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(57) Abstract :

The inventor of the present invention has disclosed a method of forming a vertically aligned liquid crystal (VALC) display device using plain ITO (Indium Tin Oxide) substrates and nematic liquid crystal in a single step. The invention provides a VALC display device in single step formation, comprises plain ITO substrates and nematic LC of either positive or negative dielectric anisotropy. No surface treatment is given to ITO substrates as well as no inducer/alignment layer is used. The device of the present invention has good stability, high transmittance, fast response, and higher contrast, which are comparable to commercialized VA devices. The surface polar anchoring strength of the LCD device is found in the same order of the surface polar anchoring energy of conventional PIVA (Polyimide vertically aligned) cell. Moreover the device is inexpensive and reduced the process of formation.

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