Supporting Information

Synthesis of Degradable Multi-Segmented Polymers via Michael-Addition Thiol-Ene Step-Growth Polymerization

Joke Vandenbergh,[a] Gijs Ramakers,[a] Luk Van Lokeren,[b] Guy Van Assche[b] and Tanja Junkers[a,c]*

[a]Polymer Reaction Design Group, Institute for Materials Research (imo-imomec), Hasselt University, Campus Diepenbeek, Building D, B-3590 Diepenbeek, Belgium

[b]Physical Chemistry and Polymer Science, Department of Materials and Chemistry, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium

[c]IMEC division IMOMEC, Wetenschapspark 1, B-3590 Diepenbeek, Belgium

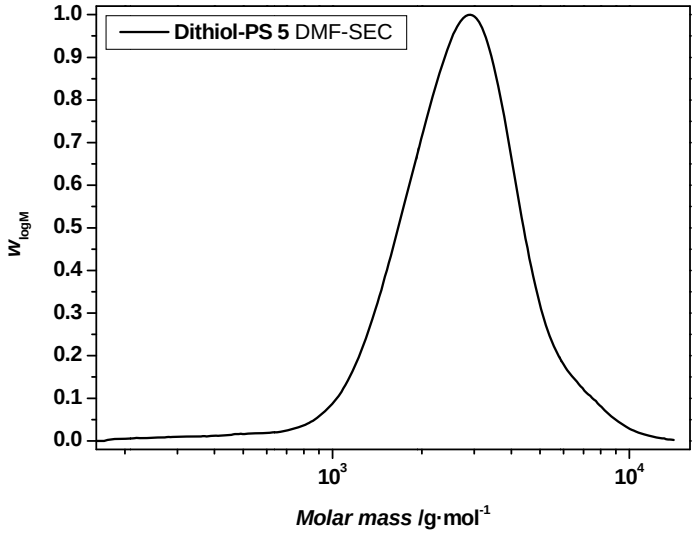

Figure S1: Molar mass distribution of **dithiol-PS 5** measured by DMF-SEC, displaying the absence of a disulfide-induced high molar mass shoulder in this particular solvent.

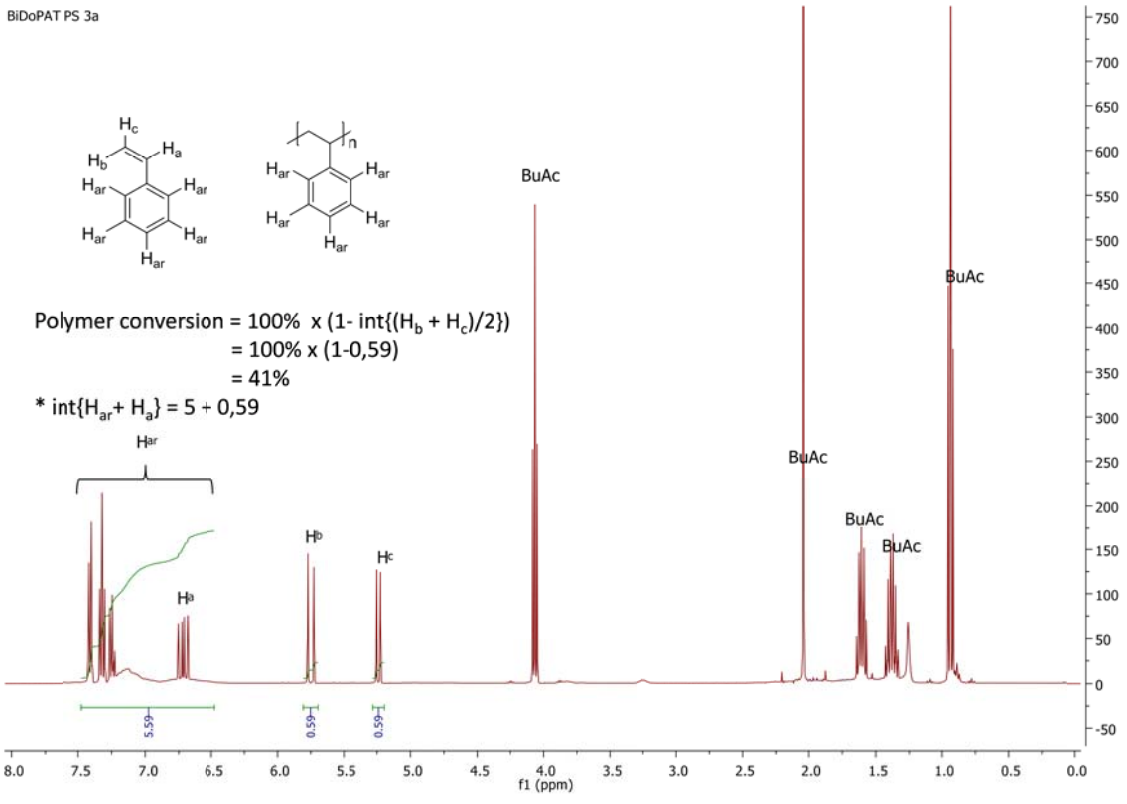

Figure S2: ^{1}H-NMR spectra of **BiDoPAT-PS 3a.** The sample was measured right after polymerization before purification in order to determine polymer conversion. The NMR resonances marked with BuAc correspond to solvent peaks.

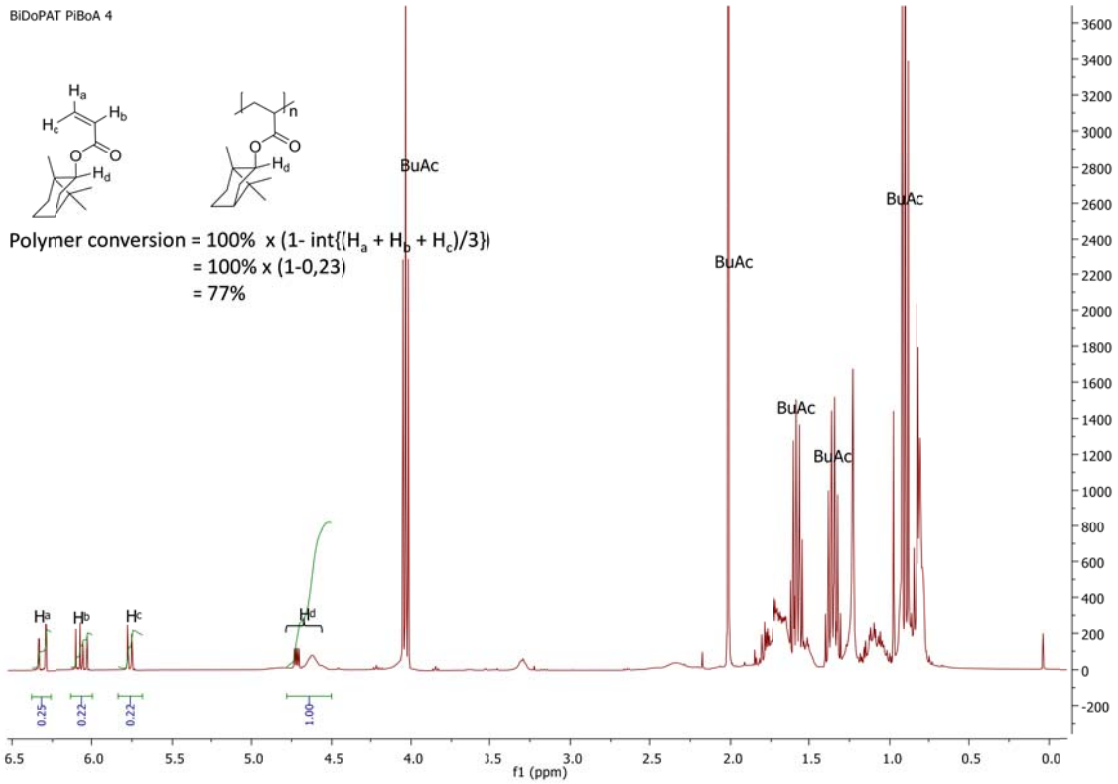

Figure S3: ^{1}H-NMR spectra of **BiDoPAT-P*i*BoA 4**. The sample was measured right after polymerization before purification in order to determine polymer conversion. The NMR resonances marked with BuAc correspond to solvent peaks.

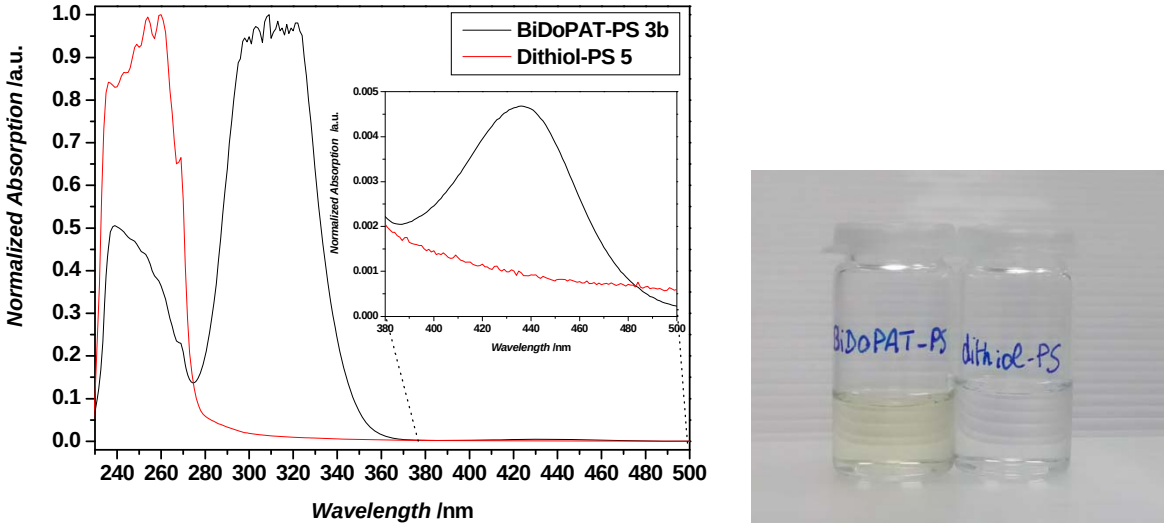

Figure S4: Normalized UV-Vis spectra of **BiDoPAT-PS 3b** and **dithiol-PS 5** and visible appearance of the products in THF.

Table S1. Table of masses for products identified in the mass spectra.

Species	Code	Charge	m/z_{exp}	m/z_{theo}	$\Delta m/z$
BiDoPAT-P*i*BoA 4	●	single	1818,06	1818,05	0,01
BiDoPAT-P*i*BoA 4	▲	double	1857,13	1857,18	0,05
Dithiol-P*i*BoA 6	○	single	1954,23	1954,22	0,12
Dithiol-P*i*BoA 6	△	double	1821,18	1821,19	0,01