The structural color is generated by the interaction of light waves and some microscopic structures. This type of coloring is more intense and more durable than colors generated by pigments. In nature, various animals, plants and insects exhibit structural color, an example is the metallic sheen of the ventral part of the scarab beetle *Cotinis mutabilis*, popularly known in México as “mayate” (Mayatl in Nahuatl). Furthermore, in the beetle’s cuticle chitin-protein complexes form a helical structure (the so-called Bouligand structure) acting as a natural left-handed circular polarizer arising the circular Bragg phenomenon.

In this work, we mimicked the circular Bragg phenomenon present in the cuticle of *C. mutabilis* through the preparation of cellulose nanocrystals (CNC) films by the film casting method. Cellulose is a biopolymer of linear chains of glycosidic units arranged in semicrystalline fibers. Filter paper Whatman 40 was used as a source of cellulose I?, which after hydrolysis with a sulfuric acid solution produces a suspension of CNC. A subsequent purification and adjustment of concentration lead to CNC in a nematic chiral liquid crystal phase. This phase is retained in dried films by slow evaporation of solvents when the suspension is deposited in Petri dishes.

Under different conditions of hydrolysis and initial concentration, homogeneous CNC films were obtained with iridescent structural color that partially exhibit the circular polarization effect. The X-ray diffractogram proves that the monoclinic crystalline structure of I? cellulose was retained in the CNC films. Infrared spectroscopy confirms that the chemical composition of the cellulose did not suffer appreciable changes either. Scanning electron microscopy images show CNC approximately 122-200 nm long by 20-30 nm wide in a helical multilayer structure arrangement. The reflectance spectra of non-polarized light of different samples show a band of selective reflection whose spectral location, strength and broadening depend on the specific processing conditions.

**Keywords:** Cellulose nanocrystals, Structural color, Circular Bragg phenomenon

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