Supporting information

Bifunctional Group Distribution and Gradient Structure Resulting from the Anionic Copolymerization of Styrene and Vinylbenzyl N,N-Allylmethylamine

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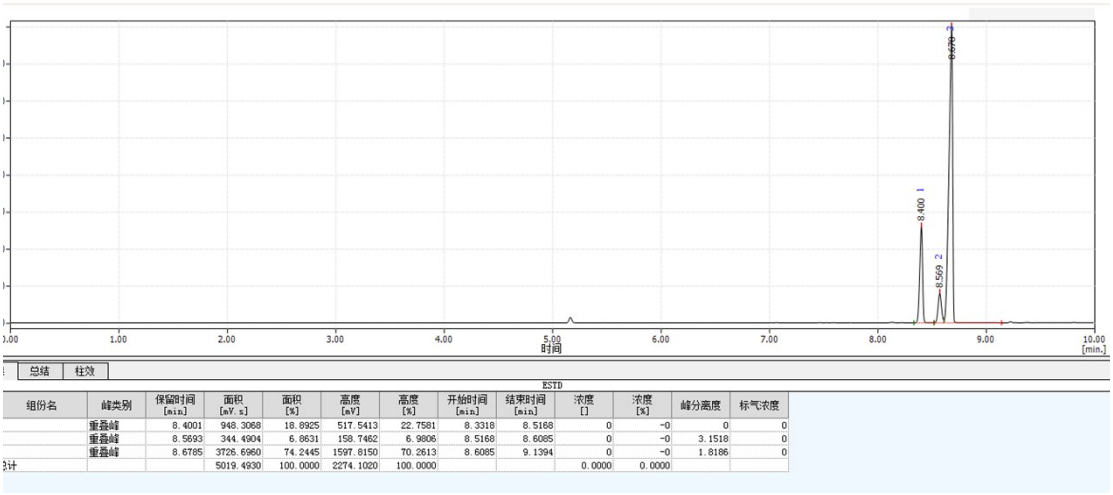
Figures S1-S5

Figure S1



组份名	峰类别	保留时间 [min]	面积 [mV.s]	面积 [%]	高度 [mV]	高度 [%]	开始时间 [min]	结束时间 [min]	浓度 []	浓度 [%]	峰分离度	标气浓度
	重叠峰	8.4001	948.3068	18.8925	517.5413	22.7581	8.3318	8.5168	0	-0	0	0
	重叠峰	8.5693	344.4904	6.8631	158.7462	6.9806	8.5168	8.6085	0	-0	3.1518	0
	重叠峰	8.6785	3726.6960	74.2445	1597.8150	70.2613	8.6085	9.1394	0	-0	1.8186	0
总计			5019.4930	100.0000	2274.1020	100.0000			0.0000	0.0000		

Figure S1. The GC spectrum of VBAMA isomers mixture synthesized in this work

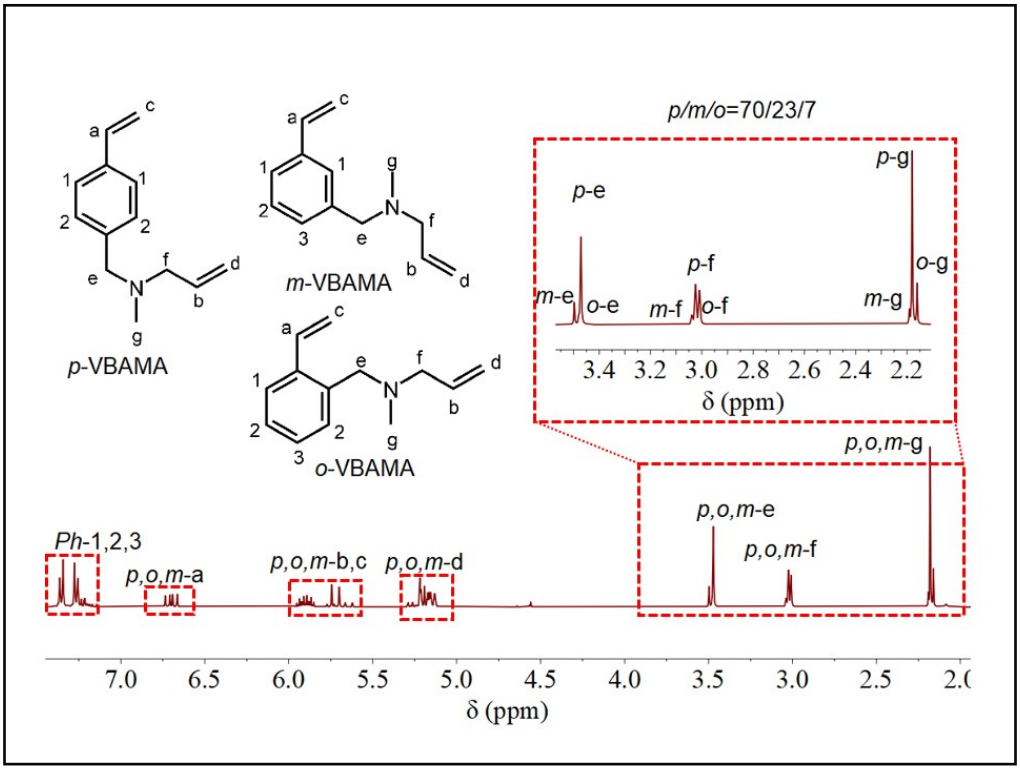


Figure S2. The ^{1}H NMR spectrum of VBAMA isomers in $CDCl_3$

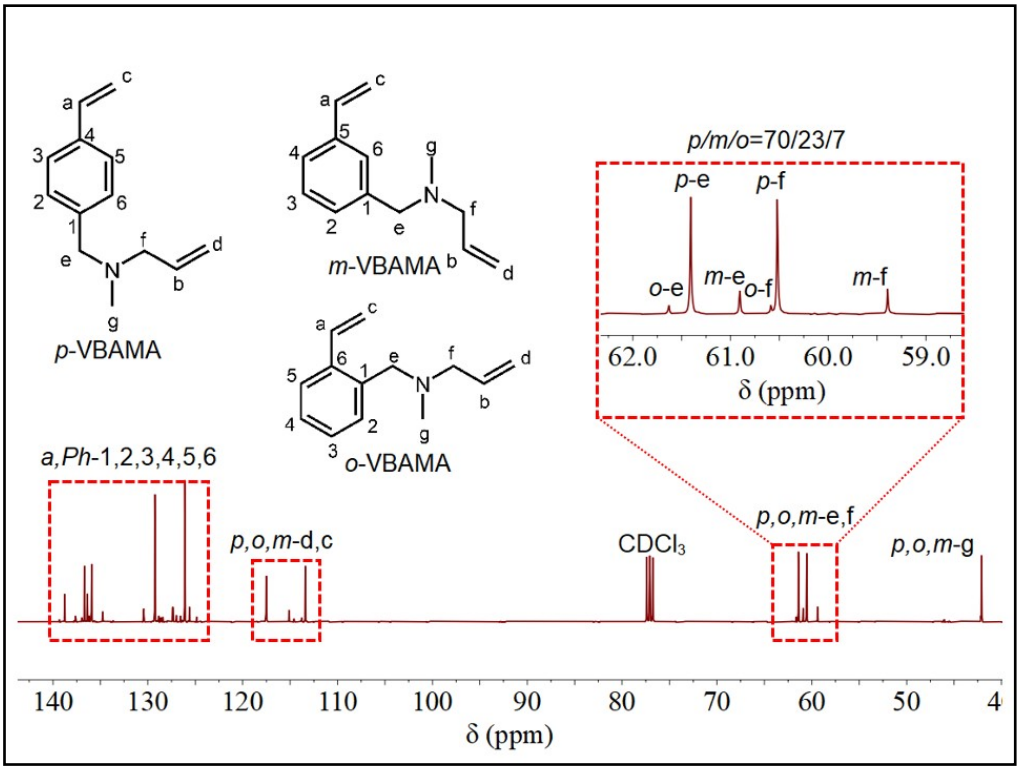


Figure S3. The ^{13}C NMR spectrum of VBAMA isomers in $CDCl_3$

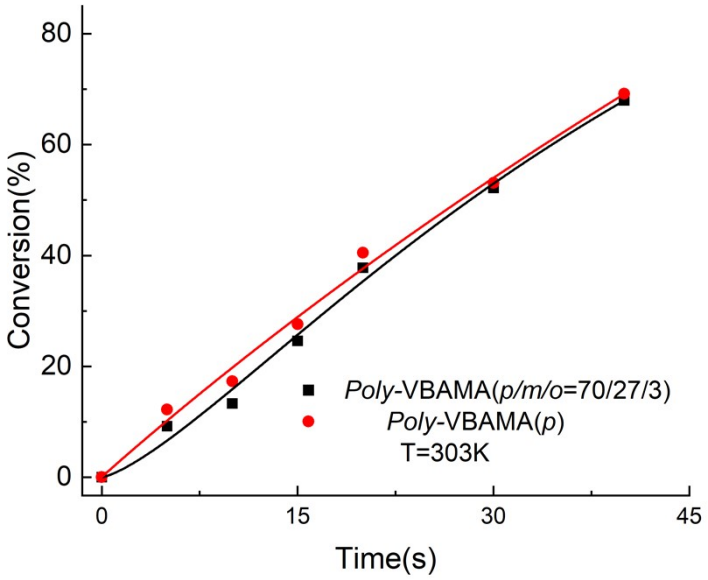


Figure S4. The homopolymerization conversion of VBAMA isomers (red line is para-VBAMA and black line is VBAMA mixture isomers) at 303K

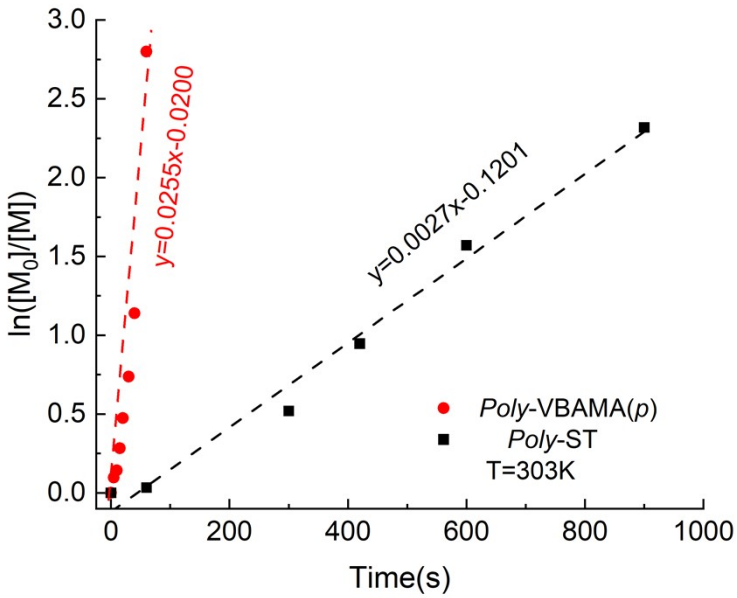


Figure S5. The first-order homopolymerization reaction curves (red line is VBAMA mixture isomers and black line is ST) at 303K

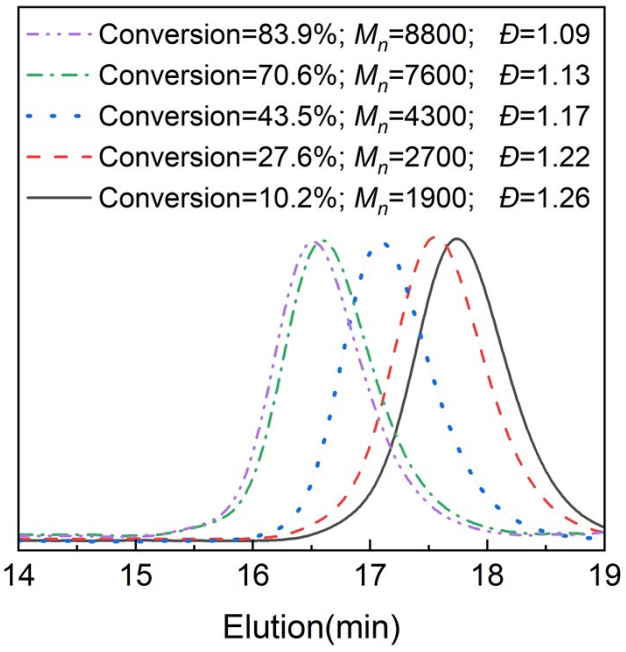


Figure S6. The SEC curves tracking the copolymerization process (ST/VBAMA=4/1 at 303K)

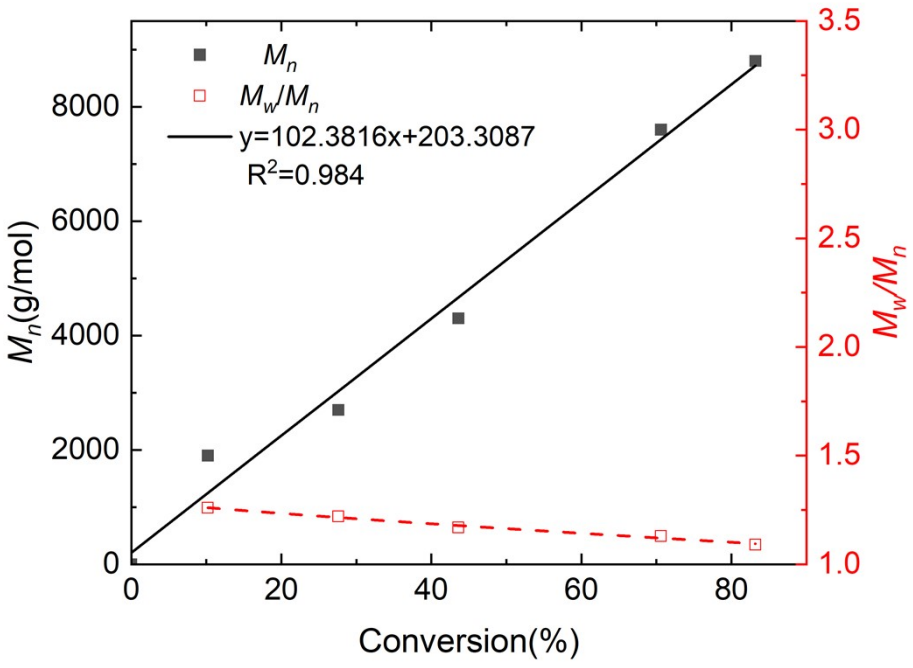


Figure S7. The copolymer Mn *vs* conversion (black line) and the Mw/Mn *vs* conversion (red line) (ST/VBAMA=4/1 at 303K)

Table S1. The key parameters used to determine the reactivity ratios of VBAMA and ST

Comonomers		T(°C)	$f(M_1)$	$f(M_2)$	Conversion [a]	$F(M_1)/F(M_2)$ [b]
M_1	M_2					
VBAMA	ST	30	80.0%	20.0%	9.65%	87.25%/12.75%
VBAMA	ST	30	75.0%	25.0%	8.62%	83.50%/16.50%
VBAMA	ST	30	66.7%	33.3%	7.38%	79.43%/20.57%
VBAMA	ST	30	50.0%	50.0%	2.53%	64.35%/35.65%
VBAMA	ST	30	33.3%	66.7%	6.73%	55.77%/44.23%
VBAMA	ST	30	25.0%	75.0%	13.22%	44.99%/55.01%
VBAMA	ST	30	20.0%	80.0%	10.26%	38.80%/61.20%

[a] determined by weighting method;

[b] determined by HNMR data