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## Supporting Information

# Stearyl Methacrylate-based Polymers as Crystal Habit Modifiers for Triacylglycerols

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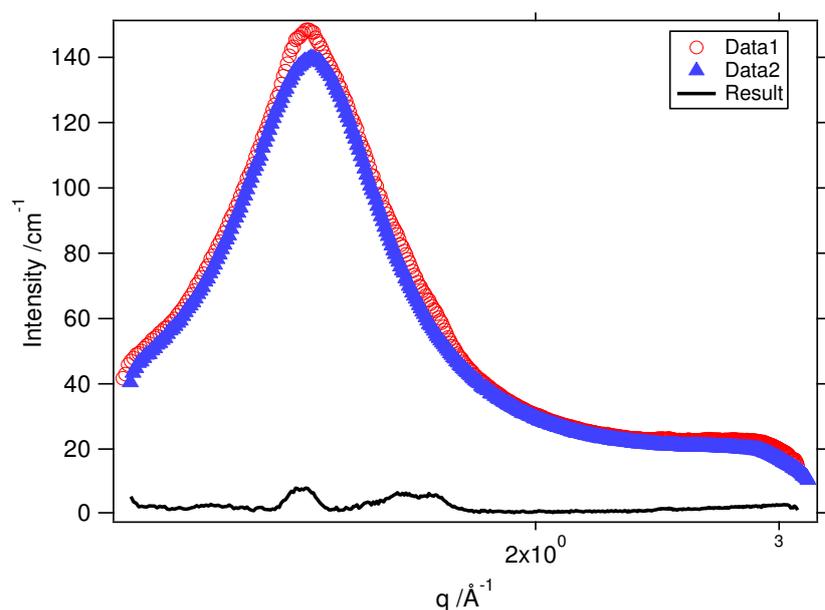
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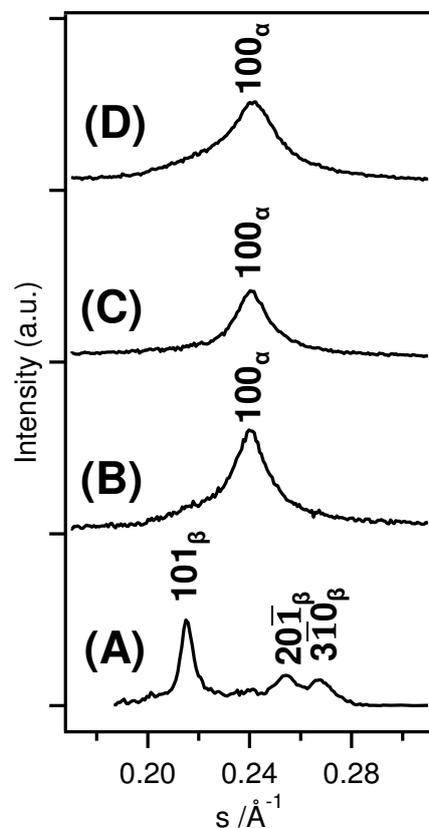
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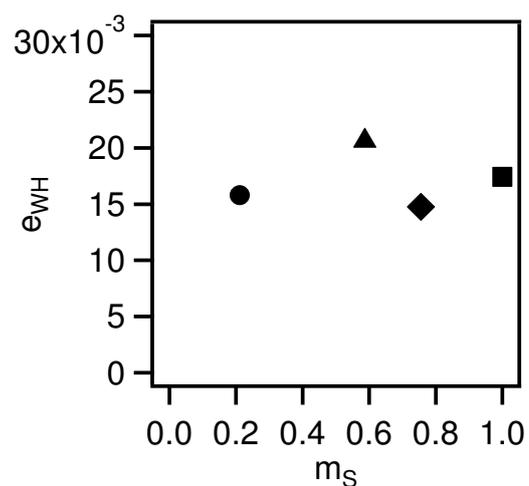
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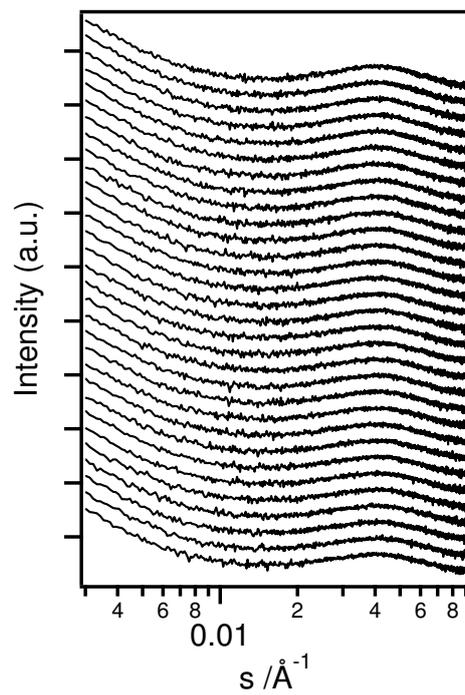
**Figure S1.** An example of wide-angle X-ray diffraction subtraction procedure, in which data from a sample containing SSS (5 wt% in OOO) crystallised at 0 °C (red symbols) is overlapped with OOO at 0 °C (blue symbols). After the subtraction, it was possible to identify 3 diffraction peaks (black line), even at such a low concentration of crystals.



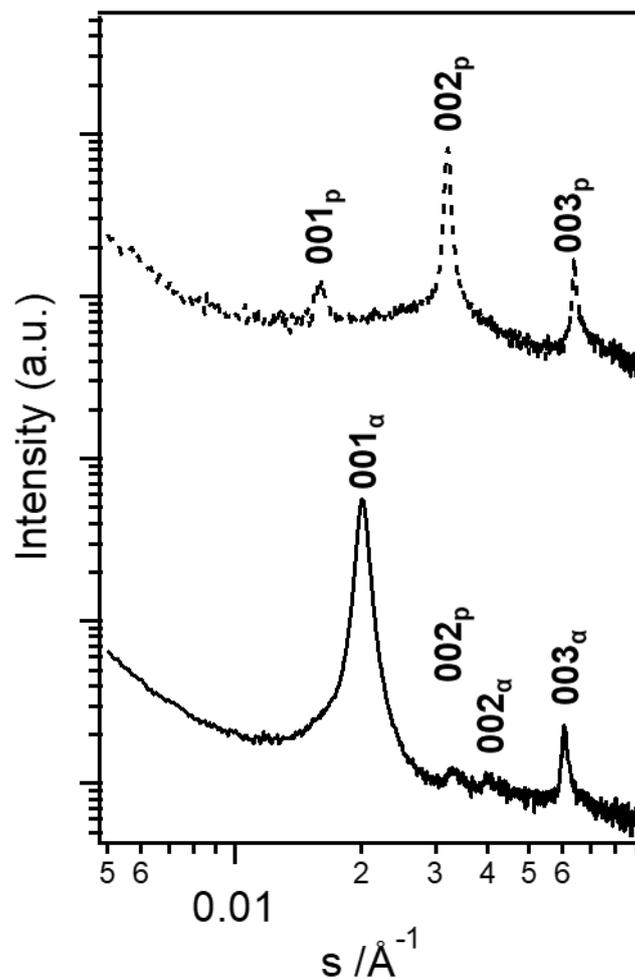
**Figure S2.** Subtracted WAXD data collected for SSS (5 wt% in OOO) at 0 °C after crystallization in the presence of the (A)  $\text{O}_{67}$ , (B)  $\text{S}_{37}$ , (C)  $\text{S}_{37}\text{O}_{11}$ , (D)  $\text{S}_{37}\text{O}_{26}$



**Figure S3.** A plot of crystal lattice strain values ( $\epsilon_{\text{WH}}$ ) measured by Williamson-Hall analysis of SSS (5 wt% in OOO) crystallized in the presence of polymer additives with different fractions of stearyl methacrylate ( $m_{\text{S}}$ ):  $\text{S}_{37}\text{O}_{138}$  (●),  $\text{S}_{37}\text{O}_{26}$  (▲),  $\text{S}_{37}\text{O}_{11}$  (◆) and  $\text{S}_{37}$  (■). The calculated strain values were relatively constant across all samples, with no obvious trend related to the additive composition.



**Figure S4.** Time-resolved SAXD data for  $S_{37}$  in OOO (1 wt%) while cooling from 30 °C (bottom trace) to 0 °C (top trace) at a rate of 1 °C/min. No crystals of  $S_{37}$  were observed to form during this cooling experiment.



**Figure S5.** Subtracted SAXD data collected for SSS (5 wt% in OOO) at 0 °C after crystallization in the presence of  $S_{37}$  (solid line) stacked against data from pure  $S_{37}$  at 0 °C after crystallization under the same conditions (dashed line). The additional peak evident at  $s = 0.033 \text{ \AA}^{-1}$  in the lower plot can be attributed to crystals of  $S_{37}$  forming in addition to SSS crystals. SAXD peaks of  $\alpha$ -phase of SSS and polymer lamellar crystals are indicated by Miller indices.