Temperature dependence of Raman spectra in 1,2-dinitrotetrachlorobenzene.

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The existence of order-disorder type phase transitions around 353 K in 1,2-dinitrotetrachlorobenzene (1,2-DNTCB), found earlier during DSC and dielectric studies, was confirmed on the basis of temperature dependence of selected Raman spectral parameters. It was established that the positions and widths of the studied bands do not vary noticeably near the transition temperature, but the change in their intensity is pronounced and a variation in their shape takes place. As was expected, Raman bands gain gaussian character in the vicinity of the phase transition. The observed properties were consistent with the concept of superstructure formation during phase transition in the 1,2-DNTCB crystal proposed already on the basis of X-ray and dielectric measurements. It was assumed that in the high temperature rotational phase a coupling of molecular movements leads to the collective rearrangement.

Adres publiczny

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