

Supporting Information *for*
Uncovering different states of topological defects in schlieren
textures of a nematic liquid crystal

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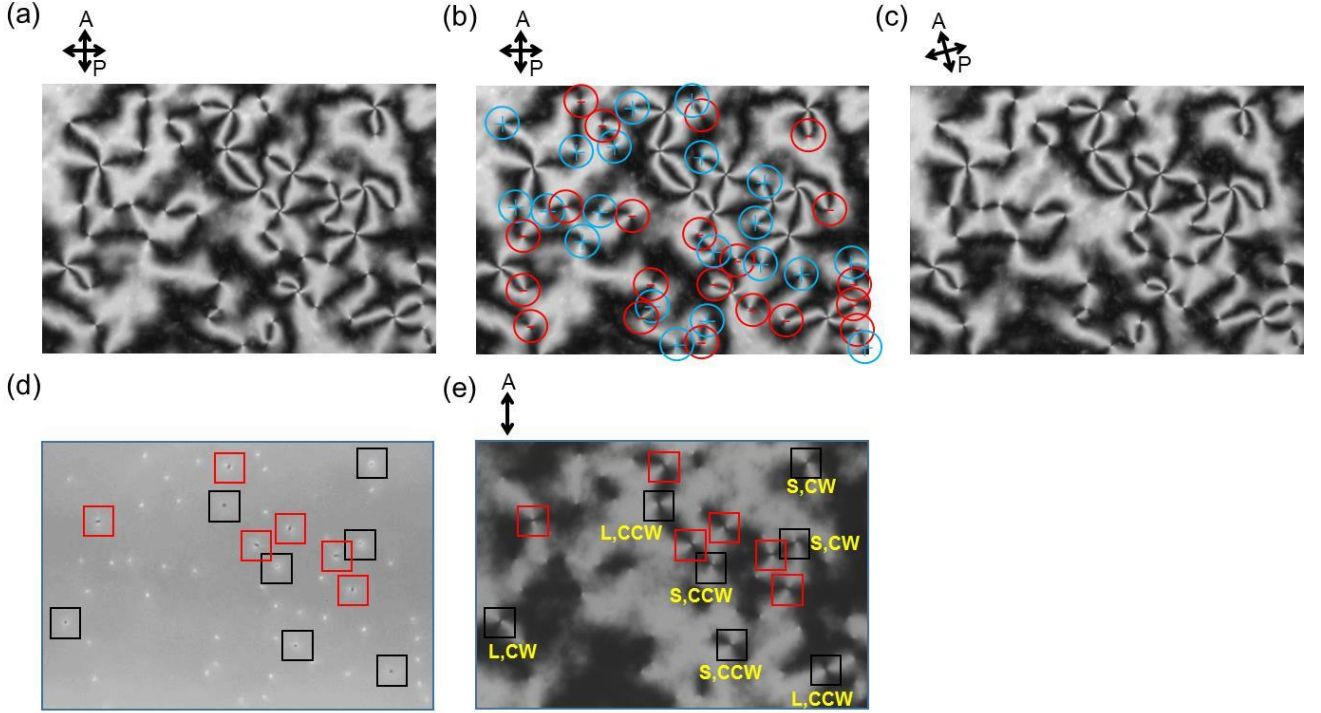
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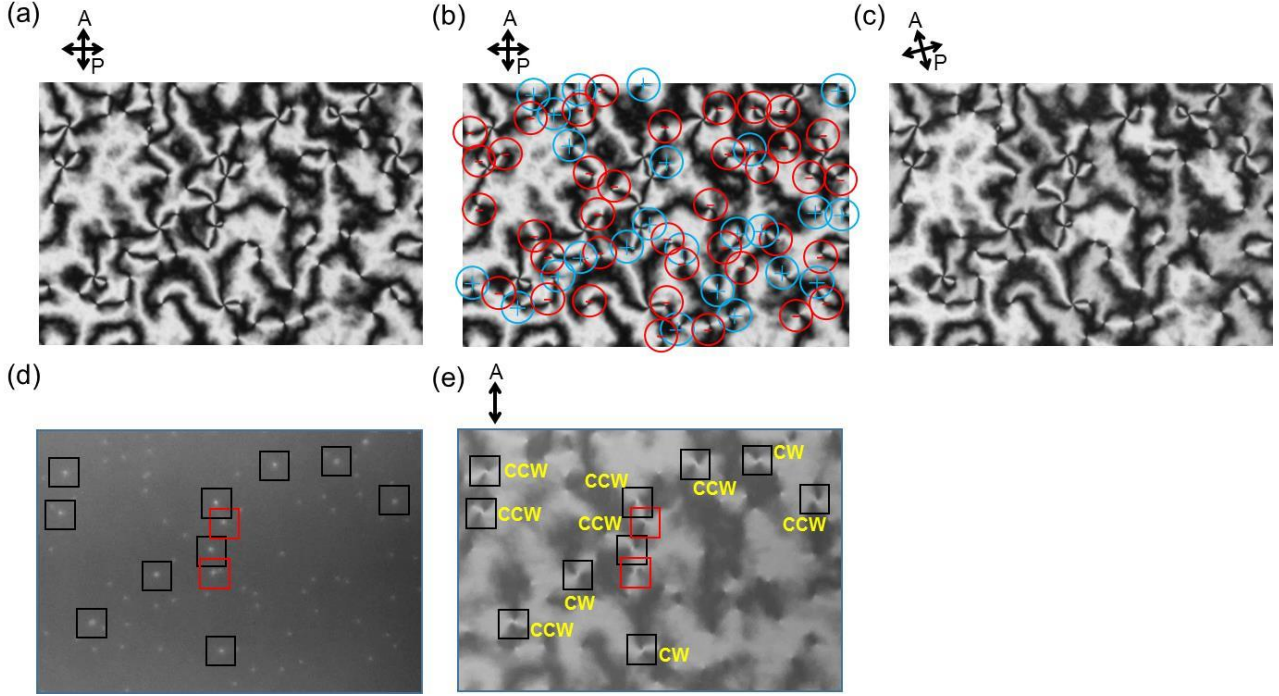
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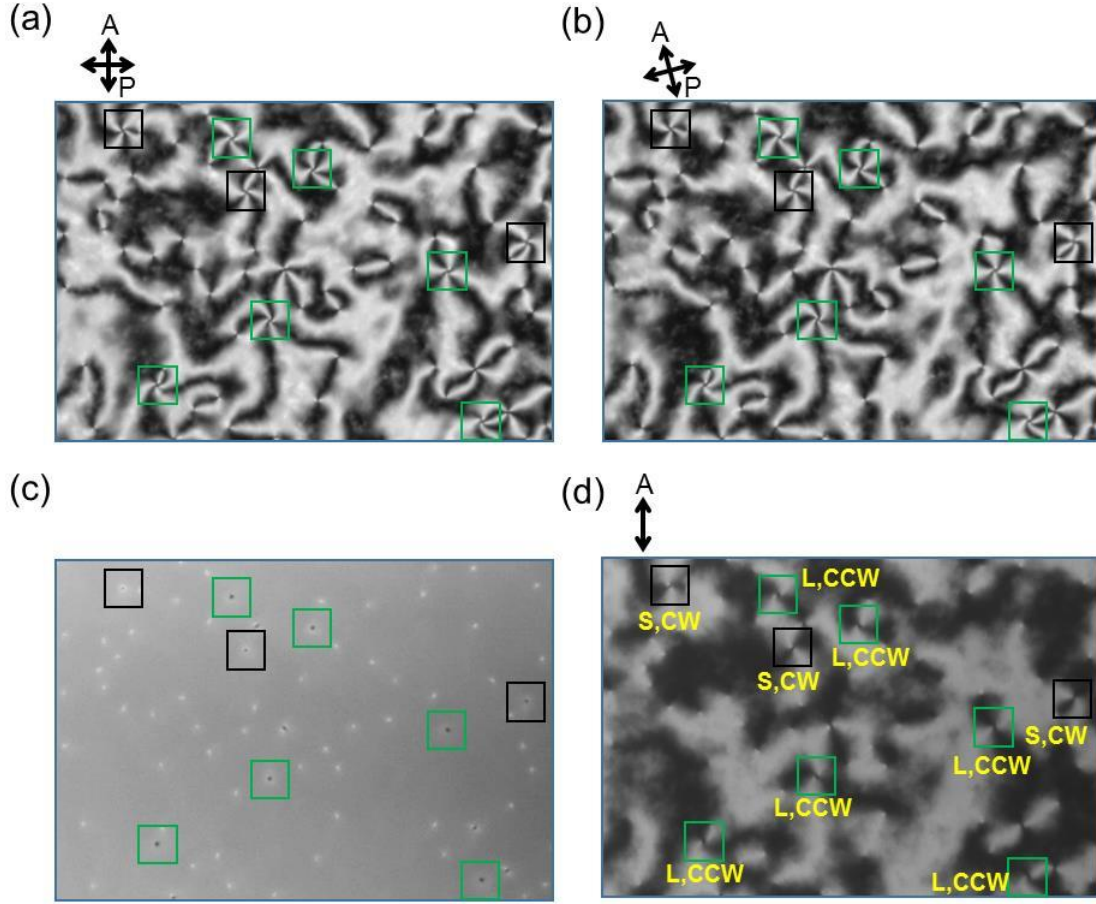
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Supplementary Figure 1. A typical set of microscopy images of NLC doped with PMN at $d \sim 2 \mu\text{m}$. (a) (b) and (c) POM images with crossed nicols. (d) FOM image. (e) FOM image with an analyser in the y direction. Size of each image: $140\mu\text{m} \times 90\mu\text{m}$. In (b), defects with $m = -1/2$ and $+1/2$ are highlighted by red and blue circles, respectively. In (d) and (e), defects with $m = -1$ and $+1$ are highlighted by red and black squares, respectively. Defects with $m = +1$ in FOM image appear as smaller (S) or larger (L) dark spots. Moreover, they show two types of spiral-like streamline of $\mathbf{n}$ from the centre in the plane [ClockWise (CW), or Counter-ClockWise (CCW) spiral]. Four types of defects with $m = +1$ are marked with yellow characters.



Supplementary Figure 2. A typical set of microscopy images of NLC doped with CNX at $d \sim 2 \mu\text{m}$. (a), (b) and (c) POM images with crossed nicols. (d) FOM image. (e) FOM image with an analyser in the y direction. Size of each image: $140\mu\text{m} \times 90\mu\text{m}$. In (b), defects with $m = -1/2$ and $+1/2$ are highlighted by red and blue circles, respectively. In (d) and (e), defects with $m = -1$ and $+1$ are highlighted by red and black squares, respectively. The difference in the dark spot size for defects with $m = +1$ in FOM image can hardly be recognized in contrast to the case with PMN. On the other hand, they show two types of spiral-like streamline of $\mathbf{n}$ from the centre in the plane [ClockWise (CW), or Counter-ClockWise (CCW) spiral]. Two types of defects with $m = +1$ are marked with yellow characters.



Supplementary Figure 3. A typical set of microscopy images of NLC doped with PMN and CB15 at $d \sim 2 \mu\text{m}$. (a) and (b) POM images with crossed nicols. (c) FOM image. (d) FOM image with an analyser in the y direction. Size of each image: $140\mu\text{m} \times 90\mu\text{m}$. Defects with $m = +1$ are highlighted by squares. Defects with $m = +1$ in FOM image appear as smaller (S) or larger (L) dark spots. Moreover, they show two types of spiral-like streamline of $\mathbf{n}$ from the centre in the plane [ClockWise (CW), or Counter-ClockWise (CCW) spiral]. Note that only two ([S,CW] and [L,CCW], highlighted by black and green squares, respectively) out of four possible types of defects (Supplementary Fig. 1) are recognized and marked with yellow characters. This result has been confirmed with no exception by assessing 39 defects with $m = +1$ over the region of $112,493 \mu\text{m}^2$.