

## Supplementary Information

### Cholesteric Mesophase in Side-Chain Liquid Crystalline Polymers: Influence of Mesogen Interdigitation and Motional Decoupling

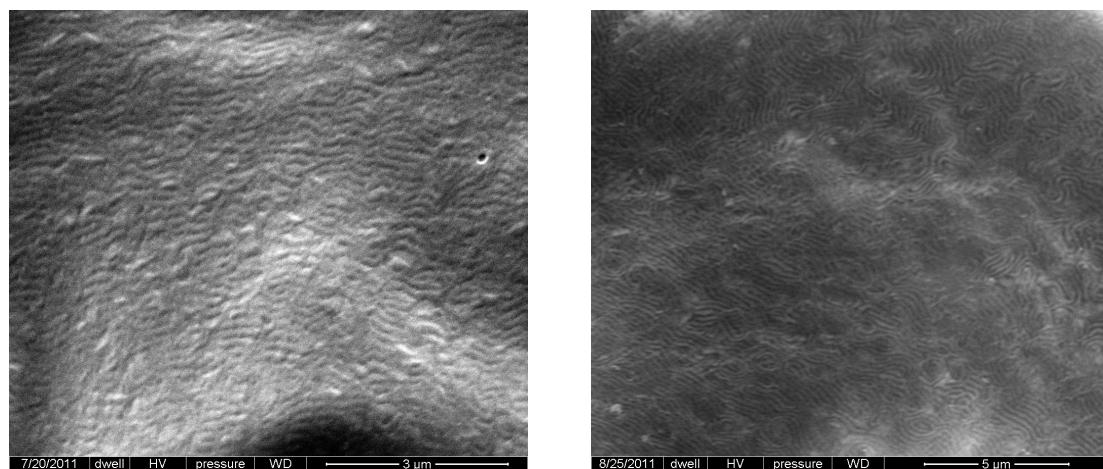
Suk-kyun Ahn,<sup>§a</sup> Manesh Gopinadhan,<sup>b</sup> Prashant Deshmukh,<sup>c</sup> Rubinder Kaur Lakhman,<sup>a</sup> Chinedum O. Osuji<sup>b</sup> and Rajeswari M. Kasi\*<sup>ac</sup>

<sup>a</sup> Polymer Program, Institute of Materials Science, University of Connecticut, 97 N. Eagleville Rd, Storrs, CT 06269, USA.

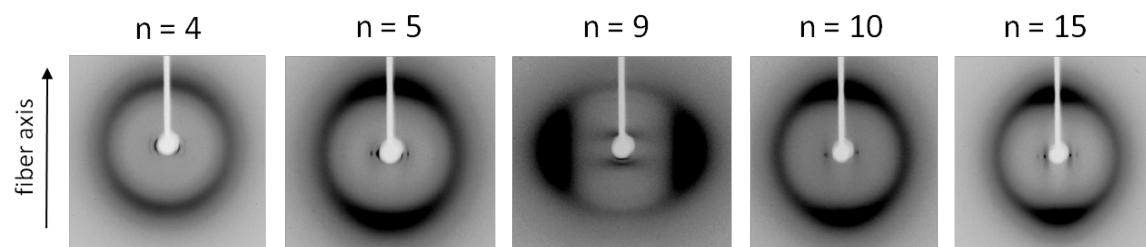
<sup>b</sup> Department of Chemical and Environmental Engineering, Yale University, 9 Hillhouse Ave. Mason Lab 302, New Haven, CT 06511, USA.

<sup>c</sup> Department of Chemistry, University of Connecticut, 55 N. Eagleville Rd, Storrs, CT 06269, USA. Fax: +1 860 486-4745; Tel: +1 860 486-4713; Email: kasi@ims.uconn.edu

<sup>§</sup> Current Address: Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA



**Fig. S1** SEM micrographs of PNBCh-9 (left) and 10 (right). The thickness variations of the microtomed film surfaces (or topography) are clearly observed.



**Fig. S2** 2D-WAXS pattern of PNBCh-*n* with oriented fibers at room temperature. The samples are prepared by melt-drawing using tweezers at about 20~30 °C above T<sub>g</sub> of polymers.