

Supplementary material:

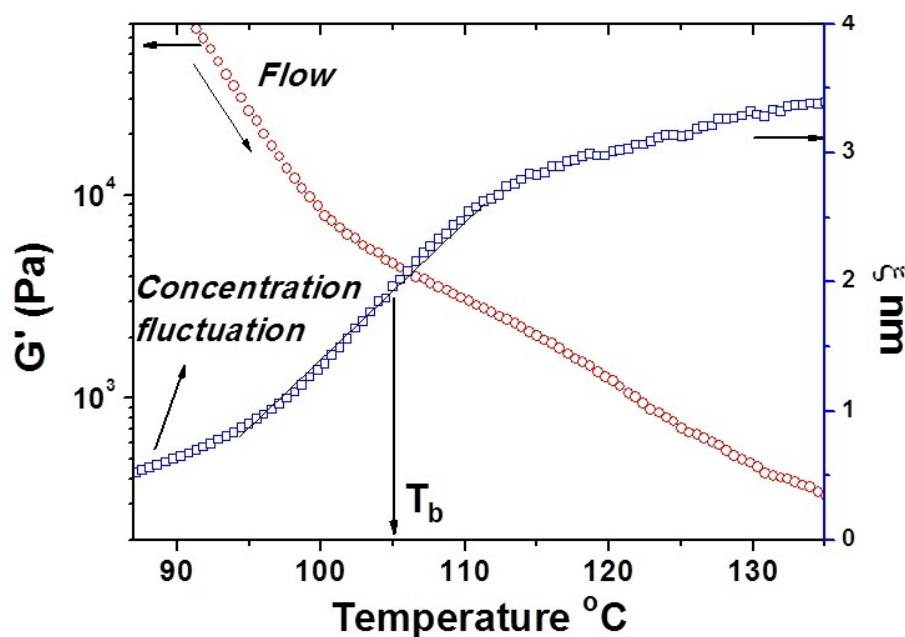


Fig. S1 Variation of storage modulus (G') and correlation length (ξ) as a function temperature by oscillatory shear rheology at heating rate 0.5 K/min; $\omega=1$ rad/s; shear rate =1%.

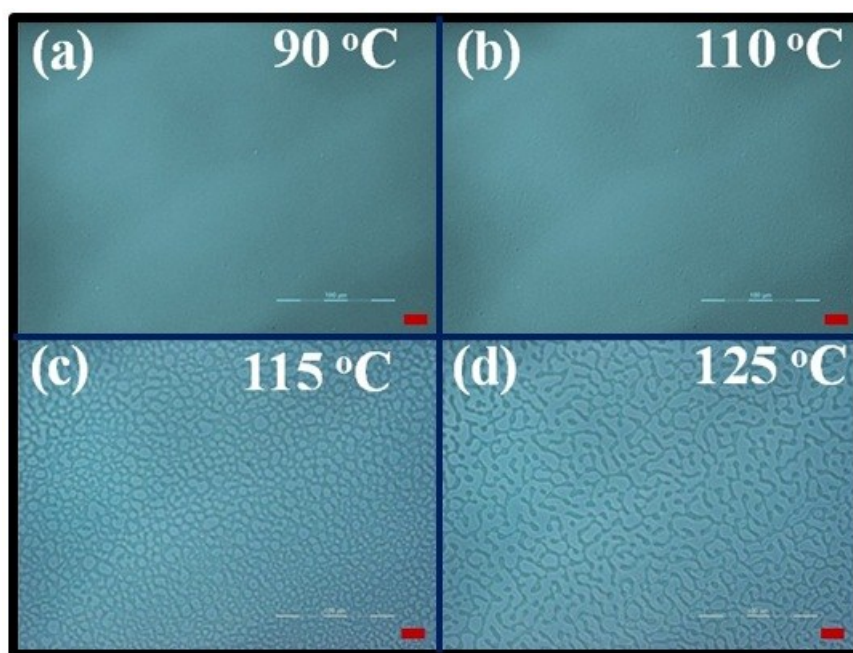


Fig. S2 Polarized Optical Microscopy images of PS/PVME 60/40 blend bulk phase separation under quiescent condition with heating 1 K/min (a) 90 $^{\circ}\text{C}$ -miscible state (b) 110 $^{\circ}\text{C}$ - onset of phase separation (c) 115 $^{\circ}\text{C}$ (d) 125 $^{\circ}\text{C}$ [scale : 20 μm].

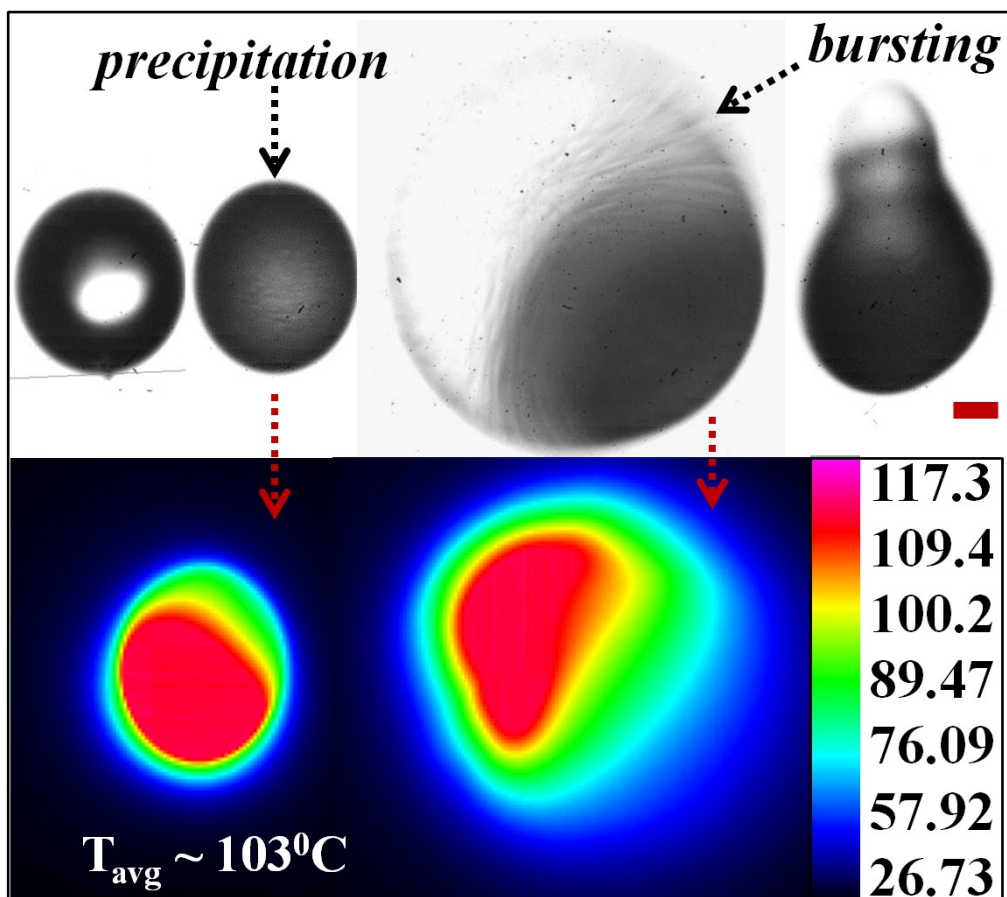
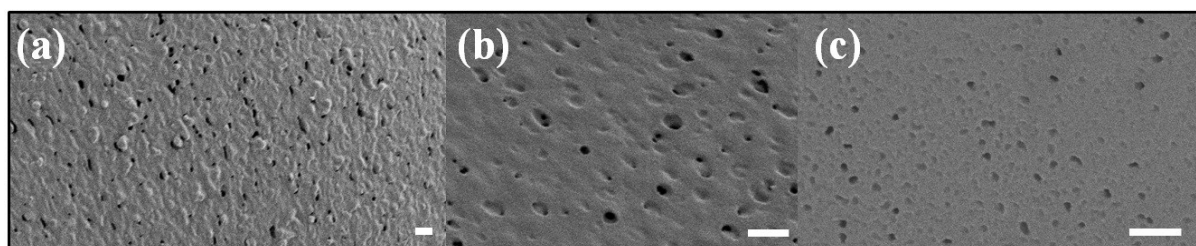


Fig. S3 High speed images along with the corresponding IR thermographic images showing the dynamics of PS/PVME droplets heated at high laser power, $I = 0.208 \text{ MW}$.



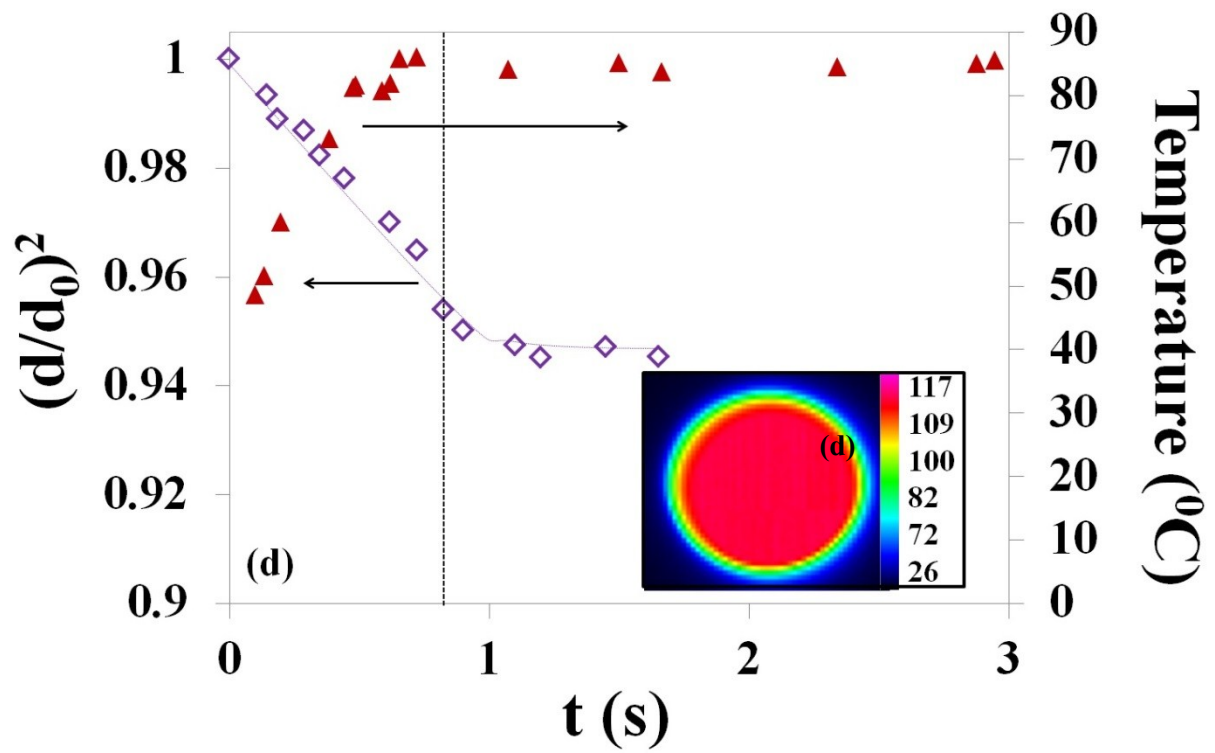


Fig. S4 SEM images showing final structures of (a) droplets of 20% (wt.) PS/PVME in toluene (at $I=0.104\text{MW/m}^2$), (b) PS/PVME (without toluene) at 85°C , (c) 30% (wt.) PS/PVME in toluene (at $I=0.104\text{MW/m}^2$) [scale bar is $2\ \mu\text{m}$] and (d) temporal variation of droplet size (20% wt. of PS/PVME in toluene) and temperature (at $I=0.104\text{MW/m}^2$).