Supporting Information for

Stabilization of the nematic mesophase by a homogeneously dissolved conjugated polymer

Andreas Lohr and Timothy M. Swager*

Massachusetts Institute of Technology, Department of Chemistry

77 Massachusetts Avenue, Cambridge, MA 02139, USA.

E-mail: tswager@mit.edu
Optical micrographs.

**Figure S1.** Optical micrographs with different magnification of a solution of **P1** in MLC-6884 (10 wt% **P1**) taken under crossed polarizers after slow cooling of the sample from the isotropic phase to 25 °C.
**UV/vis absorption spectra.**

![Graph showing UV/vis absorption spectra.](image)

**Figure S2.** Absorption spectra of polymer P1 dissolved in MLC-6884 (1 wt% polymer) and sandwiched between the glass slides of a test cell equipped with parallel rubbed polyimide layers for planar director alignment. The shown spectra were obtained before (red: nonpolarized light, green: light polarization parallel to the LC director, blue: light polarization perpendicular to the LC director) and after FFT filtering of the respective spectra with Origin 7 (black lines).

![Graph showing temperature-dependent UV/vis absorption spectra.](image)

**Figure S3.** Nonpolarized temperature-dependent UV-vis absorption spectra of polymer P1 dissolved in MLC-6884 (1 wt% polymer) and sandwiched between the glass slides of a test cell equipped with parallel rubbed polyimide layers for planar director alignment. The arrows indicate spectral changes with increasing temperature from 25 to 95 °C.
DSC thermogram.

Figure S4. DSC thermograms of solutions of P1 in MLC-6884 containing 0 (black), 1 (red), 5 (green), and 10 wt% (blue) P1. The heating/cooling rate was 10 K min⁻¹.
$^1$H and $^{13}$C NMR spectra.

**Figure S5.** $^1$H (top) and $^{13}$C (bottom) NMR spectra of 2 in CDCl$_3$. 
Figure S6. $^1$H (top) and $^{13}$C (bottom) NMR spectra of racemic triptycene quinone (±)-3 in CDCl₃.
Figure S7. $^1$H (top) and $^{13}$C (bottom) NMR spectra of racemic dibromotriptycene (±)-4 in CDCl$_3$. 
Figure S8. $^1$H (top) and $^{13}$C (bottom) NMR spectra of racemic triptycene monomer ($\pm$)-5 in CDCl$_3$. 
Figure S9. $^1$H NMR spectrum of polymer P1 in CDCl$_3$. 
Gel permeation chromatography

Figure S10. Gel permeation chromatogram of polymer P1 (eluent: THF; detection wavelength: 254 nm).