

Evgenii Pavlovich Velikhov (on his fiftieth birthday)

The Editorial Board

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Academician E. P. Velikhov, and outstanding scientist and prominent science organizer, celebrated his fiftieth birthday on February 2.

E. P. Velikhov was born in Moscow into the family of a transportation engineer. After completing school in 1952, he entered the Department of Physics at Moscow State University (MSU). Graduating from MSU in 1958, E. P. Velikhov began his career in science as a graduate student at the M. V. Kurchatov Institute of Atomic Energy (M. A. Leontovich's laboratory), where he carried out a series of theoretical studies on the stability of magnetohydrodynamic flows. After completing his graduate work, E. P. Velikhov began work on controlled thermonuclear fusion at the Institute of Atomic Energy. Within a short time he became an acknowledged authority on the theory of stability of high-temperature plasma. Together with A. A. Vedenov and R. Z. Sagdeev, he made enormous progress in the study of the manifestations of instability, he created a quasilinear theory of a weakly turbulent plasma.

Purely theoretical work, however, did not suit Evgenii Pavlovich's temperament. Having a lively character and a keen sense for anything new, E. P. Velikhov quickly initiated and, with the support of Academician M. d. Millionshchikov, organized at the Institute of Atomic Energy research on the MHO-conversion of thermal into electrical energy. Under his leadership, a new type of powerful MHO generators, which have found wide application in geological prospecting, was soon developed. While teaching at MSU, at the same time that he was engaged in research work, he helped to organize important scientific projects. Under his leadership, work on the development of powerful CO₂ lasers with non-self-sustaining discharges was initiated at the Scientific-Research Institute of Nuclear Physics at MSU and pushed to a point at which applications in metal-working were achieved.

While working in these areas, E. P. Velikhov and his coworkers obtained many new and important scientific results on the physics of low-temperature plasma. In particular, he discovered and studied the ionization turbulence of low-temperature plasma and he predicted non-equilibrium ionization waves in a gas in an electric field. The latter phenomenon lies at the foundation of the operation of MHD generators as well as fast-flow gas lasers.

In 1968 E. P. Velikhov was elected Corresponding Member and in 1974 an active member of the USSR Academy of Sciences. After the death of Academician L. A. Artsimovich, he became the director of the Soviet program on controlled thermonuclear fusion. In 1977 E. P. Velikhov was elected Vice-President of the USSR Academy of Sciences.

E. P. Velikhov devotes a great deal of attention to the training of scientific personnel. He is the Head of the Depart-



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ment of Atomic Physics and Electronic Phenomena at MSU and of the Department of Plasma Energetics at the Moscow Physico-Technical Institute. His lectures, which are distinguished by their brevity and clarity, reflect a wide spectrum of the latest problems in modern physics—controlled thermonuclear fusion based on magnetic confinement, laser and beam fusion, laser technology, surface physics, computing techniques, microelectronics, and computer technology.

E. P. Velikhov's characteristic dynamism and organizational ability are also evident in his work as Vice-President of the USSR Academy of Sciences. Recognizing the importance of accelerated development of the means of automation in this country, he has initiated the development of a series of institutes whose purpose is to develop progressive fundamentals of computing technology and automation. Carrying out his duties as the Academician-Secretary of the Division of Information Science, Computing Technology, and Automation, he has devoted a great deal of effort and energy to the development of this important area.

E. P. Velikhov's active social work is inseparable from his scientific work. He was elected to membership in the Central Committee of the All-Union Leninist Communist Youth League and a deputy of the Supreme Soviet of the Russian Soviet Federal Socialist Republic. He is currently a deputy of the Supreme Soviet of the USSR. For his active scientific and social-political work, E. P. Velikhov has been awarded two Lenin prizes and the Order of the Red Banner of Labor. He has been awarded the Lenin and State Prizes.

E. P. Velikhov has made large contributions to the organization of international cooperation of scientists. He represents our country on the Committee on Controlled Thermonuclear Fusion at the International Atomic Energy Commission. E. P. Velikhov is an active participant of the Pugwash movement of scientists for peace, disarmament, international security, and scientific cooperation.

The Editorial Board of *Uspekhi Fizicheskikh Nauk* sincerely wish Evgeniĭ Pavlovich further success in his fruitful scientific and organizational work.

Translated by M. E. Alferieff