FIRST ALL-UNION CONFERENCE ON ORGANIC CRYSTAL CHEMISTRY

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The First-All-Union Conference on Organic Crystal Chemistry was held on November 24-26, 1975, in Riga to evaluate the modern state of organic crystal chemistry in our country and also to determine the leading trends of structural organic chemistry for the future. The conference was organized by the crystal chemistry section of the Scientific Council on Chemical Kinetics and Structure of the Academy of Sciences of the USSR and the Institute of Organic Synthesis of the Academy of Sciences of the Latvian SSR.

The proceedings of the conference were conducted in plenary sessions and two thematic sections. Papers on the structural studies of organic, bioorganic, natural, and heteroorganic compounds were presented and discussed in the first section, and papers associated with studies of the stereochemistry and packing of molecules and intermolecular interaction in crystals in connection with their chemical, biological, and physicochemical properties were presented and discussed in the second section.

More than 150 representatives of 40 laboratories of organic crystal chemistry and x-ray diffraction analysis participated in the conference. Six plenary and three plenary-sectional papers, as well as ∿80 communications, were presented.

Corresponding Member of the Academy of Sciences of the USSR B. K. Vainshtein in a paper entitled "Modern data on the structure of globular proteins" pointed out the complexity and laboriousness of the determination of the crystal structure of proteins, noting that the three-dimensional structures of 50-60 proteins with high resolution (∿1.5 Å) and ∿100 structures with low resolution (∿5 Å) have presently been determined.

The problem of the determination of the absolute configuration of molecules is exceptionally important in the study of the structures of optically active compounds. A plenary paper entitled "Anomalous scattering of x-ray beams and determination of absolute configurations" (A. N. Chekhlov, Yu. T. Struchkov, and A. I. Kitaigorodskii, Moscow) was devoted to the possibilities of the solution of this problem. It was noted that the absolute configurations of the molecules of ∿480 compounds had been determined up to 1975.

Plenary papers entitled "Structural studies of organosilicon compounds" (L. O. Atovmyan, O. A. D'yachenko, S. V. Soboleva, and S. M. Aldoshin, Chernogolovka) and "Crystal structures of cyclic siloxanes" (V. E. Shklover, N. G. Bokii, and Yu. P. Struchkov, Moscow) were devoted to structural studies of heteroorganic compounds. The crystal structures of silicon and germanium compounds containing six- and five-membered heterorings condensed with aromatic rings were examined in the first paper. The crystal structures of six-, seven-, eight-, and twelve-membered heterocycles, as well as spherocyclic siloxanes, were examined in the second paper.

Papers entitled "Structures of heteromolecular and quasi-heteromolecular organic crystals" (P. M. Zorkii, Moscow) and "Crystallochemical peculiarities of molecular charge-transfer self-complexes" (Ya. Ya. Bleidelis, A. E. Shvets, and Ya. F. Freimanis, Riga) were also presented in the plenary session.

Of the communications dealing with the molecular and crystal structures of heteroorganic compounds, one should mention papers entitled "X-ray-diffraction study of heterocyclic silicon-containing compounds of the naphthalene, fluorene, and phenanthrene types" (V. A. Sharapov, A. I. Gusev, D. L. Krasnova, and E. A. Chernyshev, Moscow) and "Molecular and crystal structure of atranes" (A. A. Kemme, Ya. Ya. Bleidelis, and G. I. Zelchan, Riga).

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In a paper entitled "Structure of organophosphorus compounds" (V. D. Cherepinskii-Malov, V. G. Andrianov, and Yu. T. Struchkov, Moscow, Kazan) the results of structural studies of heterocyclic compounds of phosphorus in its various valence states were set forth.

Of the papers pertaining to the structures of biologically active and natural compounds, one should mention those devoted to the study of the crystal and molecular structures of cyclic depsipeptides (B. K. Vainshtein, G. N. Tishchenko, et al., Moscow) and alkaloids (S. M. Nasirov, V. T. Andrianov, et al., Moscow, Tashkent).

A paper by Ya. L. Gol'dfarb, S. Z. Taits, F. D. Alashev, et al. (Moscow) was devoted to the problems of the conformations of molecules of macrocyclic ansa-ketolactones that include a thiophene ring.

Interesting data on the structures of sterically strained 3,3'-disubstituted bis-symtriazolopyridazines, which are heterophenanthrenoid compounds, were presented in a paper by Z. K. Sadybakasov and co-workers (Moscow).

The papers presented in the second section reflected the achievements of Soviet scientists in the realm of confirmational calculations of carbocyclic and heterocyclic molecules. A number of them were devoted to the solution of problems associated with the formation of the tertiary structure of globular proteins, the relationship between structure and properties, the calculation of thermodynamic functions, and the analysis of intermolecular interactions by the method of atom–atom potentials.

It was resolved that the Second All-Union Conference on Organic Crystal Chemistry would be held in Moscow in 1977.

FOURTH ALL-UNION CONFERENCE ON THE CHEMISTRY OF DICARBONYL COMPOUNDS

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The Fourth All-Union Conference on the Chemistry of Dicarbonyl Compounds, devoted to the 85th birthday of Academician of the Academy of Sciences of the Latvian SSR Gustav Wanag, was held March 16-18, 1976, in Riga. The conference was organized by the Riga Polytechnic Institute in collaboration with the Institute of Organic Synthesis of the Academy of Sciences of the Latvian SSR and the Latvian Republic Board of the D. I. Mendeleev All-Union Chemical Society.

Approximately 200 individuals representing 42 different scientific organizations and universities of Moscow, Leningrad, Minsk, Kiev, Kazan, Rostov-on-Don, Ufa, Vladivostok, Sverdlovsk, etc., as well as the Szczecin Polytechnic Institute (Poland), participated in the conference.

In the five-year period between the third and fourth conferences, the theoretical level of the studies of dicarbonyl compounds with extensive involvement of modern physicochemical methods and quantum chemical calculations has risen significantly. The broad possibilities of the synthetic utilization of dicarbonyl compounds to obtain physiologically active substances, analytical reagents, complex catalysts, and substances with semiconductor properties and high photosensitivities have been demonstrated. A number of aromatic bis-1,2-diketones are finding practical application as monomers for the production of heat-resistant polymeric materials — polyphenylquinoxalines (V. V. Korshak, E. S. Krongauz, and O. Ya. Neiland).

In the category of the most interesting communications one may note the following. Professor V. I. Minkin (Rostov-on-Don) presented a correlational paper on carbonotropic tautomeric transformations of the O-derivatives of enols of diketones and the N-derivatives

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