

# Development strategy of University in the era of global issues: challenges and ways to overcome

**MIRZAYEV BAKHADIR**

*Rector, National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers"*

**27 April 2023**

# University history



**1934**  
**Tashkent Institute of Irrigation and  
Agricultural Mechanization Engineers**



**1923**  
**Faculty of Engineering Land  
Reclamation**



**2004**  
**Tashkent institute of  
irrigation and melioration**

**2017**  
**Tashkent Institute of Irrigation and  
Agricultural Mechanization  
Engineers**



**2021**  
**National research  
university "TIAME"**



**1**  
**National Ranking of Higher Educational Institutions of the Republic of Uzbekistan**



STATE INSPECTORATE FOR SUPERVISION  
OF QUALITY IN EDUCATION UNDER  
THE CABINET OF MINISTERS  
OF THE REPUBLIC OF UZBEKISTAN

**211-220** EECA  
**QS Emerging Europe and Central Asia University Rankings**



**301-350** ASIA  
**QS Asia University Rankings**

**14** Central Asia  
**QS Asia University Rankings: Central Asia**

**Ranking Web of Universities**

**3624** in World  
**4** in Central Asia  
**1** in Uzbekistan



**1001+**  
**Times Higher Education (THE)**



**603**  
**Greenmetrics (World Green University Rankings)**



# QS WORLD UNIVERSITY RANKINGS BY SUBJECT 2023

**#451-500**

## Engineering & Technology



**#501-520**

## Natural Sciences



**#351-400**

## Environmental Sciences



### Engineering & Technology

Computer Science & Information Systems
Data Science and Artificial Intelligence (NEW)
Engineering - Chemical
Engineering - Civil & Structural
Engineering - Electrical & Electronic
Engineering - Mechanical, Aeronautical & Manufactu..
Engineering - Mineral & Mining
Petroleum Engineering

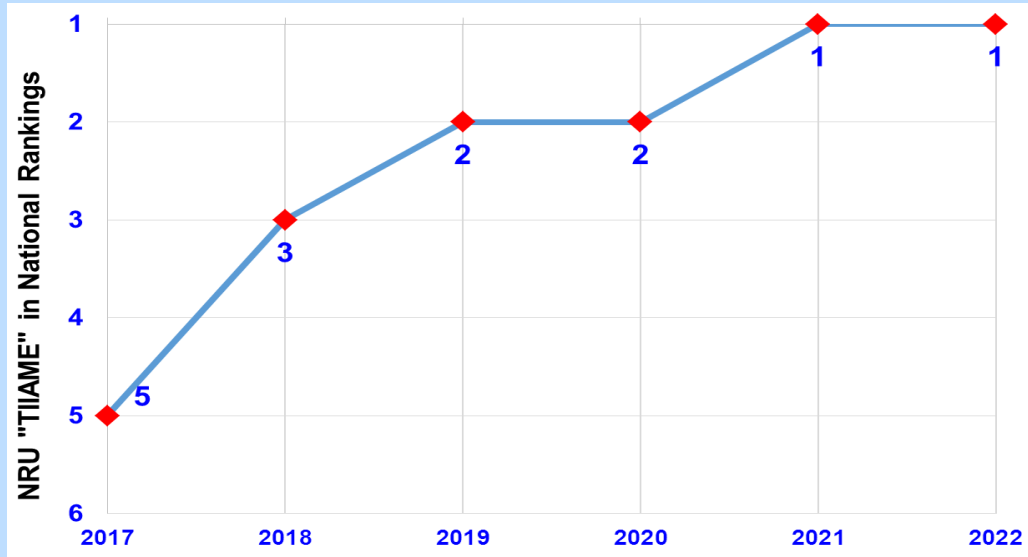
### Natural Sciences

Chemistry
Earth & Marine Sciences
Environmental Sciences
Geography
Geology
Geophysics
Materials Science
Mathematics
Physics & Astronomy

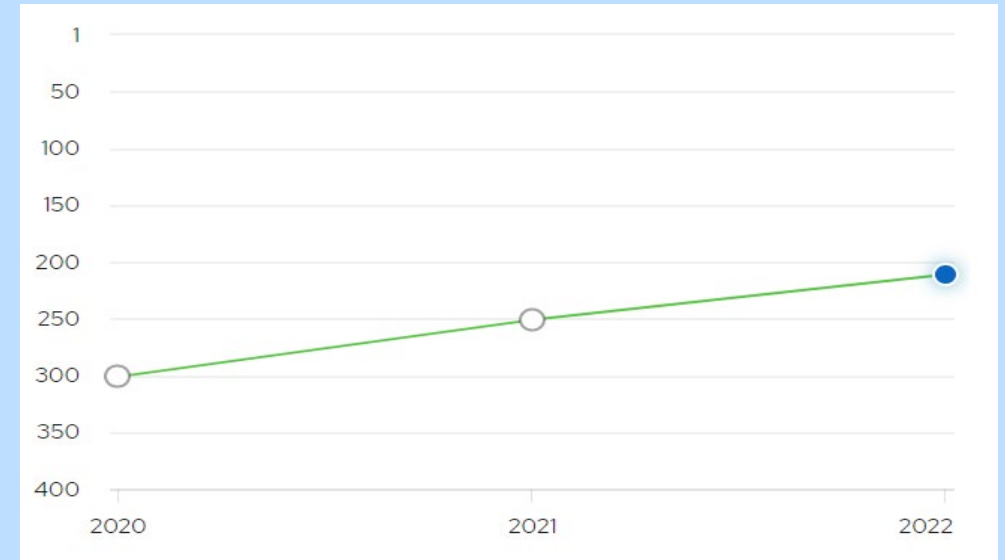


# DYNAMICS OF REPRESENTATION OF "TIAME" NRU IN RANKINGS

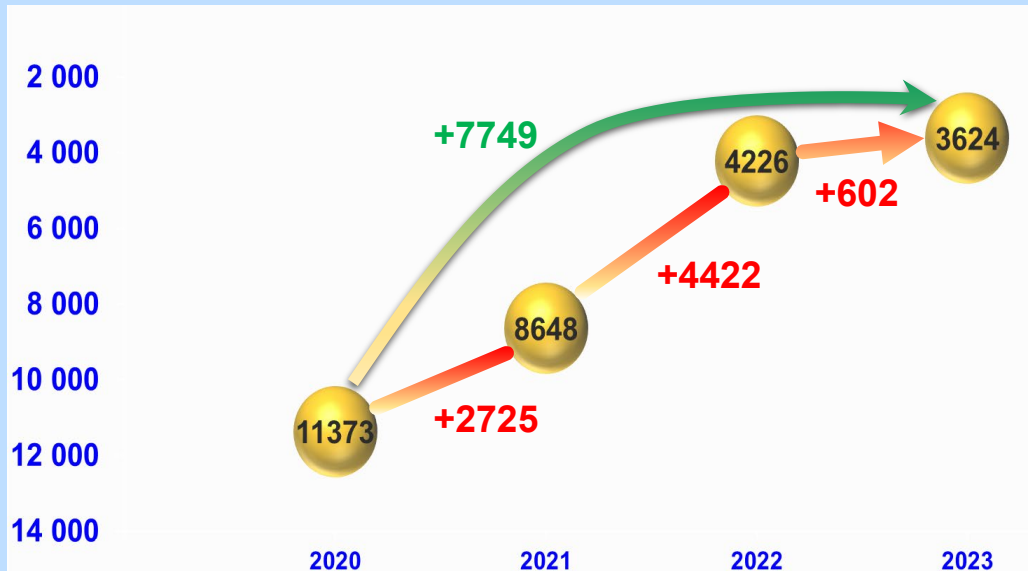
## National Rankings



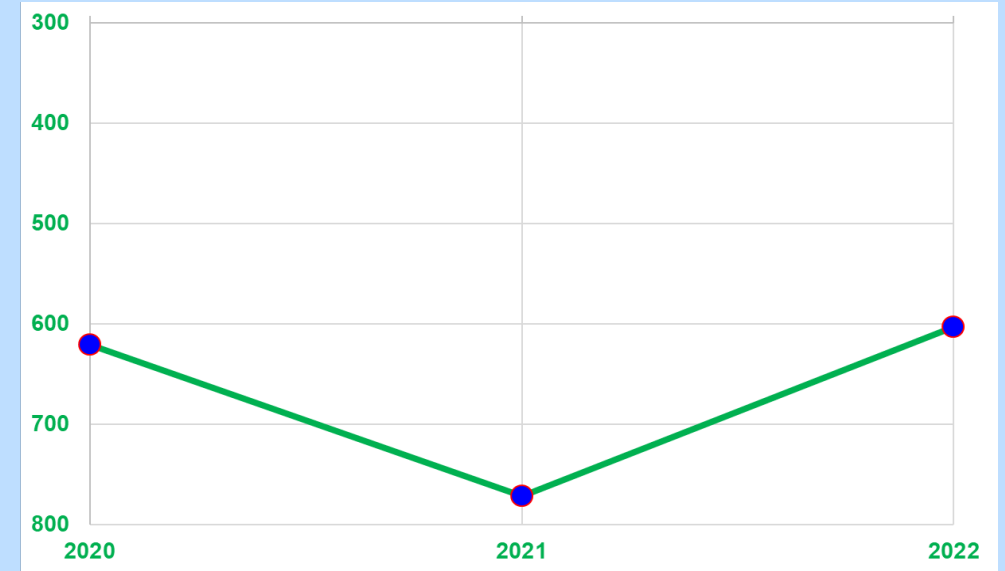
## QS EECA University Rankings



## Webometrics



## World Green University Rankings



# GLOBAL ISSUES : CHALLENGES AND WAYS TO OVERCOME

## Global issues

## Challenges

## The ways to overcome

**Pandemic**

1. Increasing the number of students interested in distance education
2. Decreasing the number of international students

1. Digitalization of education
2. Development of distance education, online courses
3. Creation of university branches in overseas

**Political situation in neighboring countries**

1. Realization problem of academic mobility
2. Decreasing the amount of joint articles indexed in Scopus, Web of Science
3. Decreasing the citation level of joint research publications
4. Exclusion of specialists from these countries from the list of academic reputation respondents

1. Changing the vector of academic mobility
2. Expansion of the geography of scientific collaboration
3. International accreditation of educational programs

# An unexpected side of ratings\*

*\*Many universities in Central Asia are starting their way into the global rankings in order to find their strengths and show the world the abilities of their educational institution, but unfortunately, at the beginning of this work, there are some hidden pitfalls that can lead to some destabilization*

## Problems

1

UNBALANCE BETWEEN  
EDUCATION AND  
UNIVERSITY RATING  
PERFORM



The pressure to perform well in university rankings can lead to a variety of negative outcomes. For example, some universities may prioritize research over teaching, leading to a lack of focus on student needs.

2

COMPETITION RATHER  
THAN  
COLLABORATION



The emphasis on rankings can sometimes lead to a culture of competition rather than collaboration, with universities more focused on outdoing each other than on working together to improve education as a whole.

3

INABILITY TO CHOOSE  
THE CORRECT RATING  
SYSTEM FOR  
EDUCATION PLACES



Rankings can be misleading and may not accurately reflect a university's strengths and weaknesses. This can be especially true for smaller schools or community colleges that may not have the same resources as larger universities.

## Solutions

1

MULTIPLE FOCUS  
OF RESEARCH TO  
EDUCATION



the preparation of an individual annual work plan for the teacher, taking into account their subject of teaching, led to an increase in the quality of teaching, enrichment of teaching materials and research.

2

COLLABORATION  
RATHER THAN  
COMPETITION



In cooperation, the points of contact with other universities of the world were taken into account, were competition between universities was the minimum percentage. Works on the principle of competition - this is the development

3

ANALISA OF  
UNIVERSITY ABILITY  
TO CORRECT  
SELECTION OF RATING  
CATEGORY



In process of creating the directions of scientific research of the university, the published results of 25 years of university research were taken into account, a correlation of the further development and existing areas after, we choose the right category of the world rating system

## 40 Bachelor's degree courses

- ❖ Water management and melioration
- ❖ Engineering water supply systems
- ❖ Hydro-technology constructions
- ❖ Mechanization of agriculture
- ❖ Inhalation technology and remote sensing
- ❖ Mechatronics and robotization
- ❖ Artificial intelligence
- ❖ Information systems and technologies
- ❖ Mechanics and mathematic modulation
- ❖ Jurisprudence
- ❖ Energy and renewable energy sources
- ❖ Economy
- ❖ Land management and land cadaster
- ❖ Ecology and environmental protection (in water management), etc.

## 36 Master's degree specialties

- ❖ Land reclamation and irrigated agriculture
- ❖ Integrated use and management of water resources
- ❖ Artificial intelligence
- ❖ Inhalation technology and remote sensing
- ❖ Water-saving irrigation technologies
- ❖ Hydraulic engineering construction
- ❖ Mechanization of agriculture
- ❖ Energy
- ❖ Environmental protection
- ❖ Jurisprudence (transboundary water relations), etc.

## 16 Specialties of doctoral studies (PhD и DSc)





## Famous graduates of National Research University “TIIAME”



**Nabiev Rakhmon Nabievich  
(1930-1993)**

The First President of the  
Republic of Tajikistan (1991-1992)



**Mirziyoyev Shavkat  
Miromonovich  
(was born in 1957 )**

The President of the Republic of  
Uzbekistan (since 2016 )



**Tashmukhammad Niyazovich  
Kari-Niyazov  
(1897-1970)**

The First President of Academy of  
Sciences of the Republic of Uzbekistan  
(1943-1947.)

**Ministers of different ministries of Uzbekistan,  
former USSR, former Kazakh SSR**

- **26**

**Khokims of regions –**

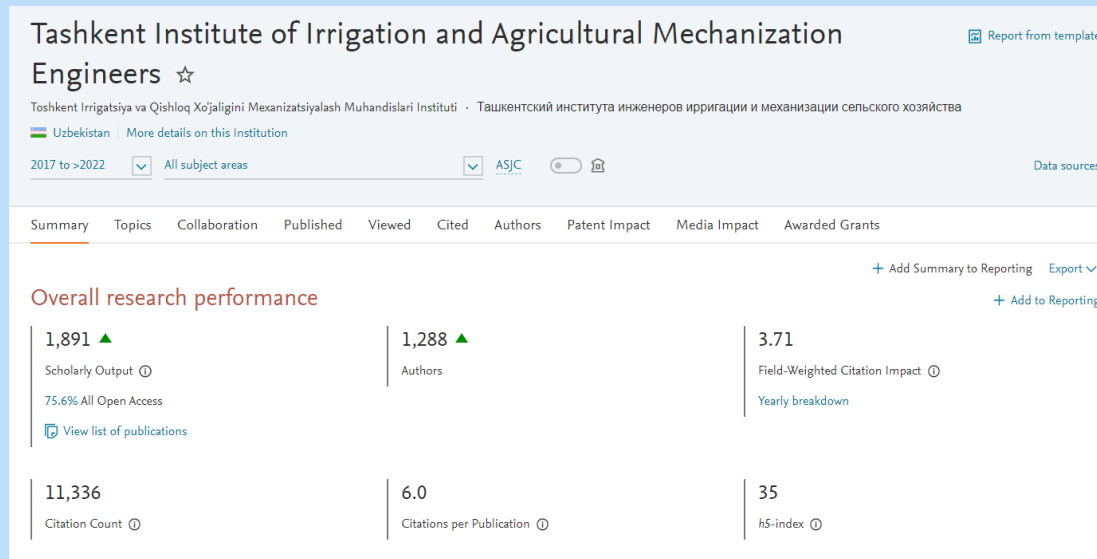
- **68**

**Academics**

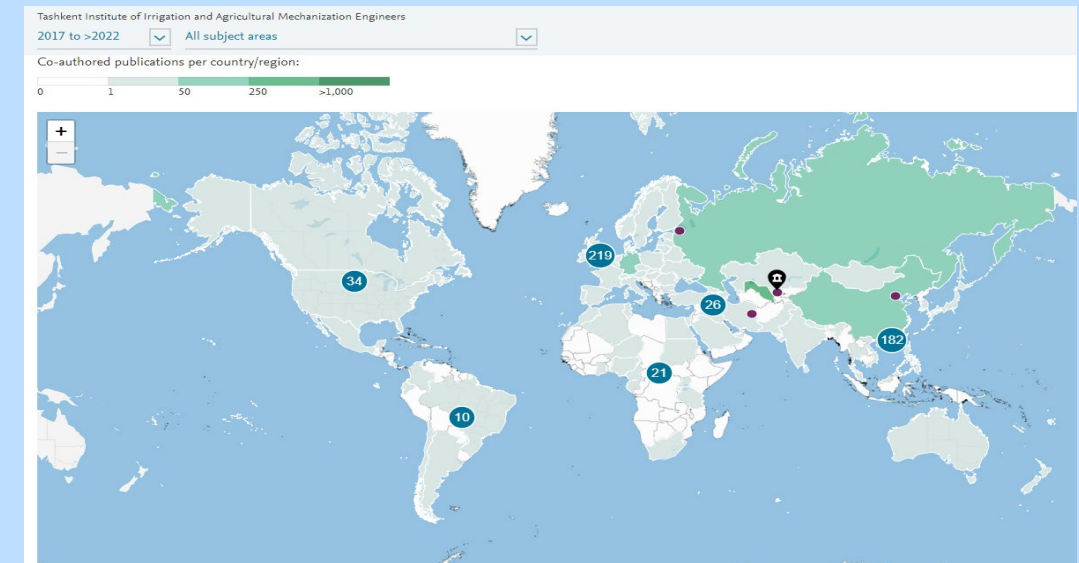
- **12**

# INTERNATIONAL COOPERATION

## Publication activity of the teaching staff of NRU "TIAME"



## COLLABORATION OF NRU "TIAME" AND UNIVERSITIES OF THE WORLD



## International cooperation



## Double-degree diploma



## RESULTS OF JOINT MASTER'S PROGRAMS BETWEEN WAGENINGEN UNIVERSITY AND TIAME

- The total number of graduates of TIAME Master's program on basic specialty "Environmental Protection" is 219 students.
- From which, 49 students studied under the double degree program in English. 26 students received diplomas from Wageningen University.
- One of the first 6 students, who successfully completed both TIAME and Wageningen University and received two diplomas.



**Anna Bronzes**



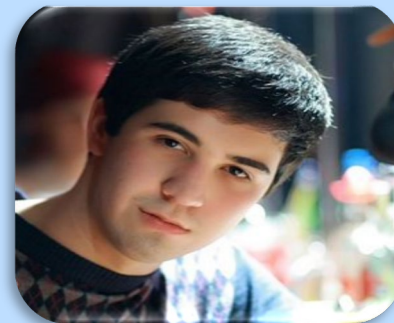
**Nargiz Mirtalipova**



**Konstantin  
Ivushkin**



**Mamanbek  
Reimov**



**Djakhangir  
Atakhanov**

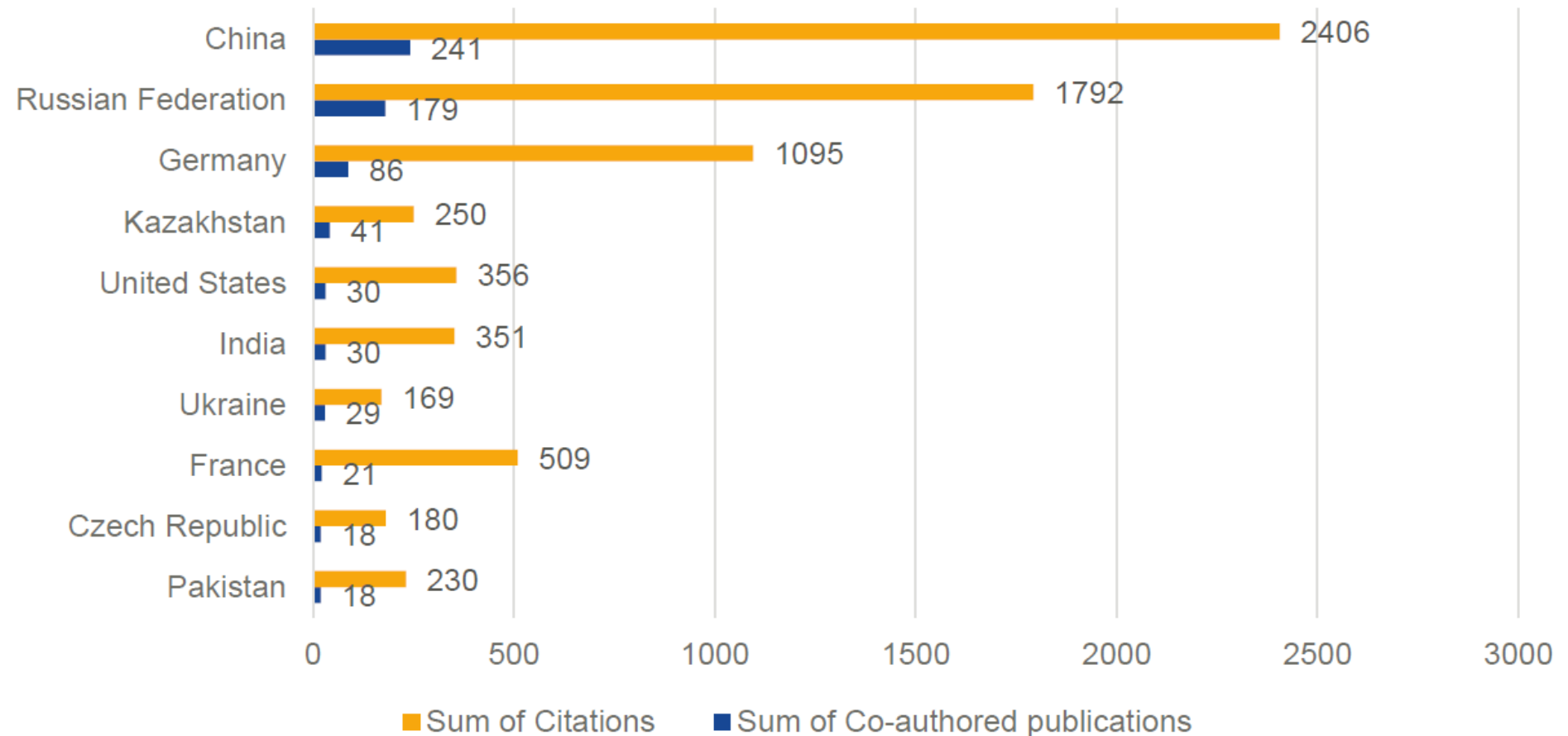


**Adil Yakubov**

# COLLABORATION OF NRU "TIAME" AND UNIVERSITIES OF THE WORLD

## Strategic Performance Insights

### International Research Network Research Collaboration (2017-2022)





## ADVANCING ECOSYSTEM HEALTH AND FOOD SECURITY THROUGH RESEARCH

### SENIOR RESEARCH SCIENTIST



**Prof. Rashid Ganeev**

Fellow of the World Academy of Sciences (TWAS)

**H-index: 51**



**Prof. Dilfuza Egamberdieva**

Fellow of the World Academy of Sciences (TWAS)

Fellow of the Islamic Academy of Sciences (IAS)

**H-index: 44**



**Prof. Bobomurat Ahmedov**

Fellow of the World Academy of Sciences (TWAS)

Fellow of the Islamic Academy of Sciences (IAS)

**H-index: 37**

### RESEARCH LABORATORIES

- Biological Research and Food Safety
- Energy Saving Technologies
- Climate Change Adaptation in Agriculture
- Artificial Intelligence and Information Communication Technologies
- Fundamental Physics and Chemistry
- Cosmic Technologies

### PUBLICATIONS (2022-2023)

**104**

(SCOPUS, Web of Science)

### PROJECTS

BMBF  
World Bank



# RESEARCH LABORATORY

In cooperation with "Petro Test Avto" LLC, at university there has been created a testing laboratory for fuels, lubricants and special liquids for agricultural, automotive and road construction machinery and technological equipment.

Along with testing work, laboratory works are being conducted by students of university .



**The Research Laboratory has been successfully accredited according to the international standard O'zDSt ISO/IEC 17025:2019**



# "DRIVERLESS ELECTRIC TRACTOR"

ELECTRIC POWER DRIVEN SPECIAL AGRICULTURAL TRACTOR

## HIGH PRODUCTIVITY

There is the possibility of plowing and leveling the 0.5 hectares of land for 2 hours.

## AUTOMATIC CONTROL SYSTEM

Drive-free based on artificial intelligence



## PRICE

Can compete with other state-of-the-art technologies and cost up to 18%

## FAST AND COMPACTNESS

With a speed of 100 km/h, it covers 200 km with a power of 1 stroke



@heta



**HETA**



# ZAMINDAR



The "ZAMINDAR" device

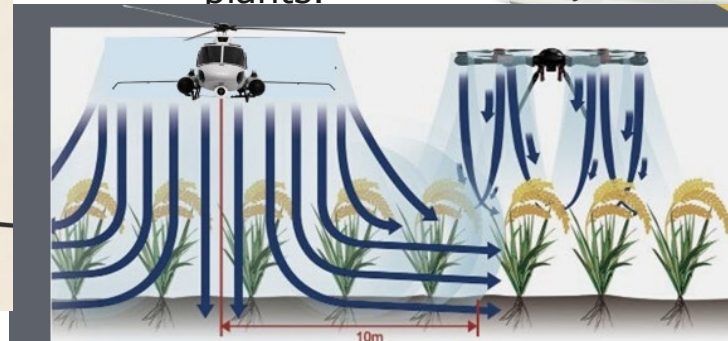
**"AGROQANOT"**

ZAMINDAR is a remotely controlled unmanned aerial vehicle capable of pollinating trees in horticulture, transporting agricultural equipment.

With a coating h of up to 18 meters, this device is capable of remotely spraying various chemical liquids on plants on an area of 10 hectares per hour.

**National Research University  
"TIAME"**

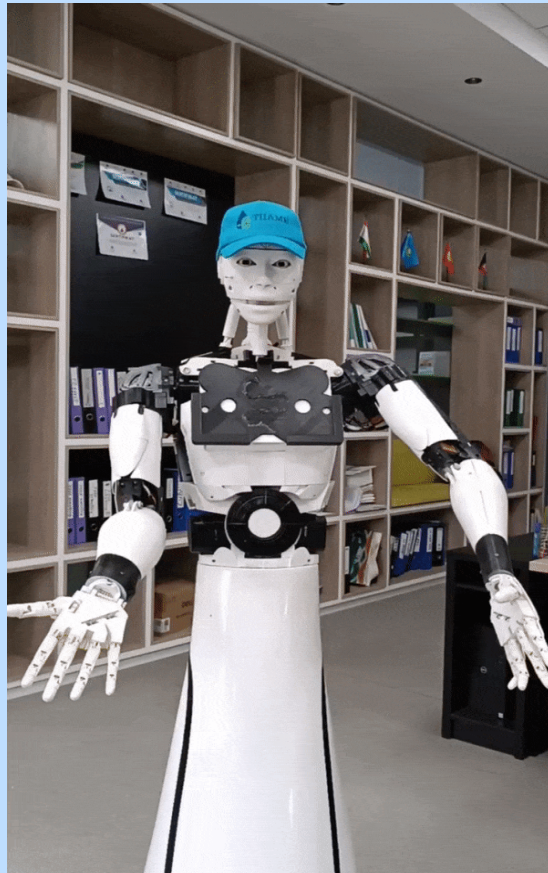
The device carries out spraying with suspension of agricultural plants during the growing season is intended for their fertilization and pest control of plants.





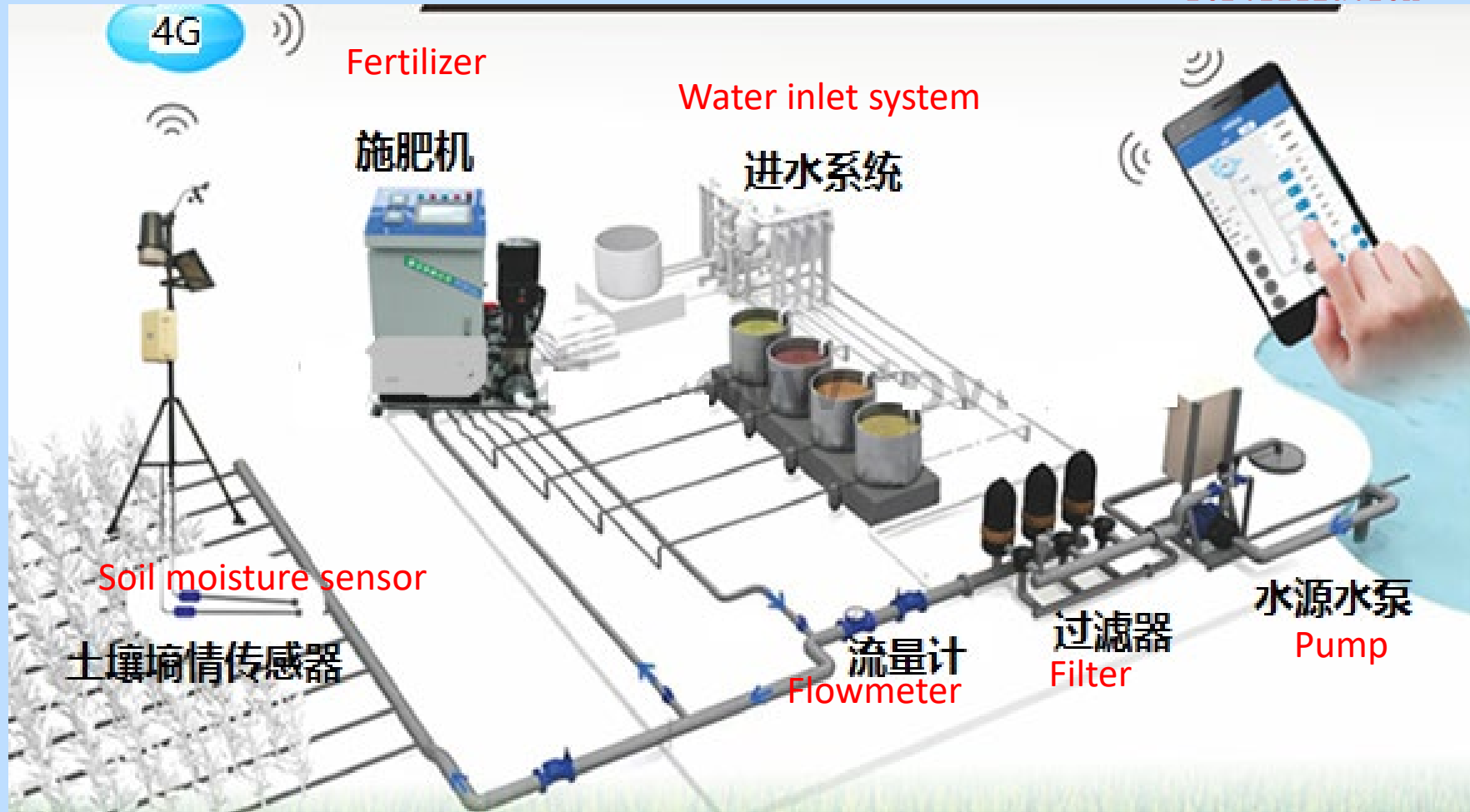
# Cyber-TIIAME robot assistants

**Robots equipped with an artificial intelligence control system serve to welcome university guests and provide assistance to students. Robots can transport items and assist university employers.**



# SCIENTIFIC-TECHNICAL PARK (PRECISION FARMING)

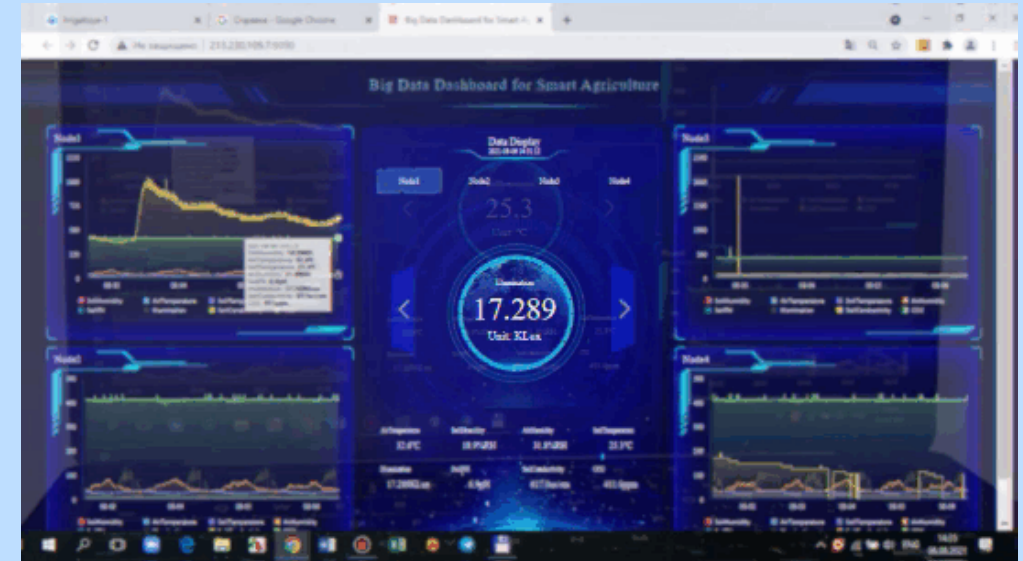
## ◆ Precision and automatic irrigation and fertilization device





# PILOT PROJECT: SMART AGRICULTURE

A pilot project of "smart" agriculture has been created using systems of management, monitoring and data processing



In the showroom the full concept of pilot project of "smart" agriculture is presented, taking into account the online monitoring of technologies applications at the scientific and educational site





# EDUCATIONAL AND SCIENTIFIC CENTER OF UNIVERSITY



The rain irrigation system was launched on 7.2 hectares of land jointly with the American company LINDSAY. Experimental testing of watering with a sprinkler at a total cost of \$100,000 is being carried out.





# ALTERNATIVE ENERGY SOURCES

## Solar panels



## Pilot-productive biogas installation, powered by farm waste





# MODERNIZATION of INFRASTRUCTURE

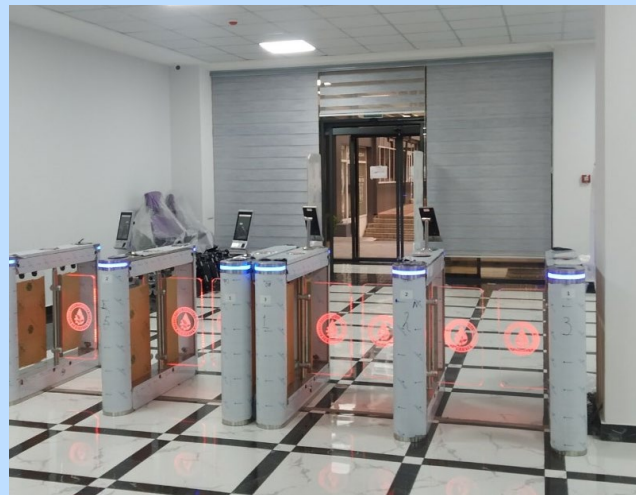
Hotel



IT-park




New Library



# DEVELOPMENT STRATEGY




Dynamic development of world-class fundamental and applied science as the basis for training highly-qualified specialists



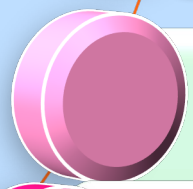
Transformation of the internal environment, development of digital infrastructure and modern material and technical base of the university




Gradual transition from traditional energy sources to alternative and renewable ones



Increasing the international attractiveness of educational programs by creating university branches in Central Asian countries



Formation of a competitive and effectively functioning sector of scientific research and developments



Creation of effective systems for the transfer of research and development results

***Thank for your  
attention!***