Fabrication of tilted ITO line pattern for advanced liquid crystal device

정우빈, 전환진, 정희태*
KAIST
(heetae@kaist.ac.kr*)

Liquid crystal displays (LCDs) are one of the most widely used displays in applications ranging from mobile to wall-mounted flat panel. To apply on LCDs, control of LCs is necessary technique.
To date, the most conventional method to align LCs is by mechanical rubbing of a thin polymer film, but it has many intrinsic drawbacks such as contamination and electrostatic charging. As alternatives to the rubbing process, noncontact methods such as photo-alignment have been used but it also has critical drawbacks. Therefore, indium tin oxide line pattern which is made by using secondary sputtering lithography is suggested new method in our laboratory. ITO line pattern can be alignment layer and electrode at the same time. Polymer layer for aligning is not needed now, but it has some problems such as disclination line in the twist-nematic mode. To remove disclination line and reduce the response time, applying pre-tilt angle by using tilted ITO line pattern will be tried.