Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

for

Hydrosilylation: An efficient tool for polymer synthesis and modification

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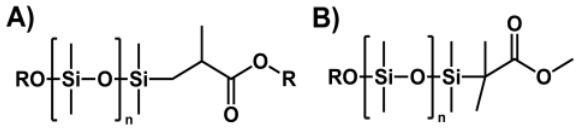
Table S1 Summary of molar masses and molar mass distributions determined by size exclusion chromatography.

Materials	theoretical molar mass	SEC[a]	
		M_n (g mol^{-1})	$Đ$
h_2PDMS	580	620	1.26
MMA-PDMS-MA	780	810	1.38
GMA-PDMS-GMA	860	1400	1.18
HEMA-PDMSH-HEMA	840	1700	1.71
LMA-PDMS-LMA	1100	1500	1.12
EHMA-PDMS-EHMA	1000	1300	1.16
BMA-PDMS-BMA	860	1100	1.17
DEGMEMA-PDMS-DEGMEMA	950	1500	1.15

[a] eluent: $CHCl_3$ + 2% TEA



Scheme S1 Structures of anti-Markovnikov (A) and Markovnikov (B) products, which can theoretically be obtained by hydrosilylation of methacrylates.

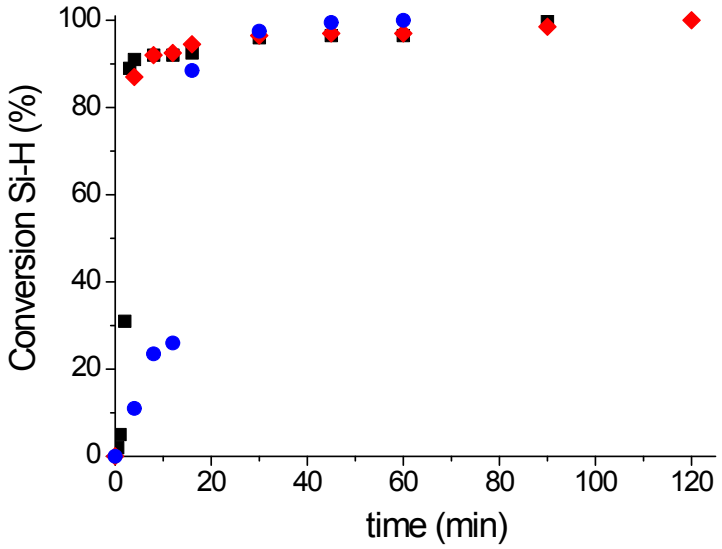


Fig. S1 Conversion of Si-H groups with time at different temperatures; 100 °C (square), 70 °C (diamonds), and 37 °C (circles).

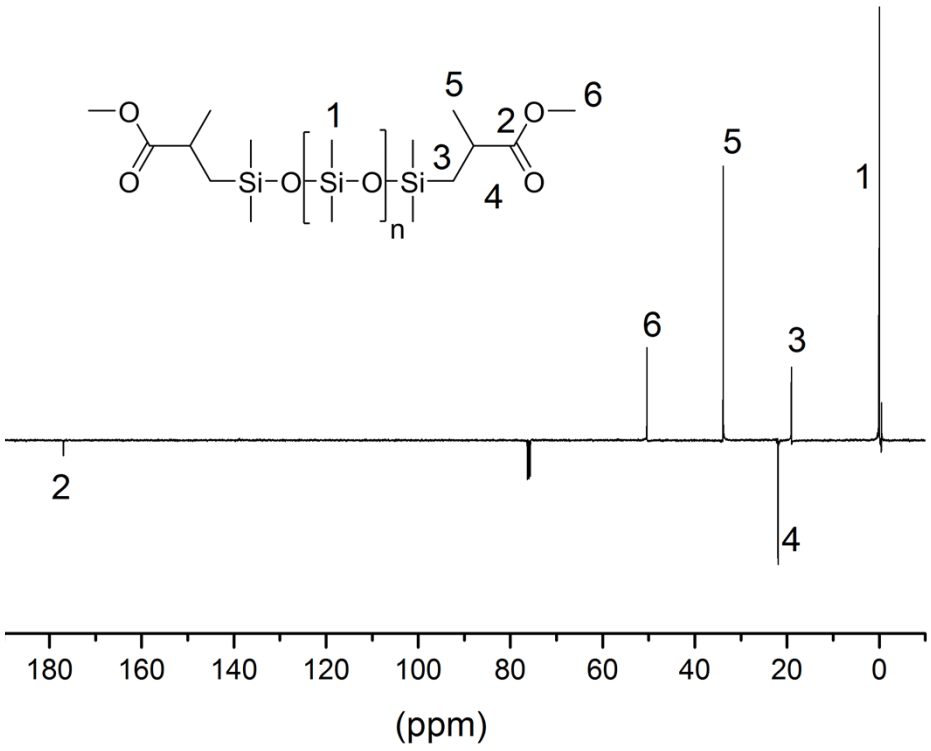


Fig. S2 ^{13}C NMR spectrum of MMA-PDMS-MMA.

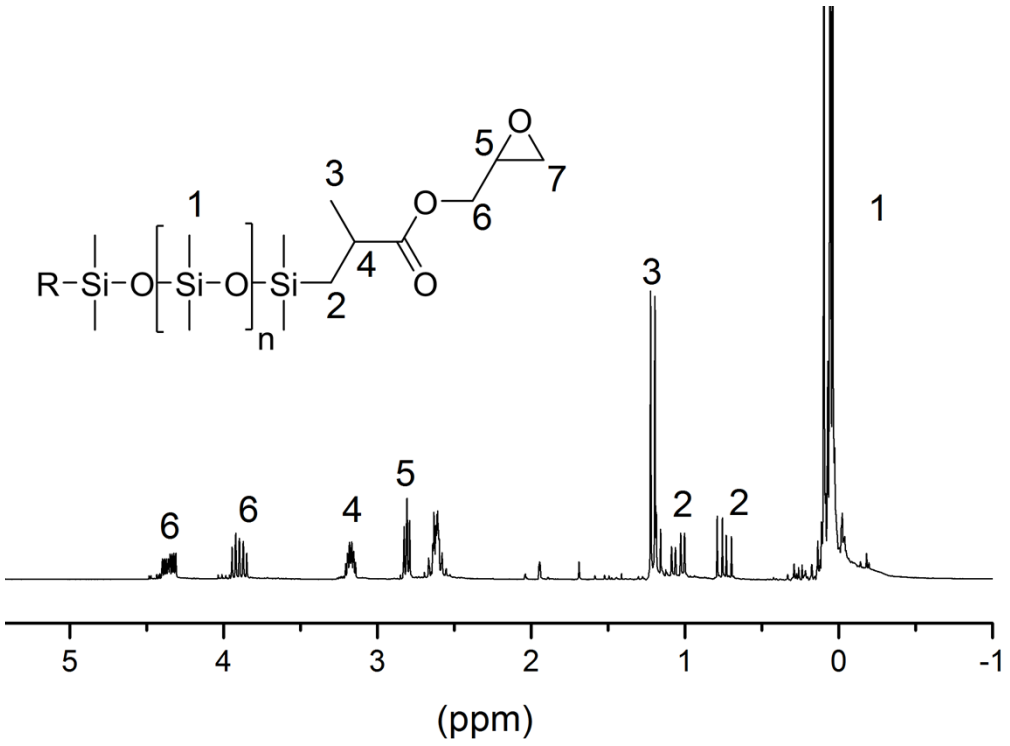


Fig. S3 [1]H NMR spectrum of GMA-PDMS-GMA.

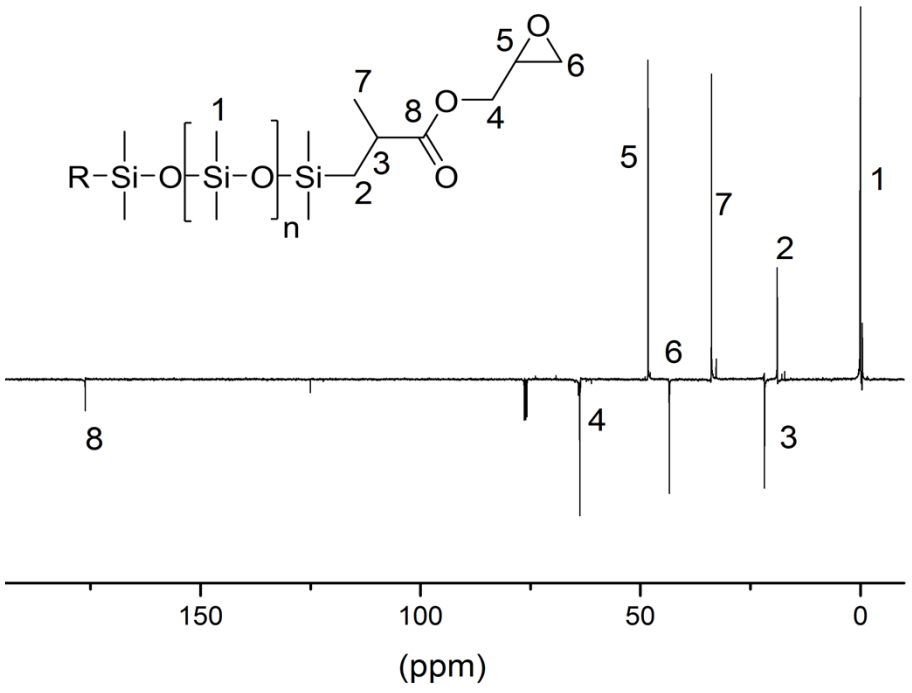


Fig. 4 [13]C NMR spectrum of GMA-PDMS-GMA.

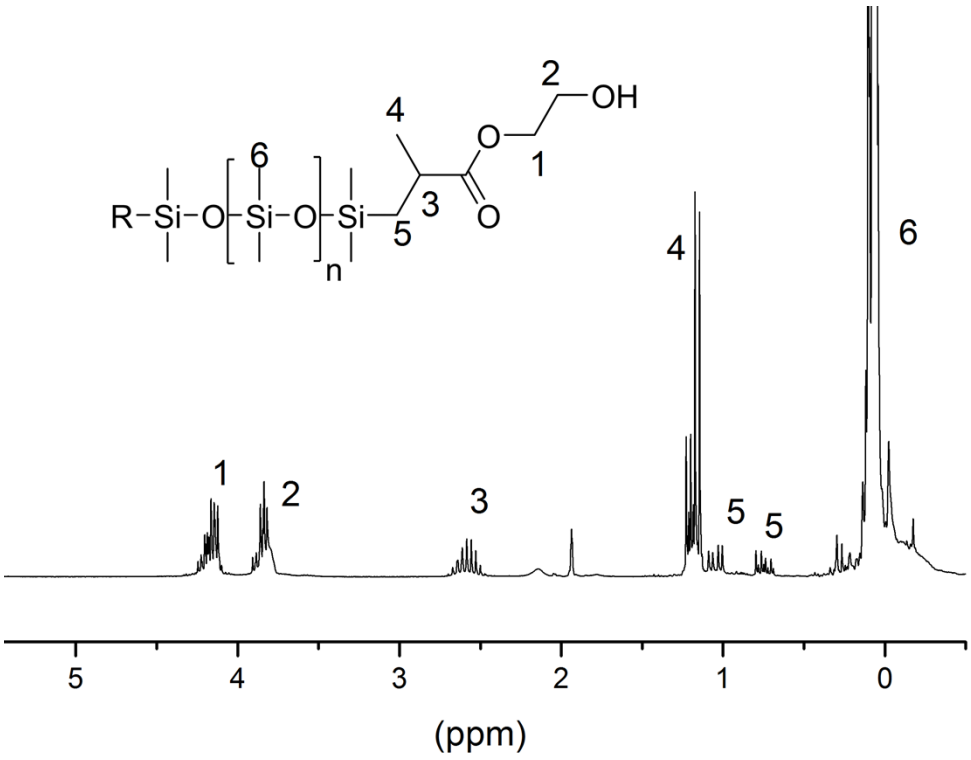


Fig. S5 ^{1}H NMR spectrum of HEMA-PDMS-HEMA.

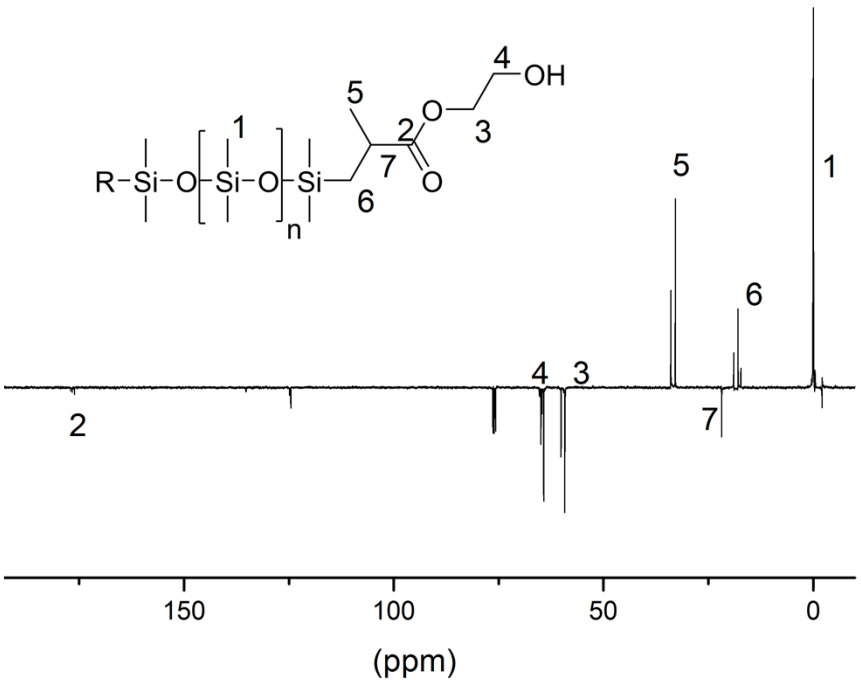


Fig. S6 ^{13}C NMR spectrum of HEMA-PDMS-HEMA.

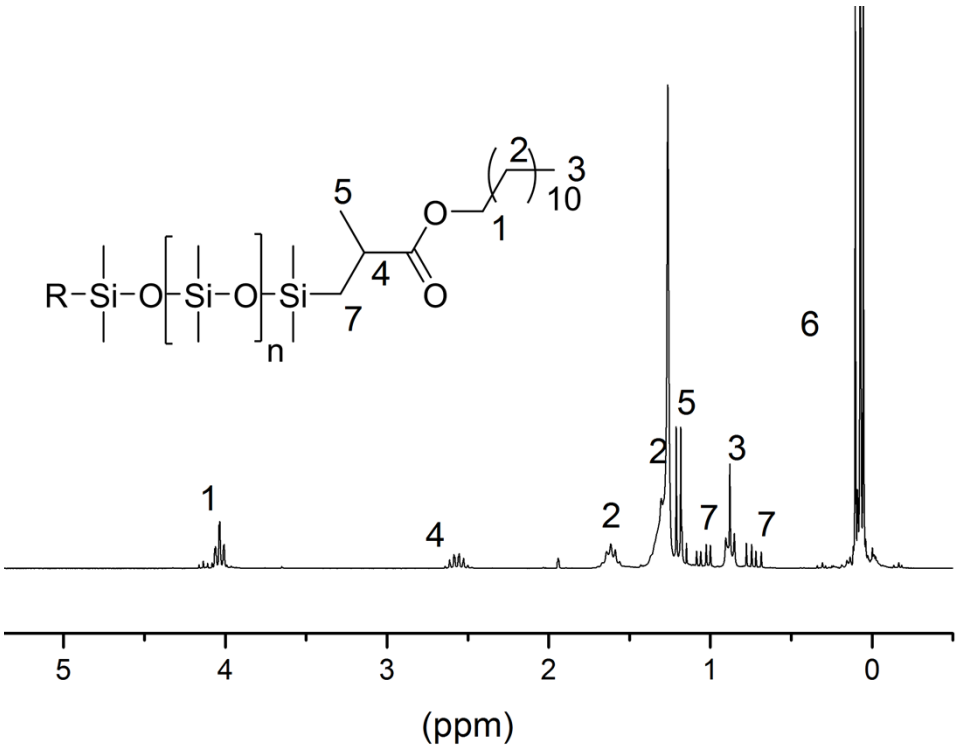


Fig. S7 ^{1}H NMR spectrum of LMA-PDMS-LMA.

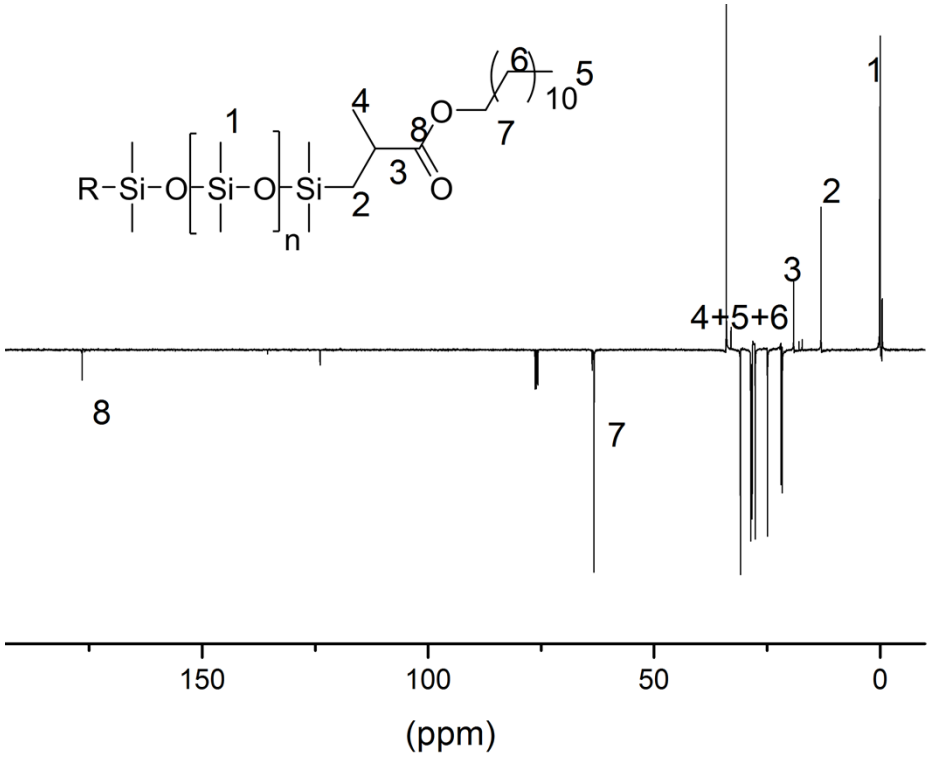


Fig. S8 ^{13}C NMR spectrum of LMA-PDMS-LMA.

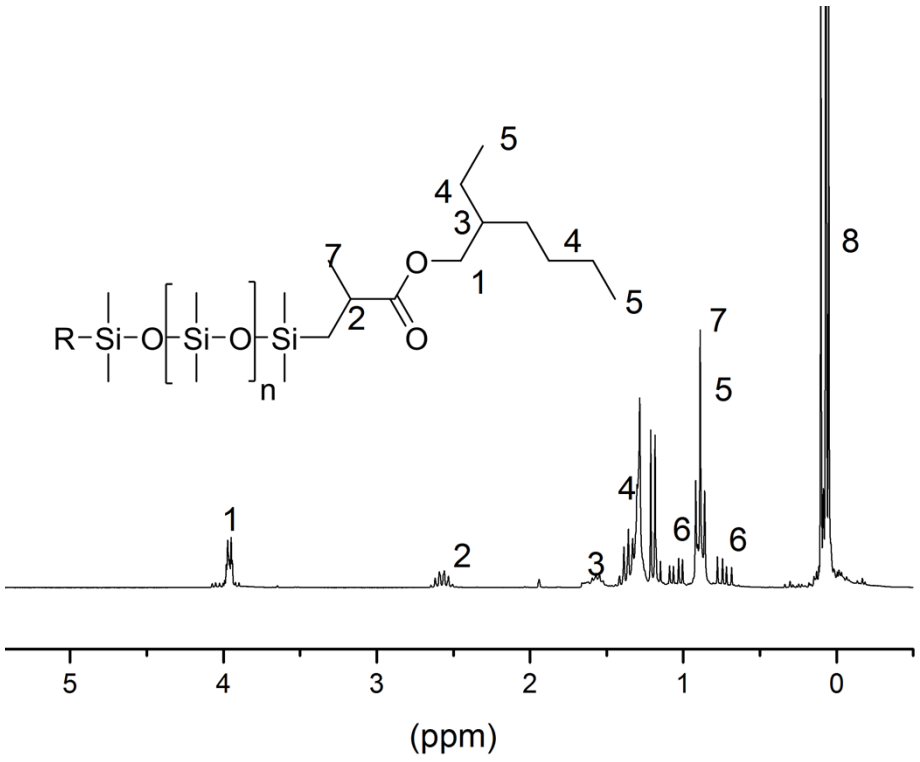


Fig. S9 ^{1}H NMR spectrum of EHMA-PDMS-2-EHMA.

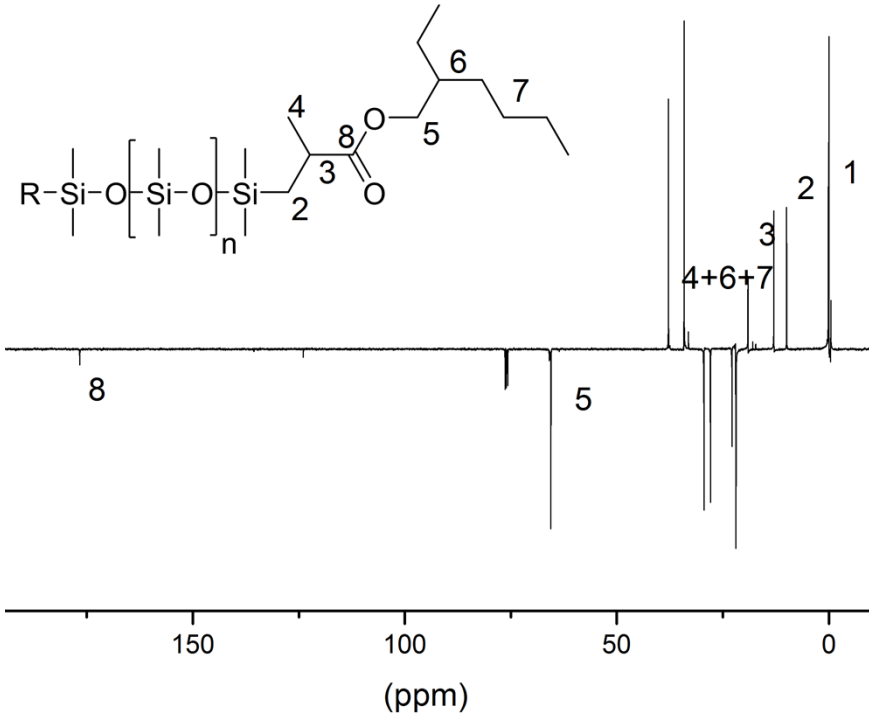


Fig. S10 ^{13}C NMR spectrum of 2-EH-PDMS-2-EH

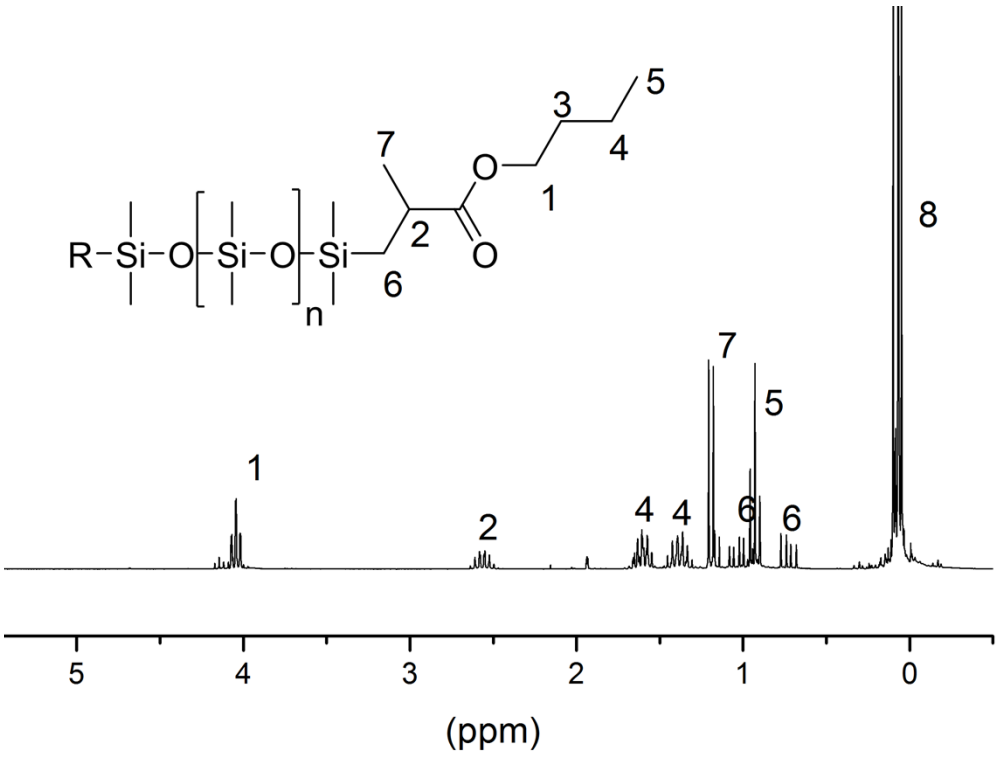


Fig. S11 ^{1}H NMR spectrum of BMA-PDMS-BMA.

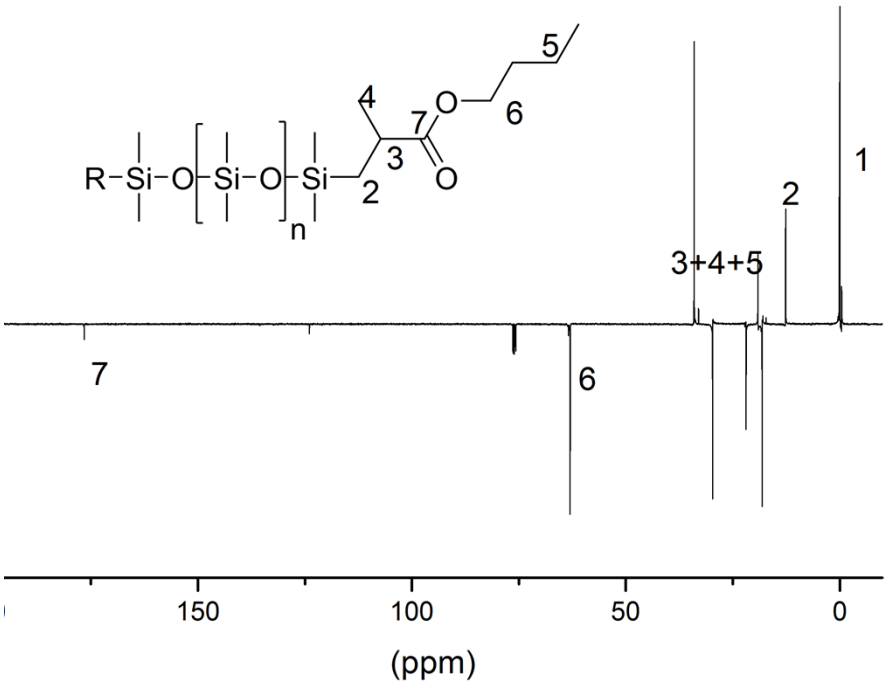


Fig. S12 ^{13}C NMR spectrum of BMA-PDMS-BMA.

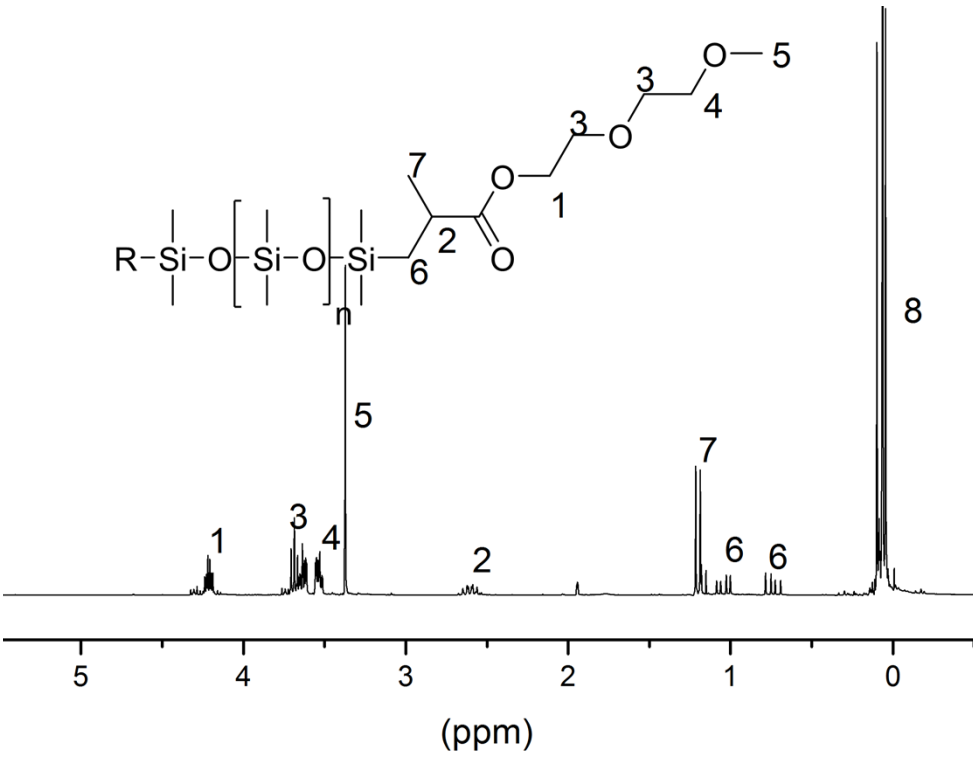


Fig. S13 ^{1}H NMR spectrum of DEGMEMA-PDMS-DEGMEMA.

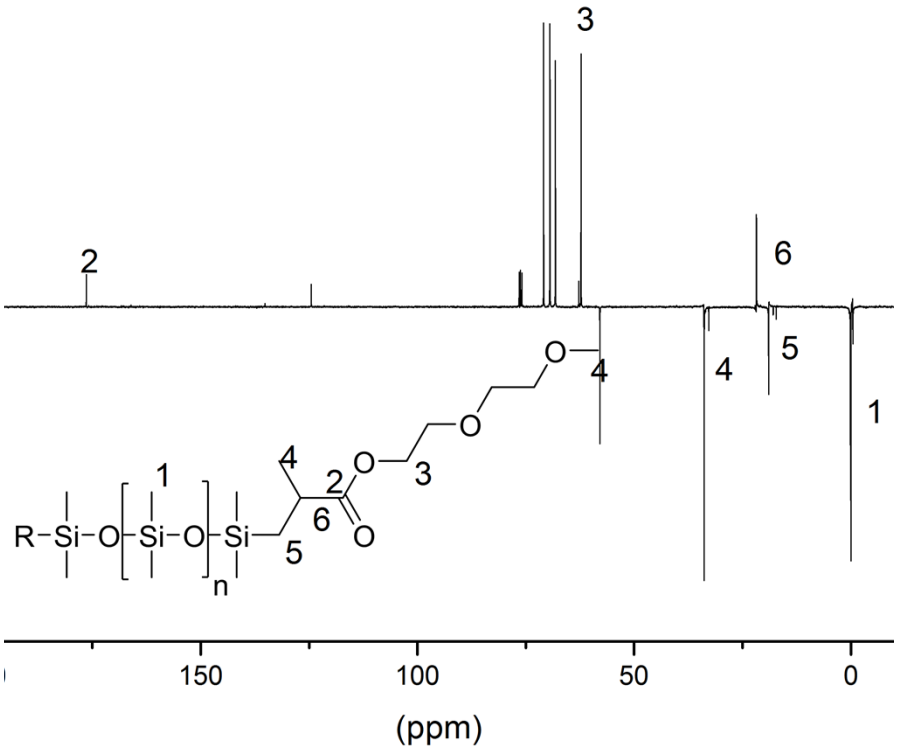


Fig. S14 ^{13}C NMR spectrum of DEGMEMA-PDMS-DEGMEMA.

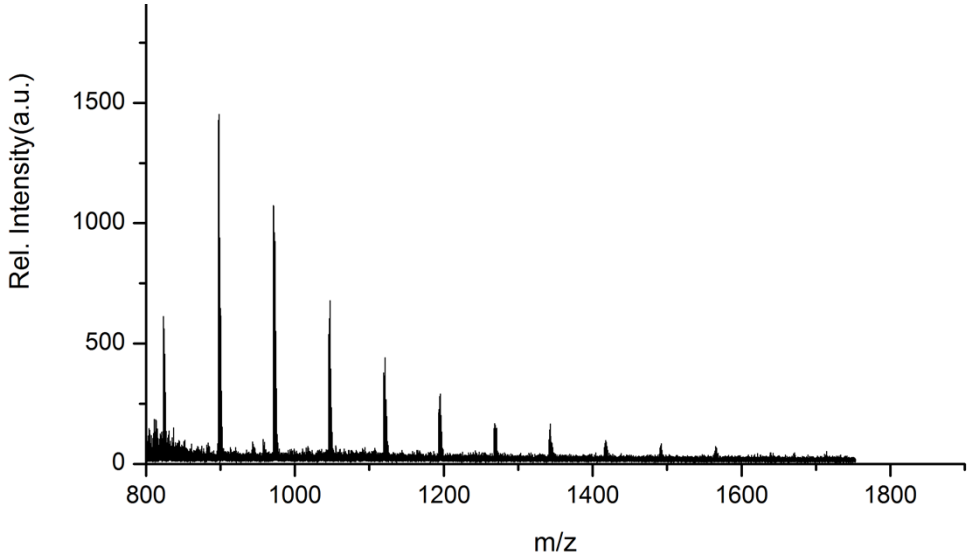


Fig. S15 MALDI-ToF MS spectrum of h_2PDMS.

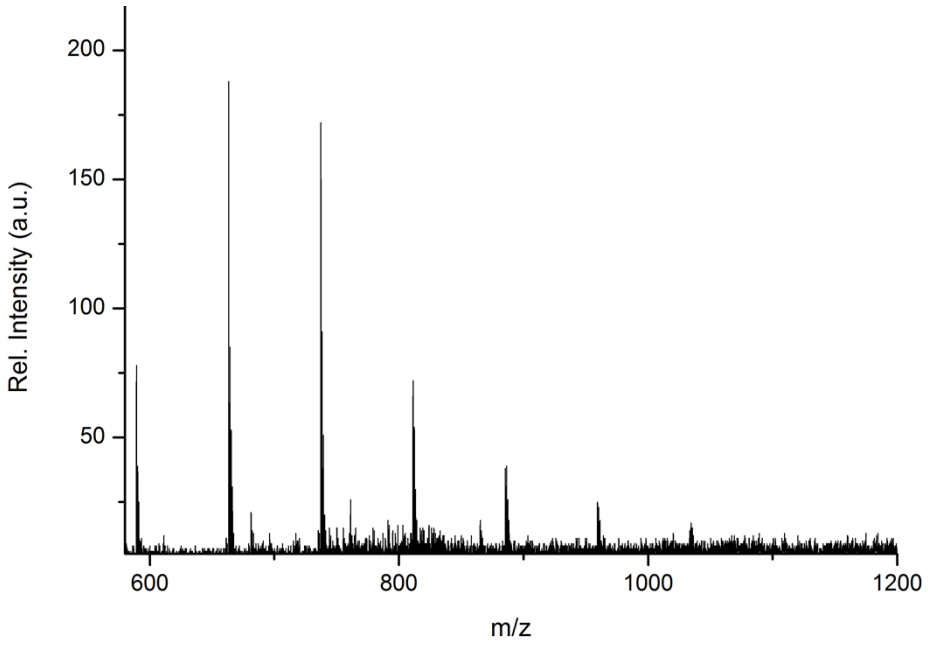


Fig. S16 MALDI-ToF MS spectrum of GMA-PDMS-GMA.

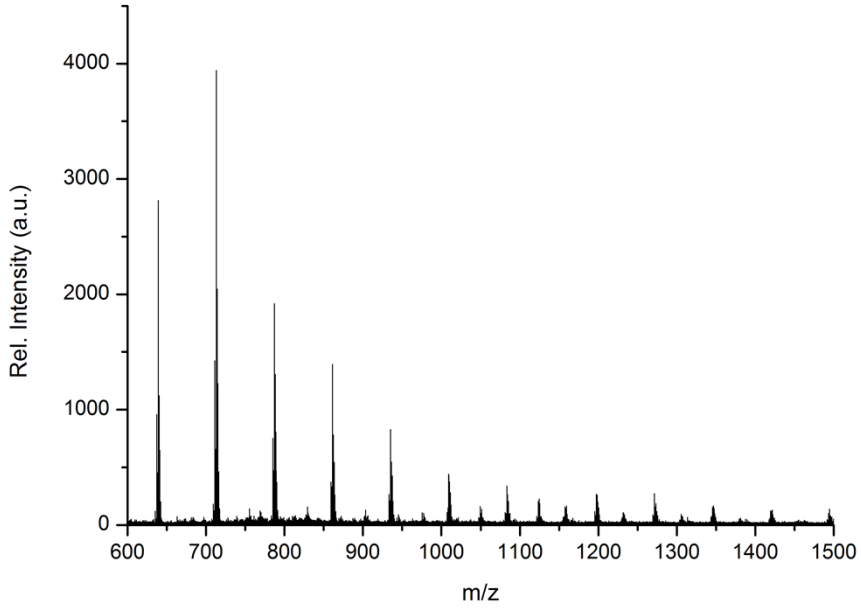


Fig. S17 MALDI-ToF MS spectrum of HEMA-PDMS-HEMA.

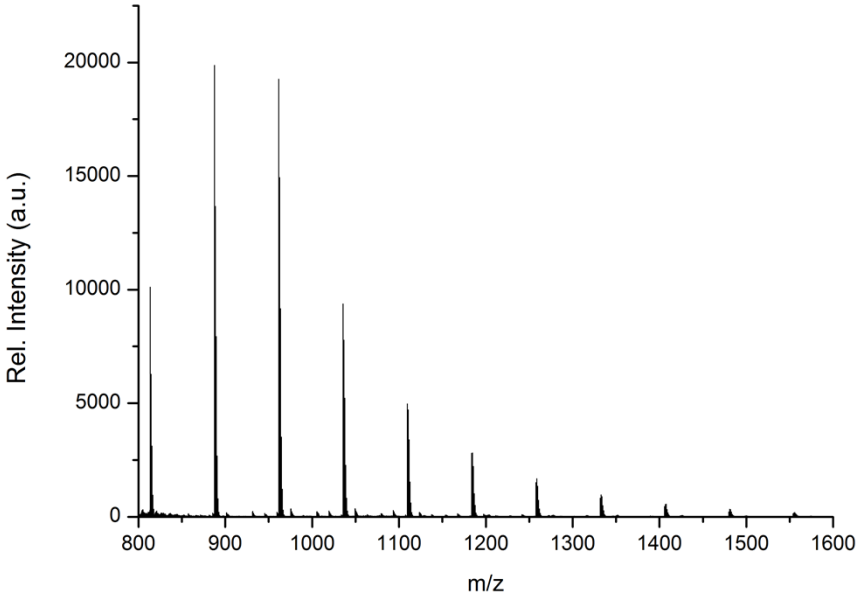


Fig. S18 MALDI-ToF MS spectrum of LMA-PDMS-LMA.

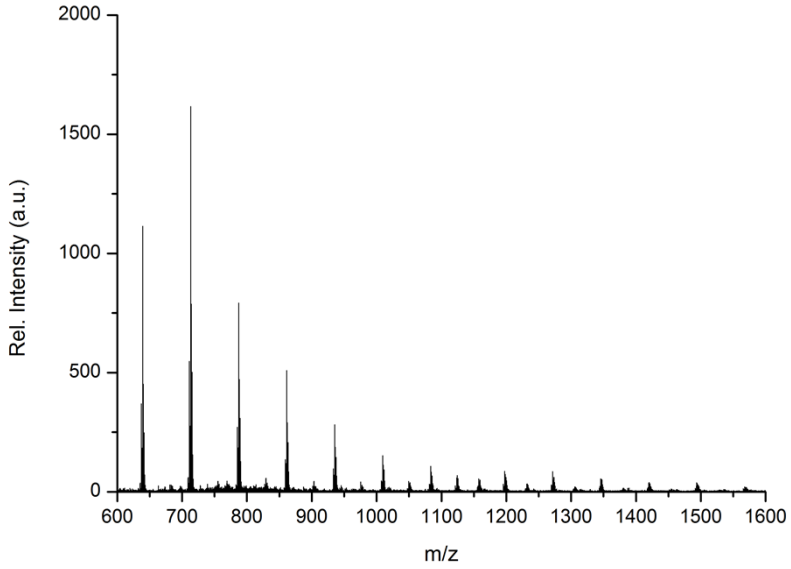


Fig. S19 MALDI-ToF MS spectrum of EHMA-PDMS-EHMA.

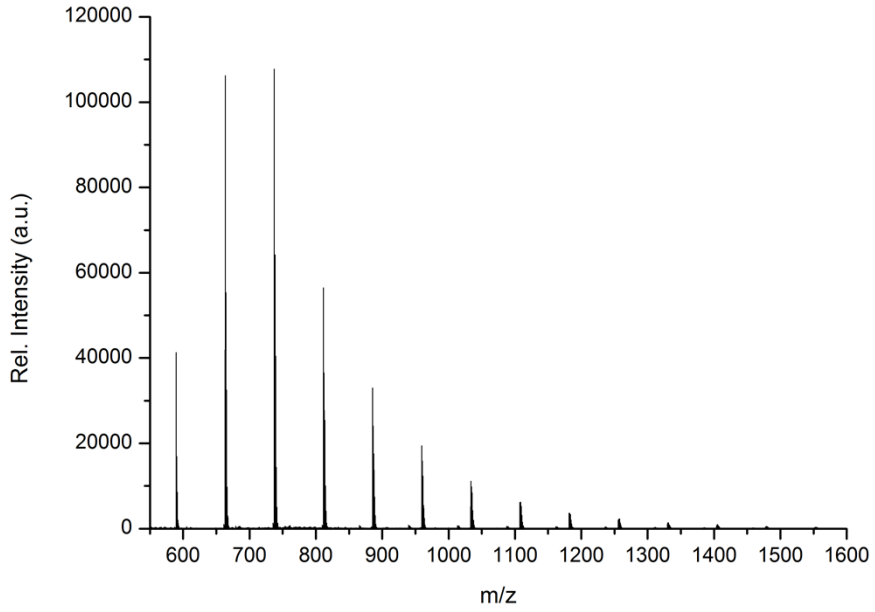


Fig. S20 MALDI-ToF MS spectrum of BMA-PDMS-BMA.

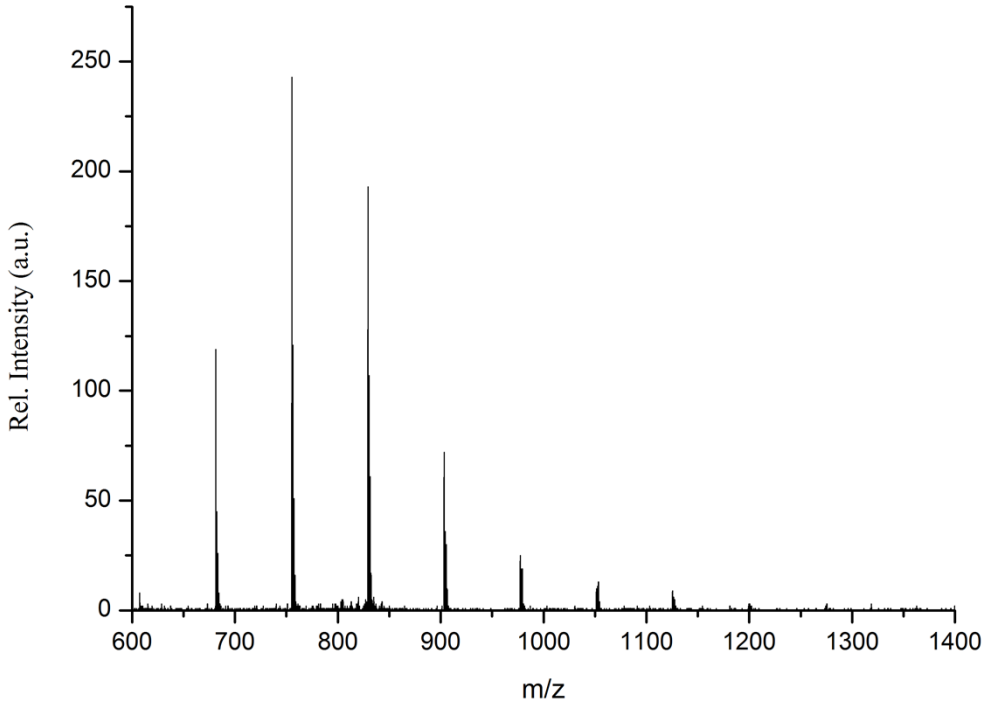


Fig. S21 MALDI-ToF MS spectrum of DEGMEMA-PDMS-DEGMEMA.

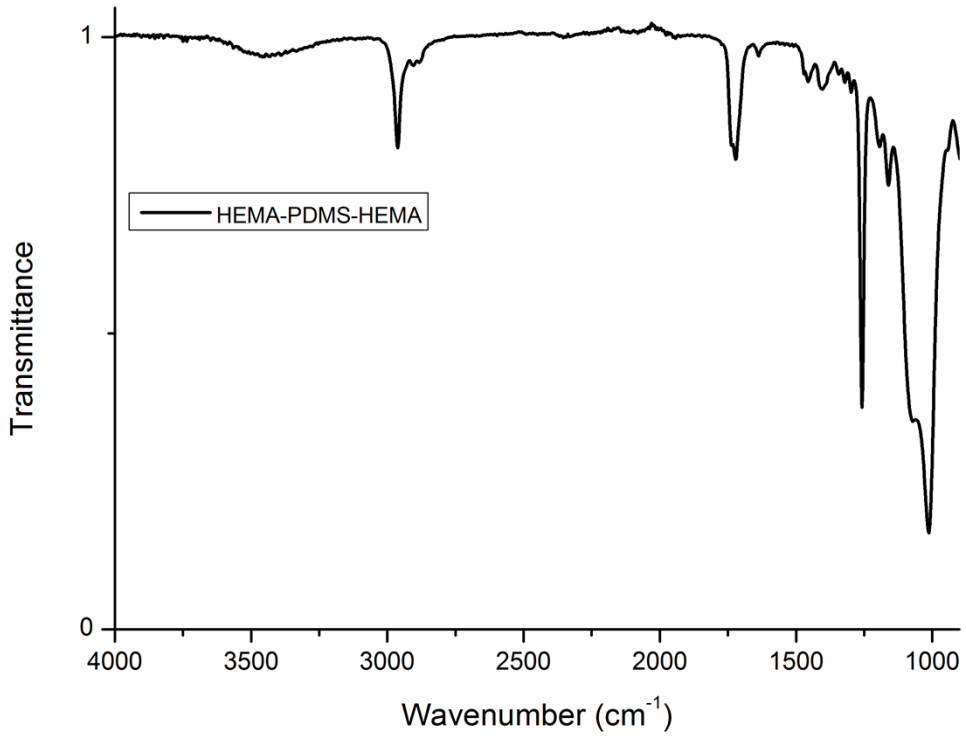


Fig. S22 IR spectrum of HEMA-PDMS-HEMA.

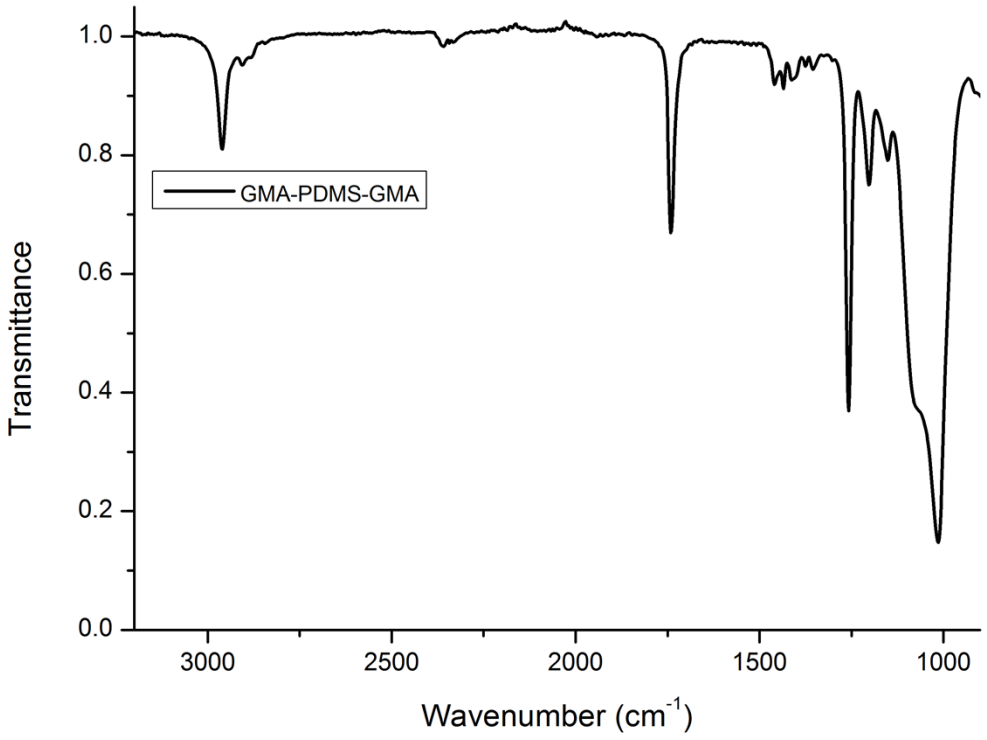


Fig. S23 IR spectrum spectra of GMA-PDMS-GMA.

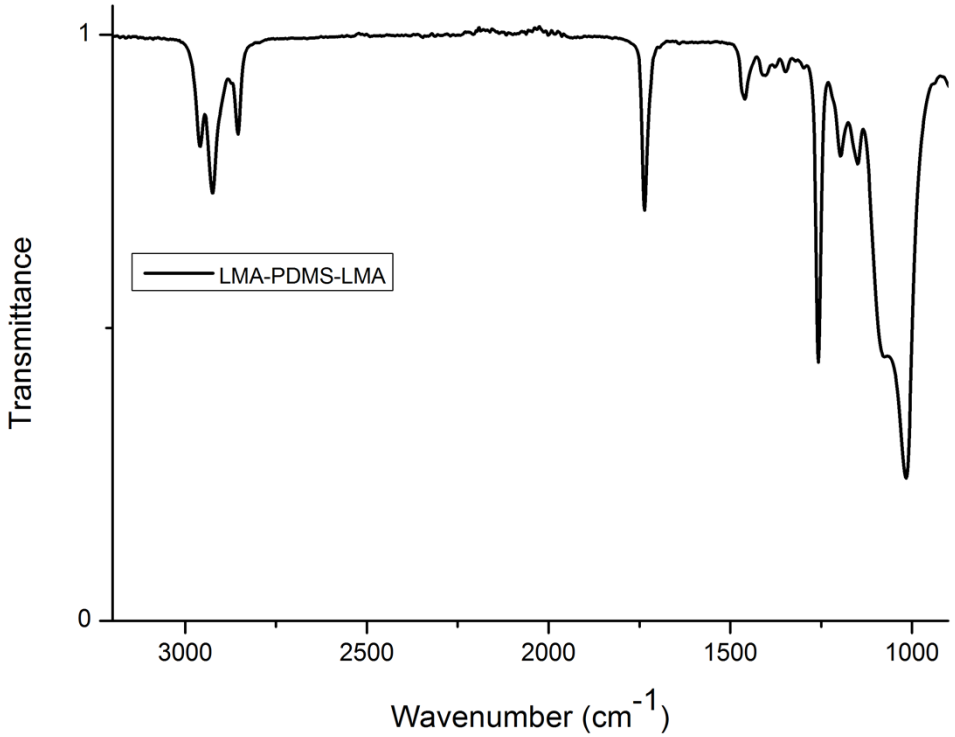


Fig. S24 IR spectrum of LMA-PDMS-LMA.

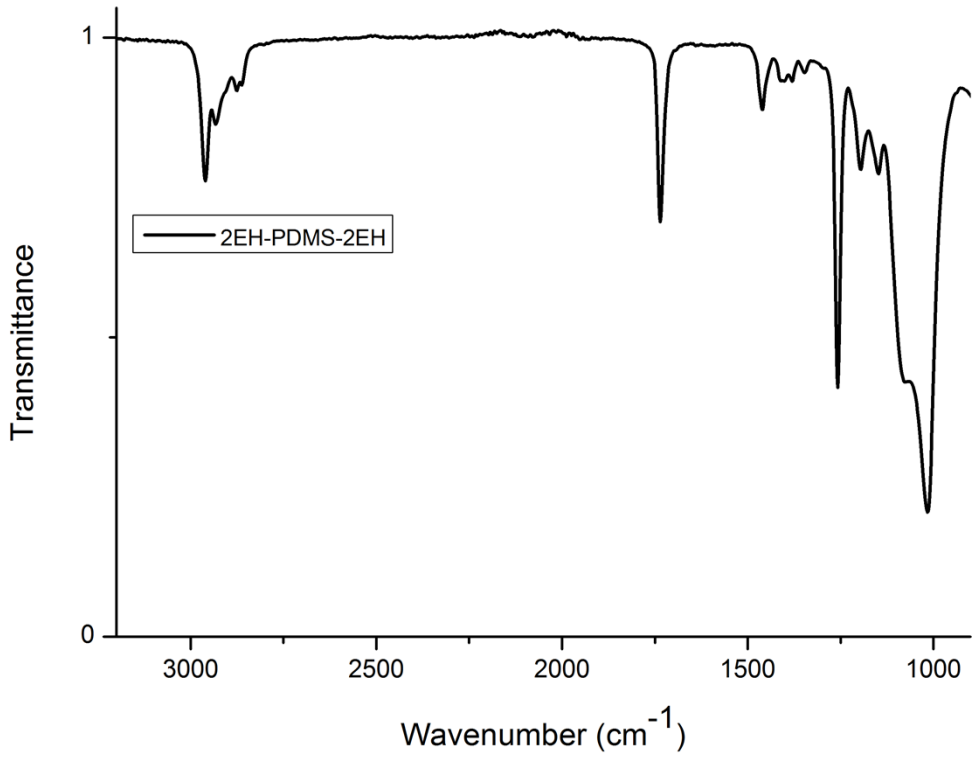


Fig.S25 IR spectrum of EHMA-PDMS-EHMA.

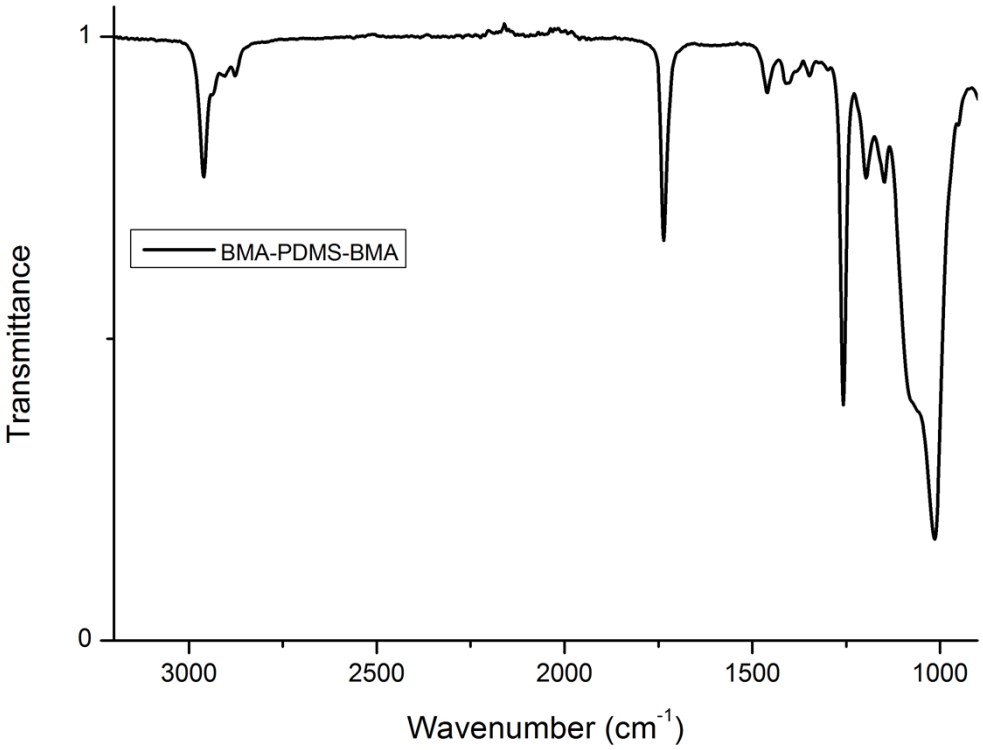


Fig. S26 IR spectrum of BMA-PDMS-BMA.

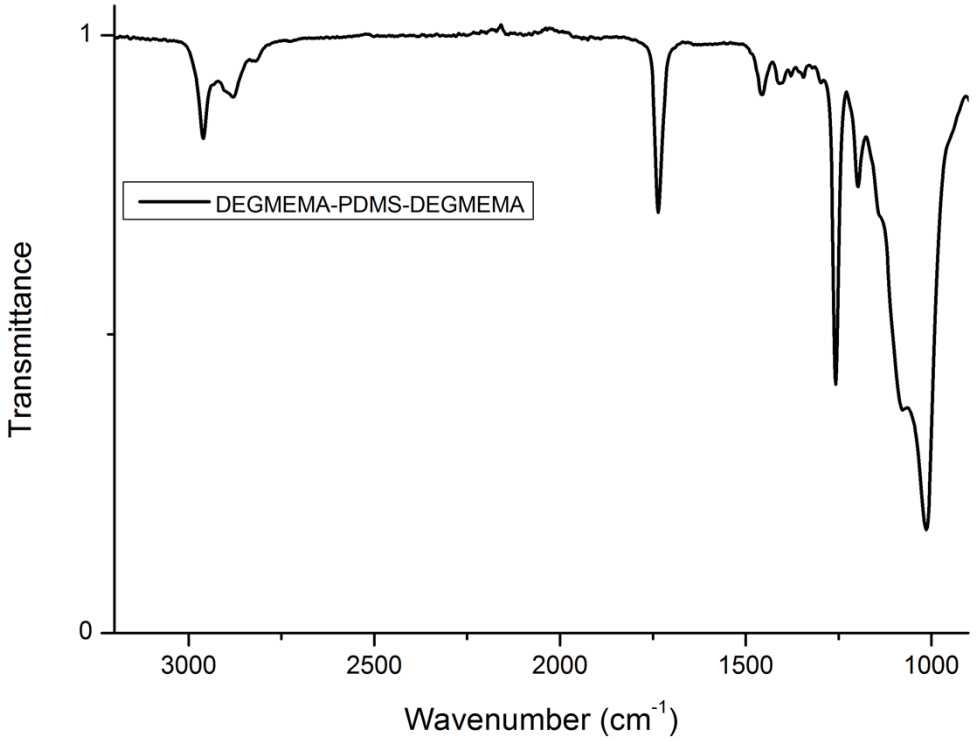


Fig.S27 IR spectrum of DEGMEMA-PDMS-DEGMEMA.

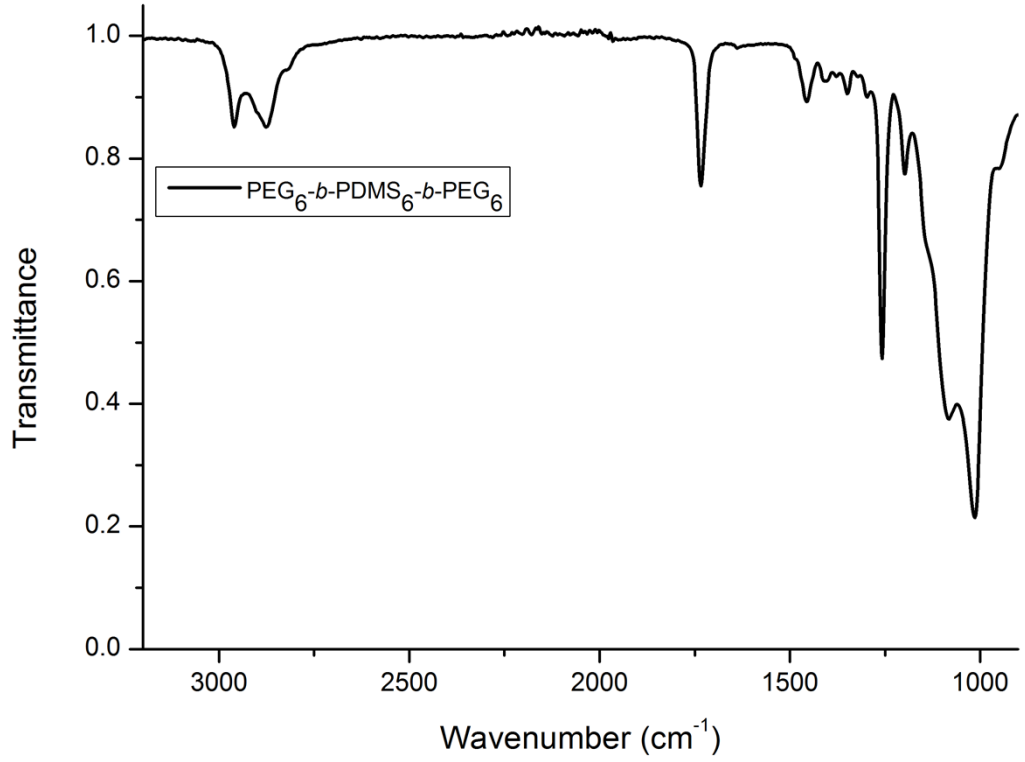


Fig. S28 IR spectrum of PEG-*b*-PDMS-*b*-PEG triblock copolymer.

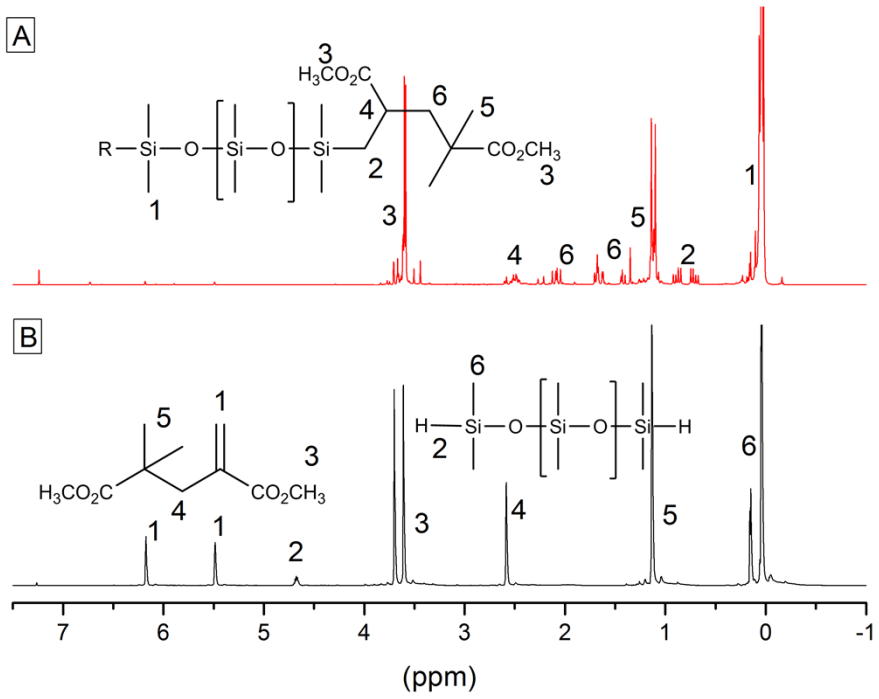


Fig. S29 ^{1}H NMR spectra of (A) the ABA triblock PMMA-PDMS-PMMA after 24 h reaction and (B) the feed reaction mixture.

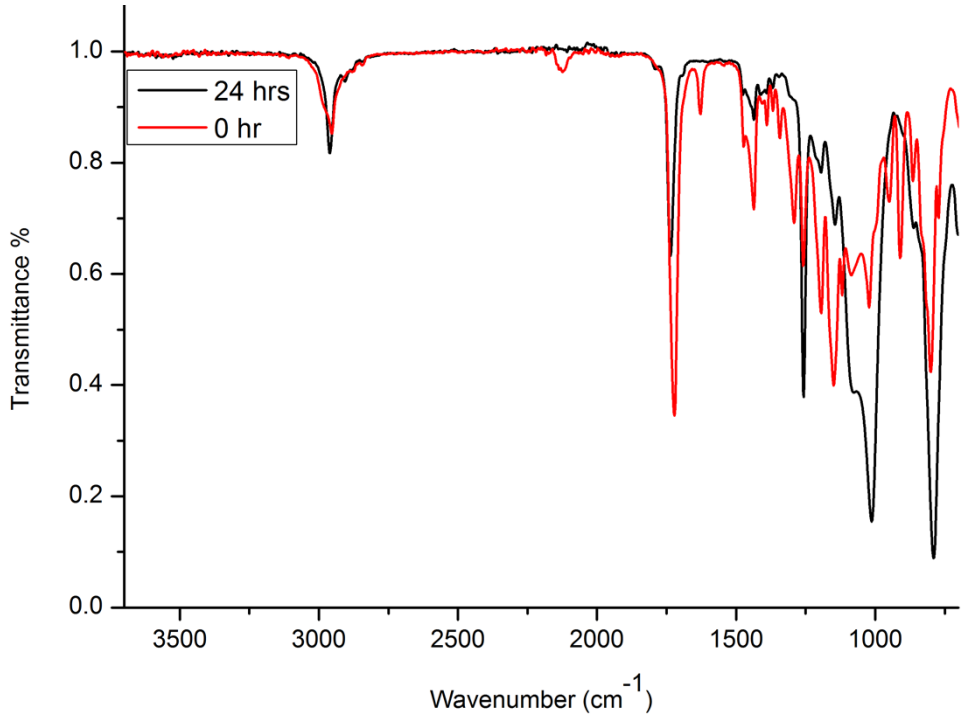


Fig. S30 IR spectrum of PMMA-*b*-PDMS-*b*-PMMA triblock copolymer.

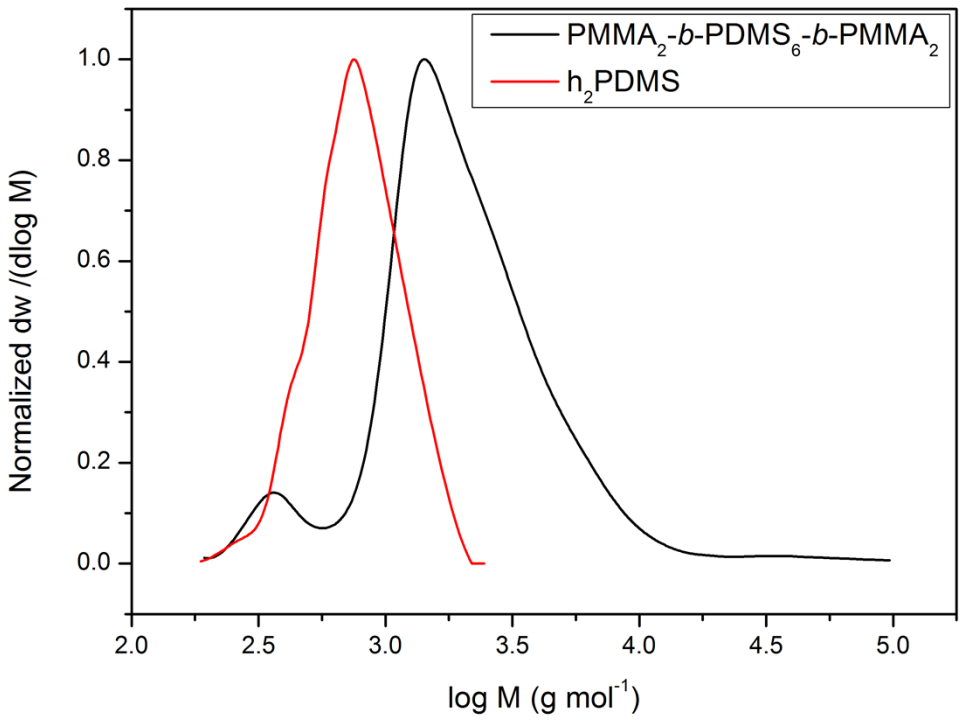


Fig. S31 SEC elution traces of h_2PDMS and PMMA-b-PDMS-PMMA triblock copolymer (SEC eluent: THF + 2% TEA).