

Abstract Submitted
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Possible solutions to the “Time Response” and “Backlight bleed” drawbacks of liquid crystal displays (LCDs) DIPTI SHARMA, WIT — This research explores the results of nematic (N) to isotropic (I) phase transition of bulk octylcyanobiphenyl (8CB) liquid crystal under the effect of magnetic field. The aligned 8CB molecules show a quicker and early occurrence of N-I transition with less deviation from thermal rates than the unaligned 8CB molecules using calorimetry technique. Smaller enthalpy of activation indicates less energy requirement and makes the aligned octylcyanobiphenyl suitable for LCDs. The results are discussed in terms of the formation of aligned domains of octylcyanobiphenyl molecules under the force of magnetic field. The results reveal a reduced time and temperature lag which may bring the possible solutions to the time response and backlight bleed drawbacks of liquid crystal displays (LCDs).

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