TASHKENT INSTITUTE OF CHEMICAL TECHNOLOGY

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Santander
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TICT AS A CENTER FOR INNOVATION AND TECHNOLOGIES

MAIN CHARACTERISTICS

- **5** FACULTIES
- **24** DEPARTMENTS
- **6** CENTERS
- **2** TECHNICIUM, LYCEUM
- **2** BRANCH

DIRECTIONS OF TRAINING AND SPECIALTIES

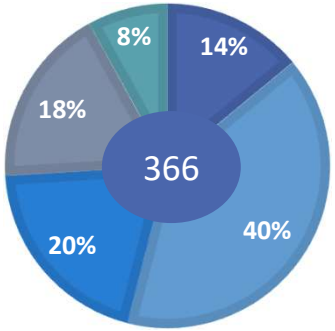
BACHELOR –	-29
MASTER'S DEGREE	-28
DOCTORAL STUDIES (PhD)	-16

DOUBLE DIPLOMA

4

- **REPUBLIC OF BELARUS**
  - Belarusian State Technological University
  - Belarusian State University of Food Production
  - Polotsk State University
- **TURKEY**
  - Ostim Technical University
- **REPUBLIC OF LATVIA**
  - Latvian University of Natural Sciences and Technologies
- **HUNGARY**
  - Debrecen University

PROFESSOR AND TEACHING STAFF



- Under 30
- 30-40
- 40-50
- 50-60
- Older 60

Scientific potential **52,1%**

12,6% 46 DSc

39,6% 145 PhD

31,0% 75 Associate prof.

36,7% 100 Senior lecturer

45,0% (165) **women**

55,0% (201) **men**

STUDENTS

TOTAL NUMBER OF STUDENTS

8485

BACHELORS

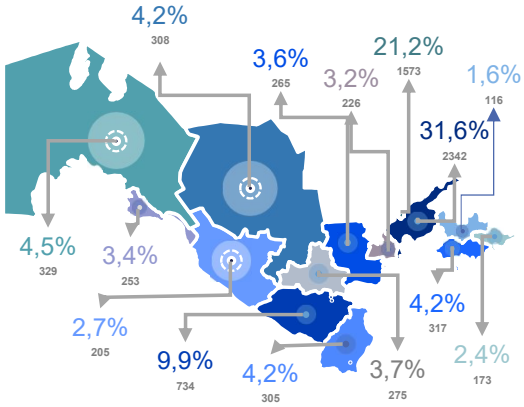
7800+

MASTER'S DEGREE

450+

DOCTORAL STUDENTS (PhD)

140+



INTERNATIONAL ACTIVITY

100 International agreements with foreign universities and organizations

40 Teaching staff who completed an internship abroad (annually)

4 Joint doctoral students

30 Foreign teachers involved in the educational process

20 Foreign citizens who have completed an internship

15 Foreign students

5 Foreign specialists working on a permanent basis

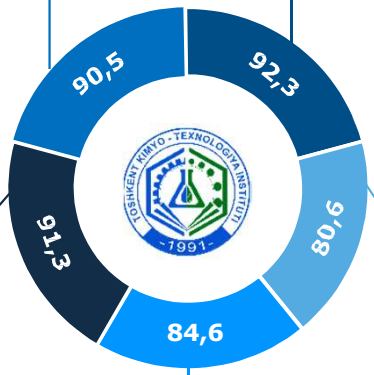
International projects

100 000 $ China Project "In the intellectual process of modified asphalt production, together in the intellectual process of modified asphalt production"	**600 000 $** MUNIS "improvement of quality indicators of agricultural products through the development of optimized smart packaging (OSP) containing antibacterial substances."	**85 080 898,00 uzs** TANDEM Project "Creation of institutional forms of cooperative higher education in the field of food technology"	**200 000 eur** Latvia [GIZ] Project "Joint Diploma in Food"	**32 900 000,00 uzs** [GIZ] Project "Practical studies in the field of food"	**717 355 eur** "101083216 – ECAMPUZ European World Talent Camp for Uzbekistan Scientists in Food Science and Technology – ERASMUS-EDU-2022-SBE"

«SCIENCE AND TECHNOLOGIES FOR INDUSTRY»
- TRAINING SPECIALISTS FOR REAL SECTORS OF THE ECONOMY

Chemical technology
- Chemical industry
- Biomass technologies
- Membrane technologies
- Deep gas processing technology
- Chemical engineering
- Process Engineering
- Continuous Flow Chemistry and Manufacturing
- Oil and gas processing technology

Industrial ecology
- Processing of industrial and household waste
- Cleaning of drains
- Water treatment



Energy and sustainability
- New energy storage systems
- Hydrogen energy
- Green methods of chemical synthesis
- Processing of industrial and household waste

Ceramic and building materials
- Modern building materials tools
- Functional materials and high-purity substances
- New polymer materials
- Composite building materials

Food technology
- Industrial viticulture
- Molecular biology
- Food biotechnology
- Food safety
- Functional foods

MISSION AND TARGET MODEL OF THE TASHKENT INSTITUTE OF CHEMICAL TECHNOLOGY IN THE DEVELOPMENT STRATEGY OF HIGHER EDUCATIONAL INSTITUTIONS OF THE REPUBLIC OF UZBEKISTAN

PHILOSOPHY
University with a vision for the future

TICT – is a basic institute for the chemical and oil and gas processing industries, as well as other industries

- **90%** of employees of enterprises in the food, chemical and oil and gas processing industries are graduates of the TICT
- **50+** technologies per year are developed at TICT for the chemical, oil and gas processing industries
- TICT – is the operator of high-tech industry development roadmap **«Technologies of new materials and substances»**
- Heads **EUA** in the areas of education «Technology of deep gas processing», «Technology of oil and gas processing», «Chemical technology»
- TICT –**is one of the basic organisations of the republic** for training personnel for the chemical, oil and gas processing industries

Target Model TICT

- **Leader in areas**: food safety, meat and milk technology, chemical technology, oil and gas chemistry, food technology, biotechnology, chemical technology of building materials, industrial ecology
- **«Green educational institution»** – a leader in the field of SDG
- **Coordinator** of chemical and technological education in the Republic of Uzbekistan
- Opening **Digital Institute**

TICT DEVELOPMENT INDICATORS

TICT – TODAY

TICT in numbers

66,4
Applicants GPA of accepted

40%
graduates work in their specialty

8485 students
- 7801 Bachelor
- **445** Master's degree
- **139** PhD

29 areas of education

365 teaching staff

207 Teaching staff with scientific degrees studying in professional retraining programs

10,5 billion
funds from extrabudgetary sources

350 mln
from professional training and retraining

4,6 billion
Income from Research and development work

CHALLENGES

- Request for personnel of a new formation
- Circular Economy and ESG Principles
- Lack of national technological and special machine building for the chemical industry
- Innovative passivity of enterprises
- Low level of digitalization of the chemical industry
- Transition from commodity towards a high-tech economy

TICT - BREAKTHROUGH

TCTI is in the TOP 15 universities of the country

92
Applicants GPA of accepted

>86%
graduates work in their specialty

10000+ students
- **9200** bachelor
- **800** Master's degree
- **200** PhD

35 areas of education

450 teaching staff

260 Teaching staff with scientific degrees studying in professional retraining programs

30 bilion
funds from extrabudgetary sources

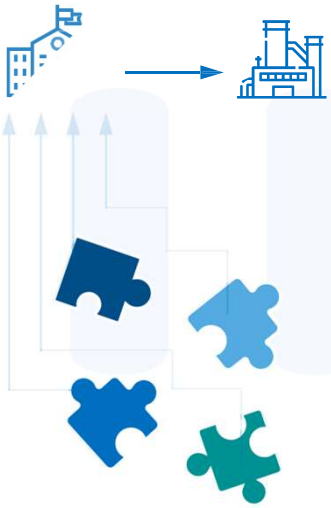
1 billion
from professional training and retraining

10 billion
Income from Research and development work

5 billion
income from the use of RIA

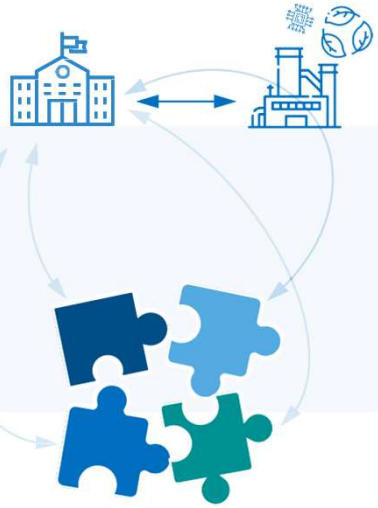
TRANSFORMATION OF THE EDUCATIONAL AND RESEARCH PROCESS OF TICT

RUN



Industry response.
The Institute is a reliable supplier of personnel and technologies

CHANGE



Ready technologies and solutions.
The Institute is a provider of integrated solutions that meet the industry agenda

UNITE

Formation of technological trends.
Institute - digital development, provider of technological solutions that transform industries

education – science – technology – innovation

"OPEN DIGITAL INSTITUTE"

GOAL –

transition to the model of an open digital university, including the total digitalization of all processes and combining them within a single service platform

TASKS

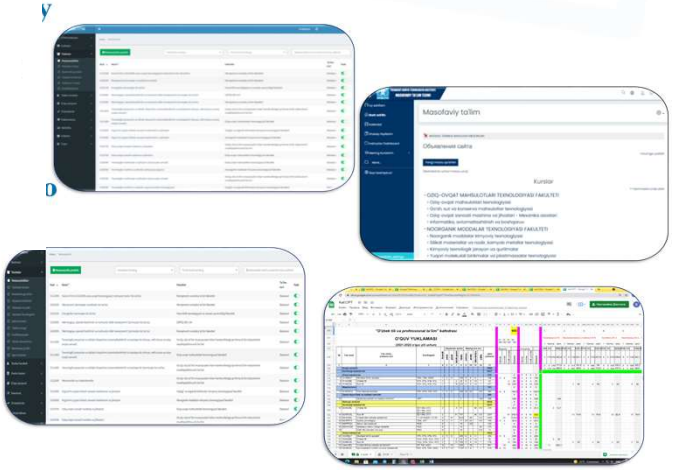
- Digitalization of educational and business processes
- Creation of a unified open digital ecosystem of the university
- Efficient storage, protection and use of all types of data
- Digital Campus
- TCTI - a platform of services for life

KEY ACTIONS

- Transition to a credit-modular system
- Digitalization of the educational system
- Opening of a registrar office
- Organization of hybrid theoretical and practical education
- **Formation of the student's individual trajectory**

HEMIS OTM axborot tizimi

moodle



Partners:

UZBEKNEFTEGAZ

Uzkimyosanoat

«O'zsanoatqurilishmateriallari» uyushmasi

O'ZBEKISTON YOG'-MOY SANOAT UYUSHMASI

FARG'ONA NEFTNI QAYTA ISHLASH ZAVODI

Uz-Kor Gas Chemical

O'ZSTANDART AGENTLIGI

DEHQONOBOD KALIY ZAVODI

МУБОРАК ГҚИЗ

alutex алюминиевые технологии

BUXORO NEFTNI QAYTA ISHLASH ZAVODI

artel

MO'TABAR

UNIFIED DIGITAL PLATFORM

TICT - Education

- IOT environment
- Schedule
- TICT - navigation
- Online cources
- Intellector (Virtual lecturer)
- Digital workshops
- Digital Library
- Corporate envronment
- Olympics

Digital campus

- TICT Camp
- TICT 24/7
- TCTI Support
- Print service
- Infrastructure monitoring
- Single data center

Toolkit graduate

- Graduate personal account
- Access to the analytical ECU
- Access to the technological CCU
- Consulting

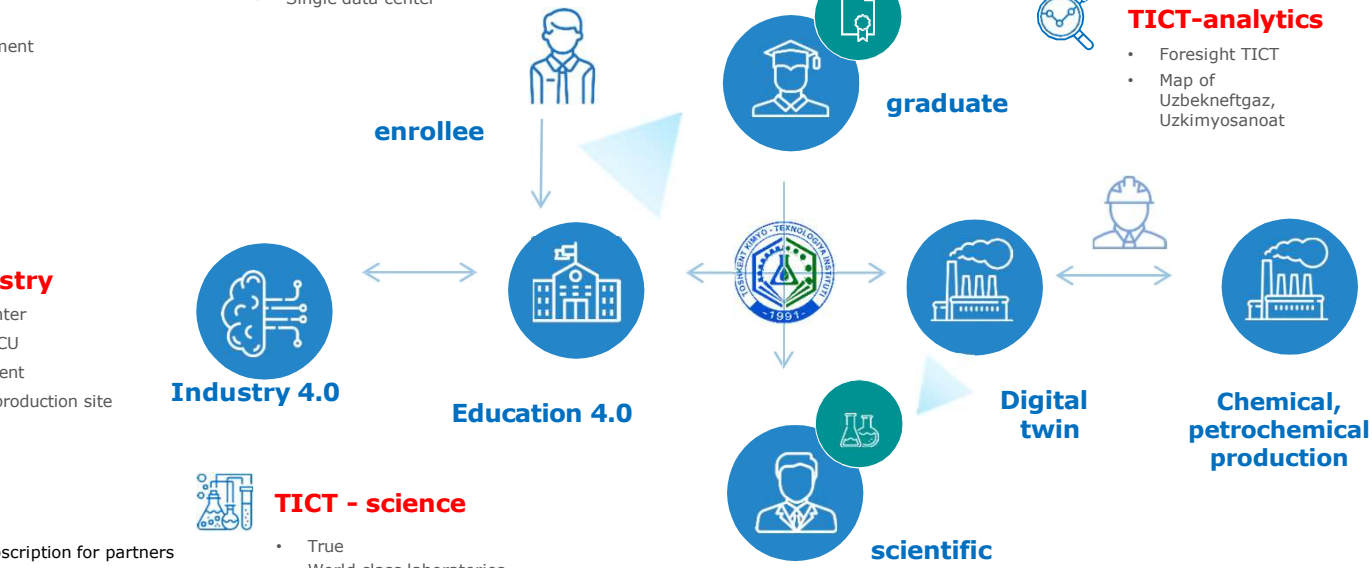
MFC TICT

- MFC project support
- Single dean's office
- TICT regulation

Social network

TICT Family

- Association of graduates
- Events and projects
- News feed



TICT-analytics

- Foresight TICT
- Map of Uzbekneftgaz, Uzkimyosanoat

TICT-career

- Career Development Center
- Jobs
- Internships
- Practices
- Qualification assessment
- Industry talent pool

TICT - Industry

- Prototyping Center
- Technological CCU
- Design department
- Multifunctional production site

Open science

- Database of experimental data
- Science Magazine

TICT - science

- True
- World class laboratories
- Technology laboratories
- Analytical TsKP
- Consulting from leading scientists
- TICT Science Foundation

Accelerator TICT

- Application window for innovators
- Acceleration programs
- TICT Challenge
- Competition «Innovator TICT»
- Investor's personal account

Comprehensive subscription for partners

TICT Assistant chemical

- Consulting
- Targeted HE/FPE programs
- Technology audit
- Expertise
- Certification
- НИР/НИОКР

VR-tour

- Video tours of enterprises
- VR/AR projects

TICT – flea-market

- Reagents
- Chemical glassware
- Household appliances
- Scientific literature
- Educational literature

TICT – invest-boutique

- Marketplays Uzbekneftgas, Uzkimyosanoat
- Start-up
- Window of "open innovations"

TICT - HUMAN CAPITAL - CLUSTER

GOAL – training of personnel of a new formation:

STEM

Engineering

TASKS

- Meeting the current and forecast needs of the industry
- Learning through science and technology
- student-centered education
- Formation of "green" thinking
- Creating sustainable links between alumni and students

Survey of customers personnel - industrial enterprises of the chemical and oil and gas complex

Professional qualities of a graduate

- Availability of practical knowledge and experience of chem. production– **54%**
- High theoretical training, availability of fundamental knowledge– **49%**
- Ability to work with information– **40%**

Personal graduate quality

- Ability to learn, self-learning– **60%**
- Teamwork skills– **52%**
- Teamwork skills– **51%**

KEY PROJECTS OF THE CLUSTER

66 **Dy** Dysprosium 162,5

Digital Educational Tools – 80% of digitized academic disciplines

- Network educational programs
- "Teach like a future employee" (simulated corporate environment)

49 **In** Indium 114,82

International educational programs - the growth of the number of foreign students

- Double degree (Double diplomas)
- Academic mobility of students (international transfer of educational technologies)

15 **P** Phosphorus 30,97

Center for Scientific Communication of Chemistry and Chemical Technology - an external review of educational programs has begun

- Scientific popular programs
- in English"New look" (external expertise of education)

10 **Ne** Neon 20,18

New educational practices - 50% of programs jointly (on order) with industrial partners

- New education
- Formation "Order Uzbekneftegaz", "Order Uzkimyosanoat"
- (education at the request of the industry)

27 **Co** Cobalt 58,93

Integration with international organizations - 5% foreign teachers

- Involvement of foreign scientists to work in TCTI
- academic mobility

115 **Mc** Moscovlum (290)

Professional career - 50% of graduates are employed by profession

- Service "TICT-career"

"EDUCATIONAL AND PRODUCTION CLUSTER" of the chemical industry

School
Technology classes

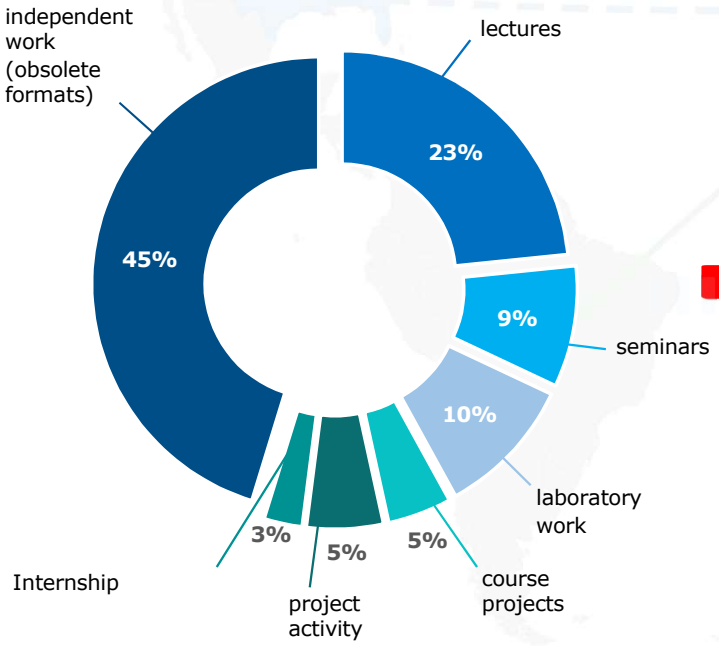
SVE
Technical schools, Vocational education

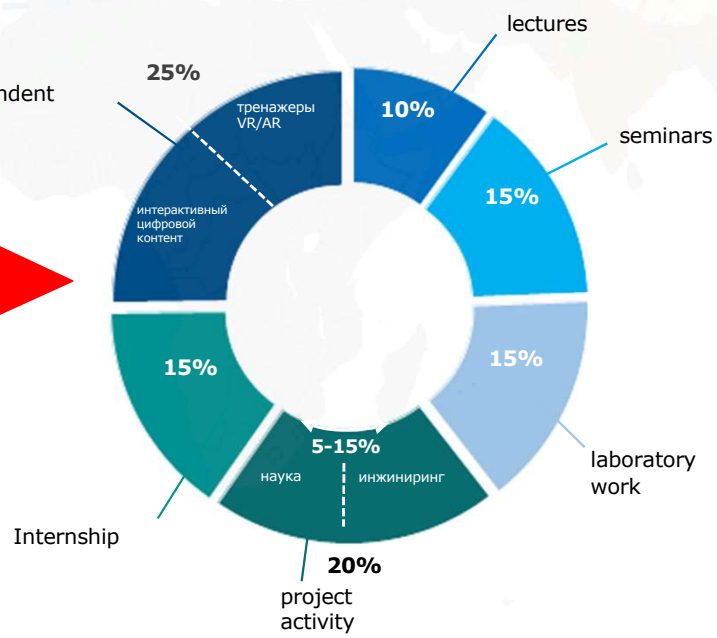
Bachelor
Mentoring and Ambassadors 10% graduates

Master's degree
Project-based learning, IT 90% of programs

Production
"Order of Industry" 50% programs

Prof. staff growth





Base:

Decree of the Cabinet of Ministers of the Republic of Uzbekistan, dated December 15, 2021 No. 753 **on measures to create an innovative chemical research and production and educational cluster for the chemical industry.**

Partners:

- **10+** partner universities
- **5+** regions of the Republic of Uzbekistan
- **10+** industrial partners

Key partners:

Uzkimyosanoat

AGH University of Science and Technology

Silesian University of Technology

University of Copenhagen

Wisconsin University of Wisconsin-Madison

University of Warmia and Mazury in Olsztyn

Latvia University of Agriculture

University of Debrecen

MASTER PLAN OF CAMPUS OF CHEMISTRY AND SCIENCE, FUTURE CAMPUS OF THE INSTITUTE (2022-2024)

Strategy 2030

Tashkent Institute of Chemical Technology

Budget - 245.2 billion soums.
Building area - 98,000 sq.m.
Educational building - 7500 seats
Administrative building - 7500 sq.m.
Laboratories - 30
Integration zones - 2500 sq.m.
Dormitories - 1218 places
Houses for teaching staff – 210

Branch of foreign university

Budget - 44.0 billion soums.
Building area - 14,700 sq.m.
Educational building - 440 seats
– 1600 sq.m.
Integration zones - 1500 sq.m.
Dormitories - 70 places
Houses for teaching staff - 12

Branch of foreign university

Budget - 84.3 billion soms.
Building area - 27,000 sq.m.
Educational building - 1000 places
Administrative building - 2100 sq.m.
Laboratories - 14
Integration zones - 1500 sq.m.
Dormitories - 200 places
Houses for teaching staff – 51

Thank you for your attention!

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