Abstract Submitted
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Studies on Sunset Yellow Chromonic liquid crystals by Polarized Raman and X-ray Scattering[1] MOHAN SRINIVASARAO, Georgia Institute of Technology, XUXIA YAO, Intel Corp., JUNG OK PARK, Georgia Institute of Technology, LEELA JOSHI, Kent State University, SHIN-WOONG KANG, Chonbuk National University, DENA MAE AGRA-KOOIJMAN, SATYENDRA KUMAR, Kent State University — Sunset Yellow FCF (SSY) molecules aggregate into columns in water and form chromonic liquid crystalline phases. Nematic SSY is aligned both in a flat capillary and in the magnetic field with columns pointing perpendicular to the long axis of capillary and perpendicular to the magnetic field direction, respectively. Temperature and concentration dependence of order parameters, both $<P_{200}>$ and $<P_{400}>$, are calculated based on polarized Raman measurement. The scission energy, E, determined from the Arrhenius thermal evolution of the longitudinal correlation length, is found to be around $4.3k_BT$ in the nematic N phase based on x-ray measurement. Flow behavior of 1.1 M nematic SSY chromonic solution under steady shear is predicted using the order parameters measured and the aspect ratios of columns.

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