

Molecular Orientation of Some Fluorescent Dichroic Dyes in Nematic Liquid Crystal

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Highly fluorescent dyes, derivatives of 1,8-naphthalimide and 3-benzanthrone, have been studied for use in liquid crystal displays of the “guest-host” type. Special attention has been given to the evaluation of the orientation of the dyes with planar molecular structure in the nematic liquid crystalline phase. By means of polarized absorption and emission spectroscopy, the order parameters S_A , S_F and D of the dyes in the liquid crystal mixture ZLI 1695 have been determined. Moreover, the absorption transition moment directions with respect to the long molecular axis of the dyes have been assigned.

Key words: Fluorescent Dyes; Liquid Crystal; Order Parameters; Polarized Absorption and Fluorescence.