Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information

Microphase separation assisted reduction in the percolation threshold of MWCNT/block polymer composites

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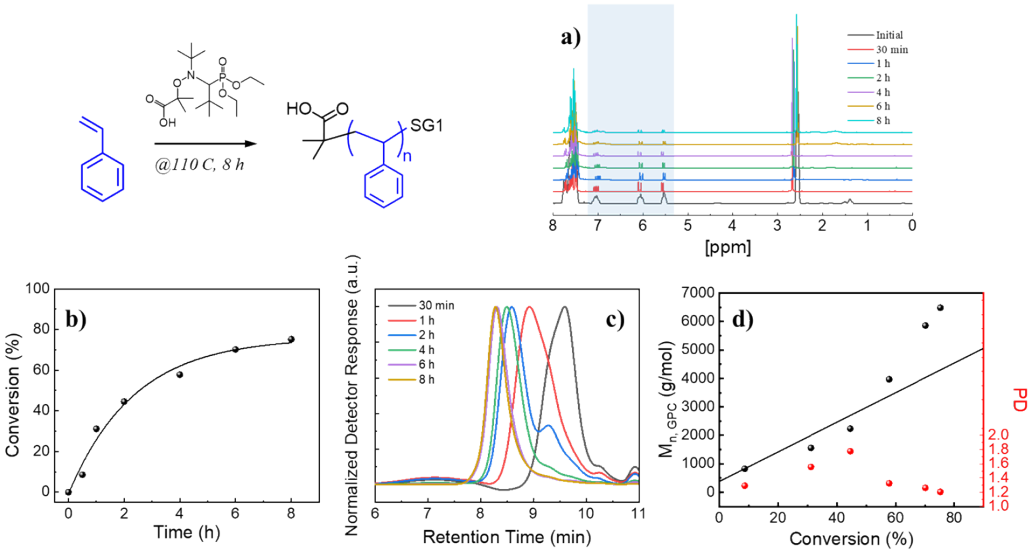

Fig. S1. (a) ^{1}H NMR spectra, (b) conversion, (c) GPC traces of styrene macroinitiator in time for NMP. (d) M_n vs. conversion plot; black symbols represent $M_{n,GPC}$, red symbols their polydispersity, and the solid line represents the respective $M_{n,theo}$.

$$f_{St} = \frac{\frac{N_{St} \times m_{St}}{\rho_{St}}}{\left(\frac{N_{St} \times m_{St}}{\rho_{St}}\right) + \left(\frac{N_{EHA} \times m_{EHA}}{\rho_{EHA}}\right)} \quad (1)$$

The volume fraction of blocks was calculated above formulation. N_{St} and N_{EHA} are the degrees of polymerisation of the styrene and EHA blocks. m_{St} and m_{EHA} are the molar masses of styrene (104 g/mol) and EHA (184 g/mol). ρ_{St} and ρ_{EHA} are the densities of blocks which are taken as 0.909 and 0.885 g/mL, respectively.

Table 1. Calculated constants for phase boundaries by using SFCT

Phase Boundary	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9	C_{10}
D/BCP	7.891	0.707	0.984	3.793	0.996	0.922	0.896	0.882	0.874	0.870
BCP/S	8.494	0.765	2.960	3.821	1.046	0.972	0.949	0.938	0.931	0.927
S/H	7.463	6.043	1.681	1.372	1.308	1.299	1.318	1.381	3.336	1.426
H/G	14.693	0.306	0.551	1.211	1.706	7.256	1.415	1.190	1.089	1.031
G/L	18.508	10.763	-0.113	0.646	1.309	1.340	1.435	7.236	1.332	1.157

C_0 = 10.5 for all boundaries