

Supplementary Information

B(C₆F₅)₃-Catalyzed Group Transfer Polymerization of Alkyl Methacrylates with Dimethylphenylsilane through *in Situ* Formation of Silyl Ketene Acetal by B(C₆F₅)₃-Catalyzed 1,4-Hydrosilylation of Methacrylate Monomer

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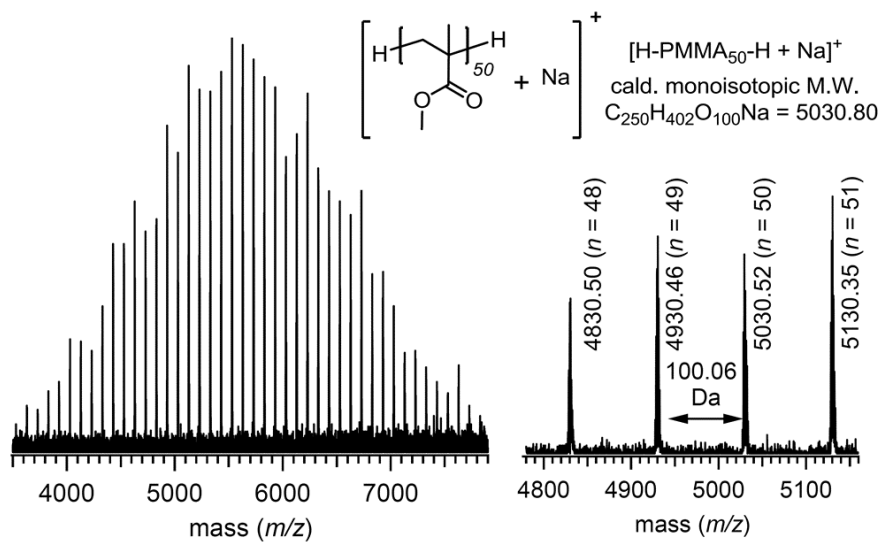


Figure S1. MALDI-TOF MS spectrum in reflector mode of a PMMA with an average degree of polymerization of 50.

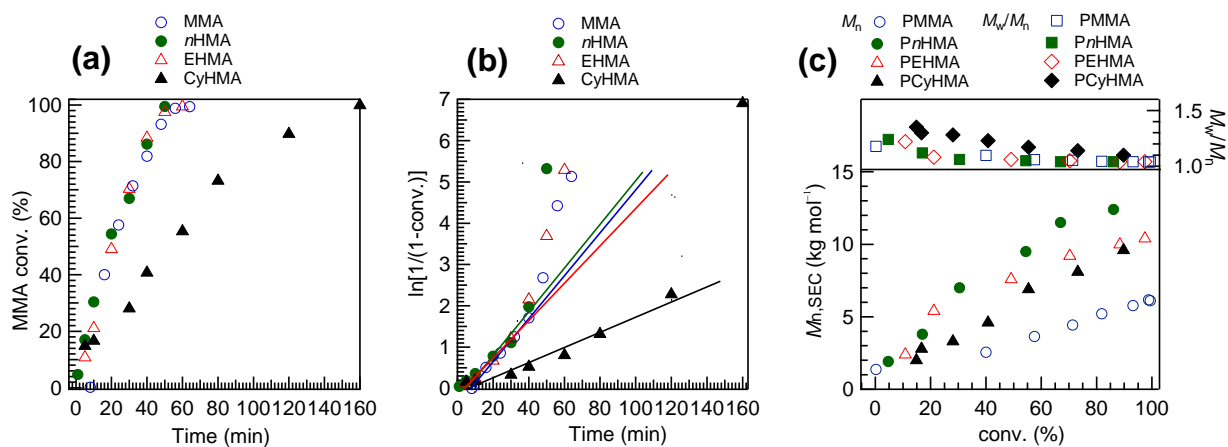


Figure S2. (a) Zero-order plots (conv. vs. time), (b) first-order plots ($\ln[1/(1-\text{conv.})]$) vs. time), and (c) the $M_{n,SEC}$ and M_w/M_n dependence of the resulting polymers on their respective conversions for the $B(C_6F_5)_3$ -catalyzed GTPs of MMA, *n*HMA, EHMA, and CyHMA using Me_2PhSiH .

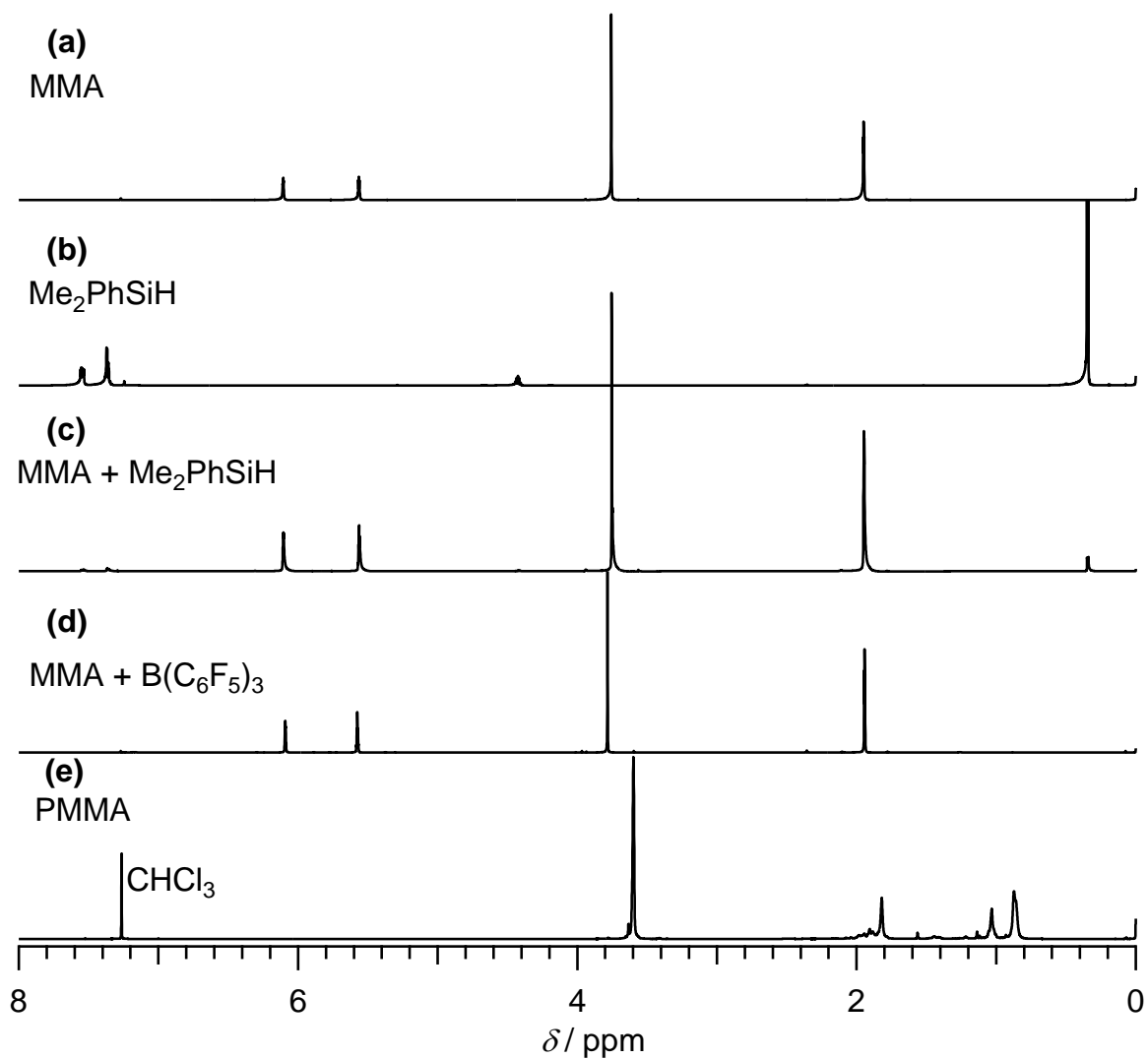


Figure S3. ^1H NMR spectra of (a) MMA, (b) Me_2PhSiH , (c) MMA + Me_2PhSiH , (d) MMA + $\text{B}(\text{C}_6\text{F}_5)_3$, and (e) PMMA in CDCl_3 .

Table S1. The propagation rate of polymerization (k_p) during the early polymerization stage and the induction period time (t_i) for the $B(C_6F_5)_3$ -catalyzed GTPs of various methacrylates using Me_2PhSiH .^a

Monomer	k_p (min^{-1})	t_i (min)
MMA	0.0498	6.3
<i>n</i> HMA	0.0517	4.5
EHMA	0.0447	3.7
<i>c</i> HMA	0.0184	5.9

^a Solvent, CH_2Cl_2 ; temperature, r.t.; Ar atmosphere; $[MMA]_0$, 1.0 mol L^{-1} ; $[monomer]_0/[R_3SiH]_0/[B(C_6F_5)_3]_0$, 50/1/0.5.