

Supplementary Information

Synthesis and self-assembly of nonamphiphilic hyperbranched polyoximes

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Table S1. Preparation of HPOXs with different molar ratios of two monomers.

Entry	PBH			TBA			HPOX Yield (mg)
	Mass (mg)	Mole (mmol)	DMSO volume (mml)	Mass (mg)	Mole (mmol)	DMSO Volume (mml)	
HPOX 1	47.74	0.8/3	4	180.86	1/3	5	111.3
HPOX 2	59.68	1.0/3	5	180.86	1/3	5	128.8
HPOX 3	71.62	1.2/3	6	180.86	1/3	5	110.2
HPOX 4	89.52	1.5/3	7	180.86	1/3	5	115.0

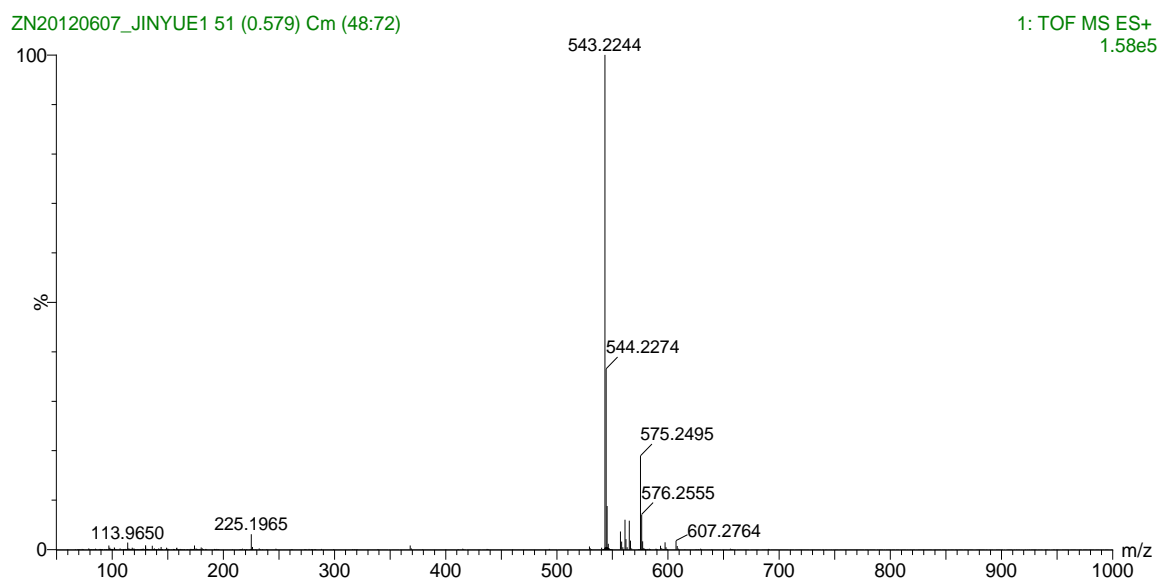


Figure S1. UPLC & Q-TOF-MS spectrum of TBA sample.

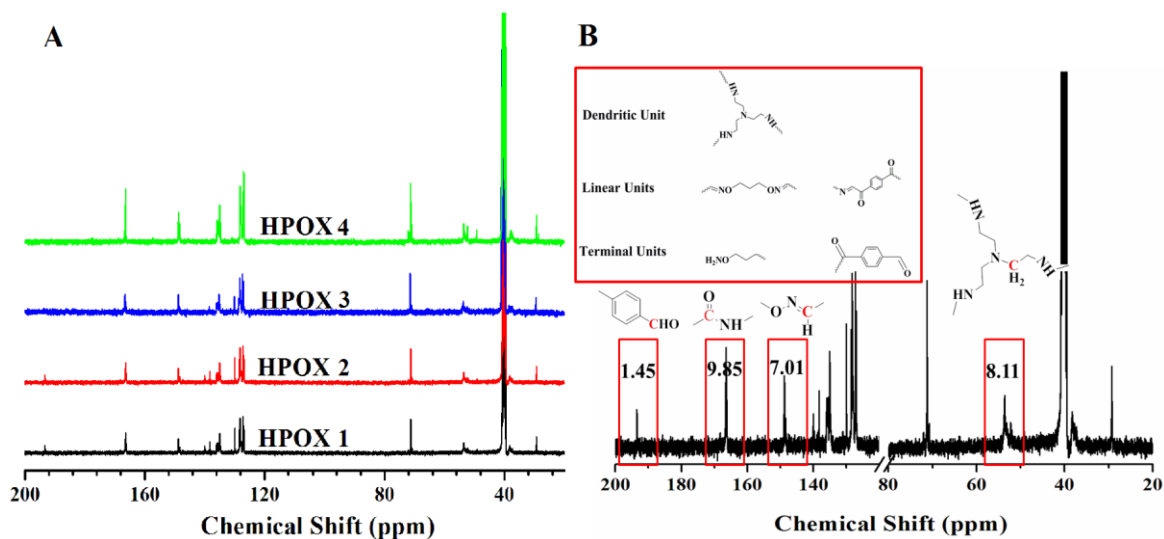


Figure S2. (A) Quantitative ¹³C NMR spectra of HPOXs and (B) their dendritic, linear and terminal structural units to calculate DB of HPOX 2 as an example.

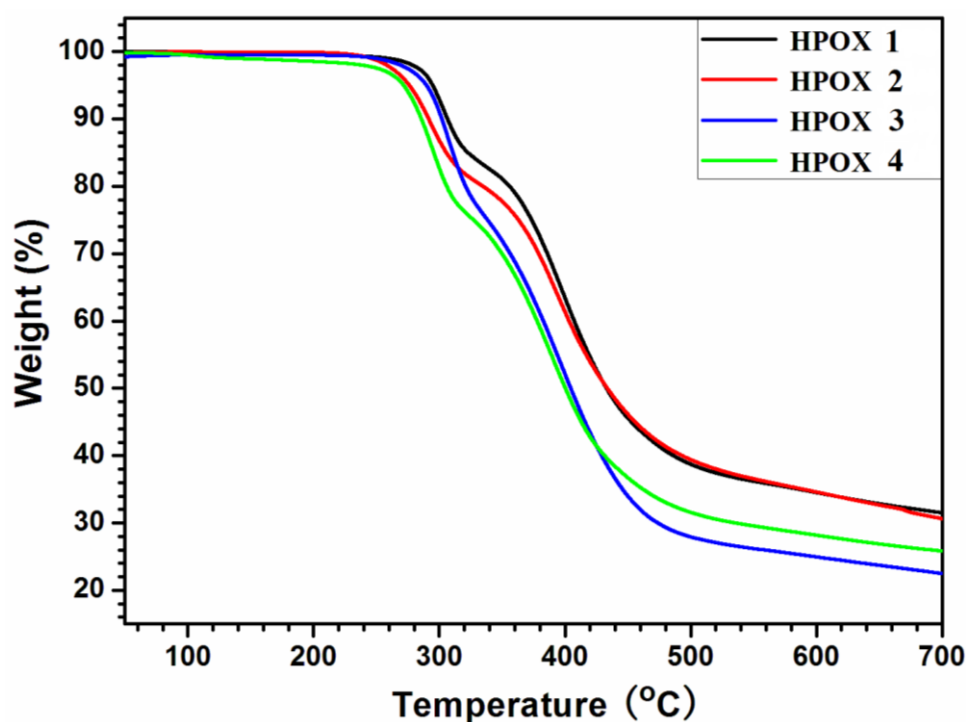


Figure S3. TGA curves of HPOXs with different molar feeding ratios of trialdehyde to bis-aminooxy monomers.

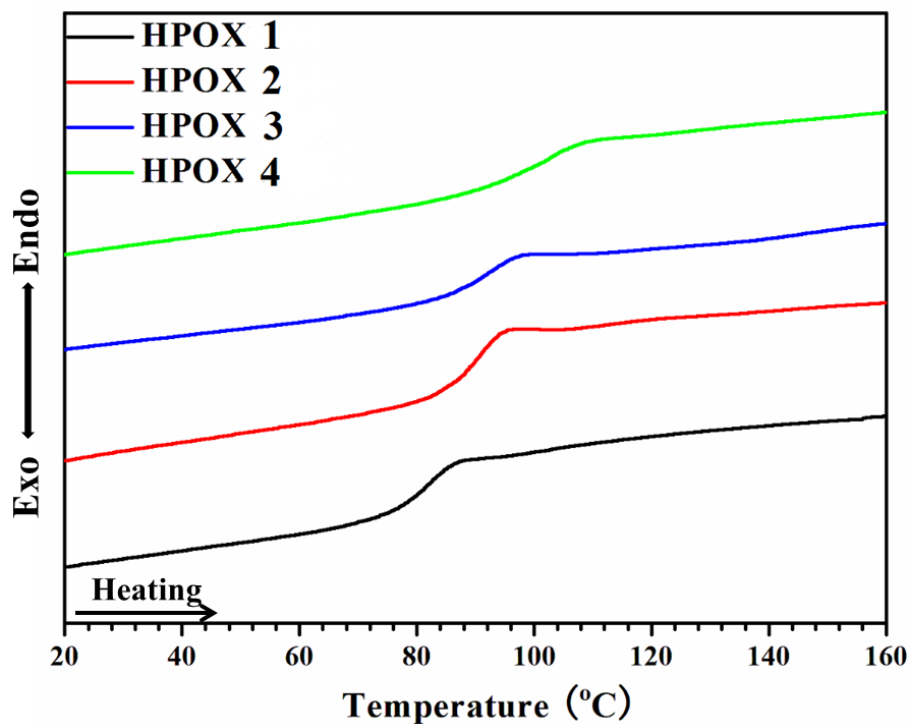


Figure S4. DSC curves of HPOXs with different molar feeding ratios of trialdehyde to bis-aminoxy monomers.

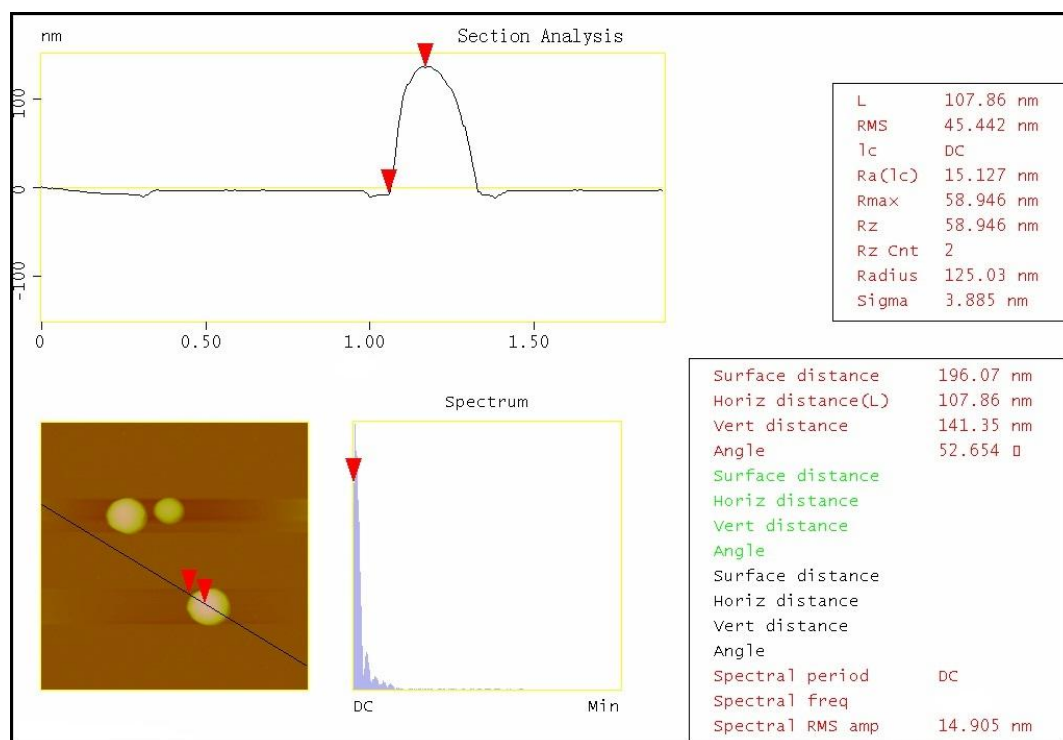


Figure S5. AFM image and section analysis of HPOX 3.

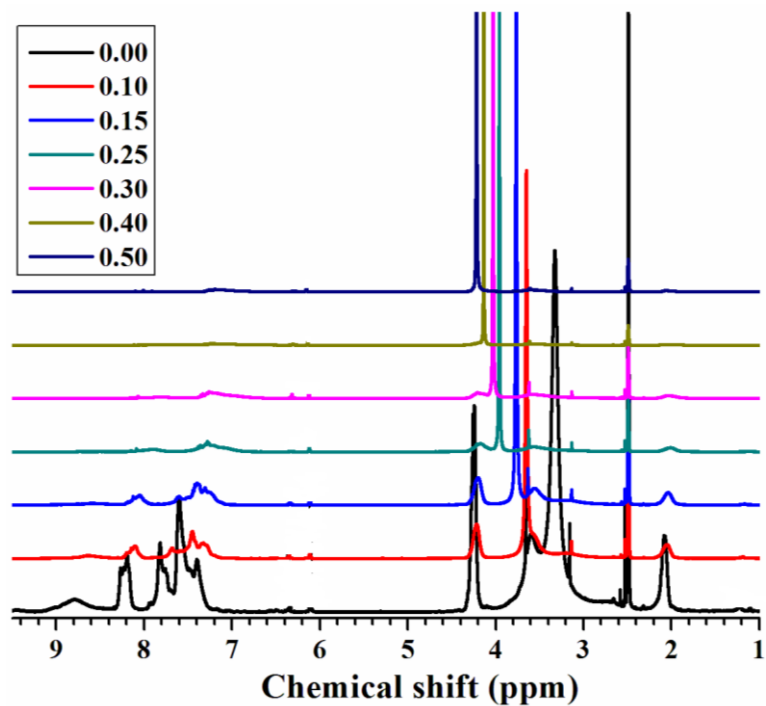


Figure S6. ¹H NMR spectra of HPOX 4 in the mixture of DMSO-*d*₆ and D₂O with different D₂O contents at 300 K. The volume ratios of D₂O to DMSO-*d*₆ are 0.0, 0.10, 0.15, 0.25, 0.30, 0.40 and 0.50, respectively.

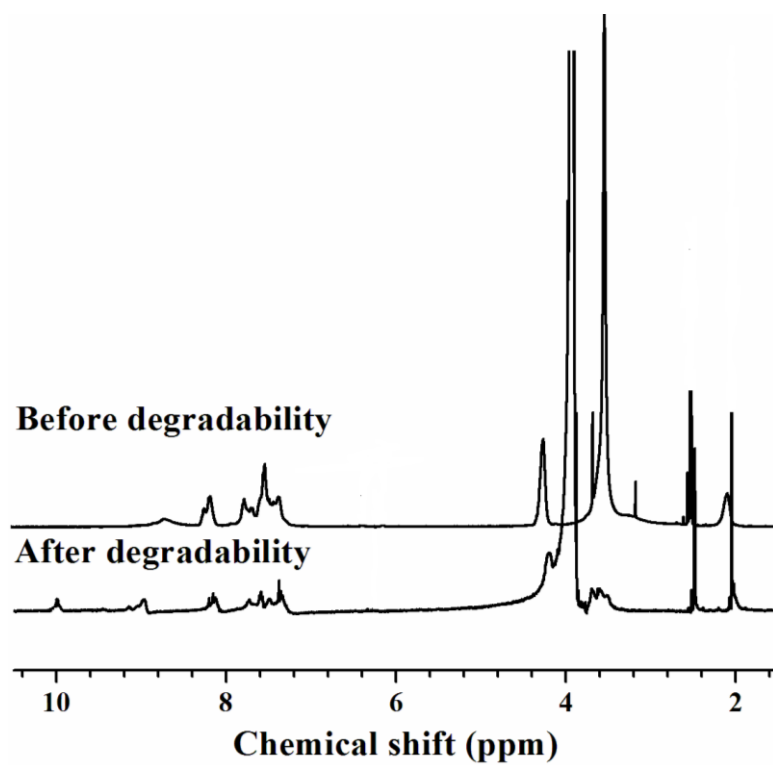


Figure S7. ¹H NMR spectrum of degradability of HPOX 4 in the mixture of

DMSO-*d*₆/D₂O at pH 4.0 before and after degradability.

By comparison with the spectrum before degradability, the signal of oxime bonds at 8.2 ppm diminishes. Meanwhile the protons of aminoxy groups obviously increase at 9.0 ppm and the aldehyde peak appears at 10.0 ppm, confirming the hydrolysis of oxime bonds catalyzed by HCl after 4 h.