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Chirality induction in confined chromonics

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The reflection symmetry breaking observed in chromonic liquid crystals confined in different geometries, like tactoids, microspheres or capillaries, has been the focus of researchers in the last few years. Although the assembly mechanism that drives this behavior is common to most chromonic materials, the interface phenomena and the induced chirality are strongly dependent on the chromonic molecule itself.

Chirality can be induced in chromonics using chiral aminoacids with alternating results. Understanding the key factors that lead to maximize this phenomenon is important for the design of novel materials able to self-assemble in chiral macroscopic structures with tailored optical properties, as selective reflection.

Here, we present a comparative study involving a not commercial chromonic, a synthesized metal containing chromonic compound [(Bpy-OH)2Ag][CH3COO]H2O, and two model chromonics that behave in different manner with respect to chirality induction [1,2].

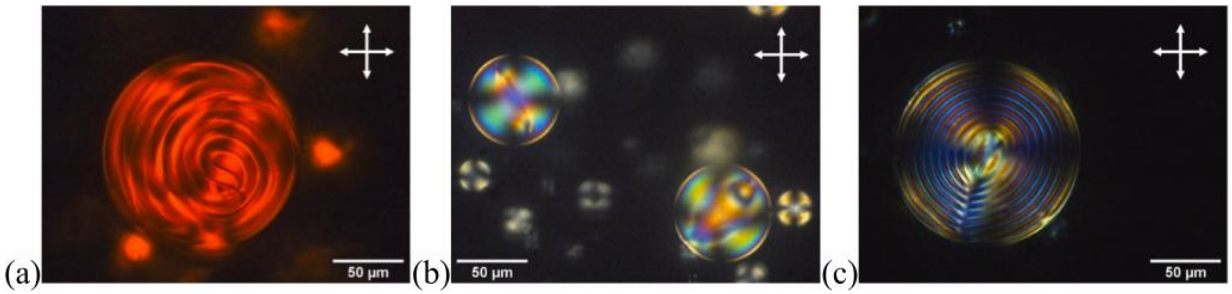

Figure 1. SSY doped with Trans-Hyp (a), [(Bpy-OH)2Ag][CH3COO]H2O doped with Trans-Hyp (b) and DSCG doped with Trans-Hyp textures (c).

References

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