이온빔 에너지 밀도 조절에 따른 액정 배향 효과

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Effects of LC Alignment by Controlling Ion-beam Energy Density

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Recently, it is widely studied to liquid crystal (LC) alignment using ion-beam exposure. Because conventional rubbing method has some problems such as defects from dust and electrostatic charges during rubbing process. Therefore rubbing-free techniques like ion-beam method are strongly required. We studied LC alignment by controlling ion-beam energy density and electro-optical (EO) characteristics of twisted nematic LC on the polyimide surface. In this experiment, a good uniform alignment of the nematic liquid crystal (NLC) with the ion-beam exposure on the polyimide (PI) surface was observed. In addition, it can be achieved the good EO properties of the ion-beam-aligned twisted nematic liquid crystal display (TN-LCD) on PI surface.

Key Words : LC alignment, ion-beam, polyimide, pretilt angle, response time, voltage-transmittance