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Supporting Information

Stearyl Methacrylate-based Polymers as Crystal Habit Modifiers for Triacylglycerols

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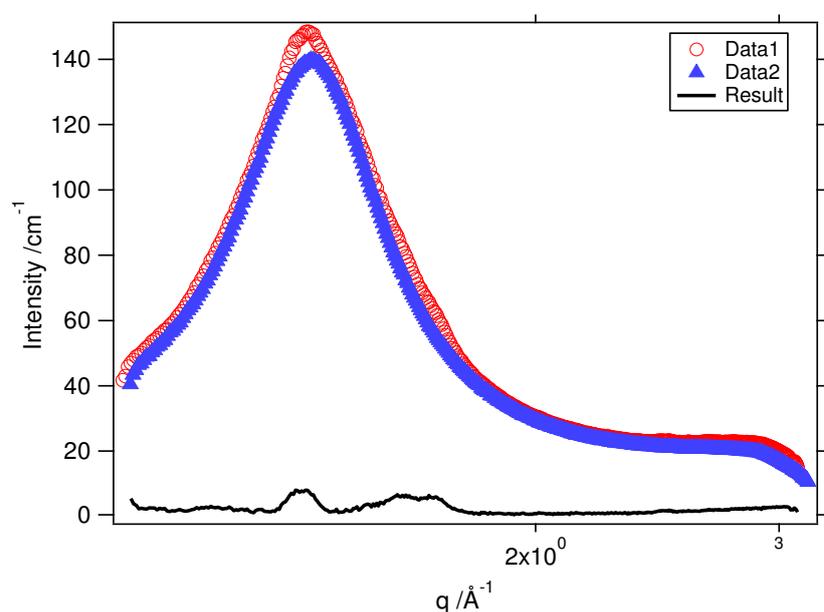


Figure S1. An example of wide-angle X-ray diffraction subtraction procedure, in which data from a sample containing SSS (5 wt% in OOO) crystallised at 0 °C (red symbols) is overlapped with OOO at 0 °C (blue symbols). After the subtraction, it was possible to identify 3 diffraction peaks (black line),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

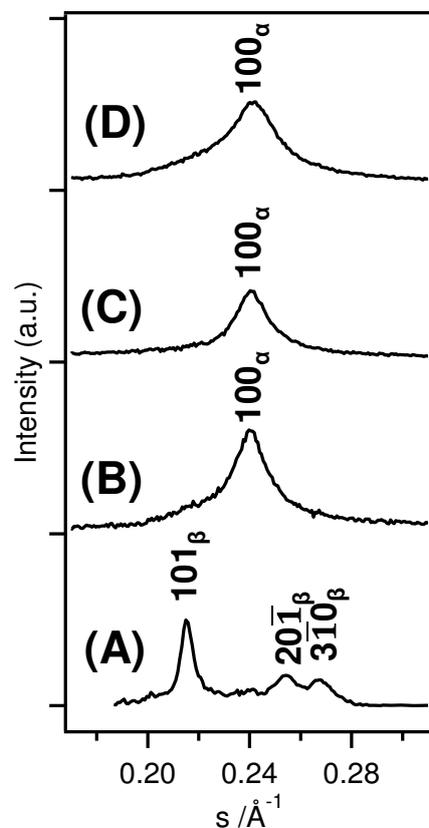


Figure S2. Subtracted WAXD data collected for SSS (5 wt% in OOO) at 0 °C after crystallization in the presence of the (A) O_{67} , (B) S_{37} , (C) $\text{S}_{37}\text{O}_{11}$, (D) $\text{S}_{37}\text{O}_{26}$

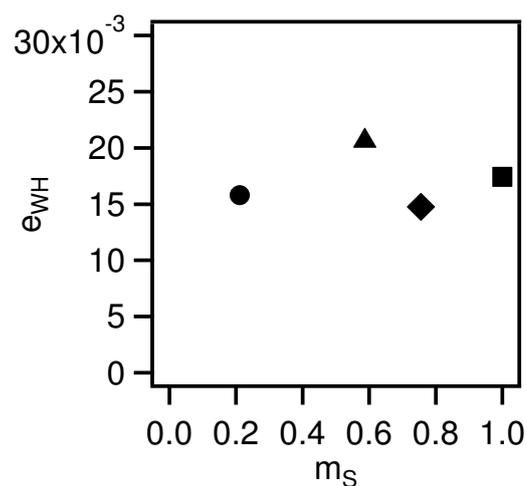


Figure S3. A plot of crystal lattice strain values (ϵ_{WH}) measured by Williamson-Hall analysis of SSS (5 wt% in OOO) crystallized in the presence of polymer additives with different fractions of stearyl methacrylate (m_{S}): $\text{S}_{37}\text{O}_{138}$ (●), $\text{S}_{37}\text{O}_{26}$ (▲), $\text{S}_{37}\text{O}_{11}$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

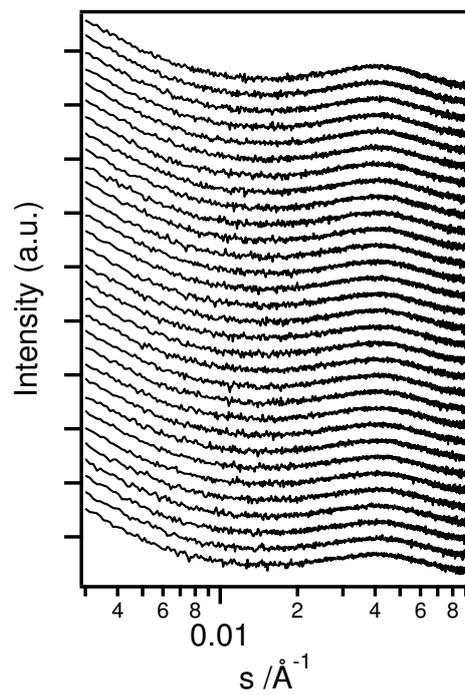


Figure S4. Time-resolved SAXD data for S_{37} in OOO (1 wt%) while cooling from 30 °C (bottom trace) to 0 °C (top trace) at a rate of 1 °C/min. No crystals of S_{37} were observed to form during this cooling experiment.

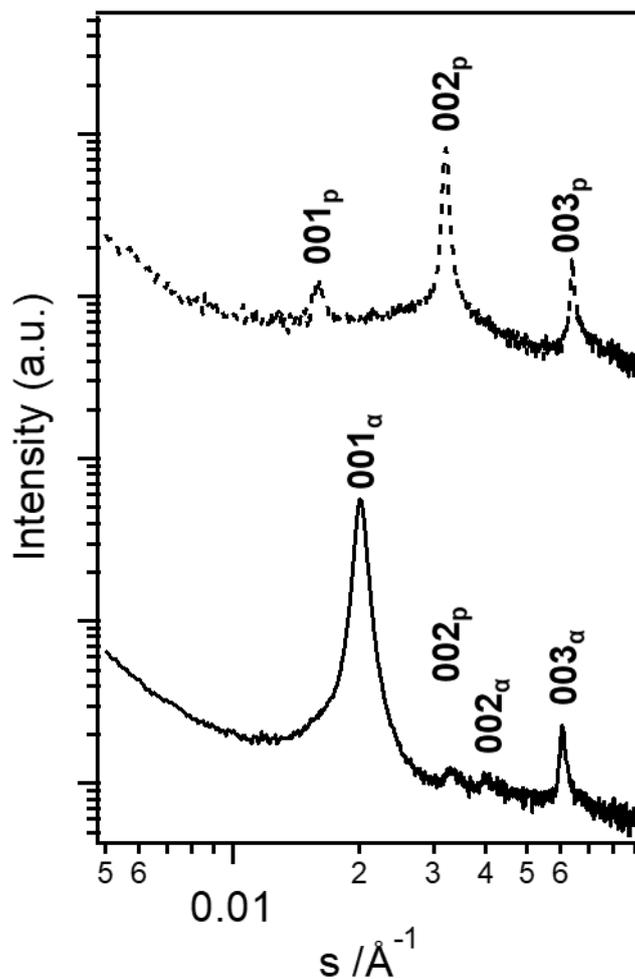


Figure S5. Subtracted SAXD data collected for SSS (5 wt% in OOO) at 0 °C after crystallization in the presence of S_{37} (solid line) stacked against data from pure S_{37} at 0 °C after crystallization under the same conditions (dashed line). The additional peak evident at $s = 0.033 \text{ \AA}^{-1}$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