Supporting information

Isothermal crystallization kinetics and time-temperature-transformation of the conjugated polymer: poly(3-(2'-ethyl)hexylthiophene)

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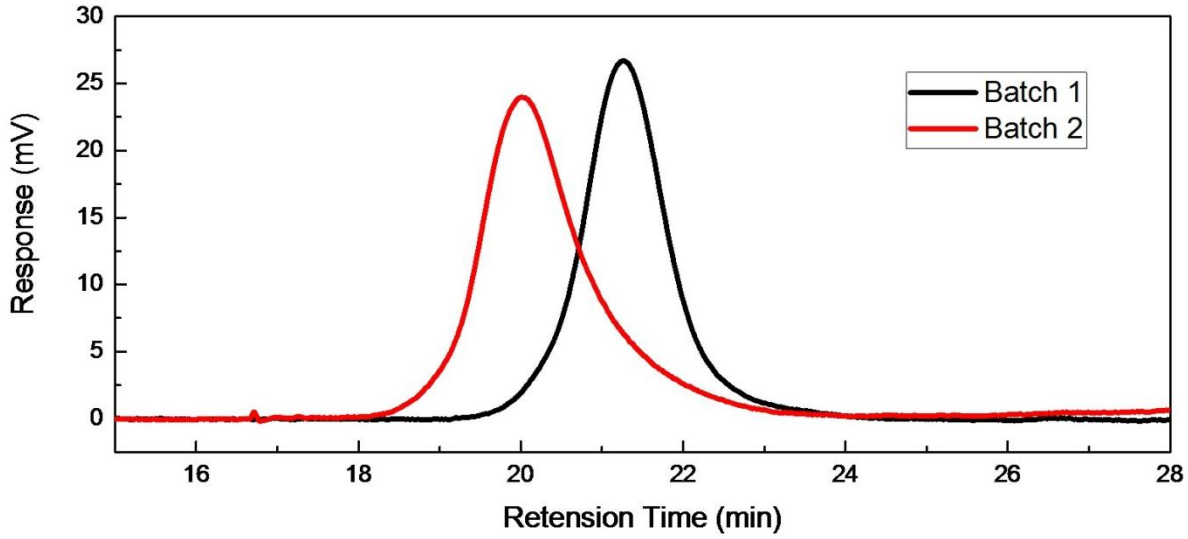

Figure S1. Size exclusion chromatography (SEC) analysis of the two batches of P3EHT.

Batch	Calibration method	M_p	M_n	M_w	M_z	M_{z+1}	M_v	PDI
1	Polystyrene standard	44271	24305	43232	65836	106883	61725	1.779
	Universal calibration	32842	12540	34704	73317	186917	63148	2.767
2	Polystyrene standard	14085	10599	15363	20747	28308	19827	1.449
	Universal calibration	11675	6528	14501	27024	51146	24094	2.221

Table S1. Molecular weight values obtained from the SEC analysis for the two batches of P3EHT

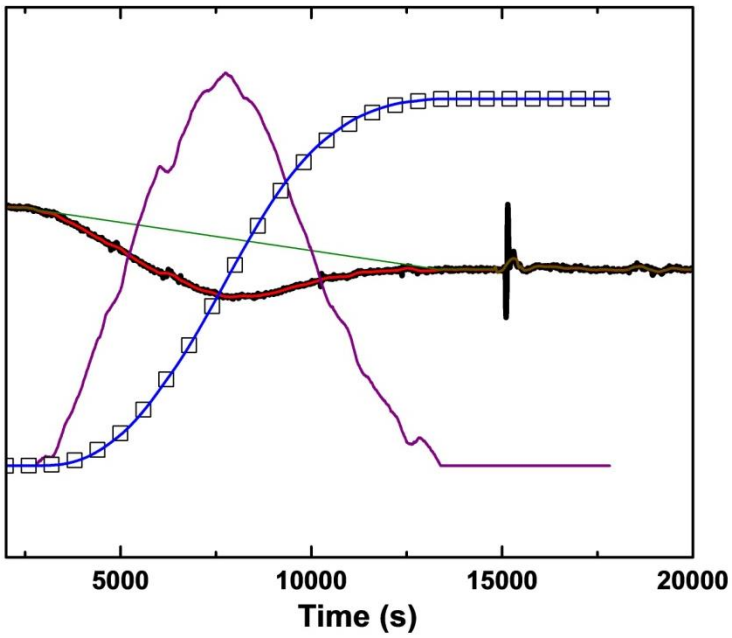

Figure S2. Plot showing all the data processing performed on the differential scanning calorimetry (DSC) isotherm for the higher molecular-weight P3EHT crystallizing at 50 °C:

Black: raw data obtained from the DSC where data points were recorded every 3 seconds

Red: smoothed curve from the raw data. Method: applying Savitzky–Golay filter where the window size was set to be 200 data points

Green: baseline. Method: fitting a line from the peak start to peak end by visualization based on the red curve

Purple: red curve after the baseline subtraction

Blue: integration of the purple curve with its maximum value normalized to 1

Black squares: reduced to evenly spaced X with sampling the mean value of every 200 data points from the blue curve

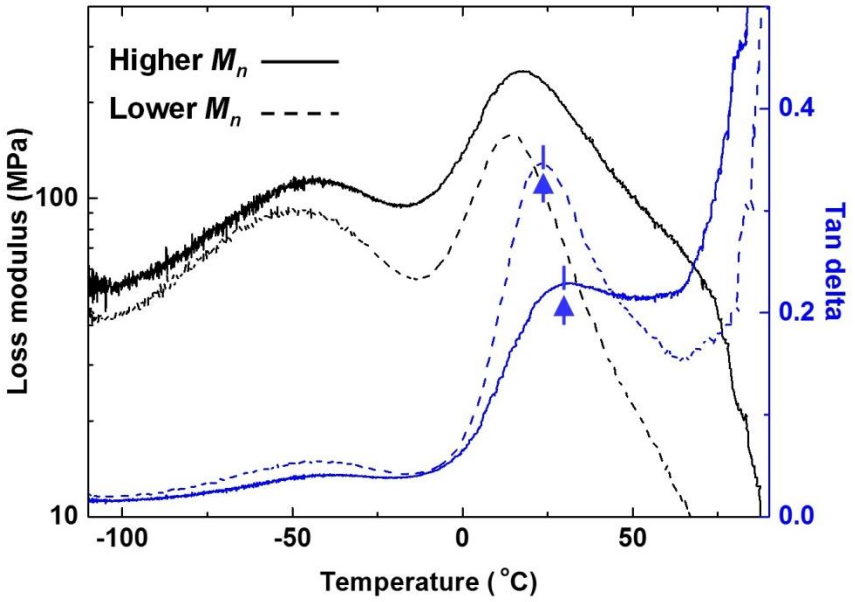

Figure S3. Loss modulus and loss tangent of higher (solid lines) and lower (dash lines) molecular weight P3EHT measured with dynamic mechanical analysis (DMA) at a frequency of 1 Hz; glass transition temperature (T_g) from the peak of the loss tangent tan δ (blue).

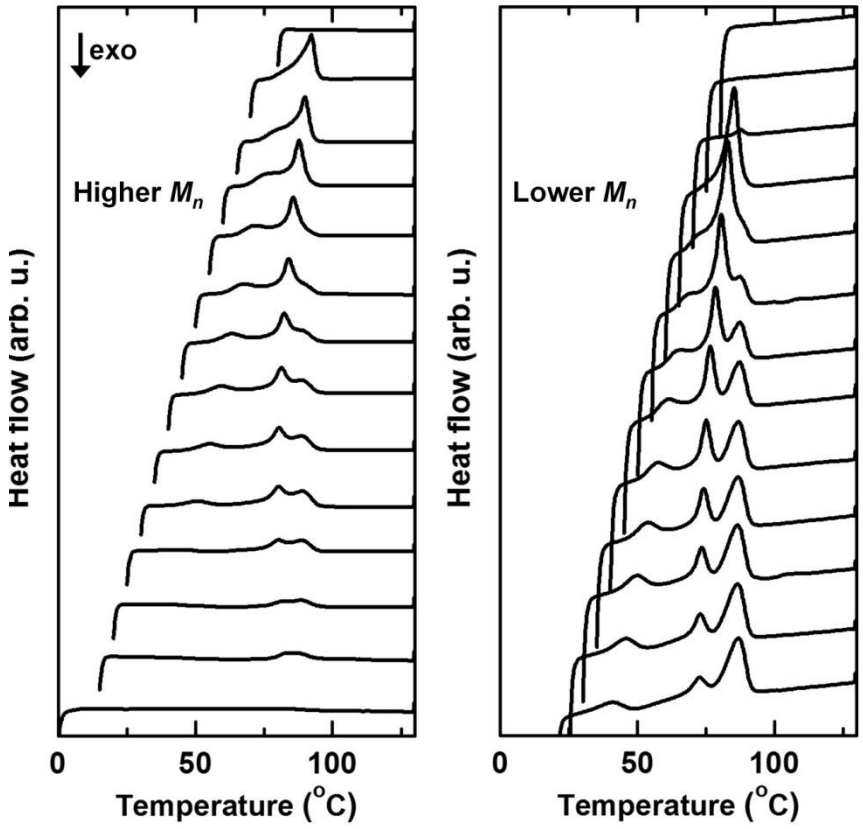

Figure S4. DSC thermogram displaying the sequential melting after the isothermal crystallization (T_c indicated as the lowest temperature of every scan) for 30,000 seconds of both batches of P3EHT.

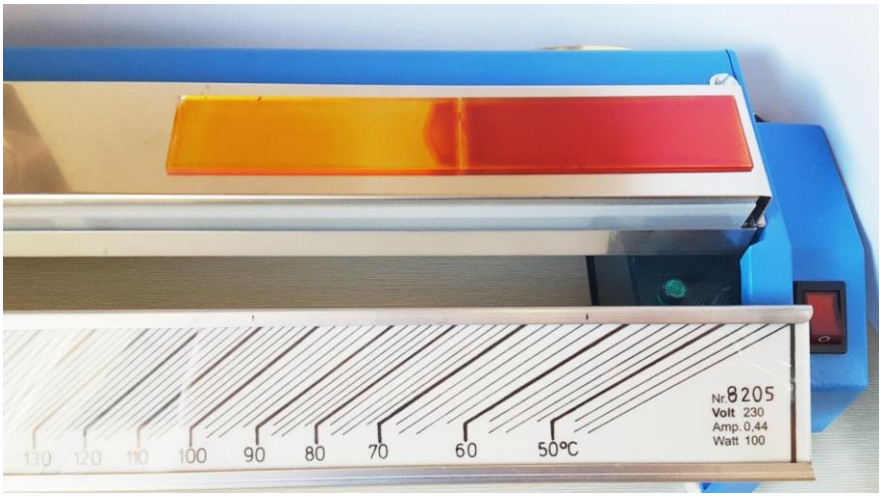

Figure S5. Photograph of higher molecular P3EHT thin films isothermal crystallized on the Kofler bench for 48 hours.

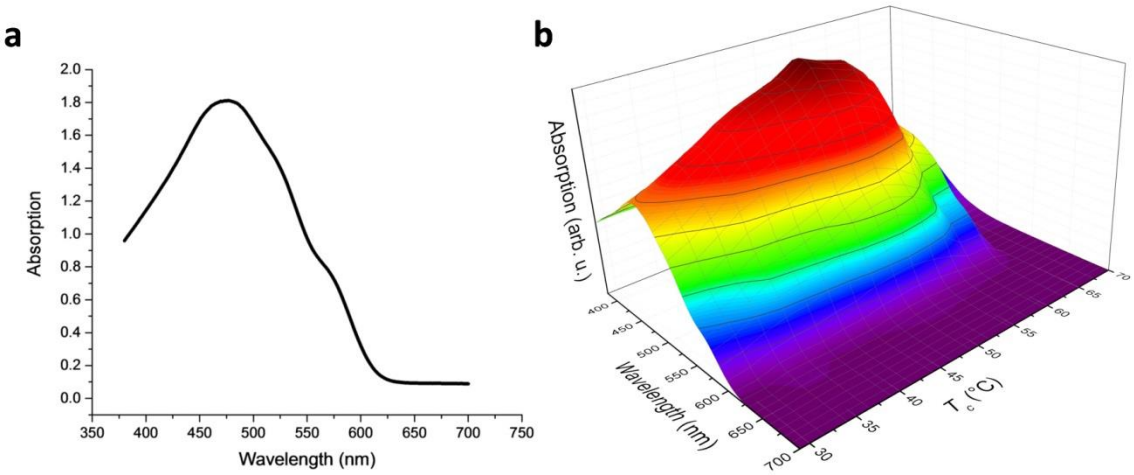

Figure S6. a) UV-vis absorption of the thin film in Fig. 3a for T_c = 50 °C. (b) A plot illustrating the evolution of the absorption with T_c, obtained from the thin film in Fig. 3a.