

Abstract Submitted  
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**Elasticity of lyotropic chromonic liquid crystal Sunset Yellow probed by magnetic Frederiks transition<sup>1</sup>** SHUANG ZHOU, YU. A. NASTISHIN<sup>2</sup>, M.M. OMELCHENKO, L. TORTORA, Liquid Crystal Institute and Chemical Physics Interdisciplinary Program, Kent State University, Kent, OH 44242, V.G. NAZARENKO, O.P. BOIKO, Institute of Physics, prospect Nauky 46, Kiev-39, 03039, Ukraine, T. OSTAPENKO, S.N. SPRUNT, J.T. GLEESON, Department of Physics, Kent State University, Kent, OH 44242, O.D. LAVRENTOVICH<sup>3</sup>, Liquid Crystal Institute and Chemical Physics Interdisciplinary Program, Kent State University, Kent, OH 44242 — By using director reorientation in the magnetic field, we determine the concentration and temperature dependencies of the splay  $K_1$ , twist  $K_2$ , and bend  $K_3$  elastic constants (normalized by the anisotropy of the diamagnetic susceptibility) for a nematic lyotropic chromonic liquid crystal (LCLC) Sunset Yellow. In a sharp contrast to thermotropic liquid crystals, the Frederiks effects in LCLC show a hysteresis, which is more pronounced at high concentration and low temperatures. We attribute the hysteresis to the changes in self-assembled structure of LCLC aggregates under the influence of field-imposed deformations.

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