



# ENERGY DEPARTMENT



The department was founded in 1965.

The main direction of researches is the development of energy resource, energy efficiency and renewable energy to nanotechnology.

Topics of research work at the Department over the years has been devoted to the reliability of power supply of agriculture, the development of devices and automatic protection from emergency operation in networks of 10-110 kV and unbalanced modes in 0.4 kV networks, the use of renewable energy, energy saving and efficiency electrical miniboiler using renewable energy sources, improving the performance of transformers 6 - 10/0, 4 kV connection scheme with star - a star with neutral.

**Achievement.** During the existence of the faculty were defended 5 doctoral and 15 master's dissertations, more than 70 invention certificates were received and more than 40 electronic aids were developed. Over the past 10 years were published 4 monographs, 14 books, 115 textbooks, 132 guidelines and analysis programs.

The scientific potential consists of 9 doctors, 22 PhD and 3 Masters.

According to the results of research by scientists of the faculty were developed:

- Device protection and automation of distributional networks;
- Device for fault location in networks, whose operation is based on the analysis of modes of metric networks;
- Heatinsulating building blocks from waste of city's CHP ;
- Heating elements based on composite materials;
- The automation of standard processes, automated electric of general industrial machinery.

Based on these studies the pedagogical staff of the faculty have received more than 25 authority's researches and their development were applied into production.

The scientists have achieved great results in the field of automation of standard processes, automated electric of general industrial machinery. Their results have been implemented on the base of Zhezkazgan ore-dressing and processing enterprise, in Magnitogorsk, companies of "KazTransOil".

Now scientists are working in the field of nanotechnology, hydraulic systems, heat pumps.

Scientific researches are implemented on 2012-2014:

Search and investigation of structural materials for ceramic filters;

Justification-flow regimes of rapid water flow in the pipe spillway waterworks hydroelectric purposes;

Development:

-Methods and means of technological equipment for electric network voltage 1000W on mining enterprises;

Technology and the creation of a pilot project of energy efficient home with a hybrid energy supply system based on renewable energy sources.

On the basis of Energy Department was found the Center of energy saving and diffusion of knowledge in accordance with the agreement between the consortium of "Kazakhstan Centre for modernization and development of housing" JSC and "Kazakh Agro Technical University. S.Seifullin" JSC

