

VOLGA STATE UNIVERSITY OF TECHNOLOGY - RUSSIA'S LEADING UNIVERSITY IN RATIONAL NATURE MANAGEMENT

Dmitrii V. Ivanov

Volga State University of Technology, Russia,

E-mail: dmitry_v_i@mail.ru

ABSTRACT

Volga State University of Technology was established in 1932. It's Russia's leading university in areas of: predicting the use and protection of natural resources in order to prevent the negative effects, and methods of evaluation of the biological productivity of forest plantations using remote sensing data, the development of new energy-saving technologies and equipment for harvesting and processing of timber and non-timber forest resources; aerobic, anaerobic and vermitechnological organic waste, use only renewable resources, the creation of new technological installations for production and purification of biogas, the creation of modern technological solutions for greenhouses with autonomous energy supply based on local renewable energy, the creation of device-analytical systems for the study and modeling of membrane contactor and gas separation membrane-sorption processes in relation to the processes of organic waste and produce biogas fuel, new technologies of organic waste and non-fertilizer in green building, new technologies reclamation of disturbed areas, reforestation, creation of objects in areas of intensive logging and taken out of use of agricultural land under the Kyoto Protocol. The strategic development program of the University received funding of the Ministry of Education and Science of the Russian Federation. To improve the efficiency of research in 2001, the University established the Center for collective use "Ecology, biotechnology, and the processes of generating clean energy" with unique equipment, which is funded under the Federal Target Program "Research and development on priority directions of scientific-technological complex of Russia in 2007-2013". To concentrate educational resources for the training of skilled workers, vocational training specialists, specialists with higher education in the forestry sector at the university was established resource center of professional education, funded by the Federal Program of Education Development for 2011-2015. The main focus is on the development of innovation infrastructure in the University of the, favorable conditions for the development of small innovative companies. In 2011, the University has won the competition for funding under the decree of the Government of the Russian Federation № 219 "On state support of innovation infrastructure in the federal educational institutions of higher education." The university holds a lot of projects funded under the Federal Target Program "Scientific and

scientific-pedagogical personnel of innovative Russia in 2009-2013", including a project to develop a high school student self-management.

KEYWORDS

Rational nature management, biotechnology, ecology, energy saving technology, forestry, environmental engineering, water management

1 DISCUSSION

University was established June 5, 1932. Volga State University of Technology operates as multilevel university complex of distributed type and includes two divisions of the initial and secondary vocational education and two branches - Volzhsky (the Republic of Mari El, Volzhsk) and Mariinsko Posadsky (Chuvash Republic, Mariinsky Posad). The University is a multidisciplinary and multilevel educational institution. It has a license the right to carry activities in a wide range of postgraduate and doctoral studies specialties, higher education to 28 bachelor and 24 master's directions, 57 specialties for qualified professionals, as well as 29 specialties of vocational education and 8 programs initial vocational training. The Institute of Continuing Professional Education that is included in university, implemented 48 programs of additional vocational training. Over the years, the university has trained more than 50,000 professionals. Its graduates over the years worked and directors of major industrial, construction and forestry enterprises and associations, heads of banks led by the ministries and departments of the Republic of Mari El, Tatarstan, Chuvashia, Udmurtia, Kostroma, Penza, etc. The quality of education at the university found to comply with international standards - University of the first Russian high schools received the international quality certificate ISO 9001:2008. In 2007, the University honored with the President of Russia Vladimir Putin.

In the coming years, the university, the following priority areas of development (PAD), in which it has significant educational and technological advance: PAD 1 - "Biotechnology in rational nature management. Ecology. "and the PAD 2 -"Information and communication technologies, energy saving technologies and electronic systems in rational nature management. " The University aims to fully become a center of innovation activity of the Volga region in rational nature management, using its competitive advantage in science and a qualified scientists. This six research and education centers, based upon recognized scientific schools: "Rational nature management on the basis of nanotechnology, biotechnology, energy saving, information and communication technologies", "Radiophysical diagnostic methods of natural environments, locations of objects, information and communication systems", "Nanotechnology and Nanomaterials", "Information-measuring, diagnostic and control systems", "Information pedagogical measurement technology", "Computer Science in Economics and Management industries complex of the enterprise", and efficient Center for collective use "Ecology, biotechnology, and the processes of generating clean energy", equipped with unique equipment, and extensive continuing education, as well as efficiently operating industrial park, business incubator, Student Design Bureau, small innovative companies, a unique Botanical Garden-Institute, a unique training and experimental forestry, effective patenting, high dynamics of growth in research and development activities, the effectiveness of the system to attract youth toward science and engineering enterprise, integration and partnership with foreign universities in

the training of specialists in the field of rational nature management, the use of modern educational technology innovations.

To maintain its competitiveness in the high-level staff of the university shows sensitivity to the international experience and flexibility in the new areas of research and teaching methodologies. In the last years of the university had developed the ability to generate collective knowledge as primarily (rational nature management) and providing directions (biotechnology, nanotechnology, energy-saving technologies, information and communication technologies) and implement its commercialization and transfer to the economy. Around the university has formed a special intellectual environment through international, national and regional research and training activities, suggests that the Volga Region State University of Technology, the university becomes a forum in the field of rational nature management.

The University has more than 70 doctors of sciences and 350 candidates of science. University staff potential is formed on a competitive basis, a high professional level, runs regular training. The University has an active policy to attract major experts in the field of rational nature management and environmental engineering from Germany, Austria, Denmark, Italy, Greece, Finland, Norway, the U.S., Turkey and the countries of the CIS and Baltic countries. Holds regular video conferencing and video lectures with international participation. The University has consistently pursued a policy of complete openness and integration into the international system of research and education, is an associate member of four international organizations in the field of ecology and rational nature management.

Volga State University of Technology achieved the international quality certificate ISO 9001:2008, and the rector - a diploma and a commemorative medal "Russian Quality Leader" In high education to improve the organization of labor, increased efficiency of training, in-demand production. Regularly to work towards the education of students, postgraduates and young scientists skills patent and market research, patent and circumstantial analysis, ability to protect our intellectual property. Under special control is the work on the legal protection of intellectual property rights, obtained in the performance of research and development at the expense of the federal budget. Commissions for expert and export control created in University. Changes to the standard forms of contracts for the performance of research and development activities, taking into account the allocation of rights to protectable intellectual property created in the framework of activities during the performance of the contract, as well as outside of this period. Standard forms of licensing agreements developed for the transfer of rights and assignment agreements. In the system of material incentives for university staff provides indicators that take into account the results of patent activity.

International activities at the University is coordinated by the Office of International Cooperation. University along with 80 universities and research organizations in Europe is a member of the European Forest Institute. Together with teachers and researchers a number of organizations in Europe and the U.S., IUFRO (International Union of Forest Research Organisations) and Silva Network (International Network of Forestry University) Volga State University of Technology is developing new technologies for sustainable forest management and their implementation in the educational process and practice of forestry production. Partnerships supported under the European TEMPUS program and bilateral agreements.

The Federal state educational standard of the third generation and the Order of the Ministry of Education of the new list of areas of training in the first priority area of University development: "Ecology and Environmental Management", "Forestry", "Landscape Design and Architecture", "Environmental Engineering and Water Management", "Technological Security", "Standardization and metrology", "Chemical Technology", "Technology and Equipment of Timber and Woodworking Production", "Land Planning and Cadastres". According to the second priority area University provides targeted training bachelor's and master's degrees in the following areas: "Radio Engineering", "Information and Communication Technologies and Communication Systems", "Design Engineering and Technology of Electronic Devices", "Control in Engineering Systems", "Bioengineering Systems and Technologies", "Heat Power Engineering and Heating Technologies", "Material Science and Materials Technology", "Technological Machinery and Equipment", "Machinery Design Support for Machine Building Industry", "Operation of Transport and Technological Machines and Complexes". Training of graduate students in the university is over 44 specialties. Every year post-graduate course of 125-130 people.

Leadership University for each selected priority areas for development is confirmed by the results and public recognition of scientists, major scientific schools, development and technology innovation nature and high growth dynamics of aggregate income and income from scientific innovation (recently annual growth of 40 - 60%.) To do this, use one of the most effective tools for the integration of science and education at the university - the active participation of the collective in the grant and project activities (annual university staff serves on various scientific projects contests 150-250 orders). The University is the winner of grants and government contracts with the Ministry of Education and Science, the FFA, as well as international projects TEMPUS-TASIS. With more than 30% of the project managers are young scientists. University professors are members of the editorial boards of leading scientific and technical journals. They are actively published in Russia and abroad. The main results of basic research, obtained in priority areas of the University are: new resources and environmentally sound technologies reforestation and forest management, and new technology for utilization of municipal and industrial waste, energy saving technologies, taking into account the increasing environmental requirements, new approaches in the introduction, selection and establishment of plantations crops with a high content of biologically active substances in the raw materials, new radiophysical technologies of remote monitoring and prediction of the atmosphere and hydrosphere of the Earth in remote areas, the unique system of image and signal processing for environmental monitoring from space and inventory of forest, geographic information system of natural and man-made objects.

Public university website (<http://www.volgatech.net>) ensures transparency and openness of activity. The information is updated on a regular basis and reflects the main activities of the university: education, research, educational, financial, economic and other content of the site is focused not only on students and teachers, but also to a wider audience, there is an English version. Widely covered by the international activity, is a section on employment of graduates and their interaction with potential employers. Special attention is paid to transparency of the selection committee. Always run a section for students, senior outreach and professional work, and at the time of admission campaign is updated daily ratings are. For university staff operates corporate website. University is a member of the Federal university computer networks of Russia RUNNet.

Despite huge raw materials reserves in the world, effective economic development is possible only if the rational use of natural resources, a saving of high technologies, the organization of effective educational and research activities of universities in this direction. A promising approach is the use of achievements in high technology for a breakthrough in rational nature management. Through adjacent critical technologies rational nature management is closely related to biotechnology, energy and energy saving, nanosystems and materials, information and communication technologies, without which there is provision and implementation of regional systems of modern and effective environmental management, and the management of environmental quality as a basis for sustainable development of the state and society.

In recent years the university, through its politechnichnost created a competitive edge in scientific and educational spheres. His work has evolved the ability to generate collective knowledge as primarily (rational nature management), and to provide directions (biotechnology, energy saving technologies, information and communication technologies) and implement its commercialization and transfer to the economy of the region and the country. Special intellectual environment has formed around the university through international, national and regional research and training activities. Thus, Volga State University of Technology strongly demonstrates our commitment to leadership in rational nature management in the Russian Federation.