Supplementary Material (ESI) for Journal of Materials Chemistry

Intercalated Liquid-crystalline Phases Formed by Symmetric Dimers with an α,ω-Diiminoalkylene Spacer

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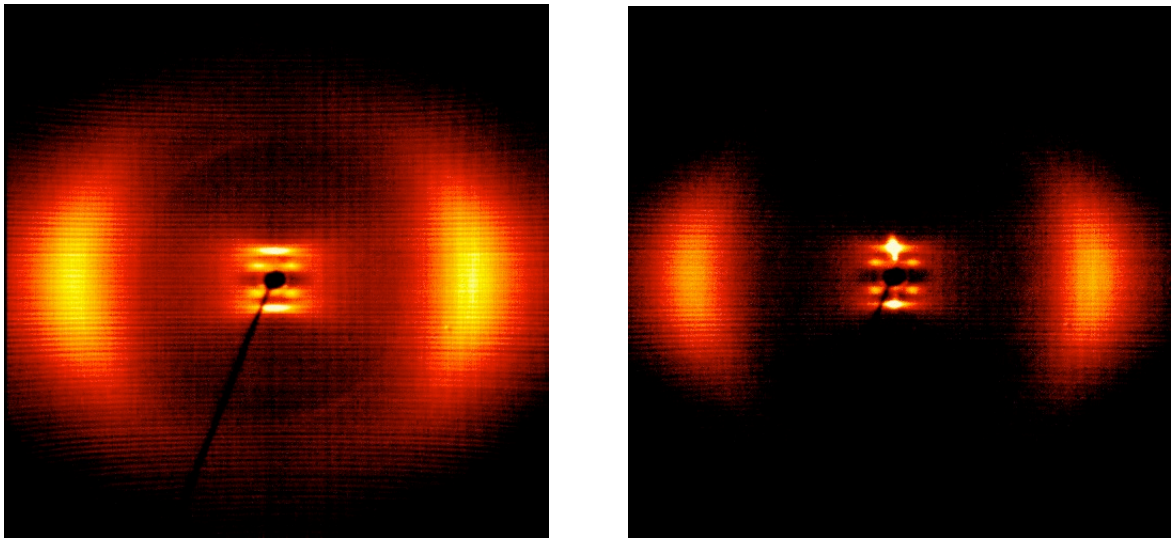
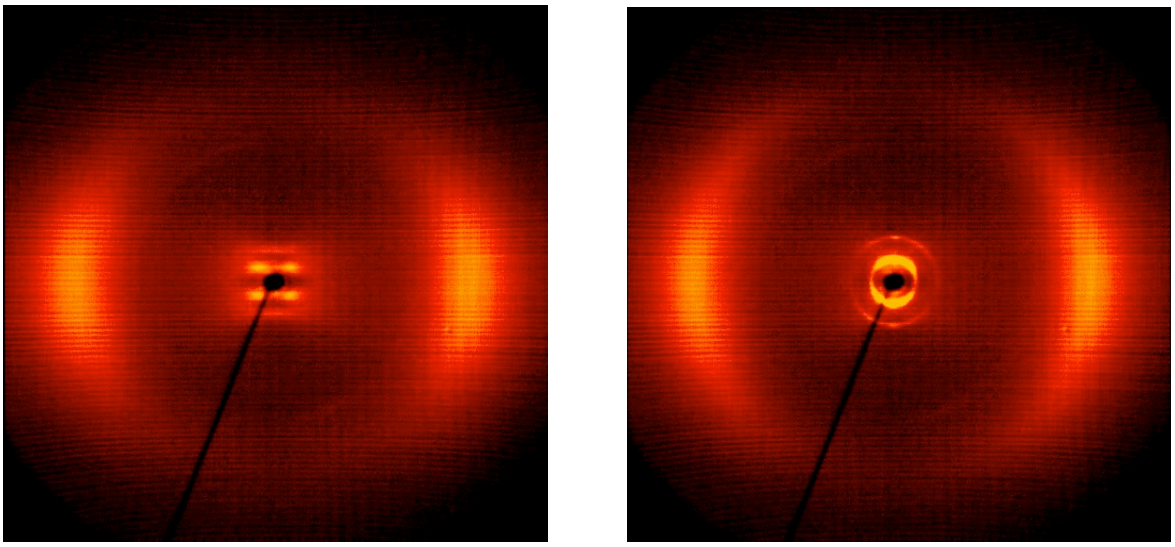
Additional Figures:



(a) (b)

Fig. S1 X-ray patterns of **8-12** aligned in the magnetic field on cooling from the isotropic liquid: a) nematic phase with cybotactic groups at 110 °C, b) SmÃ phase at 105 °C



(a) (b)

Fig. S2 X-ray patterns of **6-12** aligned in the magnetic field on cooling from the isotropic liquid: a) nematic phase with cybotactic groups of the SmC type at 130 °C, b) partially aligned sample in the SmC phase at 110 °C, tilt angle of the molecules against the layer normal ~ 30 – 35°

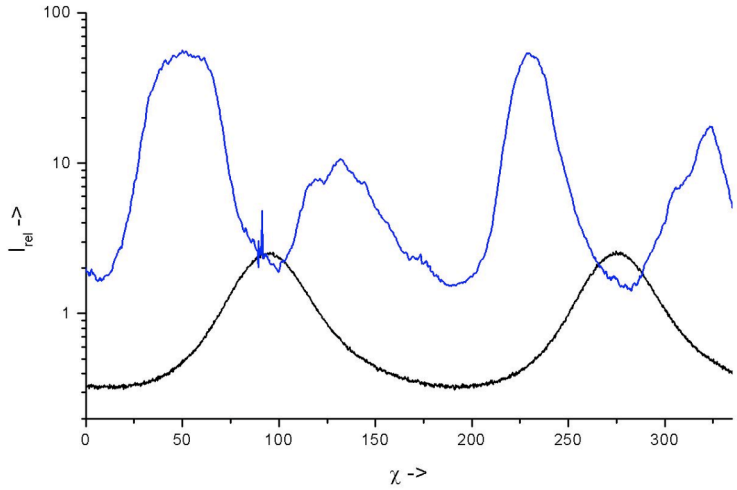


Fig. S3 χ-scans for the diffuse outer scattering (2θ integrated from 16 to 22°, black line, maxima at 95 and 275°) and the first order of the layer reflection (2θ integrated from 1.5 to 2.5°, blue line, main maxima at 50 and 230°) in the 2D X-ray pattern for the SmC phase of **8-14** at 100 °C (see Fig.4b in the text, I_{rel} = I(100 °C) / I(130 °C, isotropic liquid))

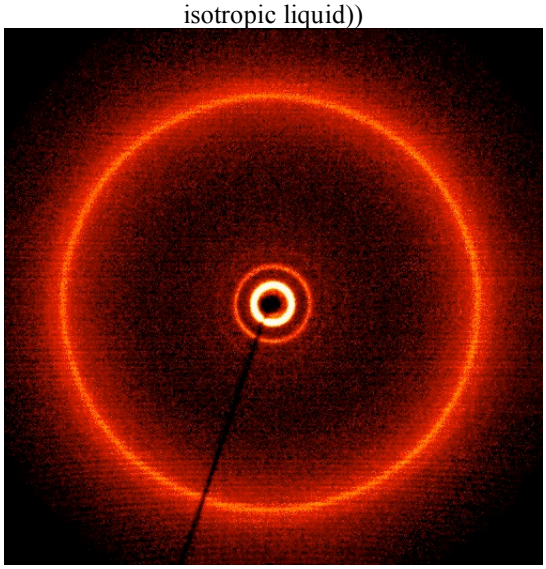
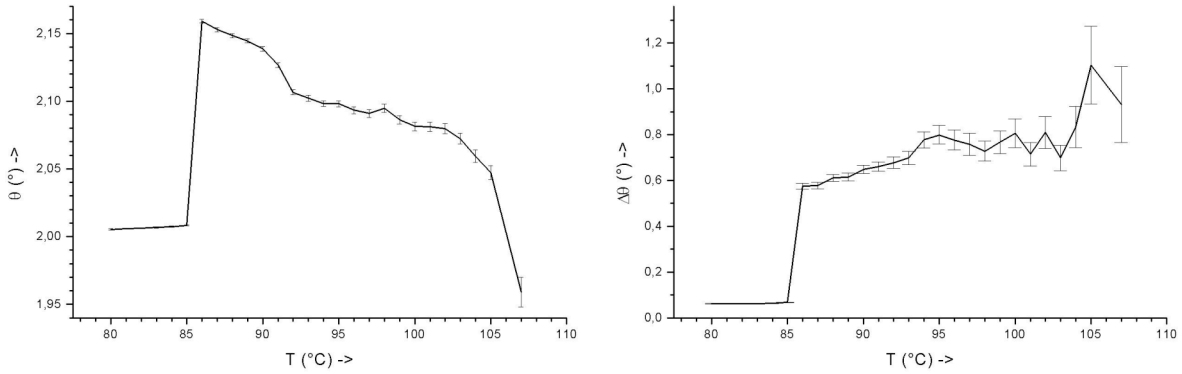
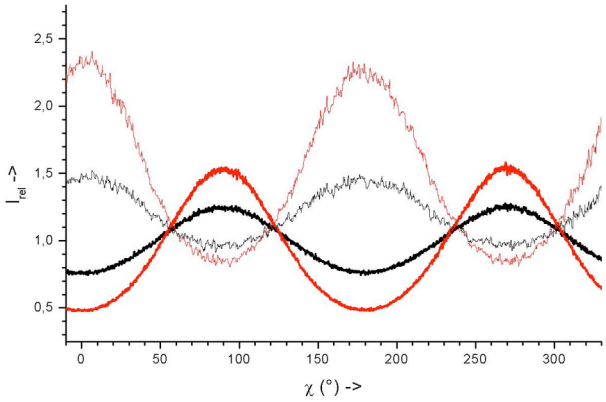


Fig. S4 Short take of the powder-like X-ray pattern for the lower temperature monotropic phase of **8-14** developing on cooling from the SmC phase at 90 °C



(a) (b)



(c)

Fig. S5 Temperature dependence of the θ-values (a) and the FWHM values (b) for the small-angle X-ray reflections from a powder-like sample of **7-4** on cooling recorded with a position-sensitive detector (error bars for esd's derived from Lorentzian fits for the peaks of the original scattering curve), (c) χ-scans for the small angle (thin lines) and the wide angle (thick lines) diffuse scattering for **7-4** aligned in the magnetic field in the N phase at 100 °C (black lines) and in the N_{col} phase at 90 °C (red lines) (2D X-ray patterns shown in Fig. 10 in the text, I_{rel} = I(T) / I(115 °C, isotropic liquid).

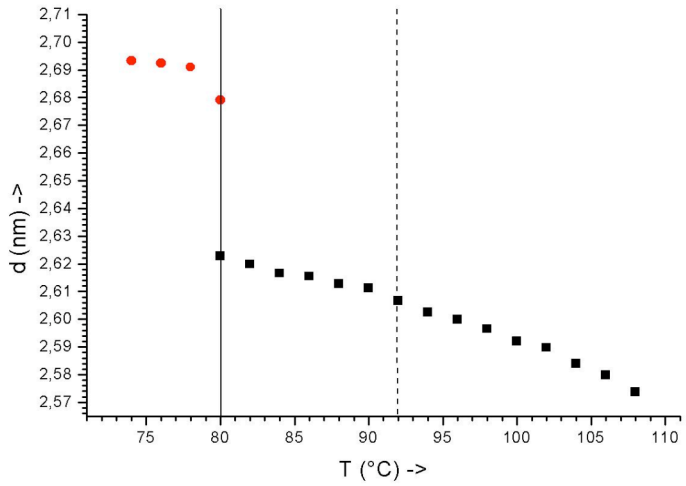


Fig. S6 Temperature dependence of the d-values for the small-angle X-ray reflections from a powder-like sample of **7-10** on cooling showing no significant change in the region of the monotropic phase transition B_{6H} to B_{6L} found in the DSC at about 94 °C (dashed line; full line and red points: crystallization) (recorded with a position-sensitive detector)

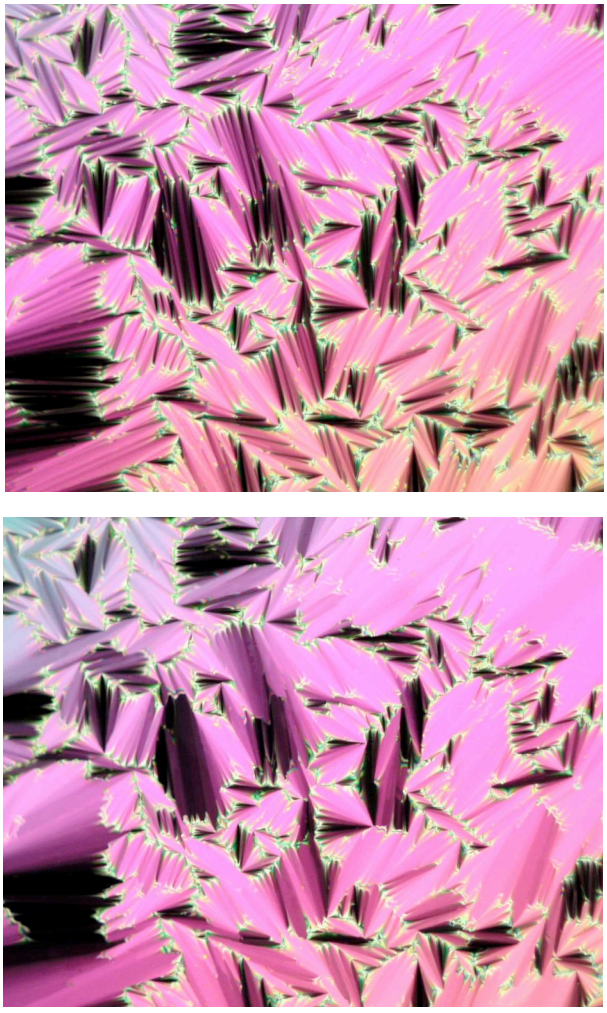


Figure S7 (Figure 4 in article) Photomicrographs of compound **8-12** obtained on cooling; (a) fan-shaped texture of the SmÃ phase at 106 °C; (b) fan-shaped texture of the SmB phase at 96 °C.