

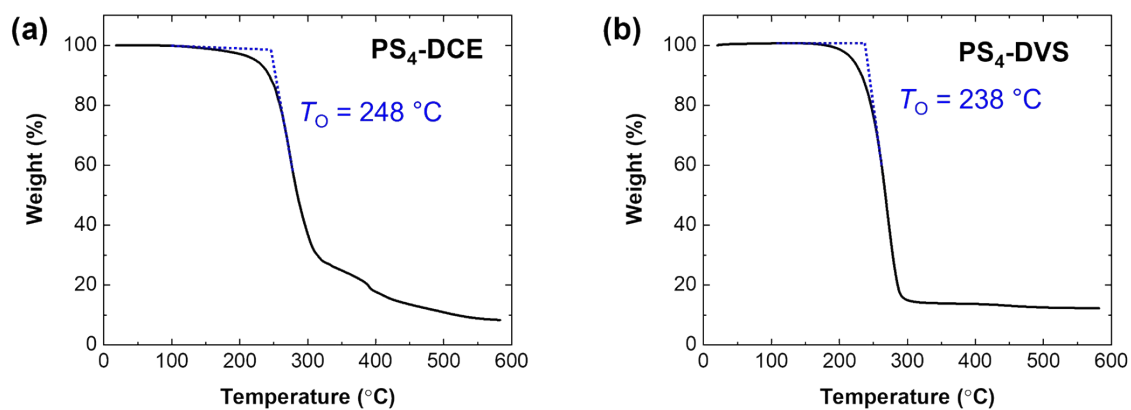
## Supporting Information

### **Low Birefringence, Low Dispersion Aliphatic Thermosets with High and Tunable Refractive Index**

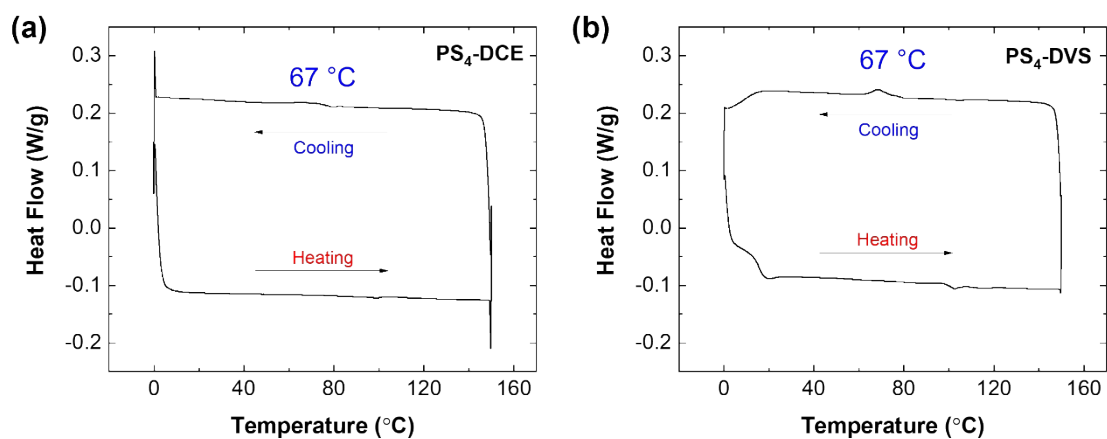
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<sup>†</sup>These authors contributed equally.

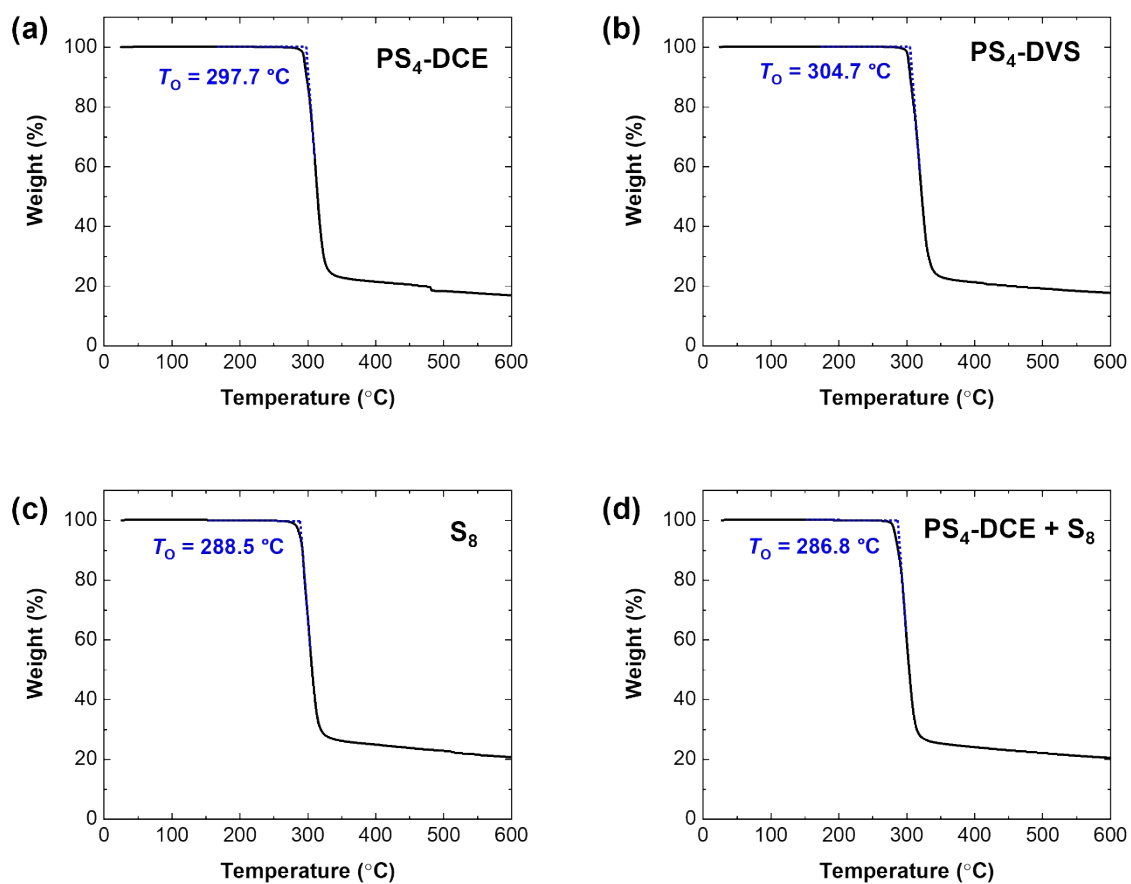
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**Figure S1.** Thermogravimetric analyses (TGA) of PS<sub>4</sub>-DCE (a) and PS<sub>4</sub>-DVS (b) prepolymers used for the preparation of p(PS-BEPS).  $T_O$  is the degradation onset temperature.



**Figure S2.** Differential scanning calorimetry (DSC) of PS<sub>4</sub>-DCE (a) and PS<sub>4</sub>-DVS (b) prepolymers used for the preparation of p(PS-BEPS).



**Figure S3.** Thermogravimetric analyses (TGA) of p(PS-BEPS) obtained from 15 wt.% of PS<sub>4</sub>-DCE (a), PS<sub>4</sub>-DVS (b), 15 wt.% elemental sulfur (c), and 15 wt.% each of PS<sub>4</sub>-DCE and elemental sulfur (d).  $T_0$  is the degradation onset temperature.

**Table S1.** Refractive indices of p(PS-BEPS)s with various additive polymer content measured using TE and TM polarized light and their birefringence.

<b>Additive Polymer</b>	<b>Content in BEPS (wt. %)</b>	<b><i>n</i> (TE)*</b>	<b><i>n</i> (TM)*</b>	<b>Birefringence</b>
<b>PS<sub>4</sub>-DVS</b>	2.5	1.6996	1.6976	0.0023
	5	1.7004	1.6980	0.0024
	7.5	1.7009	1.6988	0.0021
	10	1.7018	1.6999	0.0019
	12.5	1.7023	1.7005	0.0018
	15	1.7030	1.7013	0.0017
<b>PS<sub>4</sub>-DCE</b>	2.5	1.7015	1.6998	0.0017
	5	1.7032	1.7021	0.0011
	7.5	1.7050	1.7033	0.0017
	10	1.7073	1.7056	0.0017
	12.5	1.7100	1.7085	0.0015
	15	1.7120	1.7105	0.0015

\*Refractive index values were measured at 632.8 nm.

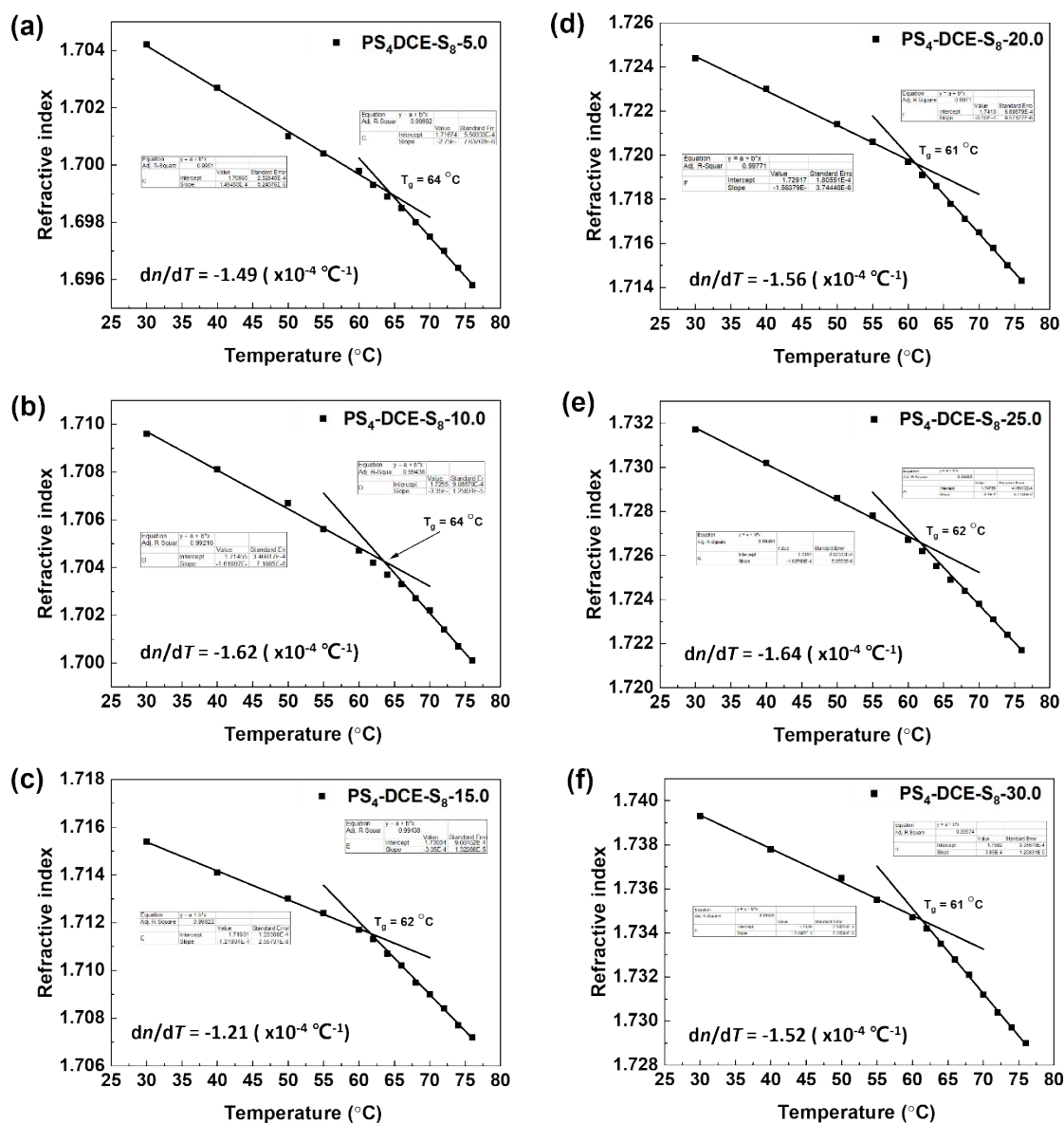
**Table S2.** Refractive indices of p(PS-BEPS)s with various additive chalcogenide content measured using TE and TM polarized light and their birefringence.

<b>Additive Polymer</b>	<b>Content in BEPS (wt. %)</b>	<b><i>n</i> (TE)*</b>	<b><i>n</i> (TM)*</b>	<b>Birefringence</b>
<b>S<sub>8</sub></b>	2.5	1.7025	1.7004	0.0021
	5	1.7059	1.7046	0.0013
	7.5	1.7098	1.7079	0.0019
	10	1.7143	1.7128	0.0015
	12.5	1.7178	1.7159	0.0019
	15	1.7221	1.7201	0.002

\*Refractive index values were measured at 632.8 nm.



**Figure S4.** Digital image of films (thickness = 1 mm) of p(PS-BEPS) and p(S-BEPS) obtained from polysulfide polymers, elemental sulfur, and a combination of PS<sub>4</sub>-DCE and elemental sulfur.



**Figure S5.**  $dn/dT$  curves of P1 (a), P2 (b), P3 (c), P4 (d), P5 (e), and P6 (f).