

Abstract Submitted
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Molecular Assembly and Liquid Crystal Properties of a Near-IR Absorbing Dye PETER COLLINGS, ELIZABETH MILLS, Swarthmore College — The molecules of the near-IR absorbing dye IR-806 spontaneously assemble in water at very low concentrations, forming a liquid crystal phase at room temperature when the concentration is above 0.6 wt%. Unlike most chromonic liquid crystal systems, macroscopic phase separation between the isotropic and liquid crystal phases is not observed. Also unlike most chromonic liquid crystal systems, the absorption spectrum of IR-806 changes dramatically as the concentration increases and molecular assembly proceeds. Analysis of the absorption spectra provides evidence of an isodesmic assembly process at an extremely low concentration, followed by a second non-isodesmic assembly process at a higher concentration just before the liquid crystal phase appears.

Peter Collings
Swarthmore College

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