EDITORIAL

The 22nd Congress of the Communist Party of the Soviet Union was one of the great events in the history of our country. The Congress summed up the achievements of the USSR and adopted a new Program of the CP SU – the program of construction of the communist society.

The program of the CP SU is permeated by a great idea: to create conditions for life which would correspond to the best ideals of mankind. To this end it is necessary to develop continuously the productive forces, to insure a rapid technological progress and to achieve high productivity.

In the realization of technological progress an ever increasing role is played by science. The expansion of theoretical investigations and a broad penetration of scientific achievements in practice are characteristic features of communist development. Science becomes in our country a direct productive force. Mechanics find its applications in most diverse areas of technology. The theory of stability of motion and the theory of vibrations, gas dynamics and hydrodynamics, theory of elasticity and the theory of plasticity, they all lie at the basis of technological problems.

There are branches of mechanics, where the development proceeds to a considerable extent within the framework of classical concepts.

In a series of cases, however, and in particular in areas of timely problems of our era, mechanics becomes increasingly intertwined with neighboring disciplines.

Gas flows past bodies with high velocities is accompanied by chemical reactions, as well as by the phenomena of ionization and dissociation; the gas becomes electricity conducting and radiation becomes essential. A study of such flows is possible only when a series of physical and chemical factors are taken into account, such as the presence of a magnetic field, radiation transfer, chemical kinetics, etc.

In studying plastic deformations of a solid body, as well as the effects of creep and stress relaxation, the use of thermodynamic concepts becomes essential, together with a series of results from physics of solid bodies. This acquires a great significance, in particular for such new materials as polymers.

Investigations in such areas, in which use is made in mechanics of findings obtained in neighboring sciences, will undoubtedly provide results which will contribute to a clarification of urgent problems of modern technology.

The indicated examples, obviously, do not exhaust the multitude of directions along which modern mechanics is being developed, which rightfully might be called the theoretical foundation of most technical sciences.

It is a matter of honor to scientists in mechanics – to consolidate for Soviet science the conquered advanced positions and to take the lead in all its principal branches.