Abstract Submitted
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A New Bistable SmA Display Mode[1] HUI-YU CHEN[2], RENFAN SHAO, Department of Physics and Liquid Crystal Materials Research Center, University of Colorado, Boulder CO 80309, EVA KORBLOVA, DAVID WALBA, 3Department of Chemistry and Biochemistry and Liquid Crystal Materials Research Center, University of Colorado, Boulder CO 80309, WEI LEE, Department of Physics, Chung Yuan Christian University, Taiwan 32023, NOEL A. CLARK, Department of Physics and Liquid Crystal Materials Research Center, University of Colorado, Boulder CO 80309 — In the traditional SmA display, crossed polarizers are absent and one can switch a light transparent state to an opaque light scattering state by using laser addressing or electric addressing. Such displays are bright, but of only moderate contrast ratio. Here, we present a new operation mode for a SmA display using two sets of electrodes, with one to induce homeotropic orientation and the other having an in-plane structure to induce planar orientation. This switching with crossed polarizer and analyzer enables a high contrast, bistable electro-optical effect. This SmA display mode exhibits a high contrast ratio (2500:1) for non-striped ITO pattern cells, prefect bistability, and reasonably fast switching (a few ms). These characteristics may enable potential applications on e-paper.

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