

05.2-18 THE RELATION OF MUSCOVITE STRUCTURAL THERMOSTABILITY TO ITS CRYSTALLOCHEMISTRY PECULIARITIES. By G.A. Kuznetsova and M.S. Metsik, Department of Solid State Physics, Irkutsk State University, Irkutsk, USSR.

The X-ray investigations of dehydroxylation of different muscovite genetic types with known crystallochemistry formulas have been carried out.

The conditions of thermal treatment which gave two-phase systems: muscovite-muscovite dehydroxylate were established. The muscovite phase concentration in the specimen subjected to thermal treatment serves as a criterion for structural thermostability. It has been determined that the thermostability of the muscovite structure increases with rise of Ba and Li contents in the interlayer, with rise of Ti in sixfold coordination and with the deviation of tetrahedral filling by cations from ideal to increase of the Si content. The increase of Ca content in the interlayer and low degree of Al isomorphous substitution by other cations in sixfold coordination lead to the decrease of muscovite thermostability.

The researches have shown that thermostability of different muscovite genetic types decreases in the following way: muscovite formed by transformation from biotite (muscovite from cracks), muscovite from quartz-muscovite substitutional complex, "pegmatoid" muscovite from zones of quartz substitution, the "late" muscovite from zones of albitization that follows from crystallochemistry peculiarities of each genetic type.

05.2-19 STUDY IN THE STRAIN TENSOR OF SOME ORGANIC HETEROCYCLIC COMPOUNDS. By L.A. Teslenko, V.F. Teslenko and V.V. Makarsky, Laboratory of Crystal Physics, Pedagogical Institute, Kolomna, U.S.S.R.

By the pulse ultrasonic method there has been measured longitudinal and transverse wave velocities in various non-equivalent crystallographic directions in the monocrystal of the 1,2,4-triazole which is a representative of heterocyclic compounds. A considerable velocity anisotropy has been discovered. The velocity indicatrices of the elasticity waves have been built. The elasticity and pliability tensor components have been calculated from the experimental data. Also there have been drawn and built all possible pressure figures and a number of other values characterising the organic crystal. The results are compared with the data we have received earlier from the analogous study of some aromatic compounds (naphthalene, anthracene, etc.), acyclic compounds (carbamide, glycine) and with the measurements we have obtained from the polycrystalline aggregates of the 1,2,4-triazole. An attempt has been made to discover the relations between the elastic and other characteristics of the 1,2,4-triazole and its structure.

05.2-20 THE CRYSTAL STRUCTURES, MOLECULAR POLARIZABILITIES AND ELECTRO-OPTICAL PROPERTIES OF SOME AMINO AND POLYAMINO ACIDS.

By V.P. Gupta, V.D. Gupta and C. Mehrotra, Department of Physics, Lucknow University, Lucknow -226007, India.

The crystal structure data of glycine, L-alanine, L-proline, 4-hydroxy-L-proline and their polymeric forms being available, attempt has been made to calculate the molecular polarizabilities and some electro-optical properties of these systems. Various theoretical approaches such as Lippincott delta function potential model (I), atomic polarization method (II) and atom-dipole-interaction model (III) have been used but not all of them reflect conformation dependence e.g. in atomic polarization method no fragment - fragment interaction which stabilize the secondary structure has been considered. The atom - dipole - interaction model takes into account various bonded and non - bonded interactions and is therefore conformation dependent. In this method, the results are dependent on atomic (or group) polarizabilities and positional coordinates of atoms and show conformational dependence. In the present paper the review of work done during last five years will be presented.