

TO THE ANNIVERSARY OF THE CORRESPONDING MEMBER OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE ANATOLII OLEKSIIOVYCH TARELIN



October 10, 2020 is the 80th anniversary of the talented scientist, specialist in the field of power engineering, general technical problems of energy and energy saving technologies, Corresponding Member of the National Academy of Sciences of Ukraine, Doctor of Technical Sciences, Professor, Head of the Department of General Technical Research in Energy in IPMash NAS Ukraine Tarelin Anatolii Oleksiiovych.

Purposeful, hardworking, highly-qualified specialist, competent and thoughtful leader, benevolent and sympathetic person, A. O. Tarelin dedicated 55 years of his creative life to the A. Pidhornyi Institute of Mechanical Engineering Problems of the NAS of Ukraine. A. O. Tarelin was born in 1940 in the city of Orel in the family of a military serviceman. During the war, the family was evacuated to Baku, Azerbaijan, where he left school and began his working life. Before going to university, he had worked for two years as a fitter on the construction of the USSR's first open-type thermal power plant with a 150 MW turbine of Kharkov Turbine Plant. It was there that he decided to dedicate his life to energy and turbine construction.

After graduating from the power engineering faculty of Kharkov Polytechnic Institute in 1965, the future scientist began working at the Institute of Mechanical Engineering Problems of the National Academy of Sciences of Ukraine under the leadership of Academician of the National Academy of Sciences of Ukraine L. O. Shubenko-Shubin.

In 1969, he entered graduate school, and in 1974 successfully defended his thesis "Design of optimal rotor blades of the last stage of high-power steam turbines." This work was highly appreciated by one of the luminaries in the field of turbine engineering, head of the turbine engineering department of Leningrad Polytechnic Institute, I. I. Kirillov, who at a meeting of the specialized council stressed that for the first time a work appeared in which a subjective approach to blade design was almost completely excluded.

After defending his thesis, A. O. Tarelin continues research in the field of turbine engineering, combining it with administrative work as the scientific secretary of IPMash NAS of Ukraine from 1977 to 1985, and in the period from 2000 to 2009, Deputy Director of IPMash NAS of Ukraine for scientific work.

In 1985, he became Head of the General Engineering Research Department in Power Engineering, which he still directs.

Responsibility to the team, on the creation of which he worked painstakingly, did not allow Anatolii Oleksiiovych in the late 90s to accept the proposal of the Institute of Thermophysics of the National Academy of Sciences of Ukraine to continue his administrative, scientific and creative activities in Kiev.

Careful selection of personnel, creativity, ability to hear suggestions and opinions of employees made it possible for A. O. Tarelin to form a team of like-minded people to solve a wide range of problems arising in the design and operation of power plants.

Under the leadership of A. O. Tarelin, the USSR's first system of automated design of turbine stages (CAD "Lopatka") was created and implemented, where for the first time in practice methods of integrated optimal design of the last stage of a turbine were used, with account taken of the requirements of thermogas-dynamics, static and dynamic strength, design, technology and operating procedures.

Under his leadership, a progressive technology for processing complex curved surfaces such as turbine blades was developed, which is several times higher than the productivity of traditional technologies and ensures high quality of their manufacture.

In 1994, A. O. Tarelin defended his doctoral dissertation "Life cycle and efficiency of the last stage of steam turbines".

The results of those studies and the work of the department's staff members were reflected in the monograph "Fundamentals of Theory and Methods for Creating an Optimal Last Stage of Steam Turbines", which, thanks to the universal system approach described in it, was highly appreciated not only by specialists in the design of powerful steam turbines, but also by aircraft gas turbine engineers, in particular at State Enterprise "Ivchenko-Progress".

On the basis of theoretical, experimental and field studies of electrophysical phenomena in steam turbines, for the first time in world practice, A. O. Tarelin substantiated the existence of a high density of electric charges in a damp-steam environment at transonic flow velocities. Under his leadership, a new scientific direction in the theory and practice of steam turbines is developing – thermoelectrophysics. The research carried out made it possible to develop theoretical and practical methods for the rational management of electrophysical phenomena in the flow and exhaust paths of turbines, to find fundamentally new practical solutions aimed at increasing the efficiency and reliability of turbines, as well as propose unconventional methods for their diagnostics.

The new scientific direction and the work carried out by A. O. Tarelin and his students were recognized by domestic and foreign scientists and specialists. Technical solutions have been patented in Ukraine, Russia, USA, and Canada.

Not stopping at what has been achieved, the scientist continues scientific research in the field of turbine construction and energy-saving technologies.

The creative team headed by him develops theoretical foundations and methods for increasing the efficiency and reliability of thermal plants through optimizing operating parameters; activating working environments by exposure to fields of different physical nature; creating methods and environmentally friendly technologies for the treatment of water systems for their use in power and household installations.

This is not a complete list of the results of the scientist's scientific activity. He is the author of over 200 scientific works, including 6 monographs and 31 inventions.

A. O. Tarelin's scientific achievements are highly appreciated in the scientific community. In 1982, he was awarded the Academician H. F. Proskura Prize of the National Academy of Sciences of Ukraine for a series of works in the field of power engineering. In 2006 he was elected a Corresponding Member of the National Academy of Sciences of Ukraine with a degree in power engineering, and in 2009 he became a laureate of the State Prize of Ukraine in the field of science and technology for the creation of new generation steam turbines.

The staff of the A. Pidhornyi Institute of Mechanical Engineering Problems heartily congratulates Anatolii Oleksiiiovych Tarelin on his anniversary and wishes him good health, creative longevity, the implementation of the action plans and new achievements!