

THE DEVELOPMENT OF HIGH-VOLTAGE TECHNIQUE IN NTU “KHPI”

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Domestic development of high-voltage pulse technology is associated with in-violable scientific and technical ties with higher technical educational, branch and academic institutes. Among the Kharkiv scientific centers, actively engaged in the study and creation of high-voltage devices, it is worth noting the National Science Center "Kharkiv Physical-Technical Institute", the National Technical University "Kharkiv Polytechnic Institute", the Research and Design Institute "Lightning" NTU "KhPI". High voltage engineering and technique is an important scientific and technical field, but for a long time, scientific research on high-voltage equipment has had a closed topic. In 1933, the Research Laboratory High-Voltage and Department of High Disruptions was created [1, p. 55]. The work of the research laboratory of high-voltage was concentrated on several main areas: the study of the principles of operation of high - voltage power systems, lightning surges in power systems, the study of the protection of power lines, and so on. To conduct this kind of research, it became necessary to create special scientific devices - generators of pulse voltage, current and combined generators [2, p. 81]. Taking into account the considerable achievements in the field of high voltage engineering, the constant need to increase the staff of the research laboratory and the need to attract qualified staff, there was a need to train specialists in high voltage equipment directly in the walls of the KhPI. along with the electrification process, in most countries of the world there were electrical installations with tens of voltages, and then in hundreds of kV. The issue of isolation, electrical strength of materials and many other important tasks has been addressed to scientists around the world and to the employees of the NTU "KhPI"[3, p. 102]. The work of the developed research laboratory of high-voltage focused on pressing issues, such as the principles of operation of high-voltage power systems, lightning surges in power systems, the study of lightning protection of power lines and other. The creation of these and other articles of unique high-voltage installations became the basis for carrying out of important scientific researches in the field of technology and electrophysics of high voltage and other fields of science. Such achievements have found wide practical application in the domestic science and industry. The creation of impulse voltage and current generators, magnetic pulse units, high voltage impulse simulators allowed to expand the range of scientific and technical capabilities for domestic physicists. The results of these studies had a great influence on a number of areas of physics, medicine, defense technology and many other scientific areas.

Sources

1. Tolok V.T. Physics and Kharkiv / V.T. Tolok, V.S. Kogan, V.V. Vlasov // Kharkov: Timchenko, 2009.-408 p.
2. Ioffe A.F. About physics and physics. - L. : Science, 1977.-260 p.
3. Batygin Yu.V. Pulsed magnetic fields for advanced technologies.-2nd ed./ Yu.V. Batygin, V.I. Lavinsky, L.T. Khimenko // Kharkiv.- 2003.- 288p.