

## TOWARDS NEW TASKS IN MECHANICS

(Editorial)

The program of Communist construction adopted at the 21st Congress of the Communist Party of the Soviet Union opens up grandiose perspectives regarding the development of science in our country.

The achievements of Soviet science received a high appreciation. The advances in industry, in science and in technology made our country a pillar of world progress.

The contribution of science during the seven-year plan of further economic development of the country should be more substantial.

The achievements of science and technology make it possible to perceive more exactly and profoundly the secrets of nature, to discover the laws of processes and phenomena in nature, in order to use them for the welfare of humanity.

The noble role of Soviet science -- service to people -- makes our scientists responsible for the fulfillment of that order which is incorporated in the resolution of the 21st Congress of the Communist Party of the Soviet Union: "... the Congress considers it necessary to achieve in the course of seven years a still faster development of all branches of science, the realization of important theoretical investigations which guarantee further scientific-technical progress. With this aim, a broad program of scientific research should be established, concentrating the scientific manpower and means along the most important directions which have practical and theoretical significance. It is necessary to strengthen the ties between scientific establishments and practice, to introduce broadly and quickly the latest achievements of science and technology into the economy, to conduct more boldly the experimental and constructing work." \*

The Congress formulated the task of further all-round development of the productive forces of our country, further technological progress, using the material and energetic resources in nature, as well as an increase in work productivity.

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\* *Report of the Extraordinary 21st Congress of the Communist Party of the Soviet Union*, p. 152, Gospolitizdat, 1959.

The application of high-speed methods, the application of high pressures and temperatures, vibration technology, intensification of technological processes in various domains of industry, of power generation, of machine construction and of metallurgy, require a further development of mechanics of deformable media, the creation of a theory of creep and plasticity on the basis of modern physics, as well as a study of mechanical properties of new materials.

The creation of new and improved systems for automatic control requires a further development of the theory of stability of motion and the theory of oscillations.

The exploration of cosmic space and of the upper layers of the atmosphere with the aid of artificial satellites and cosmic rockets requires the study of interaction of rigid bodies with supersonic flow of gases and liquids, taking into account the influence of temperatures as well as of electromagnetic phenomena.

The further development of computational techniques, related to the use of high-speed computing machines, requires a development of the programming and modeling methods for the application in practice of theoretical results obtained in various branches of mechanics.

It is difficult to enumerate, and it is possibly even more difficult to foresee, those problems which will arise in technology and industry during the fulfillment of the grandiose plan of constructing the Communist society.

However, the scientists and research workers in the field of mechanics and applied mathematics will honorably discharge their duty, and will expend all their forces and knowledge for the fulfillment of the responsible tasks, allotted for Soviet science by our Communist party.