

Abstract Submitted  
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**Spectral Measurements of Fluorescence of CdSe nanoparticles in Liquid Crystals near Phase Transitions** SAMUEL BECK, JODIE GRAY, SHANE DRYE, DARREN NORTH, Undergraduate-Physics Research, TIM ROY-APPA, Department of Chemistry, CHANDRA PRAYAGA, LASZLO UJJ, Department of Physics — The liquid crystal 4'octyl-4-cyanobiphenyl (8CB) doped with cadmium selenide nanoparticles was injected into a commercially available liquid crystal cell (INSTECH, Inc). The cell was housed in a temperature controlled environment constructed in the lab and exposed to light from a frequency doubled Nd: YAG laser. The spectrum of fluorescence from the sample was measured at several temperatures over the range 250 to 450C, covering the smectic-nematic and nematic-isotropic phase transitions. The sample was held at each temperature with a precision and resolution of 1mK before taking the spectrum. It was therefore possible to approach very close to the phase transitions. The results show a significant change in the fluorescence spectrum near the nematic-isotropic phase transition.

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