D. Serikbayev
EAST
KAZAKHSTAN
TECHNICAL
UNIVERSITY

Research Independence

and Academic Freedom Policy

NJSC «D. Serikbayev EKTU»

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1 GENERAL PROVISIONS

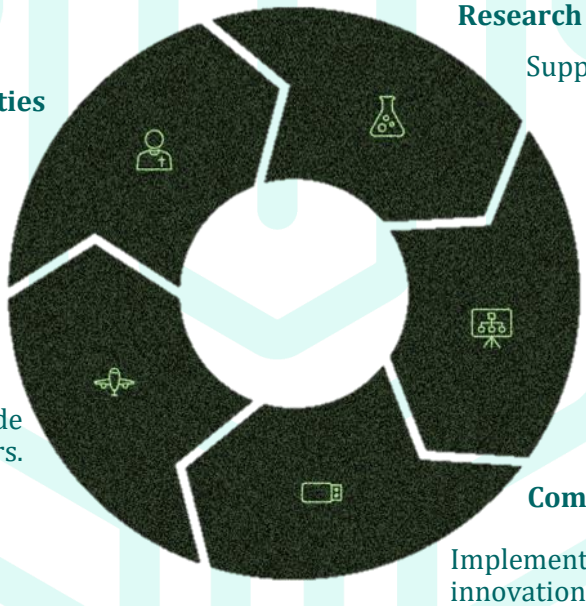
The policy on scientific and innovation activities has been developed to define the approaches to research and innovation activities at the Non-Profit Joint Stock Company "D. Serikbayev East Kazakhstan Technical University" (hereinafter – EKTU).

1.2 Purpose of the scientific and innovation policy

Ensuring a leading position among the technical universities of the country in terms of the share of publications and scientific results in the priority areas of scientific and technological development of the global economy.

2 CURRENT STATE OF THE UNIVERSITY'S SCIENTIFIC AND INNOVATION ACTIVITIES

EKTU has established a system of effective research management..



Research Office

Support for university-based research.

Department of Research Activities

Department of Scientific and Innovation Activities.

Project Support Office

Support for university-based research.

Commercialization Office

Promotion of results to a wide range of users.

Competence Centers

Implementation of scientific research and innovations.

The management of scientific and innovation activities is ensured by the Department of Research Activities. The system of university science is supported by the Research Office and the Project Support Office. Scientific research and innovations are carried out in Competence and Technology Transfer Centers and in Schools. Research results are promoted to a wide range of users by the Technology Commercialization Office. To implement the university's priority research areas, a scientific and innovation infrastructure has been established, bringing together the Center of Excellence "VERITAS" and the Competence Center "Smart Engineering," as well as 10 industry-specific Competence and Technology Transfer Centers (Construction and Building Materials; BIM Design; Mechanical Engineering; Energy; Geology and Mining; Ecology and Life Safety; Virtual and Augmented Reality; GIS

Technologies, Remote Sensing and Geodesy; Automation and Mechatronics; Water Management and Water Use).

Contracts are being implemented with four research institutes of the Republic of Kazakhstan: the National Scientific Center of Traumatology and Orthopedics named after Academician N.D. Batpenov (Ministry of Health); the K.I. Satbayev Institute of Geological Sciences (Ministry of Science and Higher Education); the Institute of Information and Computational Technologies (Ministry of Science and Higher Education); the National Nuclear Center of the Republic of Kazakhstan (Ministry of Energy).

An upgrade of the university's priority research areas has been carried out:

Geology and Geological Exploration: technologies for hydrochemical research in the extraction and processing of rare earth elements; methods for forecasting and prospecting deposits of critical metals; Advanced functional materials for medical devices: additive manufacturing technologies for metal products; bioactive composite coatings for medical-purpose items; Digital monitoring systems for agriculture: transfer of remote sensing (RS) technologies to agriculture; development of geoinformation support for the "Farmer's Tablet"; Sustainable development technologies: hardware and software complexes for monitoring urban and natural areas using satellite tools and unmanned aerial vehicles; Clean energy: hybrid and carbon-free energy complexes, zero-energy-loss buildings and structures, the university as a territory of energy efficiency; Carbon footprint: instrumental tools for carbon footprint monitoring, climate change modeling; Digitalization of educational and production activities: digital models and twins, digital user footprint.

International scientific research collaboration is being implemented through joint projects with scholars from leading universities in Germany, Italy, Spain, Slovenia, and Central Asia.

At the Non-Profit Joint Stock Company "D. Serikbayev EKTU," nine PhD doctoral educational programs are being implemented, all in technical fields, namely:

D090 Physics, D092 Mathematics and Statistics, D094 Information Technologies, D098 Heat Power Engineering, D100 Automation and Control, D103 Mechanics and Metal Processing, D104 Transport, Transport Engineering and Technologies, D117 Metallurgical Engineering, D121 Geology.

3 APPROACHES AND OBJECTIVES OF THE SCIENTIFIC AND INNOVATION POLICY

EKTU is focused on developing research activities through the following approaches:

1. Diversification of research funding, which is formed from program-target and grant funding, contract-based research commissioned by enterprises, and commercialization of R&D (World Bank Grant and "Science Fund" JSC), the Bolashak

scholarship program, as well as international programs and foundations (HORIZON Europe, Erasmus+ (CBHE, Jean Monnet, Erasmus Mundus), USA Federal Grants, IIE scholarships and programs (USA), American Councils programs, DFG (German Research Foundation – Initiation of International Collaboration, International Research Training Groups, etc.), DAAD (Bilateral Program for Cooperative Research Grants / PPP, International Study and Training Partnerships (ISAP)), CNRS (National Centre for Scientific Research), and others.

2) Strengthening human capacity – approaches are being developed to involve students in research activities through participation in scientific projects, research competitions, conferences, and academic Olympiads, followed by continued studies in master's and doctoral programs as a pathway to forming research teams capable of implementing postdoctoral projects. Additionally, the "core" of the university's research activity consists of faculty members with established research experience in implementing knowledge-intensive, practice- and region-oriented tasks, with the potential to build international partnerships and attract leading international scientific experts in specific subject areas.

3) Infrastructure development – EKTU continuously increases the efficiency of using budgetary funds, human resources, information resources, and material and technical assets through the implementation of projects with industrial enterprises of the Republic of Kazakhstan. Significant importance is placed on upgrading the infrastructure of scientific centers and laboratories, and there is also a noticeable increase in investment volume. The acquired equipment is subsequently used for conducting research by master's and doctoral students, young researchers, as well as university scientists.

4) Expansion of knowledge-intensive services and commercialization through the implementation of contract-based research and laboratory support for industrial enterprises in the region and the country; implementation of R&D commissioned by subsoil users of solid minerals and hydrocarbons within the obligations to allocate 1% of subsoil use expenses for scientific research; implementation of R&D commissioned by industrial enterprises through tax deduction mechanisms; increasing the technological readiness level of completed R&D; creation of pilot productions and market introduction of products obtained from R&D within technology commercialization projects; conducting incubation and acceleration programs for startups.

Tasks:

1. Increasing the scientific potential and research productivity of scholars.
2. Developing international research projects and interdisciplinary collaborations.
3. Diversifying sources of research funding and strengthening the scientific and innovation infrastructure.

Achieving the above tasks will require further modernization of the university's research infrastructure, the formation of international research and implementation teams, and the creation of an effective mechanism for commercializing R&D results.

4 MECHANISMS FOR IMPLEMENTING THE SCIENTIFIC AND INNOVATION POLICY

To achieve the stated objectives, the following mechanisms for implementing the scientific and innovation policy have been identified.:

1. Enhancement of the scientific potential and research productivity of scholars will be achieved through:

1) Implementing a Research GPA (IROS) as part of the integrated GPA to develop and strengthen students' research competencies.

2) A systematic approach to training PhD doctoral students and postdoctoral researchers, resulting in an increased number of defended doctoral dissertations and dissertation councils.

3) Developing a support system for young specialists and talent management; enhancing HR policies aimed at supporting young researchers.

4) Increasing the publication activity of academic staff.

5) Introducing staff rotation mechanisms to develop cross-functional competencies and create a talent pool for managerial positions (heads of Competence Centers, deputy deans, deans, etc.).

6) Concentrating resources on a set of breakthrough applied research projects (TRL 4–6) and transferring the obtained results to industry (TRL ~~7~~–8).

2. Development of international research projects and interdisciplinary collaborations will be achieved through:

1) Systematic professional development of academic staff in leading foreign universities, including through the international Bolashak scholarship and the "500 Scientists" program.

2) Targeted recruitment of successful researchers from Kazakhstan and abroad, and engagement of industry specialists from relevant Kazakhstani and international organizations for employment and collaboration.

3) Implementation of a comprehensive cooperation program with research institutes (staff training, internships, joint publications, and shared use of research infrastructure).

4) Operation of international research groups and formation of international consortia in priority research areas with the participation of national and international research organizations and universities.

3. Diversification of research funding sources and strengthening of scientific and innovation infrastructure will be achieved through:

1) Establishing, together with academic and industrial partners, a research base and human resources to support R&D in Kazakhstan's priority "technological transition" areas (geology and geological exploration, additive technologies in medicine, remote sensing methods applicable to agriculture, IT, carbon safety).

2) Ensuring the renewal of the material and technical base by seeking new sources of funding and co-funding from government agencies and industry.

3) Developing a system of financial sustainability and innovative research infrastructure within the university's scientific units through the implementation of research funded from diverse sources.

4) Cooperation with government agencies in the field of science and financing of applied projects.

5) Establishment of a new Research Institute, Engineering Center, and Medical Technopark.

6) Implementation of a performance evaluation system for Competence and Technology Transfer Centers.

7) Implementation of the project "A Strong Regional University: Center for Academic Excellence in the Mining and Metallurgical Industry."

8) Conducting technology transfer activities and thematic applied research, as well as pilot design and engineering work.

9) Identifying new funding sources for sectoral and international research and implementing priority projects.

10) Commercialization of research results in the fields of additive technologies in medicine, IT, and industrial engineering.

5 KEY ADVANTAGES OF THE MARKETING POLICY IN SCIENTIFIC AND INNOVATION ACTIVITIES

Advantages for partners

- a flagship of innovative ideas in the region,
- modern laboratories and research complexes,
- competent experts in their respective fields,
- work on real economic challenges,
- engagement with regional and national issues,
- consulting and expert opinion services,
- forecasting.

Advantages over competitors

- the leading technical university in the region,
- a flagship of innovative ideas in the region,
- modern laboratories and research complexes,
- competent experts in their respective fields,
- work on real economic challenges,
- engagement with regional and national issues,
- consulting and expert opinion services
- forecasting.

6 RESEARCH INDEPENDENCE

Research independence is a key principle of the university's scientific activity and implies ensuring researchers' autonomy in choosing research topics, methods, interpretation, and publication of results. The university guarantees freedom of scientific inquiry, expression of professional opinion, and academic critique, provided that academic ethics, legislation, and contractual obligations under grants and projects are observed.

Decisions related to the planning, implementation, and dissemination of research are made without pressure from administrative, commercial, or political entities. Maintaining research independence is ensured through transparent procedures for peer review, resource allocation, and evaluation of scientific performance, as well as through the creation of an environment that promotes objectivity, integrity, and responsibility in scientific work.

Achieving research independence at EKTU is ensured through a system of collegial and expert mechanisms that support the scientific autonomy of faculty and graduate students. The Scientific and Technical Council (STC) plays a key role by reviewing and approving research topics, grant applications, and reports based on scientific significance rather than administrative priorities.

Scientific seminars operate within each school and department, where researchers present their findings and receive independent expert evaluations from colleagues, fostering critical discussion and preserving scientific objectivity. Internal peer-review procedures and discussions at STC meetings eliminate conflicts of interest and ensure equal access to participation in competitions and publications.

The university also supports faculty participation in international conferences, projects, and network collaborations, which strengthens their academic independence and reduces dependence on local factors.