

CHRONICLES

SIXTH ALL-UNION CONFERENCE ON THE CHEMISTRY AND USE OF LIGNIN

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The Sixth Conference on the Chemistry and Use of Lignin organized by the Division of General and Technical Chemistry of the Academy of Sciences of the USSR, The Scientific Council on the Problem of "The Chemistry of Wood and Its Main Components," the Institute of Wood Chemistry of the Academy of Sciences of the Latvian SSR, and the D. I. Mendeleev All-Union Chemical Society was held in Riga from October 26 to 28, 1976.

More than 300 scientific workers from 86 scientific-research institutes and colleges of 48 towns of the Soviet Union took part in the work of the conference. More than 60 lectures were delivered on the chemistry technology and use of lignin.

Many bench lectures were delivered in the conference hall and an exhibition of preparations and products obtained from lignin was organized.

The participants in the conference listened with great attention to a lecture by L. V. Grebnev (Ministry of the Pulp and Paper Industry of the USSR, Moscow) on "The promising nature of scientific investigations in the field of lignin chemistry in accordance with the proposals for the development of the pulp and paper industry in the 10th Five-Year Plan," where the advances achieved in this field were shown with clear examples. In past five-year plans, as well, research workers have recommended and have introduced into the general economy a number of lignin preparations. These include igetan, nitrolignin, and sunil, which is used at the present time in drilling petroleum wells to reduce the viscosity and to thin out drilling muds tending to thicken (the work of N. N. Shorygina and T. V. Izumrudova, Institute of Organic Chemistry of the Academy of Sciences of the USSR, Moscow). LSU and ATK (M. I. Chudakov et al., Leningrad Technological Institute of the Pulp and Paper Industry) have proved to be effective lignin fertilizers. However, an enormous amount of lignin is still discarded into water bodies or is used as fuel. Lignin is used insufficiently fully as a raw material for the chemical industry. In view of this, the lecturer presented research workers with a number of problems on delignification and the use of lignin.

Great interest is attached to the work performed under the direction of Academician of the Academy of Sciences of the Latvian SSR, V. N. Sergeeva (Institute of Wood Chemistry of the Academy of Sciences of the Latvian SSR, Riga) on the production of heat-stable resins (G. N. Telysheva) and lignourethanes (L. N. Mozheiko) for practical use as paints, adhesives, and coatings.

Professor B. D. Bogomolov (Archangel Institute of Wood Chemistry) and representatives of the Yaroslavl tire factory gave a lecture on the production of sulfate lignin and its use in the manufacture of tires to increase the strength of the bond of rubber-cord systems.

The lectures of M. I. Chudakov and his pupils gave the results of the oxidative ammonolysis of lignin and some of its model compounds and reported that at high temperatures and pressures (200°C, 30 atm) lignin with a high nitrogen content (up to 21%) is obtained.

G. F. Zakis (Institute of Wood Chemistry of the Academy of Sciences of the Latvian SSR) made the participants of the conference acquainted with the technology of the production at room temperature of an ammoniated lignin containing about 20% of organically bound nitrogen.

Kh. A. Abduazimov and colleagues (Institute of the Chemistry of Plant Substances, Tashkent) has obtained a number of nitrogen-containing derivatives of hydrolysis lignin with ammonia, urea, thiourea, and o-, m-, and p-phenylamine diamines which are being tested by biologists at the present time. The introduction of ammoniated lignin into the soil (in a

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dose of about two tonnes/ha) raises the yield of cotton by 3-8, of rice by about 5, and of potatoes by about 20 centners/ha as compared with a control.

A number of communications was devoted to the use of lignins in the foundry industry (S. P. Doroshenko, Kiev Polytechnic Institute), as a reducing agent in nonferrous metallurgy (E. I. Akhima, "Gidroliz" All-Union Scientific-Research Institute, Leningrad), and as an ion-exchanger for precious metals and in the purification of effluents.

The lectures of V. M. Nikitin (Leningrad Academy of Wood Technology), V. M. Reznikov (Belorussian Technical Institute, Minsk), and others considered questions of improving the delignification of wood in various methods of digestion and questions of the reactivity of lignin.

The lectures delivered at the conference aroused great interest.

The results of their discussion showed that in the institutes of the system of the Academy of Sciences, in departments of some universities and in divisions of scientific-research institutes investigations are being performed on the most urgent problems of understanding the structure of lignin, its reactivity, its modification, and its practical use.

In conclusion, Academician of the Academy of Sciences of the Latvian SSR, A. I. Kalnin'sh wished the participants at the conference further advances in the discovery of new useful properties of lignin and its rapid introduction into the national economy.

A decision was taken to organize the next Conference on Wood Chemistry (including that of lignin) with the participation of foreign workers in Riga in 1980.