

Abstract Submitted
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Chromonic liquid crystals and their dispersion in polymers JUNG PARK, XUXIA YAO, MOHAN SRINIVASARAO — Chromonic liquid crystals can self-assemble into an ordered complex fluid, potentially applicable for biosensor, polarizers, optical compensators and organic solar cells. Different from common amphiphilic lyotropic mesophases, aggregation of the chromonic liquid crystals is thought to be isodesmic and without optimum aggregation size. We studied the aggregation behavior by Vis-spectroscopy, and the phase behavior by polarizing optical microscopy and differential scanning calorimetry. We also used capillary flow to achieve uniform planar alignment in a flat capillary, and measured polarized Raman scattering, from which the temperature and concentration dependence of order parameters, both $\langle P_{200} \rangle$ and $\langle P_{400} \rangle$, and the orientation distribution were deduced. Order parameters increase as concentration increases and decrease as temperature increases. Polymer dispersed chromonic droplets with different director configurations were obtained by using different water soluble polymers and those anchoring phenomena were compared.

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