Electronic Supplementary Information

Synthesis and characterization of hydrophilic functionalized organosilicon copolymers containing triazole and silylimidate/silylacrylate groups

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Table of Contents

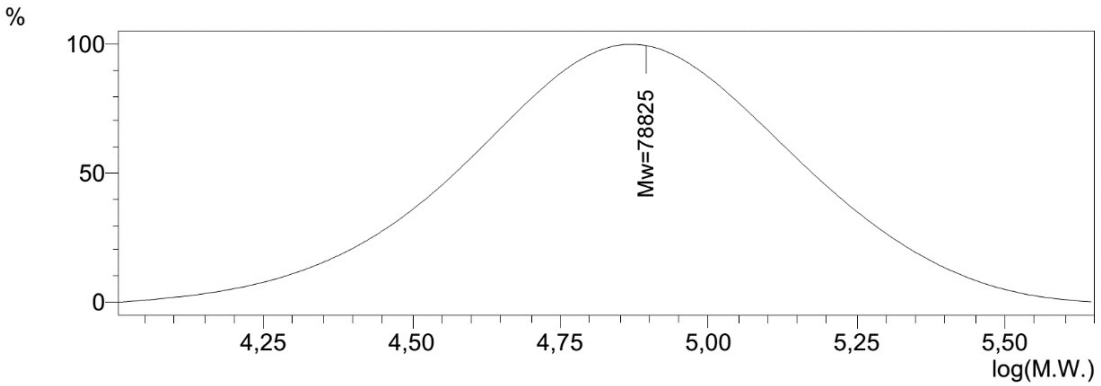

Fig. S1 Molecular weight distribution for poly(VT-*co*-BTMSI) **P2**.

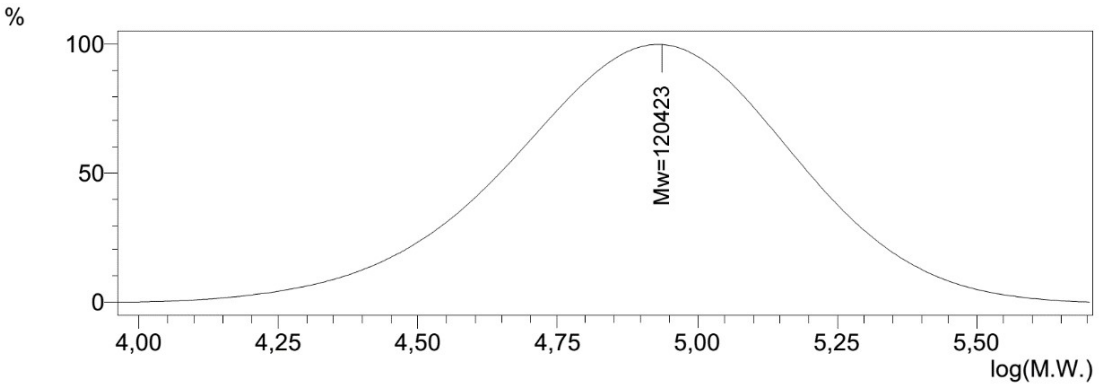

Fig. S2 Molecular weight distribution for poly(VT-*co*-BTMSI) **P4**.

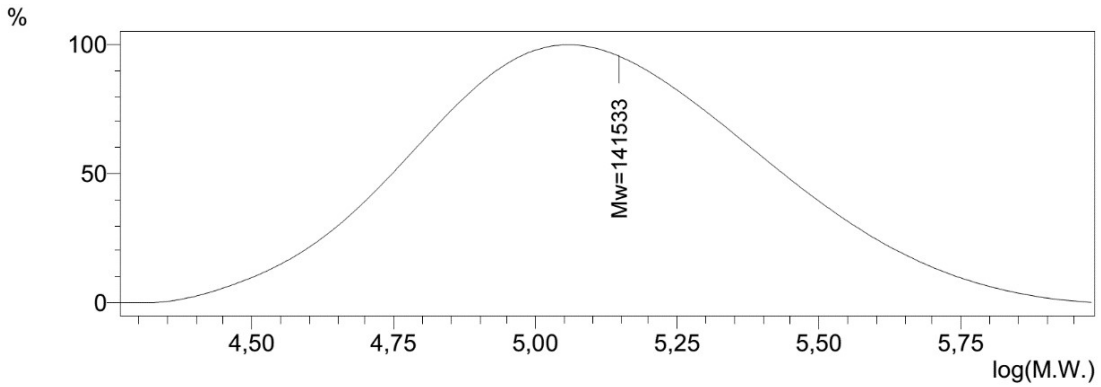

Fig. S3 Molecular weight distribution for poly(VT-*co*-BTMSI) **P5**.

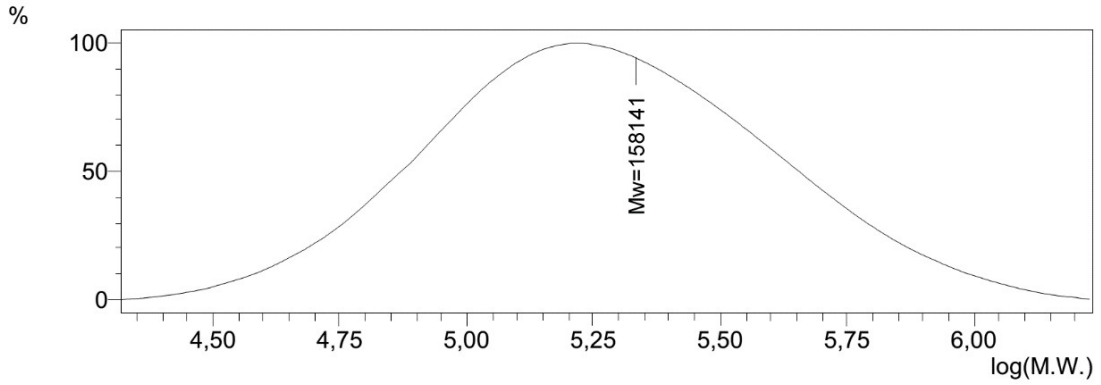

Fig. S4 Molecular weight distribution for poly(VT-*co*-BTMSI) **P6**.

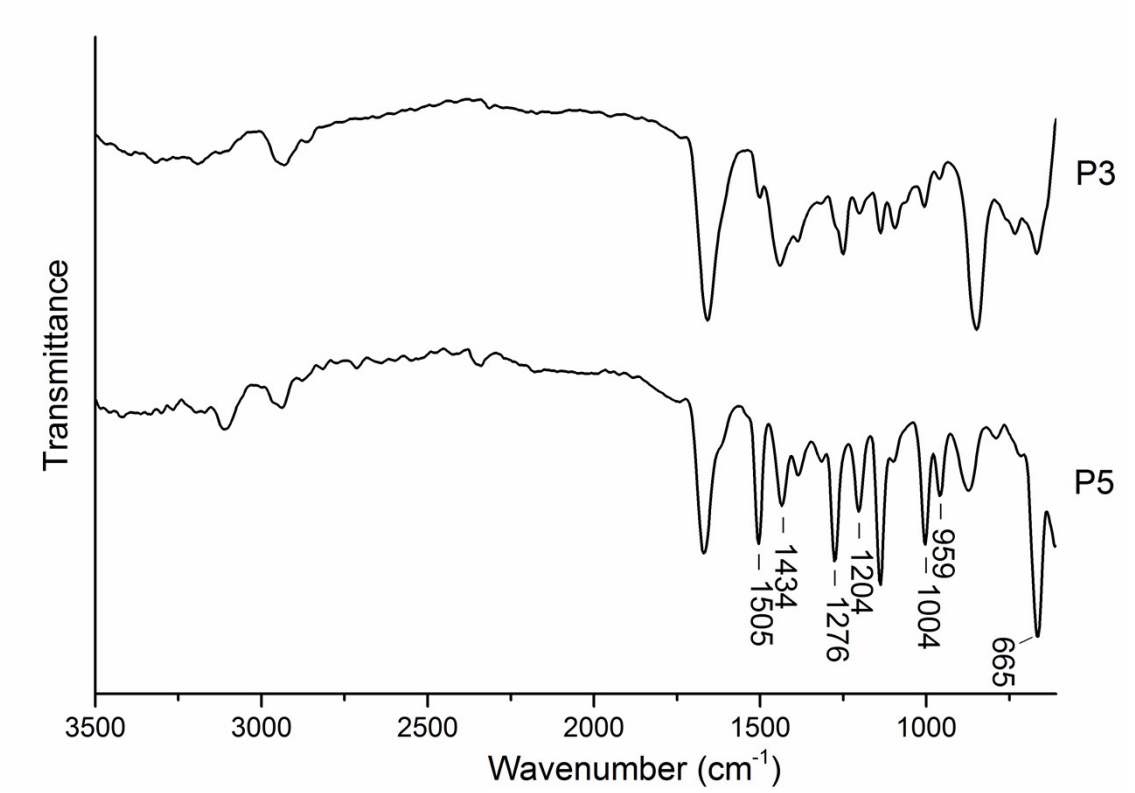

Fig. S5 FT-IR spectra of poly(VT-*co*-BTMSI) **P3** and **P5**.

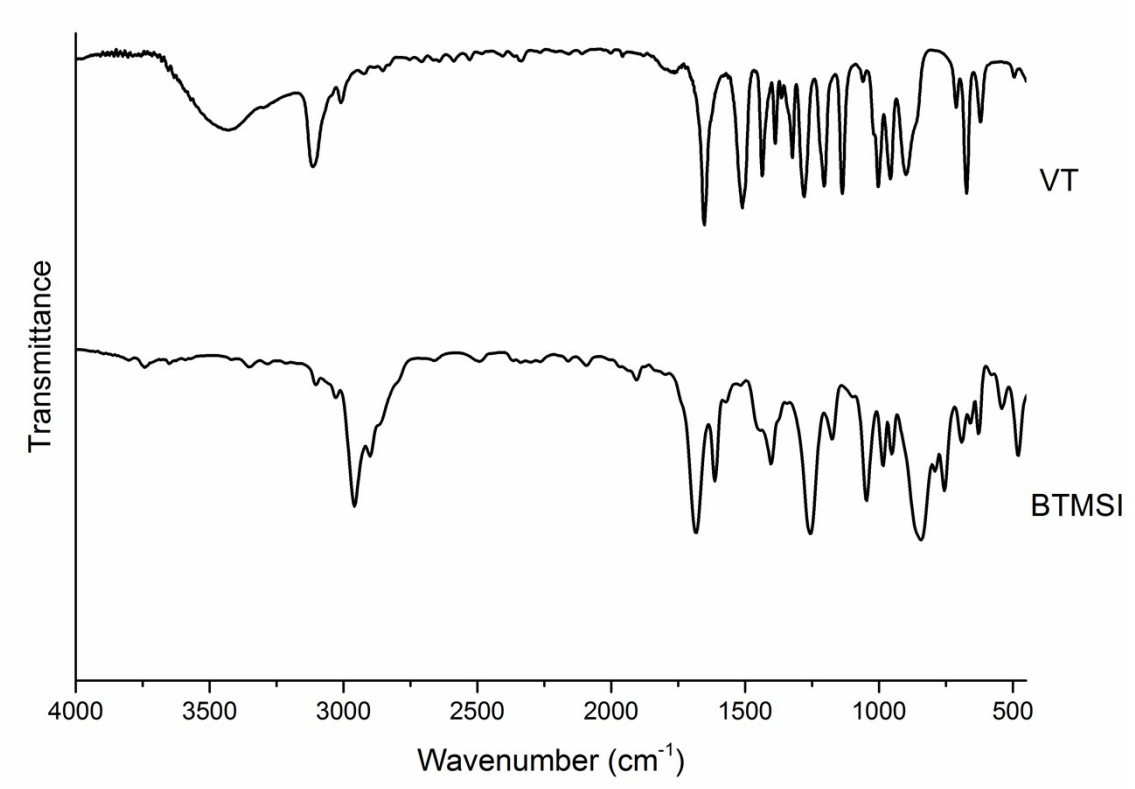

Fig. S6 FT-IR spectra of 1-vinyl-1,2,4-triazole (VT) and N,O-*bis*(trimethylsilyl)prop-2-enecarboximidate (BTMSI).

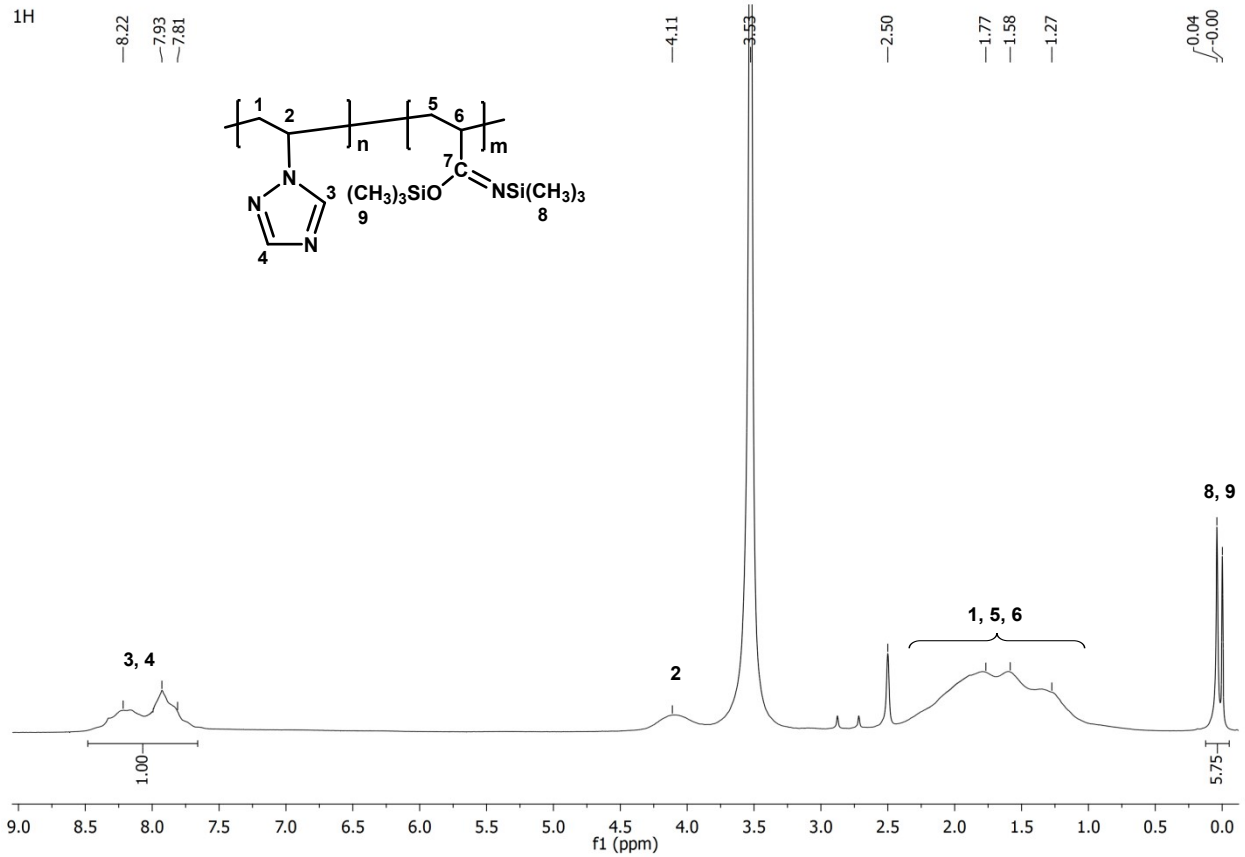

Fig. **S7** ^{1}H NMR spectrum of copolymer **P3** (400.13 MHz, DMSO-d_6).

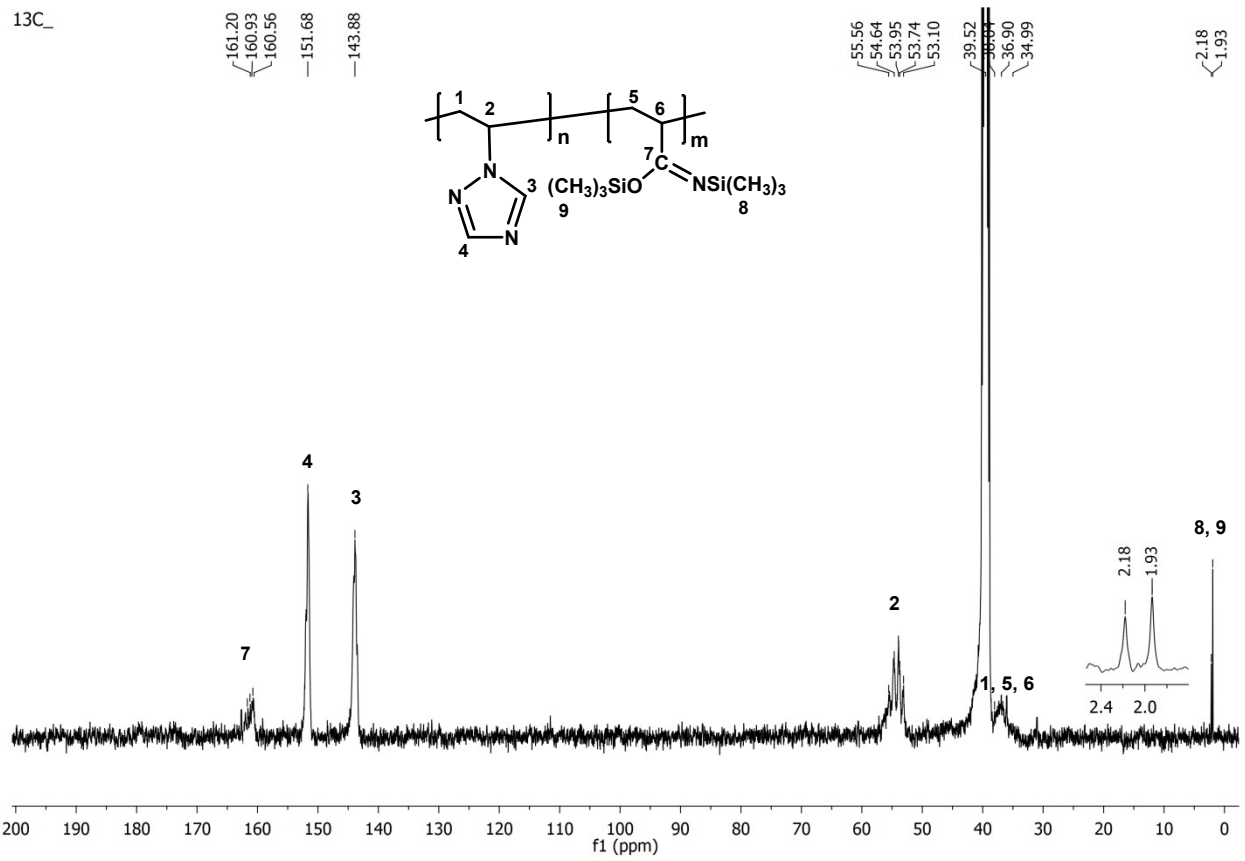

Fig. **S8** ^{13}C NMR spectrum of copolymer **P3** (100.62 MHz, DMSO-d_6).

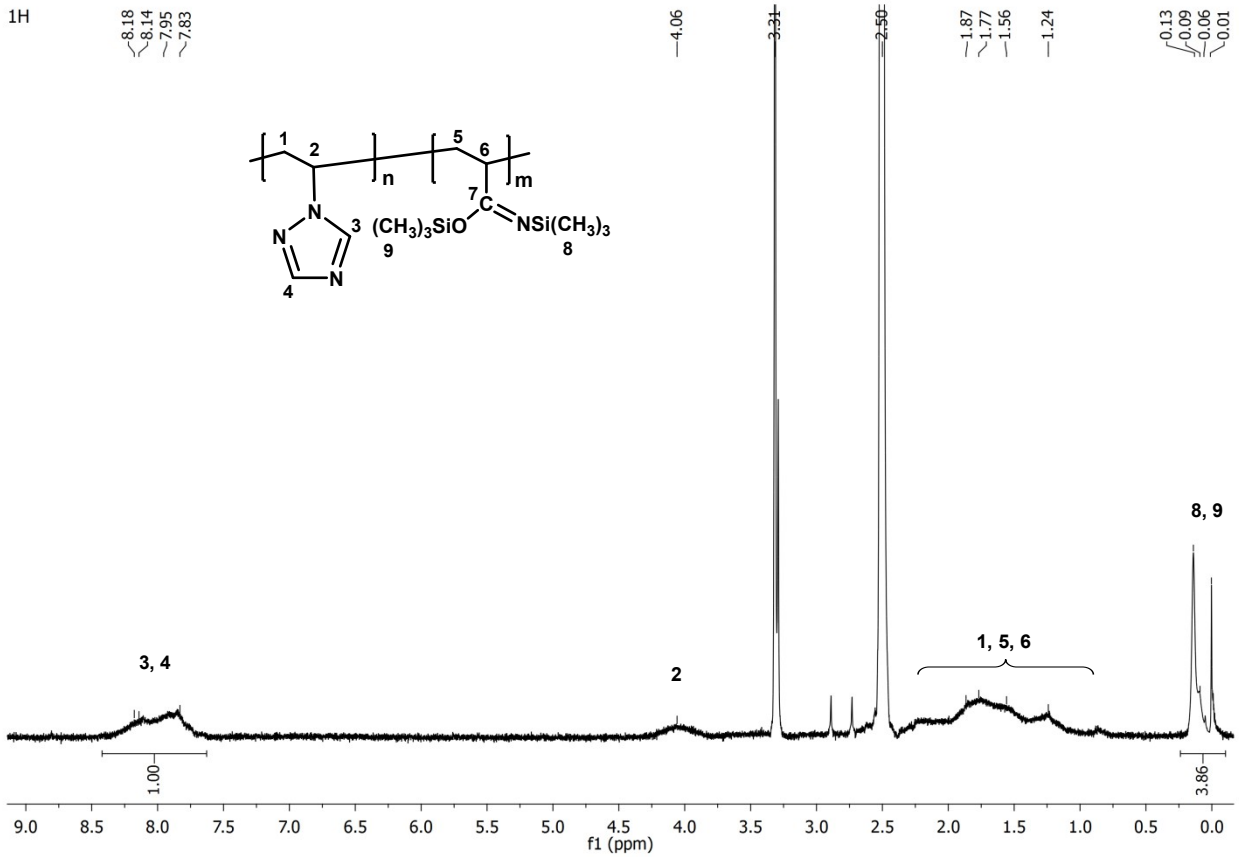

Fig. **S9** ^{1}H NMR spectrum of copolymer **P4** (400.13 MHz, DMSO-d_6).

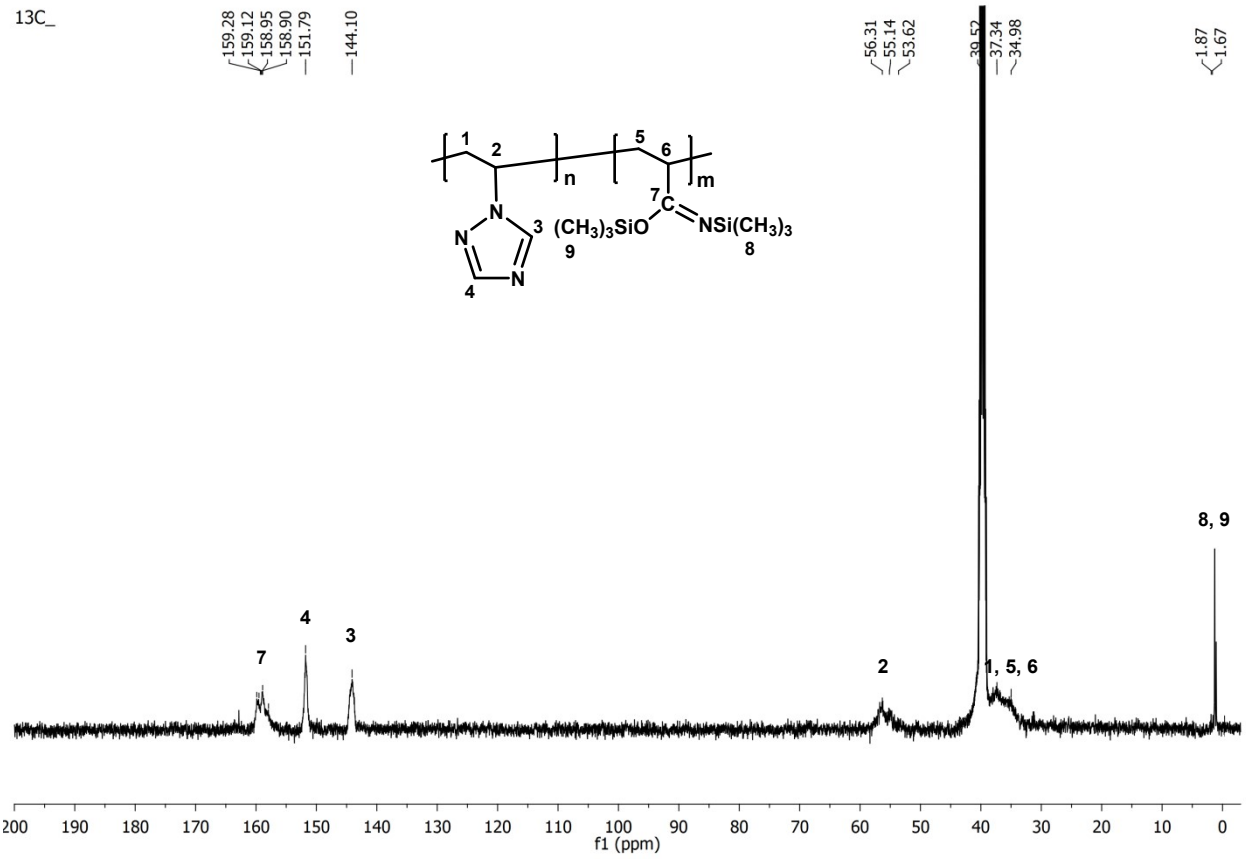

Fig. **S10** ^{13}C NMR spectrum of copolymer **P4** (100.62 MHz, DMSO-d_6).

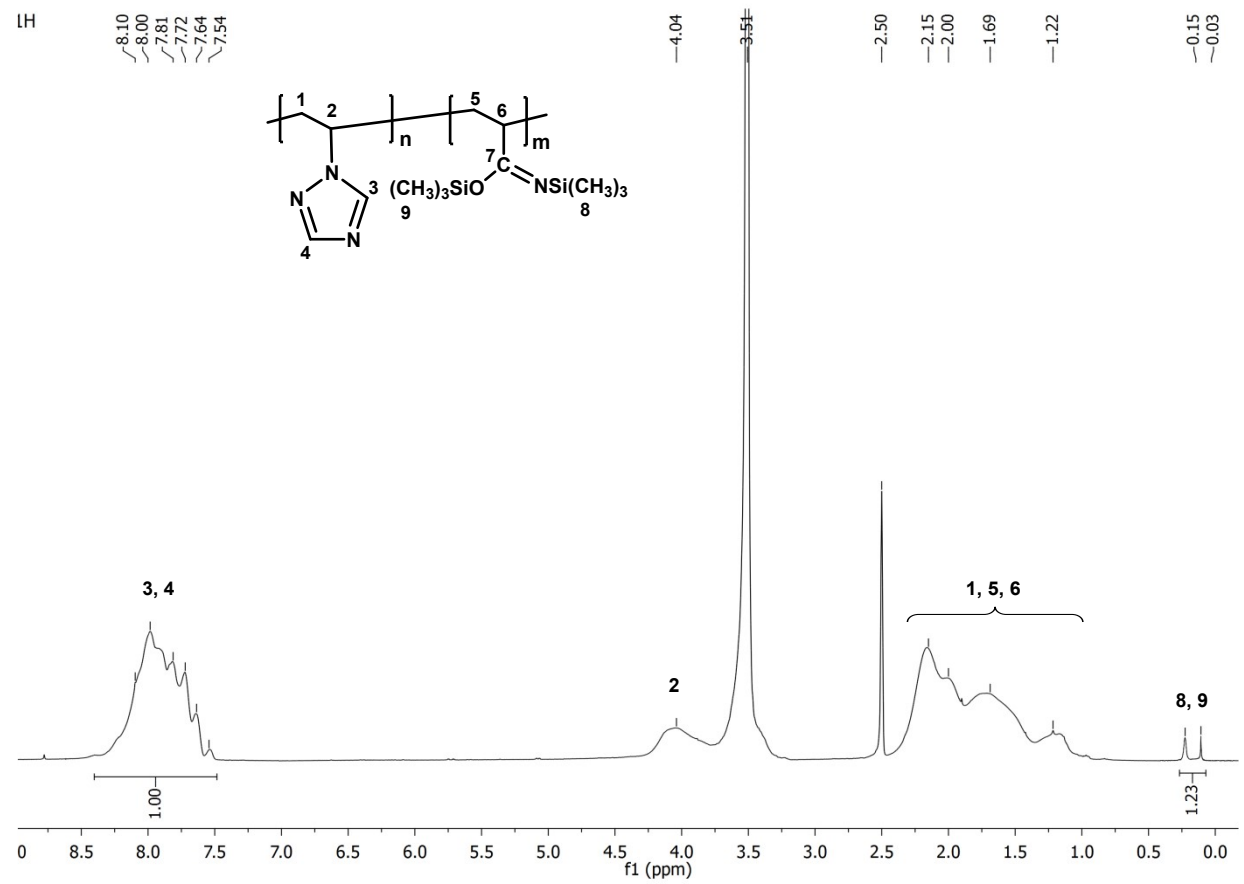

Fig. **S11** ^{1}H NMR spectrum of copolymer **P5** (400.13 MHz, DMSO-d_6).

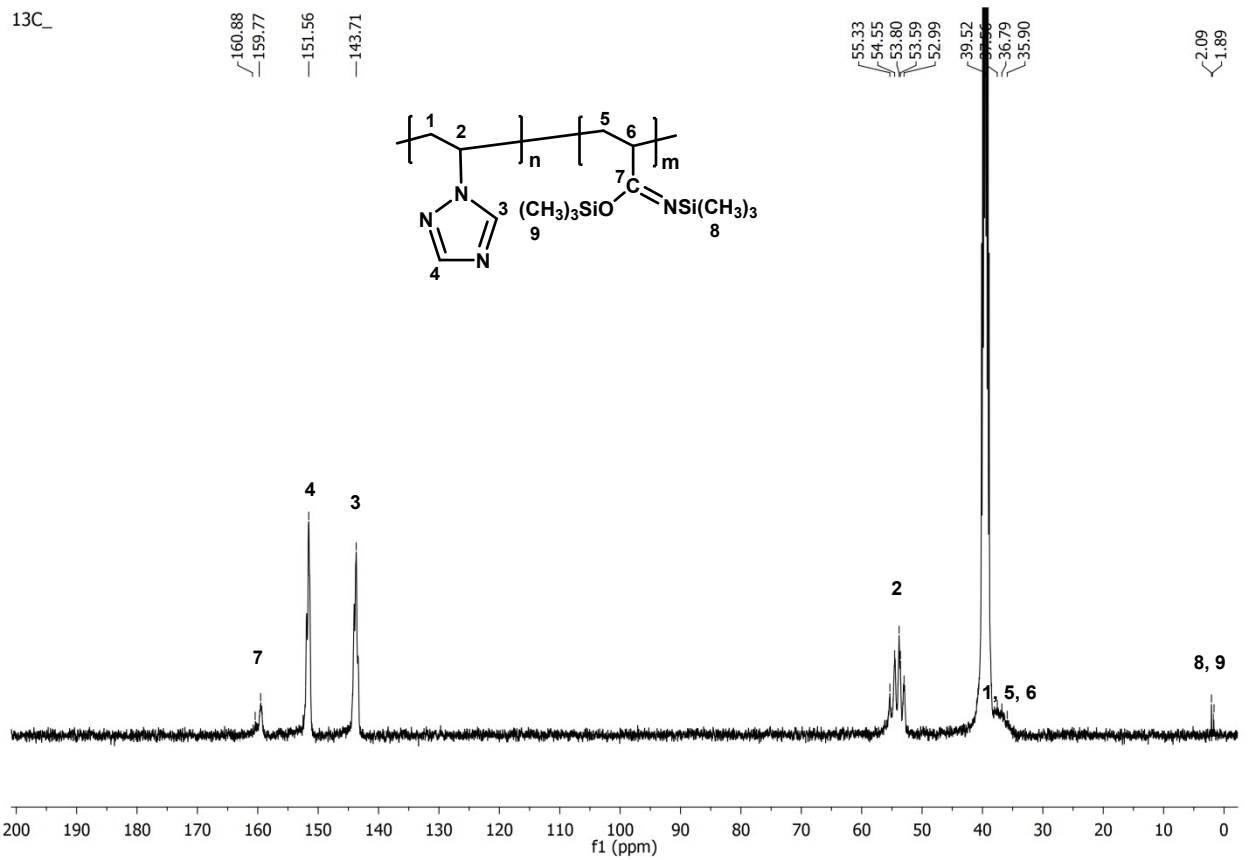

Fig. **S12** ^{13}C NMR spectrum of copolymer **P5** (100.62 MHz, DMSO-d_6).

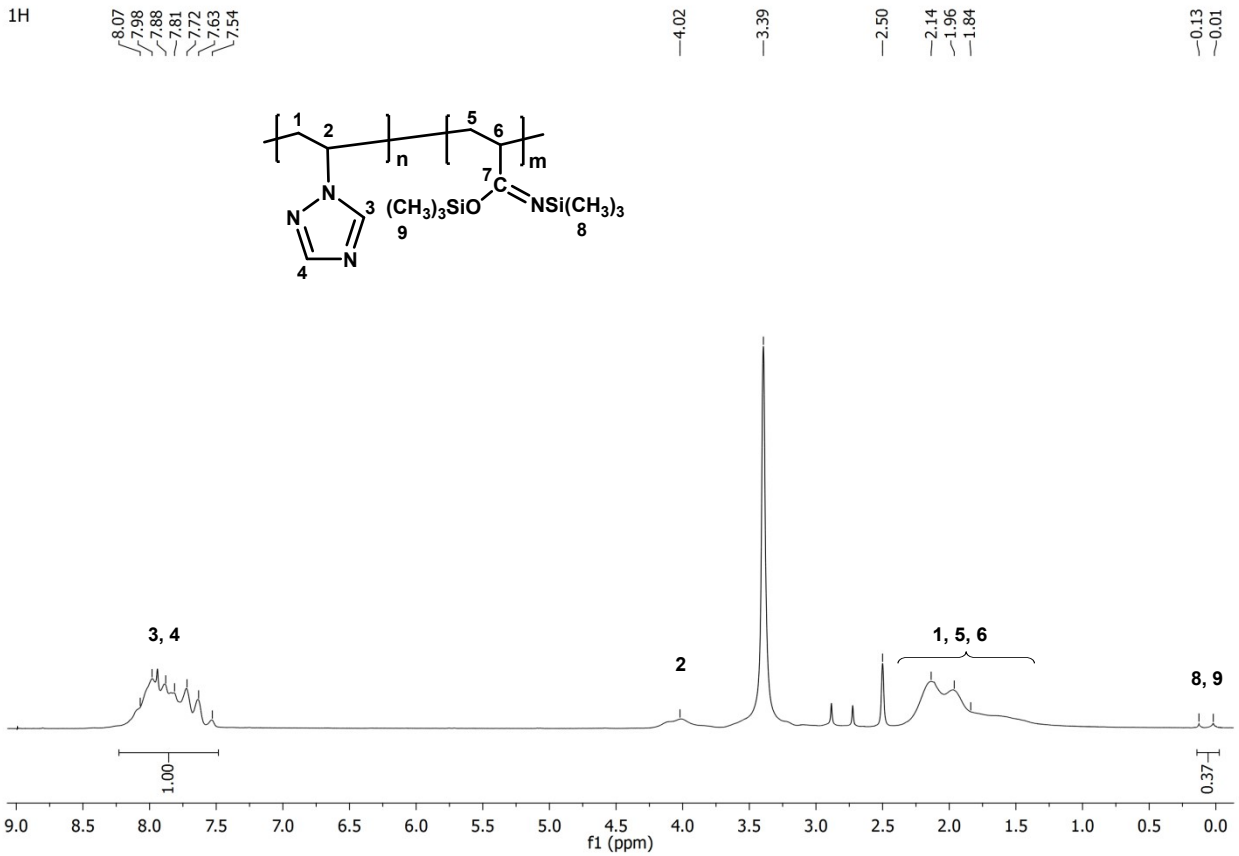

Fig. **S13** ^{1}H NMR spectrum of copolymer **P6** (400.13 MHz, DMSO-d_6).

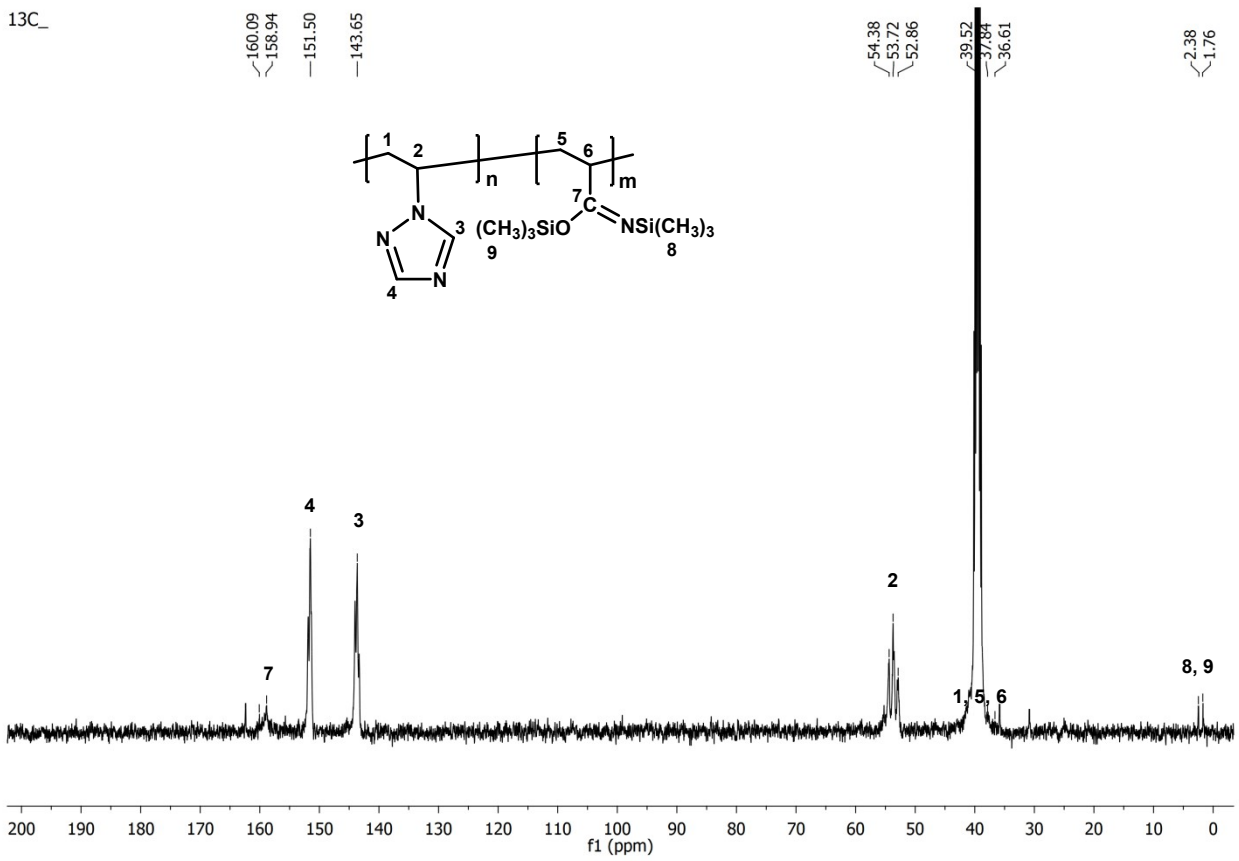

Fig. **S14** ^{13}C NMR spectrum of copolymer **P6** (100.62 MHz, DMSO-d_6).

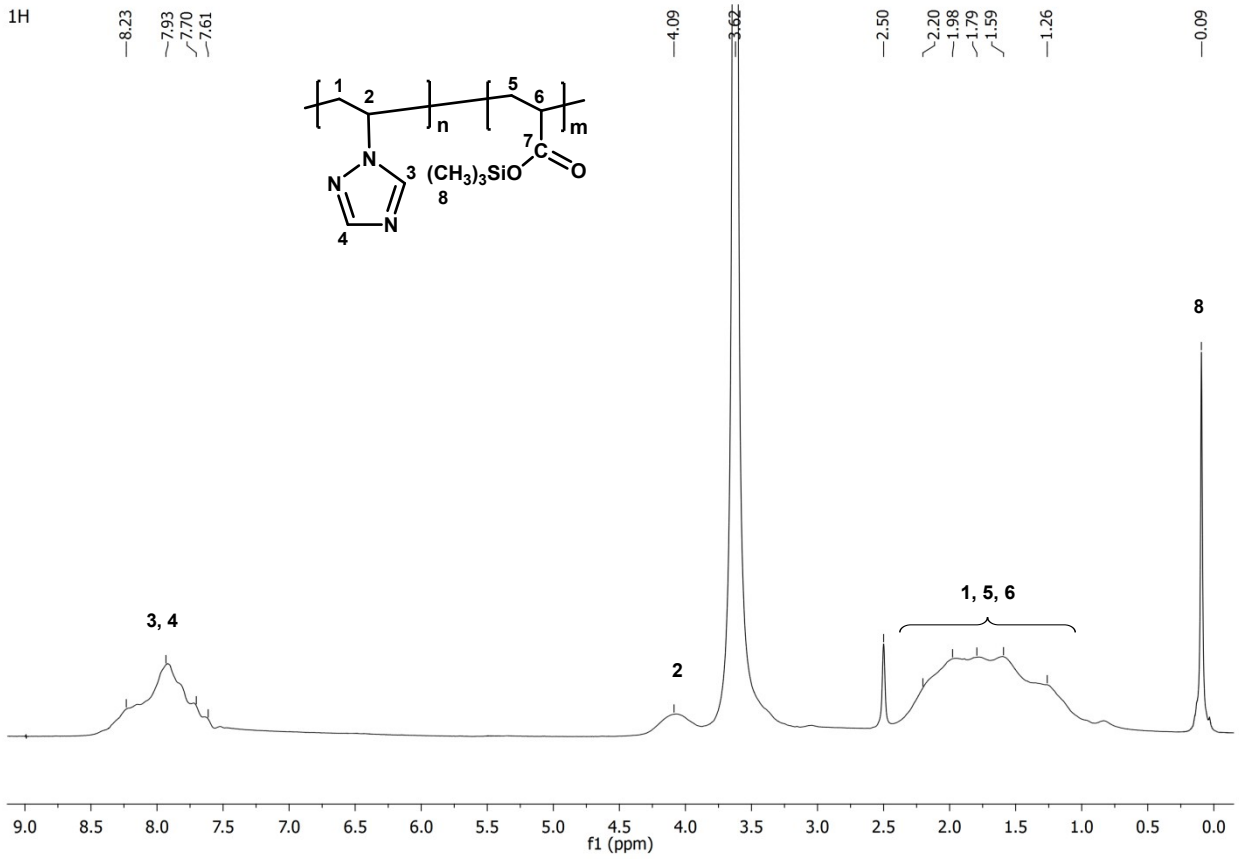

Fig. **S15** ^{1}H NMR spectrum of copolymer **MP2** (400.13 MHz, DMSO-d_6).

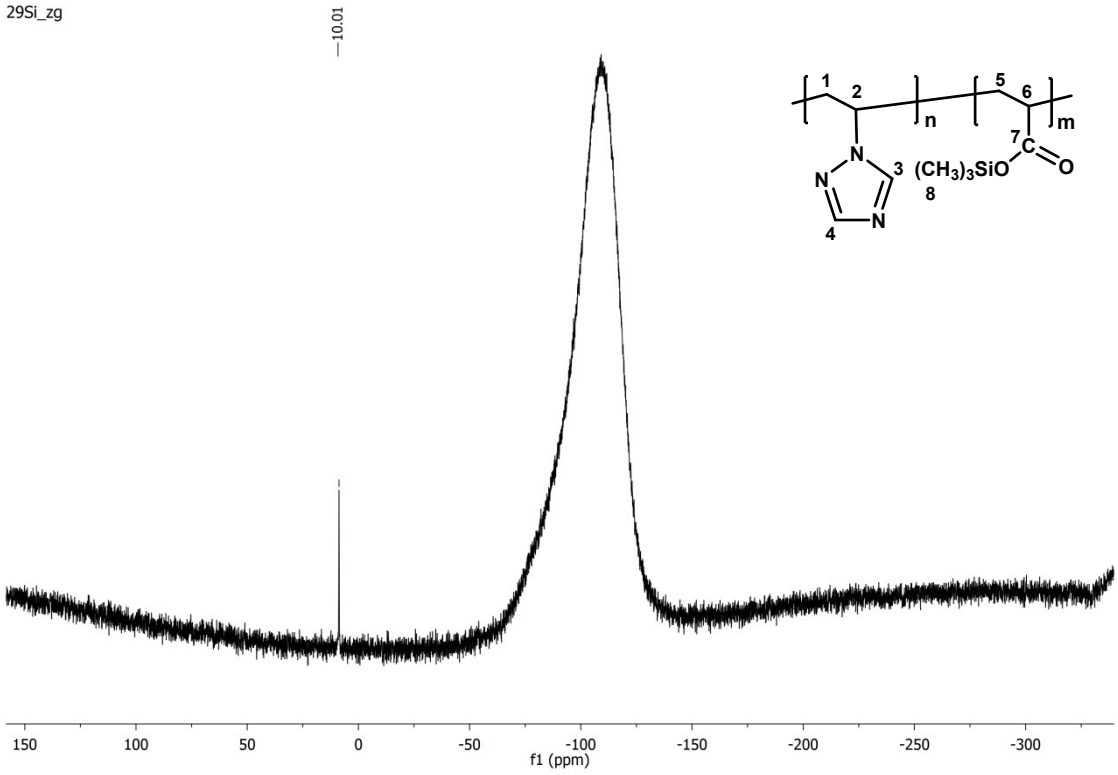

Fig. **S16** ^{29}Si NMR spectrum of copolymer **MP2** (79.50 MHz, DMSO-d_6).

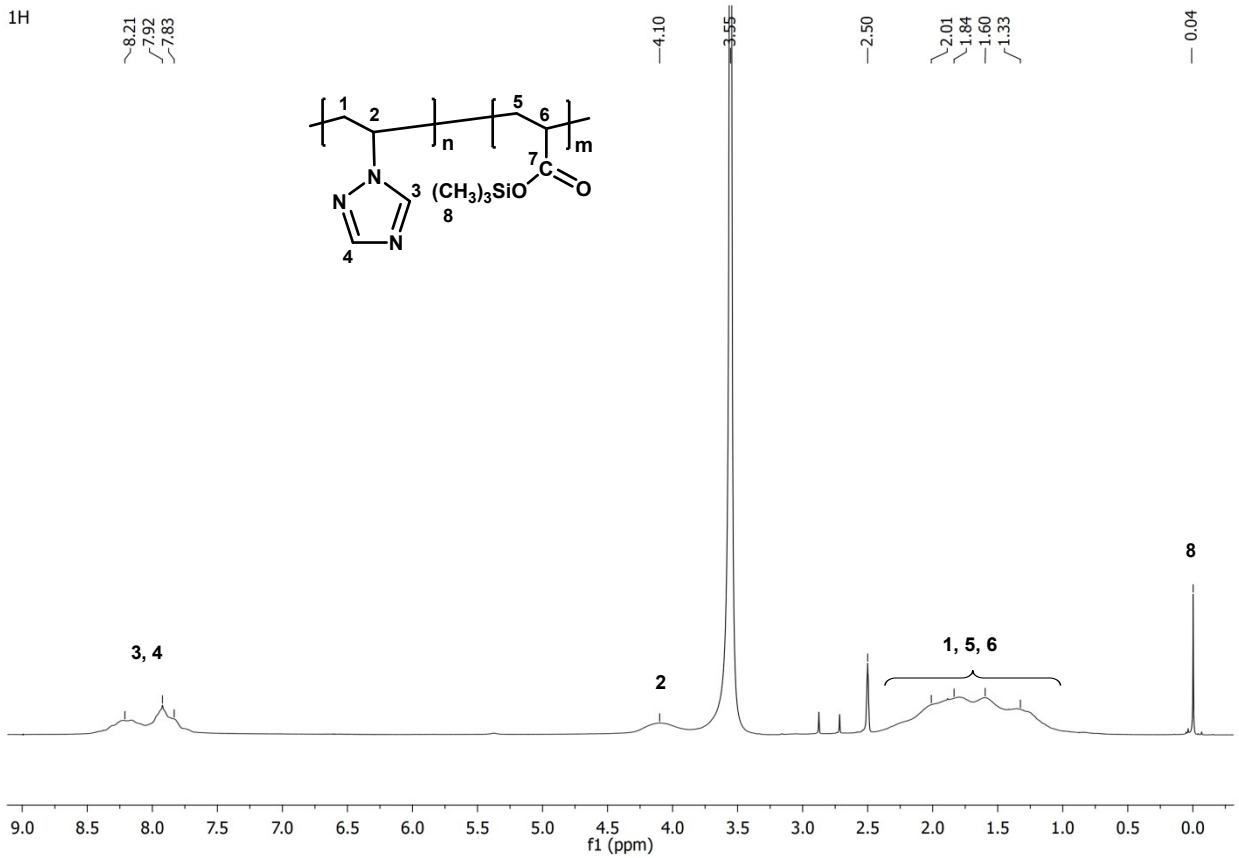

Fig. **S17** ^{1}H NMR spectrum of copolymer **MP3** (400.13 MHz, DMSO-d_6).

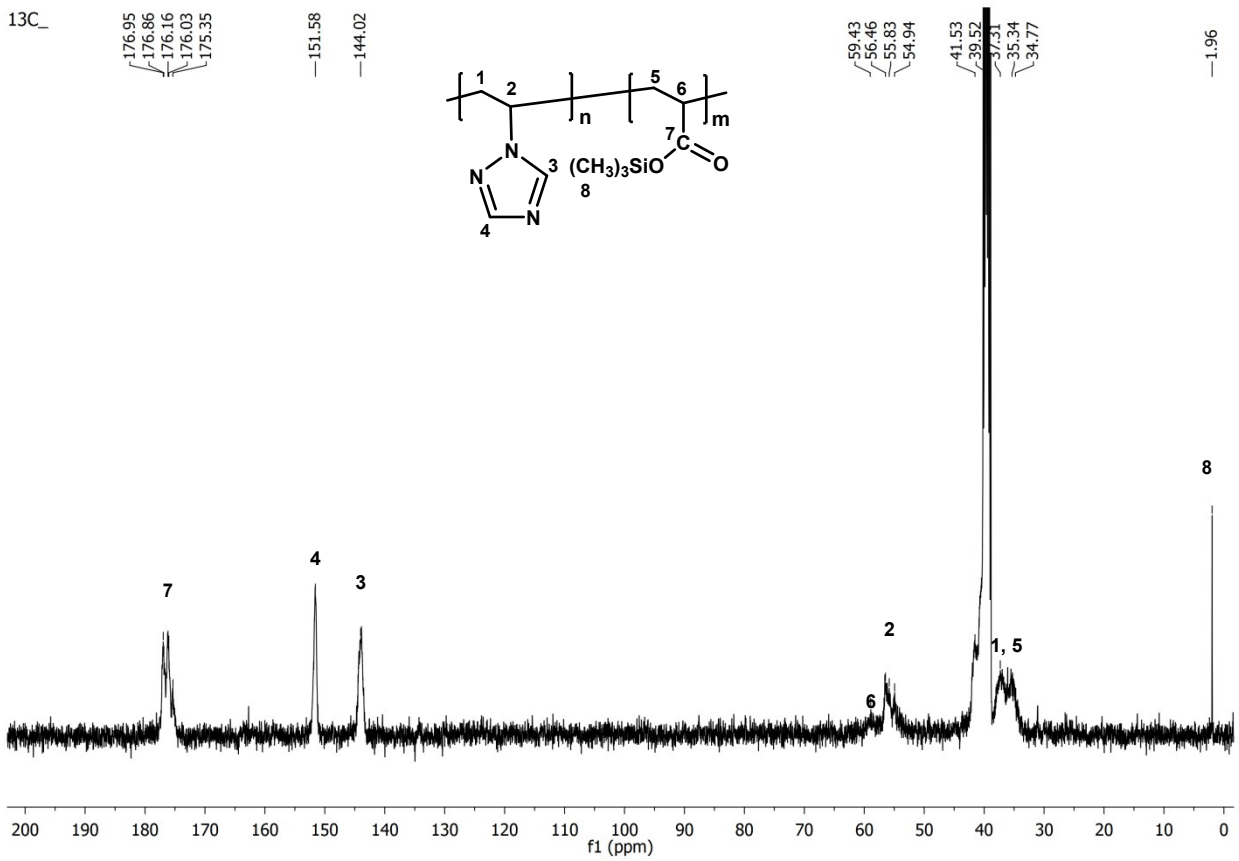

Fig. **S18** ^{13}C NMR spectrum of copolymer **MP3** (100.62 MHz, DMSO-d_6).

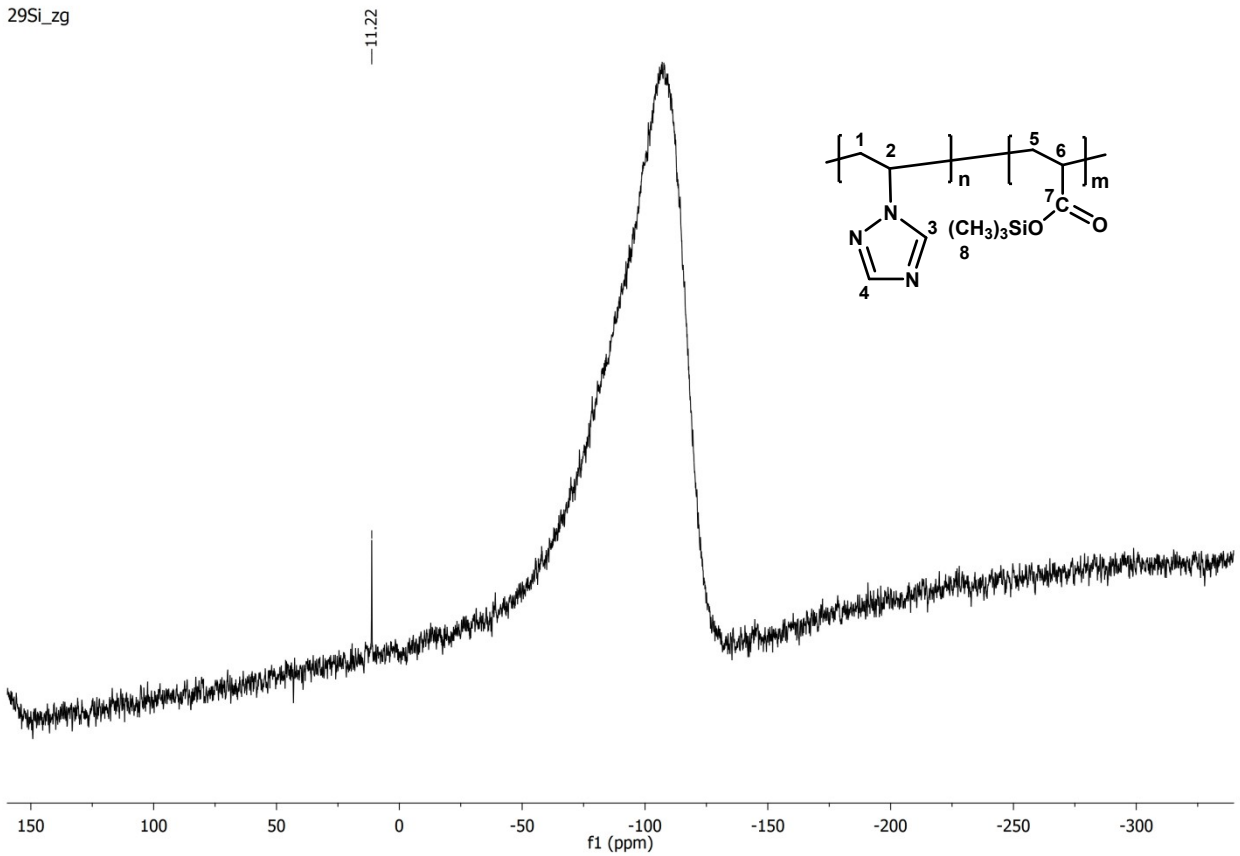

Fig. **S19** ^{29}Si NMR spectrum of copolymer **MP3** (79.50 MHz, DMSO-d_6).

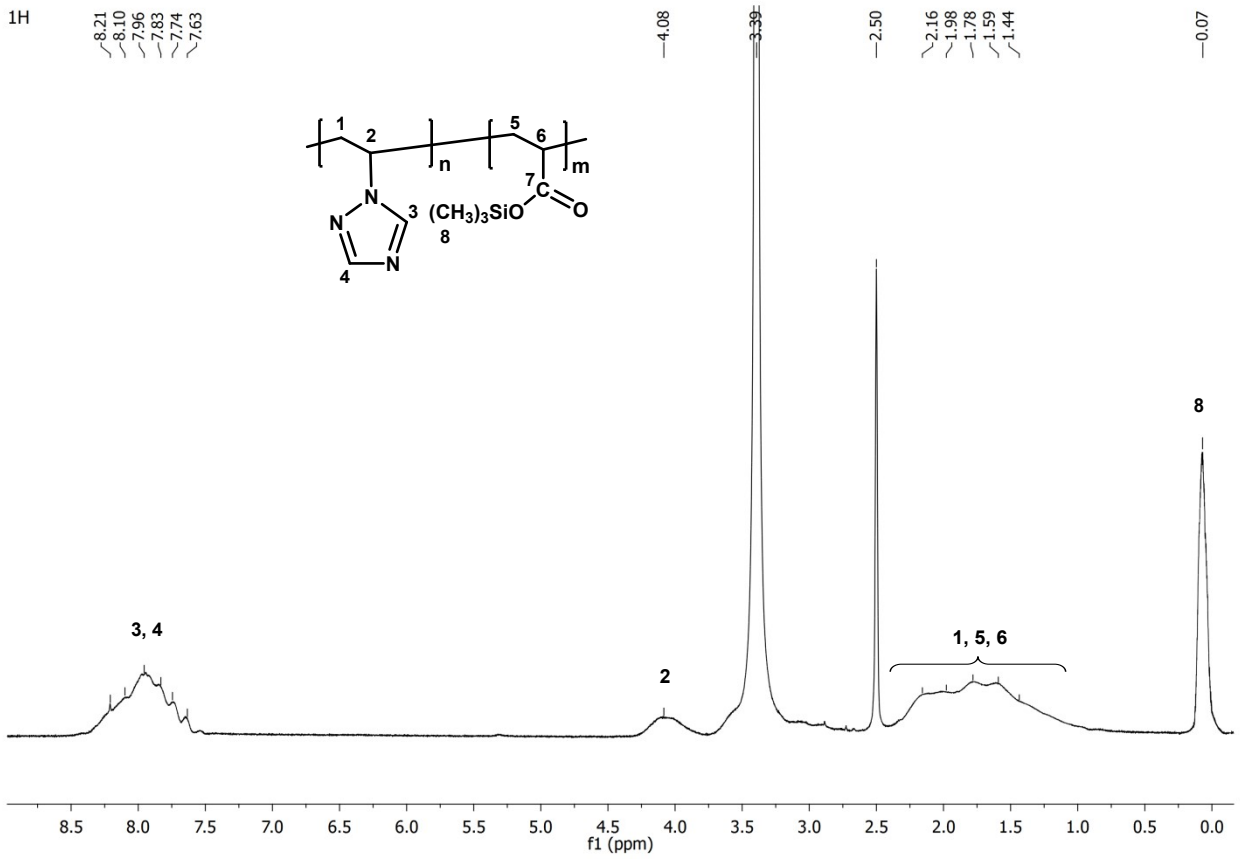

Fig. **S20** ^{1}H NMR spectrum of copolymer **MP4** (400.13 MHz, DMSO-d_6).

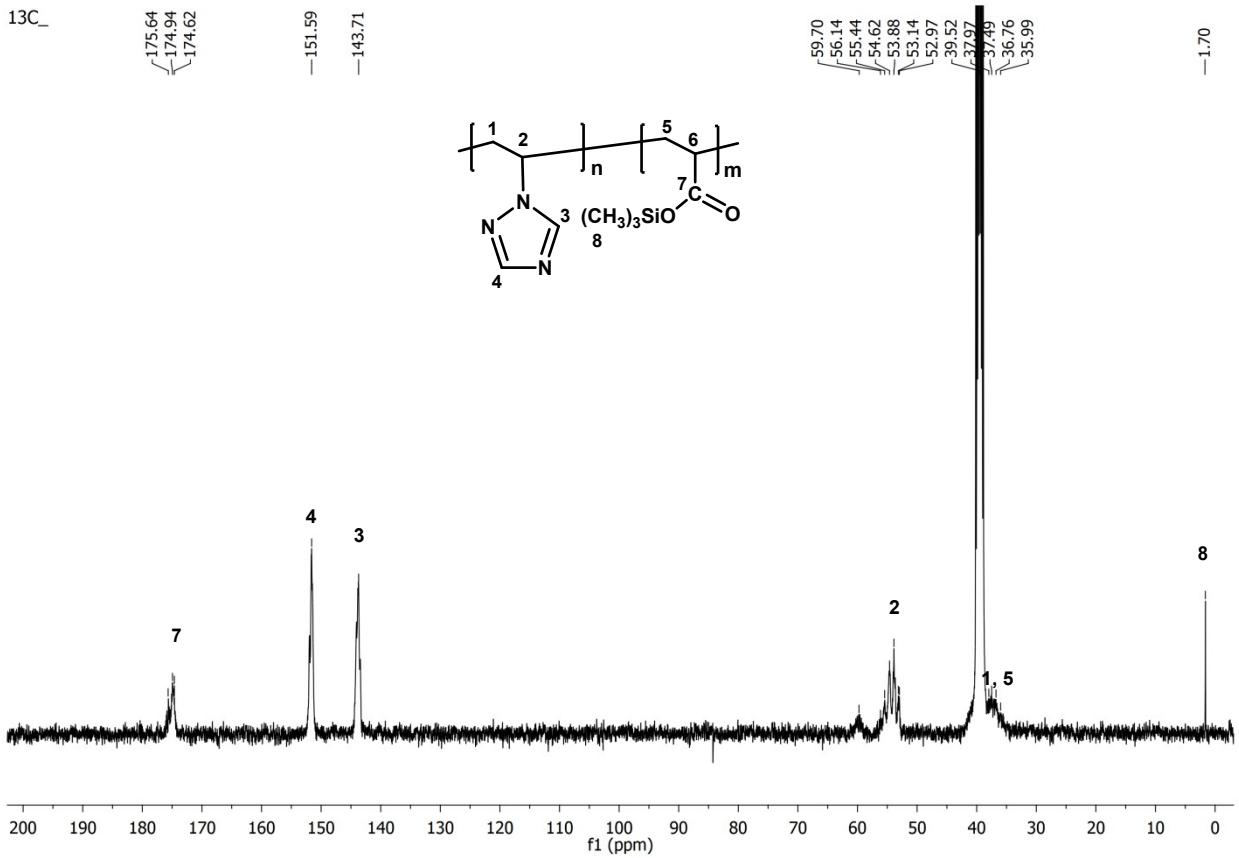

Fig. **S21** ^{13}C NMR spectrum of copolymer **MP4** (100.62 MHz, DMSO-d_6).

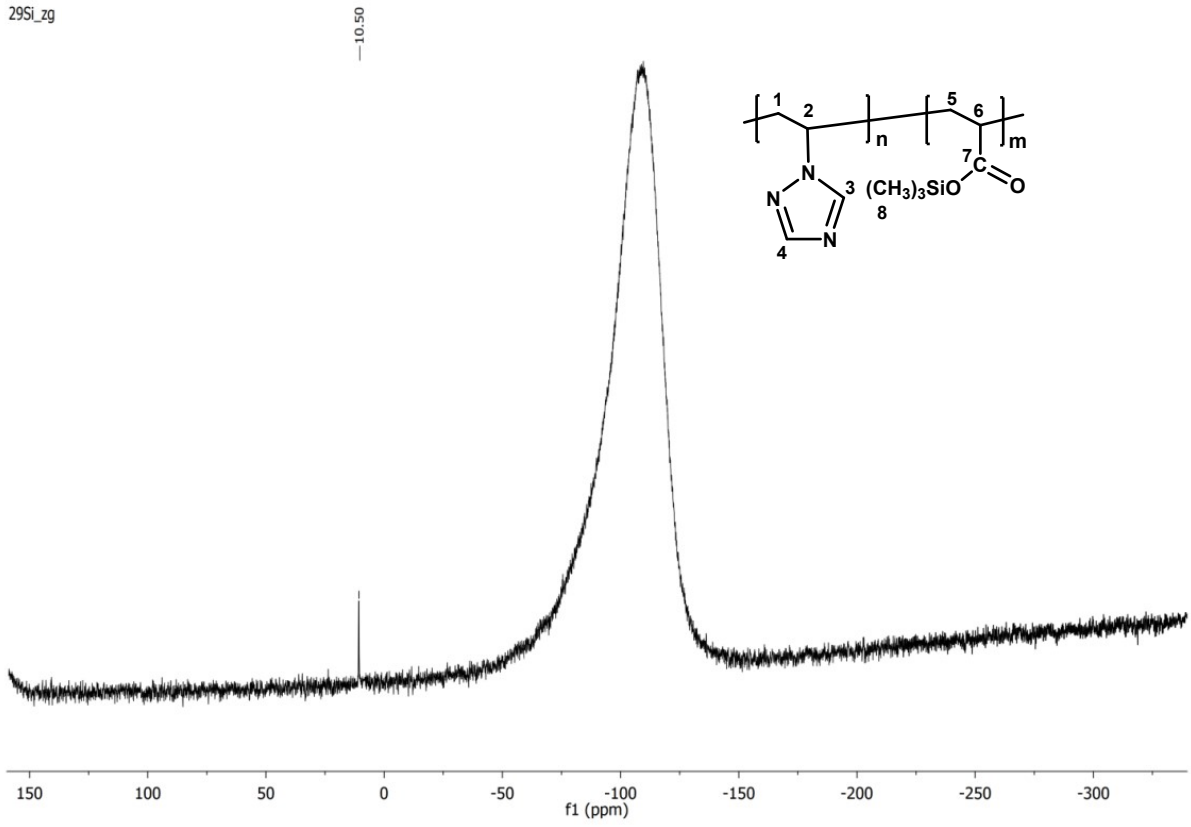

Fig. **S22** ^{29}Si NMR spectrum of copolymer **MP4** (79.50 MHz, DMSO-d_6).

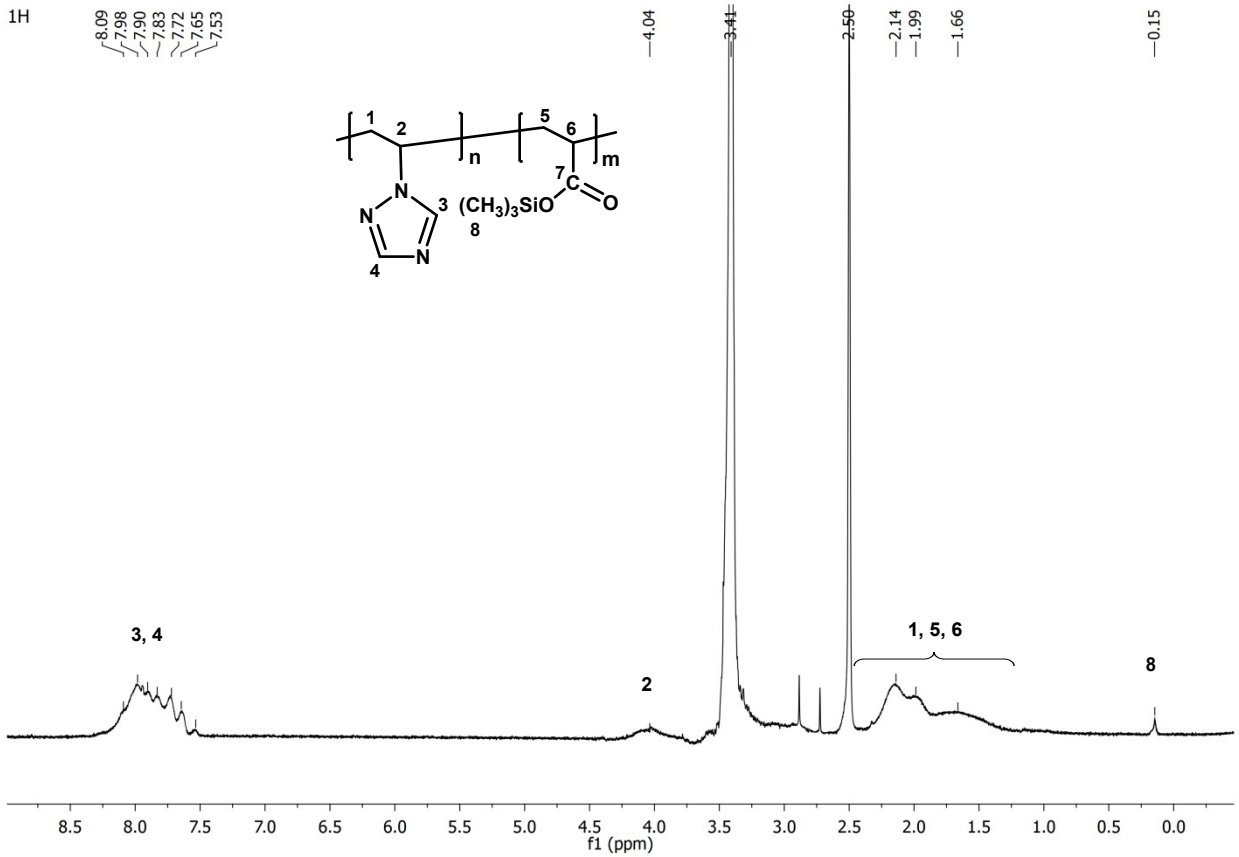

Fig. **S23** ^{1}H NMR spectrum of copolymer **MP5** (400.13 MHz, DMSO-d_6).

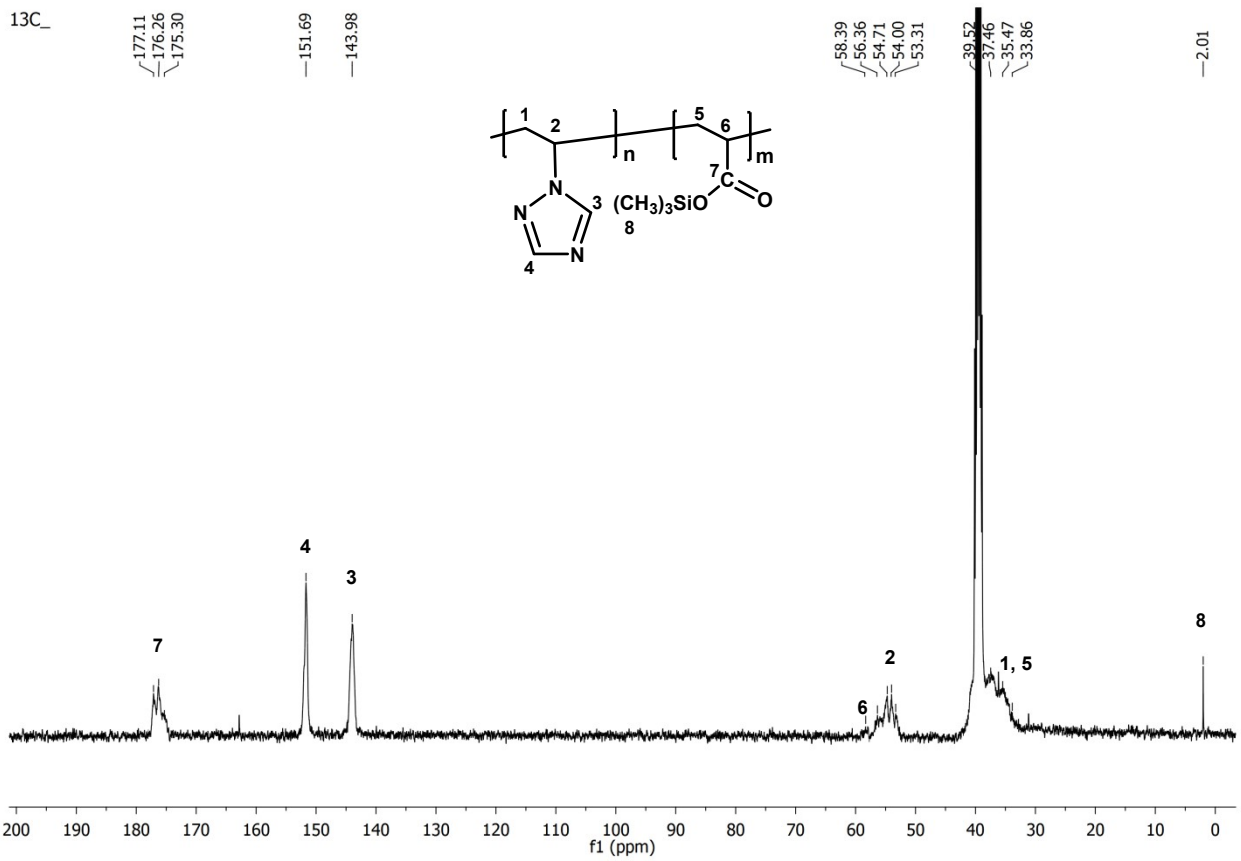

Fig. **S24** ^{13}C NMR spectrum of copolymer **MP5** (100.62 MHz, DMSO-d_6).

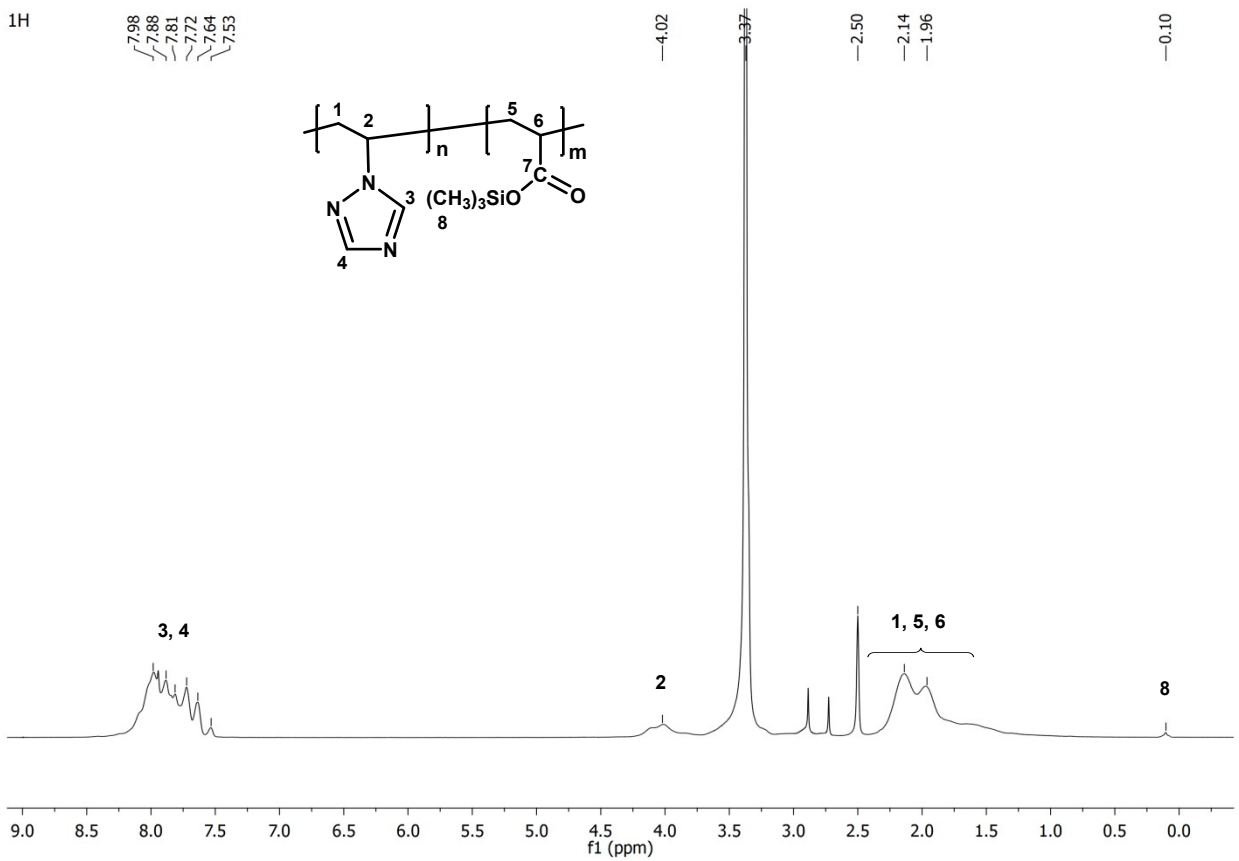

Fig. **S25** ^{1}H NMR spectrum of copolymer **MP6** (400.13 MHz, DMSO-d_6).

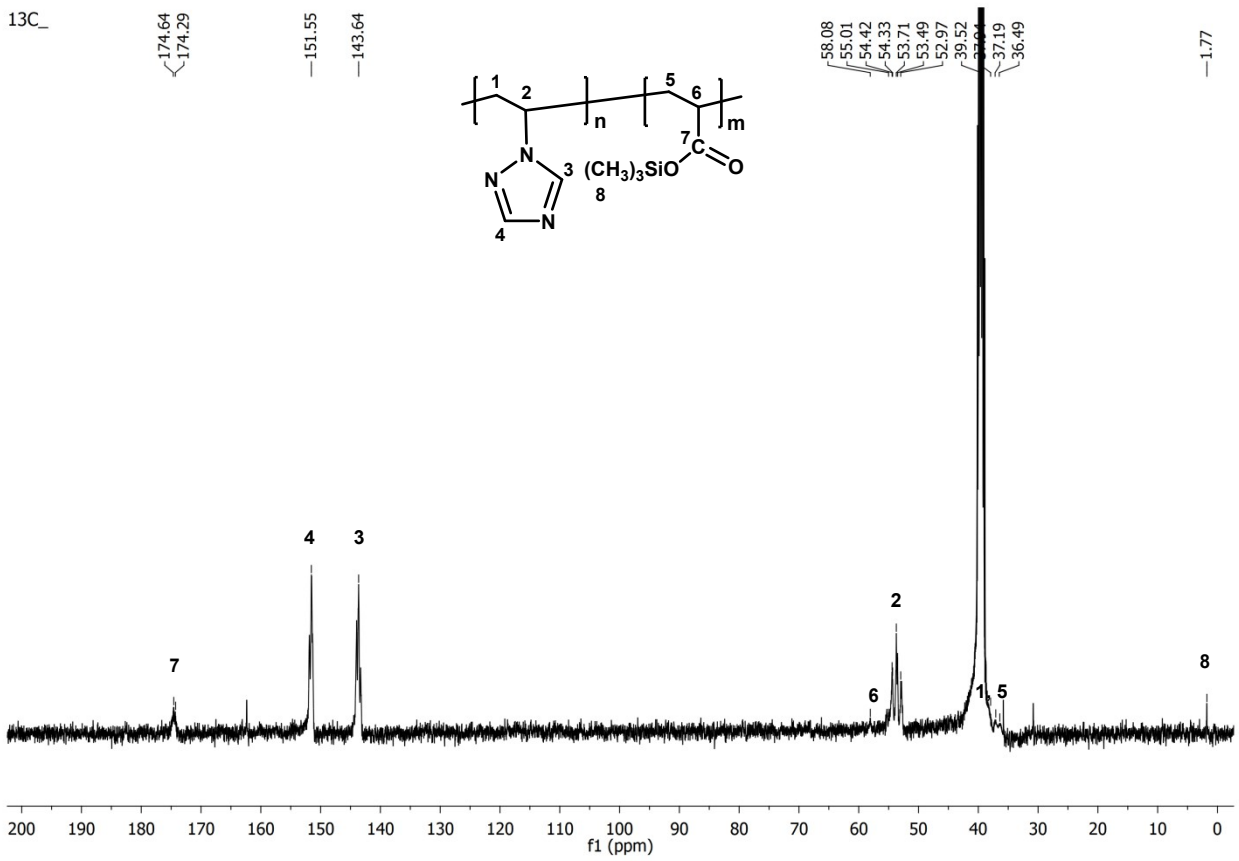

Fig. **S26** ^{13}C NMR spectrum of copolymer **MP6** (100.62 MHz, DMSO-d_6).

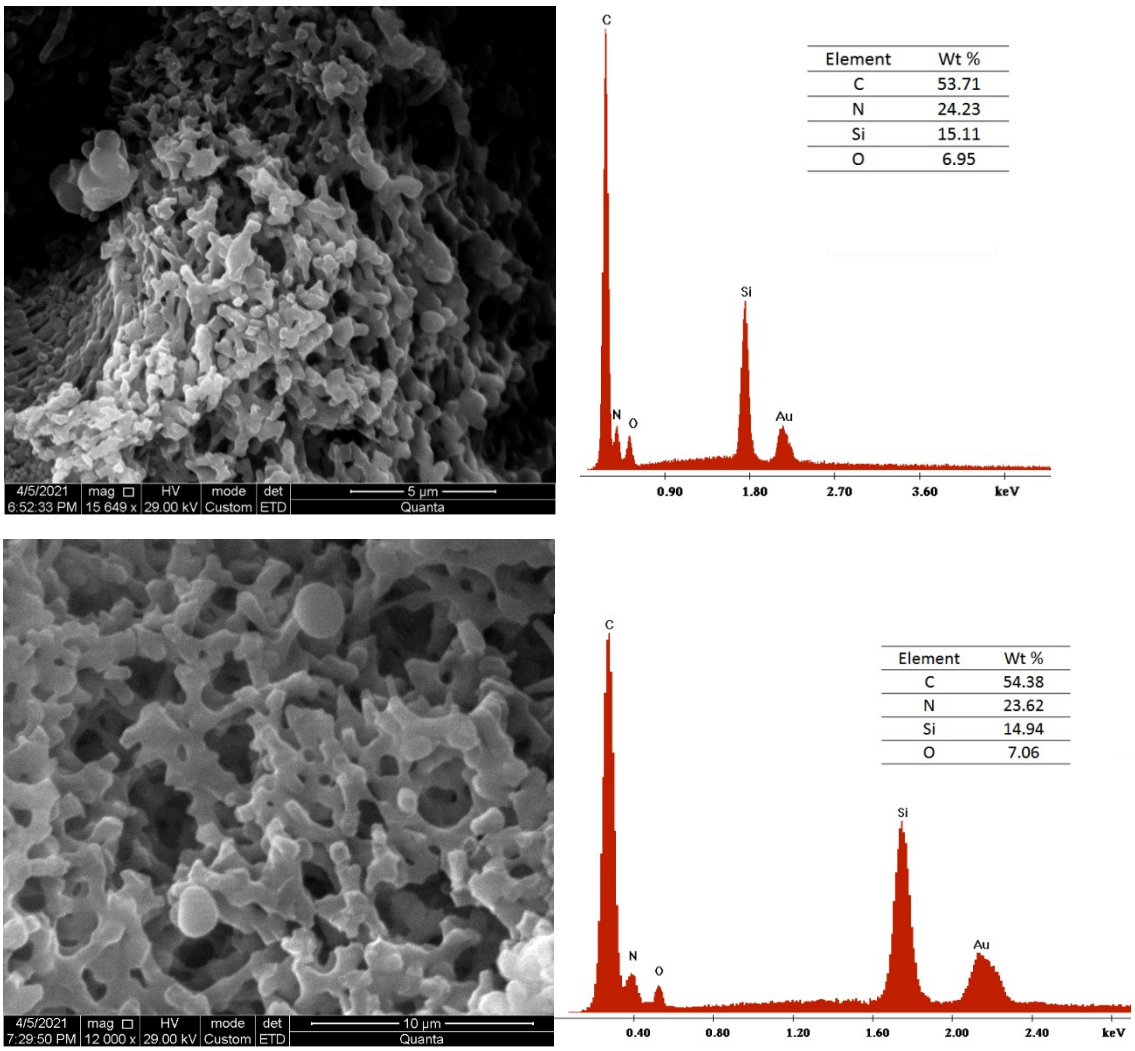

Fig. S27 SEM and EDX of poly(VT-*co*-BTMSI) **P3** (various surface regions).

Table S1. Thermal stability of copolymers **P2–P6**

Copolymer	Thermal stability, ºC
P2	220
P3	230
P4	265
P5	290
P6	300

Copolymerization constants

The following equation was used to determine the copolymerization constants:

$$\sqrt{kx} - \frac{1}{\sqrt{kx}} = r_1\sqrt{\frac{x}{k}} - r_2\sqrt{\frac{k}{x}}$$

where $x = [M_1]/[M_2]$, $k = [m_1][M_2]/[m_2][M_1]$; $[m_i]$, $[M_i]$ are concentrations of the component in the copolymer and in the initial monomer mixture.

Copolymerization constants have been determined up to 8% conversion.

Table S2. Calculation of copolymerization constants.

F10	F1C	f1	fm1	fm2
0.1	0.19	0.19174	-9.9343	-41.878
0.3	0.49	0.49337	-27.78	-28.526
0.5	0.66	0.66285	-37.171	-18.907
0.7	0.81	0.81201	-44.345	-10.266
0.9	0.93	0.9204	-46.157	-3.9919

The copolymerization constants are r_{VT} = 1.361±0.078 and r_{BTMSI} = 0.273±0.029.

*Elemental analysis data of **MP2**–**MP6** copolymers*:

MP2 – Found, %: C 48.04; H 7.45; N 13.28; Si 14.62. **MP3** – Found, %: C 48.14; H 7.38; N 25.13; Si 7.85. **MP4** – Found, %: C 48.18; H 6.53; N 29.87; Si 6.42. **MP5** – Found, %: C 47.03; H 6.07; N 36.08; Si 2.18. **MP6** – Found, %: C 48.76; H 5.83; N 40.44; Si 0.83.