

Photopolymerizable Ionogel with Healable Properties Based on Dioxaborolane Vitrimer Chemistry

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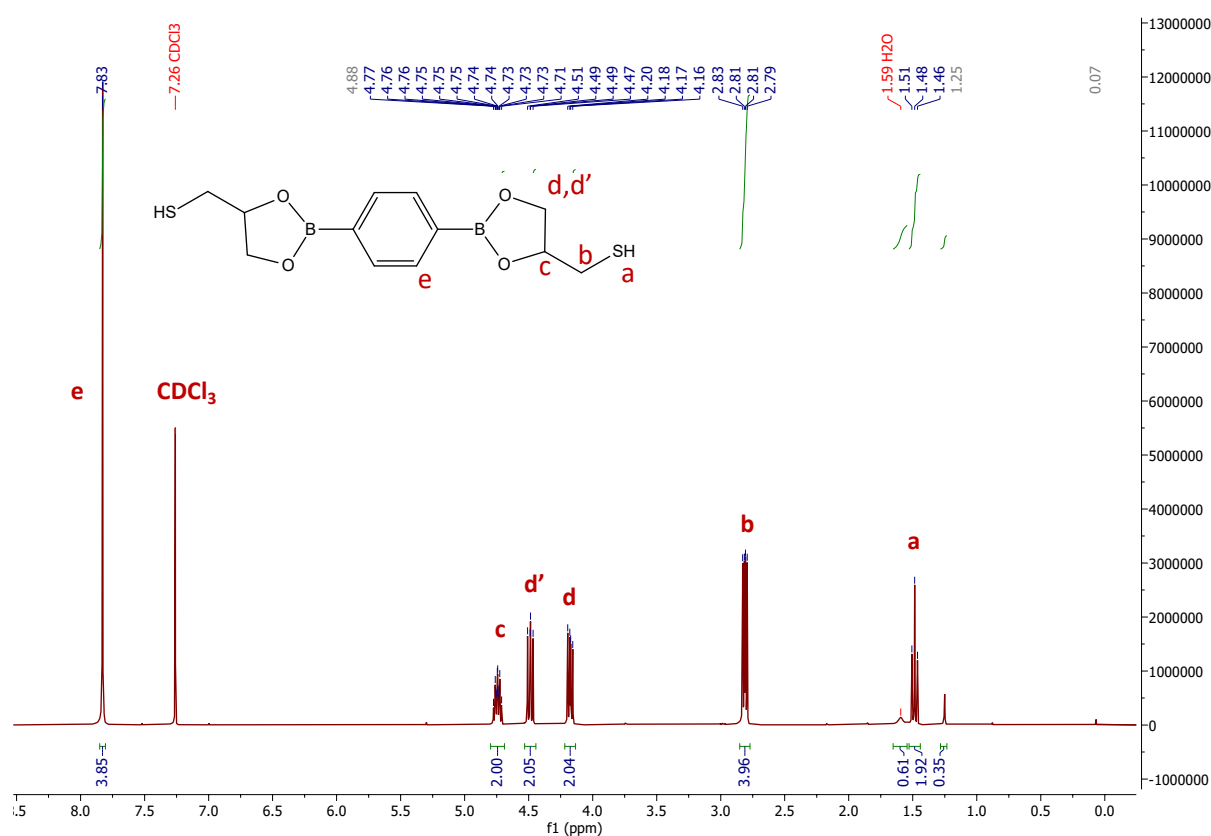
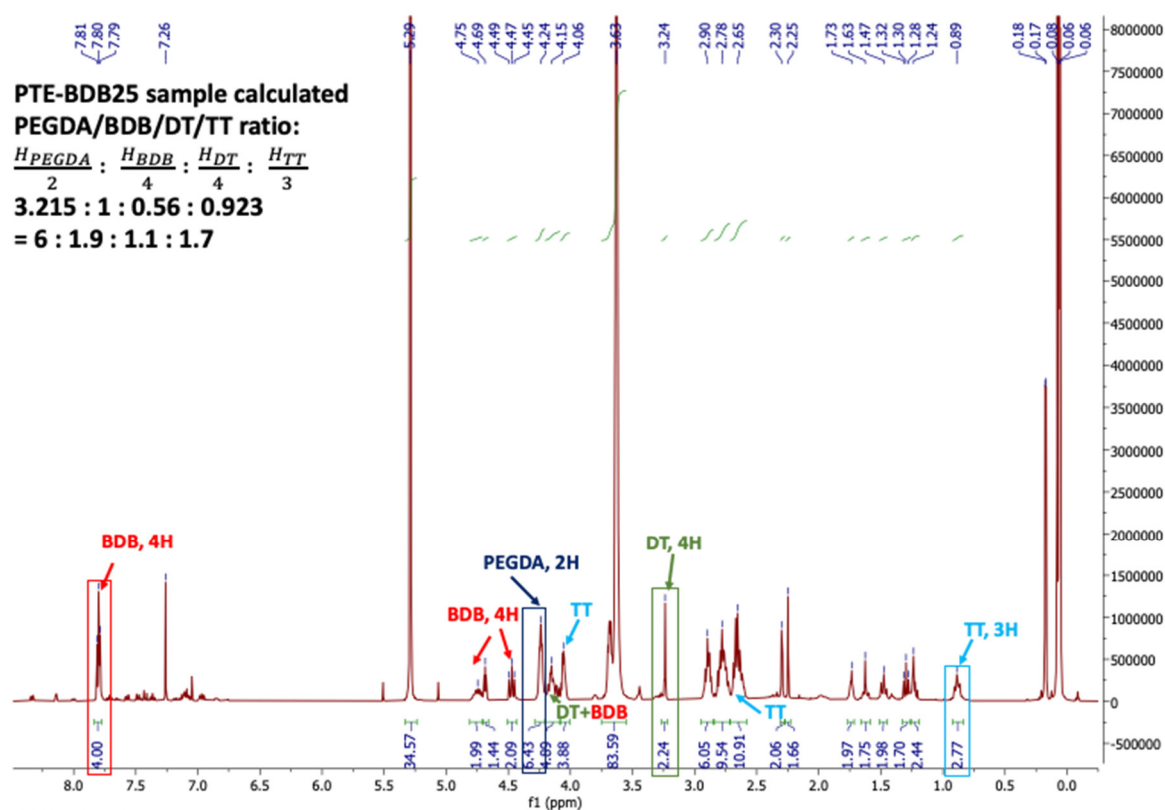
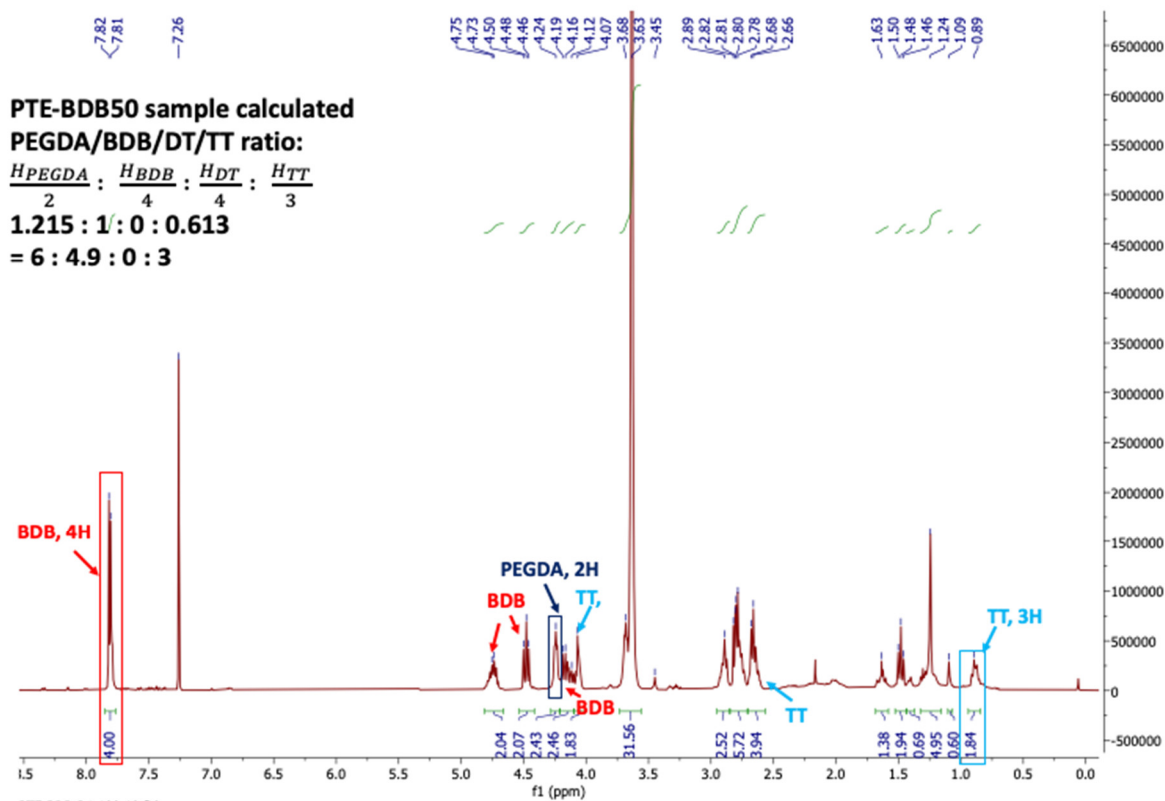


Figure S1. ^1H NMR of 2,2'-(1,4-Phenylene)-bis[4-mercaptan-1,3,2-dioxaborolane] (BDB) in CDCl_3 .

Figure S2. ^1H NMR of the extractable content of PTE-BDB25 sample in CDCl_3 .Figure S3. ^1H NMR of the extractable content of PTE-BDB50 sample in CDCl_3 .

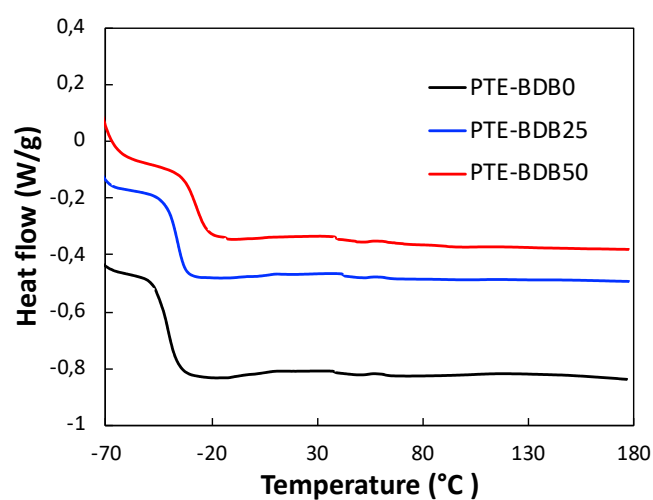


Figure S4. DSC curves of thermal cured PTE-BDB series samples.

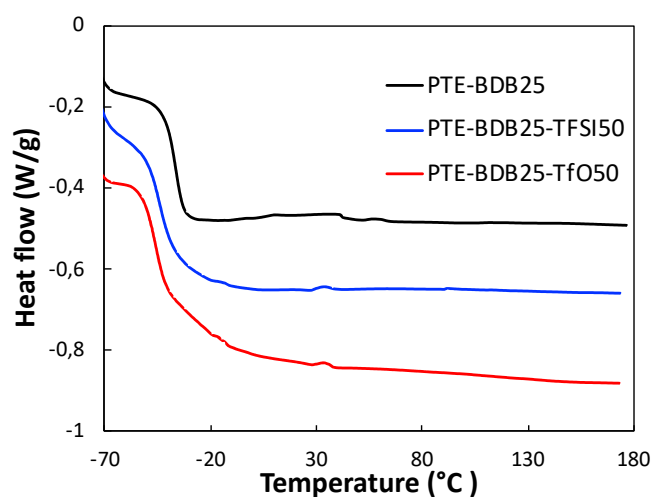


Figure S5. DSC curves of thermal cured PTE-BDB-IL dynamic ionogels and PTE-BDB25 sample.

Table S1. Relaxation times extracted from stress relaxation tests of PTE-BDB samples and their corresponding theoretical T_v and E_a associated with the boronic ester exchange reaction.

Sample	Relaxation time (min)						T_v (°C)	E_a (kJ·mol ⁻¹)
	60 °C	80 °C	100 °C	120 °C	130 °C	140 °C		
PTE-BDB25	160	53.9	3.5	3.1	1.4	1.1	11.7	75.6
PTE-BDB50	/	10.0	1.3	1.4	/	0.6	-31.0	49.9

Table S2. Relaxation times extracted from stress relaxation tests of PTE-BDB-IL samples and their corresponding theoretical T_v and E_a associated with the boronic ester exchange reaction.

Sample	Relaxation time (min)						T_v (°C)	E_a (kJ·mol ⁻¹)
	60 °C	80 °C	100 °C	120 °C	140 °C			
PTE-BDB25	160	53.9	3.5	3.1	1.1		11.7	75.6
PTE-BDB25-TFSI50	214	9.4	2.6	1.7	0.6		0.3	78.7
PTE-BDB25-TfO50	211	58.1	8.9	4.1	1.6		2.0	72.0