Figure 3
Polarizing optical microscopy textures in a 5 μm twisted cell in the nematic phase at 175 oC. (a) is under crossed polarizers and (b) and (c) are under uncrossed polarizers. Opposite twist domains separated by linear disclination lines are seen. The black spots are spacer particles.

Figure 4
Polarising microscopy textures in a 5μm TN cell as a function of increasing voltage (fields from 0 to 0.6 V/μm) applied in a direction normal to the substrates. The sample is held at T-TNI = 55 K. The majority of the disclination lines bow as the voltage is increased. (magnification 4x).

Figure 5
(a) Cartoons of director orientation at the middle of the device in opposite twisted domains, (b) and (c) POM textures of a twisted cell under uncrossed polarizers at T-TNI = 40 K at 0 and 0.55 V/μm respectively. (d) Representation of the coordinate system formed by D and D' and the preferred domain in each coordinate, (e) Director orientation in opposite twist domains around a disclination line in the first coordinate, γ and δ are the angles between the directors and the disclination line.

Figure 1
The heterocyclic esters synthesised originally to determine the influence of bend angle on the antiferroelectric behaviour, but later invaluable in resonant x-ray scattering experiments. X= S, Se and O, though the oxygen substituted material had no liquid crystalline behaviour.