Raman Investigation of the Processing – Structure Relations in Individual Poly(ethylene terephthalate) Electrospun Fibers

Supporting Information

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Figure S1. Calibration curve used for orientation quantification by relating the 1616/705 cm\(^{-1}\) band ratio in ZZ spectra to the \(\langle P_2 \rangle\) values of cold-drawn PET films.

\[
\frac{I_{ZZ,1616}}{I_{ZZ,705}} = 23.5\langle P_2 \rangle + 9.42 \\
R^2 = 0.99
\]
Figure S2. Diameter dependence of molecular orientation in individual PET fibers collected using an aluminum plate, a gap collector, and a rotating disk. The diameter of fibers thinner than the focused laser spot (approximated by the vertical line at 550 nm) could be overestimated. Symbols with a red edge indicate outlier fibers with exceptionally high orientation. They were rejected from calculations of the median orientations in Figure 2 but they support our conclusions on the impact of crystallization.
Figure S3. Evolution of the fraction of trans conformers as a function of the diameter of PET fibers collected using an aluminum foil, a gap collector, and a rotating disk. The diameter of fibers thinner than the focused laser spot (approximated by the vertical line at 550 nm) could be overestimated. Symbols with a red edge indicate outlier fibers with exceptionally high orientation.
Figure S4. Evolution of the mesophase fraction ($F_M$) as a function of $\langle P_2 \rangle$ in PET fibers collected using an aluminum foil, a gap collector, and a rotating disk.