

PDMS기판에 이온빔 처리에 따른 수평 액정의 배향 연구

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Abstract : We characterize a flexible self-assembled liquid crystal display (LCD) fabricated from a polyimide (PI) alignment layer with polydimethylsiloxane pixel walls. Ion beam (IB) irradiation aligned LC molecules in the PI layer and bonded two flexible plastic substrates in a one-step assembly of the pixel walls. X-ray photoelectron spectroscopic analysis, Fourier transform infrared spectroscopy, and scanning electron microscopy provided chemical and physical evidence for the formation of stable chemical bonds between the PI layer and the PDMS pixel walls in addition to the important maintenance of a uniform 6 μm gap between the two substrates without the use of any epoxy resins or other polymers.

Key Words : Flexible LCD, Ion beam irradiation, PDMS, pixel walls

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