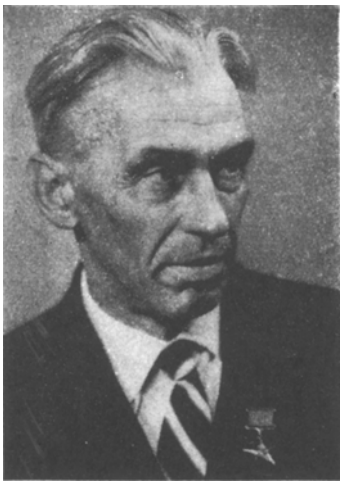
GEORGII IVANOVICH PETROV — 60TH BIRTHDAY



On May 31, 1972 the scientific community of our contry celebrated the 60th birthday of the prominent Soviet scientist, in the field of aerohydromechanics, Georgii Ivanovich Petrov.,

G. I. Petrov was born in 1912 in Pinega, in what was then the Arkhangelsk Guberniya (his parents lived there in political exile). In 1917 the Petrovs moved to the father's home town Ivanovo, where in 1928 Georgii Ivanovich completed his high school education. After working for two years in a textile factory, he enrolled in 1930 in the Moscow State University's Department of Mechanics and Mathematics, from where he then graduated in 1935. Since 1934 he also worked at the Central Institute of Aerohydromechanics in the laboratory under the directorship of Academician S. A. Chaplygin.

During the first stage of his scientific activity, G. I. Petrov devoted his efforts mainly to problems concerning the stability of incompressible fluid flow, a theoretical and experimental study of processes in the transition from laminar to turbulent flow. At the same time he also developed mathematical method of analyzing these processes. In 1940 G. I. Petrov generalized and proved the convergence of one simple method in mathematical physics, namely the Galerkin method, which is still widely used in the study of flow stability and of mechanical equilibrium states. During recent years G. I. Petrov has applied all his talent to research in supersonic gas dynamics.

G. I. Petrov was among the first on the world scene to demonstrate the importance of radiative heat transfer during the aerodynamic heating of bodies entering the earth's atmosphere. Under his direction, toward the end of the nineteen fifties, studies were made of the radiating boundary layer and the role of radiation in total heating was established along with the effect of radiation on convective heating.

Academician G. I. Petrov has played a major role in organizing research concerned with the flow of multicomponent mixtures, for the study of the heat transfer between a body and a chemically reacting high-temperature ambient gas. During the nineteen sixties Georgii Ivanovich has directed a long cycle of research projects on the heat and mass transfer at frontal segments of bodies in a stream of high-temperature gas. Typically, these studies required a rigorous formulation of objectives with an as precise as possible accounting for the transfer properties of a multicomponent gas and of radiation, as well as with a correct description of interaction between gas and body surface.

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At the present time he directs well progressing research on the three-dimensional boundary layer and the three-dimensional separation flow, the results of this research being put to immediate use in engineering problems such as calculation of the heat transfer at the most thermally stressed parts of a body in a hot gas stream. While continuing to refine the mathematical apparatus for the analysis of problems in gas dynamics, G. I. Petrov was among the first ones to demonstrate the effectiveness of numerical methods. He has directed the development of several efficient methods for the numerical solution of boundary-layer equations accounting for physicochemical processes. On his initiative, a special course on "Numerical Methods in the Mechanics of Continuous Media" has been added to the curriculum at the Department of Mechanics and Mathematics of the Moscow State University. G. I. Petrov organized and headed a scientific seminar on the application of numerical methods in hydro- and aerodynamics held at the Computer Center of the Moscow State University.

For his outstanding contributions in gas dynamics research, G. I. Petrov was awarded the First State Prize in 1949 and the N. E. Zhukovskii Prize in 1961. Georgii Ivanovich was elected to the Academy of Sciences of the USSR as Corresponding Member in 1953 and then as Active Member in 1958.

Much of his popularity has G. I. Petrov won as teacher. While heading the Chair of Aerodynamics and Gas Dynamics as well as the Department of Aeromechanics at the Institute of Mechanics — both at the Moscow State University — he guides the activities in both places along new scientific paths and also toward practical applications in the field of extreme-temperature gas dynamics with radiation effects and chemical reactions and electromagnetic fields. His vast experience, erudition, and wide scope of interests attract young scientists to Georgii Ivanovich. The seminar which G. I. Petrov directs at the Moscow State University on problems in gas dynamics and heat transfer serves as a schooling ground for young scientists of the entire country. His severe but benevolent criticism of papers presented at this seminar contributes to their high scientific level.

G. I. Petrov's services in organizing Soviet science are invaluable. The Institute of Cosmic Research at the Academy of Sciences of the USSR, which he heads since 1966, is now engaged in solving the grandiose task of space conquest.

His broad erudition, sensitivity, and considerate attitude to those around him have inspired esteem and respect for G. I. Petrov in every one who had the good fortune to collaborate with him.

For his contributions to the development of Soviet science and technology, the Party and the Soviet Government have bestowed on G. I. Petrov the Order of Lenin and the Red Star of Labor, and in 1961 he was named Hero of Socialist Labor.

We extend warm and cordial greetings to Georgii Ivanovich on his 60th birthday, and we wish good health as well as further success in his creative work for the benefit of the Soviet homeland.