Supplementary Information

Viscoelastic Phase Separation and Interface Assisted Crystallization in a Highly Immiscible iPP/PMMA Blend

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1. Calorimetric measurement by DSC

Supplementary figure 1. Calorimetric measurement of crystallization with 5°C/min cooling rate after phase separation at 180°C for different time. All procedurals were carried out repeatedly in one sample.
2. Irregular iPP spherulites under SEM

Supplementary figure 2. The morphology of the iPP spherulites in iPP/PMMA blend when PMMA-rich phase was etched away by acetone. (a) reveals the macroscopic structure and (b) the local details.
3. Secondary phase separation in dynamically symmetric blends under double quenches

Supplementary figure 3. Schematic representation of phase separation under double quenches.

After the first quench (path 1), the concentration in well phase separated domains reaches A and B, while the concentration at the interface still stay the same with the original composition. In the second quench, there are secondary phase separations in A and B phases (path 2) as well as at the interfacial boundary (dashed line). The dynamic postulation believes that the fluctuation and inter-diffusion at the interface are stronger than that in A and B phases.

In usual blends with dynamic symmetry, the secondary phase separation cannot be avoided. This brings in even more complicated factors when phase separation couples with crystallization. However, as stressed in the paper, the secondary phase separation is not the problem in this iPP/PMMA blend.