Supporting Information for

Backbone Flexibility on Conjugated Polymer's Crystallization Behavior and Thin Film Mechanical Stability

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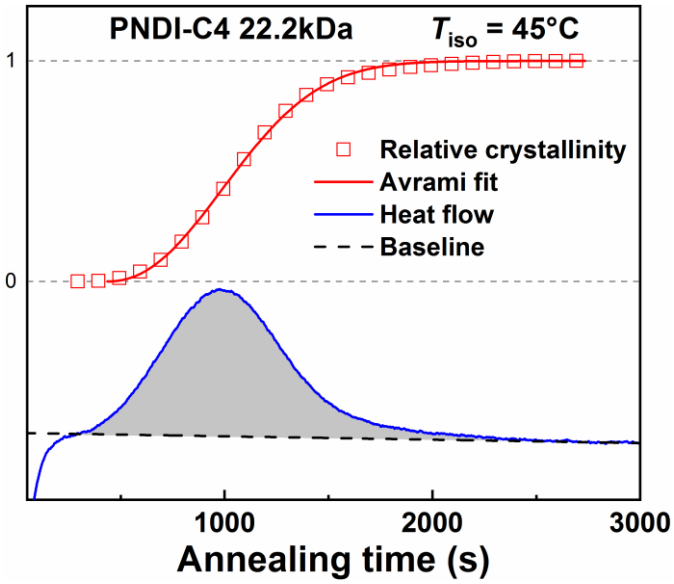

Figure S1. Schematic of data processing for obtaining the isothermal crystallization kinetics. Blue line is the heat flow recorded during isothermal crystallization. Black line marks the baseline which is properly identified from the onset of peak to the end of peak. Gray area marks the integrated area between raw data and baseline. Red open squares are the relative crystallinity obtained by taking the ratio between the area at time *t* and total area. Red line is the curve fitting using the modified Avrami equation.

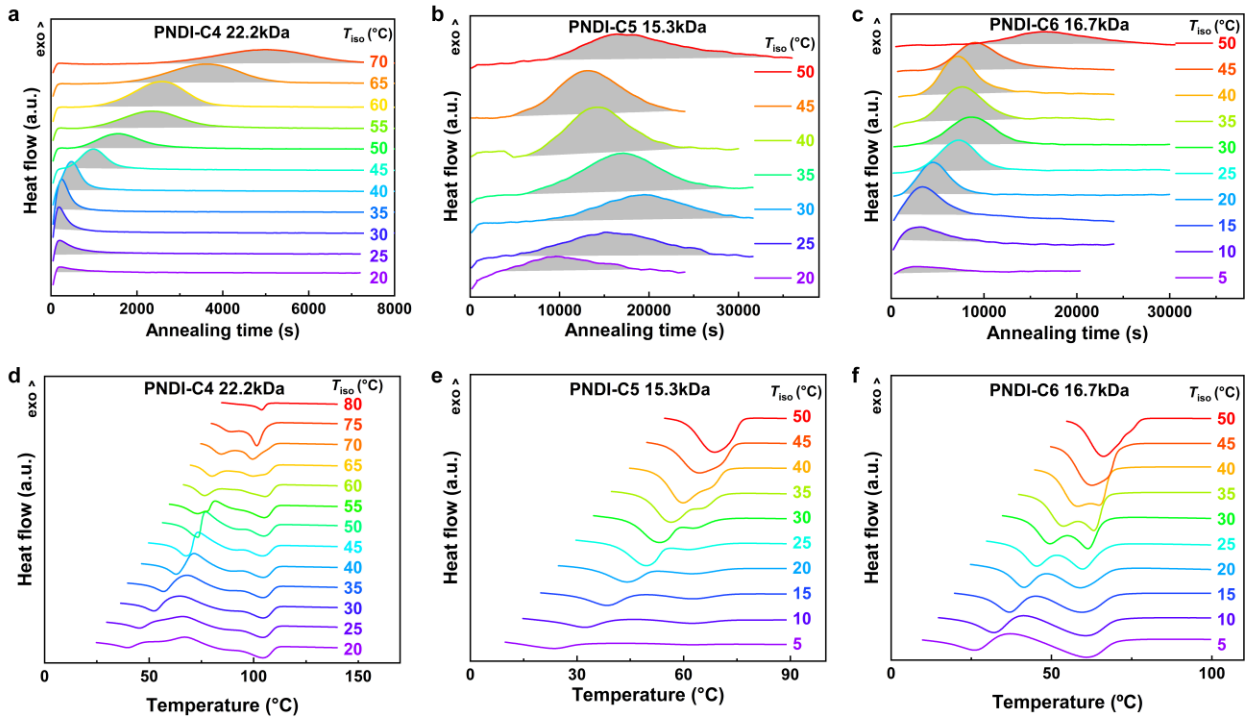

Figure S2. Heat flows of (a) PNDI-C4, (b) PNDI-C5, and (c) PNDI-C6 at various isotherms. Gray areas mark the crystallization regions for data processing. Subsequent reheating scans of (d) PNDI-C4, (e) PNDI-C5, and (f) PNDI-C6 after isothermal crystallization.

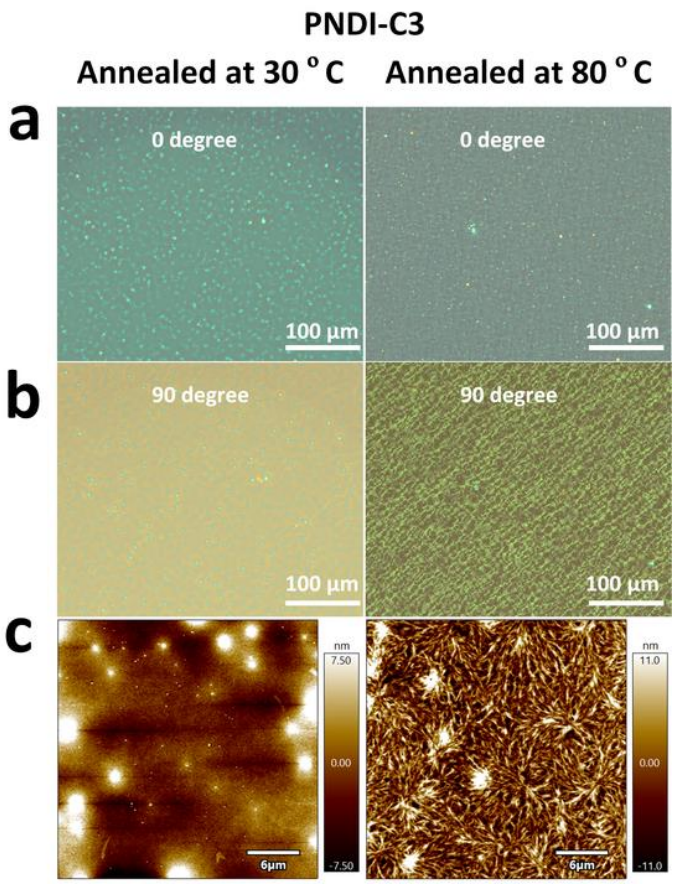

Figure S3: Polarized optical microscopy and AFM height images demonstrating the surface morphological change associated with the presence of type 2 lamellae.

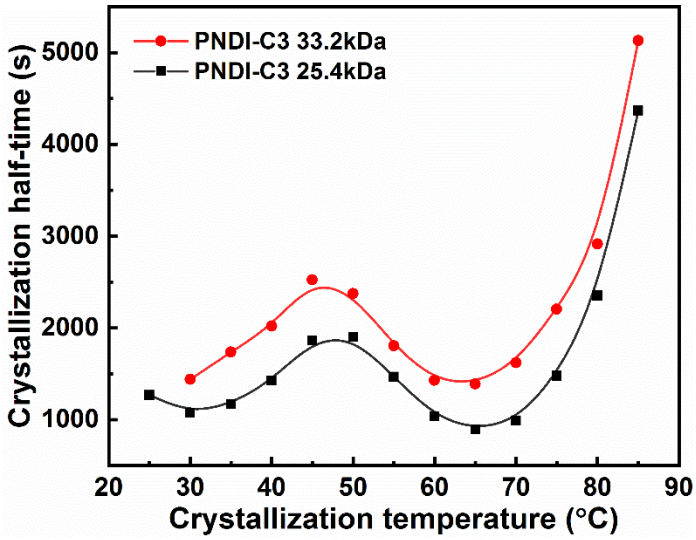

Figure S4. Influence of molecular weight on the crystallization kinetics of PNDI-C3. Black and red spline lines are drawn to guide the eyes.

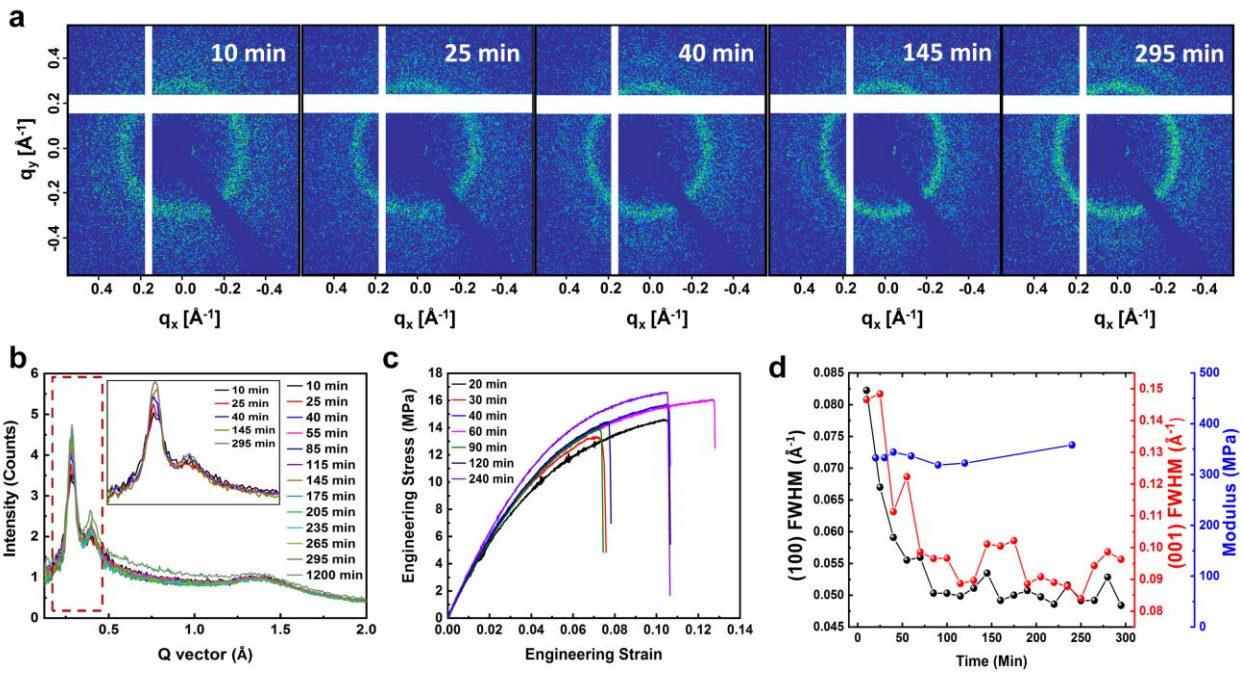

Figure S5: The morphological and time-dependent mechanics of PNDI-C3. a) WAXS 2D scattering profiles throughout a 5-hour time period and b) the associated 1D scattering profile with magnified (100) and (001) insert. c) Time dependent stress vs. strain plot and d) modulus dependence of both (100) and (001) crystalline FWHM with time.