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Optical Absorption and Laser Induced Fluorescence Studies of Liquid Crystal C-10 Fluorescent Dipyrrinone DARREN NORTH, SAMUEL BECK, RICHARD RODE, CHRISTOPHER H, AMY RENAUD, LOGAN TATE, Undergraduate, CHANDRA PRAYAGA, AARON WADE, MICHAEL HUGGINS, Faculty Advisor — A newly synthesized liquid crystal C-10 Fluorescent Dipyrrinone was dissolved in chloroform and allowed to dry on a glass slide. The slide was housed in a temperature controlled environment constructed in the lab**.** A frequency-tripled pulse ND: YAG laser (355 nm) was used to induce fluorescence in the liquid crystal sample, which was analyzed using a monochromator, photomultiplier tube, and a 1GHz oscilloscope. The sample was tested over a temperature range of 30-70^{0}C. The temperature control was precise to within 1 mK, allowing precise determination of the phase transition temperatures. The area, fall time, and peak values of the fluorescence signal were studied as functions of wavelength and temperature. Absorption spectra in the spectral range 300 – 800 nm were also recorded using a commercial (HP8453) UV-VIS spectrometer.

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