

# **Competing crystallization of $\alpha$ - and $\beta$ -phase induced by $\beta$ -nucleating agents in microdroplets of isotactic-polypropylene**

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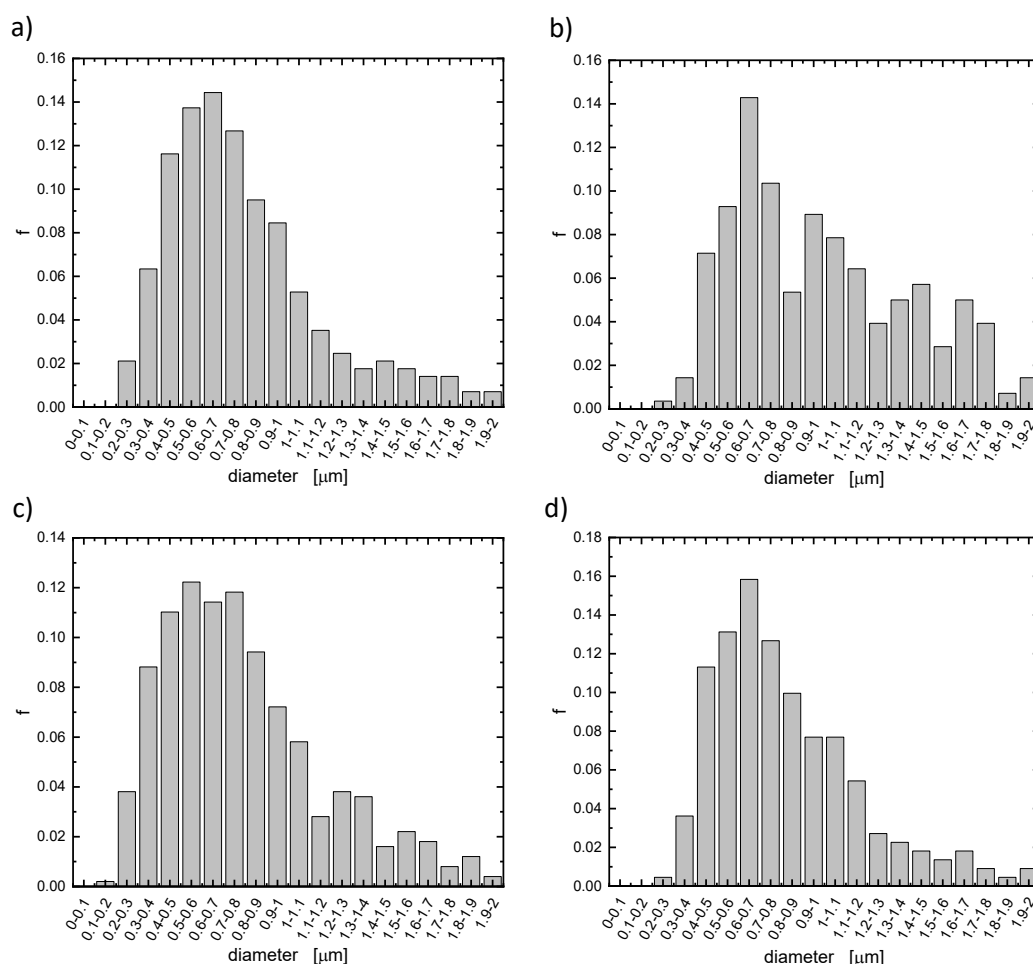


Figure S1. Droplets diameter distribution of a) the PS/PP, b) the PS/PP(DCHT), c) the PS/PP(QQ) and d) the PS/PP(TATA) blend.

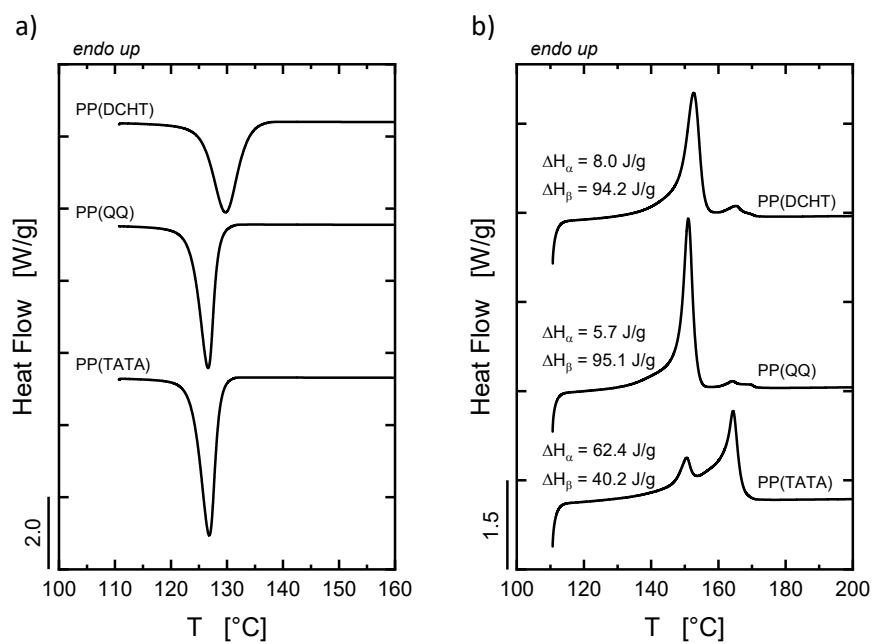


Figure S2. DSC a) cooling scans to 110 °C and b) subsequent heating scans for PP samples containing the nucleating agents. The enthalpy of melting for each phase was calculated as the area under the two endotherms separated at their common valley.

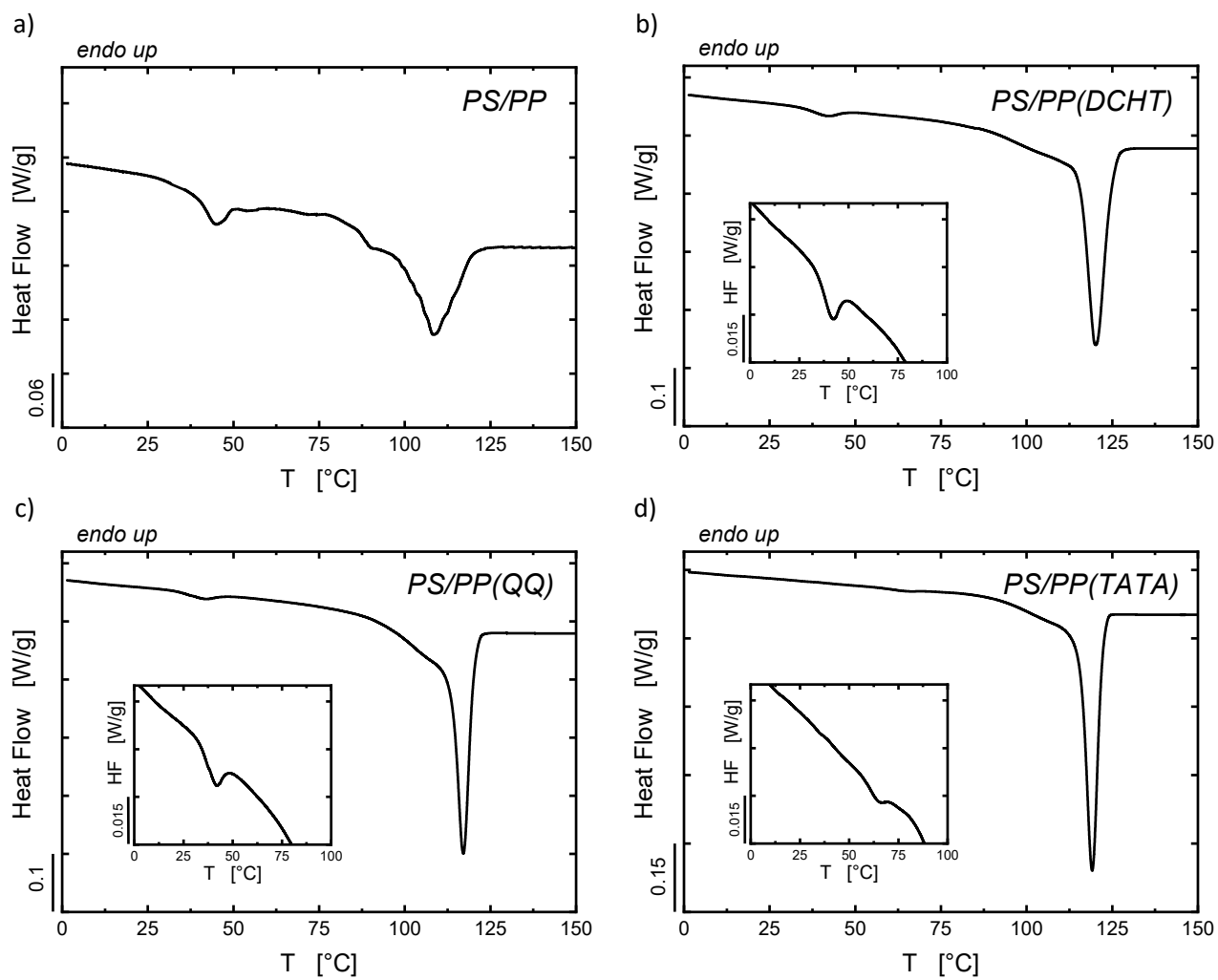


Figure S3. Cooling from the melt of the studied blends. The inset graphs were added to highlight the occurrence of fractionated crystallization in the PP phase.

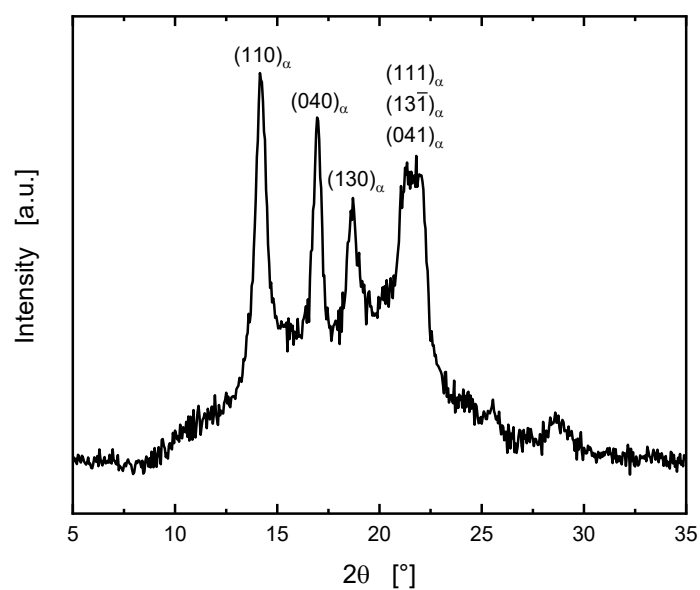


Figure S4. WAXS diffractogram of PP phase for a sample of the PS/PP blend after cooling from the melt to room temperature at 10 °C/min. After normalization to unity of the area under the curve, the amorphous halo of the PS matrix (scaled according to its content in the blend) was subtracted.

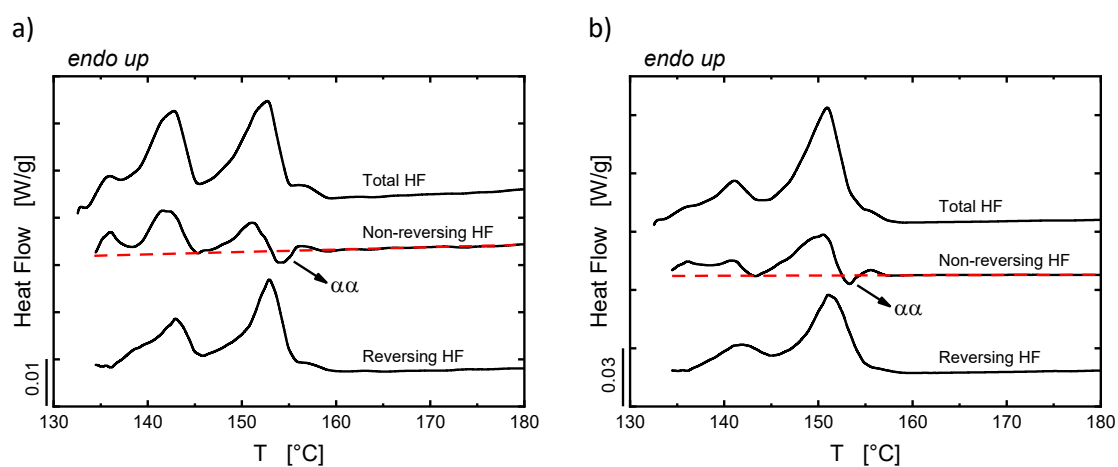


Figure S5. Temperature modulated DSC heating scan after isothermal crystallization at 131 °C for 120 min for a) the PS/PP(QQ) and b) the PS/PP(DCHT) blend. The dashed red lines represent the baseline for the non-reversing heat flow curve. The employed heating rate, temperature modulation period and temperature modulation amplitude were 2 °C/min, 60 s and  $\pm 0.32$  °C, respectively.

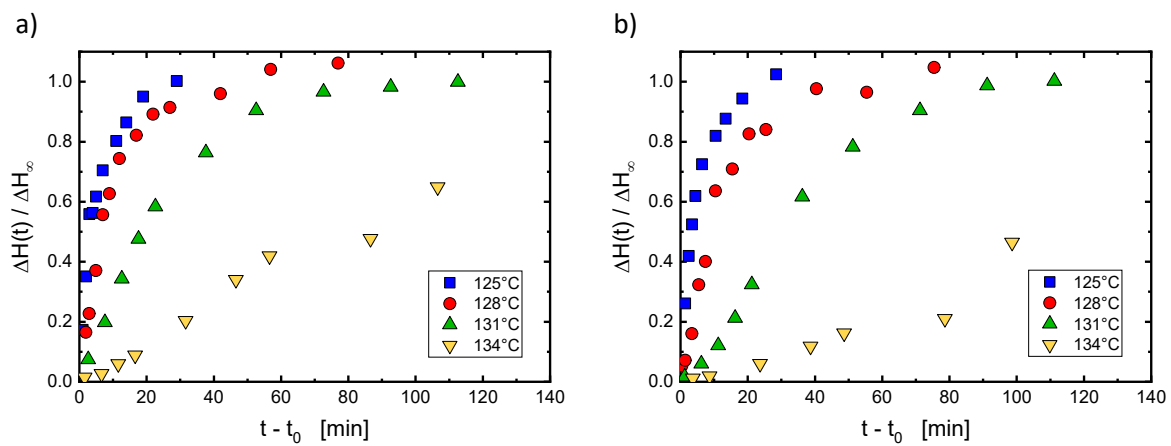


Figure S6. Evolution of the fraction of crystallized droplets or fraction of the enthalpy of fusion ( $\Delta H(t)/\Delta H_{\infty}$ ) as a function time at different crystallization temperatures for a) the  $\alpha$ -phase and b) the  $\beta$ -phase of the PS/PP(QQ) blend.