

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Smectic A to Nematic Phase Transition of the Aligned Octyl-cyanobiphenyl Could Bring Faster Response in Smectic Liquid Crystal Devices** DIPTI SHARMA, Wentworth Institute of Technology, Boston, MA — In the smectic liquid crystal devices, more attention has been paying to get smectic phase transition earlier with higher quality. The laser beam steering and the optical shutter applications have also been showing their interest on how fast the smectic phase transition can be reached. Therefore, here we report the energy dynamics of the molecular motion and rearrangement of the octylcyanobiphenyl (8CB) liquid crystal molecules at the smectic A to nematic (SmA-N) phase transition in the presence of magnetic field alignment as a function of time, temperature and energy activation. The results indicate that the presence of the alignment in 8CB brings faster response time and an increased energy dynamics with higher activation for the SmA-N phase transition and make the results useful in the smectic liquid crystal devices.

Dipti Sharma  
Wentworth Institute of Technology, Boston, MA

Date submitted: 07 Jan 2014

Electronic form version 1.4