

Electric Supplementary Information

In-Plane Switching Liquid Crystal Cell with Weakly Anchored Liquid Crystals on the Electrode Substrate

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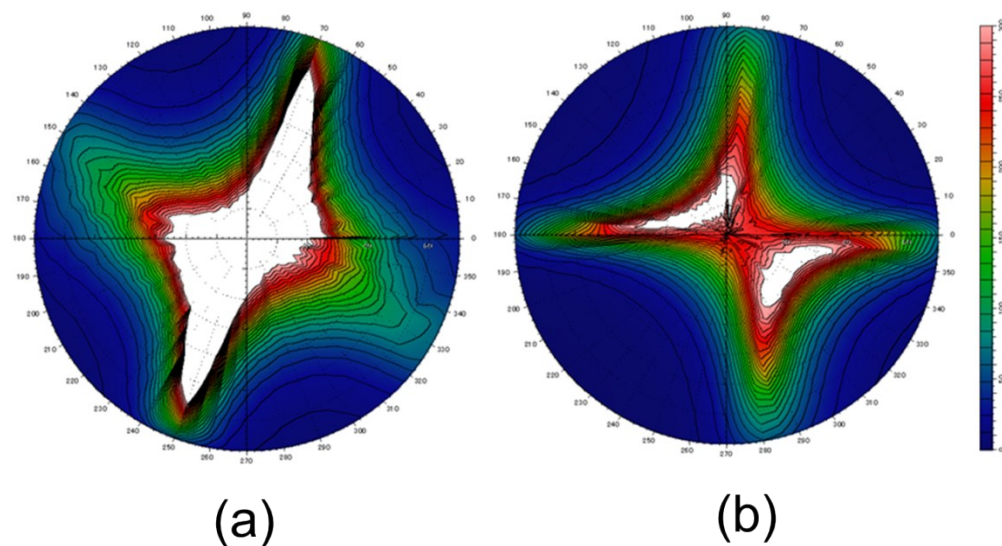


Figure S1. Contour map of the contrast ratio for the (a) type-I cell and (b) type-III cell. Regions with a contrast ratio above 300 are indicated in white. These maps reveal a difference of 20° in the symmetry of the high-contrast region between the type-I and type-II cells. This corresponds to the differences in the cross-Nicol and rubbing directions, which differ by just 20° between the type-I and type-II cells (FIG.1). The initial LC orientations of the type-I and type-III cells are at 70° – 250° and 90° – 270° , respectively.

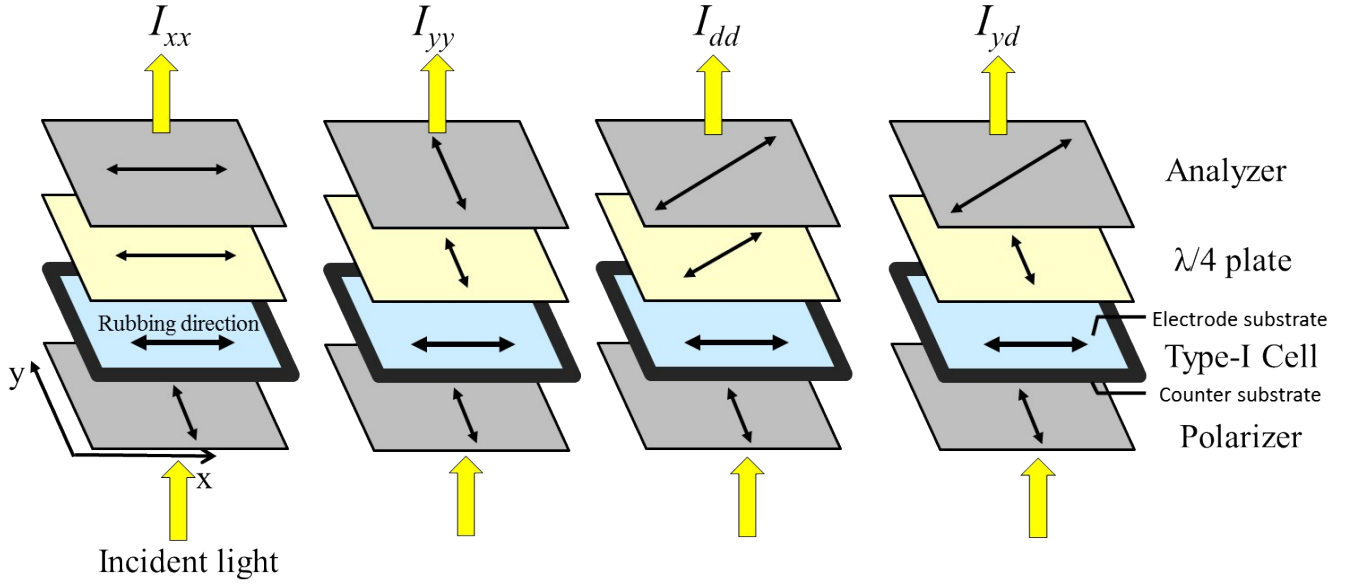


Figure S2. Optical setup for measuring the transmitted light intensities I_{xx} , I_{yy} , I_{dd} , and I_{yd} . The arrow on a $\lambda/4$ plate indicates the first axis direction. The type-I LC cell is set with the counter-substrate side facing the polarizer.

Characterization of JC-5051 (nematic LC) at 25 °C

Refractive indices $n_e = 1.5696$, $n_o = 1.4886$.

Relative permittivities $\epsilon_{//} = 8.4$, $\epsilon_{\perp} = 3.7$.

Elastic constants $K_{11} = 10.1$ pN, $K_{22} = 12.8$ pN, $K_{33} = 28.2$ pN.

Rotational viscosity $\gamma = 0.1$ Pa s.