ALL-UNION INTER-FACTORY CONFERENCE ON APPLIED ELECTROCHEMISTRY

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In Leningrad, on the 10-12th of November, 1971, there was held an All-Union Scientific Conference entitled "Courses of development and recent achievements in applied electrochemistry" organized by the Ministry of College and Secondary Specialized Education of the USSR. More than 600 staff members from the electrochemistry departments of colleges, a number of institutes of the Academy of Sciences of the USSR, and corresponding industrial departments took part. At the plenary sessions and the meetings of the six sections, approximately 190 papers were presented.

The papers at the plenary sessions related mainly to general information on the status and development prospects for the separate branches of applied electrochemistry. They were devoted to questions of hydrometallurgy (Academician R. I. Agladze and Professor V. L. Kheifets), plating technology (N. T. Kudryavtsev, P. M. Vyacheslavov), electrolysis of fused media (Yu. V. Baimakov, M. M. Vetyukov, A. A. Kostyukov), electrolysis without precipitation of metals (L. M. Yakimenko, G. A. Seryshev, M. Ya. Fioshin) chemical current sources (N. S. Lidoreno, G. F. Muchnik), and corrosion (Academician Ya. M. Kolotyrkin). The problems of each of these branches were considered in more detail at the proceedings of the respective sections. At the plenary session two papers of a theoretical nature were also presented, devoted to electrocatalysis, in particular, the role of kinetic and structural factors in this phenomenon (V. S. Bagotskii, Yu. B. Vasil'ev) and electrocatalysis during the chemical reduction of metals (K. M. Gorbunova, M. V. Ivanov, A. A. Nikiforova).

A consideration of the large amount of actual material and the lively discussion of the problems of development in each of the branches of applied electrochemistry provided a means of developing a general point of view on the problems of research workers and electrochemists, as was reflected in the conclusions of the conference.

At the conference the importance was stressed of the work concerned with improving the efficiency of electrolysis in both the metallurgical and chemical industries. Increase of current densities and enlarging the electrolysis cells are the most important questions, primarily for large-scale electrochemical production. Great attention was paid to questions of automation and optimization of electrolysis.

One of the main scientific and engineering problems in the applied electrochemistry of solutions is the development of stable insoluble anodes, the use of which brings new possibilities of making high-efficiency and economical electrolysis cells.

The question of improving the quality of electrochemical production played an important part in the conclusions of the conference, as also increasing metal purity, extending the working life of the largest types of chemical current sources, improving the quality of electrodeposits, etc.

The question of improving working conditions was discussed at meetings of a number of sections. With regard to this question those aspects were considered such as the development of compositions devoid of highly toxic components (cyanide-free complex electrolytes for electrodeposition, arsenic-free alloys for lead/acid batteries) etc.

The conference devoted much attention to the need for the wide acceptance into the national economy of the latest methods and engineering techniques and the development of new routes in applied electrochemistry. One paper laid particular stress on the wide introduction of corrosion inhibitors, the development of organic electrosynthesis, electrodeposition from alloys, increasing the production of sodium, and

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many other real examples (in addition to those named, more than 20 actual questions were included in the conclusions of the conference).

The conference stressed the great importance of developing theoretical and research work directed towards the improvement of existing and developing new engineering processes.

The conference considered it expedient to introduce a number of proposals of an organizational nature. The most important of these are the suggestions to create an All-Union Coordination Center for the investigation of corrosion and protection of metals and other materials and to create a State Association (similar to the State cost accounting division) for electrodeposition and an organization for the training of teams of corrosion specialist.