Supporting information

Highly Ordered Defect Arrays of 8CB (4’-n-octyl-4-cyano-biphenyl) Liquid Crystal via Template-Assisted Self-Assembly

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Fig. S1. a) The molecular structure and phase transition temperature of 4'-n-octyloxy-4-cyano-biphenyl (8OCB). b) POM images of 8OCB in a PEI coated rectangular microchannel with width = 20µm and depth = 10µm. c) POM image of 8OCB in a PEI coated trapezoidal microchannels with top-width = 40µm, bottom-width = 19.5µm and depth = 14.4µm (Scale: 50µm).
Fig. S2. POM images of 8CB in rectangular shaped channels of different widths and depths. a-d) width = 10 - 40µm (from top to bottom) and fixed depth = 5µm. e-h) width = 10 - 40µm (from top to bottom) and fixed depth = 10µm (Scale: 50 µm).
Fig. S3. a-e) POM images of 8CB in V-shaped channels of different $w = 3 - 20\mu m$ and $h = 1.8-14.4\mu m$ (Scale: 50µm). f) POM images taken by rotating the samples at 0° and 45°.
Fig. S4. a-e) POM textures of 8CB in trapezoidal microchannels of different \( u \), \( l \) and \( h \) of channel. The detail information of trapezoidal channels is shown in Table. (Scales: 50\( \mu \)m). The average radius \( \langle a \rangle \) of TFCDs was \( \langle a \rangle = (1.63 \pm 0.07) \) \( \mu \)m in channel (a), \( \langle a \rangle = (2.29 \pm 0.13) \) \( \mu \)m in channel (b), \( \langle a \rangle = (2.96 \pm 0.05) \) \( \mu \)m in channel (c), \( \langle a \rangle = (3.8 \pm 0.18) \) \( \mu \)m in channel (d), \( \langle a \rangle = (5.2 \pm 0.16) \) \( \mu \)m in channel (e). f) Illustrations of the effective volume in trapezoidal channel influencing to form TFCD.