

**Synthesis and surface characterization of well-defined
amphiphilic block copolymers composed of
polydimethylsiloxane and poly[oligo(ethylene glycol)
methacrylate]**

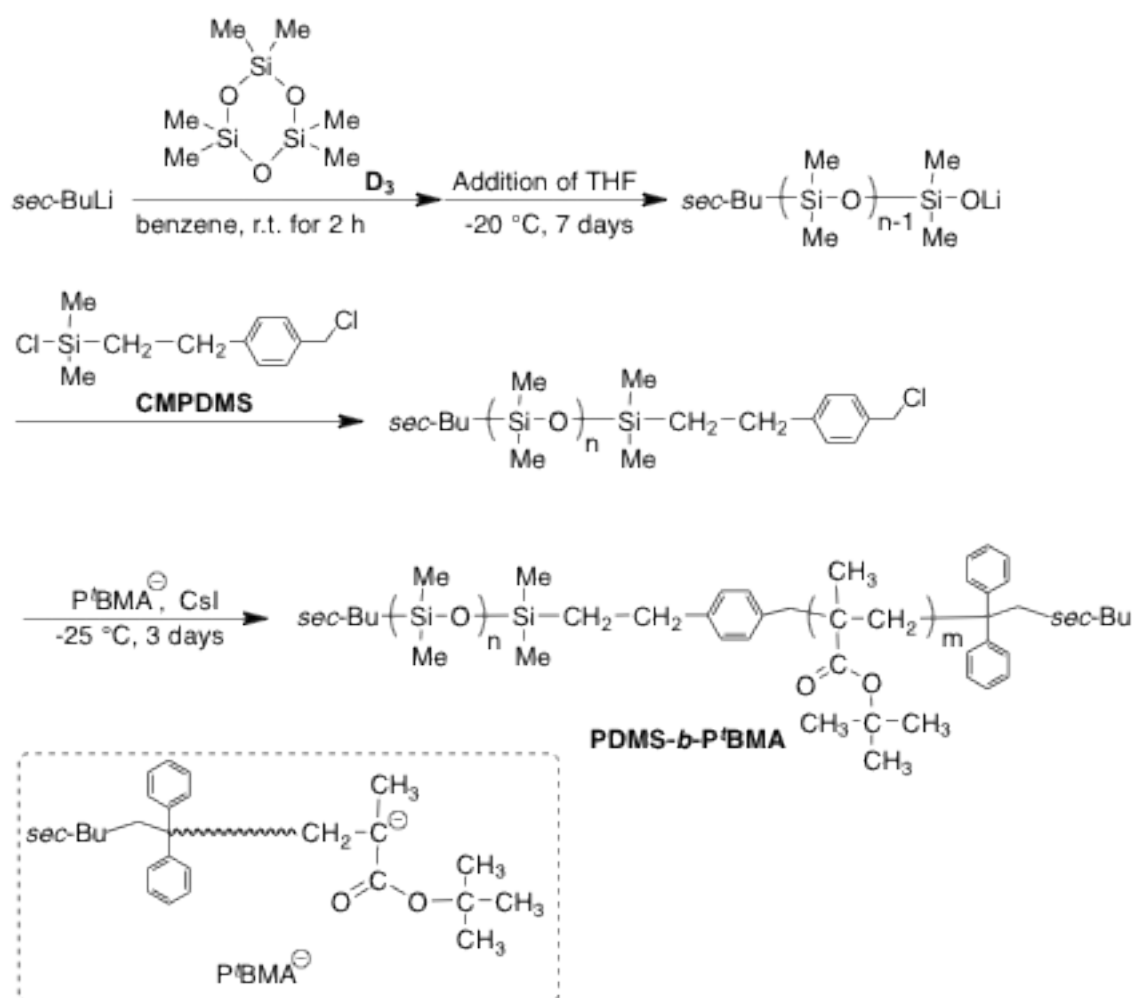
Raita Goseki^a, Ling Hong^a, Manabu Inutsuka^b, Hideaki Yokoyama^{*b}, Kohzo Ito^b, and Takashi Ishizone^{*a}

[†]Department of Chemical Science and Engineering, Tokyo Institute of Technology, 2-12-1-S1-13 O-okayama, Meguro-ku, Tokyo, 152-8552 (Japan)

[‡]Department of Advanced Materials Science, School of Frontier Sciences, The University of Tokyo, 5-1-5 Kashiwano-ha, Kashiwa, Chiba, 277-8561 (Japan)

Corresponding author: T. Ishizone, E-mail: tishizon@polymer.titech.ac.jp, H. Yokoyama, E-mail: yokoyama@molle.k.u-tokyo.ac.jp

Supporting Information



Scheme S1. Synthetic scheme of PDMA-*b*-P'BMS by coupling reaction.

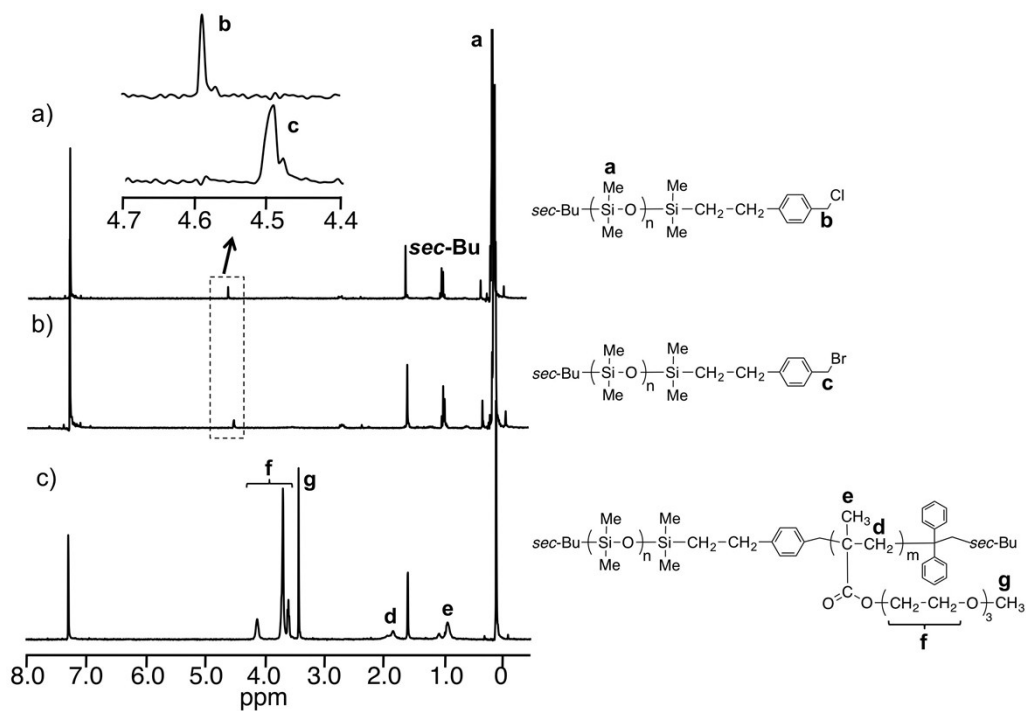


Figure S1. ^1H NMR spectra of a) PDMS-BnCl, b) PDMS-BnBr, and c) PDMS-*b*-PM3.

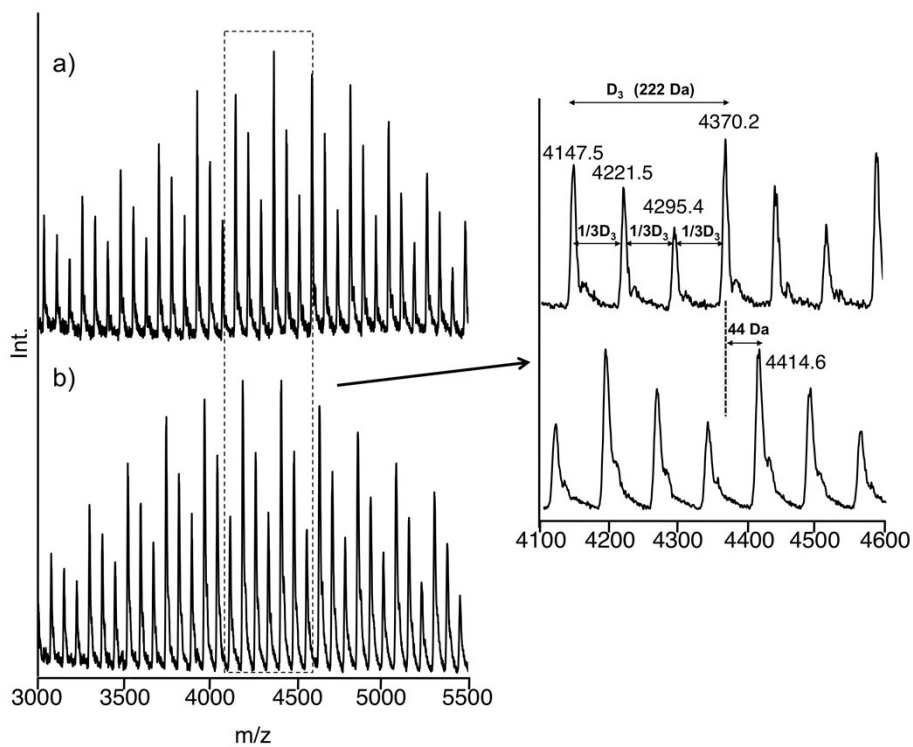


Figure S2. MALDI-TOF-MASS spectra of a) PDMS-BnCl and b) PDMS-BnBr.

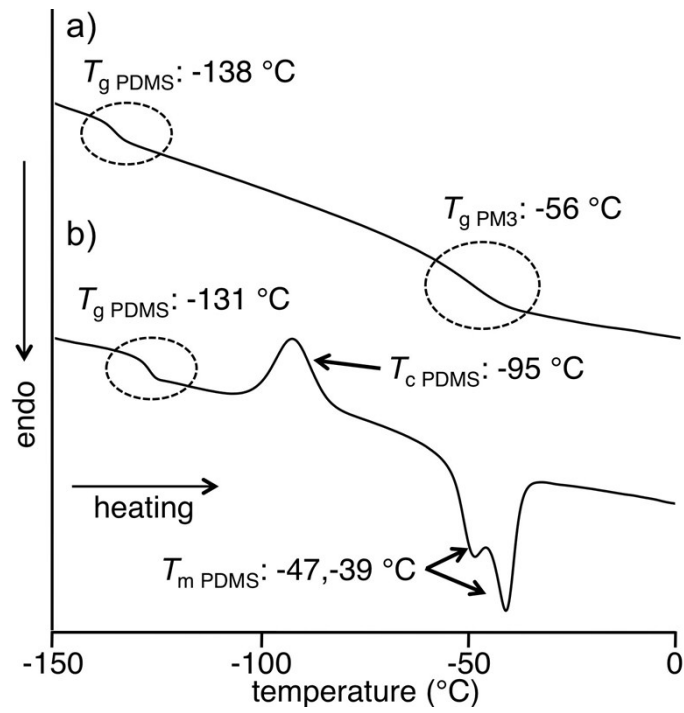


Figure S3. DSC charts of a) PDMS-*b*-PM3 (61 wt%) and b) PDMS-*b*-PM3 (48 wt%).

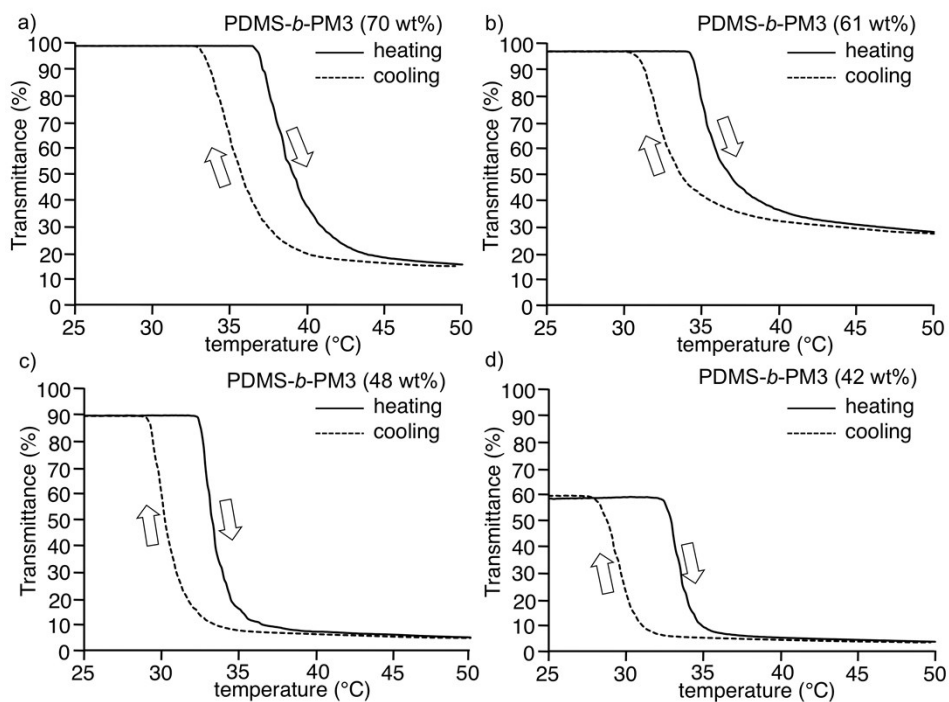


Figure S4. Temperature dependence of optical transmittance at 500 nm for PDMS-*b*-PM3 block copolymers during a heating and cooling cycle at 0.5 °C/min in a 0.2 mg/mL aqueous solution.

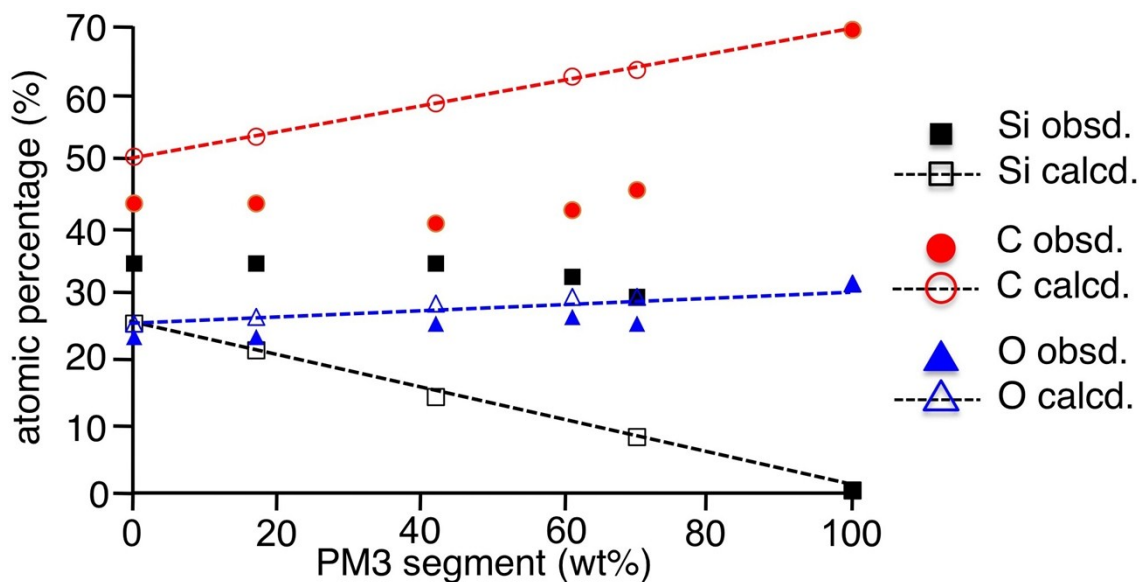


Figure S5. Atomic percentage of PDMS-*b*-PM3s (TOA = 50°).

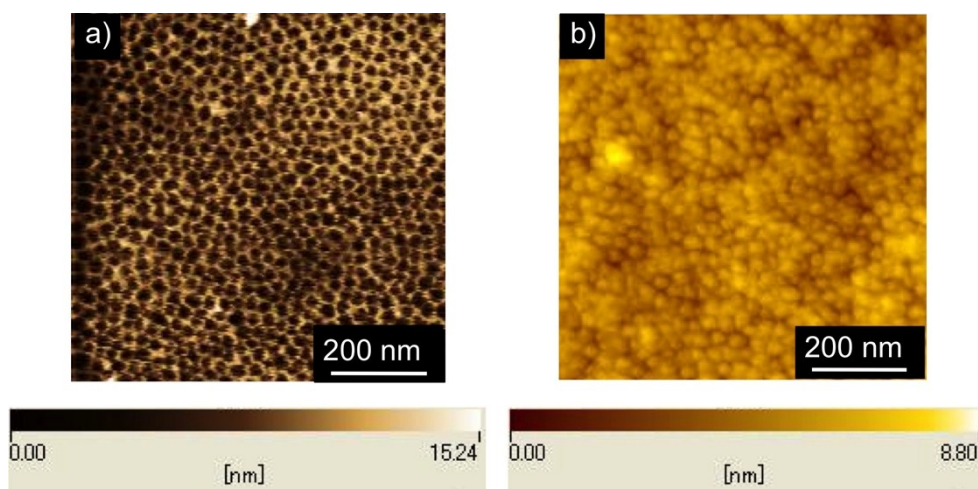


Figure S6. AFM height images of PDMS-*b*-PM3(70 wt%) before (a) and after O₂-RIE (b).

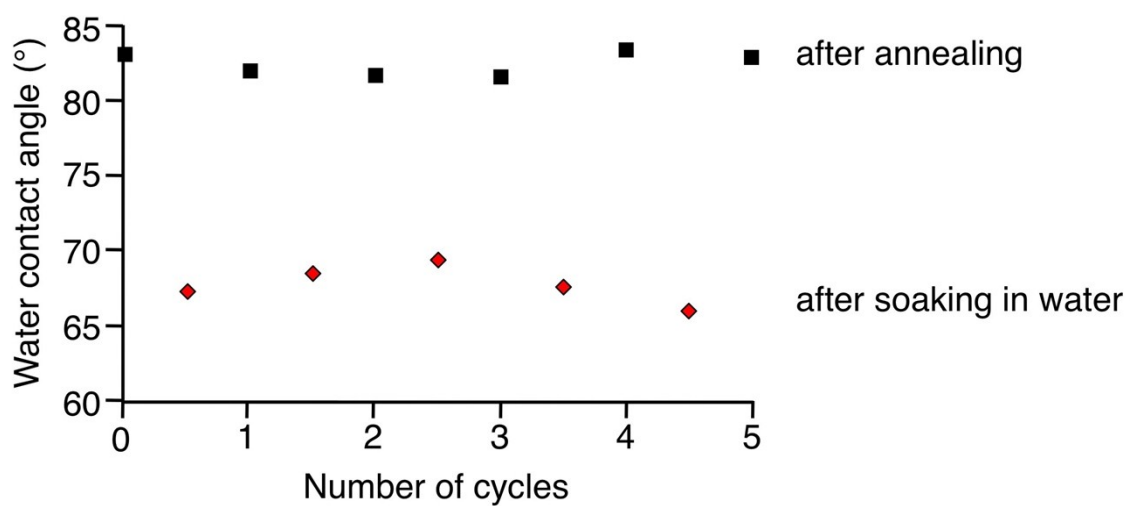


Figure S7. Repeated measurement of water contact angle of PDMS-*b*-PM3 (17 wt%).

Table S1. Solubility of PDMS-*b*-PM3 Block Copolymers

Solvent	PDMS- <i>b</i> -PM3 (PM3 wt%)						PDMS	PM3	PS- <i>b</i> -PM3
	70	61	48	42	30	17			
Hexane	I	I	S	S	S	S	S	I	I
Benzene	S	S	S	S	S	S	S	S	S
Toluene	S	S	S	S	S	S	S	S	S
CHCl ₃	S	S	S	S	S	S	S	S	S
Acetone	S	S	S	S	I	I	I	S	S
THF	S	S	S	S	S	S	S	S	S
MeOH	S	S	S	S	P	P	I	S	I
Water	S ^a	S ^a	S ^a	S ^a	I	I	I	S (below 52 °C)	I

S: soluble, P: partially soluble, I: insoluble. ^amicelle formation.