

PVD방식을 이용한 NDLC 박막에서의 액정 배향 효과

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Liquid Crystal orientation on the NDLC Thin Film Deposited using physical deposition method

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Abstract : Ion beam (IB)-induced alignment of inorganic materials has been investigated intensively as it provides controllability in a nonstop process for producing high-resolution displays[1][2]. LC orientation via ion-beam (IB) irradiation on the nitrogen doped diamond like carbon (NDLC) thin film deposited by physical deposition method-sputtering was embodied. The NDLC thin film that was deposited by sputter showed uniform LC alignment at the 1200eV of the ion beam intensity. The pretilt angle of LC on NDLC thin films was measured with various IB exposure time and angle. The maximum pretilt angle were showed with IB irradiation angle of 45° and exposure time of 62.5 sec, respectively. To show NDLC thin film stability in high temperature, thermal stability test was proceeded. The uppermost of the thermal stability of NDLC thin film was 200°C. In this investigation, the electro-optical (EO) characteristics of LC on NDLC thin film were measured.

Key Words : LC alignment; NDLC thin film; pretilt angle; PECVD; sputter; thermal stability

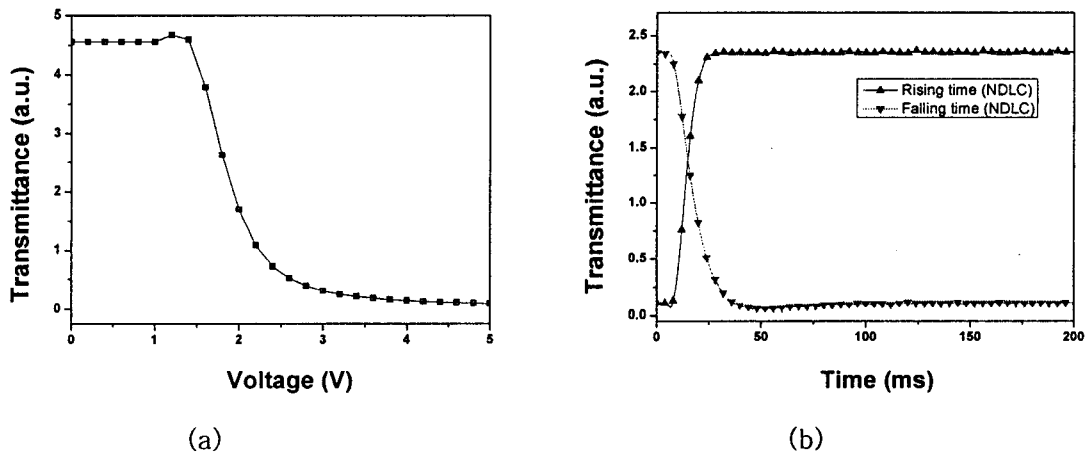


Figure 1. Electro-optical characteristics of LC on NDLC thin films (a) Voltage-Transmittance curve (b) Response time

참고 문헌

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