Supplementary Material (ESI) for Journal of Materials Chemistry

Electronic Supplementary Information

Synthesis of a Novel Smectic Liquid Crystalline Glass and Characterization of its Charge Carrier Transport Properties

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1. Information about the thin film fabrication by liquid crystal cell.

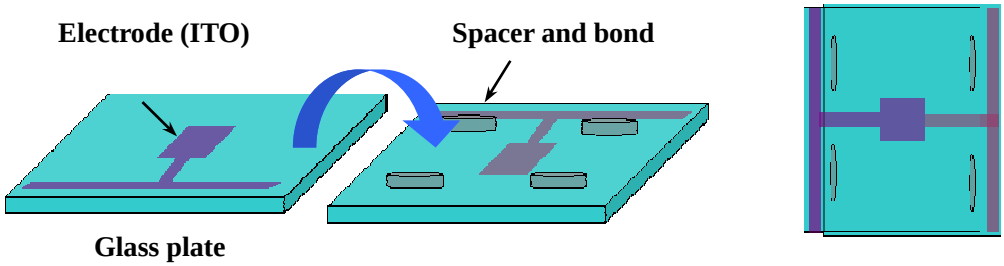

Fig. 1 The fabrication and structure of liquid crystal cell.

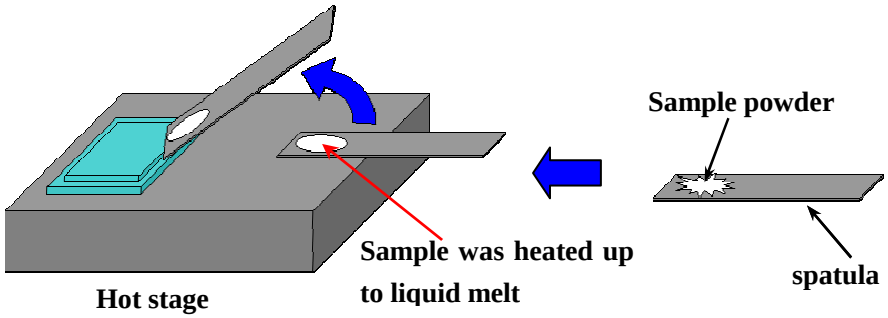

Fig. 2 The thin film fabrication by liquid crystal cells.

The liquid crystal cells for characterizing electrical properties of liquid crystalline materials are a sandwich type of cells and are made as shown in Fig 1. Electrode materials are indium tin oxide (ITO). Spacers used are silica particles in a size from 5 to 15 μm.

A liquid crystalline material was capillary filled into the liquid crystal cells in the isotropic phase as shown in Fig. 2. The glue used for fixing the glass or quartz plates is an epoxy resin, which is available below 200^{o}C.

2. Information about the time-of-flight (TOF) experimental setup.

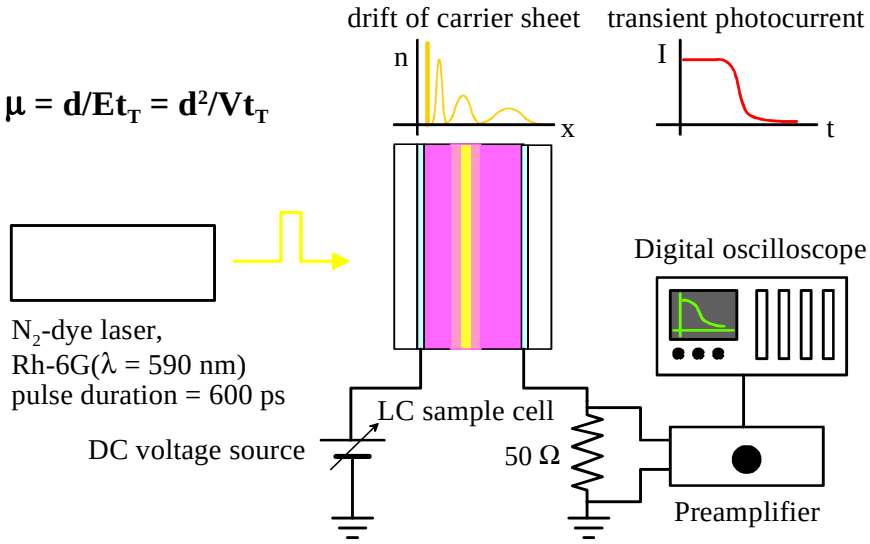

Fig. 3 TOF setup for the present study, which consists of N_2-dye pulse laser (wavelength = 337 nm, pulse width = 600 ps, and intensity = 90 μJ/pulse), DC voltage source, preamplifier with 50 Ω resistor, digital oscilloscope, and hot stage with PID thermo-controller.

3. Information about the molecular alignment of LCG-triester 8-PNP-O12 in 15 μm thick liquid crystal cell for TOF experiment.

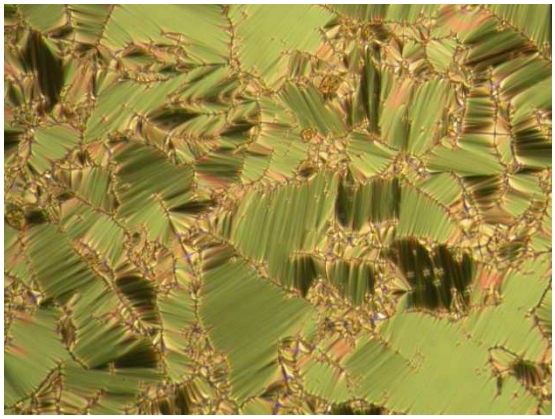

Fig 4. Micrographic texture of LCG-triester 8-PNP-O12 in a 15 μm thick liquid crystal cell.

Molecules are homogeneously aligned to the ITO pre-coated glass surface.