

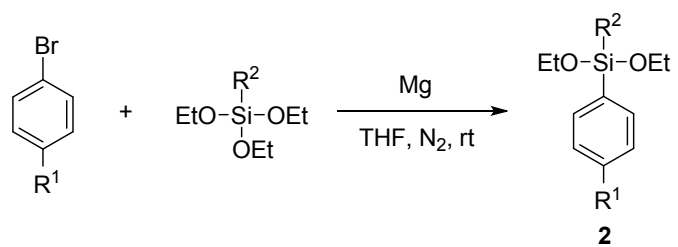
Electronic supplementary information for:

An Effective Strategy for the Preparation of Intrinsic Low-k and Ultralow-loss Dielectric Polysiloxanes at High Frequency by Introducing Trifluoromethyl Groups into the Polymers

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Supplementary Figures



2a, $R^1 = -\text{OCH}_3$, $R^2 = -\text{CH}_3$;

2b, $R^1 = -\text{CF}_3$, $R^2 = -\text{CH}_3$;

2c, $R^1 = -\text{CF}_3$, $R^2 = p\text{-trifluoromethylphenyl}$

Scheme 1. Procedure for the Synthesis of **2**

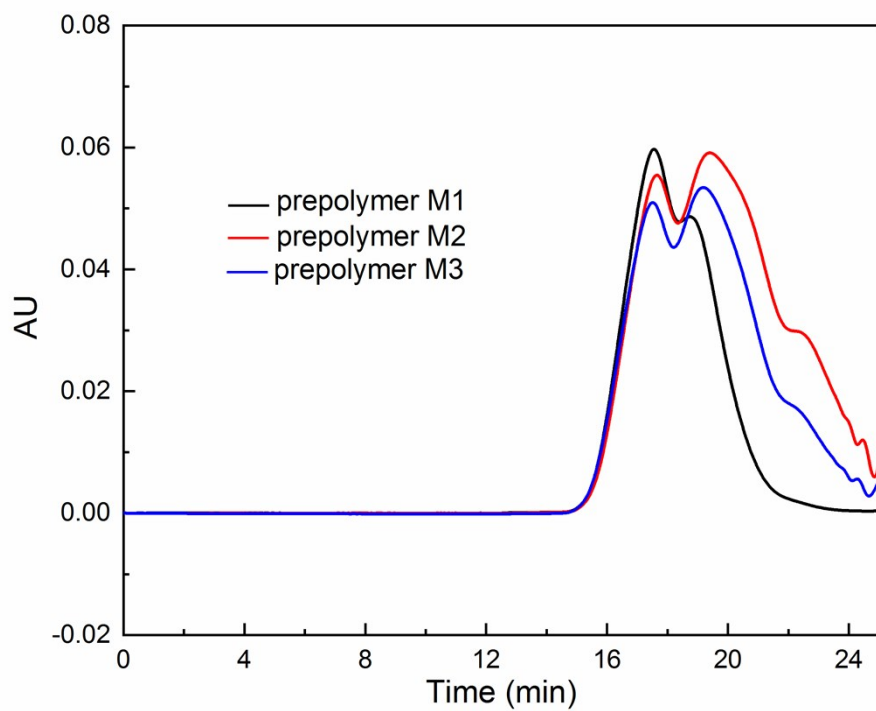


Figure S1. GPC curves of prepolymers **M1~M3**.

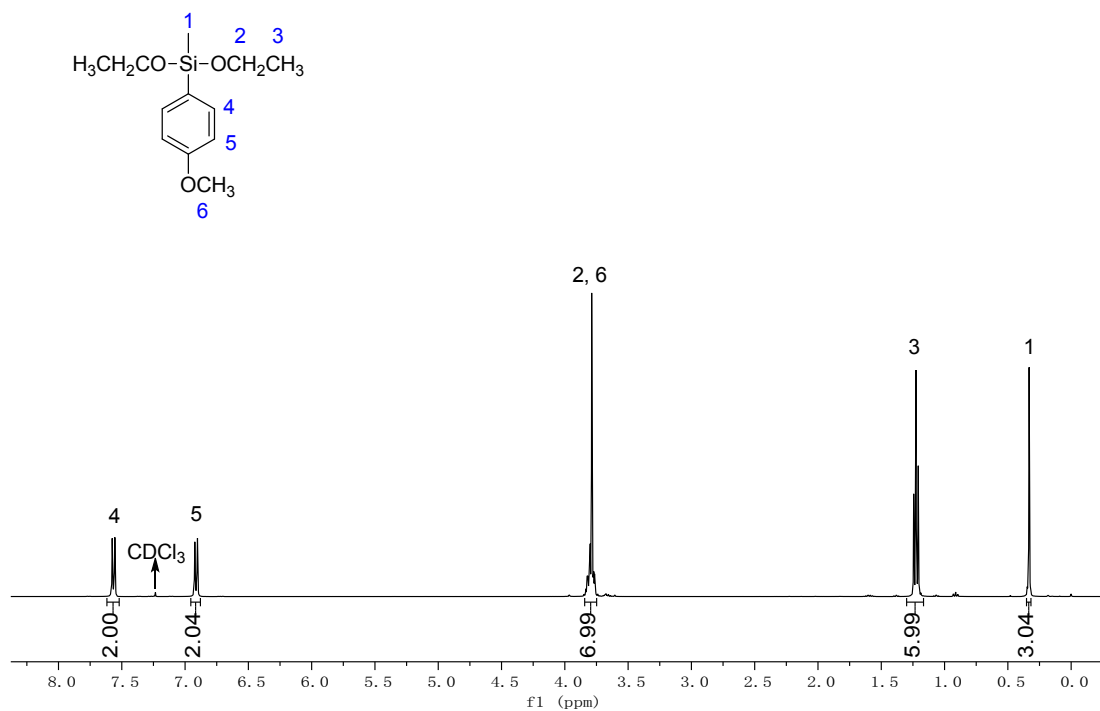


Figure S2. ^1H NMR (400 MHz, CDCl_3) spectrum of **2a**.

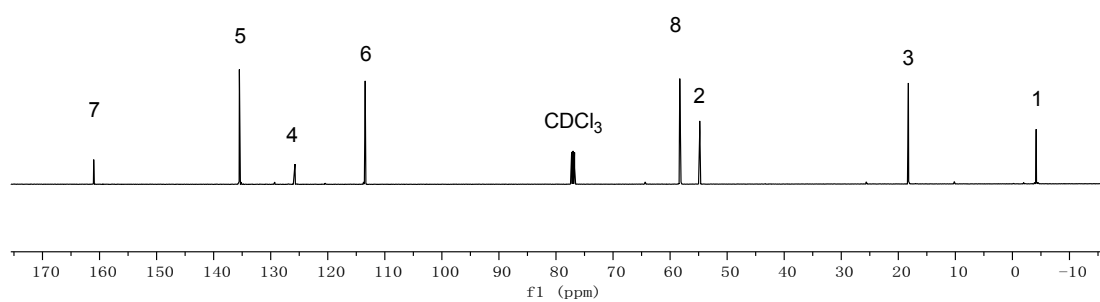
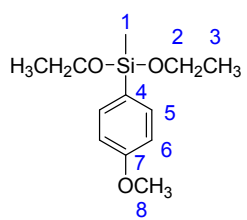


Figure S3. ¹³C NMR (126 MHz, CDCl₃) spectrum of **2a**.

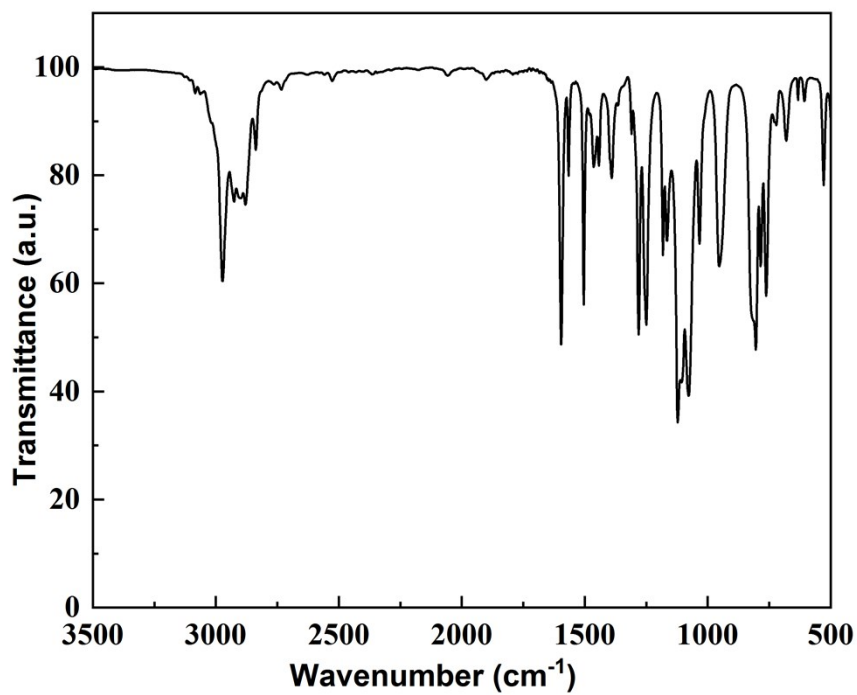


Figure S4. FT-IR spectrum of 2a.

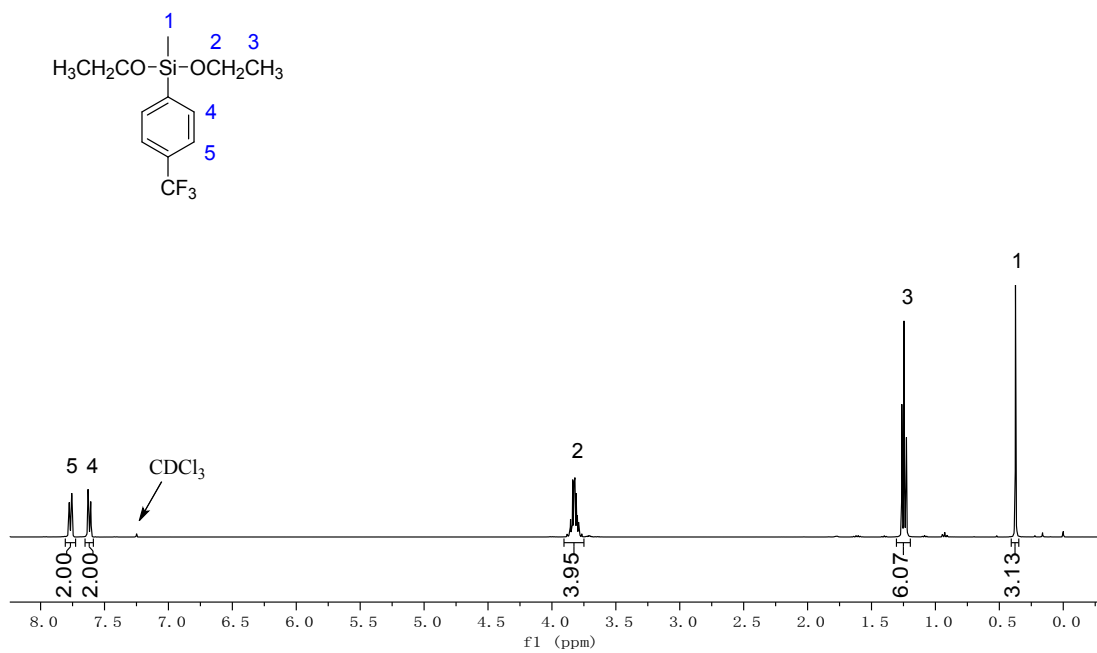


Figure S5. ¹H NMR (400 MHz, CDCl₃) spectrum of 2b.

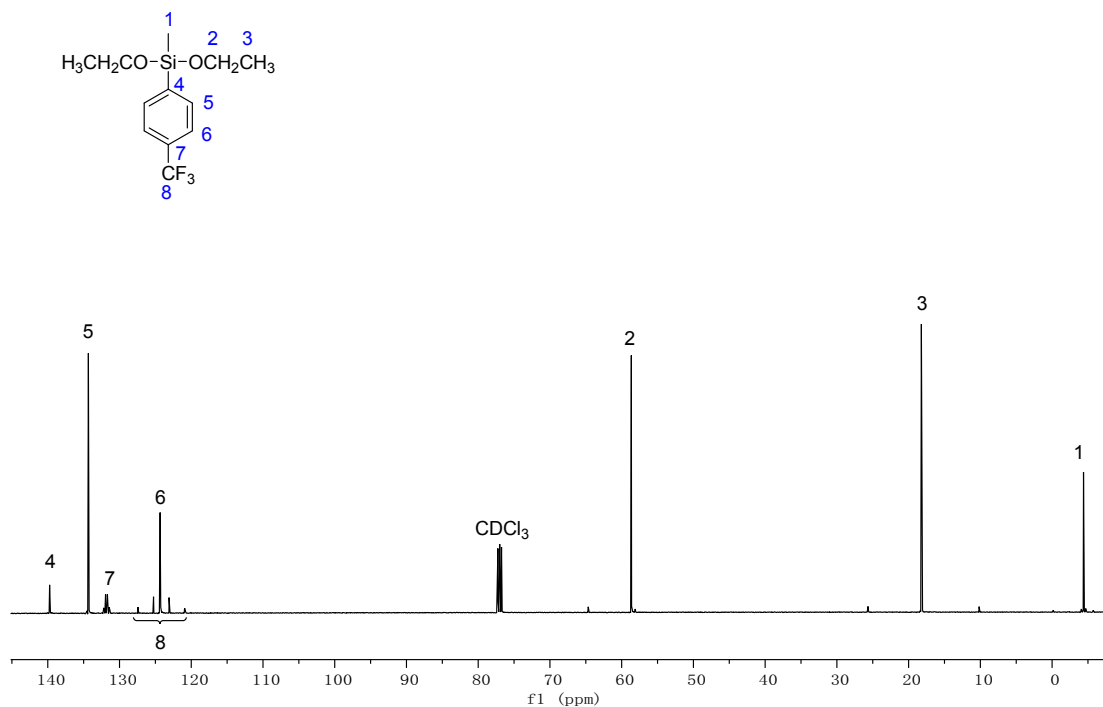


Figure S6. ^{13}C NMR (126 MHz, CDCl_3) spectrum of **2b**.

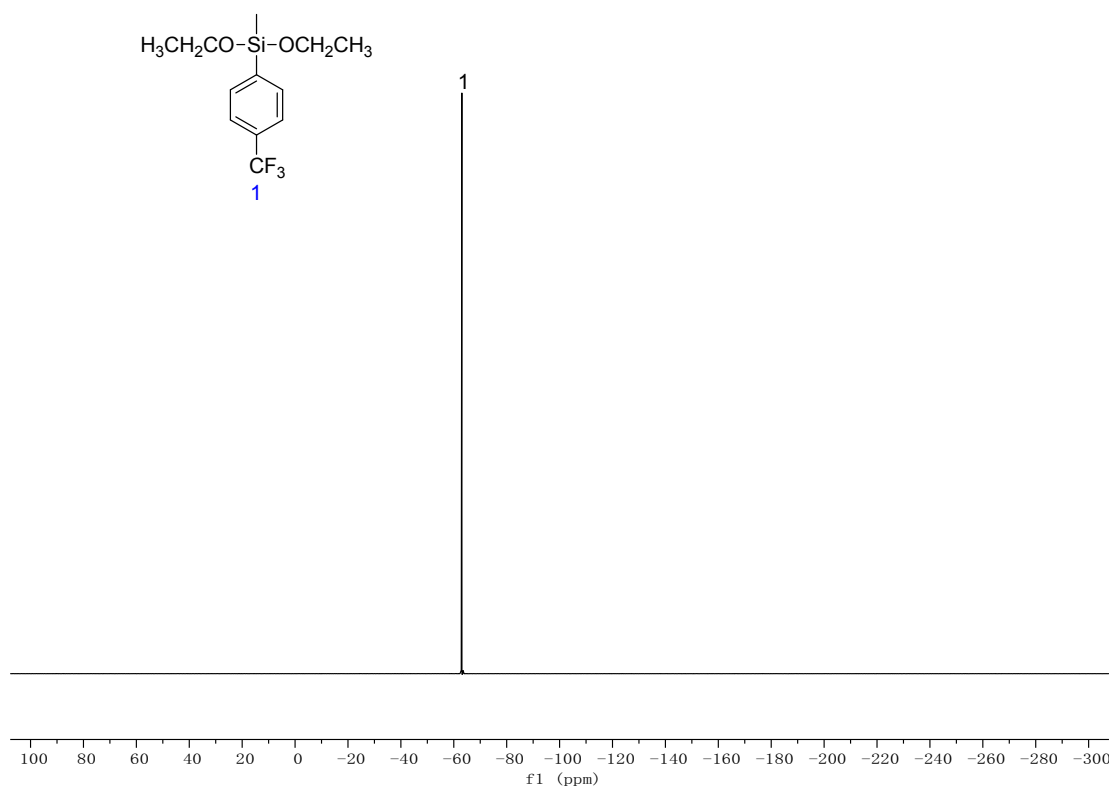


Figure S7. ^{19}F NMR (376 MHz, CDCl_3) spectrum of **2b**.

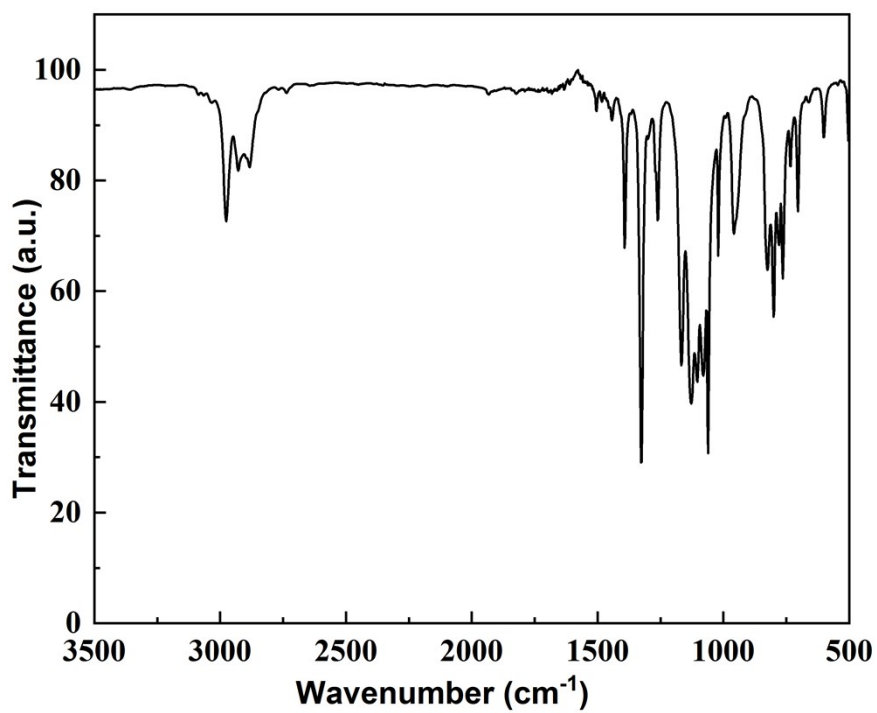


Figure S8. FT-IR spectrum of **2b**.

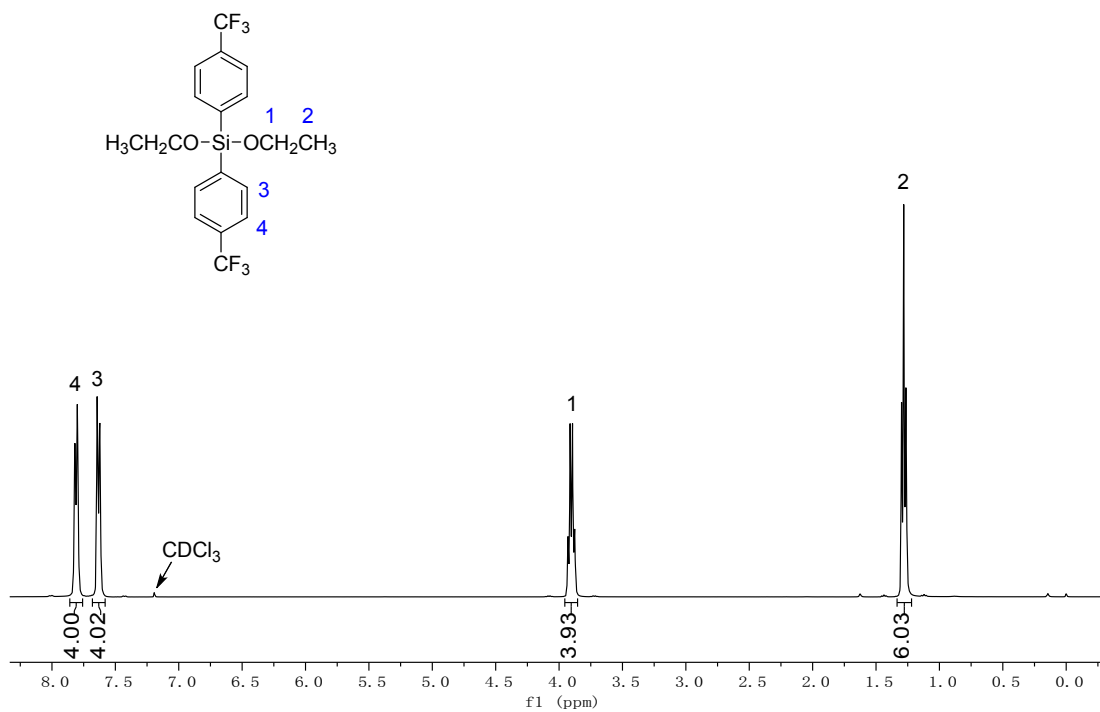


Figure S9. ^1H NMR (400 MHz, CDCl_3) spectrum of **2c**.

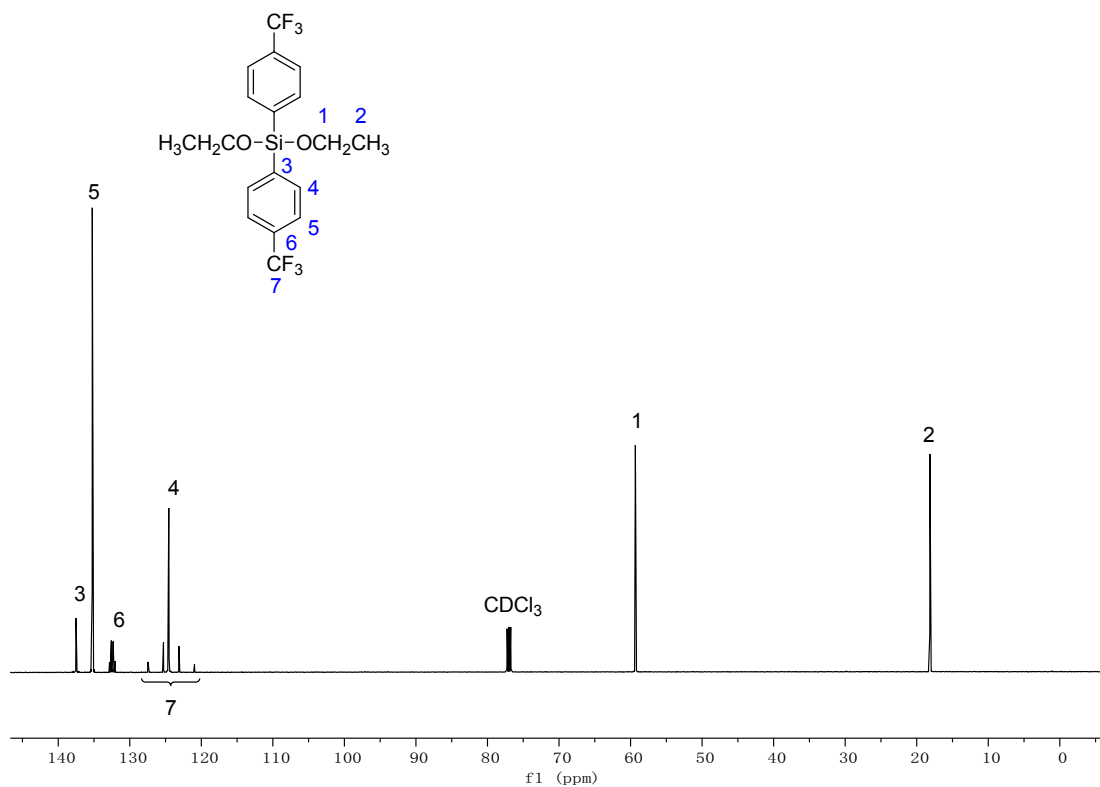


Figure S10. ¹³C NMR (126 MHz, CDCl₃) spectrum of **2c**.

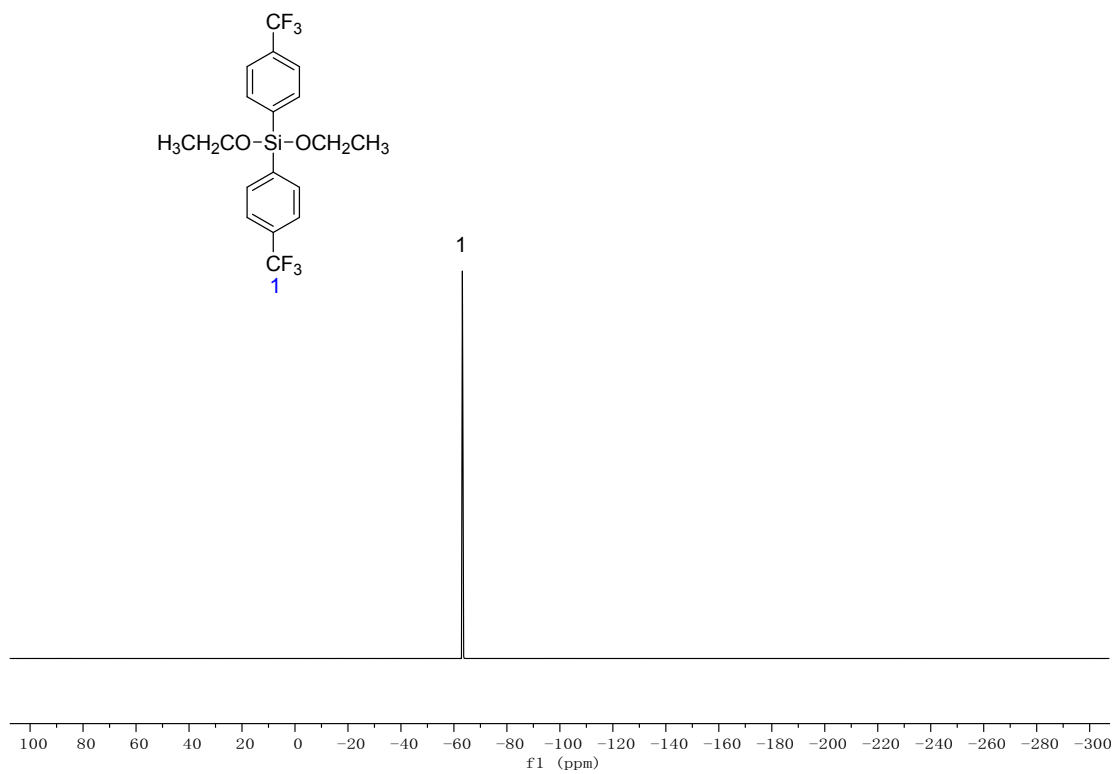


Figure S11. ^{19}F NMR (376 MHz, CDCl_3) spectrum of **2c**.

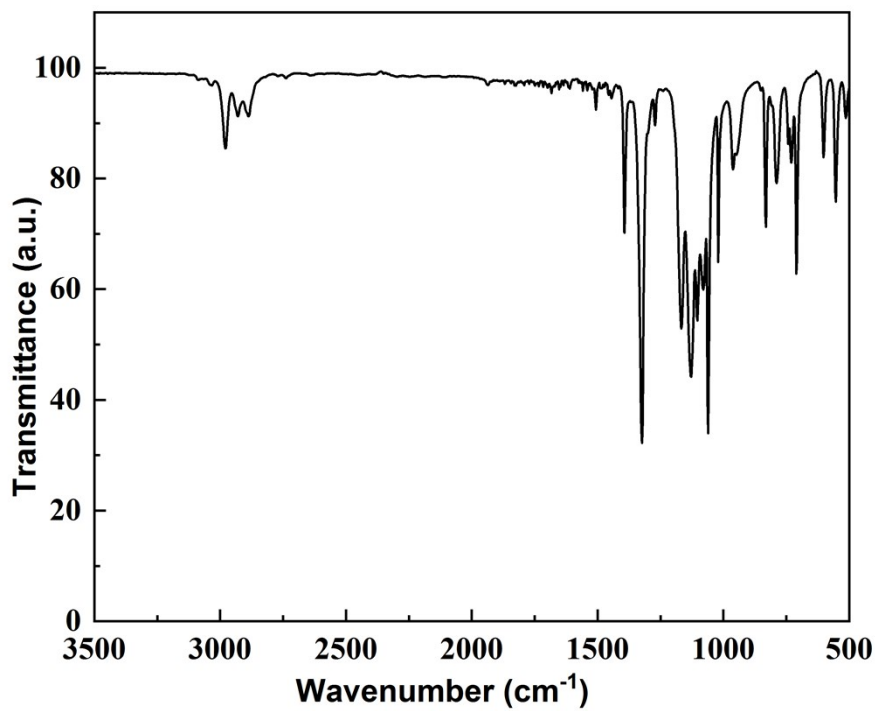


Figure S12. FT-IR spectrum of **2c**.

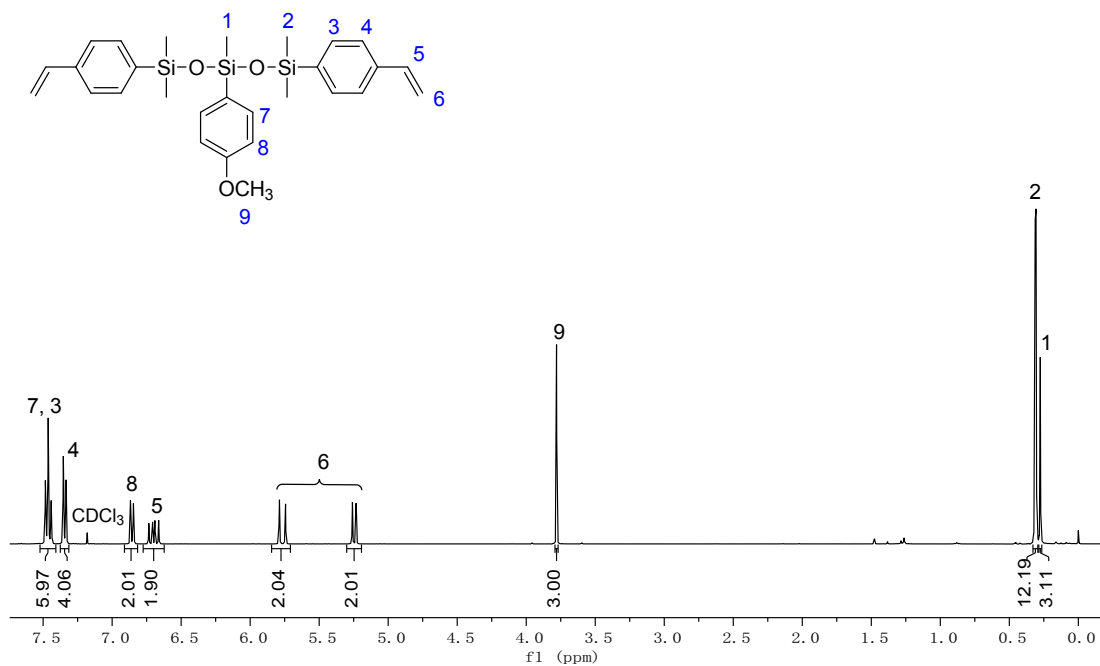
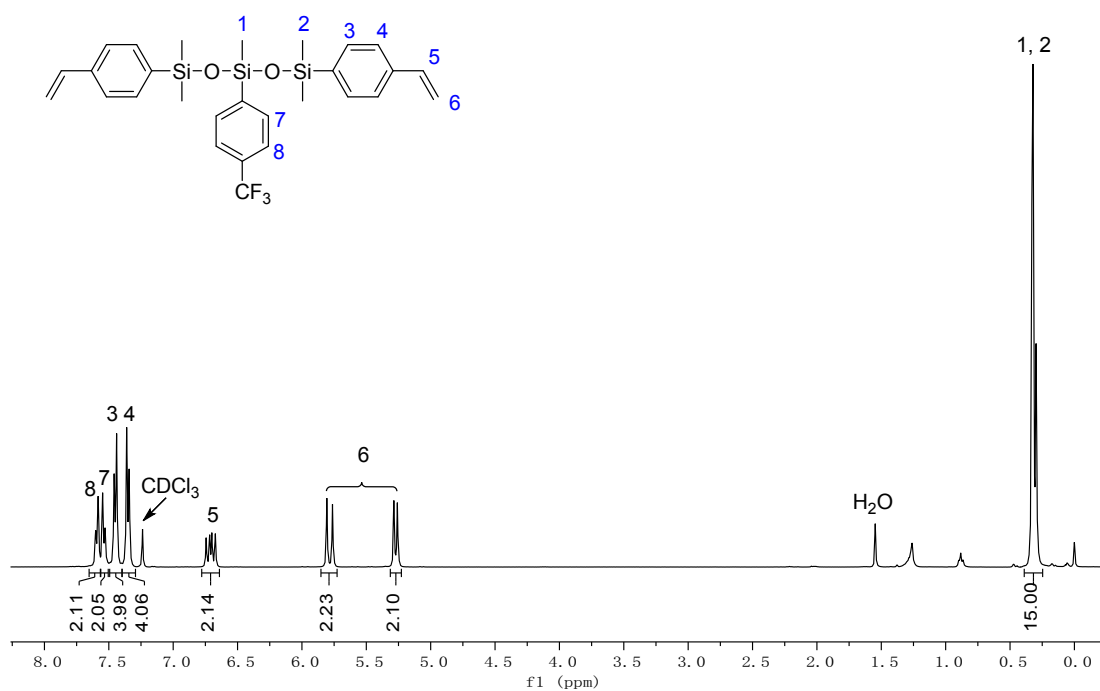
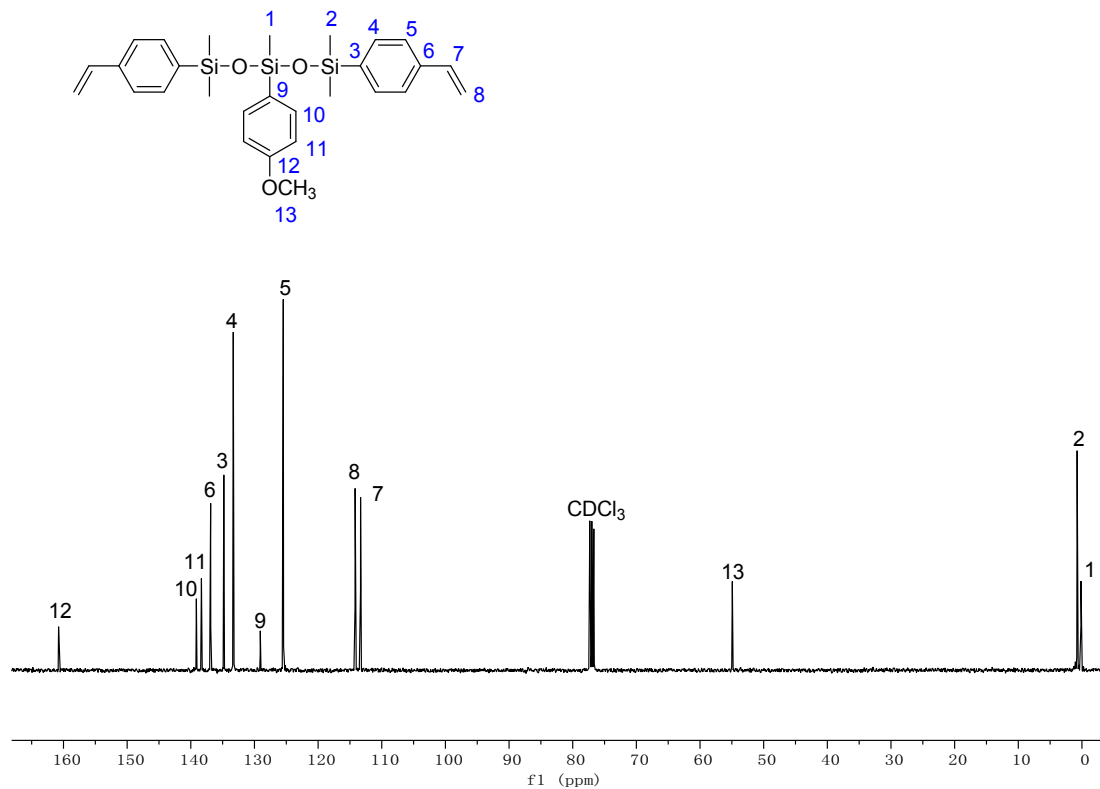


Figure S13. ¹H NMR (400 MHz, CDCl₃) spectrum of **M1**.



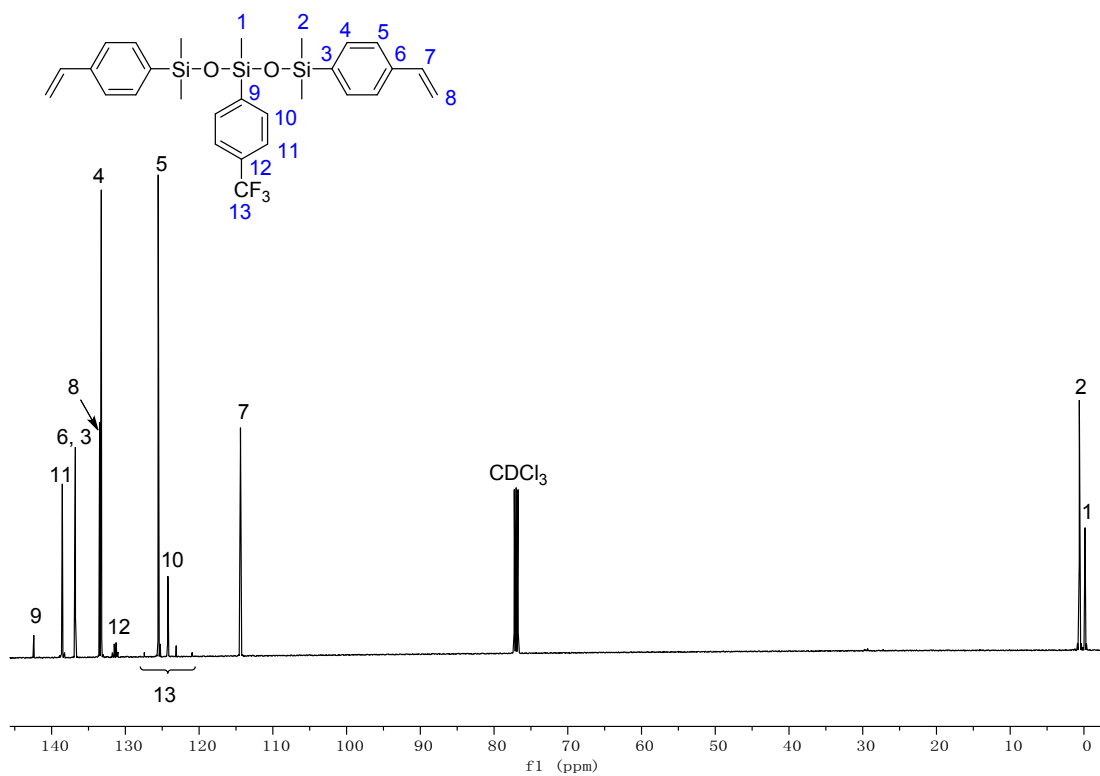


Figure S16. ¹³C NMR (126 MHz, CDCl₃) spectrum of M2.

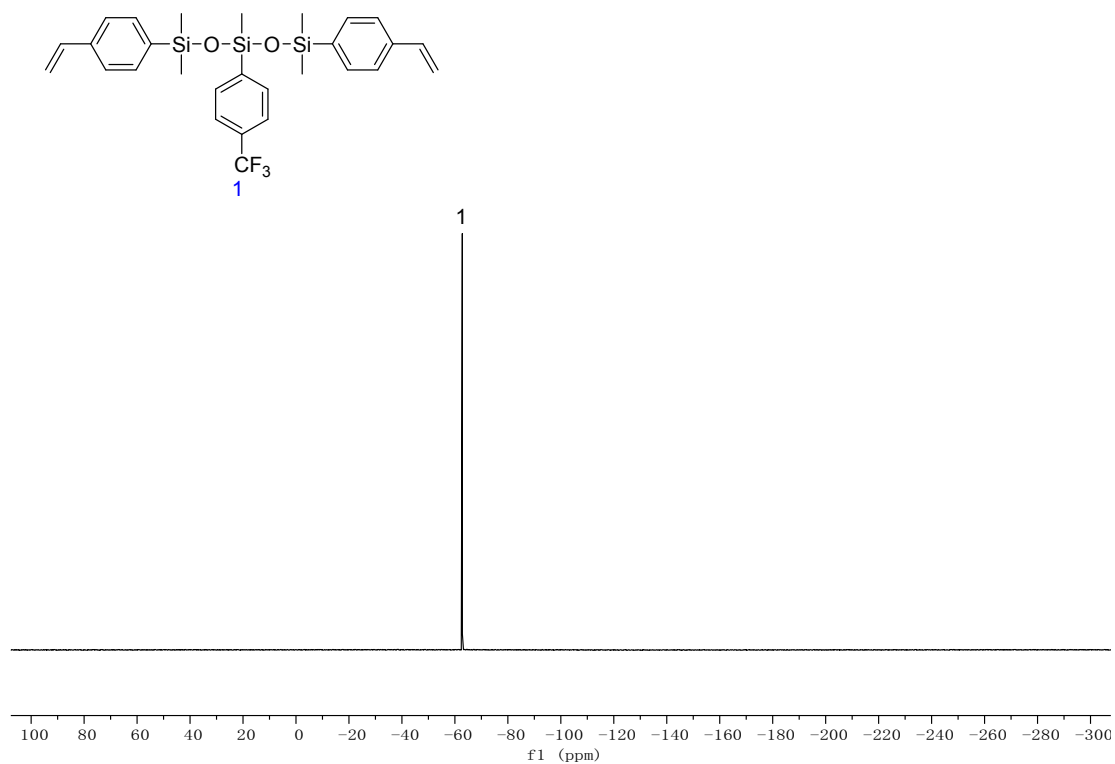


Figure S17. ^{19}F NMR (376 MHz, CDCl_3) spectrum of **M2**.

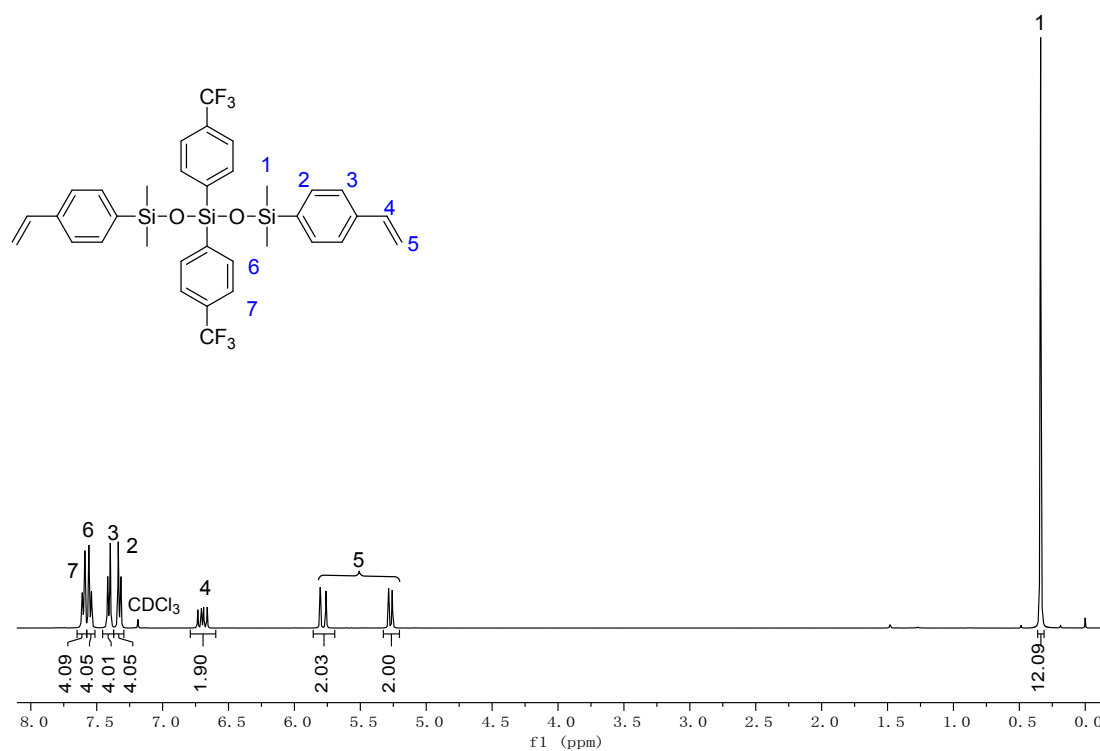
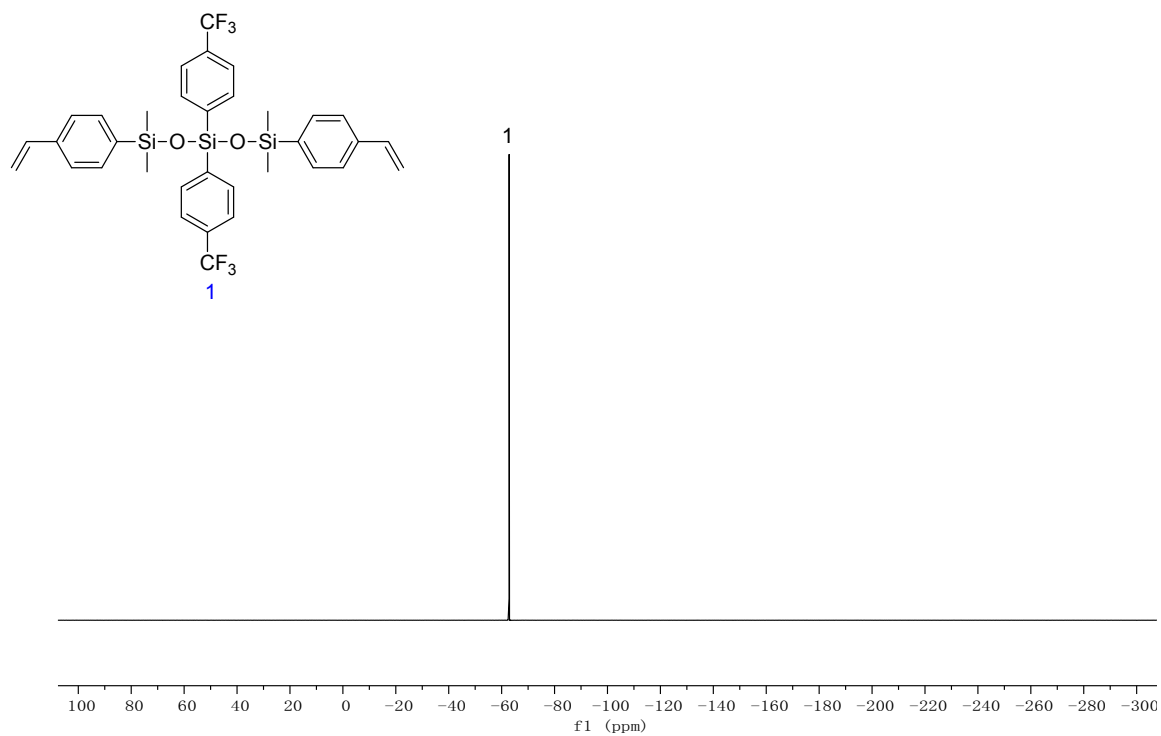
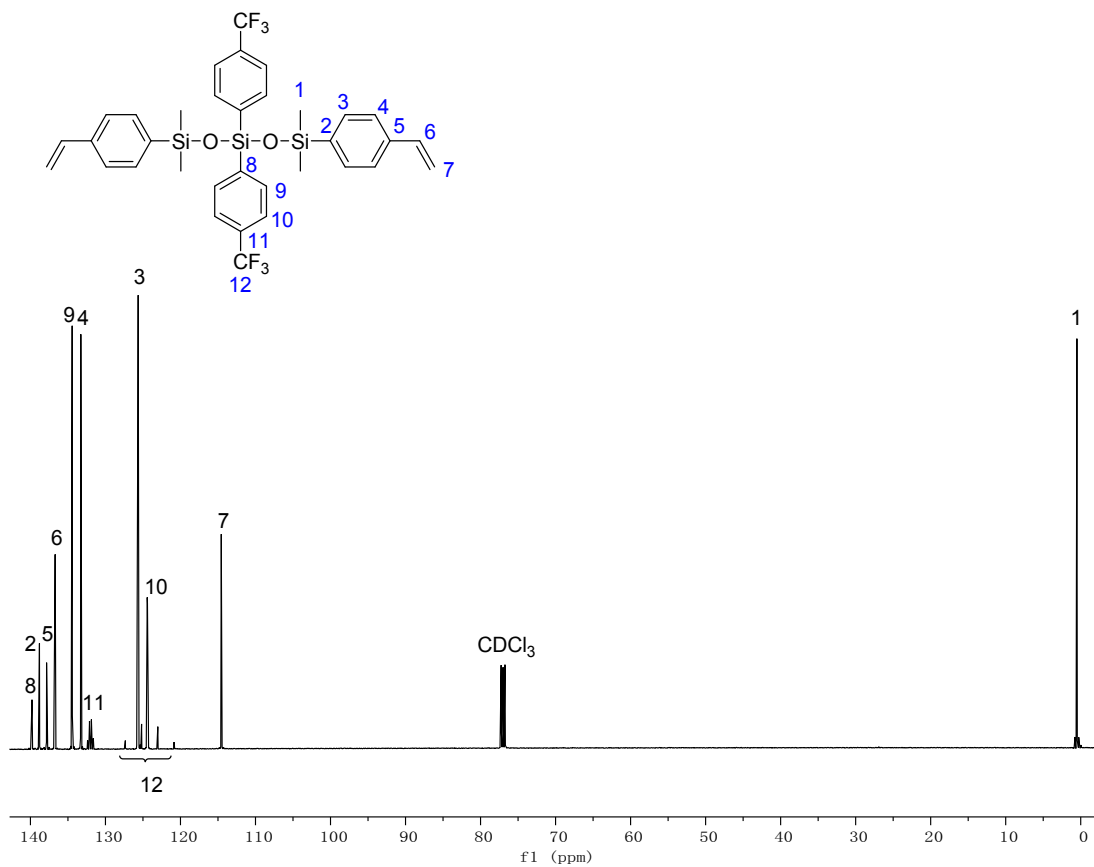


Figure S18. ^1H NMR (400 MHz, CDCl_3) spectrum of **M3**.



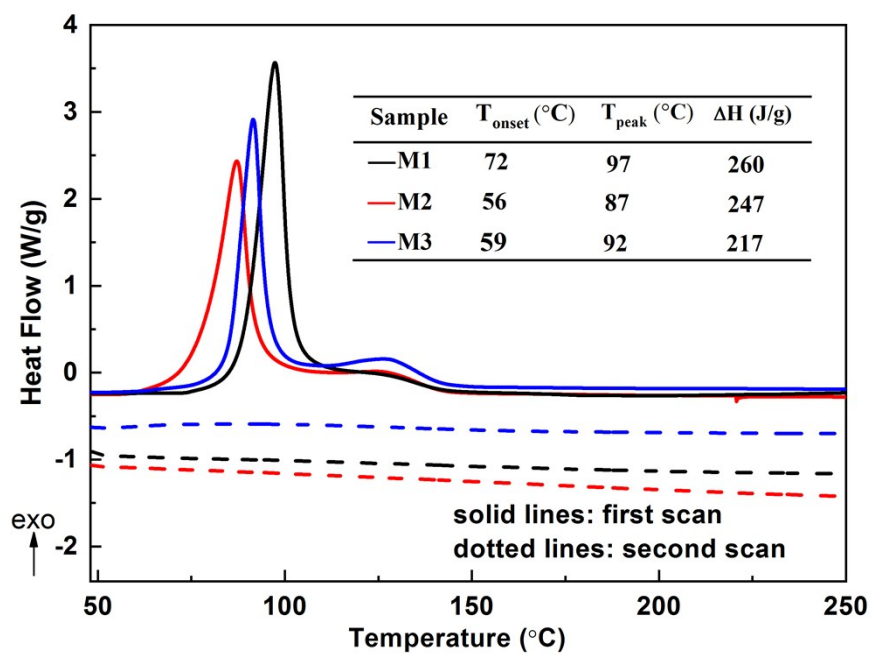


Figure S21. DSC traces of monomers with an initiator of AIBN at a heating rate of 10 °C min⁻¹ in N₂.