

Abstract Submitted
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Broadening the Interface Between a Compensation Film and Its Substrate in a Direct Coating Process¹ WUMIN YU, MARK FOSTER, University of Akron — Rigid-rod like aromatic polyimides (PIs) have been used as compensation films to widen viewing angles of liquid crystal displays (LCDs). A new procedure for incorporating the compensation film in the multilayer LCD assembly by directly coating the PI on a substrate film, e.g. triacetate cellulose (TAC), is preferred in industry for its simplicity and cost-effectiveness. Based on experimental results from other systems, it is thought that the adhesion of the PI layer to the TAC substrate should increase with increasing width of the interface between the two. To probe the interface width, sequential solution deposition processes were used to create model bilayer structures. Neutron Reflectivity measurements reveal that the interface width can be substantially increased by depositing the PI layer using a solvent mixture that includes a component which swells the TAC. Since changing coating temperature impacts multiple transport rates, there exists an optimum deposition temperature to maximize interface width.

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