

Abstract Submitted
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Chromonic liquid crystalline properties of dyes XUXIA YAO, JUNG PARK, School of Polymer, Textile, and Fiber Engineering, Georgia Institute of Technology, MOHAN SRINIVASARAO, School of Polymer, Textile, and Fiber Engineering, School of Chemistry and Biochemistry, Georgia Institute of Technology — As a new class of lyotropic liquid crystals, chromonic liquid crystals (CLCs) can self-assemble into an ordered complex fluid, potentially useful for organic solar cells. Different from common amphiphilic lyotropic mesophases, CLCs have no optimum aggregation size, which implies the order parameter increases with concentration. We used capillary flow and magnetic field to induce alignment in chromonic dyes and studied the aggregation behavior by Vis-spectroscopy, the phase behavior by POM and DSC, and the order distribution by Raman Scattering. We also investigated how the molecular structures influence the structures of mesogens and the morphology in the dried film which will further influence the charge mobility in the solar cells.

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