Electronic transitions in a classical antiferroelectric banana-shaped compound

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Banana-shaped liquid crystals can be used as molecular electronics. In this work, we have investigated the electronic transitions in a typical banana-shaped liquid crystal 1,3-phenylene-bis [4-(4-octylphenylimino) methyl] benzoate by measuring its optical absorption spectra and calculating its electronic structures. The absorptions of the banana-shaped compound take place at 210, 240, 280, 350 nm, respectively. With the assistance of the calculated electronic structures, the electronic transitions in this banana-shaped compound can be determined.

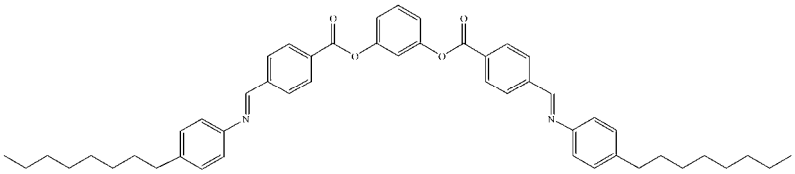

Figure 1. Molecular structure of the antiferroelectric banana-shaped liquid crystal.

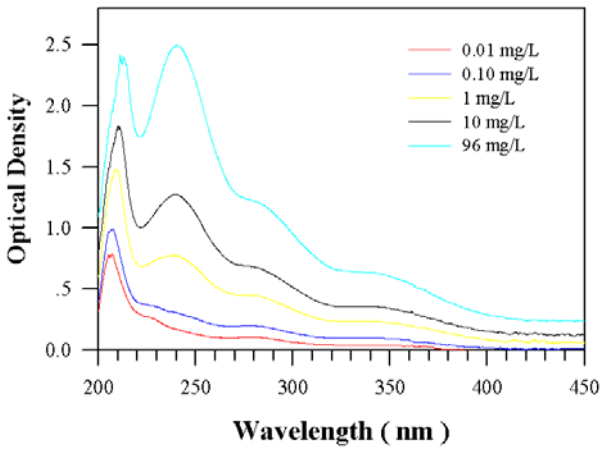

Figure 2. Optical absorption spectra of the banana-shaped compound.