Supporting Information

Increased Order-Disorder Transition Temperature for a Rod-Coil Block Copolymer in the Presence of a Magnetic Field

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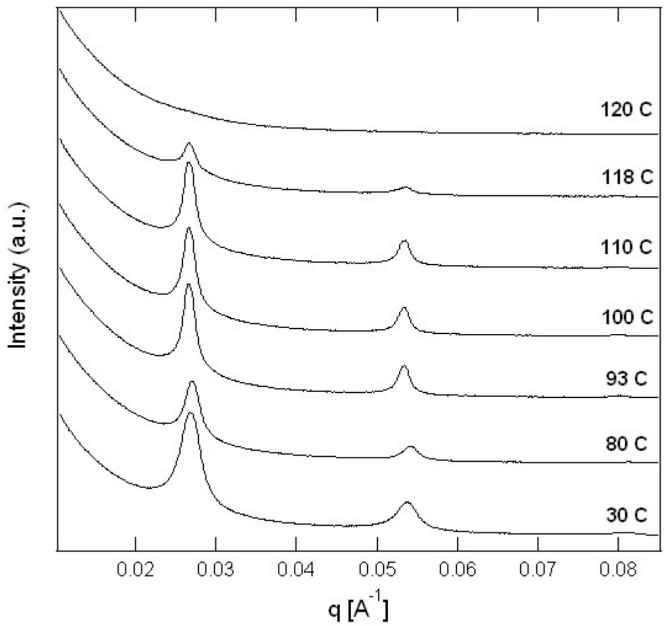

Figure S1. Azimuthally integrated scattering intensity of PPV-PI under a 2 T magnetic field as a function of temperature. Upon heating a reversible order-disorder transition is reached at 120 °C which is identified by a dramatic decrease in the primary peak intensity and a loss of higher order peaks.

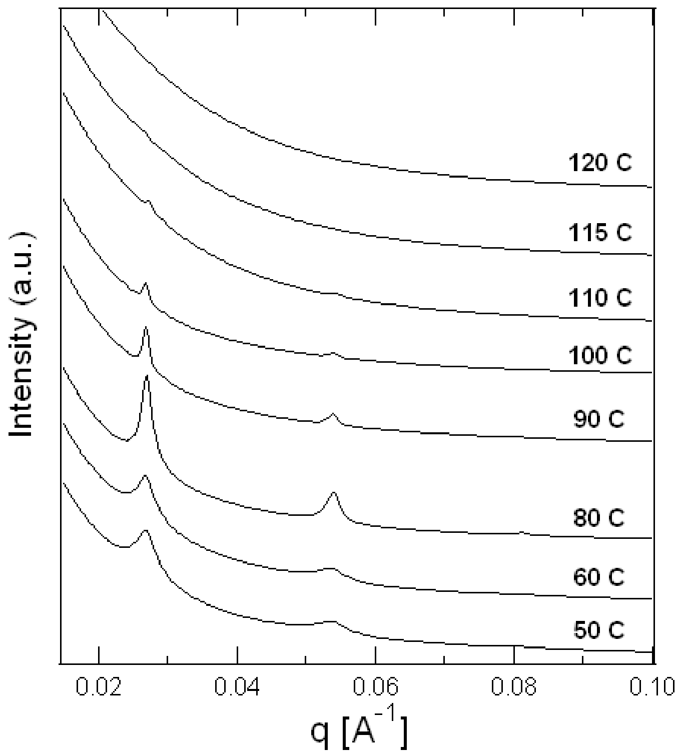

Figure S2. Azimuthally integrated scattering intensity of PPV-PI without the presence of a magnetic field as a function of temperature. Upon heating a reversible order-disorder transition is reached at 115 °C which is identified by a dramatic decrease in the primary peak intensity and a loss of higher order peaks.

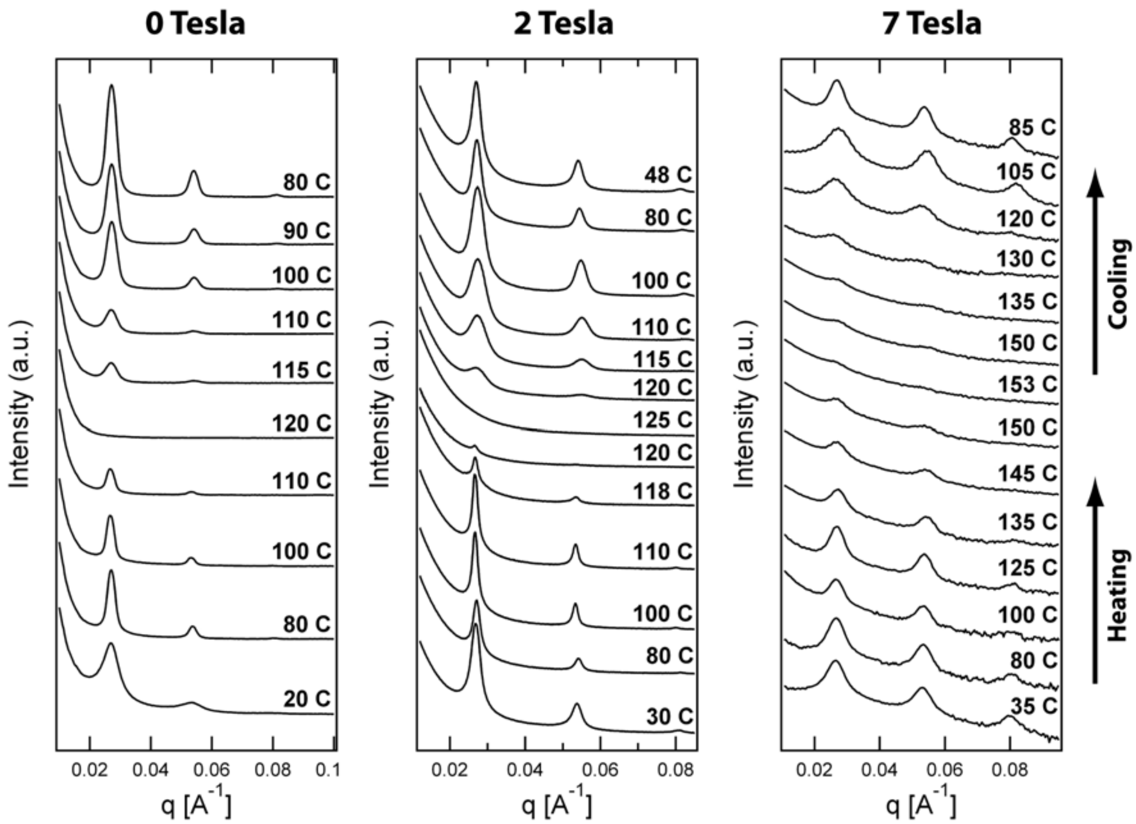

Figure S3. Azimuthally integrated scattering intensity of PPV-PI as a function of temperature and magnetic field strength. Upon heating the samples reach an order-disorder transition which is identified by a dramatic decrease in the primary peak intensity and a loss of higher order peaks. Cooling the sample from the disordered state leads to a disorder-order transition with little apparent hysteresis between the heating and cooling scans.

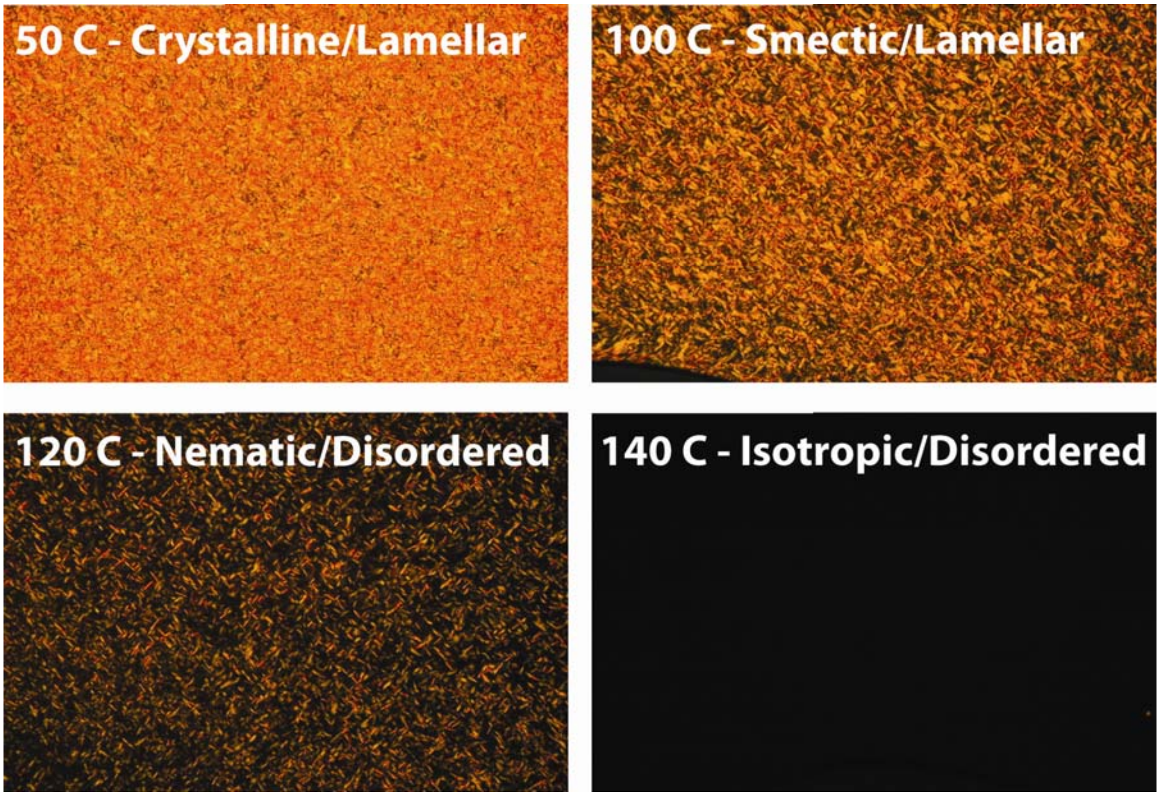

Figure S4. Polarized optical microscopy (POM) was used primarily to distinguish the nematic-isotropic liquid crystalline transition. The liquid crystalline texture is apparent below the nematic-isotropic transition. The nematic phase may also be distinguished from the smectic phase by a change in the liquid crystalline texture.

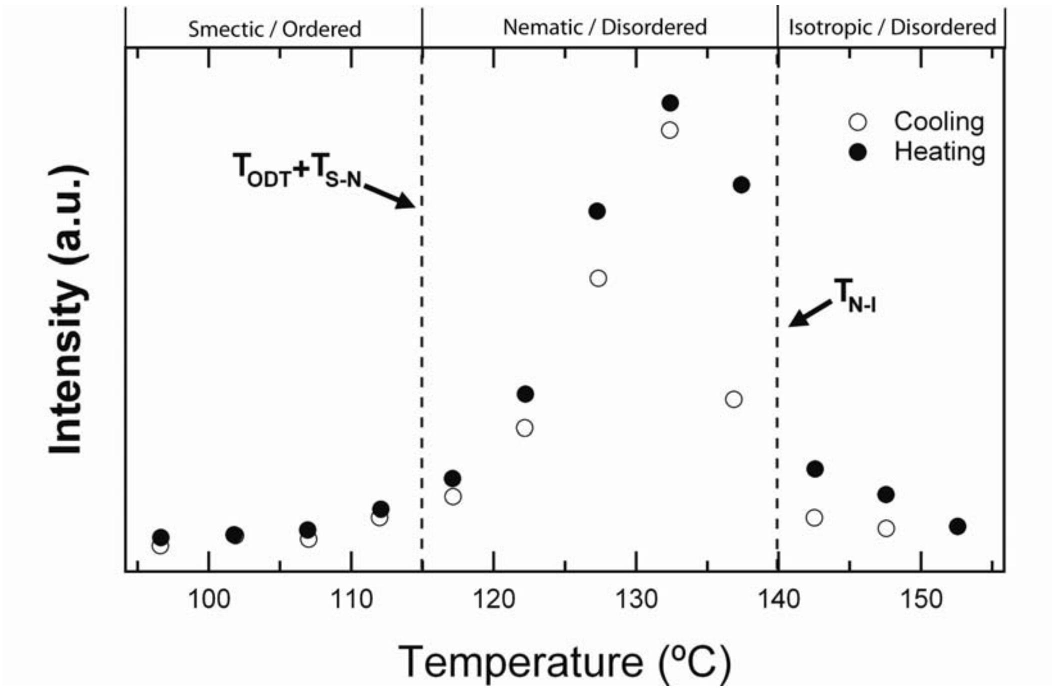

Figure S5. Depolarized light scattering (DPLS) was used to confirm the zero field smectic-nematic and nematic-isotropic liquid crystalline transition temperatures by measuring the intensity of transmitted light passing through a sample placed between crossed polarizers. The smectic phase has low transmission through the sample and the isotropic phase does not significantly polarize light also producing low measured intensity. Little hysteresis is observed upon heating or cooling the sample. The order-disorder transition temperature was determined using small angle x-ray scattering and the nematic-isotropic transition temperature was determined using polarized optical microscopy.