Abstract Submitted
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Elasticities and viscosities of a lyotropic chromonic nematic liquid crystal[1] KRISHNA NEUPANE, Kent State University, YURI NASTISHIN, Institute of Physical Optics, Lviv, Ukraine, ALAN BALDWIN, OLEG LAVRENTOVICH, SAMUEL SPRUNT, Kent State University — We have performed dynamic light scattering studies of the elastic moduli and viscosity coefficients in a uniformly aligned sample of a lyotropic chromonic nematic formed by 14 wt. % water solution of Disodium Cromoglycate [1]. These parameters show a significant anisotropy. In particular, the bend and splay moduli K_{33} and K_{11} are an order of magnitude higher than the twist modulus K_{22}, and the ratio K_{33}/K_{11} shows an anomalous increase in temperature, which we attribute to the shortening of the aggregates. The bend viscosity is three orders of magnitude smaller than the splay and twist viscosities; all viscosity coefficients exhibit a strong temperature dependence.

[1] Nastishin *et al.*, *Phys. Rev. E.* **70**, 051706 (2004).

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