Supplementary information

Molecular dynamics of the asymmetric blend PVME/PS revisited by broadband dielectric and specific heat spectroscopy – Evidence of multiple glassy dynamics

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HOMOPOLYMERS	T_g^{therm} [K]	
PS	376	
PVME	246	
PVME/PS BLEND	$T_{g,Fox}$ [K]	T_g [K]
70/30	275	256
50/50	297	273
40/60	310	279
30/70	325	-
25/75	332	293
15/85	348	352
10/90	357	363

Table S1: Composition dependence of the T_g and $T_{g,Fox}$ of the PVME/PS blend and PVME and PS homopolymers.

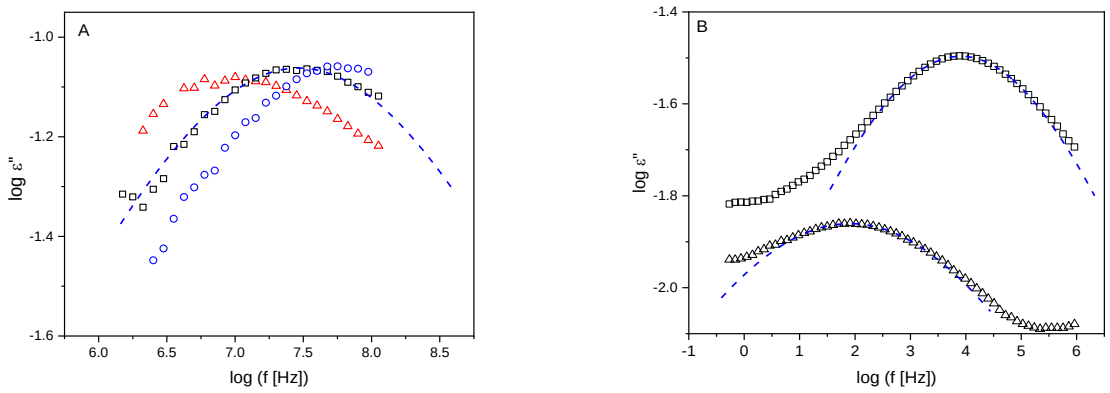

Figure S1: Dielectric loss spectra of PVME/PS 25/75 wt% versus frequency at temperatures of 349 (red triangles), 364 (black squares) and 376 K (blue circles) (frequency domain) in the high frequency range (A) and at 293 (black squares) and 243 K (black triangles) in the standard frequency range (B). The blue dashed line is an HN fit to the data.

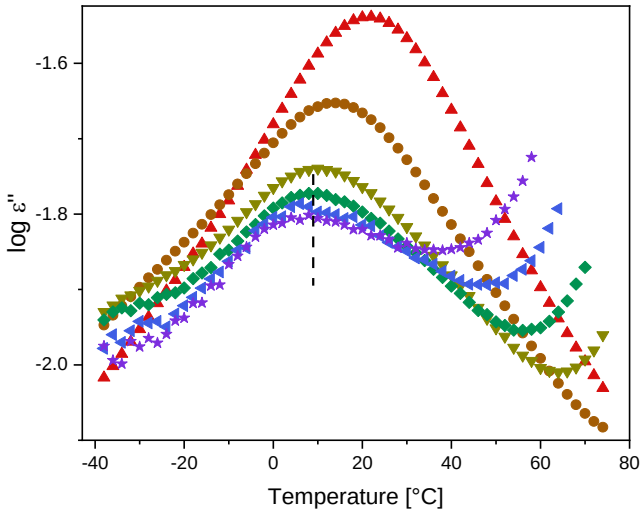

Figure S2: Dielectric loss spectra of PVME/PS 25/75 wt% versus temperature at frequencies log (f [Hz]) of ca. 3 (red triangles), 2 (orange circles), 1 (dark-yellow down-sided triangles), 0.5 (green diamonds), 0 (blue left-sided triangles) and -0.5 (purple stars) (temperature domain).

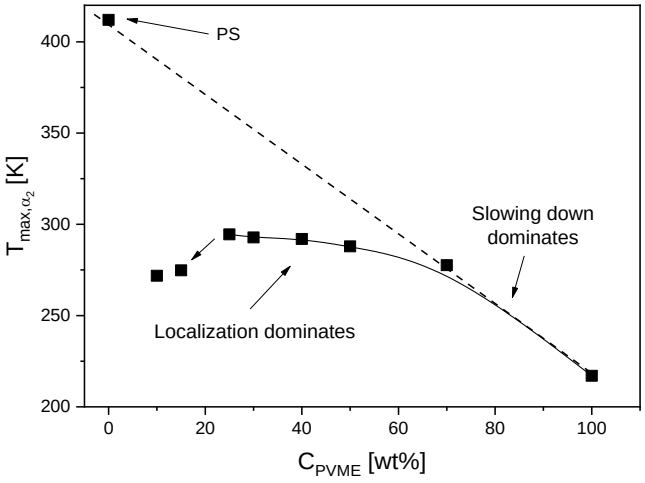

Figure S3: Peak position (Tmax) of the α_2-relaxation from the dielectric loss spectra obtained from the isochronal scans at 1000 Hz

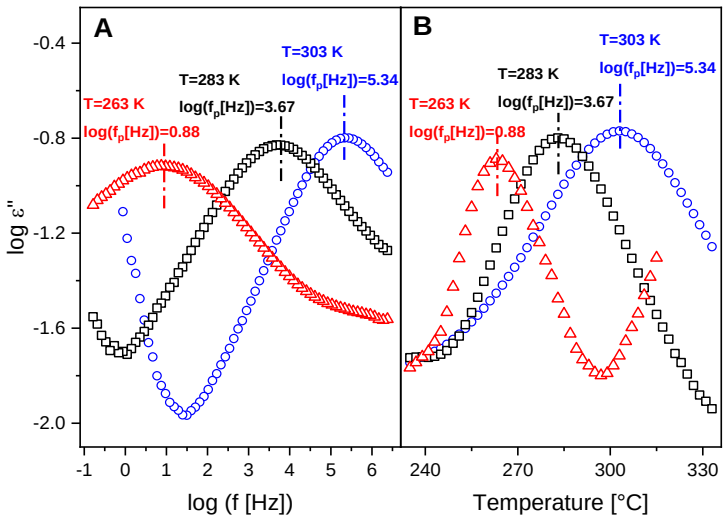

Figure S4: Dielectric loss spectra of PVME/PS 70/30 wt% as a function of **(A)** frequency at a temperature of 263 K, 283 K and 303 K (frequency domain) and **(B)** temperature at a frequency of log(f_p [Hz])=0.88, log(f_p [Hz])=3.67 and log(f_p [Hz])=5.34 (temperature domain).

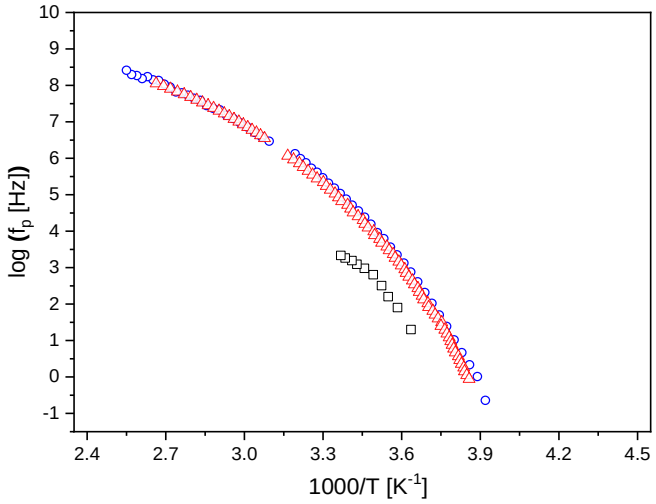

Figure S5: Relaxation map for the PVME/PS 70/30 wt% sample: α_1-process (blue circles) (frequency domain), α_2-process (red triangles) (temperature domain) and α_3-process (black squares) (SHS).

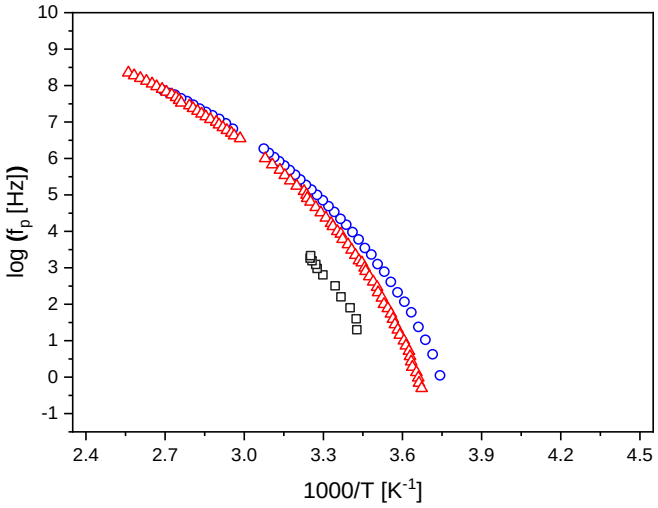

Figure S6: Relaxation map for the PVME/PS 50/50 wt% sample: α_1-process (blue circles) (frequency domain), α_2-process (red triangles) (temperature domain) and α_3-process (black squares) (SHS).

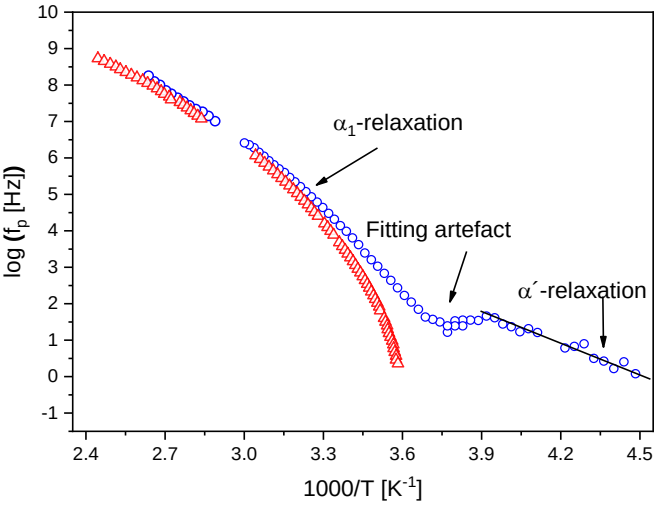

Figure S7: Relaxation map for the PVME/PS 40/60 wt% sample: α_1-process (blue circles) (frequency domain) and α_2-process (red triangles) (temperature domain).

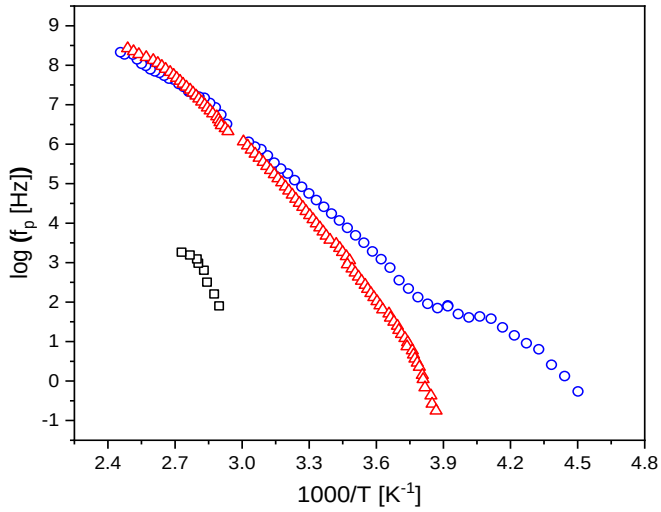

Figure S8: Relaxation map for the PVME/PS 30/70 wt% sample: α_1-process (blue circles) (frequency domain), α_2-process (red triangles) (temperature domain) and α_3-process (black squares) (SHS).

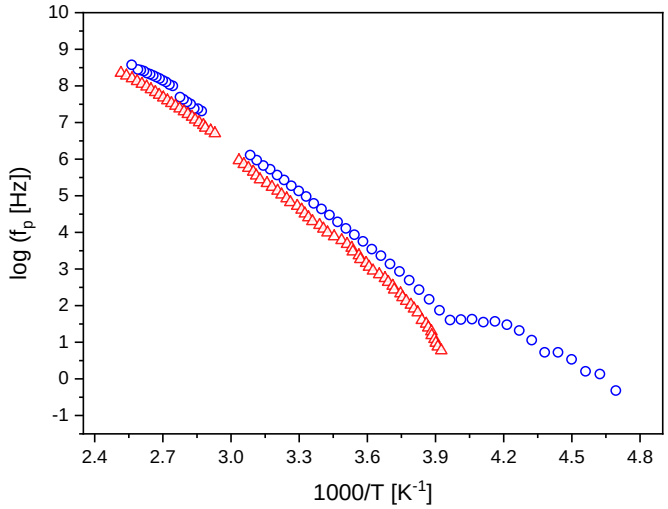

Figure S9: Relaxation map for the PVME/PS 15/85 wt% sample: α_1-process (blue circles) (frequency domain) and α_2-process (red triangles) (temperature domain).

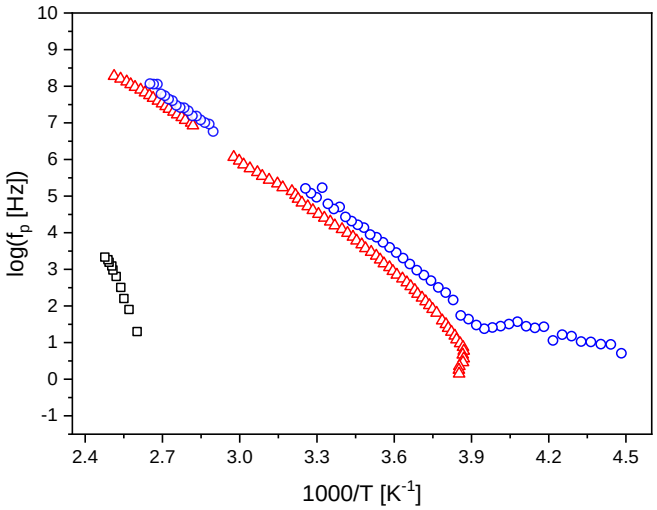

Figure S10: Relaxation map for the PVME/PS 10/90 wt% sample: α_1-process (blue circles) (frequency domain), α_2-process (red triangles) (temperature domain) and α_3-process (black squares) (SHS).

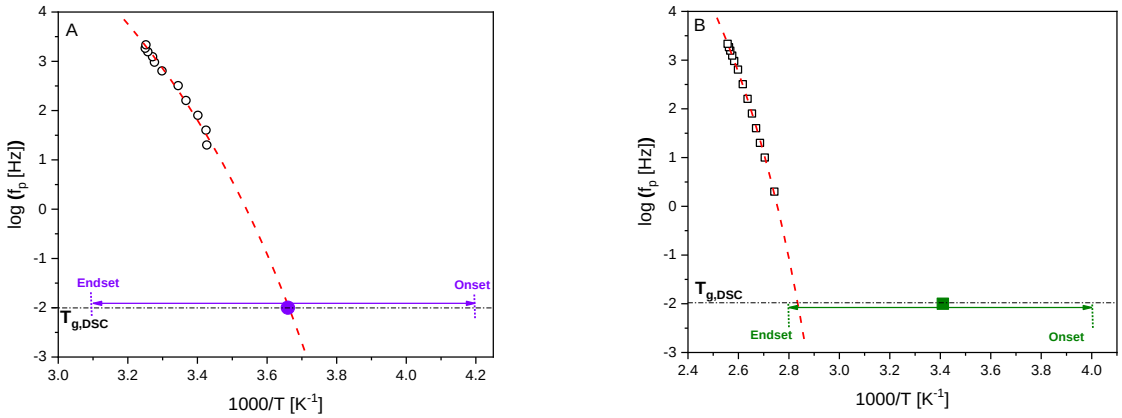

Figure S11: SHS relaxation map of (A) PVME/PS 50/50 wt% (squares) and (B) PVME/PS 25/75 wt% (circles) and glass transition temperatures obtained by DSC ($T_{g,DSC}$) for (A) PVME/PS 50/50 wt% (purple circle) and (B) PVME/PS 25/75 wt% together with the onset and endset of the glass transition region. The red dashed lines are VFT fits to the data.