

Synthesis of Polystyrene-based Y-Shaped Asymmetric Star by the Combination of ATRP/RAFT and Its Thermal and Rheological Properties

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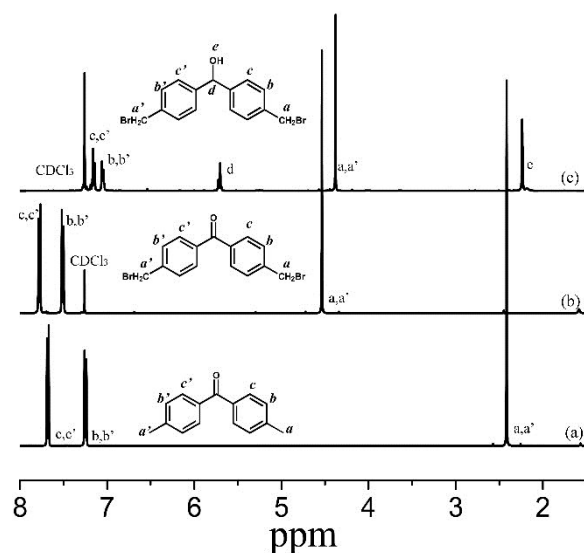


FIGURE S1. ¹H NMR spectra of precursors: (a) 4,4'-dimethylbenzophenone, (b) 4,4'-di(bromomethyl)benzophenone and (c) 4,4'-di(bromomethyl)benzhydrol.

Table S1. Aymmetric Polystyrene Stars (PS_x)₂-*p*-(PS_y) Prepared by RAFT at 110 °C with BPO in the Presence of LPSCS₂ Macroinitiator.

run	M_n^a (g/mol)	M_w/M_n	Conv. ^b (%)	M_b^c (g/mol)	$M_{n,th}^c$ (g/mol)
5	7500	1.2	0.0	0	7500
6	8100	1.2	0.4	600	8100
7	8500	1.2	0.6	1000	8400
8	9300	1.2	1.4	2400	9600
9	9700	1.3	1.9	1800	10400
10	11300	1.2	2.9	4000	12000
11	13000	1.3	4.5	5800	14400
12	17700	1.3	7.9	10200	19700
13	21300	1.3	10.6	13800	23800
14	27000	1.3	15.3	25500	31100

^a Molecular weight of the asymmetric star polystyrene. ^b Conversion of the monomer (St). ^c Molecular weight of the branched chain.

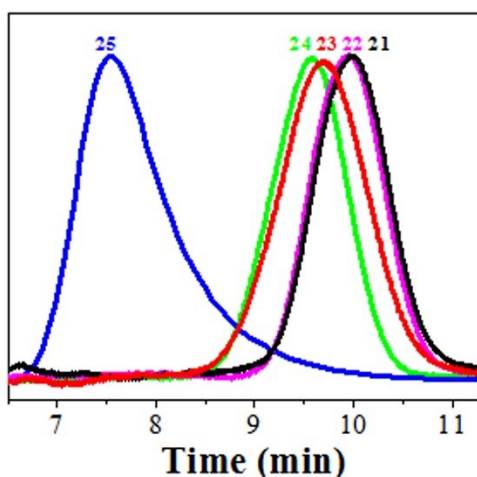


FIGURE S2. GPC Traces of the Samples of Miktoarm Star (PS)₂(PBA). (Here molecular weights of the samples corresponding to the SEC traces of 17 to 21 were listed in Table 2).