Studies of reorganization of the molecules during smectic A-smectic C phase transition using infrared spectroscopy and generalized two-dimensional correlation analysis.

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Streszczenie

The FT-IR spectra of the 4-hexyloxybenzylidene-4′-dodecyloxyaniline (6BA12) were studied as a function of temperature to describe reorganization of spatial distribution of molecules during various liquid crystal phase transitions: isotopic liquid (IL) – nematic (N), nematic – smectic A (SmA), smectic A – smectic C (SmC), smectic C – smectic I (SmI). The main focus is on the SmA-SmC and SmC-SmI transitions. Two dimensional correlation analysis (2D-IR) of IR spectra has been used to check changes of the arrangement and specific interactions of molecules during phase transitions. A moving-window autocorrelation analysis has been applied to locate transition points basing on the spectroscopic data.

Słowa kluczowe

2DIR, Smectic C, Moving-window autocorrelation analysis, schiff base, iR spectroscopy, liquid crystals, Smectic A

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