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LIQUID CRYSTAL ALIGNMENT

ABSTRACT

The invention provides a liquid crystal device having an aligned and surface tilted liquid crystal layer contained between two cell walls. The alignment is provided by a layer of a material that undergoes optically induced ordering during cross linking. That is, a material capable of aligning crystal molecules after cross linking with polarized light. One such material is polyvinylcinnamate. The aligning layer is profiled with an asymmetric grating, eg approximately sawtooth in cross section by interferometer, oblique incidence photolithography, or embossing. The shape of the grating provides the surface tilt. The liquid crystal material may be nematic, cholesteric, or smectic.

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