



Al-Farabi Kazakh National University

(Almaty, Kazakhstan)

Tlekkabul Ramazanov
Vice-Rector for Science & Innovations

Colombo, Sri Lanka, COMSATS, 12-13 May 2015





Present statistics of the Centre



Main Campus Area **75 hectare**







Al-Farabi KazNU

VISION: to enter the Top 200 leading research universities in the world

MISSION: Generating the human capacity - highly qualified specialists competitive in the international labor market



«To 2020 at least 2 higher educational institutions will be awarded in the ranking of the world's best universities»

From the Message of President of Kazakhstan N. Nazarbayev

ABOUT THE UNIVERSITY:

- Faculties: **14**
- Chairs: **63**
- Research institutes: **25**
- Laboratories of the National Level: **2**
- Science and Technology Park

ACADEMIC PROFILE:

- More than **20 000** students
- Bachelor specialties: **81**
- Master specialties: **84**
- PhD programs: **64**





Al-Farabi Kazakh National University Structure

Al-Farabi Kazakh National University - the only university in the Republic of Kazakhstan, which has a unique scientific and innovative structure

Research is carried out in accordance with the priorities of the Republic of Kazakhstan and world trends in science and technology





Faculties

Faculty of Mechanics and Mathematics

Faculty of Physics and Technology

Faculty of Chemistry and Chemical Technology

Faculty of Biology and Biotechnology

Faculty of Geography and Nature Management

Faculty of History, Archeology and Ethnology

Faculty of Philology, Literary Studies and World Languages

Faculty of Journalism

Faculty of Philosophy and Political Science

High School of Economics and Business

Faculty of Law

Faculty of International Relations

Faculty of Oriental Studies

Faculty for Pre-College Education





Research Institutes and Centers

Institute of Mathematics and Mechanics



Institute of Experimental and Theoretical Physics



Institute of New Chemical Technologies and Materials



Center of Physico-Chemical Methods of Research and Analysis



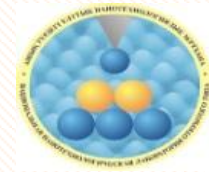
Institute of Biology and Biotechnology Problems



Institute of Ecological Problems



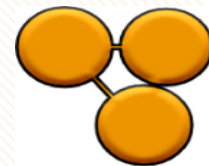
National Nanotechnology Open Laboratory



Scientific and Technology Park



Laboratory of Engineering Profile





Socio-humanity institutes and centers

Abay Research Institute

Institute of State and Law

Confucius Institute

Institute of Security and Cooperation Problems

International Institute of Kipchak Studies

Orazbayev Center for Archaeology and Ethnology

NATO Information and Resource Centre

Center for Sociological Research and Social Engineering

Versatile scientific and innovative center of the educational services "GLOSS"

Research and Innovation Center for Educational Studies

Research and Educational Center for German Studies

Training and Research Center Ancient Turkic scripts

Center for Environmental Safety and Natural Resources

Research Centre for Korean Studies

Center for Arabic Studies

Research Institute of Archaeology and Ethnology

Center for Psychological Technology and Innovation

Center for Economic Research

Center for Legal support of innovation development of RK

The European Information Centre

Center of problems of fight against crime

Resource Center for American and Democratic Studies

Republican Center «Al-Farabi and spiritual culture »

Center for Religious Research and Expertise

Center of Ethnopedagogics and Ethnic Psychology



Former research institutes of Academy of Sciences (Gylym Ordasy) are integrated with KazNU

Institute of Mathematics and Mathematical Modeling

Institute of Information and Computer Technologies

Institute of Economics

Institute of History and Ethnology named after C.Valikhanov

Institute of Literature and Art named after M.Auezov

Institute of Oriental Studies named after R.Suleimenov

Institute of Linguistics named after A.Baitursynov

Institute of Mechanics and Engineering named after Academician U.Dzholdasbekov

Institute of Philosophy, Political Science and Religious Studies

Institute of Archaeology named after A.Margulan

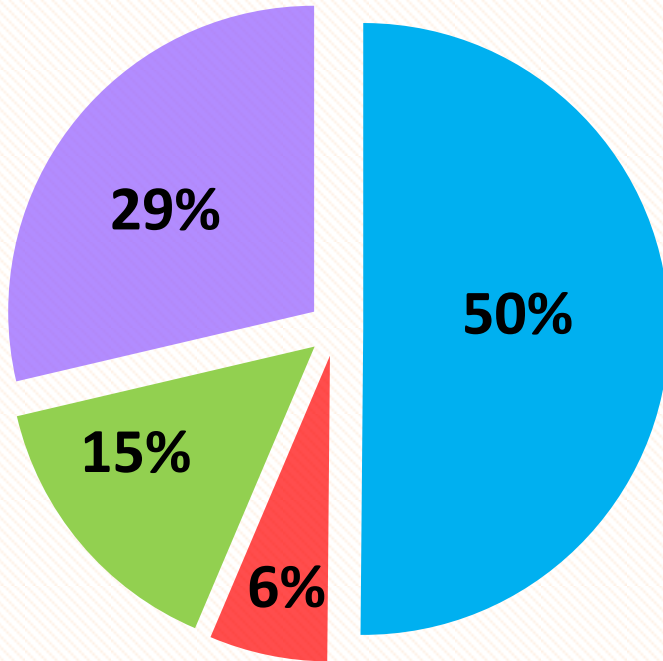


ФСДИ



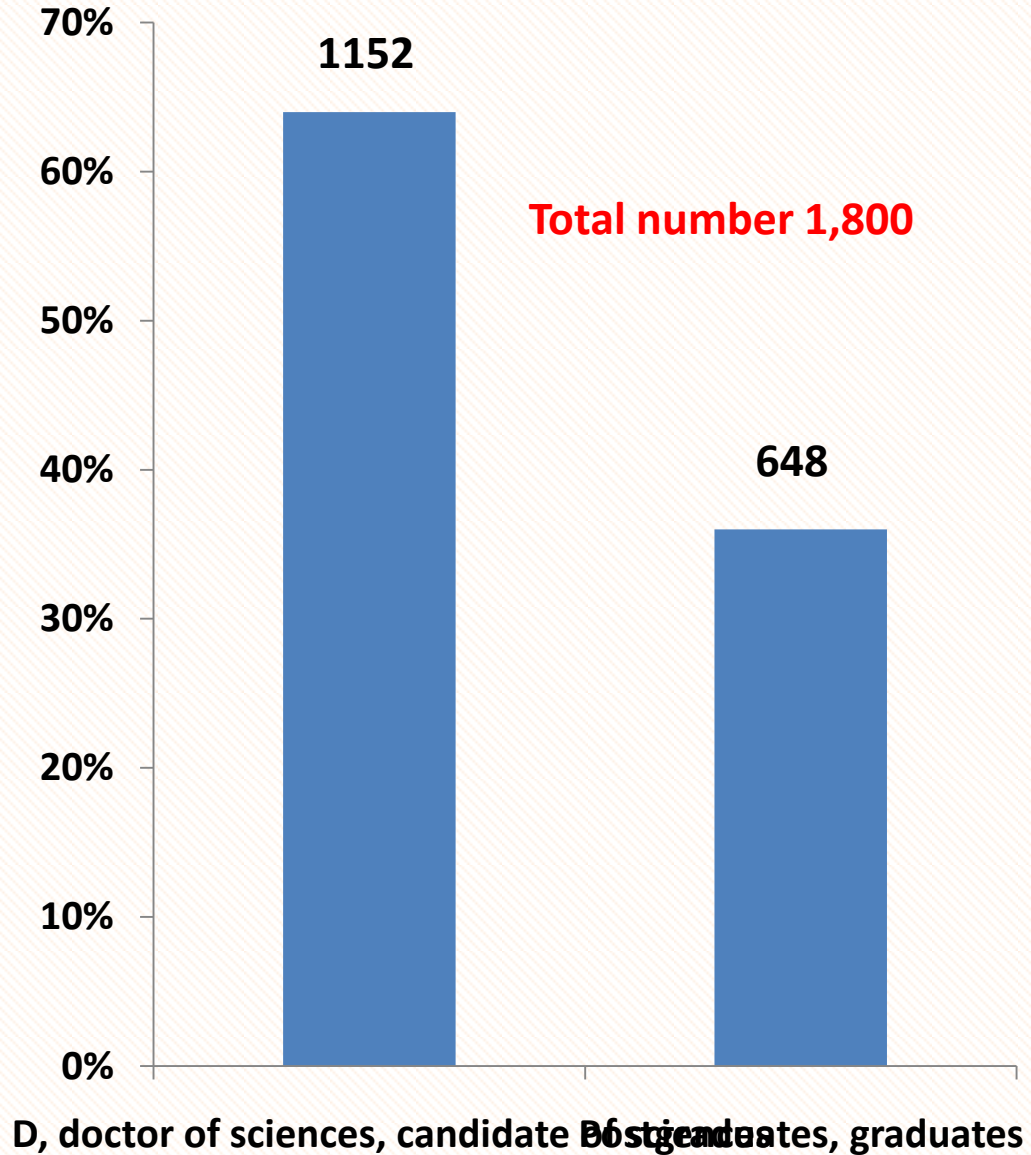
Contingent Staff Summary

EMPLOYEES



- Faculty
- Administrative staff
- Technicians
- others

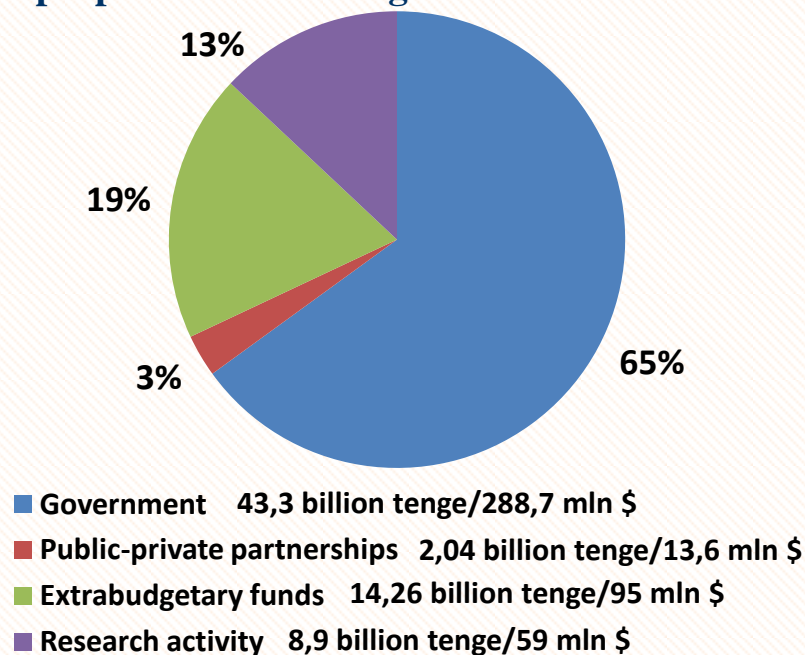
FACULTY



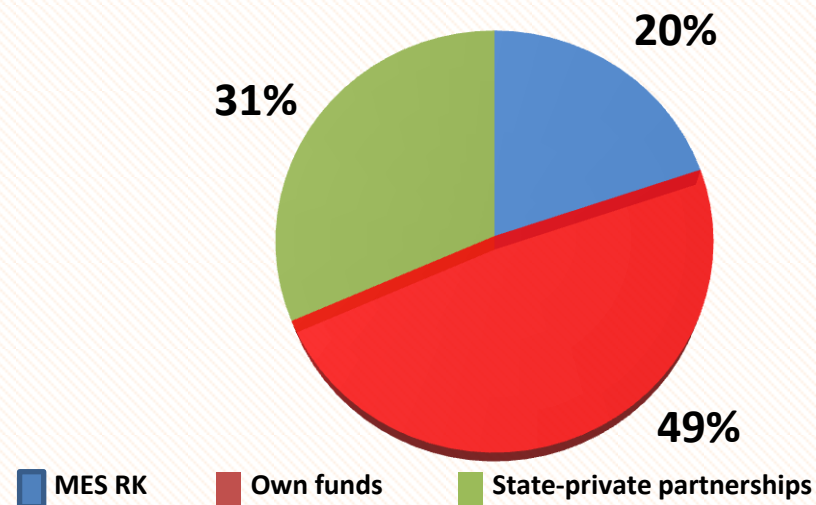


Financial and economic performance indicators

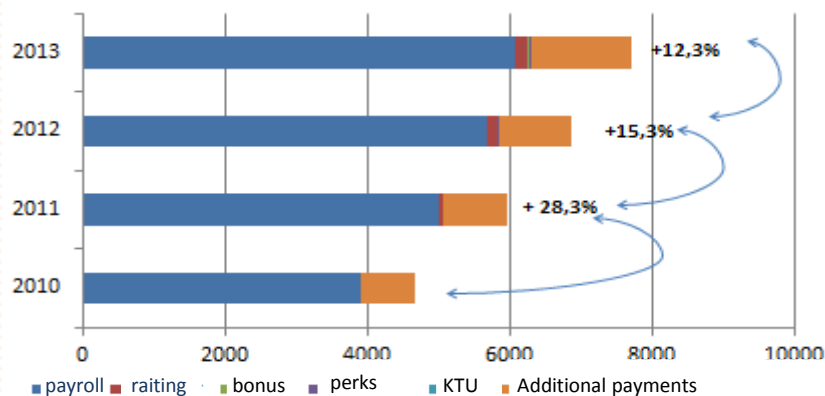
The proportion of funding sources for 2011-2014



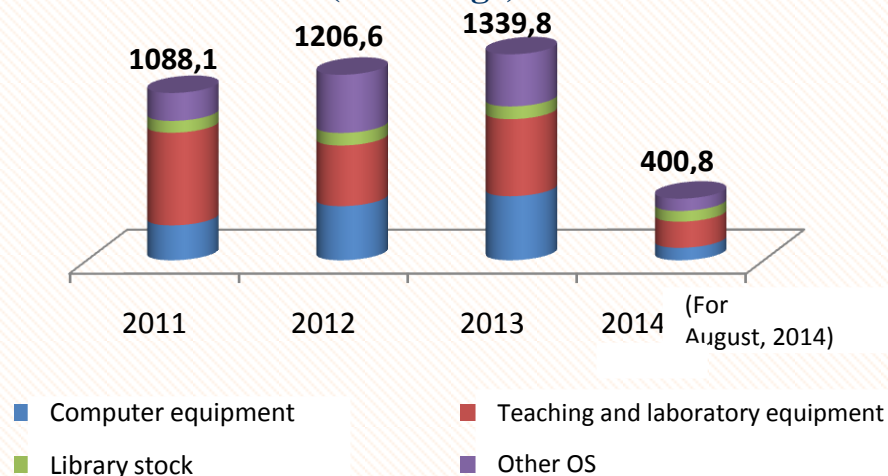
The structure of financing capital construction, repair of buildings for 2011-2014



The dynamics of payroll growth

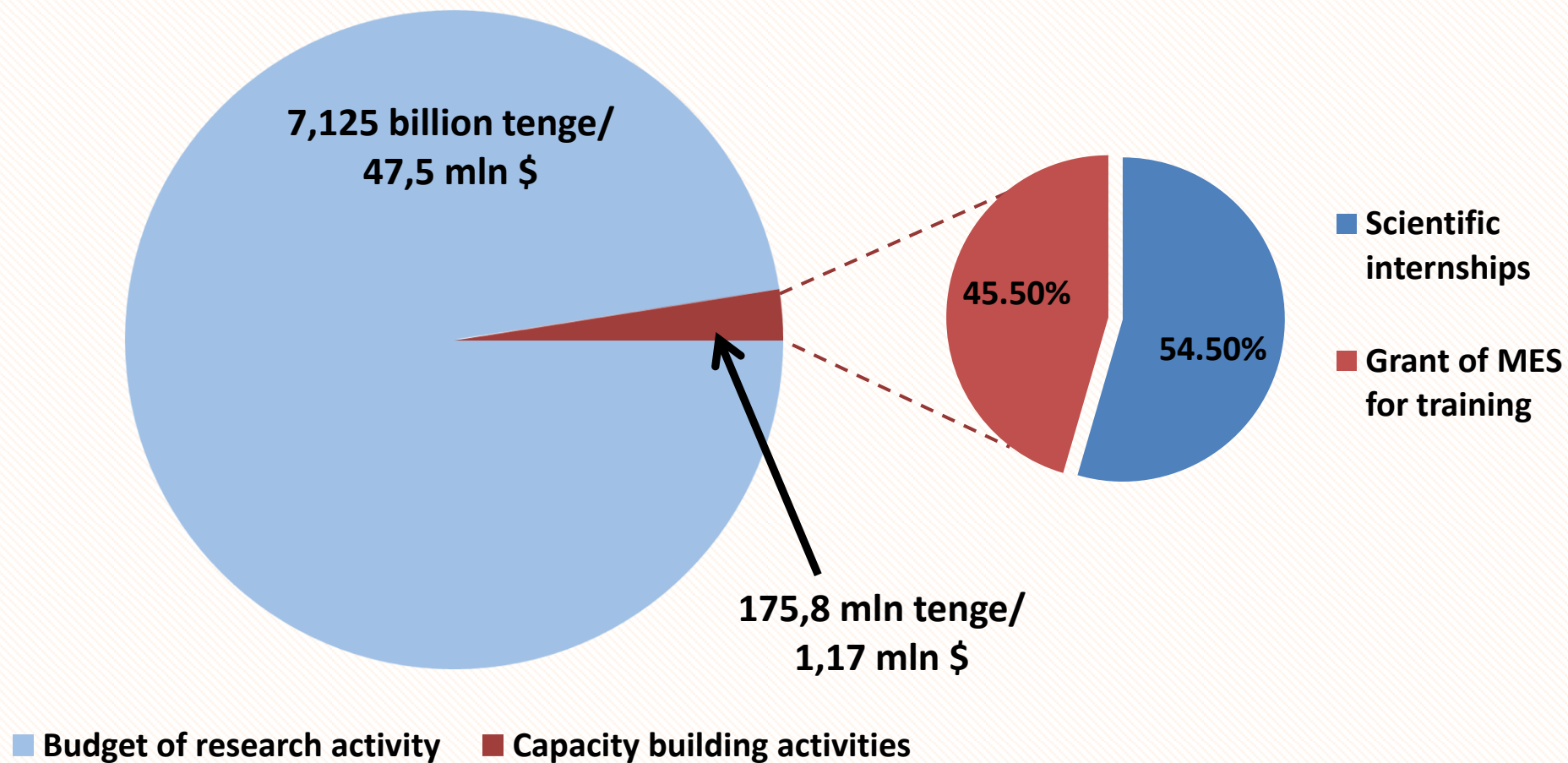


The material and technical equipment (mln. tenge)



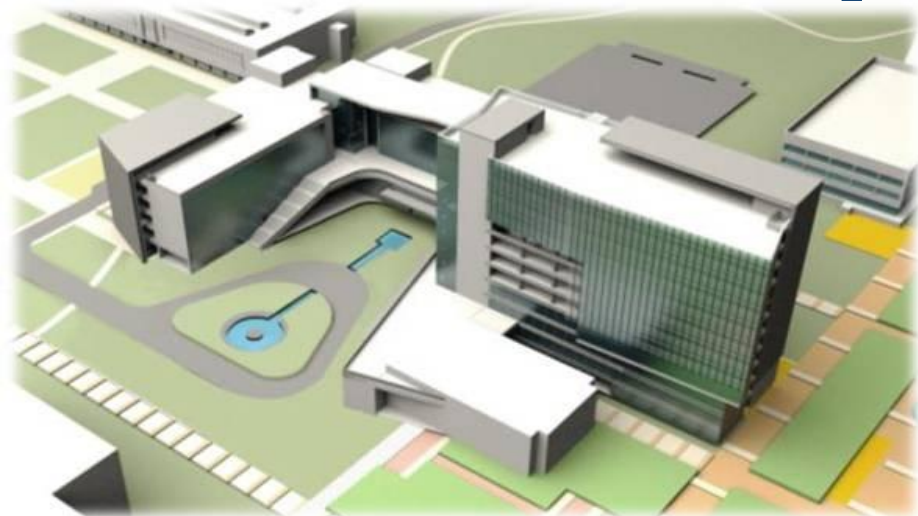


Capacity building activities





Funding of building within the framework of state-private partnerships



Innovation Cluster – 10 bn tenge (54 mln USD).



Housings of Research Institutes – 7 billion tenge (37 mln USD).



Medical and Biological Cluster – 500 million \$



Dormitory for 1500 people – 27 mln USD.



Innovation management: methods

- **Restructuring** of the university on the cluster approach basis :
 - expansion of faculty activity fields;
 - determination of scientific fields and concentration of departments by scientific fields and integration of chairs (from 115 to 63)
- **Decentralization and democratization of management** :
 - delegation of authority and decision-making rights to faculties and chairs;
 - increasing the role of public collegiate boards.
- Implementation of the system «**Management focused on result**»;
- Implementation of the system «**Kaizen**»;
- Implementation of the system «**Knowledge Management**».
- **Rating system of assessment** of faculty staff activity;
- **Differentiated payment stimulation teachers and faculty staff**:
 - Encouraging payment of teachers and faculty staff on the base rating
 - Encouraging payment of employees on the basis of labor participation rate;
- **Attestation of faculty teachers and staff**;
- **Recruitment of teachers and faculty staff on a competitive basis.**



The application of innovative educational technologies in the university

1

Formation of **new structure of basic curriculum**

2

Examination of educational programs and courses for compliance with the methodology of competency approach for specialists training

3

Informatization of the educational process and improvement of resource provision for carrying out classes

4

Development and **implementation of the Academic Policy** of KazNU according to international standards

5

Improvement of technology of training and evaluation of knowledge

6

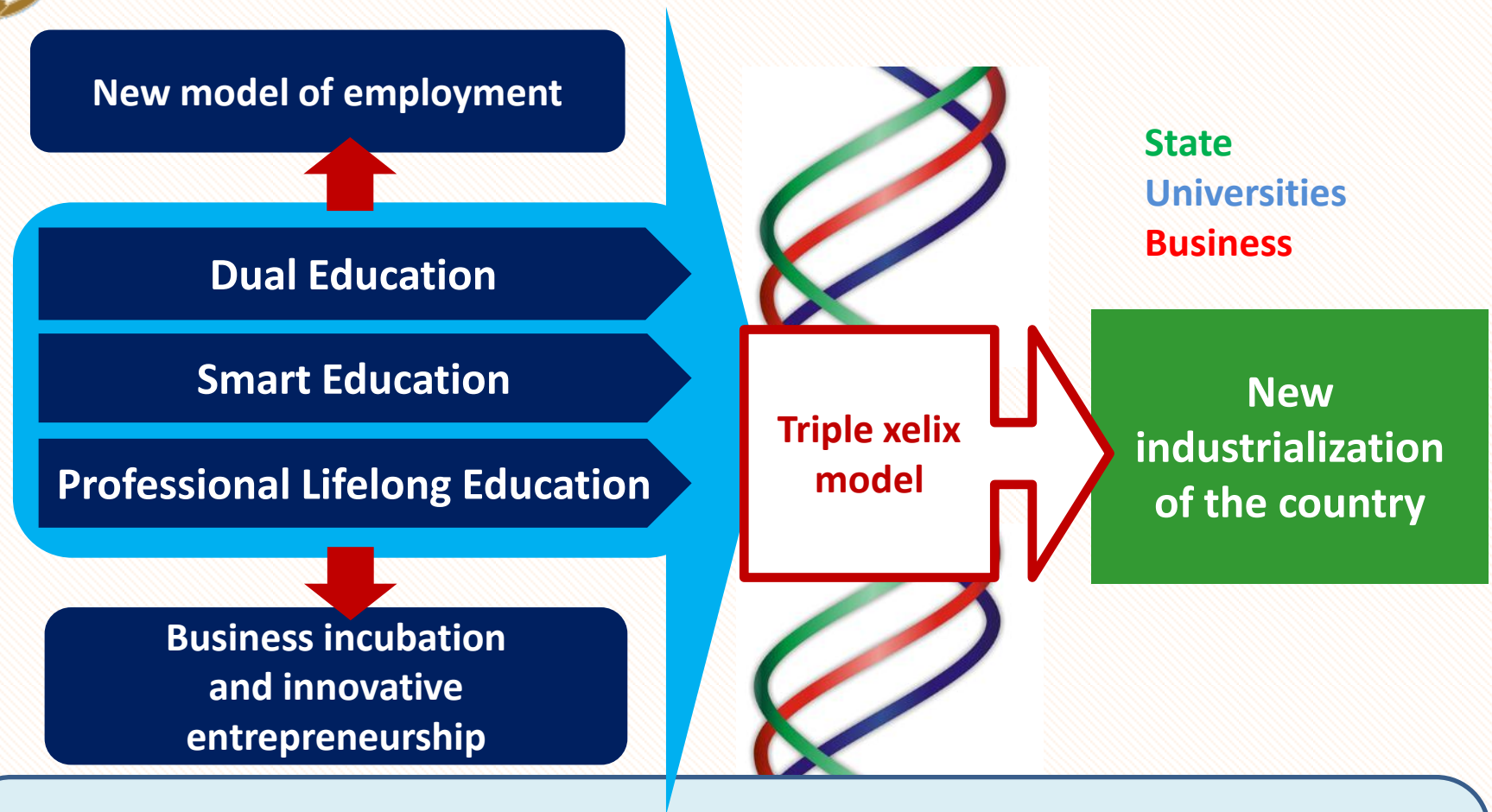
GIVING ~ 90% OF CREDITS FOR THE PROFESSIONAL BLOCK OF DISCIPLINES: STEM-GENERATING MODULES – SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS

7

Issue of Diploma Supplement on accredited specialties



KNOWLEDGE-BASED ECONOMY



Under conditions of innovative economy and knowledge-based economy any generation of new knowledge and technology is achieved through **joint efforts of universities, government and business** as key elements of innovation system of any country.

The State program of industrial and innovative development of Kazakhstan for 2015-2019 is developed in accordance with the long-term priorities of the Strategy «Kazakhstan-2050»

Goal	Stimulation of diversification and improvement of competitiveness of the manufacturing industry
-------------	--

- | | |
|--------------|--|
| Tasks | <ol style="list-style-type: none">1) advanced development of the manufacturing industry;2) improvement of efficiency and increasing the added value in the priority sectors;3) expansion of markets for non-primary goods;4) increase of productive employment;5) giving a new level of manufacturability to priority sectors of industry and providing a basis for development of future sectors through the formation of innovation clusters;6) stimulation of entrepreneurship and development of small and medium-sized businesses in the manufacturing industry. |
|--------------|--|



Perspective directions of SPIID-II

Oil and gas complex

Chemical Industry

Metallurgical complex

Food industry

ICT / Space technologies

“Green” Energy

Pharmaceutics

**Opening of
laboratories**

Research

**Increasing
the material-technical base**

2015 год

2,1 bn tenge/ 11,7 million \$

2016 год

2,3 bn tenge/ 12,5 million \$

2017 год

2,3 bn tenge/ 12,5 million \$



Al-Farabi Kazakh National University

Directions of SPIID-II:

Oil and gas complex



Metallurgical complex



Chemical Industry



Food industry



"Green" Energy



ICT / Space technologies



Educational Programs:

• petrochemistry



• Materials science and technology of new materials, • Nanotechnologies



• Chemistry and technology of rare and rare earth metals



• Genetic engineering, • Food and Biological Safety,



• Nuclear power, • Alternative energy and energy saving technologies • Geo energy



• Automation and robotics, space technologies, • Innovation management, innovative entrepreneurship





Personnel training for SPIID-2

Directions of SPIID-II:



**Information and
communication technologies**



Pilot educational programs:

- Automation and control of technological processes;
- Information technologies for space monitoring systems;
- Mathematical and computer modeling of technological processes;
- Geo energy and information technologies for efficient development of mineral deposits;
- Mechanics of machines and manipulators, creation of intelligent robots;



Industrial chemistry

Agrochemistry



- Chemistry and technology of organic materials;
- Chemistry and technology of inorganic materials.



- Chemistry and technology of production of mineral fertilizers and ameliorants;
- Chemistry and technology of plant protection products.



International recognition



QS World University Rankings (2014) **305**
 QS Emerging Europe and Central Asia Ranking (2014) **14**
 Great Value Colleges (2014) **31**



Al-Farabi Kazakh National University leads the **Global hub of United Nations Academic Impact (UN Academic Impact)** for Sustainable Development 2014-2016.



Central Asian Regional Hub of UNESCO on sustainable development was established on the basis of the University according to the program UNITWIN.

In the framework of the VII Astana Economic Forum on May 21-22, 2014, **III Asian Universities Forum** was held on the basis of the Al-Farabi Kazakh National University.

Main purposes of the University in the framework of the President's Address "Kazakhstan's way-2050: Common goal, common interests, common future" are:



Promoting the idea of strengthening the role of the President of Kazakhstan as one of the key figures in the international process of solving global problems

Promotion in transformation of Almaty into a regional hub of multilateral diplomacy





III Asian Universities Forum

«Eurasian diversity and the role of universities for sustainable development»

May 21-22, 2014, Astana-Almaty



- **Galym Mutanov**, rector of KazNU
- **Jan Sadlak**, President of the IREG Observatory on Academic Ranking and Excellence, France
- **OH Yeon Cheon**, President of the Seoul National University, The founder of the Forum of Asian universities, the Republic of Korea



THE SECRETARY-GENERAL

QUOTE FOR AL-FARABI
KAZAKH NATIONAL
UNIVERSITY
May 2014

Having experienced the power of education in my life and the advancement of my country, I know that it can open doors of opportunity and unlock solutions to world's many problems. The research and practical work done by researchers and scientists have immensely benefitted the UN in our global mission of peace, development and human rights. As we now strive to shape a bold post-2015 development agenda, I look forward to your insights and other contributions. Thank you for your commitment to the United Nations, including through your membership in

Address of the UN Secretary-General
Ban Ki-moon

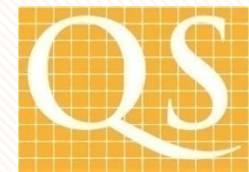
GREETING ADDRESS from
Ms. Irina Bokova, Director-
General of UNESCO

Higher education institutions play a crucial role in sustainable development of any nation. As sustainability is becoming the most critical issue of the world, the role of higher educational institutions in relation to sustainable development is more prevalent.

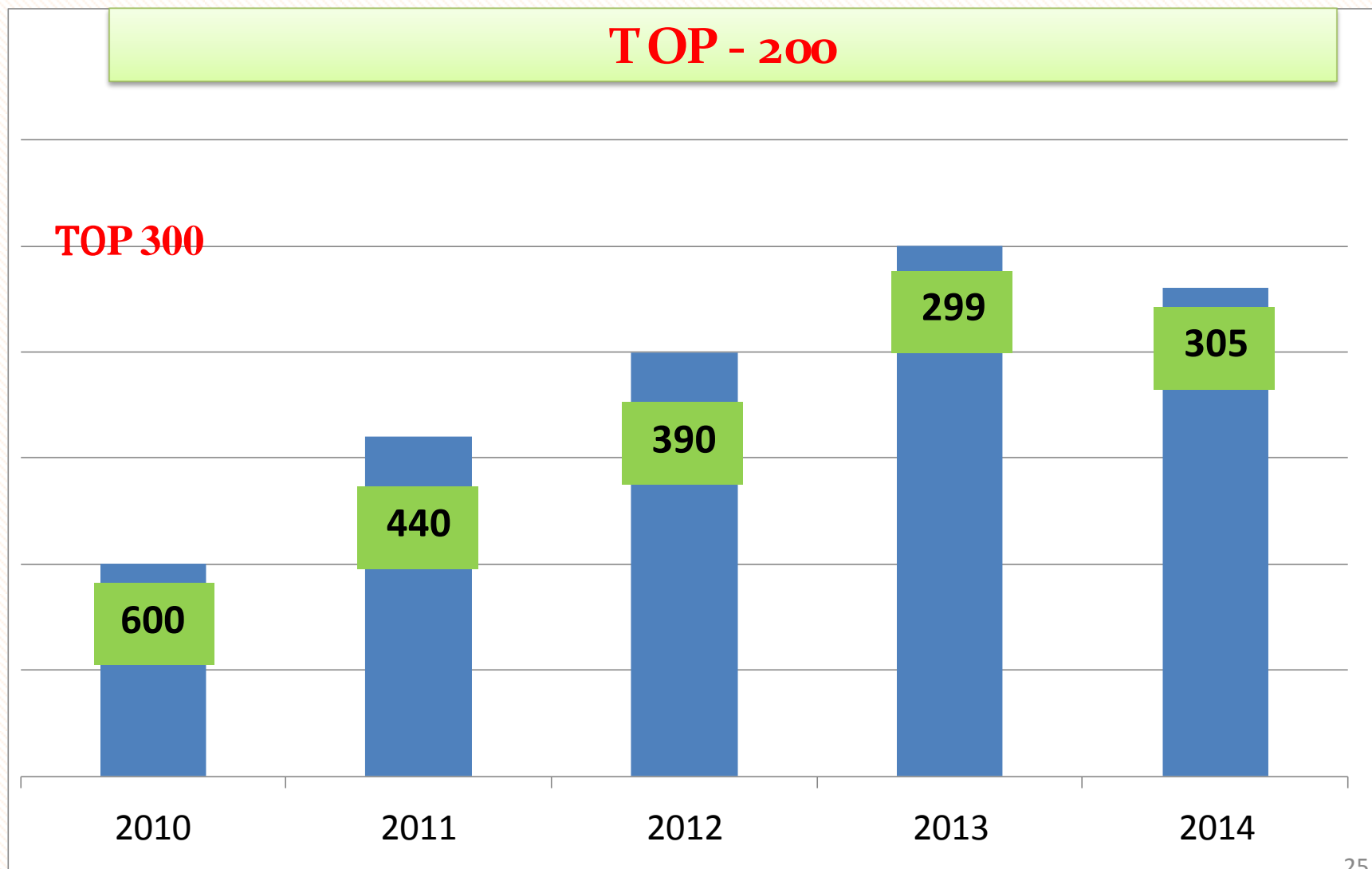
In this regards this effort of the University is considered to be as a strong commitment to UN principles as well as contributes in achieving of long-term tasks for sustainable development declared in the Millennium Development Goals. I do believe that the Forum will become a good platform for informed discussion across a wide range of sustainable development issues from the perspective of Eurasian diversity.



Congratulations of the Director-General of
UNESCO Irina Bokova



KazNU in TOP-300 (QS World University Rankings)





Great Value Colleges



The 50 Most Technologically Advanced Universities



1 place – École Polytechnique Fédérale de Lausanne



10 place – Cambridge University



12 place – Oxford University



30 place – University of Texas — Austin



31 place – **al-Farabi Kazakh National University**



32 place – Australian National University



40 place – Utah State University



45 place – University of California San Diego



50 place – Wofford College



On-going programs



In 2014 at the University there were implemented 616 projects with total funding of 7,125 bn tenge (\$ 50 mln), including:

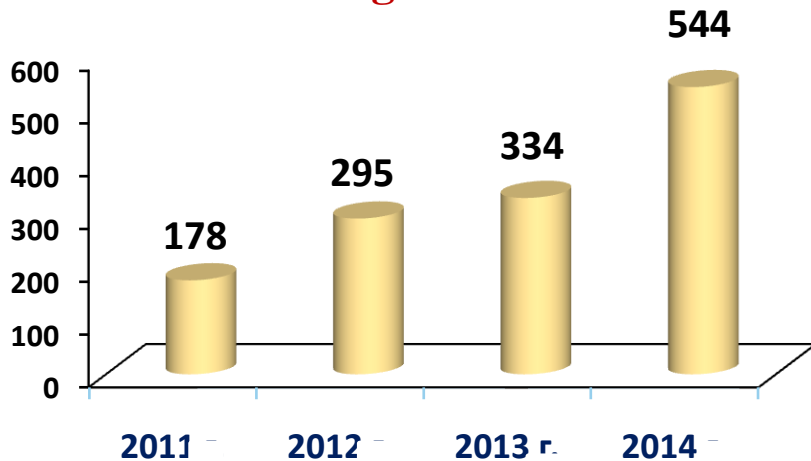
- **544** grant projects funding of Ministry of Education and Science of Kazakhstan for 2012-2014., 2013-2015;
- **4** projects of MES and the World Bank joint program “Technology Commercialization”;
- **3** projects of JSC “National Scientific-Technological Holding “Parasat”;
- **1** grant of The International Science and Technology Center;
- **6** projects of JSC “National Agency for Technological Development”;
- **141** international grants and projects within international scientific and educational cooperation;
- **72** developed in collaboration with national companies and private enterprises.

➤ **In 2015** University scientists carry out 286 grant projects and 6 projects targeted funding of Ministry of Education and Science of Kazakhstan for 2015-2017.

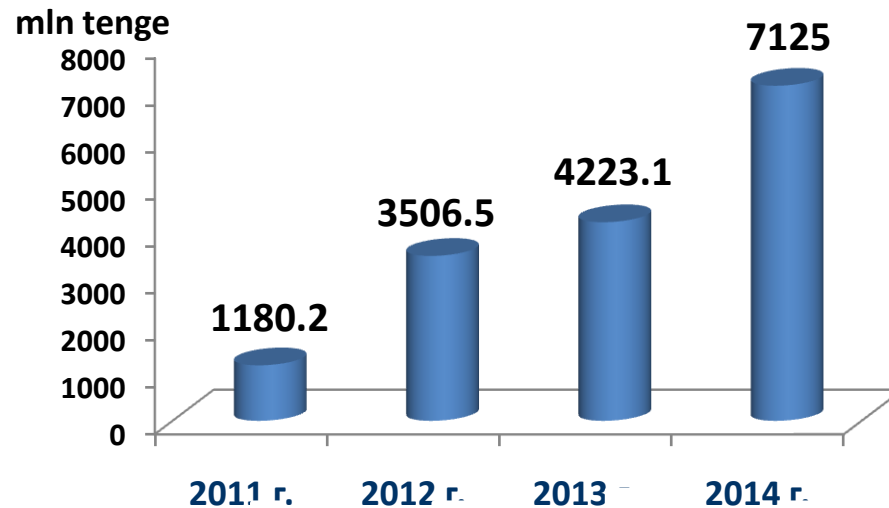


Research activity

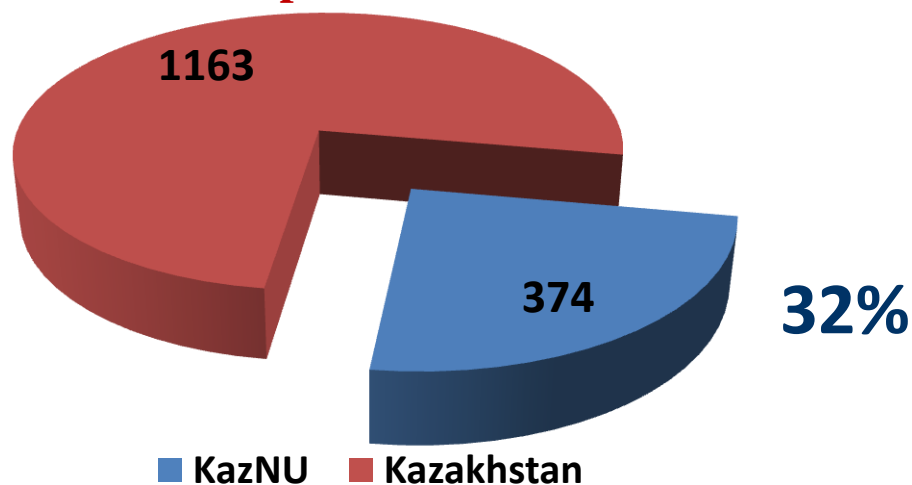
Number of projects of grant financing of MES RK



The amount of research activity funding

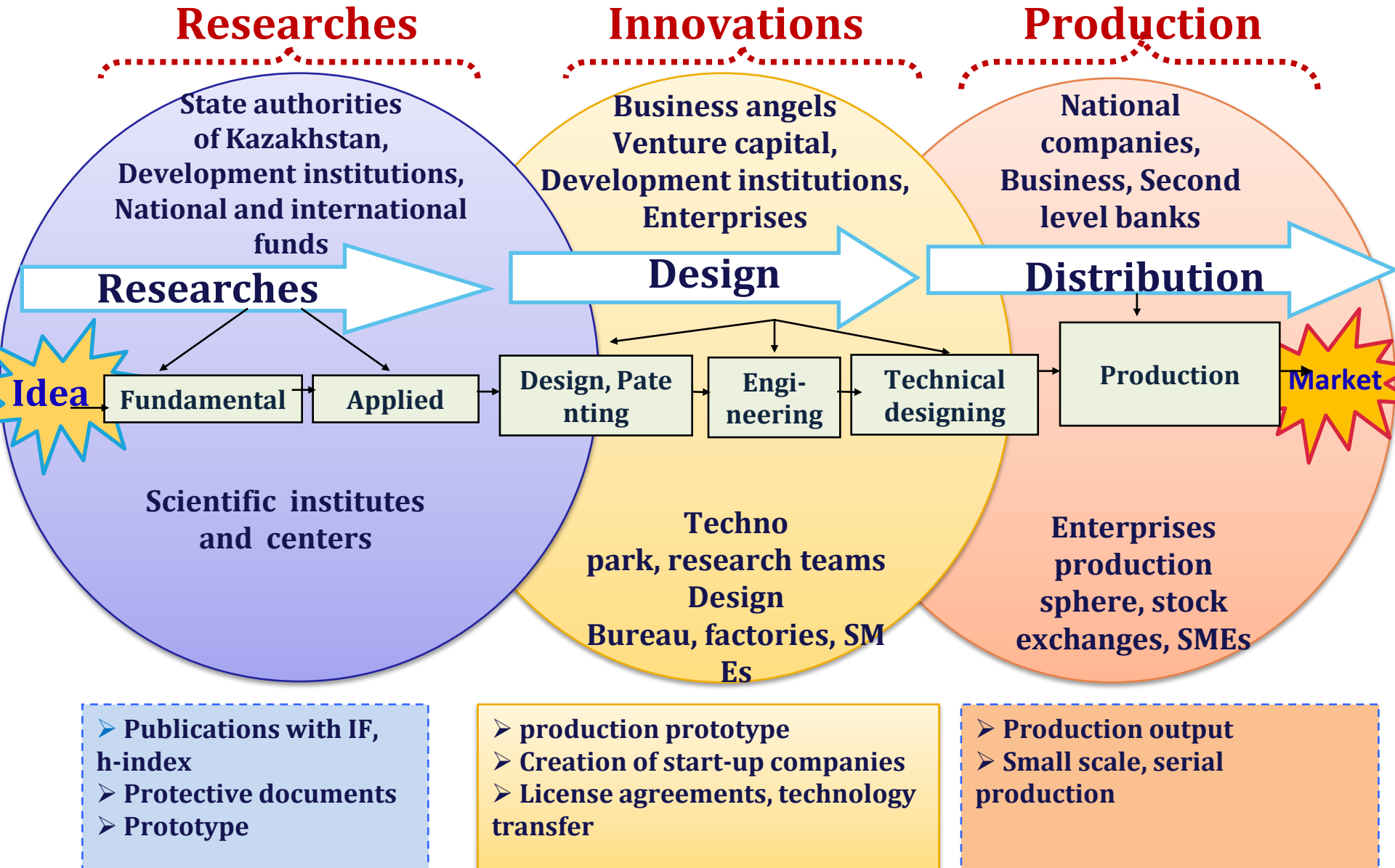


Publications in high-rated journals of Thomson Reuters and Scopus data bases in 2014





Scientific-Innovation "Corridor"

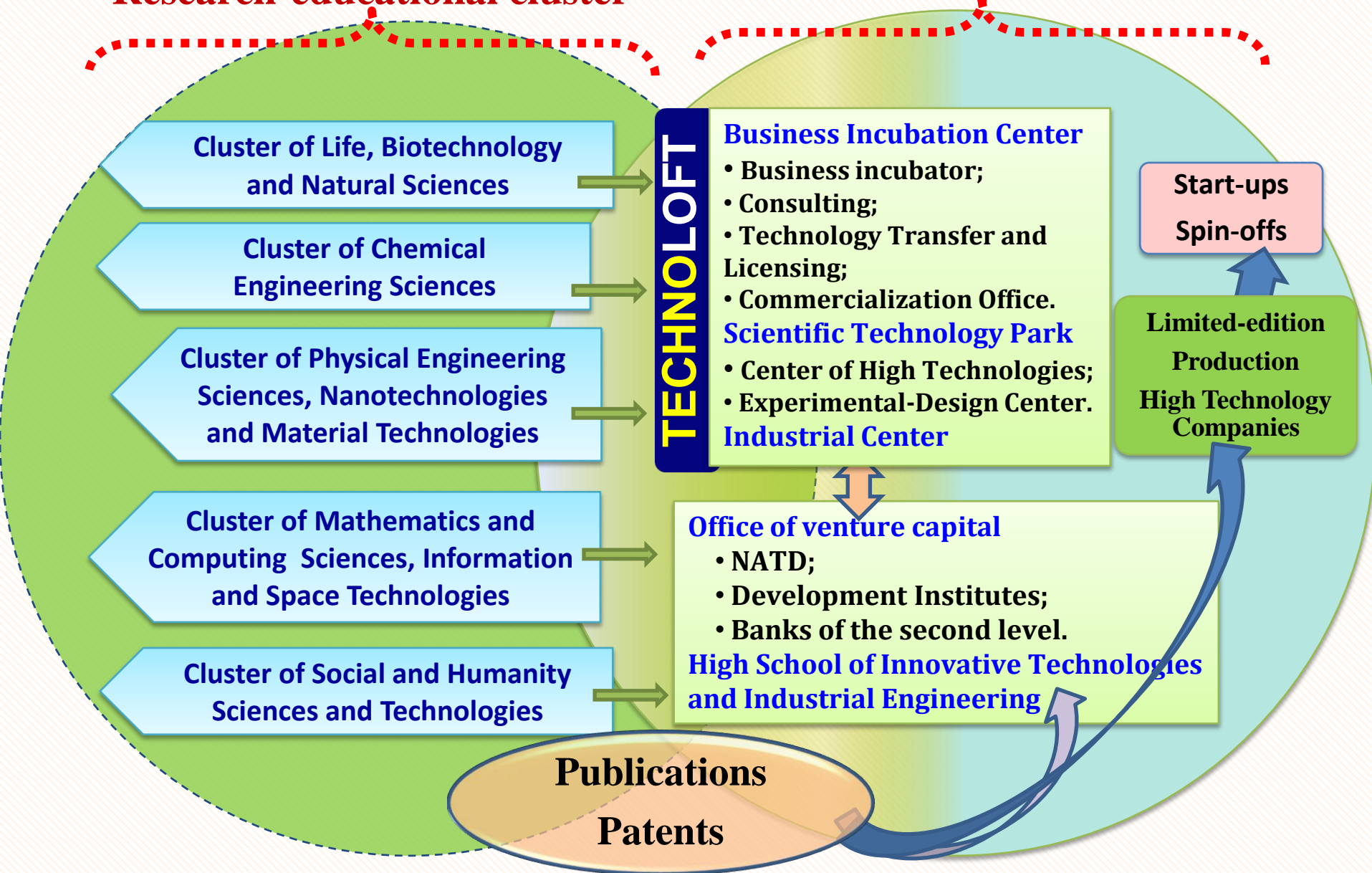




RESEARCH-EDUCATIONAL AND INNOVATION CLUSTER

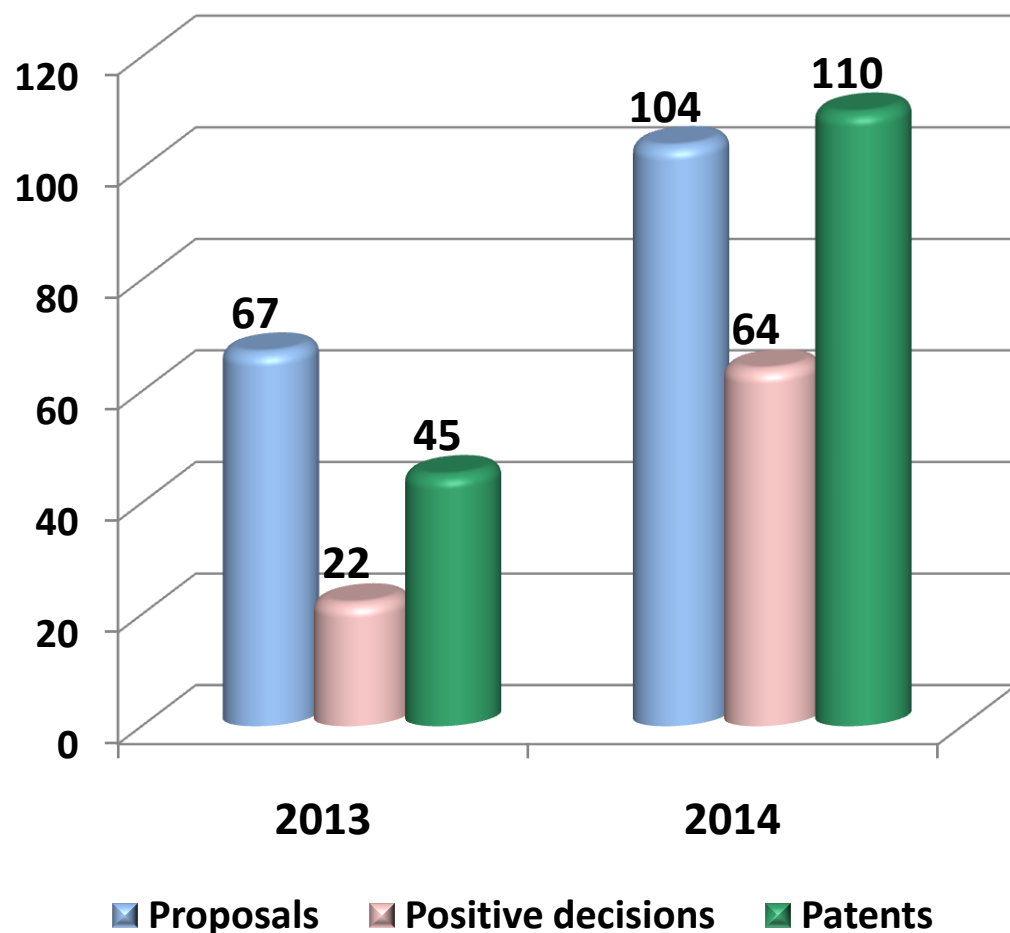
Research-educational cluster

Innovation cluster





Patent-licensing activity



Foreign Patents

1. «Method for extraction of Beryllium from the minerals of Genthelvite group when processing the raw minerals (ores, concentrates)»

USA Patent № 8,945,492

2. «Method for extraction of Beryllium from raw genthelvite (danalite, genthelvite, helvite) and bertrandite (chryosberl, euclase, bertrandite) mineral groups when processing the raw minerals (ores, concentrates)»

USA Patent № 8,945,493



Innovative and commercialization projects (R&D)

University supporting projects – 18:
international – 4, republican – 7, branch– 3, university – 4

According to the “Technology Commercialization” program of MES RK and the World Bank the results of 4 R&D are commercialized. 4 spin-off companies are created:

«Creation of pilot production of nano structured carbonaceous materials for chemical processes» (*Funding – \$1 500 000*)

«Creation of production of new hydro gel medical forms of phyto preparations from the vegetable raw materials of Kazakhstan» (*Funding – \$1 500 000*)

«Practical application of isotope ratios of natural radio nuclides in hydrometallurgy of uranium and radioecology» *Funding – \$600 000*)

**«Development of methods for producing self-renewing composite coatings
Funding – \$600 000)**



Spin-off companies



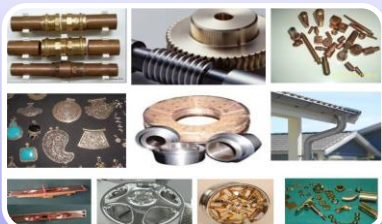
LLP «Eco Chem»

Pilot production of nano structured carbonaceous materials and composites.



LLP «Chemistry and innovation»

production of new hydro gel medical forms of phyto preparations from the vegetable raw materials: hydro gel bandages, phyto preparations, synthetic anesthetic, polymeric hydro gel ointments from vegetable raw materials of Kazakhstan



LLP «AIM Lab»

Production of self-renewing composite coatings: metal composite coatings with incorporated capsules.



LLP «EcoRadSM»

Practical application of isotope ratios of natural radio nuclides in hydrometallurgy of uranium and radioecology.



Pilot plant for production of composite materials





Pilot production site for processing carbon-mineral shungit rocks

(EKR, 80 km from Ust-Kamenogorsk city, v. Auezov)

**Productivity of complex - 2000 tons of shungite
concentrate per year**



Pilot production site



Shungite rocks



Creation of biotech complex “Vermi culture” for processing of agricultural waste to produce high-quality feed additives and vermi compost

The small innovative enterprise for production of new products of “Technology Business Incubator” with the support of “NATD” is created (farm "Manshuk", Almaty region).



E.ferida worms



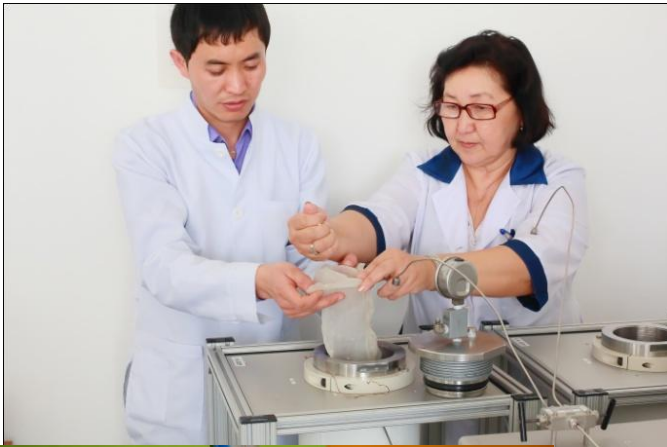
Biohumus production in piles. «Manshuk» farm



Production of medications

The work on finding and developing new medicines is carried out. Now the following drugs are obtained from the available domestic raw materials and brought to the industrial production stage:

ointment "Sanjar", tincture from camel thorn "Gauhar," Syrup "Limonidin"
Syrup "Zhantak", anticancer drugs "Alhidin - 5% and 10%", "Ramon" drug
, Polymer Hydro gels.





Technology of extraction of wool fat from wool rinsing water, receiving and deep processing of lanolin

Goal: creation of construction and industrial plant for extraction of wool fat from wool rinsing water; improving the technology of obtaining of various grades of lanolin; development of methods for obtaining sterol alcohols by deep processing of lanolin and wool fat.

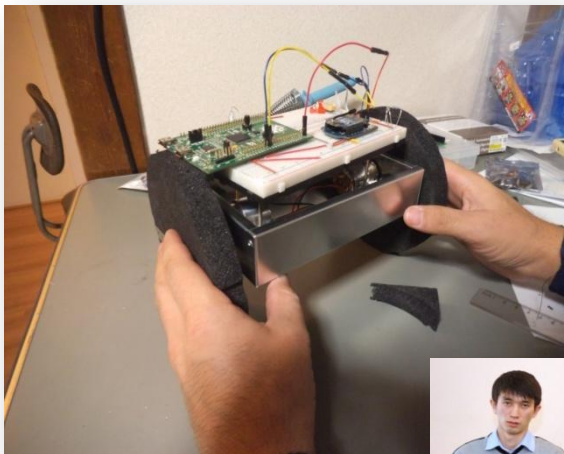




Innovation project: the first university NANOSATELLITE of Kazakhstan

Within the frame work of the International Consortium **UNIFORM** Project in conjunction with the University of Tokyo **an unique project** for creation and launch of the first in history of Kazakhstan university scientific and educational nano satellite is realized .

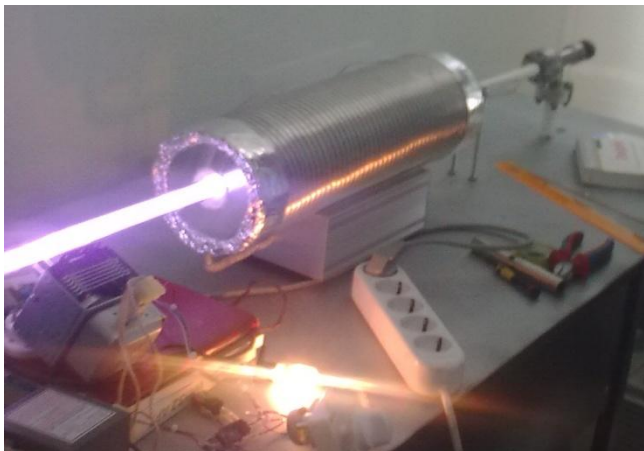
4 students of Physics and Technology and Mechanics and Mathematics Faculties are sent to the University of Tokyo, where they acquire theoretical knowledge and practical skills in creating nano-satellites within the Master Course.



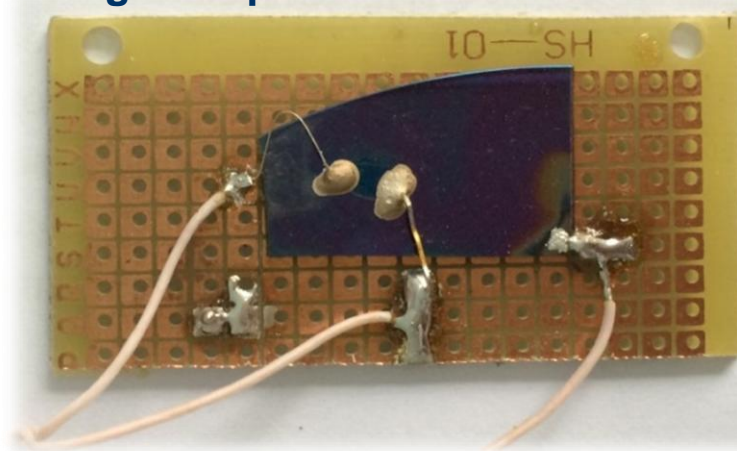


Synthesis of graphene

method CVD - process of vapor deposition of materials. We can produce materials with different structures using CVD-process.



CVD installation

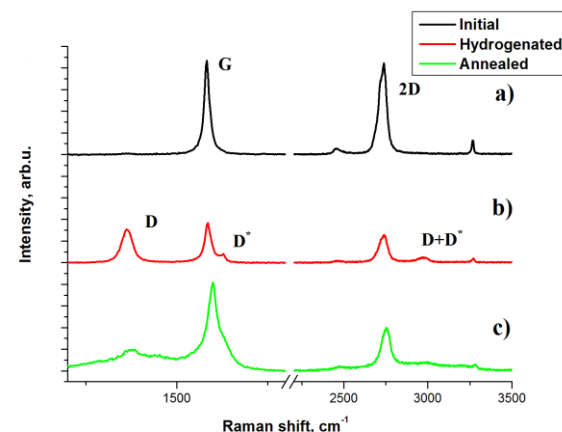


Sensor for UV registration on the basis of CVD graphene

Functionalization of graphene



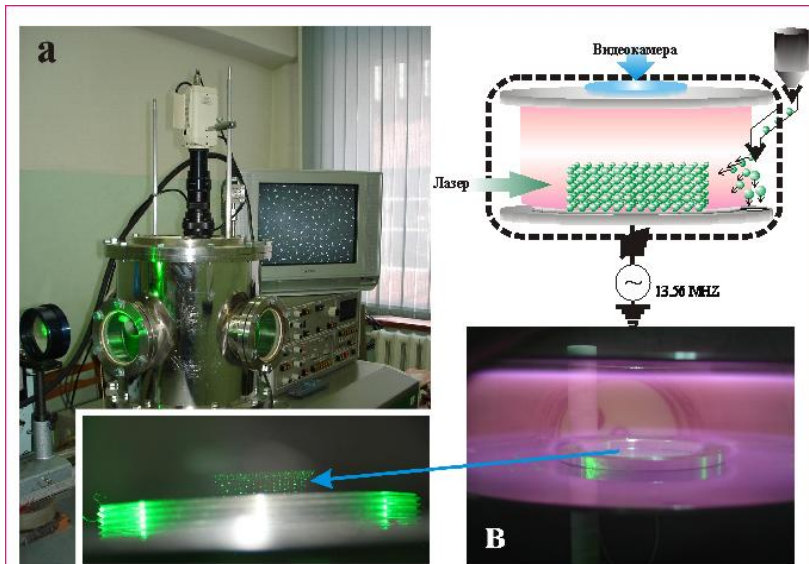
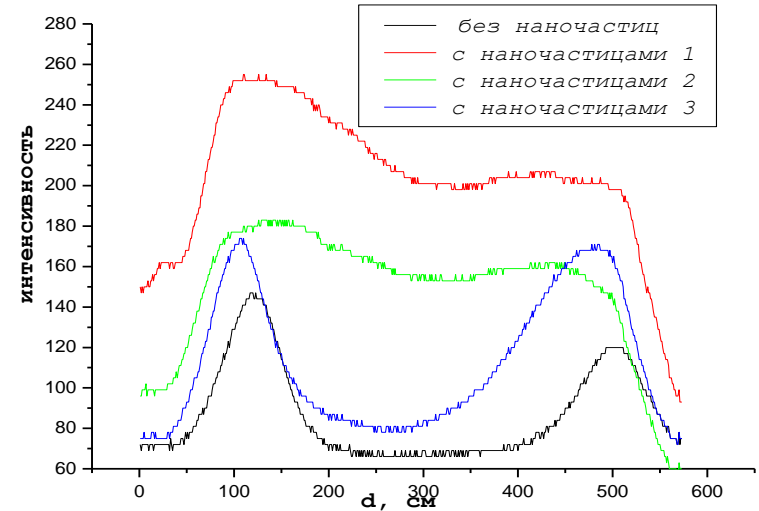
Electrolytic cell for hydrogenation



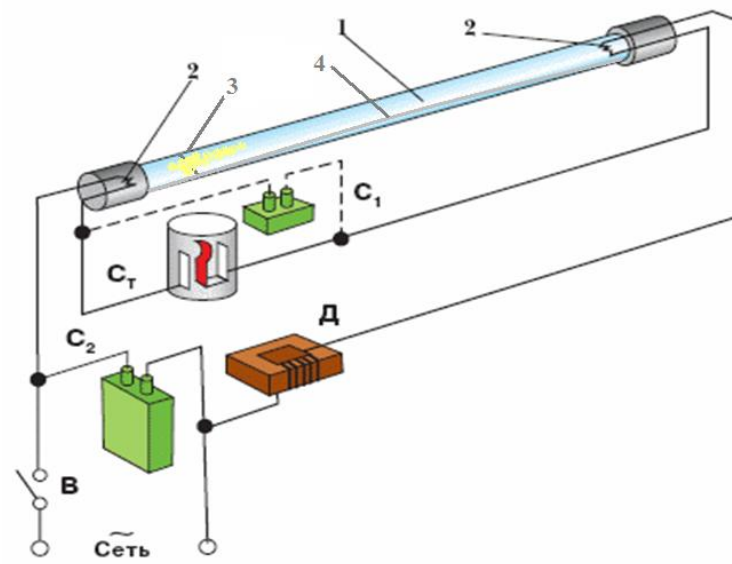
Changing of Raman spectrum of graphene under influence of hydrogenation and recovery by annealing



Energy saving lamp with high luminous intensity



The experimental setup of lamp



The scheme of lamp



Universal gas leakage sensor «QORGAN»

- ❖ Weight of sensor no more than 150 g
- ❖ Overall dimensions no more than 100x50x30 mm
- ❖ The possibility of sending SMS to mobile
- ❖ The operating temperature of 40 to 70 degrees
- ❖ The sensor has a built-in optical indication
- ❖ The sensor is operable at self-supplied power up to 1 week



Combined gas sensors



Carbon monoxide sensors



Toxic gas sensors



Highly sensitive gas sensors



Flammable gas sensors



Sensors of alcohol vapors



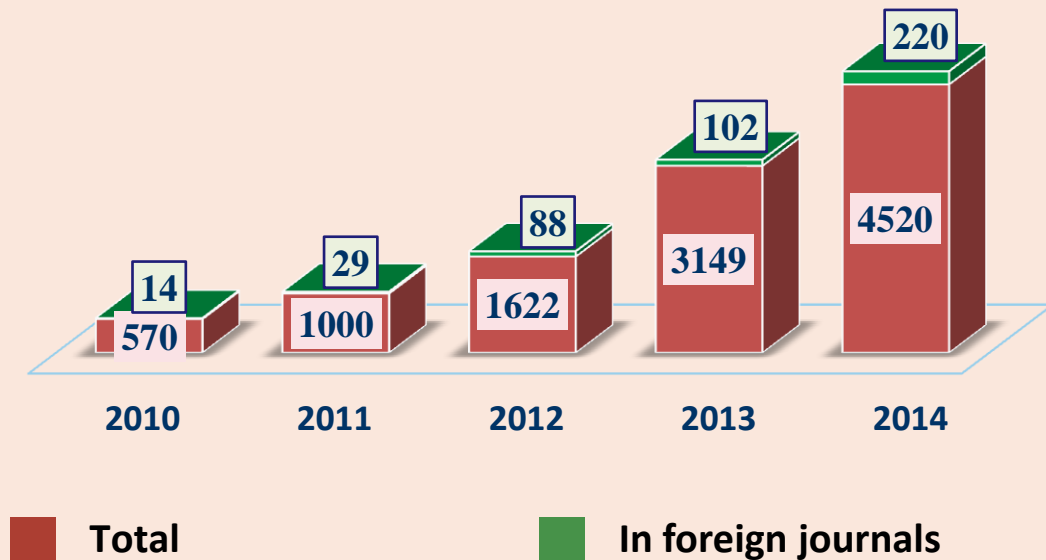
Plasma sterilizer



The laboratory setup for schools on electrical and electromagnetic phenomena

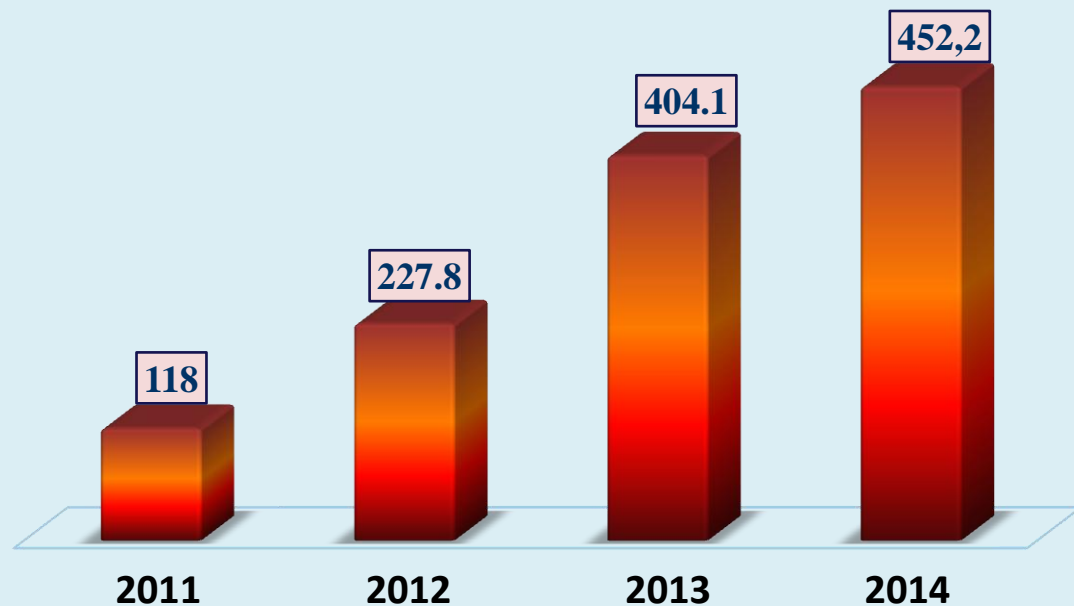


The research work of students



**Publication activity of
students for 5 years**

**Allocations for attracting
students to research projects
on a paid basis (mln.tenge) for
2011-2014.**





The best innovation projects of Student Business Incubators



Energy saving lamp



Bio soap



3D animation movie



Cryo case



«Kipa.kz»



Students' drone



«Youth Travel» tourist agency



«Eco interior»



Al-Farabi Kazakh National University should become a core of research and innovation development in the Republic of Kazakhstan and the Central-Asian region

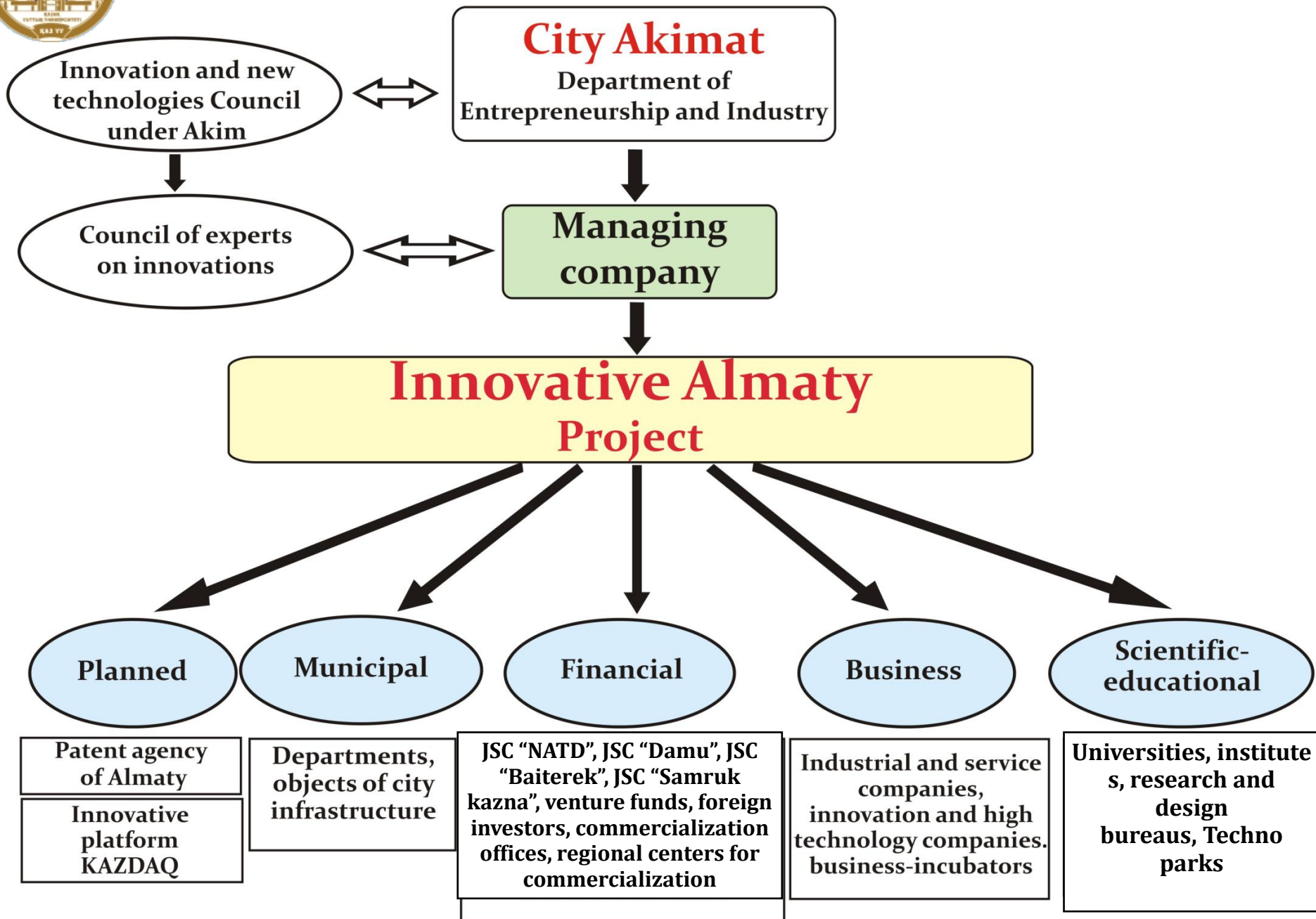
For the purposes of innovative development of Almaty region Al-Farabi Kazakh National University has worked out «Innovative Almaty» project .

Project mission:

- **transition of Almaty technological and innovative platform to a new level of the international competitiveness;**
- **improvement of life quality;**
- **intensification of enterprise activities;**
- **creation of new workplaces for highly qualified specialists.**



Almaty city innovation structure



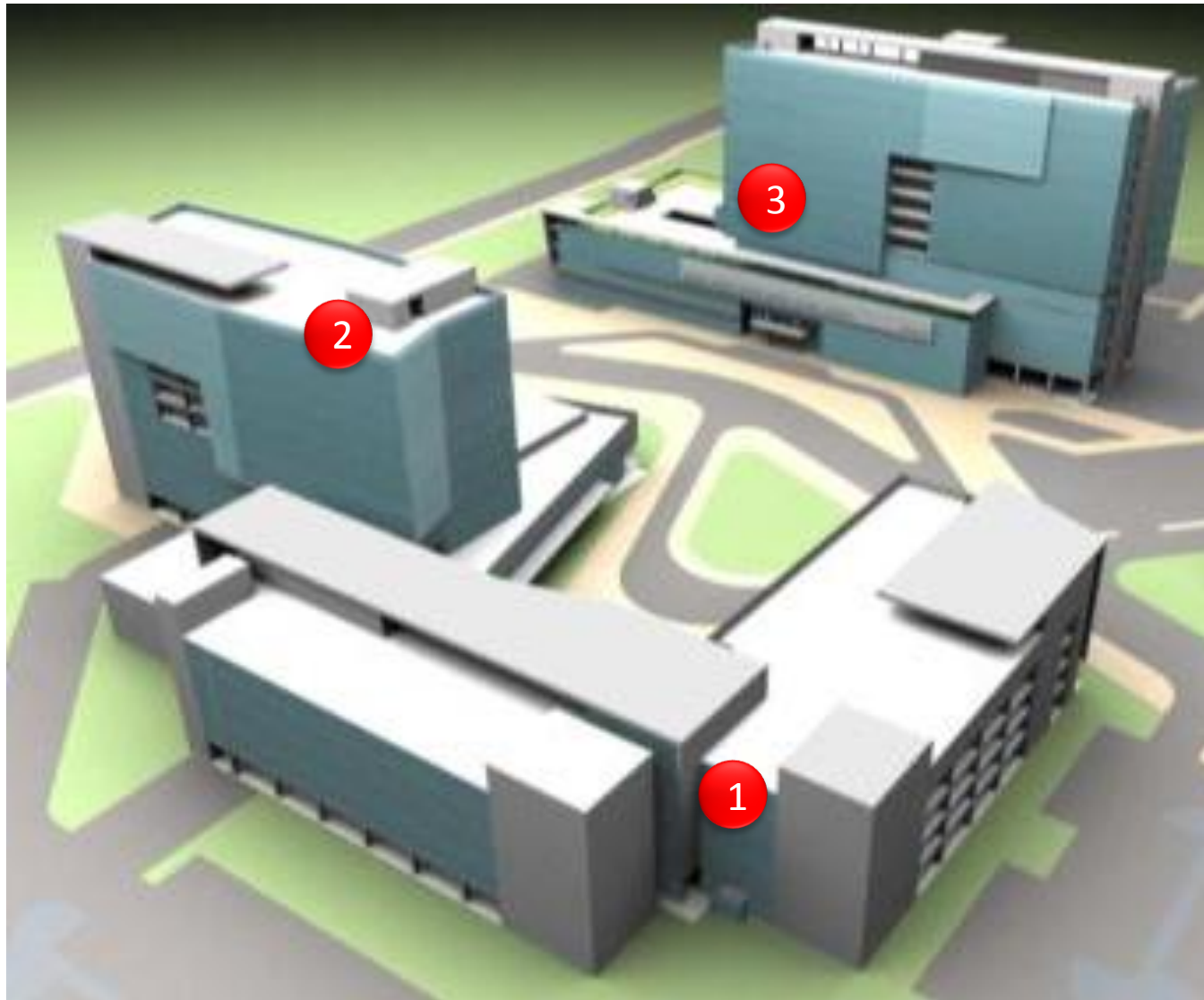


Innovation cluster of al-Farabi Kazakh National University is planned as three buildings

1 – Production center

2 – Business-incubator

3 – Techno park



**Ministry of Industry
and New
Technologies**

**The program for
development of
innovation and
promotion of
technological
Modernization in the
Republic of
Kazakhstan
(p.18 "Creation of
Al-Farabi Innovative
cluster")**



Medical and biological cluster

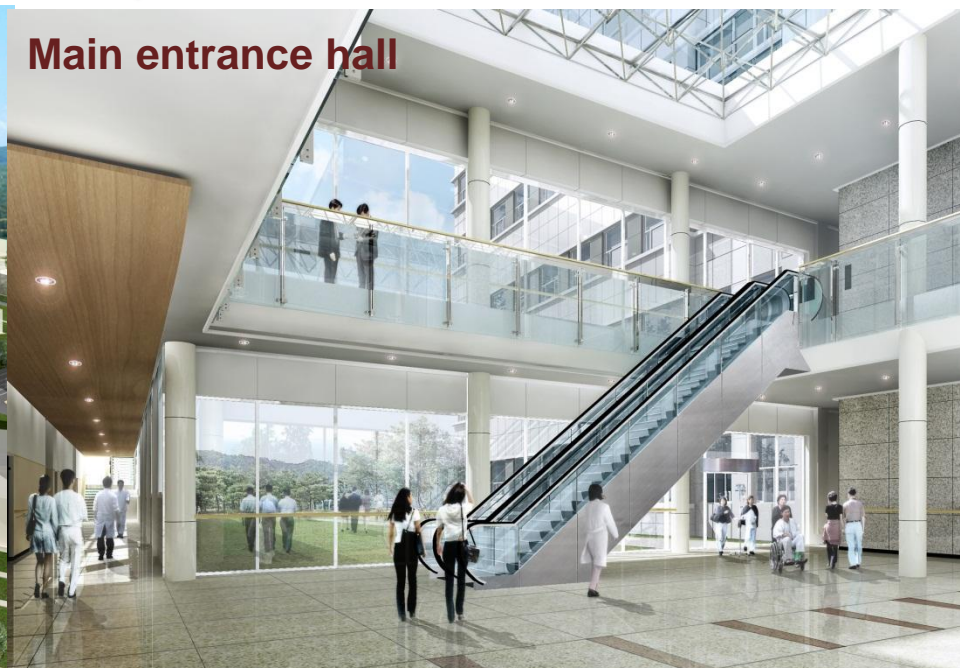
Funding organizations (Shinkhan Bank (Hong Kong), Park Way Holding (Singapore))

The project cost is \$ 500 million

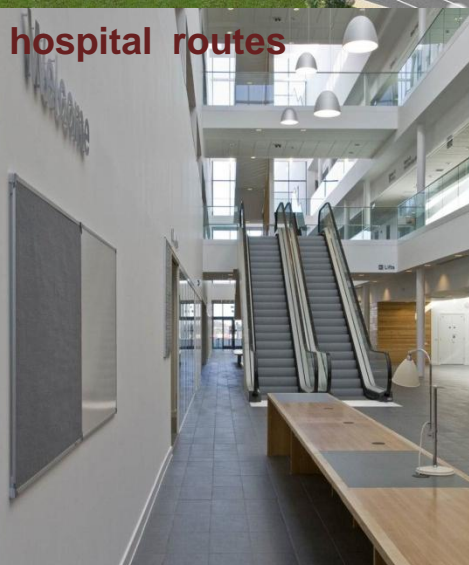
View from the bird's-eye view



Main entrance hall



hospital routes



Corridor



Common room, light sources





Infrastructure of research-educational and innovation cluster



1. The Center of Educational Management
2. The Center of Life and Biotechnology Sciences
3. Scientific Technology Park
4. The Center of Social and Humanity Knowledge and Technologies
5. The cultural-community Center "Univer-City"
6. The Industrial Center
7. The Business-innovation Center
8. The Center of Emerging Technologies

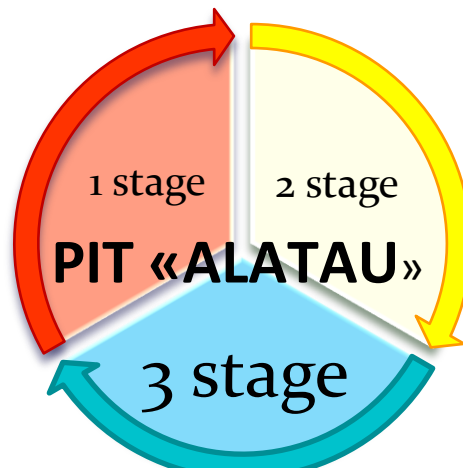


Main trends of REIC development at al-Farabi Kazakh National University

- **Information and communication technologies**
- **Nanotechnologies and new promising materials**
- **Alternative energy and energy-efficient technologies**
- **Biotechnologies**
- **Biomedicine**
- **Pharmaceutics**
- **Physicochemical technologies**
- **Space technologies(nano satellite and etc.)**
- **Social and humanity researches**



III stage of realization PIT “Alatau” on the basis of REIC KazNU



REIC Al-Farabi KazNU

«Innovative
Almaty»

TECHNOLOFT

KazNU

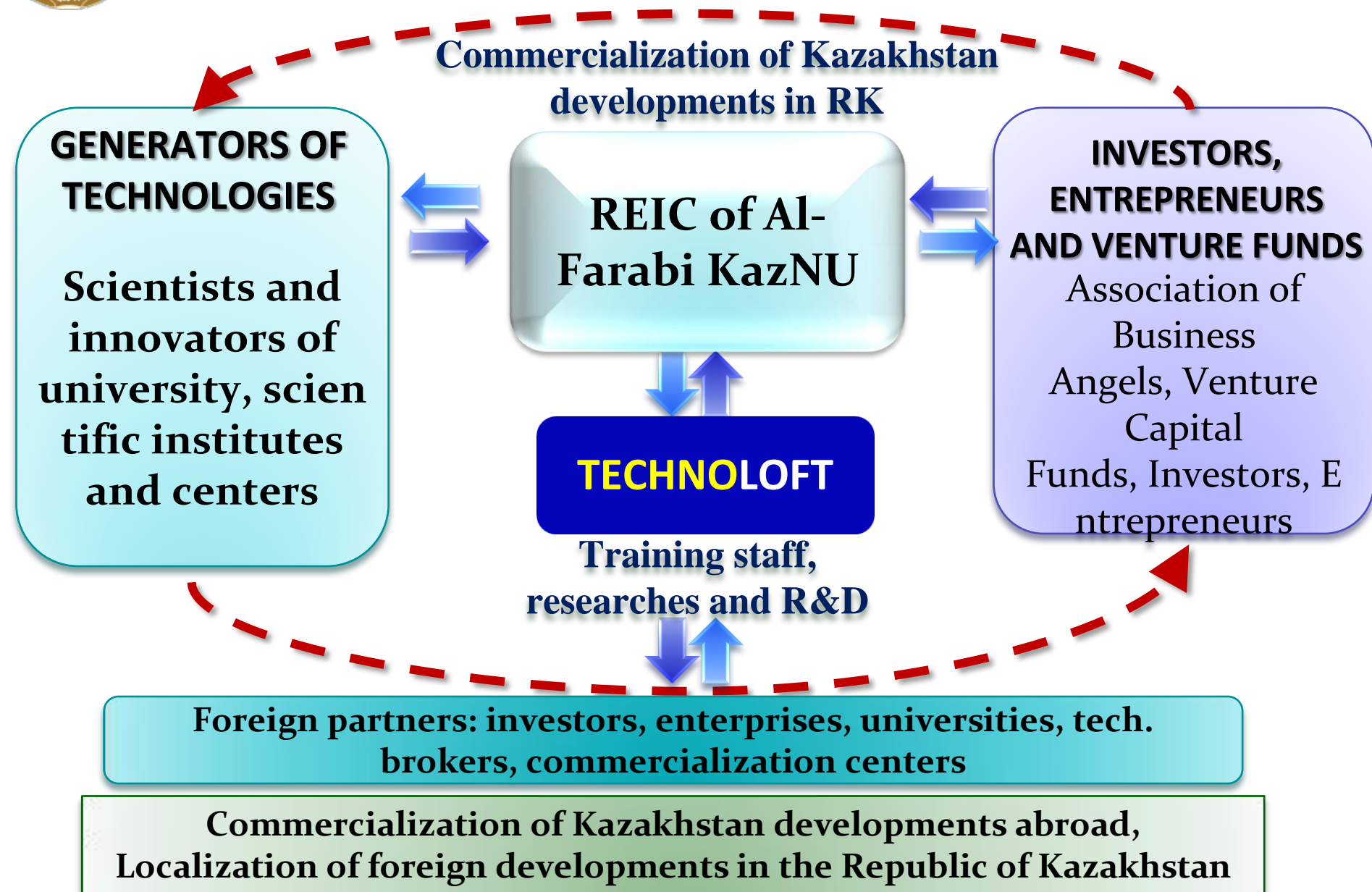
Medical and
biological
cluster

Innovation cluster

- residents of PIT “ALATAU”

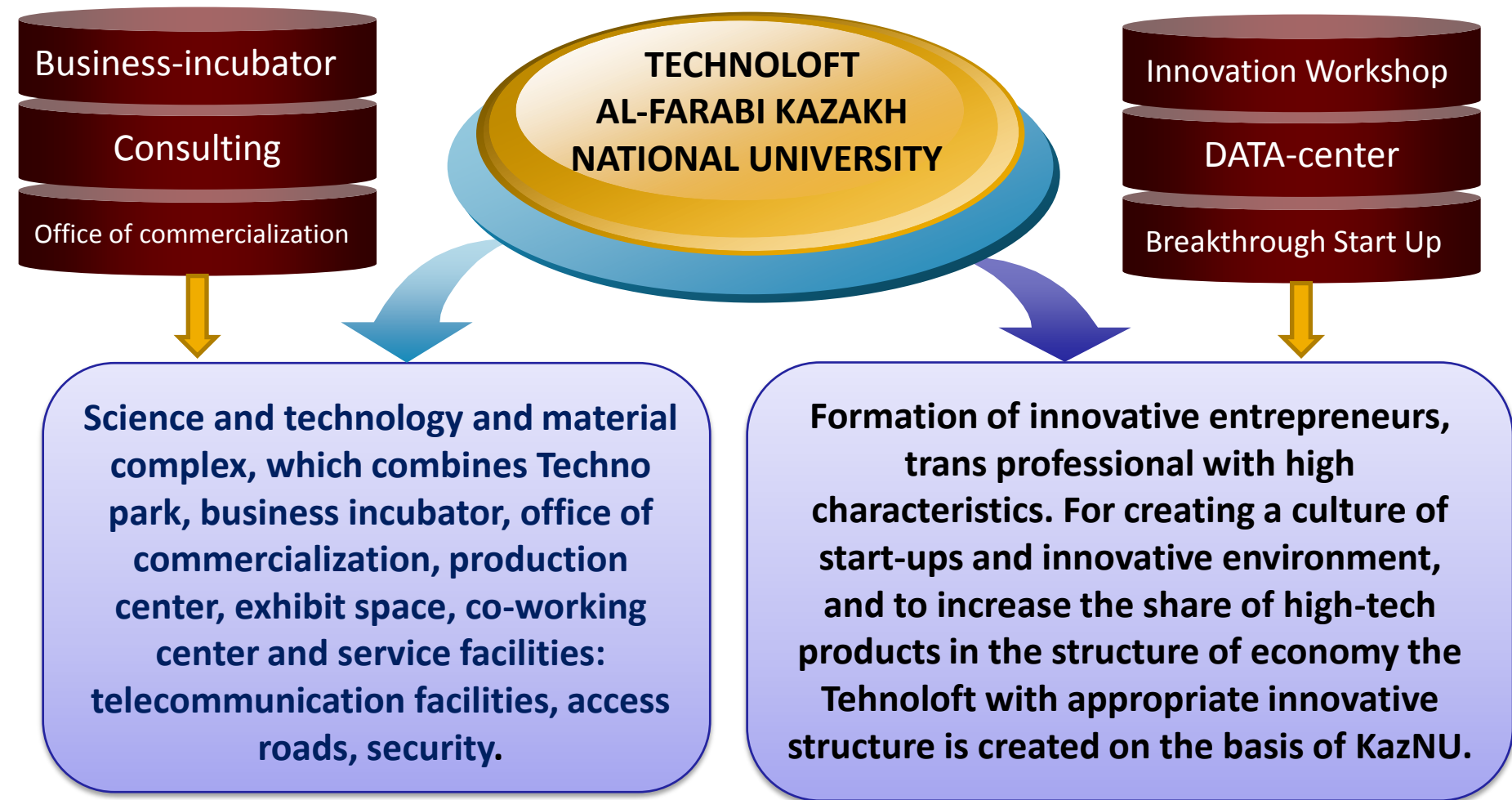


Scheme of interactions of REIC KazNU





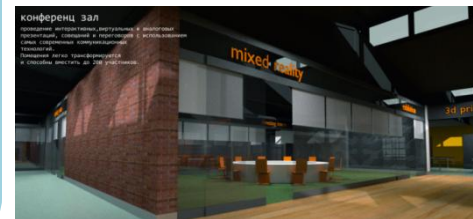
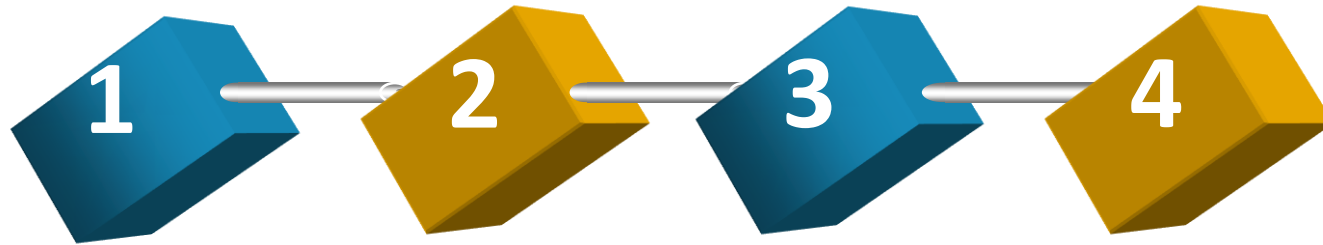
TECHNOLOFT on the basis of al-Farabi Kazakh National University



The purpose of creation of TECHNOLOFT - to focus on a single area all tools needed for innovation, launching start-ups and business incubation.



TECHNOLOFT – a place where innovation environment forms



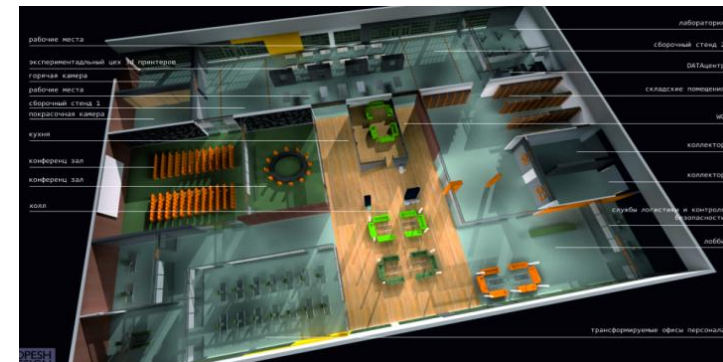
Science and technology and material complex, which combines **innovative workshop**, **co-working center** and service facilities: telecommunication facilities, access roads, security

A place where innovative environment and culture of start-ups are formed

A place of conversion of R&D results into the real sector of economy. A place where all tools needed for innovation activity are concentrated on a single site

A place where competitive capable breakthrough start-ups are created

- innovation infrastructure, unique co-working center;
- pilot plant of 3-D printers;
- parking of solar batteries;
- DATA-center;
- air recovery system.

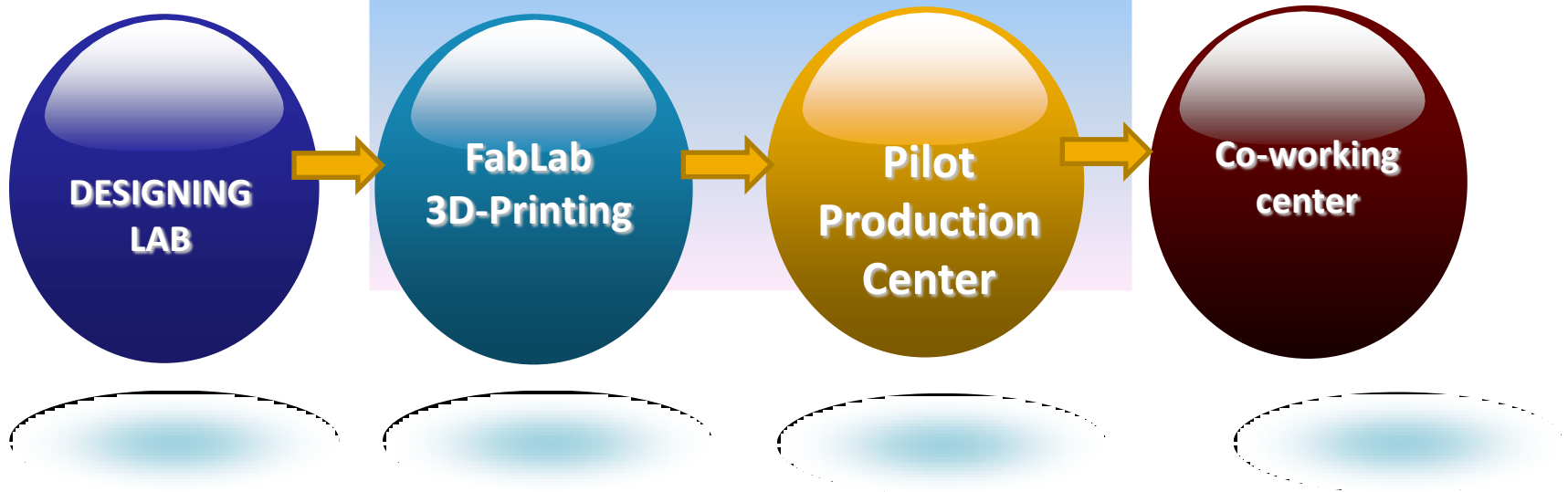




TECHNOLOFT INNOVATION WORKSHOP

INNOVATION WORKSHOP

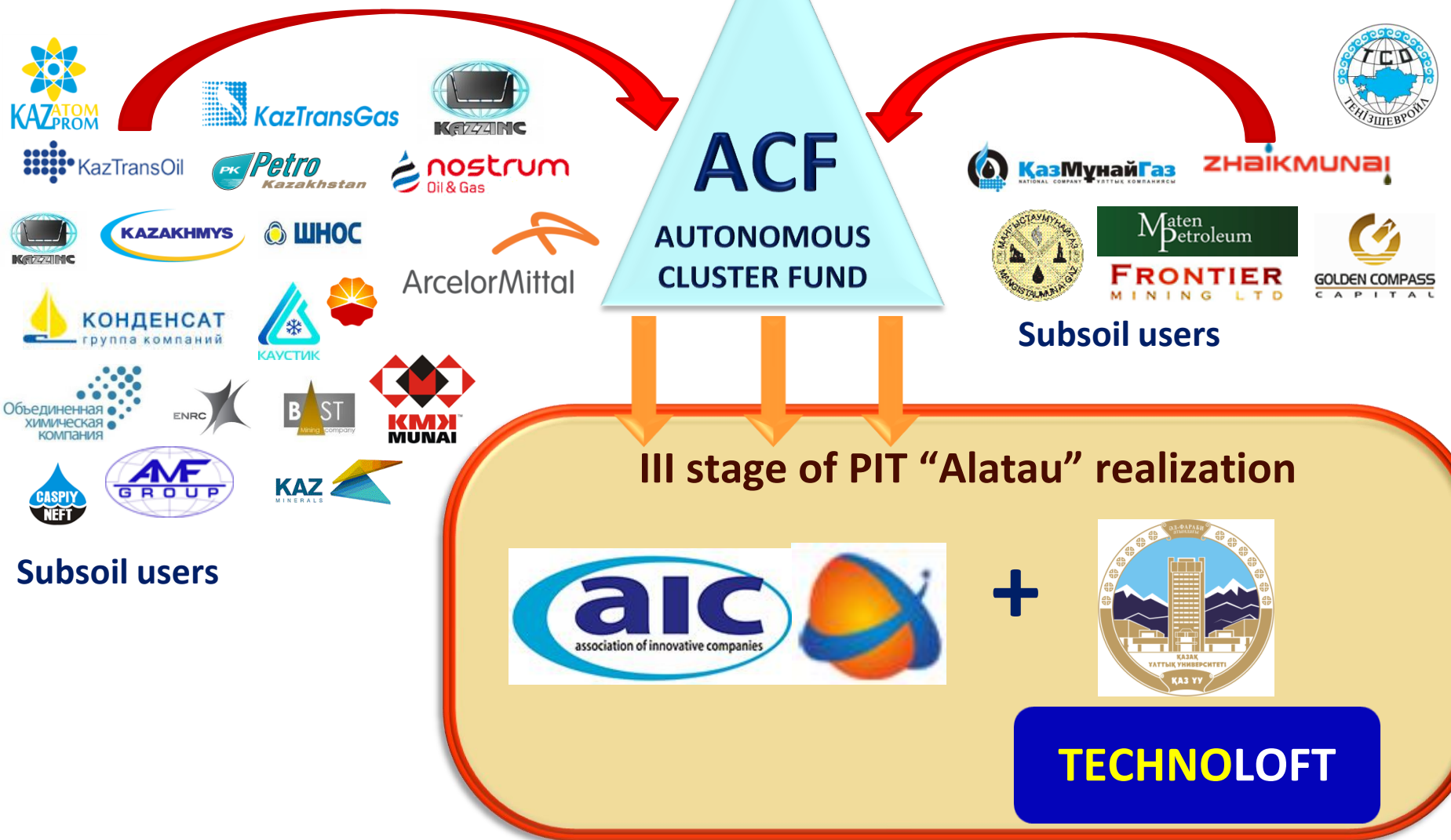
This element of innovation infrastructure
is missing at universities





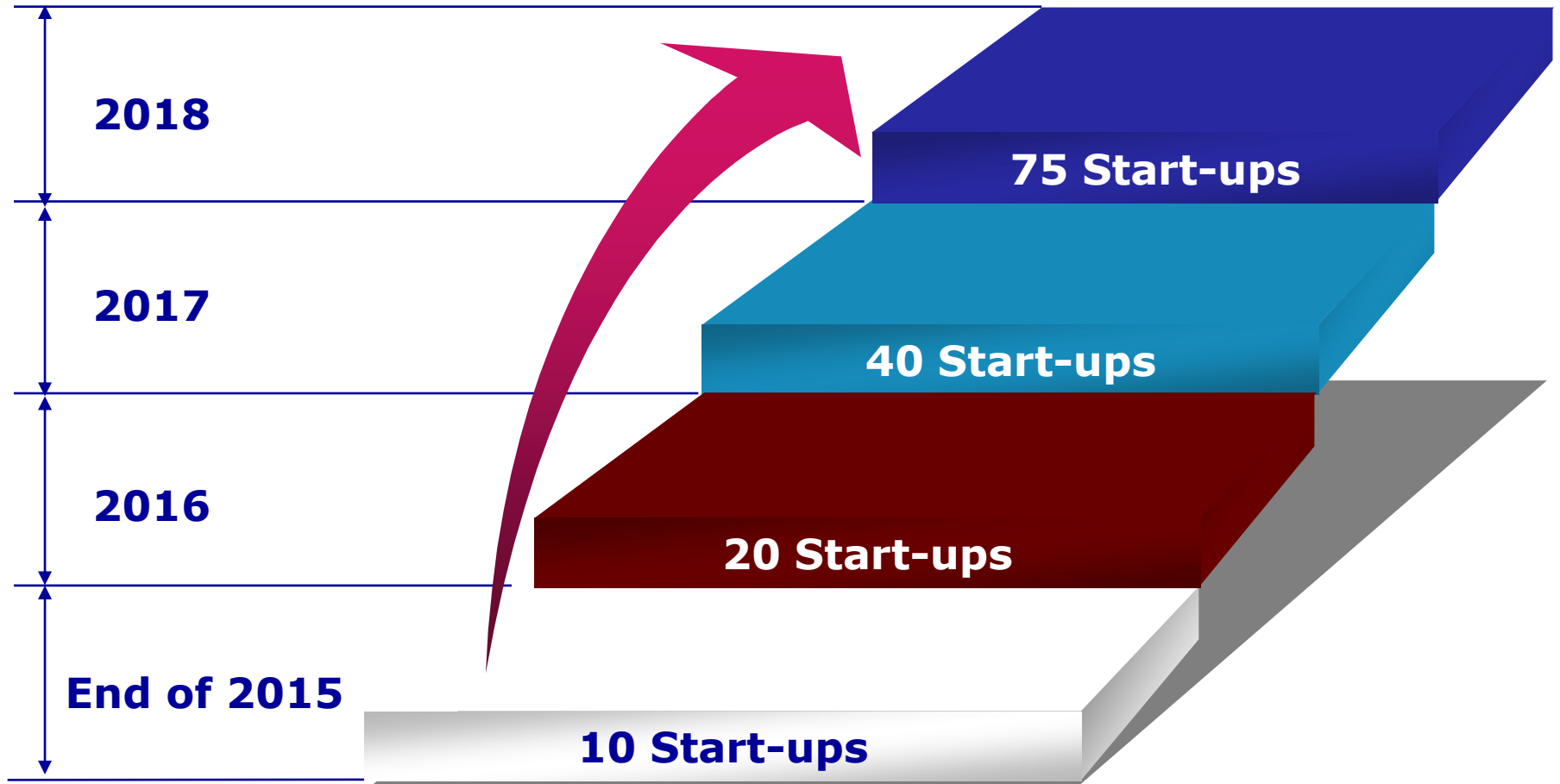
Interaction of TECHNOLOFT with Autonomous Cluster Fund (ACF)

1% of the total gross income of mineral developers





As a result, our university gets ...





In order to form the university of modern formation the large-scale project

«Al-Farabi university smart city».

was started.



872-951

«People can not live alone, and a minimum level of association, where a dispensation of the good life is possible – it is a city.

Virtuous city is like a perfectly healthy BODY, all organs of that HELP each other in order to save the LIFE of a living creature and make it the MOST comprehensive»

Abu Nasr al-Farabi

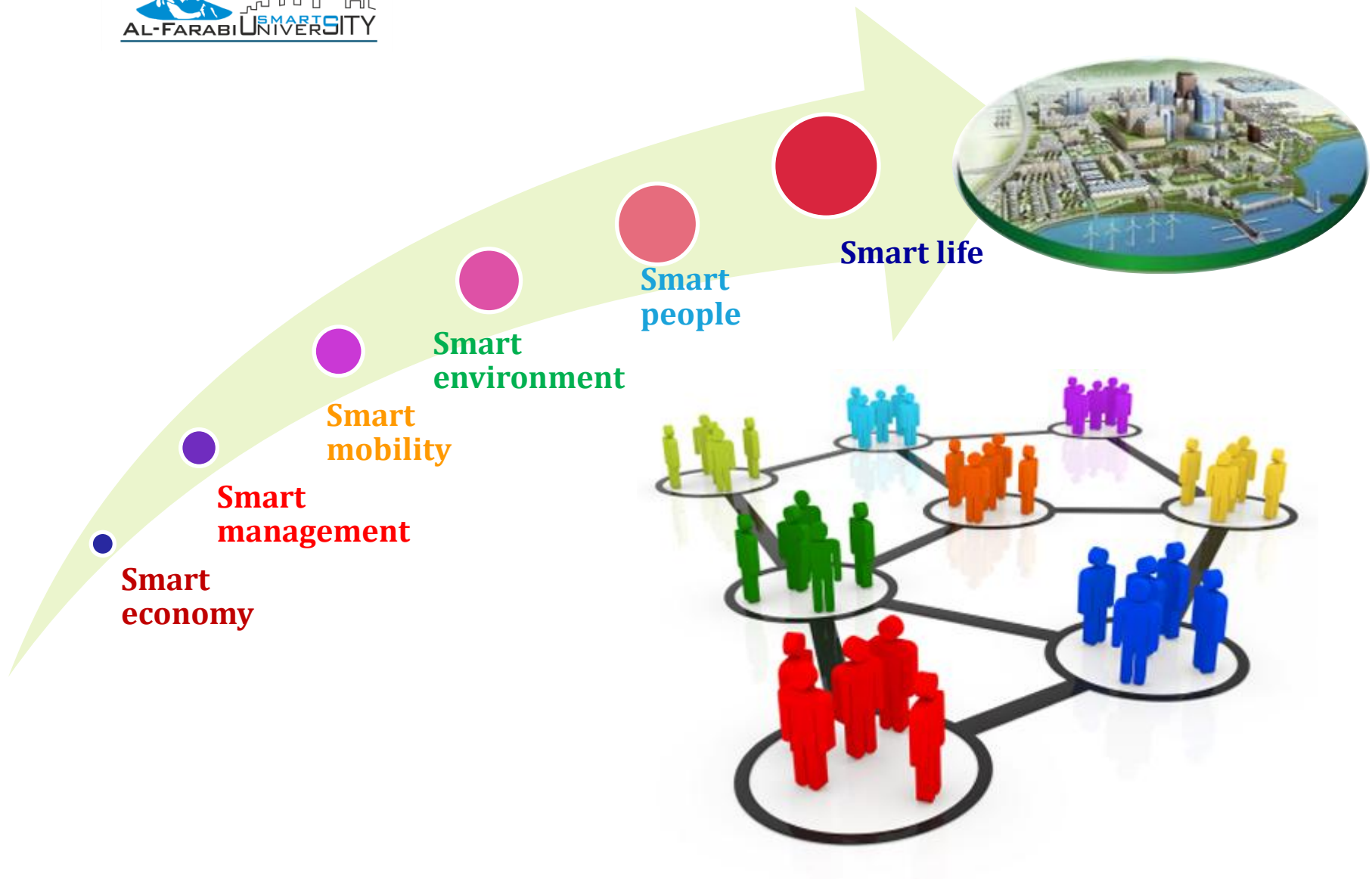
An important role in the works of Al-Farabi "Treatise on the views of residents of a virtuous city", "The book is about the pursuit of happiness," "Specify how to get happiness" and others took the doctrine of the model city.

The ideal al-Farabi
- a virtuous
city, the most
important feature
of which is a
universal spiritual
values.

- PURPOSE of
Virtuous City
residents is to
achieve Happiness

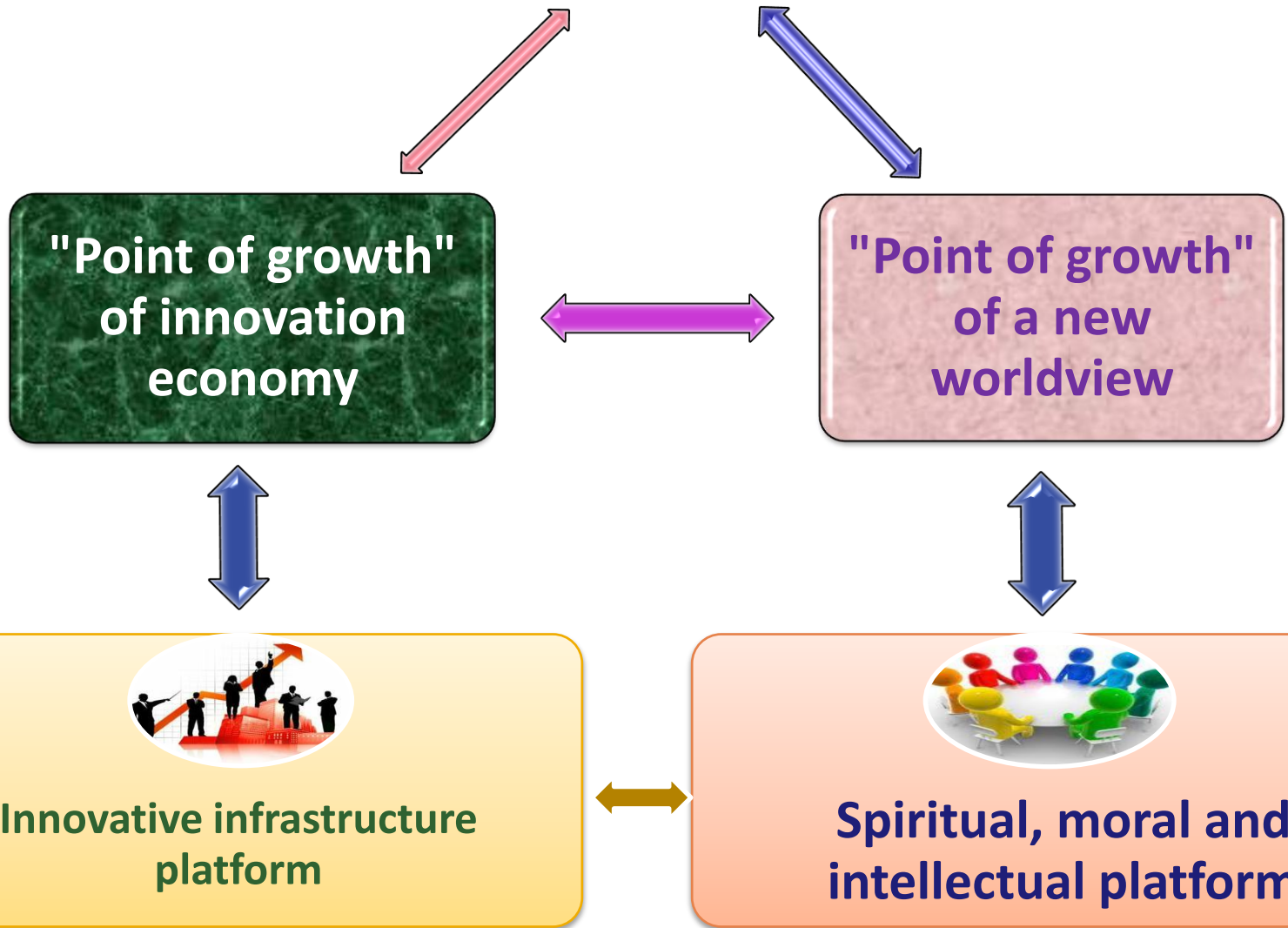


Six criteria of smart - virtuous city





Al –Farabi University SMART CITY





Al- Farabi Smart University



SPIRITUAL, MORAL AND INTELLECTUAL PLATFORM

- ✓ Code of corporate culture, honor code of student
- ✓ “Brighten your corner”, “100 books”
- ✓ Pedagogical mentorship
- ✓ Implementation of breakthrough projects
- ✓ Competence-based approach
- ✓ An independent evaluation of students' knowledge
- ✓ Rating system of remuneration
- ✓ Student government

"Point of growth" of a new worldview

INNOVATION AND INFRASTRUCTURE PLATFORM

- ✓ Corporate network, e-Campus
- ✓ Security monitoring system
- ✓ Smart-library
- ✓ Students Service Center – Micro model of the smart city
- ✓ Technology parks, business incubators, innovation and biomedical clusters
- ✓ III stage of PIT “Alatau” development

"Point of growth" of innovation economy

Smart universities - a pledge of creation of smart city, smart economy, scientific and technological progress based on the spiritual and moral foundations.



Kazakhstan Association of Engineering Education (KazSEE)

KazSEE, is the only independent accreditation center in Kazakhstan, has **experience of international accreditation of educational programs**, which is ready to carry out accreditation of educational programs in the framework of the state program of industrial-innovative development.

KazSEE Accreditation Center is the representative and a member of the following international organizations:

- ✓ International Federation Society of Engineering Education, IFEES.
- ✓ European Federation of National Engineering Associations, FEANI.
- ✓ KazSEE joined the INQAAHE in the field of quality assurance in accordance with the requirements of MES.
- ✓ International Society for Engineering Education, IGIP.
- ✓ The International Network for Quality Assurance Agencies in Higher Education, INQAAHE.
- ✓ European Network for Accreditation of Engineering Programs, ENAEE.
- ✓ Partnership Agreement was signed with Association of Engineering Education of Russia and Portugal, Italian Agency of Accreditation of Engineering Programs, QUACING.





European Network for Accreditation of Engineering Programs (ENAE)E)

ENAE - a network of accrediting agencies, is responsible for the pan-European system for accreditation of engineering education programs. ENAE is recognized by the international community and consist of European engineering associations.



ENAE according to the results of accreditation allows the assignment of a **European quality label EUR-ACE Label**, and the international certificate ENAE.

Accreditation Center KazSEE has applied for authorization, and has partnered with ENAE





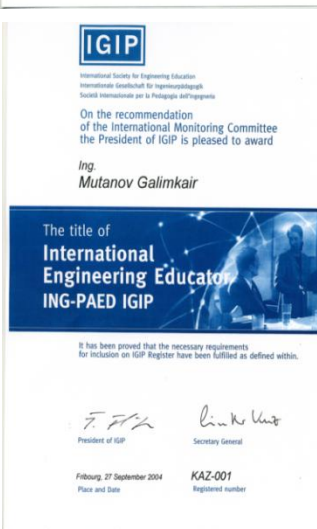
Capacity building programmes

IGIP - one of the authoritative international organizations in the sphere of higher technical education, bringing together the scientific and pedagogical public engineering schools of 72 countries. Founded in 1972 in Klagenfurt, Austria.

IGIP is the only international socio-professional organization, which improves the qualification of engineering specialties teachers of technical universities and issuing certificates of “ING-PAED IGIP”

The official representative of IGIP in Kazakhstan is IGIP Training center at the Al-Farabi KazNU (since 2009). In 2014, the Center passed the international re-accreditation for a period of 5 years and awarded the certificate of the training center of international level.

From January 26 to February 14, 2015 IGIP Training center at the Al-Farabi KazNU started program to enhance the level of teachers professional skills for State Program for industrial-innovative development with awarding certificate **ING-PAED IGIP.**





Capacity building programs (conferences/training)



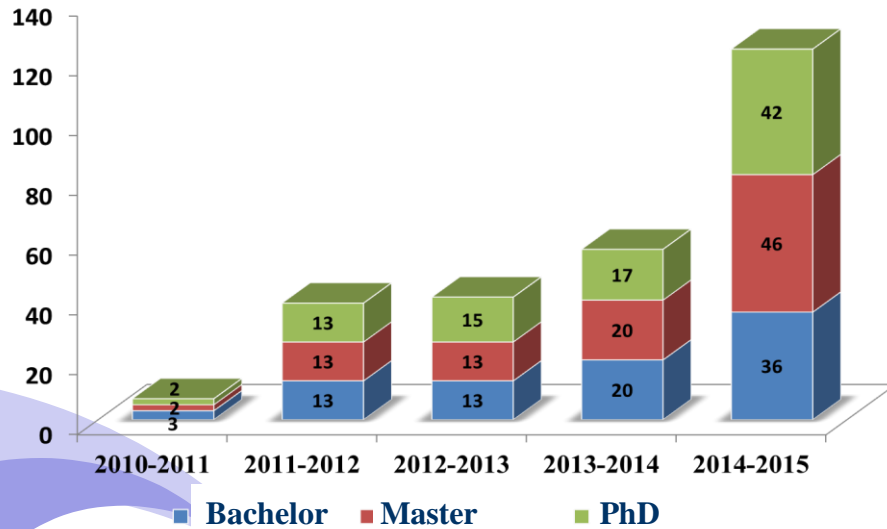
Every year **20-25** teachers of KazNU receive grants of the Ministry of Education and Science of the Republic of Kazakhstan "The best teacher of high school" to enhance the level of their professional skills. The amount of the grant is **4 million tenge (~\$27,000)**.

In 2014, **95.8 million tenge (~\$640,000)** of the grant projects funding of Ministry of Education and Science of Kazakhstan was directed to scientific training, participation in conferences.

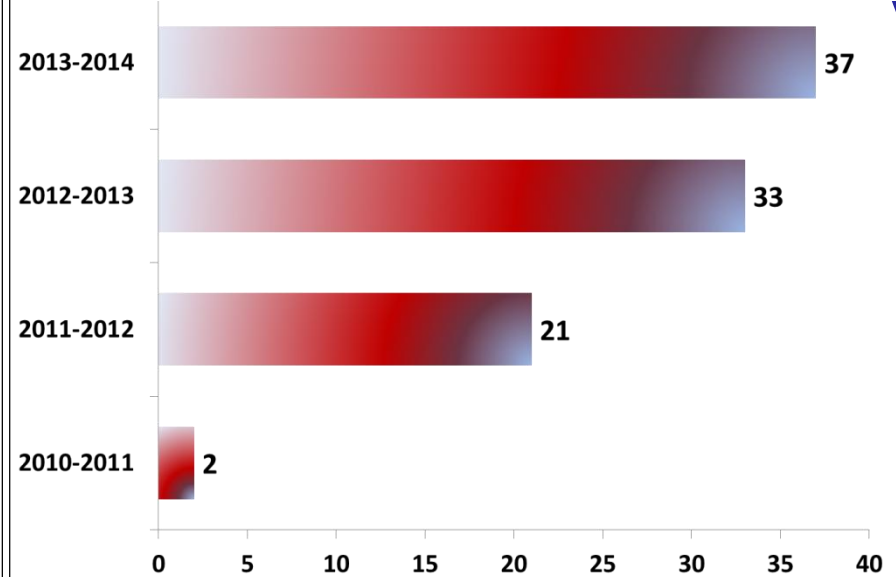


Internationalization of education

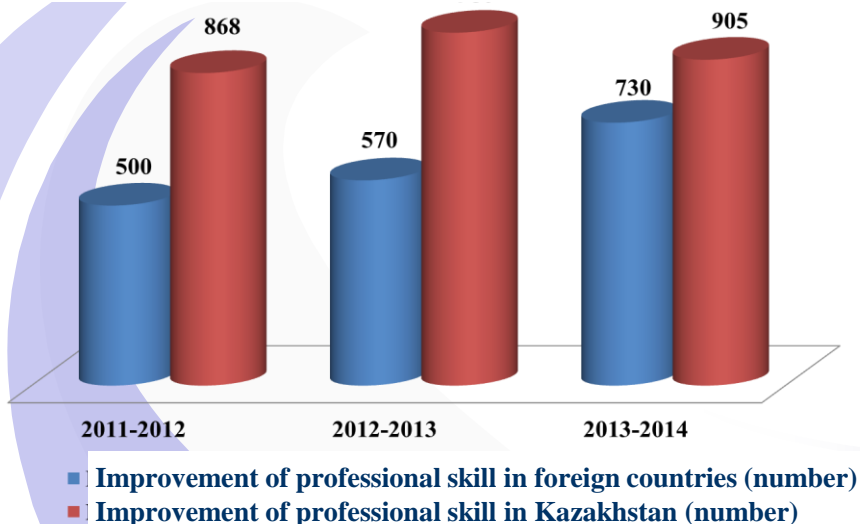
Number of specialties with teaching in English



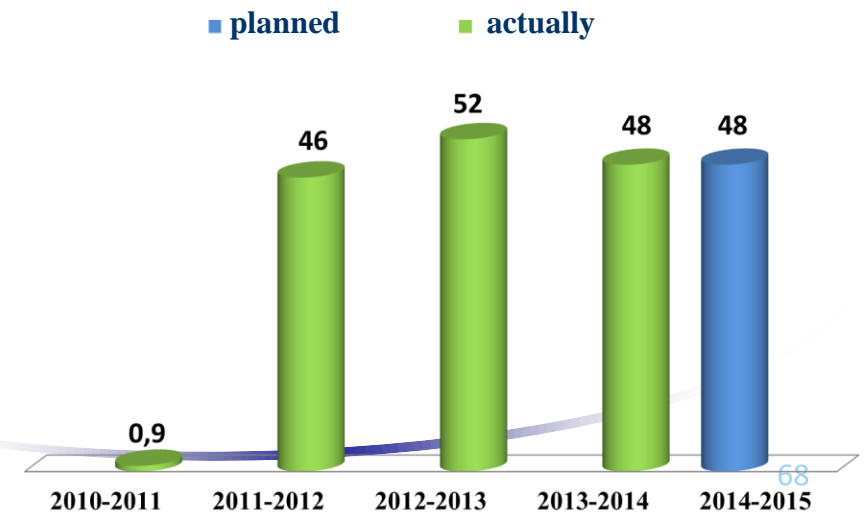
Graduation of Masters with dual diploma



Improvement of professional skill of university staff



University staff passed training/retraining/probation, %





Introduction of STEM, STEAM modules to educational programs

ENGINEERING AND TECHNICAL AREA

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

STEM



SOCIAL AND HUMANITARIAN AREA

SCIENCE, TECHNOLOGY, ENGINEERING, ART, MATHEMATICS

STEAM



COMPETENCE-ORIENTED PROFESSIONAL EDUCATION PROGRAMS



International collaboration



Membership with other regional and international organizations

KazNU is a member of:



EAU - Eurasian Universities Association;
IAU - International Association of Universities;
SEFI - European Society for Engineering Education ;
IAESTE - International Association for the Exchange of Students for Technical Experience;
University of the Shanghai Cooperation Organization (USCO);
Open Network University of Commonwealth of Independent States (ONUCIS);
Eurasia-Pacific UNINET;
IREG - International Observatory on Academic Ranking and Excellence.



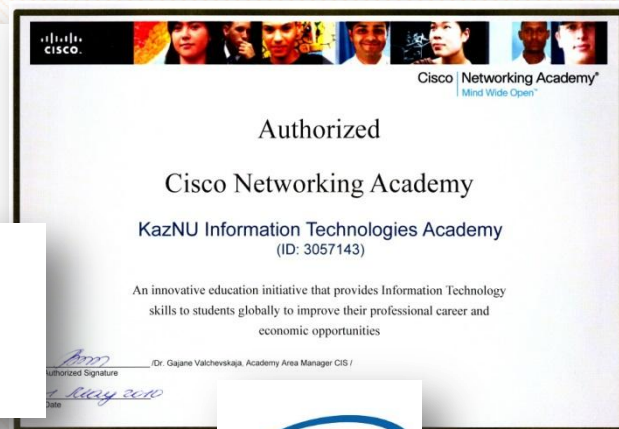
Also, the University signed Magna Charta Universitatum - the Great Charter of Universities.





International scientific and educational centers at the Al-Farabi Kazakh National University

- **Network Local Academy Cisco** has been working since 2008.
The goal of the program: modern Information Technology Training.
- FUJITSU – Smart Library was established in 2012.
- **Data Center (T-platform, Inspur, HP)** was established in 2011.
- In 2013 HP educational technology center opened at the University for the operation of authorized courses of «Hewlett-Packard» Corporation with certification of students.
- **Konica Minolta** laboratory was opened in 2013.





Joint international educational programs

- **Bachelor's degree**

- Strasbourg School of Management (France)
- Institute for Nuclear Research (Russia)
- Lanzhou University (China)

- **Master 's degree**

- National Polytechnic Institute of Lorraine and geo-energy center
- University of the Shanghai Cooperation Organization (USCO)
- Open Network University of Commonwealth of Independent States (ONUCIS)
- Pierre-Mendès-France University (France)

- **PhD degree**

- Hokkaido University (Japan)
- Institute of Researches on Catalysis and Environment in Lyon (France)
- Polytechnic University of Valencia (Spain)





International recognition of educational programs

Dual diploma programs with foreign universities

- **Baccalaureate** - 4 educational programs
- **Magistracy** - 15 educational programs
- **Doctorate** - 4 educational programs

International accreditation of educational programs

- **ASIIN 10 programs** – natural specialties
- **During the passage of accreditation**
- **ACQUIN 10 programs** – humanity specialties
- **ASIIN**: 82 programs;
- **AQA**: 52 programs;
- **FIBAA**: 41 programs;
- **HKAOKO** – accreditation passed.

Issue of Diploma Supplement on accredited specialties

- **The Unified European Diploma Supplement** in EU / GoE / UNESCO format is given as an evidence of successful training in the framework of the Bologna process since 2014.

The principle of **trinity of languages**, multilingual education: in 2011 - on 16 specialties; from 2012 - on 41 specialties; in 2014 - new Working curriculum in English divided into levels A, B, C in accordance with the European standard.

"Open chair" project: development of skills and competencies, invitation of graduates of "Bolashak», Open Society Institute, Soros Fund, Muskie, Chievening, DAAD, etc. to faculty staff.



Joint international research programs



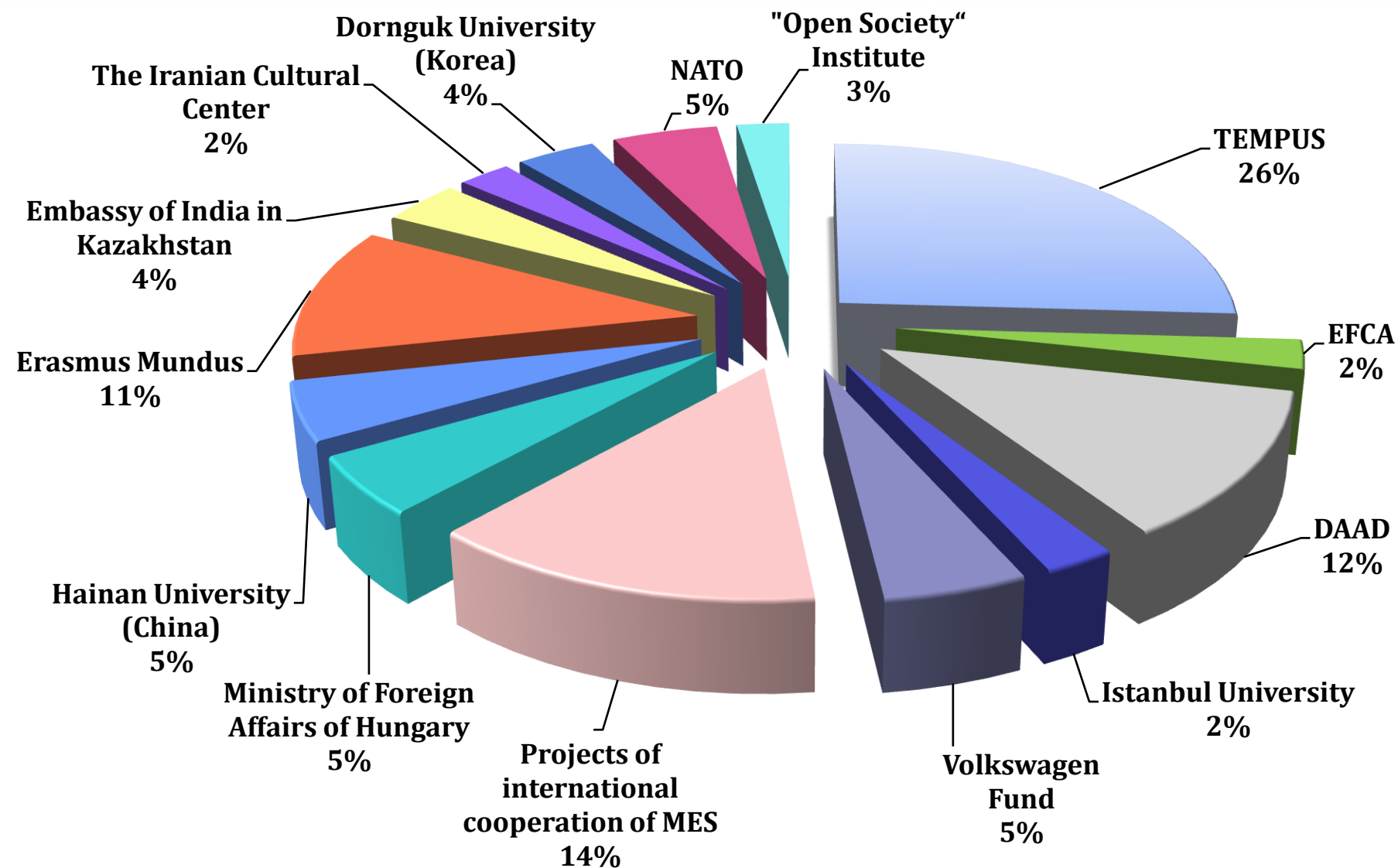
- The university has partnerships with over **250** universities and international educational institutions from **15** countries such as: England, Belgium, Germany, Italy, Spain, Canada, China, Poland, USA, France, Switzerland, etc. University scientists and staff participate in individual competitions for scholarships and grants in the framework of various international programs.

The university is involved in **58** programs and projects of international organizations such as: the Council of Europe, the European Commission's "Tempus", "Erasmus Mundus", UNESCO, NATO, OSCE, ISTC, IAEA, German Academic Exchange Service (DAAD), "Open Society" Institute and others.





International funds and organizations financing university projects





Future plans



Program of Development of al-Farabi Kazakh National University in 2015-2019 within the Framework of SPIID-2

Number of the developed up-to-date profiled magistracy programs for various SPIID-2 branches on examples of the best world universities: **9 EP in 2015-2017**

Number of the opened world level educational and research laboratories: **3 laboratories in 2015-2017**

Number of undergraduates, annually credited to profiled magistracy for training at state budget expense: **350 undergraduates in 2015/2016 school year; 350 - in 2016/2017 school year, 350 - in 2017/2018 school year**

Average evaluation of readiness of graduates on SPIID-2 specialties to work on the basis of an independent survey of key employers in SPIID-2 industries (score on a 100-point scale) **(80 in 2017, 83 in 2018, 85 in 2019)**

Number of undergraduates employed after graduation on the specialty, which were trained in SPIID-2 programs - **100%**



The Roadmap of the Programme of Development of Al-Farabi Kazakh National University for 2015-2019 within the framework of SPIID-2

1

**Formation of the structure of professional
educational programs and their accreditation
2015**

2

**Improvement of professional skills of faculty staff
2015-2019**

3

**Providing the quality recruitment of students
to SPIID-2 Educational Programmes
2015-2019**

4

**Ensuring the quality of educational services.
Updating the material and technical base
2015-2019**

5

**Employment and professional certification
of graduates (personnel)
2017-2019**



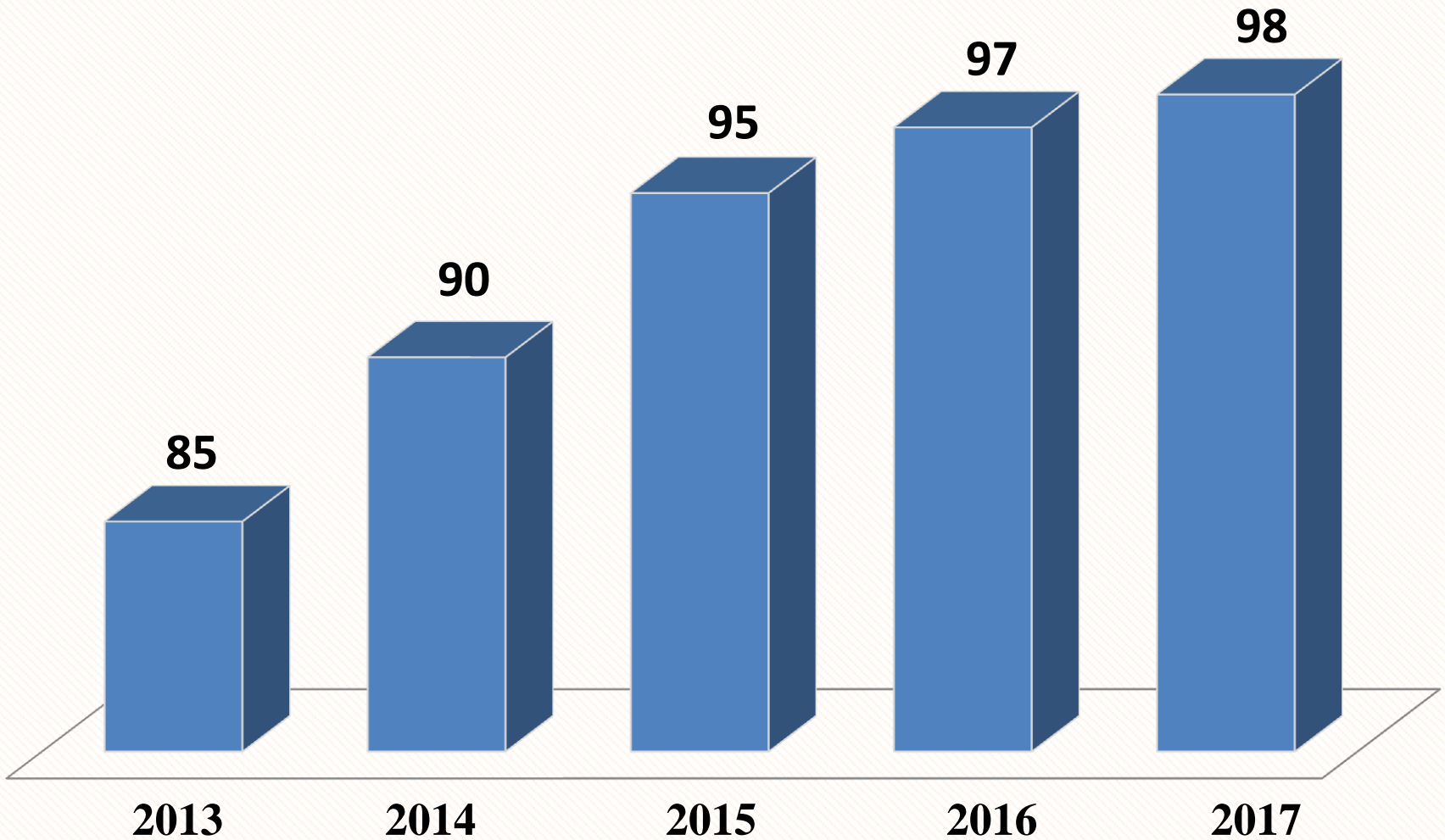


Goals of Al-Farabi KazNU for 2015-2019 within the framework of SPIID-2

- Enter the top 200 leading research universities in the world**
- Transformation of the classical national university into the world-class research university**
- To achieve the 195th positions in the world ranking QS**
- To increase quantity of publications in rating journals with impact-factor to 2000**
- To increase volume of revenues from commercialization of scientific developments to 1.8 billions of tenges/10 mln \$**
- To achieve 98% employment of graduates**
- To increase share of accredited educational programs to 100%**
- Creation of scientific, educational and innovation cluster for realization of the third stage of PIT "Alatau" at Al-Farabi Kazakh National University.**



Share of faculty involved in the implementation of fundamental and applied programs of the total number, %

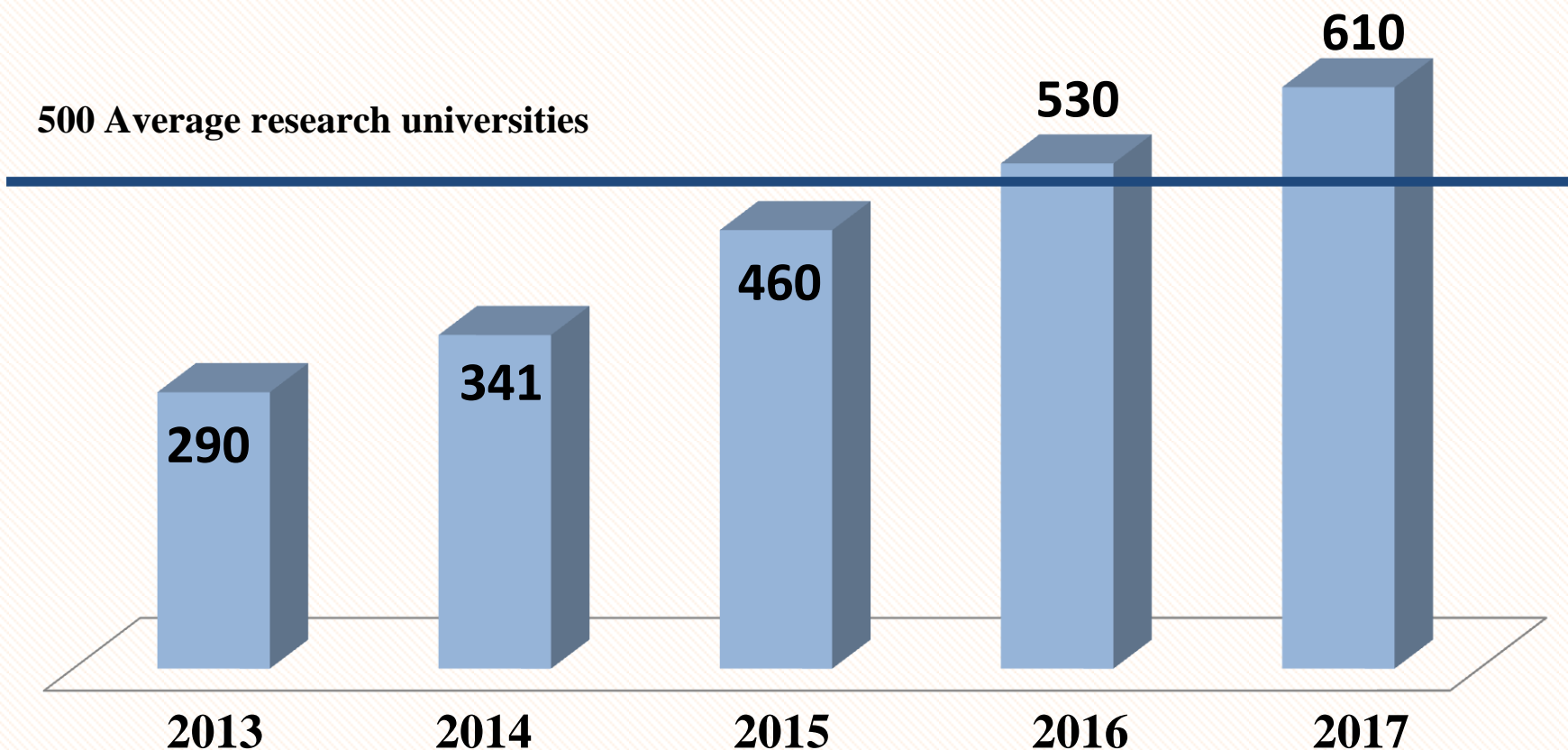




The total impact factor of scientific publications of scientists and faculty of the University

5000 Top Research Universities

500 Average research universities

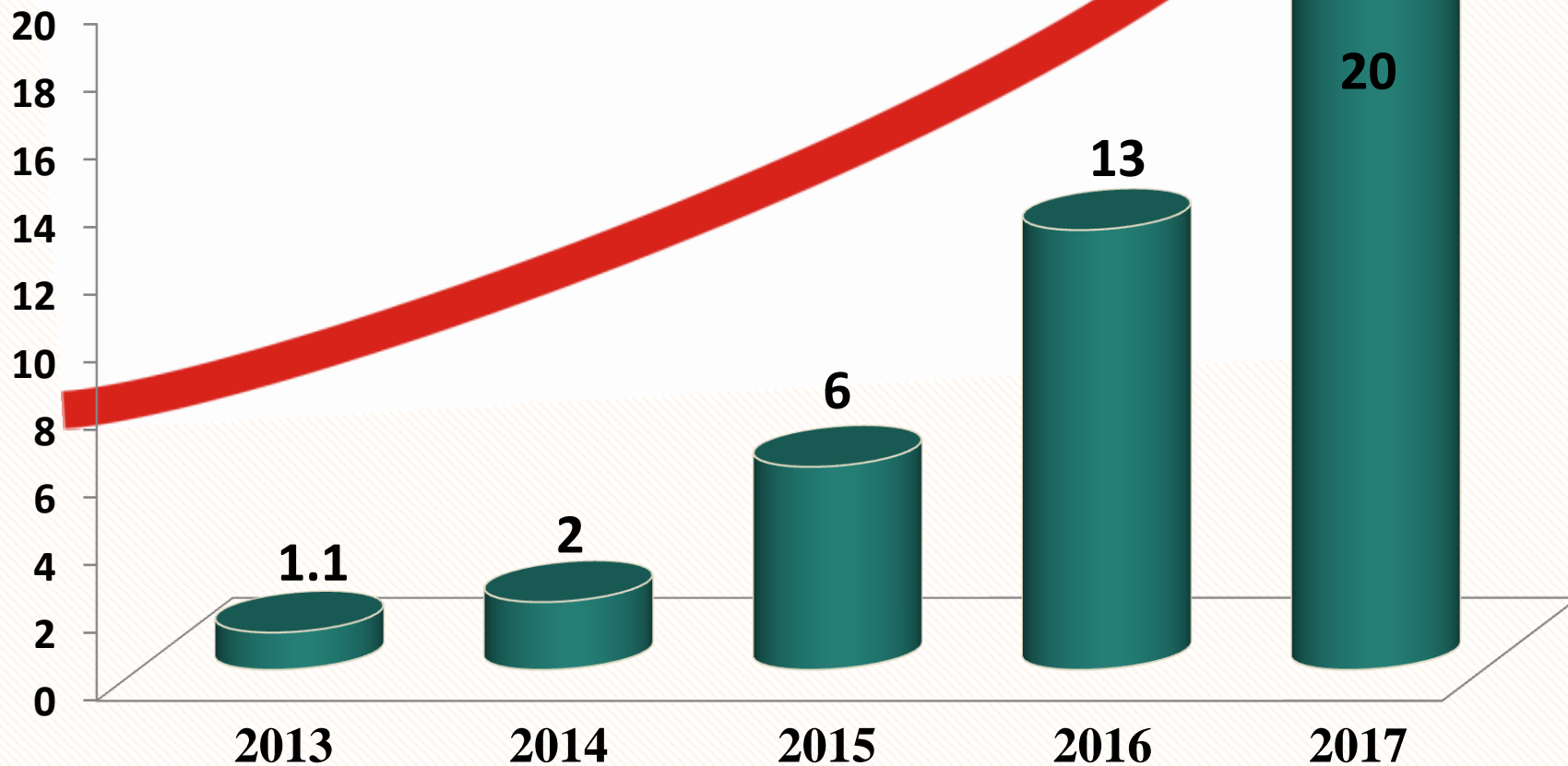




The average number of citations per publication

80-100 Top Research Universities

20-30 Average research universities





Thank you for attention!

