SPECTROSCOPIC STUDY OF CONFORMATIONAL POLYMORPHISM IN MESOGENIC SERIES OF CHOLESTEROL ALKOXYBENZOATES

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The conformational mobility of homologues of cholesteryl *p-n*-alkoxybenzoates (ChAOB) $C_{27}H_{45}$-COO-C_6H_4-O-C_nH_{2n+1} (n = 1, 3 - 6, 8, 10, 16) has been studied by infrared spectroscopic methods. These substances are one of the prospective classes of cholesteric liquid crystals. IR spectra show a high conformational mobility of the ChAOB connected with the turn of benzoate fragment around the C-O ester bond with respect to the plane of steroid nucleus. It was shown that the ChAOB mesomorphism was dependent not only on molecular structure (length and conformation of alkoxy chains), but also on a molecular arrangement in solid crystalline state. It was obtained that alkoxy chains of the high homologues (n = 10, 16) are in the ”melted” state even at 100 K. The spectral-structural correlations were neatly established.