

Supporting Information

***Cylindrical Micelles of a POSS Amphiphilic Dendrimer
as the Nano-reactors for Polymerization***

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compound 2

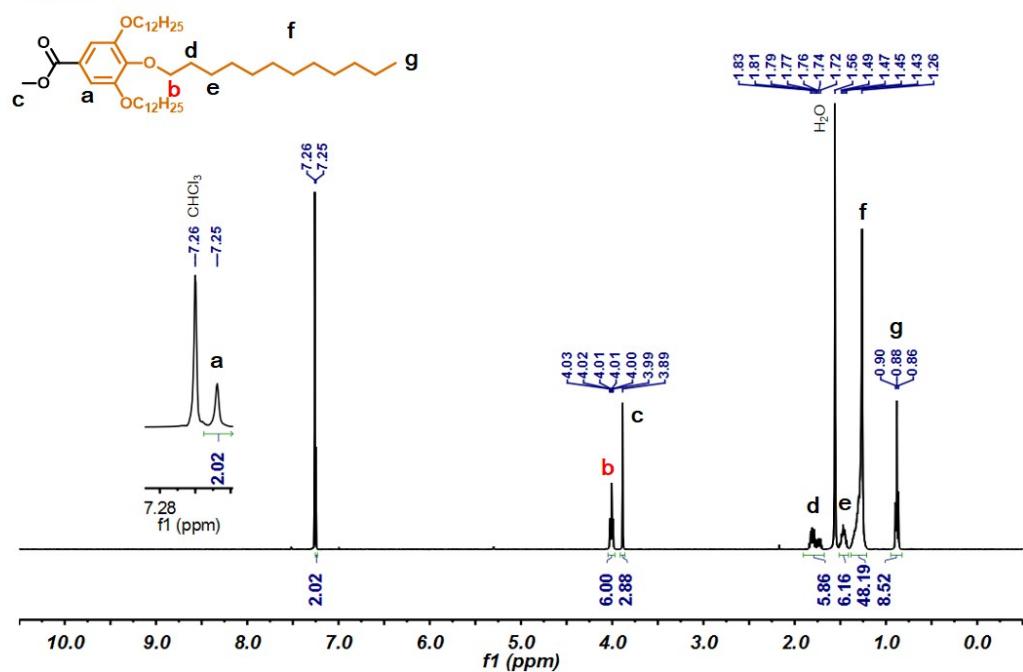


Figure S1: ¹H-NMR spectra of compound (2) (400 MHz in CDCl_3)

compound 3

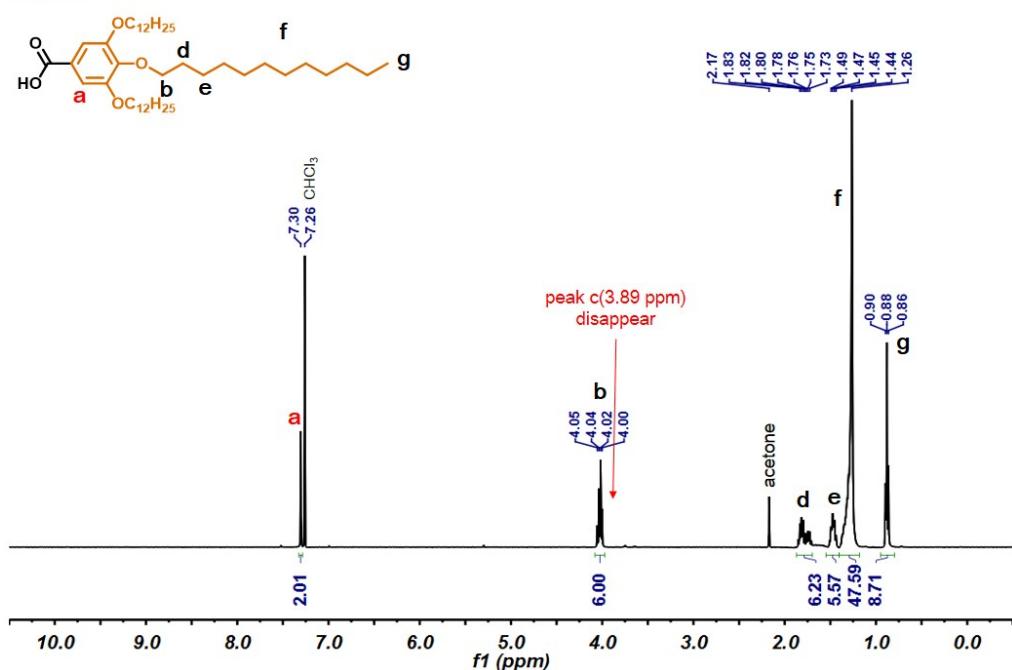


Figure S2: ^1H -NMR spectra of compound (3) (400 MHz in CDCl_3)

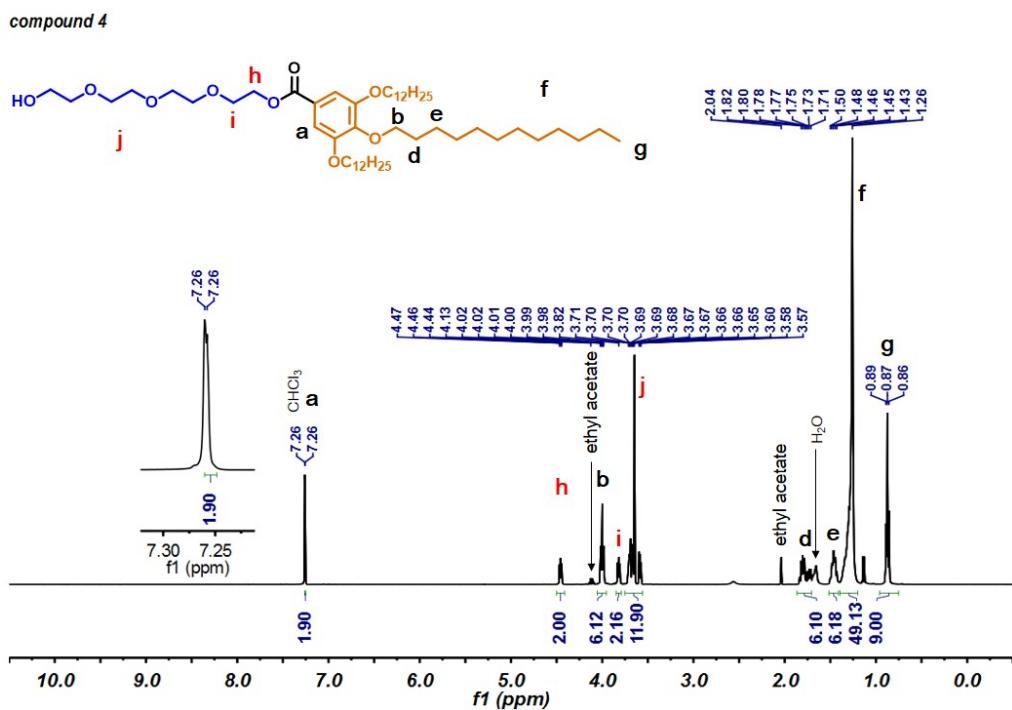


Figure S3: ^1H -NMR spectra of **compound (4)** (400 MHz in CDCl_3)

compound 5

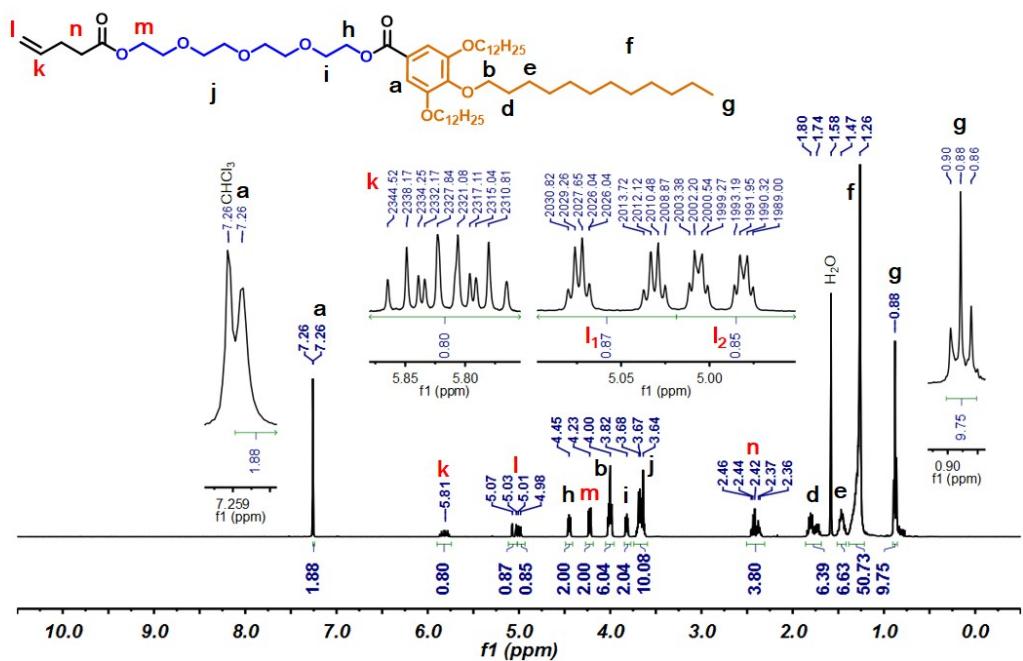


Figure S4: ^1H -NMR spectra of compound (5) (400 MHz in CDCl_3)

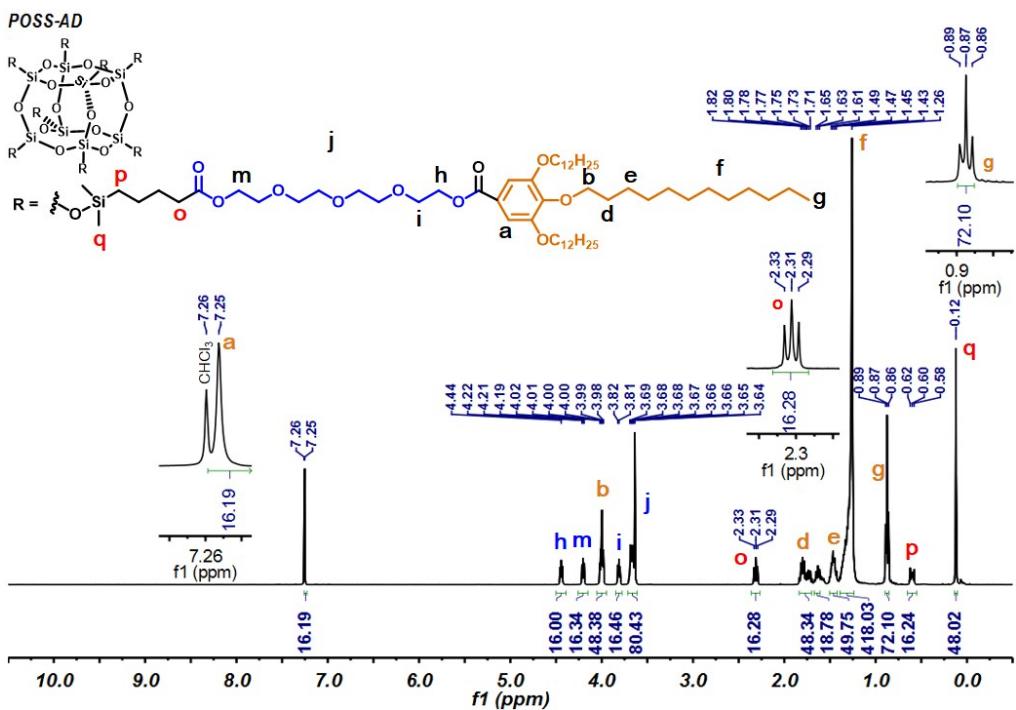


Figure S5: ^1H -NMR spectra of **POSS-AD** (400 MHz in CDCl_3)

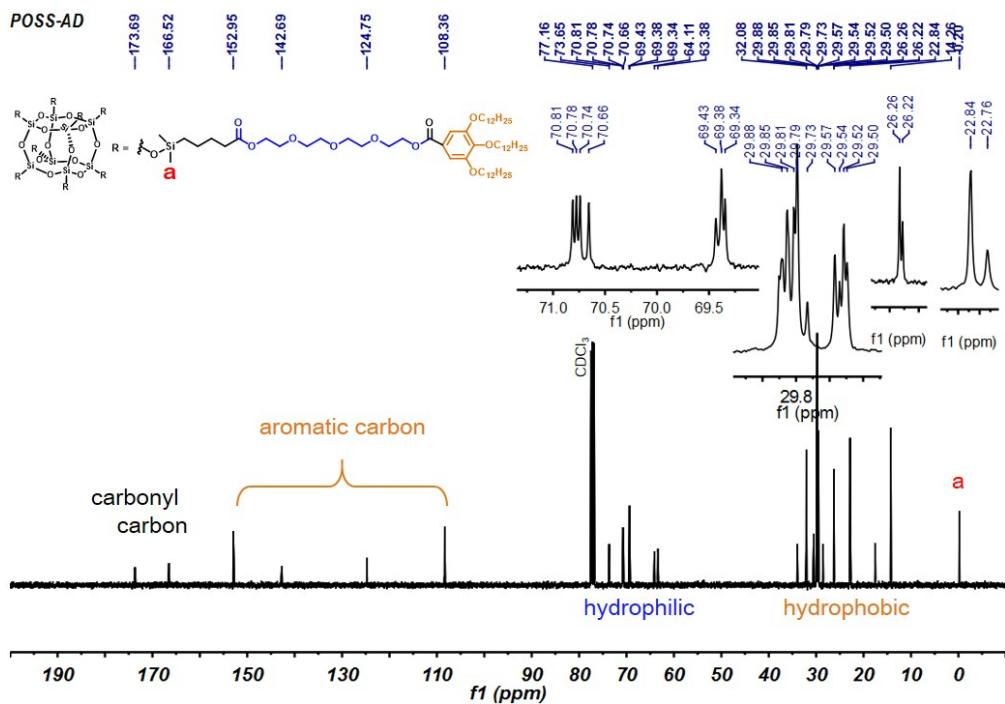


Figure S6: ^{13}C -NMR spectra of POSS-AD (101 MHz in CDCl_3)

20151014_C01

Mass range: 8000-9000 (LP mode)

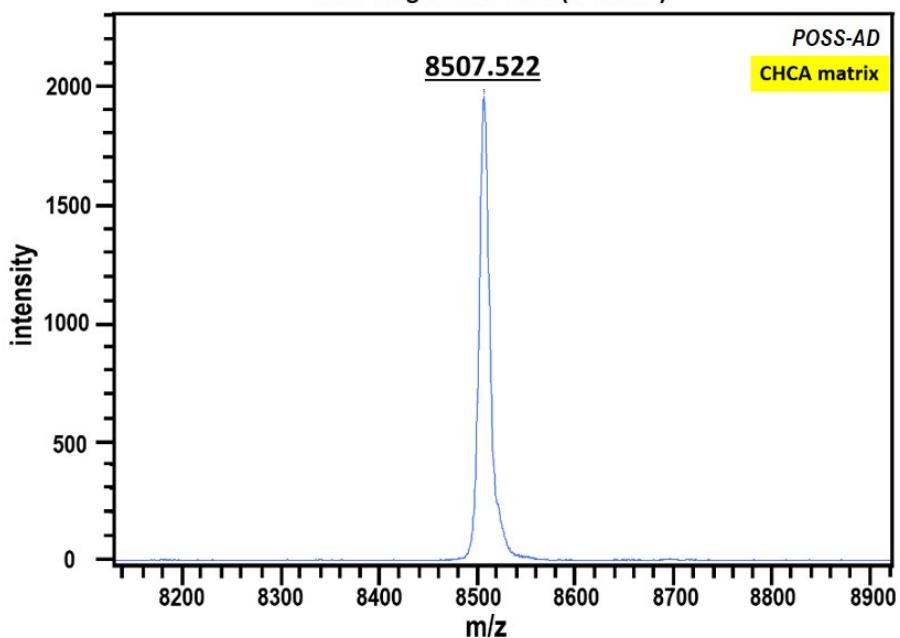


Figure S7: MALID-TOF mass spectra of POSS-AD

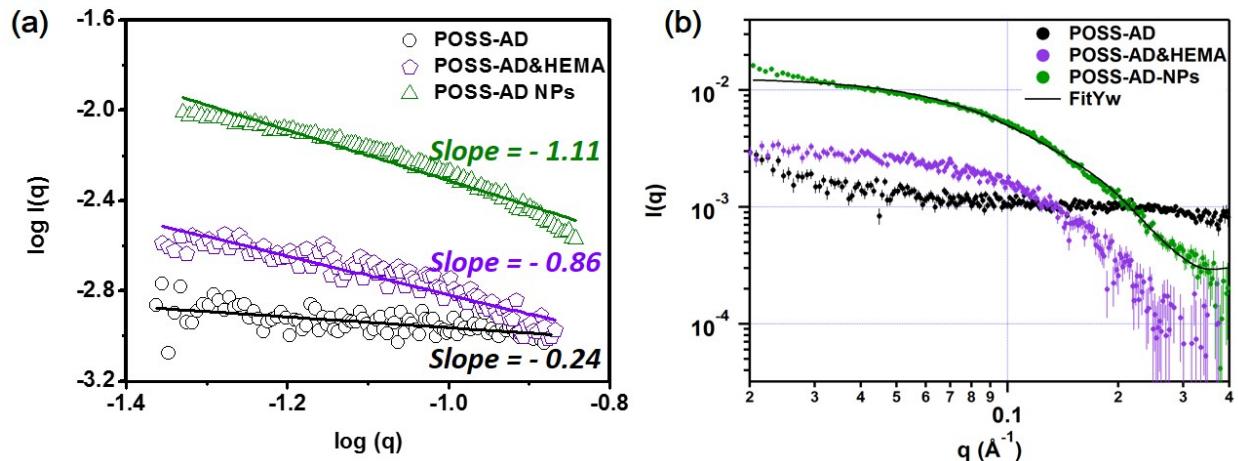


Figure S8: (a) power analysis of SAXS scattering curve (b) SAXS scattering curve $I(q)$ of the hexane solutions for **POSS-AD** (black, 4.93×10^{-5} mol/L), **POSS-AD** and 2.74×10^{-2} mol/L HEMA (purple, 4.93×10^{-5} mol/L), and **POSS-AD NPs** (green, 4.93×10^{-5} mol/L).

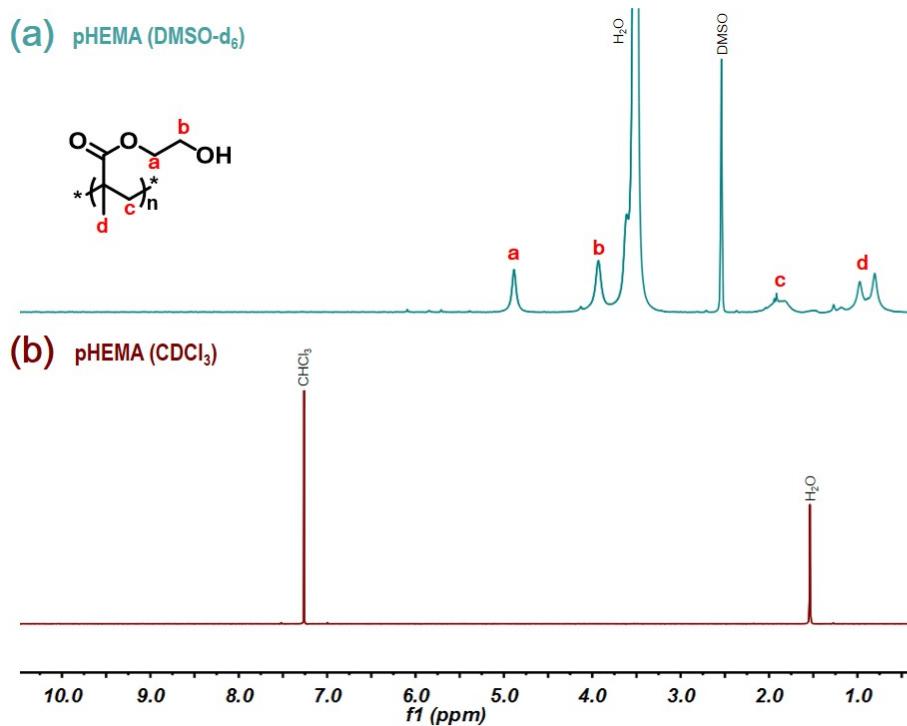


Figure S9 ^1H NMR spectra of p(HEMA) in (a) DMSO-d_6 and (b) CDCl_3 . The p(HEMA) was prepared from the precipitation polymerization. (400 MHz in CDCl_3)

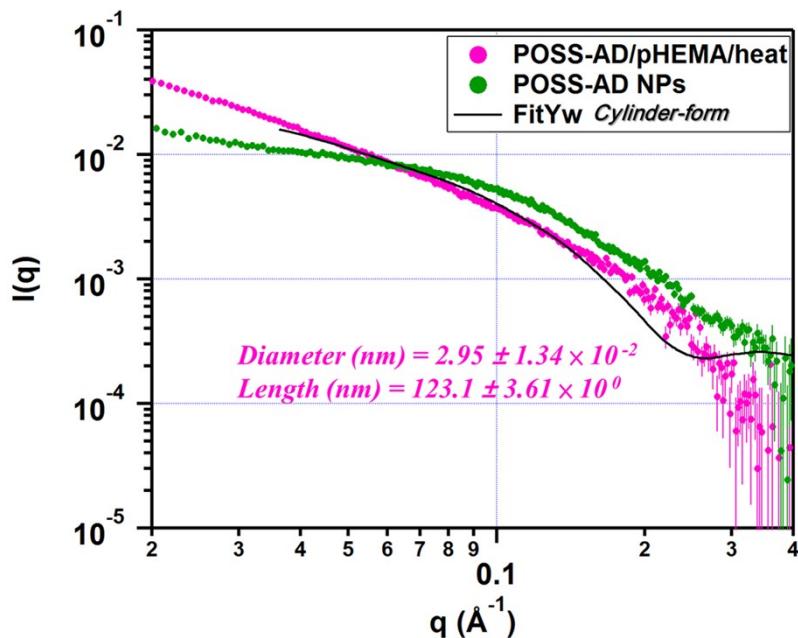


Figure S10. SAXS profiles of the hexane solutions of **POSS-AD** and p(HEMA) that were mixed at 90 °C for 45 hr (pink, 0.42 mg/mL), and **POSS-AD NPs** (green, 0.42 mg/mL). The scattering profile of the **POSS-AD/p(HEMA)** mixture cannot be fitted well with a monodispersed cylindrical model, so the fitting results did not match with the dimensions of the **POSS-AD** molecule or the **POSS-AD** micelles.