

Electronic Supplementary Information:

New Second-Order Nonlinear Optical (NLO) Polymers Containing Isolation Chromophore Derived from One-Pot “A₂+B₄” Approach via Suzuki Coupling Reaction

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Chart S1.

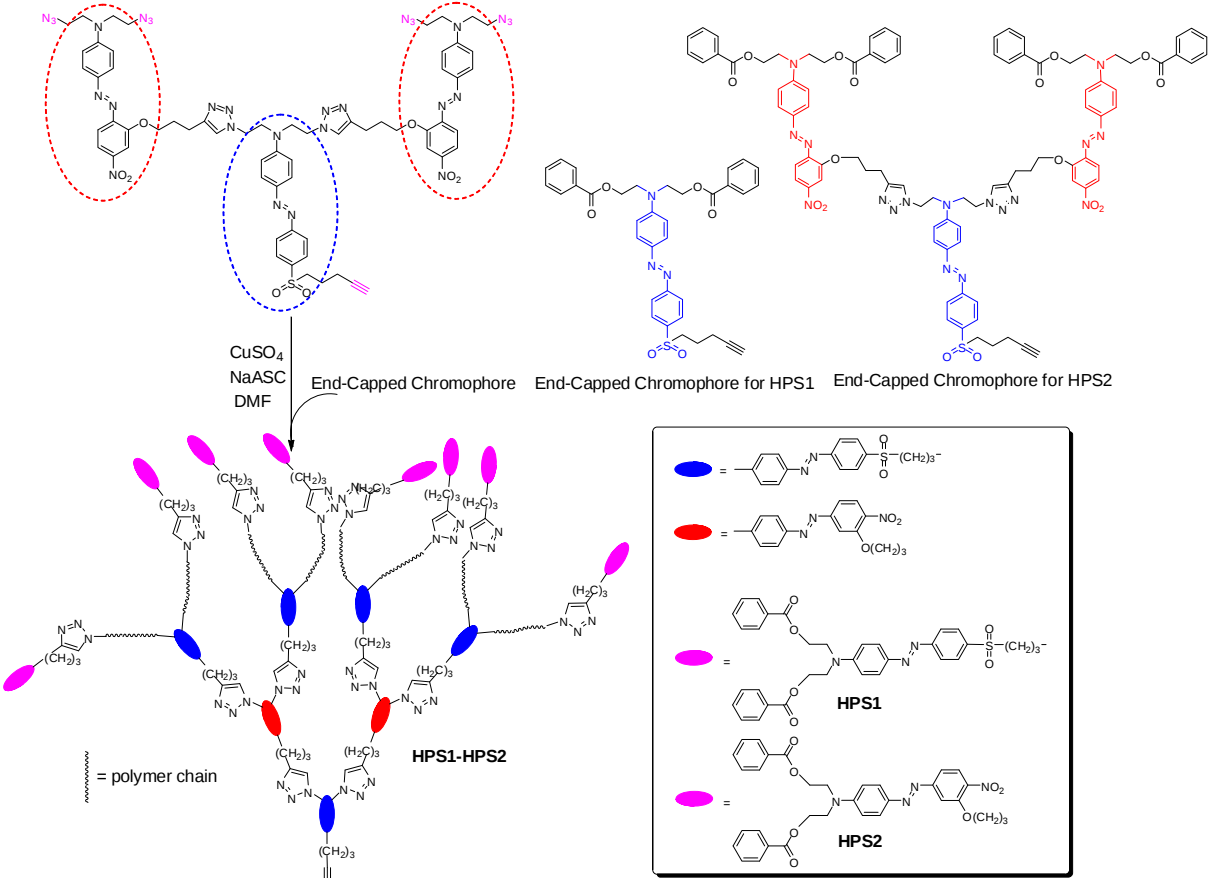


Table S1. Characterization data of hyperbranched polymers.

no.	$M_w^{[a]}$ ($\times 10^5$)	$M_w/M_n^{[a]}$	$T_g^{[b]}$ ($^{\circ}\text{C}$)	$T_d^{[c]}$ ($^{\circ}\text{C}$)	$T_e^{[d]}$ ($^{\circ}\text{C}$)	$l_s^{[e]}$ (μm)	$d_{33}^{[f]}$ (pm/V)	$d_{33(\infty)}^{[g]}$ (pm/V)	$\Phi^{[h]}$	$\lambda_{\text{max}}^{[i]}$ (nm)
HPS1	1.25	2.06	97	243	120	0.22	117.6	24.8	0.22	458
HPS2	1.79	2.42	100	284	125	0.25	167.4	31.5	0.26	466

[a] Determined by GPC in DMF on the basis of a polystyrene calibration. [b] Glass transition temperature (T_g) of polymers detected by the DSC analyses under argon at a heating rate of 10 $^{\circ}\text{C}/\text{min}$. [c] the 5 % weight loss temperature of polymers detected by the TGA analyses under nitrogen at a heating rate of 10 $^{\circ}\text{C}/\text{min}$. [d] the best poling temperature. [e] Film thickness. [f] Second harmonic generation (SHG) coefficient. [g] The nonresonant d_{33} values calculated by using the approximate two-level model. h Order parameter $\Phi = 1 - A_1/A_0$, A_1 and A_0 are the absorbance of the polymer film after and before the corona poling, respectively. [i] The maximum absorption wavelength of polymer films.

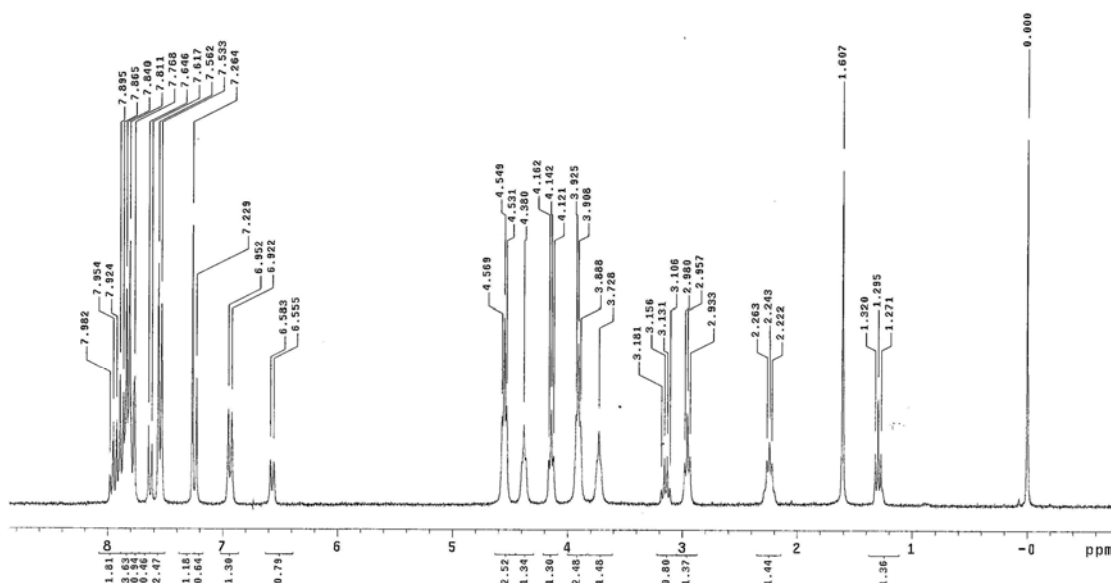


Figure S1. ^1H NMR spectrum of A₄-type monomer **C1** in chloroform-*d*.

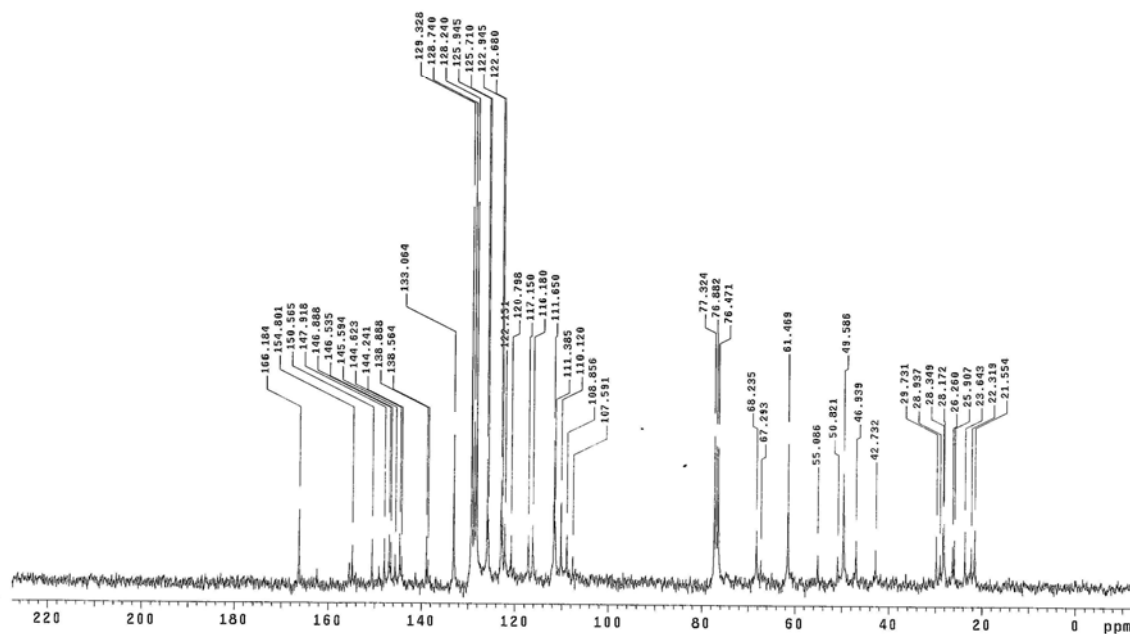


Figure S2. ^{13}C NMR spectrum of A₄-type monomer **C1** in chloroform-*d*.

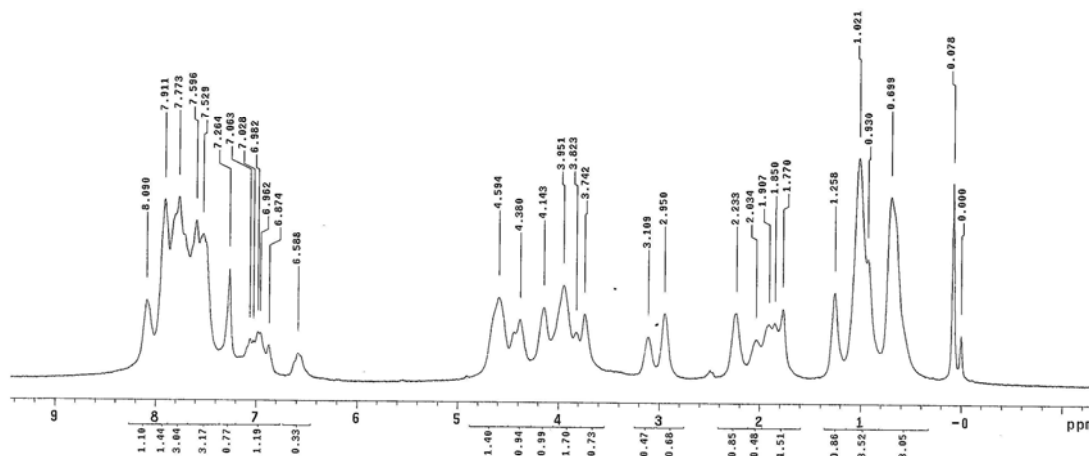


Figure S3. ^1H NMR spectrum of hyperbranched polymer **HP1** in chloroform-*d*.

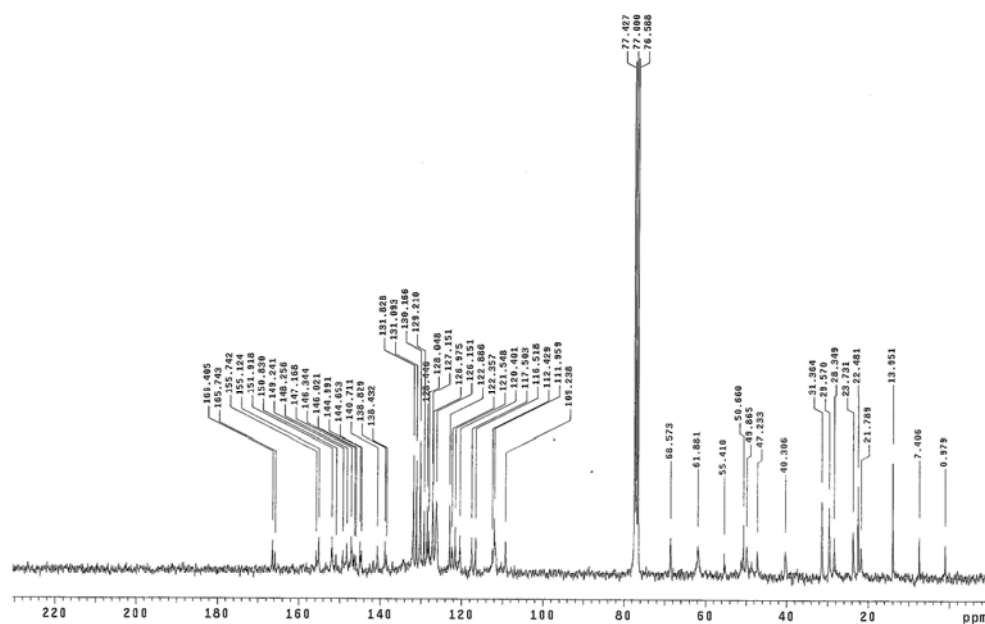


Figure S4. ^{13}C NMR spectrum of hyperbranched polymer **HP1** in chloroform-*d*.

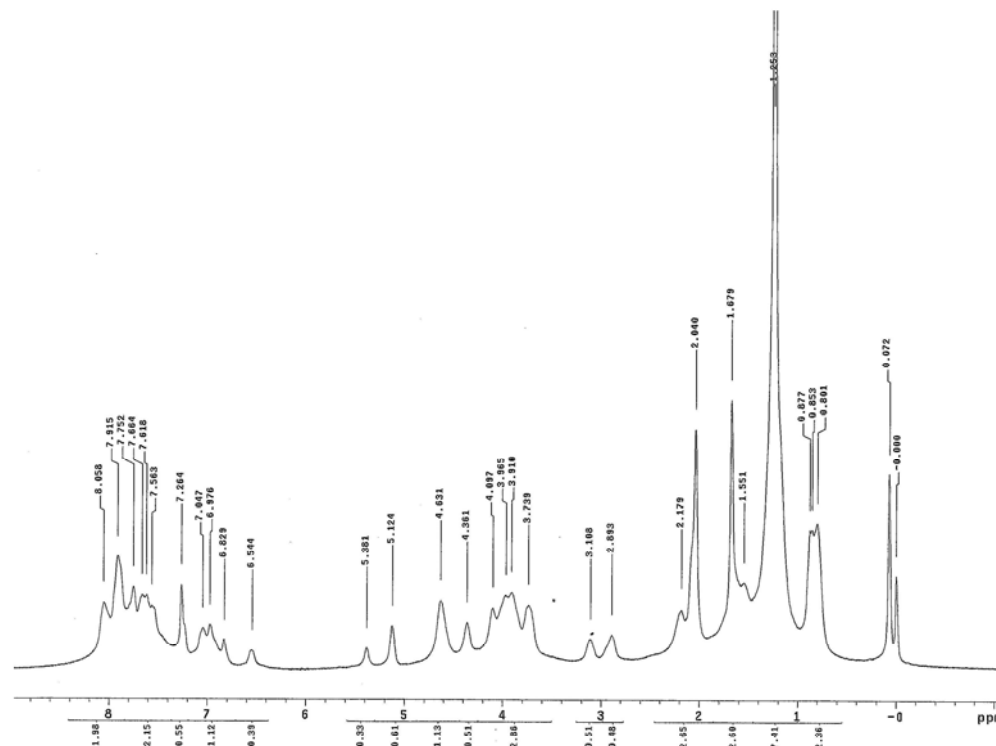


Figure S5. ^1H NMR spectrum of hyperbranched polymer **HP2** in chloroform-*d*.

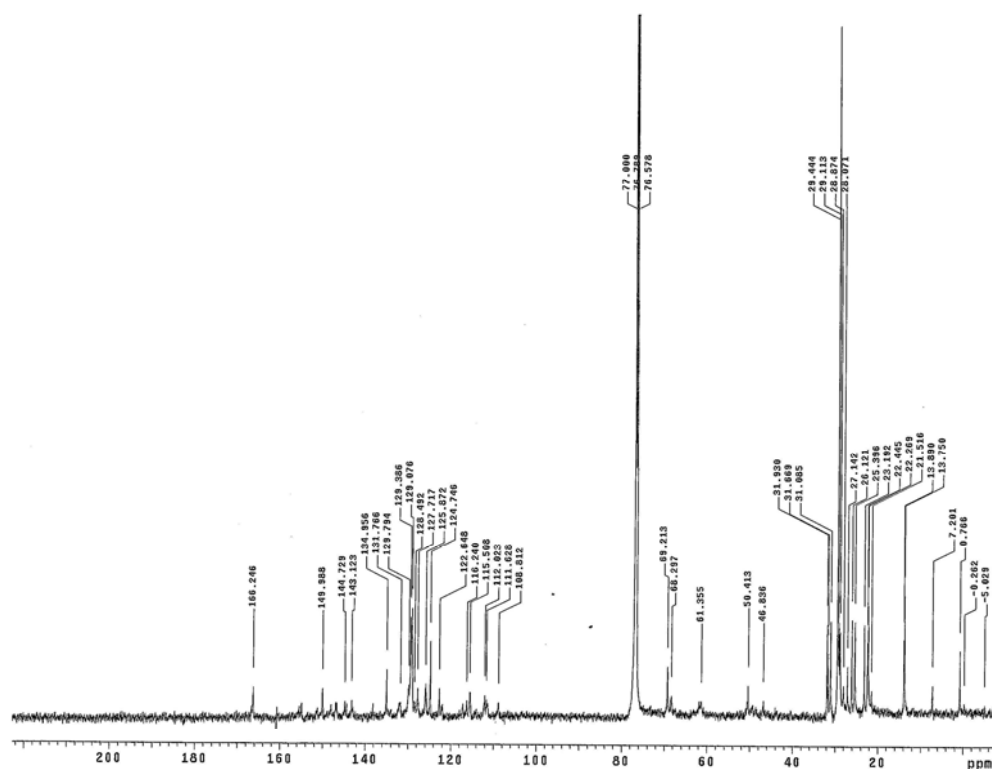


Figure S6. ^{13}C NMR spectrum of hyperbranched polymer **HP2** in chloroform-*d*.
Voyager Spec #1[BP = 1984.1, 1624]

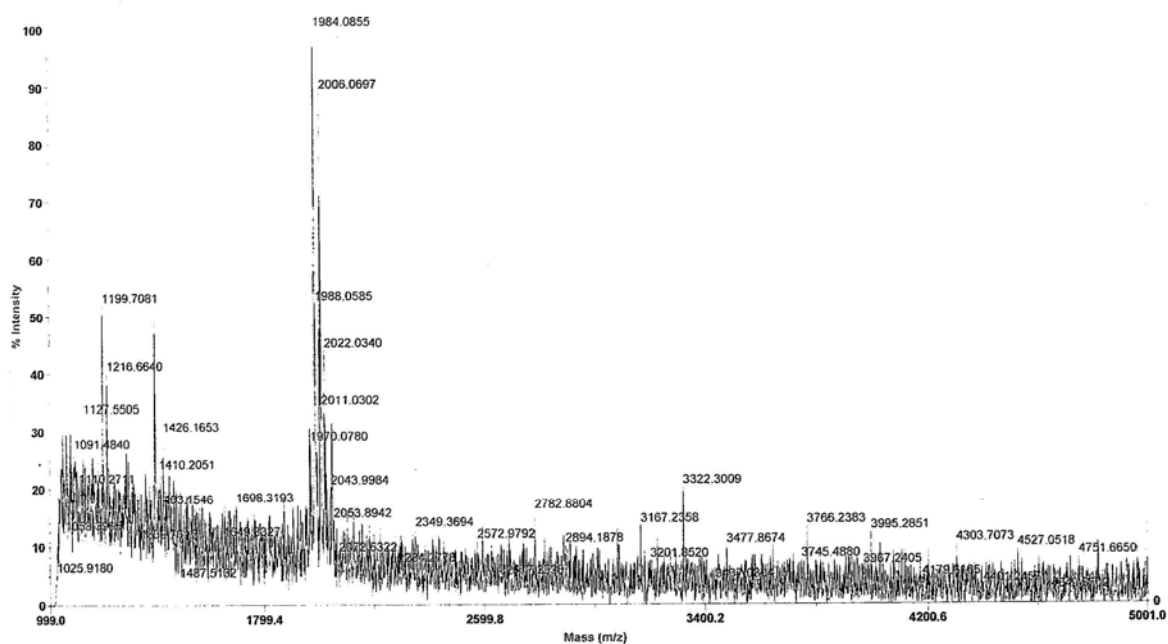


Figure S7. MALDI-TOF spectrum of A_4 -type monomer **C1**.

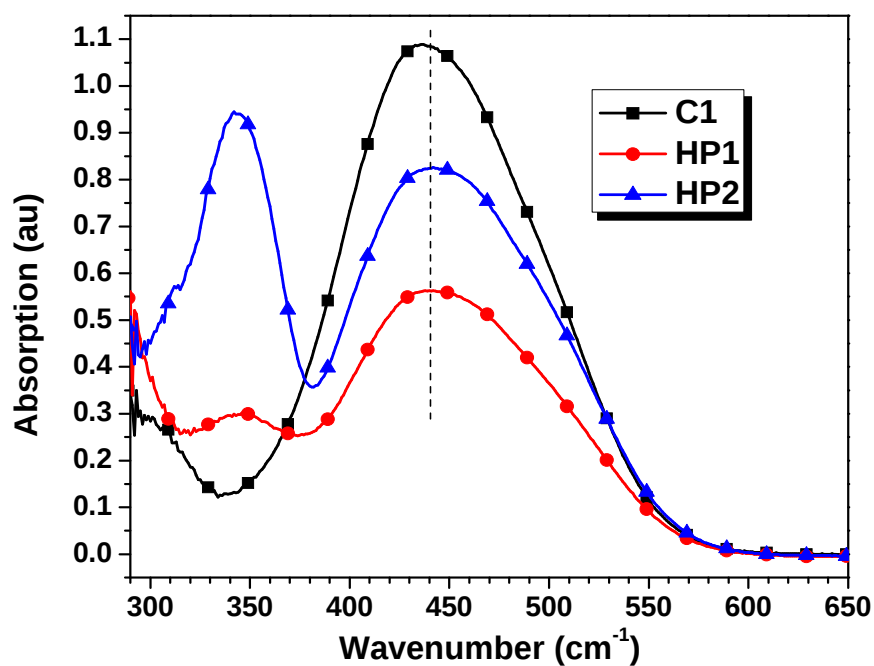


Figure S8. UV-Vis spectra of hyperbranched polymers **HP1-HP2** and their corresponding monomer **C1** in 1, 4-Dioxane (0.02 mg/mL).

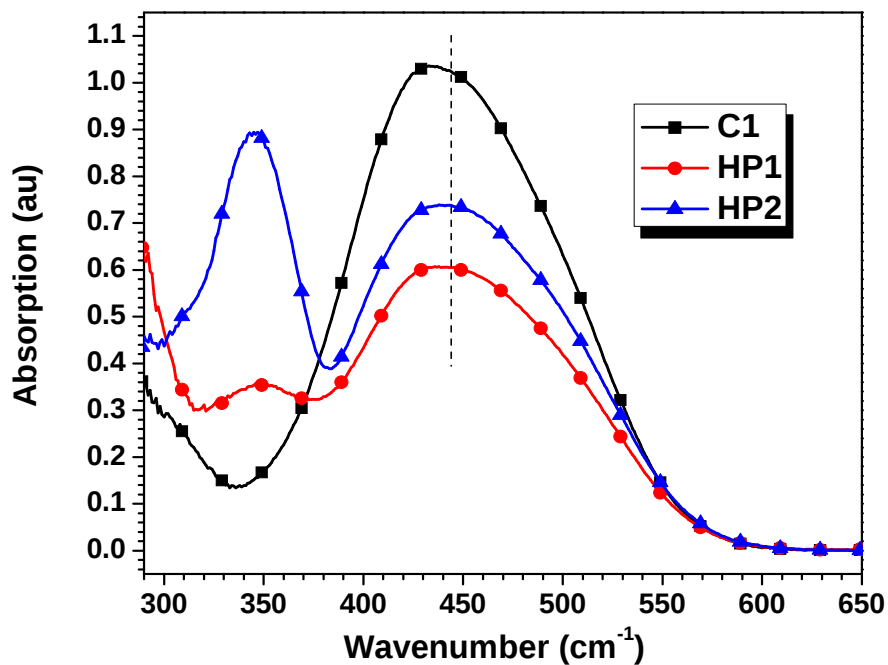


Figure S9. UV-Vis spectra of hyperbranched polymers **HP1-HP2** and their corresponding monomer **C1** in chloroform (0.02 mg/mL).

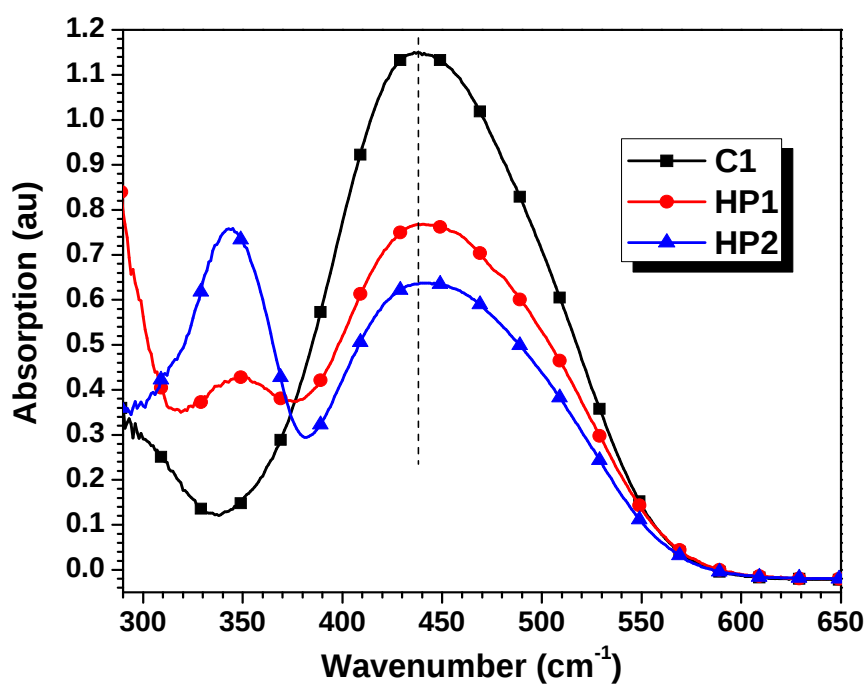


Figure S10. UV-Vis spectra of hyperbranched polymers **HP1-HP2** and their corresponding monomer **C1** in dichloromethane (0.02 mg/mL).

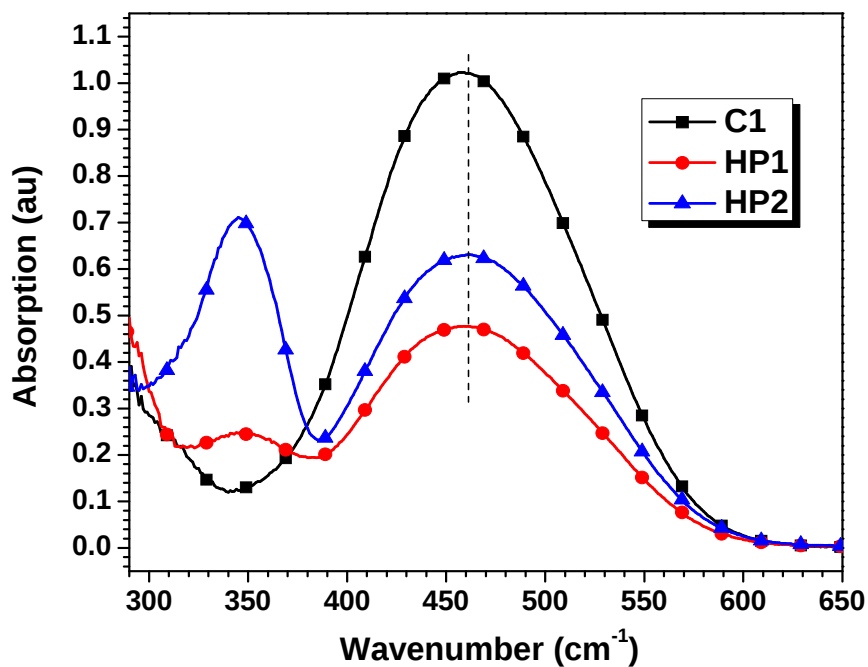


Figure S11. UV-Vis spectra of hyperbranched polymers **HP1-HP2** and their corresponding monomer **C1** in DMF (0.02 mg/mL).

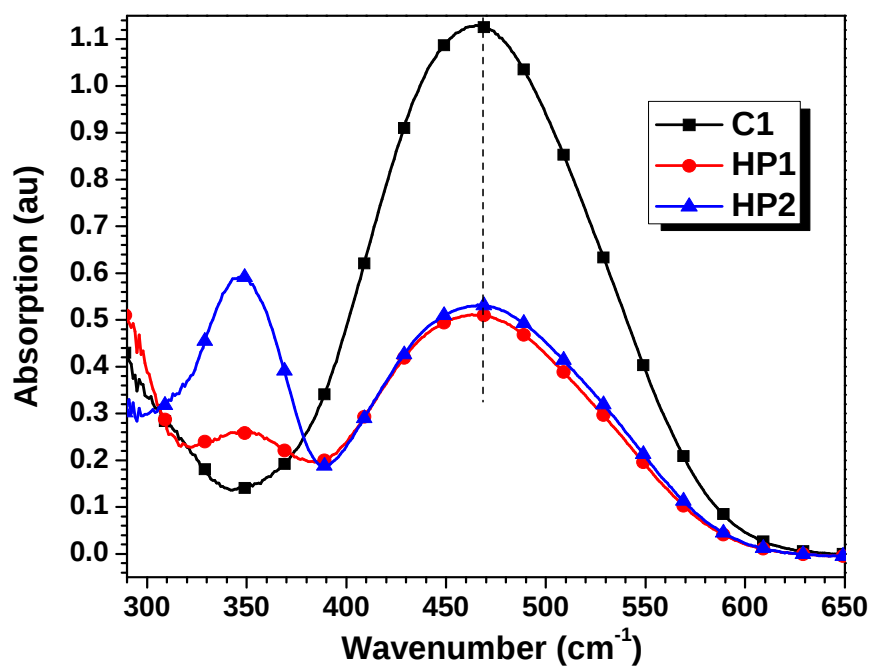


Figure S12. UV-Vis spectra of hyperbranched polymers **HP1-HP2** and their corresponding monomer **C1** in DMSO (0.02 mg/mL).