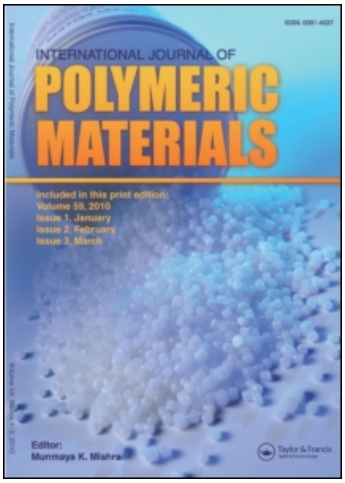

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The First Enikolopov's Readings

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The First Enikolopov's Readings

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The first Enikolopov Readings were held on March 14, 1994 at the Institute of Synthetic Polymeric Materials (ISPM), Russian Academy of Sciences, Moscow. These Readings were dedicated to the 70th Anniversary of the Birthday of Professor Nickolay S. Enikolopov, who made an oustanding contribution to the development of Chemical Physics, Physical Chemistry, and Chemistry and Physics of Composites. The leaders of the Russian scientific community gathered in order to remember the achievements of this great scientist of the former Soviet Union.

Regretfully Professor Enikolopov did not survive his jubilee. He passed away in January, 1993 during his business trip in Germany where he discussed the possible industrial application of his ideas on the re-use of automotive tires and the blending of non-mixed polymers. Enikolopov's approach was based on the principles of the reactions in solid phase under pressure and sheer (Bridgeman envel and extruder), which he successfully developed.

Nickolay S. Enikolopov was born in Nagorny Karabakh (the Armenian region of Azerbadjan) to the family of a poor accountant. His father was arrested and shot in 1937 during Stalin's social purification. Nickolay left with his brothers and sisters, and with his mother, who was a cleaner. Enikolopov told G. E. Zaikov that, at he remembered, they had no relatives and nobody visited or invited them, because they were reluctant to maintain contacts with the family of the "Enemy of People."

After finishing school, Enikolopov graduated from Erevan State University and came to Moscow for postgraduate study in the Institute of Chemical Physics of the USSR Academy of Sciences. Soon after, he was awarded his PhD degree. Suddenly, he discovered that his former village was, after all totally populated by his relatives who all started to visit him in Moscow. What's more, the entire population of Erevan (the capital of Armenia) became related to Enikolopov just after his successful defence of DSc thesis. And, once Professor Enikolopov was elected Associated Member of the Academy of Sciences, the whole population of the Republic of Armenia became his relatives. Finally, when he was elected Member of the Academy (the Soviet definition of the Member of the Academy: "This is man who

lives, but lives in Paradise"), all ethnic Armenians in the Soviet Union declared that they were his nearest relatives. This is a jest, but every jest contains a particle of truth.

Enikolopov's PhD thesis addressed the study of methane oxidation in formaldehyde in gas phase. He was so successful in obtaining formaldehyde in high yields during methane oxidation that the Director of the Institute, Professor N. N. Semenov, discussed the possibility of the development of an industrial method for obtaining formaldehyde through methane oxidation in the gas phase. Professor Enikolopov was awarded the degree of Doctor of Sciences for his thesis on polymerization of formaldehyde in polyoximethylene and his study of properties, modification and application of polyformaldehyde. Then Professor Enikolopov focused on the problems of the polymerization of polyolefines and the development of filled and composite materials. At that time, he was already Head of a Division of 500 scientists. In his last years Professor Enikolopov developed a new field: the Chemistry of Solid Phase Reactions under Pressure and Sheer. He discovered many unexpected phenomena by comparing the processes in solid with those in liquid or gas phase. He found that diffusion coefficients (more accurately, mixing rates) in solid phase may be controlled by pressure and sheer and be equivalent to values which are obtained in liquid phase processes. This is very important for the technology, because the processes were available at ambient temperatures. The essential advantage of the solid phase processes is the absence of a solvent. For example, it is possible to carry out a liquid tree removal of lignin in cellulose in extruder. This would contribute significantly to protecting the environment against atmospheric pollution.

With regard to highly filled polymers, Professor Enikolopov developed a method of chemical addition of catalysts to an inorganic surface (particle) which followed polymerization (this was applied for a synthesis of polyolefines). In this case, the inorganic particle had a polymeric cover, and it was possible to obtain 90%-filled inorganic compounds, and to maintain good mechanical and other physico-chemical properties.

The Readings were organized by the Scientific Council on Macromolecules of the Russian Academy of Sciences, the Institute of Synthetic Polymeric Materials, the Semenov Institute of Chemical Physics, the Chernogolovka Institute of Chemical Physics (all three of Russian Academy of Sciences), the Moscow Physico-Technical Institute, the National Academy of Sciences of the Republic of Armenia, the Ministry of Education and Science of the Republic of Armenia, and the Armenian State University of Engineering. About 150 scientists participated in the Readings. The program included opening remarks by Professor Victor A. Kabanov, the Secretary of the Division of the Pure and Technical Chemistry of the Russian Academy of Sciences, and four lectures by the disciples of Professor Enikolopov.

Professor V. A. Kabanov emphasized Professor Enikolopov's contribution to the development of the Science of Chemical Kinetics and Polymer Science.

The lecture entitled "Kinetic Study of Processes of Polymerization Developed by Professor N. S. Enikolopov and his School," was given by Professor Al. Al. Berlin, who was appointed to the position of the Head of Division of Polymers

and Composites† of the Semenov Institute of Chemical Physics when Professor Enikolopov left this position to found the Institute of Synthetic Polymeric Materials. Since March 1, 1994, Professor Berlin has also held the position of the Deputy Director of the Semenov Institute of Chemical Physics.

The polymerization processes under sheer deformations and high pressure were considered in the lecture of the Professor A. A. Zharov (Institute of Organic Chemistry of the Russian Academy of Sciences), who was the first co-worker of Professor Enikolopov on problems of pressure and sheer in 1970th.

The application of the methods of elastic deformations for obtaining dispersed polymers were discussed in the joint lecture of Doctors A. M. Kryuchkov and M. N. Knunyants, and Professor E. V. Prut. While Professor Zharov's lecture focused mainly on the fundamental problems, the lecture of three co-authors dealt with the practical applications of the research, particularly with the re-use and processing of rubbers, including automotive tires.

The final lecture (Dr. V. N. Shpinev) considered the solid phase method of the formation of coatings on metallic surfaces.

All participants emphasized the great contribution of Professor Enikolopov in science and technology, and in the management of scientific activity. He founded the Moscow and Erevan Schools of Scientists in the area of Physics and Chemistry of Polymers. These schools now hold the leading position in several fields of Science of Polymers and Composites.

For many years, Professor Enikolopov was at the Head of the Scientific Council of the State Committee on Science and Technic of the USSR on "Polymeric Materials in Economy." This Council formed the country's scientific policy on the development and financial support of those or other directions of polymeric research.

Professor Enikolopov was also Head of the Scientific Council of the USSR Academy of Sciences on "Thermostable Materials," whose aim was to support the development of polymers for their further application at extreme conditions (at very high or very low temperatures).

Enikolopov was a member of editorial board of many Soviet and international journals. He wrote many books and hundreds of original reviews and papers. Many of his disciples successfully work in different fields of Chemistry and Physics of Polymers and Composites.

Hopefully the Second Enikolopov's Readings will be held in March, 1995.

†This Division was founded in 1960, and Professor Andrey M. Markevich was the first Head of this Division. The second Head was Professor Enikolopov, and the third Head, Professor Berlin, is currently holding this position.