

Abstract Submitted
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Absorption and Fluorescence Study of New Liquid Crystal C14-Fluorescent Dipyrrinone RICHARD RODE, SAMUEL BECK, DARREN NORTH, CHRISTOPHER HEATH, AMY RENAUD, LOGAN TATE, Undergraduate, CHANDRA PRAYAGA, AARON WADE, MICHAEL HUGGINS, Faculty Advisor — A new liquid crystal, C14-Fluorescent Dipyrrinone, was synthesized and its fluorescence and absorption properties were studied near the phase transitions. A frequency-tripled, pulsed ND: YAG laser was used to induce fluorescence in the liquid crystal sample. The fluorescence spectra and decay times were studied as functions of temperature using a 1GHz oscilloscope, monochromator, and photomultiplier tube. This sample was tested over a temperature range of 30-60 °C with 1 mK resolution to allow precise determination of the phase transitions of the sample. The absorption spectra were recorded over the temperature range of 30 – 50⁰C using a HP 8453 UV-VIS spectrometer, on a sample of the liquid crystal dissolved in chloroform and dried on a quartz insert.

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