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Application of Aligned 8CB: A Solution to "Time Lag" Drawback of LCDs DIPTI SHARMA, Wentworth Institute of Technology, Boston, MA — Liquid crystal devices (LCDs) uses nematic to isotropic (N-I) phase transition of the liquid crystal to get more vibrant images on the screen where LCDs takes longer response times "Time Lag" than their plasma and CRT counterparts creating visible ghosting when images rapidly change. For example, when moving the mouse quickly on a LCD, multiple cursors can sometimes be seen. This time lag can be related to the time taken by nematic state to reach to the isotropic state of liquid crystal during the N-I phase transition. The current research focuses how the aligned domain of the octylcyanobiphenyl (8CB) liquid crystal indicates a reduced time lag during N-I transition in the presence of an external magnetic field when compared to the unaligned 8CB. The presence of magnetic field imposes a force to the liquid crystal molecules and changes the director of nematic domain towards field creating a long range ordered nematic matrix of the liquid crystal 8CB and forces the N-I phase transition to occur earlier than unaligned 8CB phase transition.

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