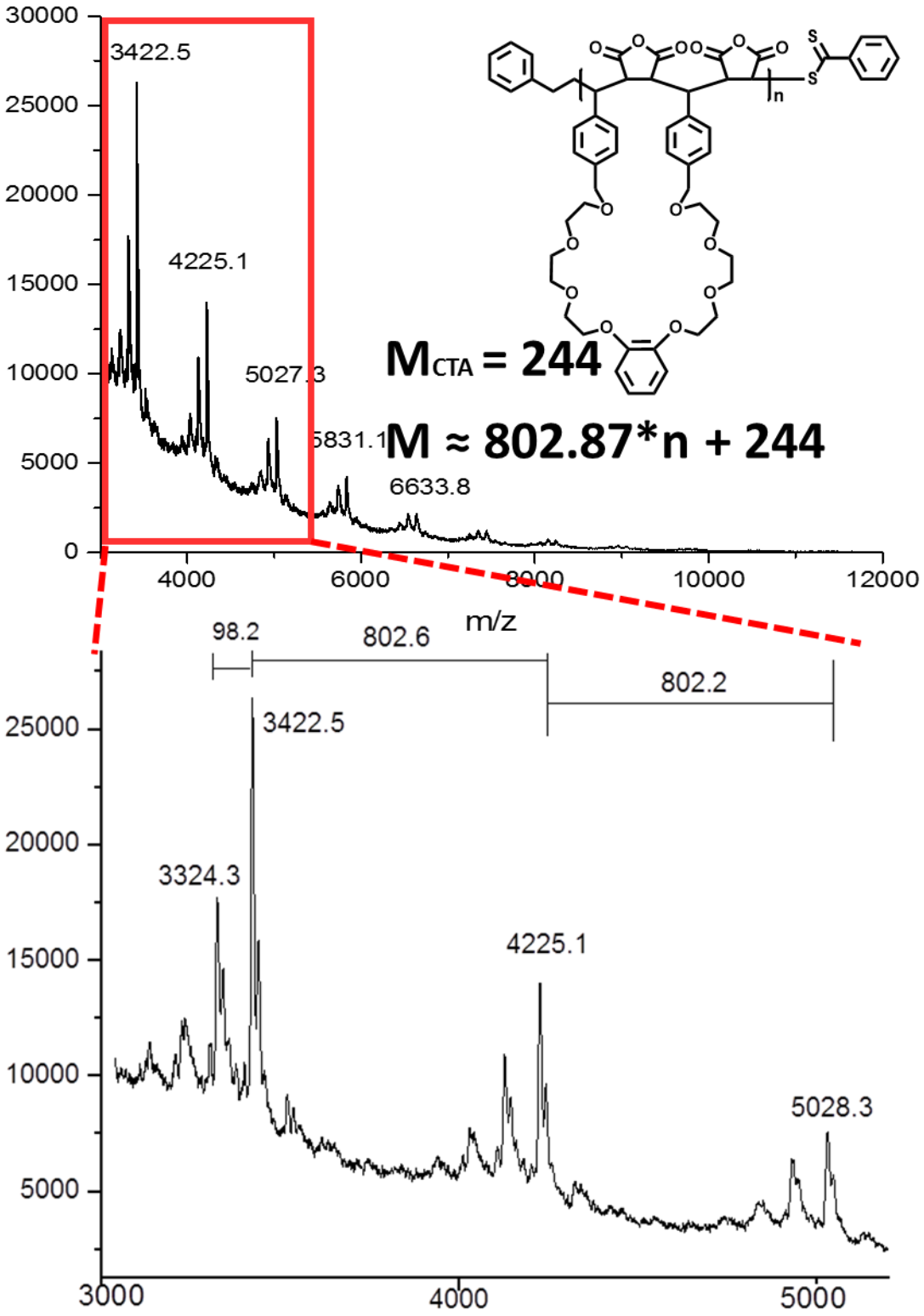


Figure S3. MALDI-TOF mass spectrum of copolymer **PDSM3** (top) and an enlarged zone (bottom)

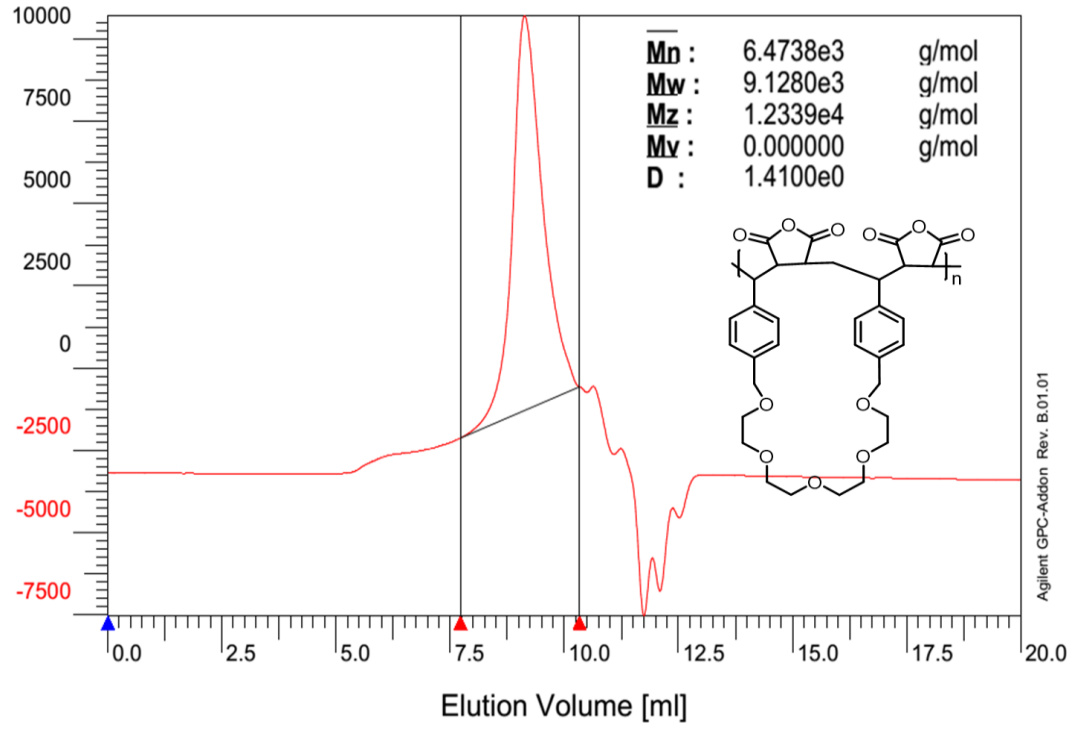


Figure S4. GPC curve of **PDSM1**

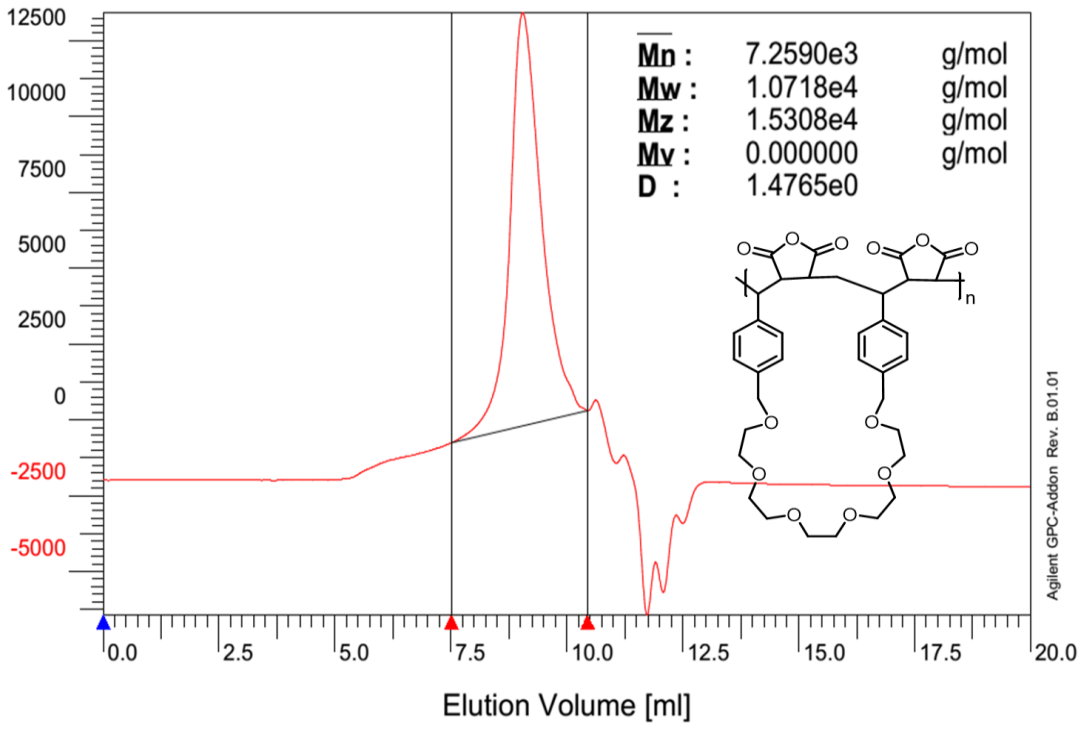


Figure S5. GPC curve of **PDSM2**

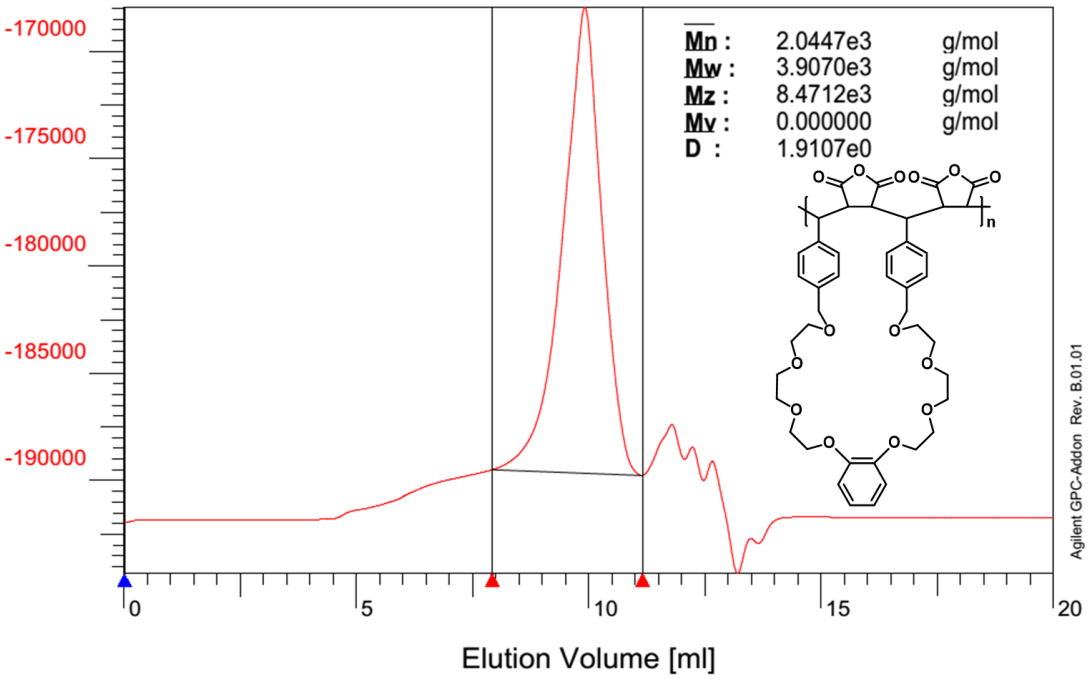


Figure S6. GPC curve of **PDSM3**

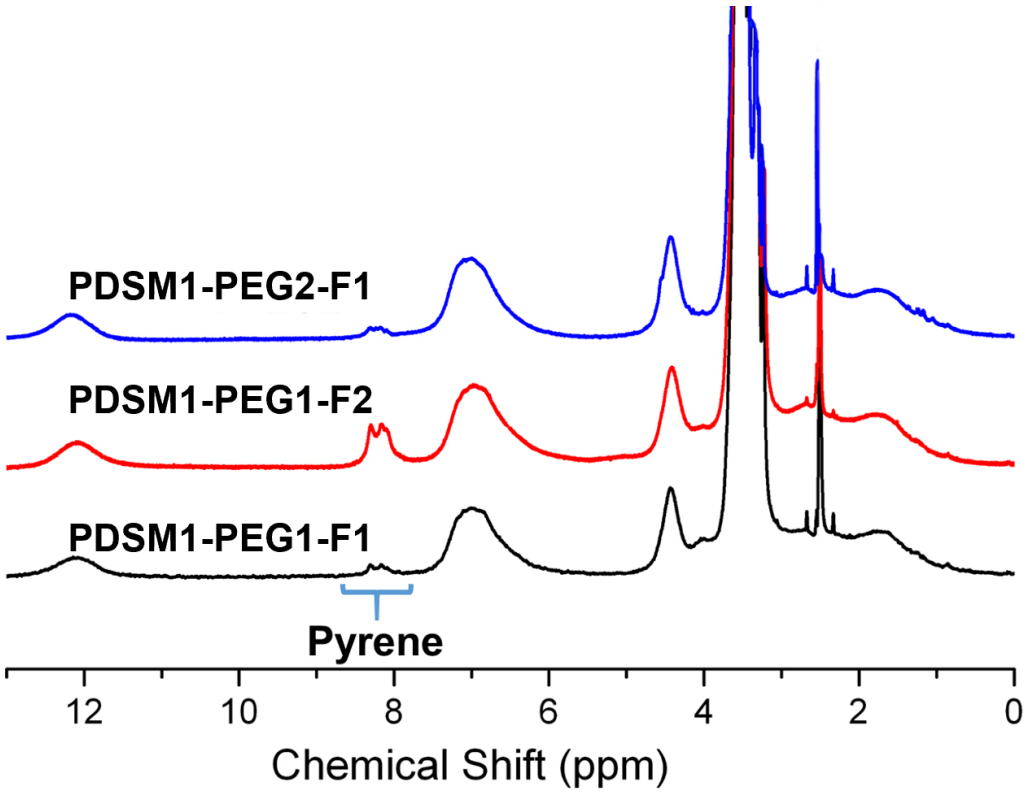


Figure S7. ^{1}**H NMR** spectra of **PDSM-PEG-F** (DMSO-d_6, 25 ^{o}C)

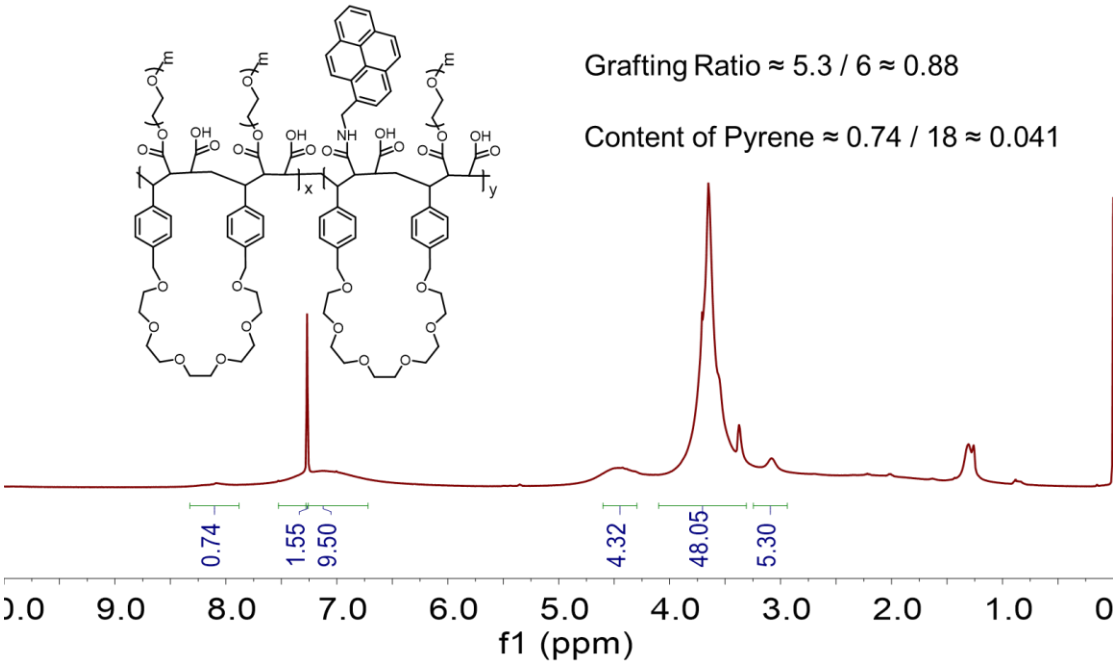


Figure S8. ^{1}H NMR spectrum of **PDSM2-PEG1-F1** ($CDCl_3$, 25 ^{o}C)

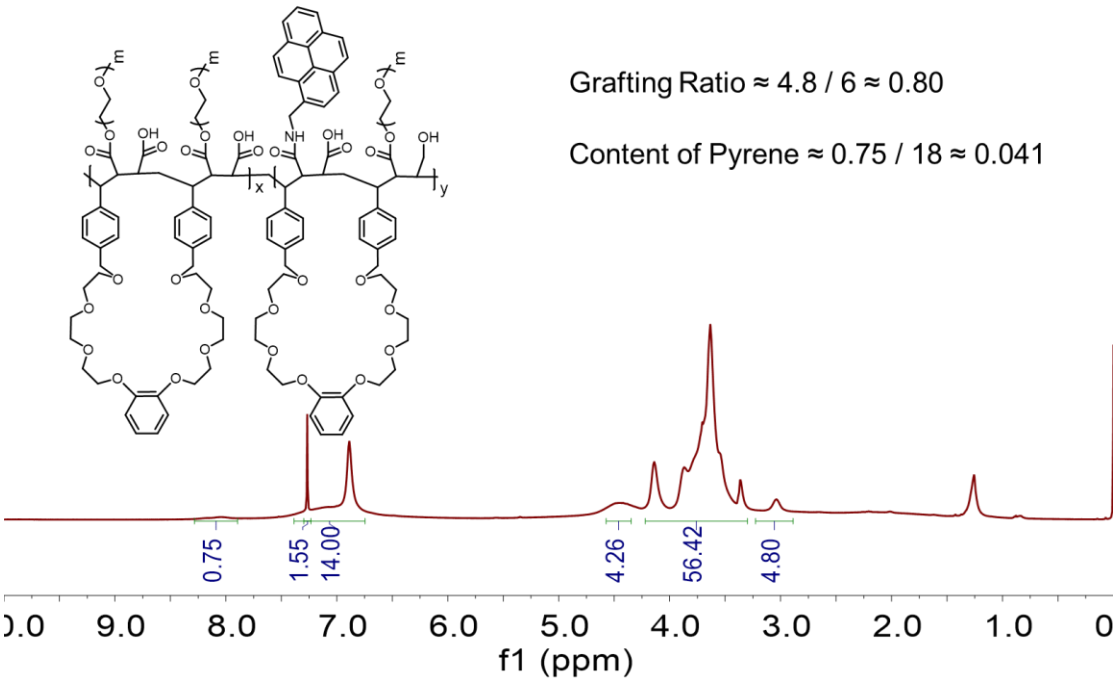


Figure S9. ^{1}H NMR spectrum of **PDSM3-PEG1-F1** ($CDCl_3$, 25 ^{o}C)

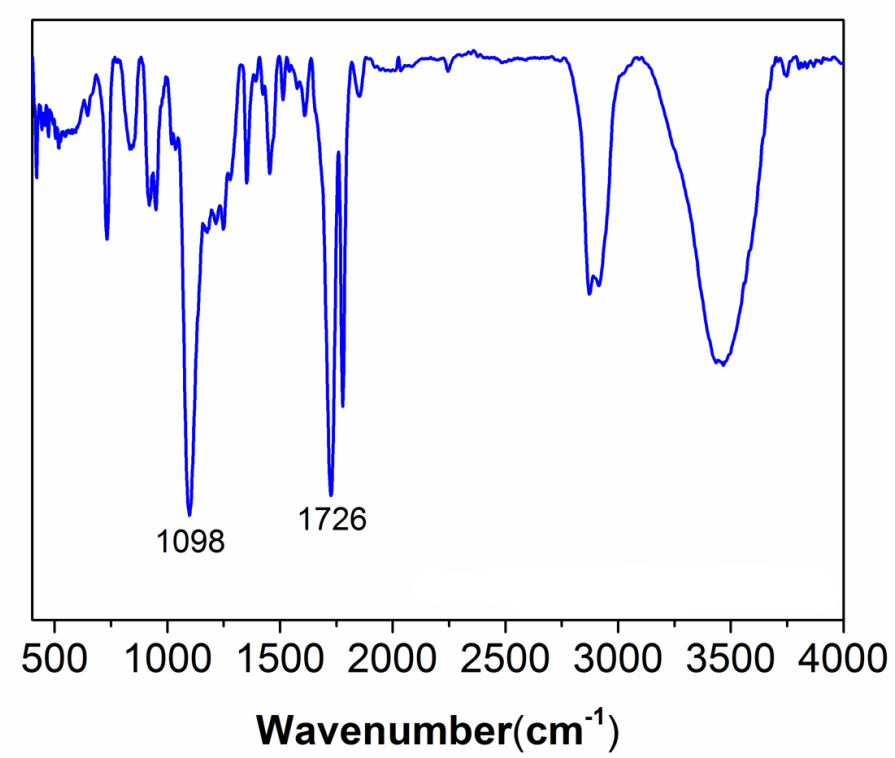


Figure S10. FT-IR spectrum of the grafting cyclopolymer **PDSM2-PEG1-F1**

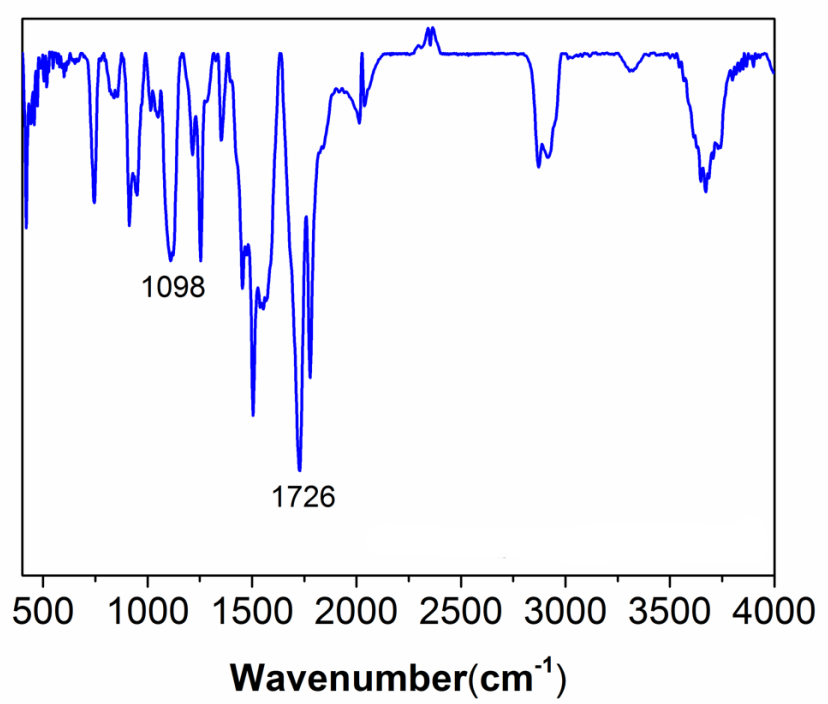


Figure S11. FT-IR spectrum of the grafting cyclopolymer **PDSM3-PEG1-F1**

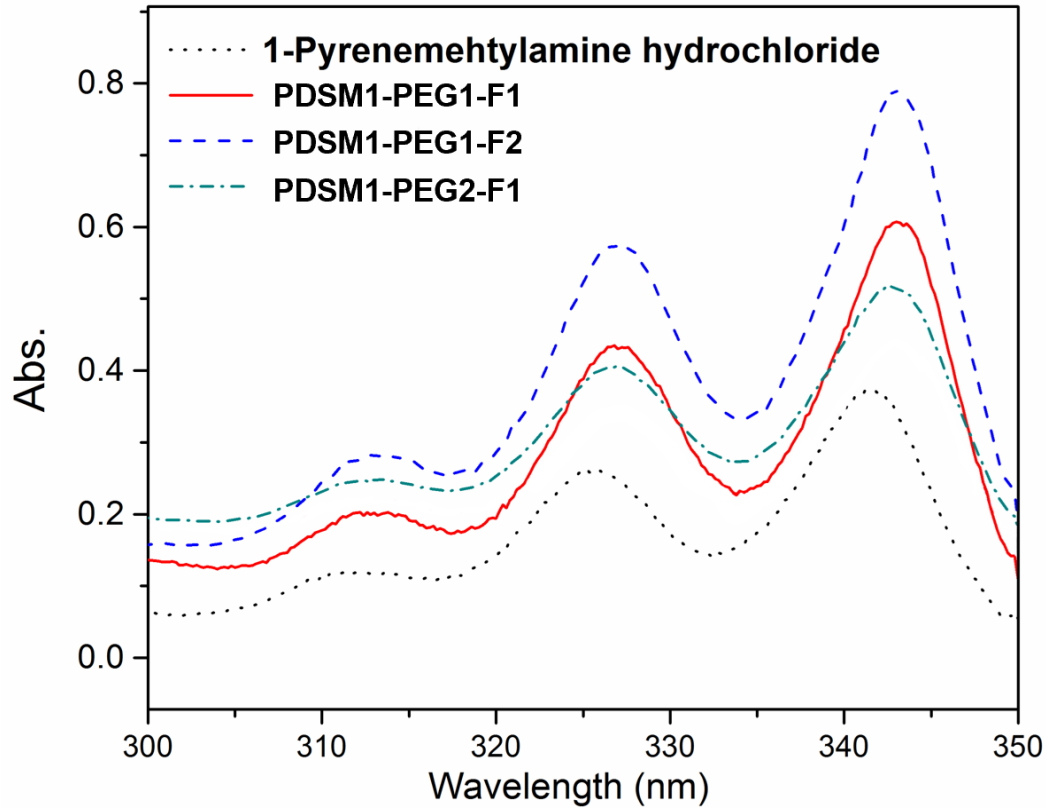


Figure S12. UV-vis spectra of 1-Pyrenemethylamine hydrochloride and **PDSM-PEG-F** (THF : H_2O = 1 : 1, [1-Pyrenemethylamine hydrochloride] = 1×10^{-4} mol/L, [**PDSM-PEG-F**] = 2.5×10^{-2} g/L)

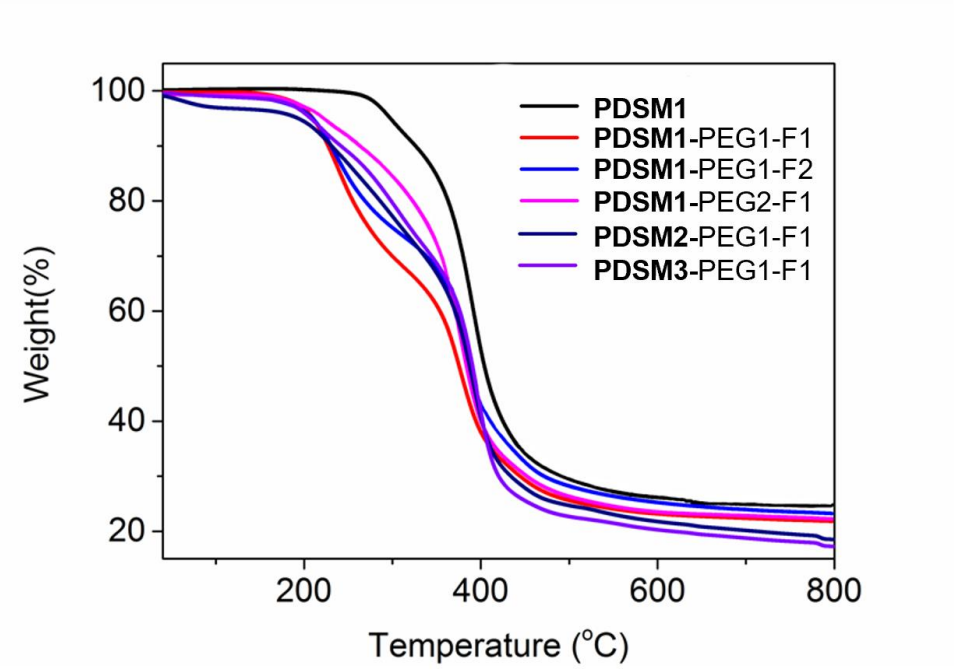


Figure S13. TGA profiles for the different **PDSM-PEG-F** copolymers

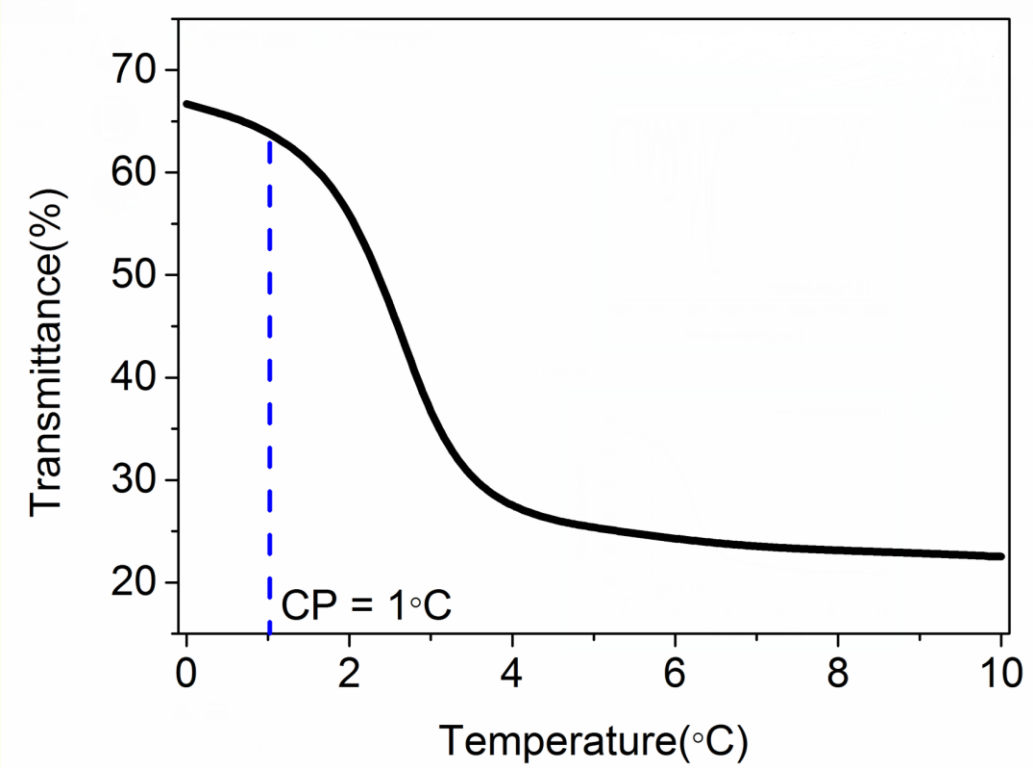


Figure S14. TGA profiles for the different **PDSM2-PEG1-F1** copolymers

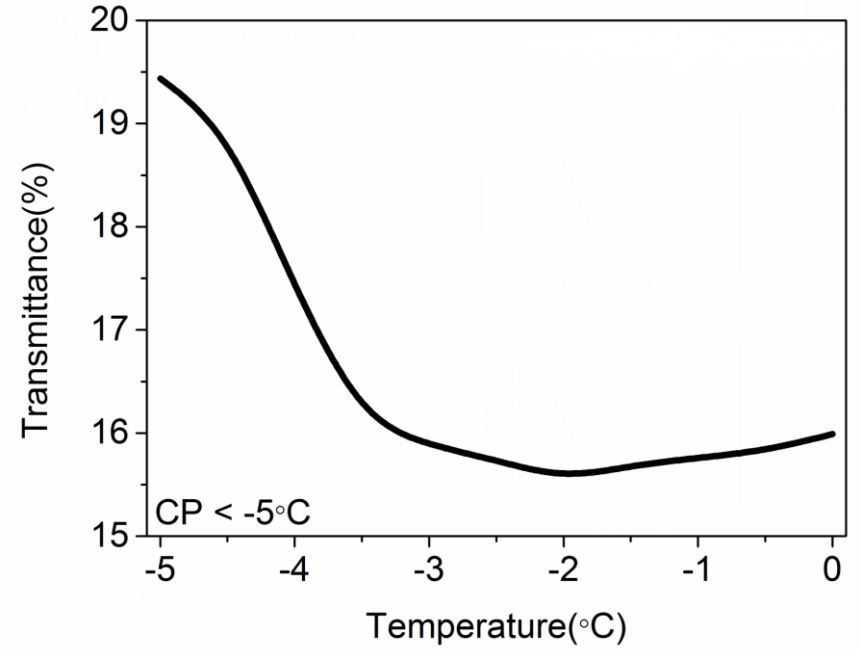


Figure S15. TGA profiles for the different **PDSM3-PEG1-F1** copolymers

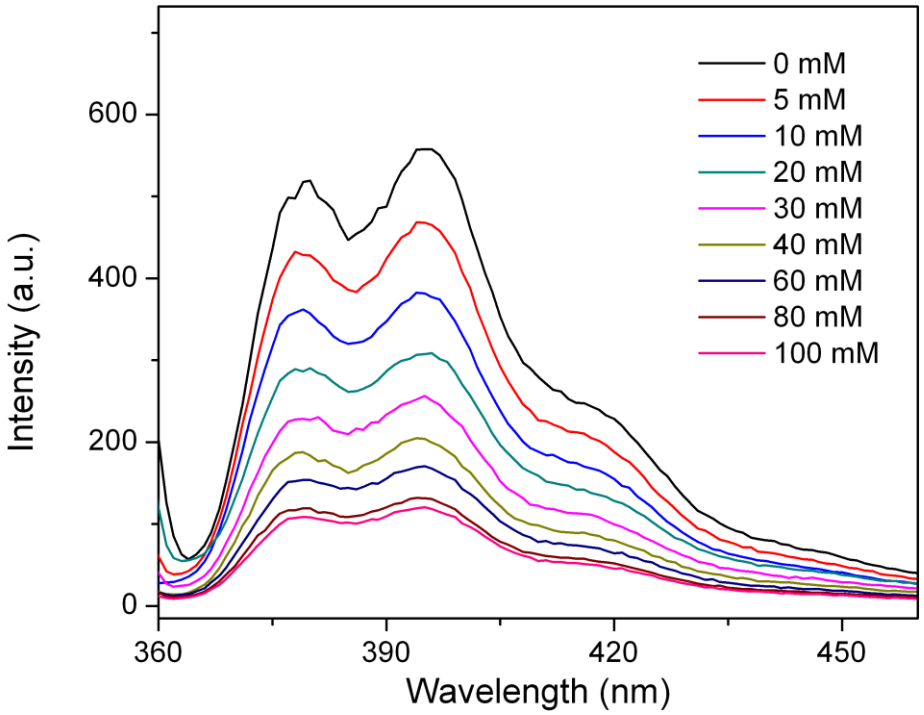


Figure S16. Fluorescent spectra of pyrene after adding Cu^{2+} under room-temperature (pH = 2.0, $\lambda_{excitation}$ = 345 nm, slit width = 5 nm, [Pyrene] = 10^{-7} M)

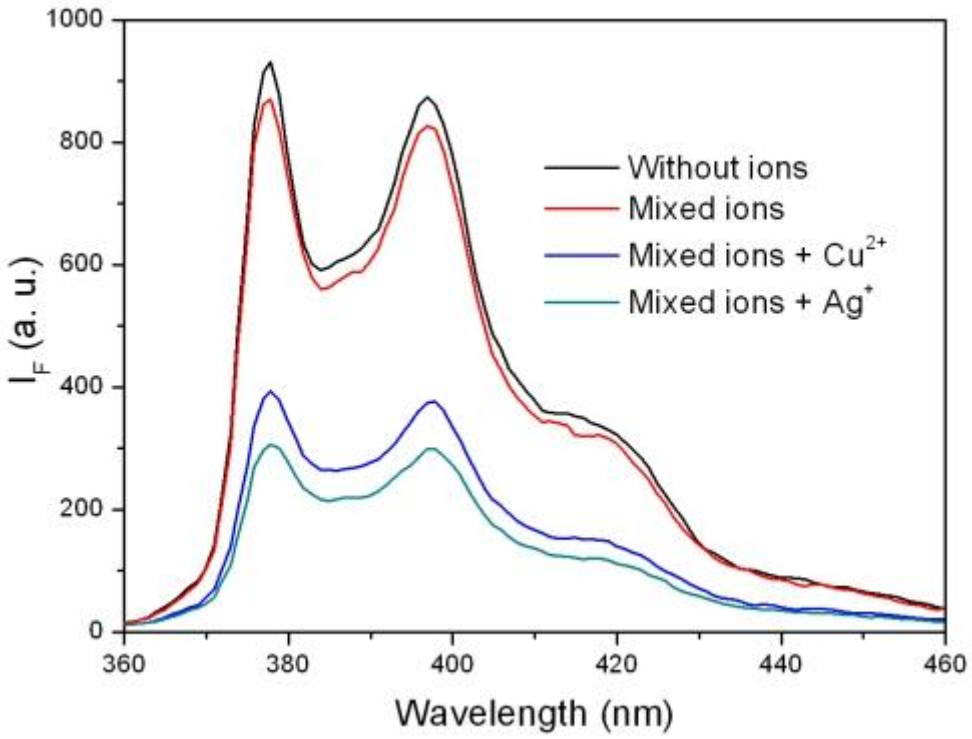
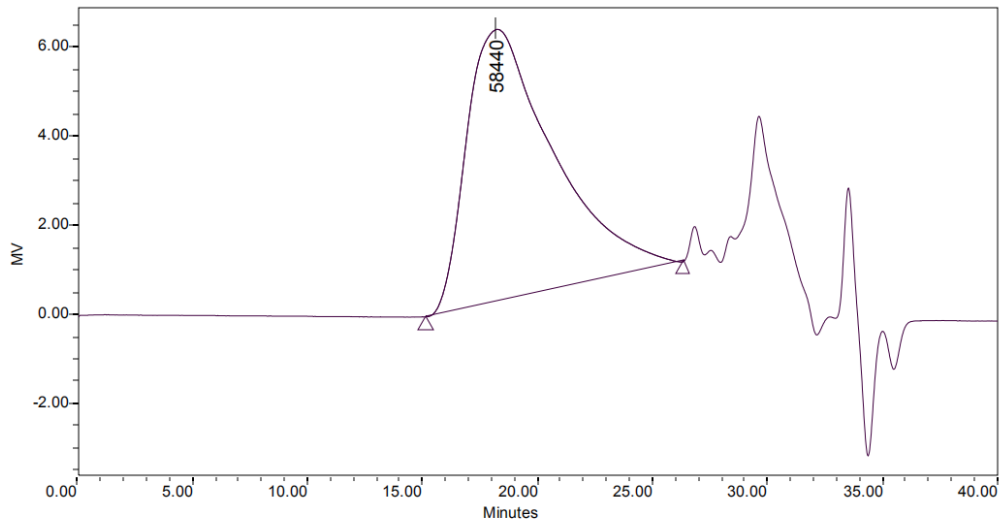


Figure S17. Interference of Metal ions on the detection of **PDSM1-PEG1-F1** to Cu^{2+} or Ag^{+}, Mixed ions: K^{+}, Na^{+}, Mg^{2+}, Ca^{2+} and Fe^{3+}, 10 μM to each metal ion.



Broad Unknown Relative Peak Table

	Distribution Name	Mn (Daltons)	Mw (Daltons)	MP (Daltons)	Mz (Daltons)	Mz+1 (Daltons)	Polydispersity	Mz/Mw	Mz+1/Mw
1		24317	56453	58440	106503	170994	2.321527	1.886568	3.028955

Figure S18. The GPC of polystyrene-*co*-polymaleic anhydride (**PSMA**).

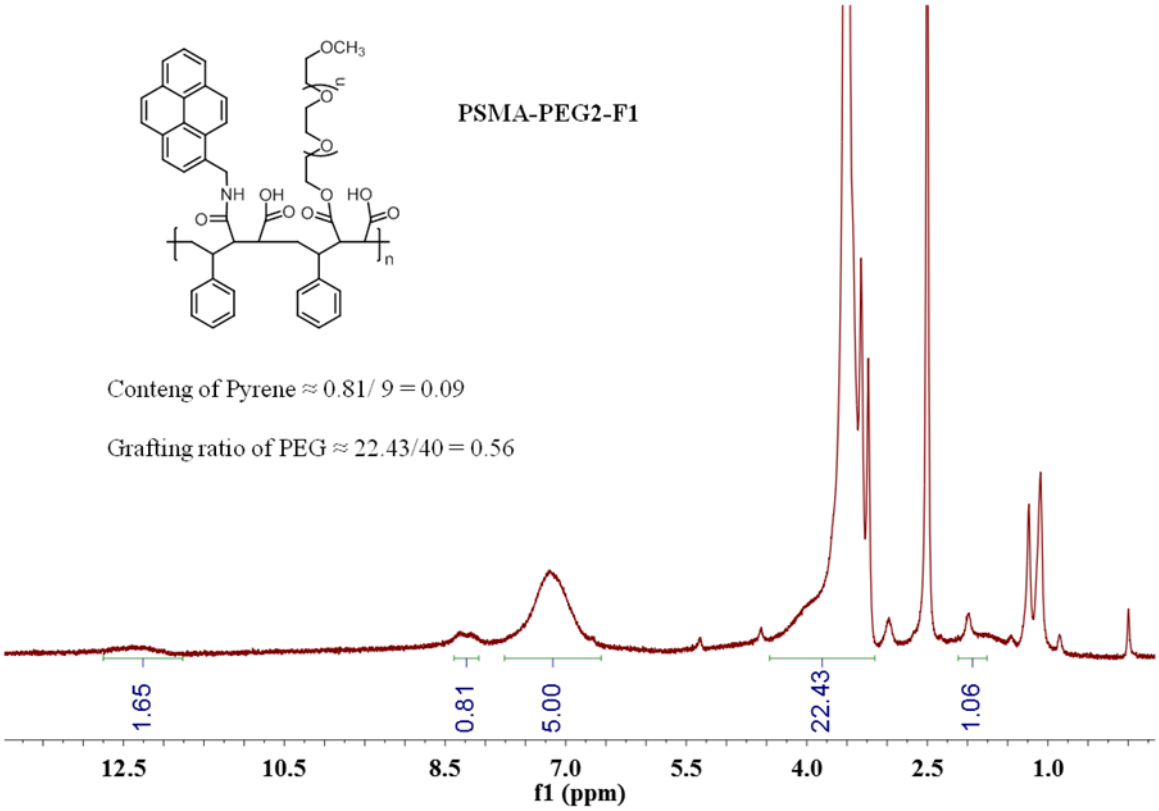


Figure S19. The ^{1}H NMR of **PSMA-PEG2-F1** ($CDCl_3$).

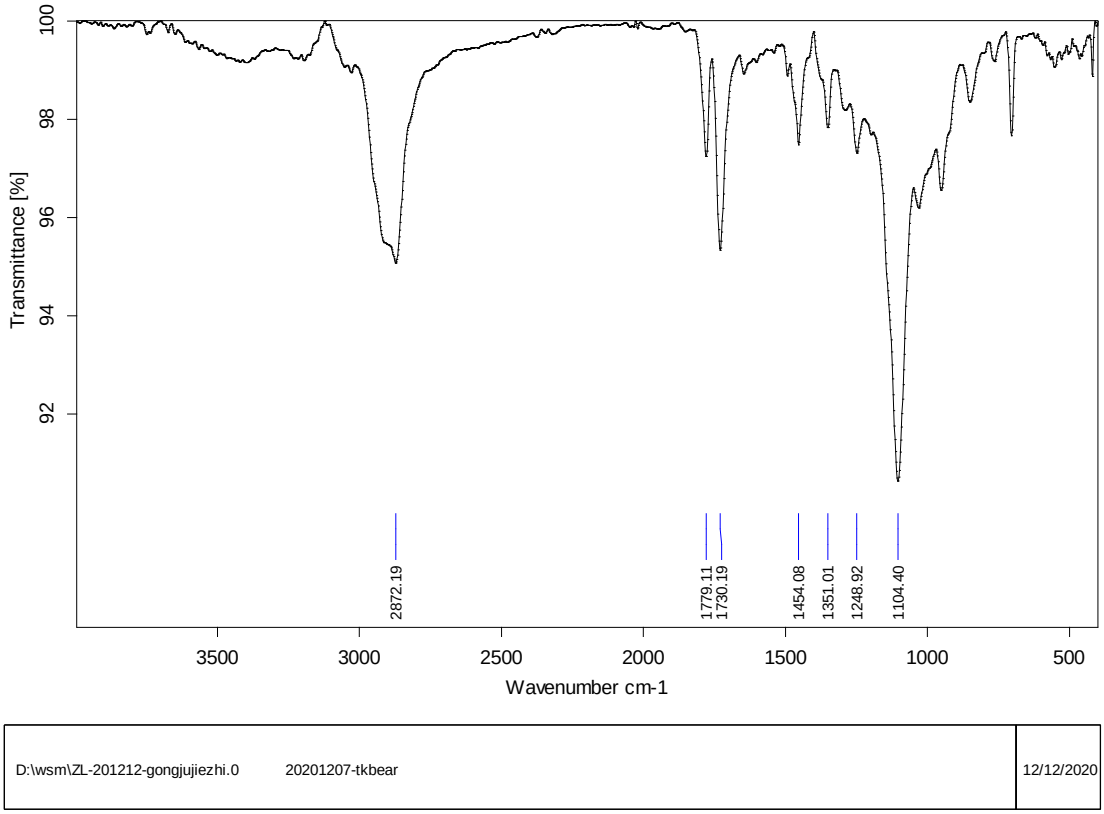


Figure S20. The IR of **PSMA-PEG2-F1**.