Supporting Information

A durable heterogeneous catalyst for photoinduced controlled radical polymerization under white LED light irradiation in aqueous

Chenhan Yu,[1,‡] Xinyi Feng,[1,‡] Qiuyu Li,[1] Jiahui Peng,[1] Yu Xiang,[1] Yanting Song,[1] Haoyu Feng,[1] Yunye Huang,[1] Longqiang Xiao,[1,2,*] Linxi Hou[1,2,3,*]

[1]Department of Materials-Oriented Chemical Engineering, College of Chemical Engineering, Fuzhou University, Fuzhou 350116, P.R. China.

[2]Qingyuan Innovation Laboratory, Fuzhou University, Quanzhou 362801, P. R. China

[3]Fujian Key Laboratory of Advanced Manufacturing Technology of Specialty Chemicals, Fuzhou University, Fuzhou 350116, P.R. China

[‡]These authors contributted equally to this article.

*Corresponding author, E-mail: xiaolq@fzu.edu.cn; lxhou@fzu.edu.cn

Table S1. The elemental analysis result of TD-I.

Element	C	H	O	N	Br	I
Content (%)	33.58	4.35	0.00	6.38	0.00	55.69

Table S2. Summary data of RCMP of PEGMA.

Entry	Monomer	DP[a]	m (catalyst) (mg)	t (h)	Conv. (%)[b]	M_n ($M_{n,theo}$[c])	M_w/M_n
1	PEGMA	30	0	4	6.7	2000 (1000)	1.16
2	PEGMA	30	5	2	8.0	3300 (1300)	1.12
				4	26.9	4500 (4000)	1.12
				6	46.0	5900 (6800)	1.11
				8	58.0	7200 (8500)	1.10
				10	62.8	7500 (9100)	1.14
				12	65.7	7900 (9600)	1.15
3	PEGMA	30	10	1	14.5	4400 (2300)	1.13
				2	38.0	6200 (5600)	1.11
				4	74.8	9000 (10900)	1.11
				8	90.8	10400 (13100)	1.16
				10	96.0	11000 (13900)	1.17
4	PEGMA	30	15	2	24.9	4200 (3700)	1.12
				4	47.8	6400 (7000)	1.09
				6	63.0	7900 (9200)	1.12
				8	70.5	8900 (10200)	1.14
				10	75.0	9300 (10900)	1.16
				12	77.5	9600 (11200)	1.17
5	PEGMA	50	10	2	37.1	6900 (9000)	1.09
				4	62.9	10400 (15100)	1.10
				6	77.7	13000 (18700)	1.10
				8	84.1	14300 (20200)	1.11
				10	87.6	15000 (21000)	1.12
6	PEGMA	100	10	2	19.2	7000 (9300)	1.09
				4	31.6	10400 (15200)	1.11
				6	36.1	13000 (17300)	1.09
				8	39.0	14100 (18700)	1.11
				10	39.6	14200 (19000)	1.12

[a]Target degree of polymerization at 100% monomer conversion (calculated as $[PEGMA]_0/[CP-I]_0$).

[b]Monomer conversion was determined by ^{1}H NMR.

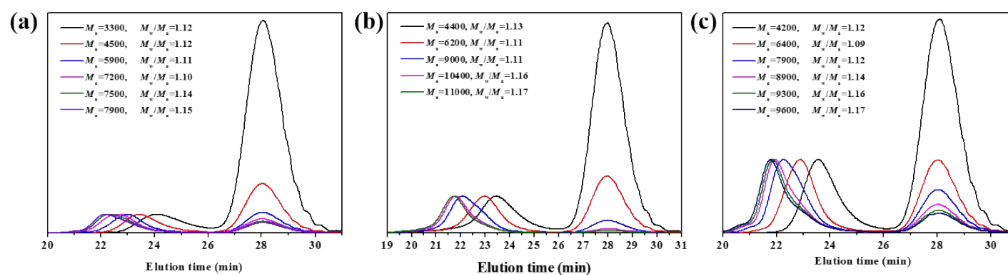[c]$M_{n,theo}$=(molecular weight of monomer)×DP×(conversion/100) + (molecular weight of initiator).

Figure S1. GPC traces of polymers obtained by using 5 mg (a), 10 mg (b) and 15 mg (c) of TD-I for RCMP of PEGMA monomer under white LED light irradiation ([PEGMA]$_0$/[CP-I]$_0$ = 100).
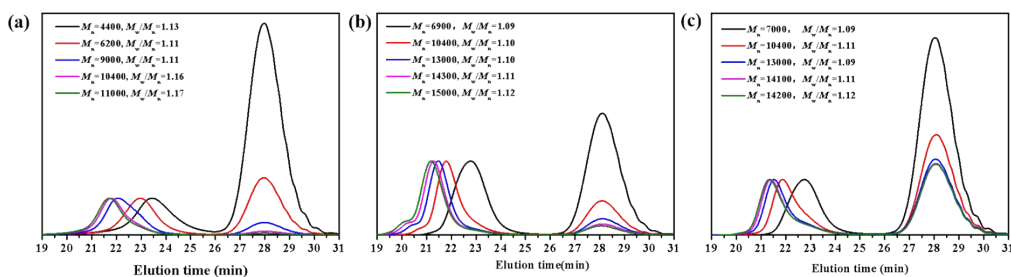

Figure S2. GPC traces of polymers obtained by using 10 mg of TD-I for RCMP of PEGMA monomerunder white LED light irradiation [PEGMA]$_0$/[CP-I]$_0$ = (a) 30, (b) 50, and (c) 100.