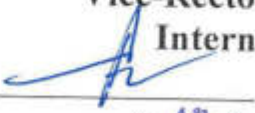


Ministry of Education and Science of the Republic of Kazakhstan
Kh. Dosmukhamedov Atyrau University
Research Institute of Mathematics and Applied Technologies

APPROVED


Vice-Rector for Science and
International Relations


E.K. Aibuldinov

« 27 » 01 2022

Report
of the Research Institute of Mathematics and Applied Technologies
for 2021

Director of the Institute


G.K. Zhussupkaliyeva

« 27 » 12 2021

Atyrau, 2021

The Research Institute of Mathematics and Applied Technologies is a university-wide division and was established in order to coordinate and ensure scientific research, as well as to assist departments in the training of scientific personnel. The Research Institute consists of two centers: the Center for Mathematics and Information Technology (Head: B.Z.Kenzhegulov) and the Analytical Center (Head: Zh.T. Kalibekov).

Areas of work

- Development of a mathematical model for effective management of oil and gas fields
- Nanomaterials and nanotechnologies
- Actual problems in the field of education

Scientific potential

The personnel potential of the Institute is 3 staff positions, including: 1 - Doctor of Sciences, professor; 1-Candidate of Sciences.

	Full name	Google Scholar (ссылка)	Research Gate (ссылка)	ORCID	PUBLONS	Scopus ID	Индекс-Хирша	
							Scopus	WOS
1.	G.K. Zhussupkaliyeva	https://scholar.google.com/citations?view_op=new_profile&hl=ru	ГРС-7835-2022	0000-0003-4848-1344	ГРС-7835-2022	55711494500	h=4	
2.	B.Z. Kenzhegulov	https://scholar.google.com/citations?view_op=list_works&hl=ru&user=dqLfwbYAAAAJ	АВІ-3562-2020	000-0001-2345-6789	АВІ-3562-2020	57218894811	1	

Grants

1	Project of the Ministry of Education and Science of the Republic of Kazakhstan "Strengthening the potential of pedagogical education" G.A.Saltanova, G.K.Zhussupkaliyeva	The World Bank	September 2021 – May 2022	
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Publications

5 articles by the Institute staff were published in 2021, of which 1 scientific article was published in international journals with a high impact factor, 4 articles in journals by the Committee for Control in Education and Science.

Name of the publication database	2021r.
Web of Science	
Scopus	3
RSCI	1
CCES	1
Bcero	5

1. **Beket Kenzhegulov**, Raigul Tuleuova, Aigul Myrzasheva, Nurgul Shazhdekeyeva, Galymzhan Kabytkhamitov. Mathematical modeling and development of a computational algorithm for the study of the thermo-stressed state of a heat-resistant alloy, - Periodicals of Engineering and Natural Sciences Methodology/Method, Vol. 9, No. 4, September 2021/ pp.214-241
2. **Beket Kenzhegulov**, Aigul Myrzasheva, Nurgul Shazhdekeyeva, Raigul Tuleuova A NUMERICAL METHOD FOR DETERMINING THE DEPENDENCE OF THE THERMALLY STRESSED STATE OF A ROD ON AMBIENT TEMPERATURE WITH THE SIMULTANEOUS PRESENCE OF THERMAL PROCESSES, - PERIÓDICO TCHÊ QUÍMICA, 17/35 Vol. 9, No. 4, September 2021/765-781
3. Nurgul Shazhdekeyeva, **Beket Kenzhegulov**, Aigul Myrzasheva, Galymzhan Kabytkhamitov, Raigul Tuleuova Numerical methods for solving improper problems of filtration theory, - Istraživanja i projektovanja za privredu Journal of Applied Engineering Science-2021.-Vol.19, Iss.1.-P.98-108 Istraživanja i projektovanja za privredu Journal of Applied Engineering Science-2021.-Vol.19,Iss.1.-P.98-108
4. B.Z. Kenzhegulov "Application of the finite element method for solving thermal conductivity problems" "Modern problems of physical and Mathematical Sciences and interdisciplinary research", International Scientific and practical conference: Kh.Dosmukhamedov Atyrau University, Atyrau, 2021. - pp. 142-149
5. G.K. Zhussupkaliyeva Application of competence-based approach in teaching physics in solving problems – Trends and prospects for the development of science and education in the context of globalization (Issue 70) - 2021, Ukraine Pereyaslav, pp.247-250 (Appendix 1)

6.

№	Names	Quantity
1	Monograph	1
	Textbooks, teaching aids	2
	Collection of conferences	1
	Copyright	-

Patents	-
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1 monograph by B.Z.Kenzhegulov was published, as well as 2 textbooks and teaching aids, among them are the works of B.Z.Kenzhegulov "Fizikalıyq prosesterdi matematikalıyq pishendeý" and G.K.Zhusupkaliyeva "Electromagnetic Phenomena". (Annex 2)

Conducting events

№	Names (conferences, seminars, etc.)	Date of the event
1	<i>VI International Scientific and Practical Conference "The Role of physics and mathematics in the modern educational space"</i>	7.12.2021
2	<i>Forum "Modern school education: essence, goals and prospects"</i>	8.12.2021

On December 7, an international scientific and practical conference "The role of physical and mathematical sciences in the modern educational space" was organized and held, more than 300 applications were submitted and scientists from the USA, Poland, Turkey and Kyrgyzstan came to participate in it. A collection of scientific articles has been published. As part of this conference, an agreement was reached with the professor of Nazarbayev University, Massachusetts Institute of Technology Nurxat Nuraj on joint participation with scientists from Nazarbayev University in scientific projects for grant funding of young scientists for 2022-2024, in which our young researcher of the department will also take part physics and technical disciplines G.T. Bekova.

Research work of students

Problems:

1. One of the main tasks set before our institute is the entry of science to the international level. This is a difficult task and internationally recognized research criteria play an important role here. One of the main internationally recognized criteria for evaluating the activities of a researcher, research organizations and universities are publications in top scientific journals.
2. The main problem is the weak involvement of the teaching staff of the departments in scientific research and funded research activities.
3. It is necessary to improve the quality of teaching mathematics and natural sciences at all levels of education.
4. It is necessary to implement joint projects with leading foreign universities and research centers, large enterprises.
5. Co-financing from the private sector should become a requirement.

Development prospects:

- Training of personnel in priority areas, increasing the level of teaching staff.
- In-depth research of the selected areas due to foreign business trips and internships.
- Joint projects with leading foreign scientific centers and leading scientists.
- Selection of an effective applied direction.
- Involvement of leading young scientists in the work of the Research Institute. The work at the Institute should be prestigious, authoritative and interesting with a high salary.

**Director of the Research Institute of
Mathematics and Applied Technologies**



G.K. Zhussupkaliyeva