



## Optical Anisotropy of Birefringence and Optical Retardation Studies on Chromonic Phases of Nematic and Columnar Biphase Regions of Liquid Crystalline Materials

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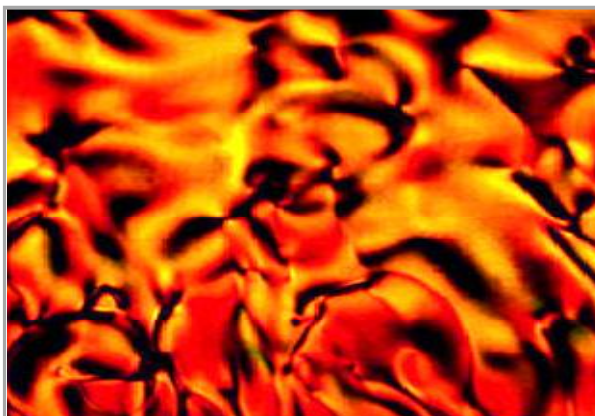
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### ABSTRACT

*The crux of our study focuses on specific properties- thermal and optical of a system comprising of binary component system, namely: 4-n-(nonyloxybenzoic) acid (NOBA).and abietic acid. Mixture of these molecules shows the co-existent biphase regions of nematic (N+I) and columnar smectic (C + I) phases: sequentially when the specimen is cooled from its isotropic phase respectively at different temperatures. The paper throws light on experimentally measured temperature-dependent liquid crystalline refractive index. The study also concentrates on thermodynamical response of optical birefringence and phase retardation of chromonic liquid crystalline phases.*

### Graphical Abstract:



Microphotographs obtained in between the crossed polars.

**Keywords:** Chromonics, Optical anisotropy, Thermodynamical studies, Optical retardation.

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