Report on the work of the Dissertation Council
Dissertation Council at NJSC KazNRTU named after K.I. Satpayev
Dissertation Council "Chemical processes and production of chemical materials" in the specialties (8D07108- Basic processes of synthesis and production of new organic and polymer materials; 8D07109- Innovative technologies and new inorganic materials) for 2023.

1. Data on the number of meetings held -6
2. There are **no** members of the dissertation council who attended less than half of the meetings.
3. A list of doctoral students indicating the organization of training:
   1) Kenzhebayeva Bibigul Aivarkyzy - NJSC KazNRTU named after K.I. Satpayev
   2) Shaimardan Yesbol - NJSC KazNRTU named after K.I. Satpayev

4. Brief analysis of dissertations reviewed by the council during the reporting year

№	Full name of Doctoral student, university	Subject of work	Code and name of specialty
1	Kenzhebayeva Bibigul Aivarkyzy - NJSC KazNRTU named after K.I. Satpayev	«New modified peptides for medical use»	6D072100 - "Chemical technology of organic substances"
2	Shaimardan Yesbol - NJSC KazNRTU named after K.I. Satpayev	«Research and transformation of persistent organic pollutants based on polychlorinated biphenyls»	6D072100 - "Chemical technology of organic substances"

4.1 Analysis of the topic of work by Kenzhebayeva B.A. «New modified peptides for medical use»

The dissertation work is devoted to the development of the synthesis of a new peptide, as well as modification of known peptides to indicate the significance of a specific amino acid residue to the stability of selective peptides. This work studies the synthesis, identification and separation of peptides using mass spectrometry and nuclear magnetic resonance spectrometry.

The relevance of the topic lies in synthesis of new organic compounds - peptides with tumor-targeting potential and production of new organic substances used for the treatment of cancer. Oncological diseases are among the most common in Kazakhstan, in particular prostate cancer. Every year, 1.3 million new cases are detected in the world, and in Kazakhstan, more than 1,200 newly diagnosed cases of prostate cancer are registered per year. Meanwhile, traditional and conventional chemotherapy for malignant neoplasms uses drugs of primary action, which, after administration, spread throughout the body and lead to undesirable consequences. Therefore, special methods and drugs are being developed and tested around the world for more effective treatment of cancer patients. The most promising is the development and use of medicinal substances - a targeted agent for the treatment of various oncological diseases, as well as allowing observation of this process. Despite some advances in cancer therapy, the main problem is still the lack of selectivity of antitumor therapeutic agents. In this regard, today tumor- targeted peptides have been identified as the most promising in the fight against cancer. Therefore, the development of methods for using targeted chemotherapy using cell-penetrating peptides helps distribute the drug to the receptors of target cells, destroys the membranes of cancer cells and inhibits access to healthy cells, which increases the effectiveness of the treatment drugs .

Connection of the topic of the dissertation with the directions of development of science, which were formed by the Higher Scientific and Technical Commission under the

Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. Dissertation work by Kenzhebayeva B.A. carried out on the basis of KazNRTU named after. K.I. Satpayev and the University of Lorraine, Nancy, France (Erasmus Agreement). The formulation and justification of the topic of the dissertation research, the formulation of problems, the method of solving them, theoretical and experimental studies have been carried out and the main scientific results have been obtained personally by the dissertation author.

Analysis of the level of implementation of the dissertation results into practical activities. On the topic of the dissertation, 2 review articles and 1 article included in the first quartile of Q1 were published.

4.2 Analysis of the topic of work by Shaimardan Yesbol. «Research and transformation of persistent organic pollutants based on polychlorinated biphenyls»

The dissertation is devoted to the study and establishment of the scale of distribution and quantitative content of polychlorinated biphenyls (PCBs) related to persistent organic pollutants (POPs) in the territories adjacent to the Ust-Kamenogorsk condenser plant, as well as the development of heterogeneous mono- and bimetallic catalysts for the disposal of PCBs by catalytic dehydrochlorination.

As a result of the survey on the territory of Kazakhstan, the location of PCB-contaminated equipment and the presence of PCB-contaminated territories in such a significant amount that the republic ranks second (after Russia) among the CIS countries. Eight "hot" spots contaminated with PCBs have been identified in the republic. In the city of Ust-Kamenogorsk, East Kazakhstan region, 80% of PCB waste is concentrated.

In modern methods of disposal of man-made wastes containing PCBs, the main share is occupied by dehydrochlorination of PCBs due to the possibility of using new types of catalysts obtained using nanomaterials and nanotechnologies. In addition, reduction methods for removing halogen or replacing it with hydrogen make it possible to regenerate the hydrocarbon component of halogenated molecules for reuse, which meets the tasks of resource saving, and the usage of catalytic methods contributes to a significant decreasing in energy costs. The most common catalytic systems using for PCB dehydrochlorination are palladium-containing carriers catalysts. The content of palladium in such catalysts reaches up to 10%. Work on reducing the cost of palladium catalysts by "diluting" the noble metal by other metals with low cost characteristics is a relevant.

Connection of the topic of the dissertation with the directions of development of science, which were formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs. The dissertation work was carried out within the framework of program-targeted funding No. BR05236302 "Scientific and technical substantiation of innovations of the chemical cluster in the field of creating new materials and technologies to improve the efficiency and environmental sustainability of industrial production" for 2018-2020.

Analysis of the level of implementation of the dissertation results into practical activities. 8 works have been published on the topic of the dissertation work, including 1 article in peer-reviewed scientific publications indexed in the Scopus and Web of Science databases, 3 articles in journals recommended by Control Committee in the field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan and 4 articles in materials of republican and international conferences.

5. Analysis of the work of official reviewers (with examples of the most low-quality reviews)

№	Full name of Doctoral student	Reviewers	
		1 Reviewer's name (position, academic degree, title, number of publications in the specialty over the past 5 years)	**2 Reviewer's name** (position, academic degree, title, number of publications in the specialty over the past 5 years)
1	Kenzhebayeva Bibigul Aivarkyzy	Kaldybekov Daulet Bolatovich, PhD, Professor of the Department of Chemistry and Technology of Organic Substances, Natural Compounds and Polymers in KazNU Al-Farabi, There are 12 scientific publications available in Scopus in the specialty 6D072100 – Chemical technology of organic substances	Yu Valentina Konstantinovna, Senior Researcher, Doctor of Chemistry, Professor, Institute of Chemical Sciences named after A.B. Bekturov, there are 48 scientific publications in Scopus. There are 48 scientific publications available in Scopus in the specialty 6D072100 – Chemical technology of organic substances
2	Shaimardan Yesbol	Zhumagalieva Shynar Nurlanovna, Doctor of Chemical Sciences, Professor of Al-Farabi Kazakh National University There are 5 scientific publications available in Scopus in the specialty 6D072100 – Chemical technology of organic substances	Zhumakanova Ardak Sydykovna, leading researcher of Institute of Fuel, Catalysis and Electrochemistry named after D.V.Sokolsky There are 8 scientific publications available in Scopus in the specialty 6D072100 – Chemical technology of organic substances

6. Proposals for further improvement of the scientific personnel training system - strengthen control over the preparation of doctoral students at the training stage.

7. Number of dissertations for the degrees of Doctor of Philosophy (PhD), doctor in the profile in the context of areas of training:

1) dissertations accepted for defense (including doctoral students from other universities) – **2**;

2) dissertations withdrawn from consideration (including doctoral students from other universities) - **no**;

3) dissertations for which negative reviews were received from defense reviewers (including doctoral students from other universities) - **no;**

4) dissertations with a negative decision based on the results of defense (including doctoral students from other universities) - **no;**

5) dissertations aimed at revision (including doctoral students from other universities) – **1**;

6) dissertations aimed at re-defense (including doctoral students from other universities) - **no.**

Chairman of the DC
d.c.s. professor — Selenova B.S.

Scientific Secretary of DC
PhD — Amitova A.A.