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INDEPENDENT AGENCY FOR QUALITY ASSURANCE IN EDUCATION - IQAA

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REPORT ON THE EXTERNAL REVIEW OF THE EDUCATIONAL ORGANIZATION

M.Auezov South Kazakhstan State University,

written by the IQAA expert group

after the study of the self-evaluation report and the external review of the educational organization M.Auezov South Kazakhstan State University in the framework of specialized (programme) accreditation of the study programme “6D072000-Chemical technology of inorganic substances” (in accordance with the National classifier)

March 12, 2019

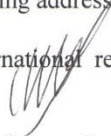
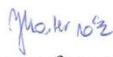
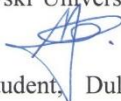
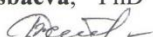
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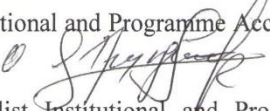

THE EXPERT GROUP

Head: Rinat Iskakov, Provost, PhD, Assoc. Professor, academic provost, Satbayev University, Almaty, r.iskakov@satbayev.university. 

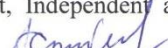
Members:

- 1) **Olzat Toktarbayuly**, researcher, Laboratory of Materials Processing and Applied Physics, Nazarbayev University, PhD, Astana, complete mailing address, olzat.toktarbaiuly@nu.edu.kz
- 2) **Guillaume Rousset**, Vice-president for international relations, Université Jean Moulin Lyon III, France, guillaume.rousset@univ-lyon3.fr 
- 3) **Joanna Masternak**, researcher, assistant professor, Inorganic chemistry division, Jan Kochanivski University, Poland, joanna.masternak@ujk.edu.pl 
- 4) **Alicja Galczyńska**, Jan Kochanivski University, associate professor, Humanities faculty, Poland, alicja.galczyńska@ujk.edu.pl 
- 5) **Gulim Dzhetspisbaeva**, PhD student, Dulati Taraz State university, Kazakhstan, gulim_86@mail.ru 


Observers:

- 1) **Lilit Pipoyan**, Specialist Institutional and Programme Accreditation Division, ANQA, PhD, Armenia, l.pipoyan@anqa.am 
- 2) **Varduhi Gyulazyan**, Specialist Institutional and Programme Accreditation Division, ANQA, PhD, Armenia v.gyulazyan@anqa.am 

IQAA COORDINATOR

Aliya Assylbekova, senior expert, Independent agency for quality assurance in education (IQAA) 

RESPONSIBLE PERSON FOR THE EXTERNAL REVIEW FROM THE HIGHER EDUCATION INSTITUTION

Bakhytgul Abdizhaparova, head of accreditation department, Auezov South Kazakhstan State University. 

The level of compliance of the self-evaluation report with the actual state of affairs of the study programme “6D072000-Chemical technology of inorganic substances” (in accordance with the National classifier) in the Auezov South Kazakhstan state university for each standard

Standards	Indicate the level of compliance of the self-evaluation report with the actual state of affairs at HEI for each standard			
	Fully complies	Substantially complies	Partially complies	Doesn't comply
Standard 1. Policy in quality assurance of the study programme		+		
Standard 2. Quality of the teaching staff		+		
Standard 3. Quality of research work		+		
Standard 4. Effective system of support provided to doctoral students		+		
Standard 5. Resources		+		
Standard 6. Efficiency of learning outcomes of the study programme and public information		+		

Expert group's signatures:

Rinat Iskakov

Olzat Toktarbayuly

Gulim Dzhetpisbaeva

Guillaume Rousset

Joanna Masternak

Alicja Galczynska

Observers:

Lilit Pipoyan

Varduhi Gyulazyan

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CONTEXT AND AIMS OF THE SITE VISIT (NO MORE THAN 2 PAGES)

– Introduction

External review has been held at M. Auezov South Kazakhstan State University (SKSU) within March 11-12, 2019 by visiting according to plan in Appendix 1 via meeting and interviewing of faculty, PhD students, alumni, employers, administration etc. according to a list in Appendix 2 provided by the expert group as it listed in page 2.

Prior to visit the expert group was provided with self-assessment report of educational program 6D072000-Chemical technology of inorganic substances, its curriculum, attached documents (totally 22 annexes), and description of the program. The self-assessment report consists of 50 pages and describes accordance of the program to 6 basic standards such as (1) Policy of quality assurance; (2) Quality of Faculty; (3) Quality of research; (4) Effectiveness of student support system; (5) Resources; and (6) Effectiveness of learning outcomes with full level of preparedness and detailed description.

All members of SKSU society showed eagerness and participation for the expert group during the accreditation overview.

Interview with the University management gave the opportunity to get acquainted with the mission, strategy, objectives and plans of the University in training on the considered OP. In addition, the leadership of the University announced the main achievements of the University, graduating Department and doctoral students enrolled in the OP.

Visual inspection was carried out in order to get an idea of the resource capabilities of the University for the implementation of educational programs, to determine the compliance of the material and technical base of the University, laboratories, the requirements of OP and accreditation standards, as well as for the possibility of direct communication with the teaching staff and other University staff at their workplaces (laboratories, Department, library, service center of students of the University, etc.).

Lists of all facilities the expert group visited and observed

1. Regional test laboratory with engineering profile «Constructional & Biochemical Materials»
2. Pilot equipment for physico-chemical type of water purification in the framework of International education project “Water Harmony” at Research institute of Ecology & Biotechnology
3. Research Laboratory «Monitoring of water quality, water resources of Kazakhstan», in the framework of international NATO project HATO to evaluate impurities in water of Syr Darya
4. Research laboratory named after S. Suleimenov for physico-chemical analysis «SAPA»

5. Training and research laboratory equipped with pilot industrial process «Syntheses of polycomponent mineral fertilizers »
 6. Pilot process for production of composingly blended fertilizer «JAMB»
 7. Accredited laboratory«Technology of Inorganic Acids & Salts»equipped by «Kazphosphat Ltd»
 8. Accredited laboratory «Syntheses of polycomponent mineral fertilizers»
- The staff of SKSU showed readiness for external audit and assistance to the work of the expert group. Computer office for doctoral students.

– **Main characteristics of the HEI**

M.Auezov South Kazakhstan State University (SKSU) is Kazakhstan's largest multi-disciplinary university, providing training on a 3-tier system: Bachelor's programme – 95 educational programmes, Master's programme- 59 educational programmes, PhD doctorate - 19 educational programmes. The University was established in 1943. The Chair of Inorganic Technologies was established in 1963. The program operates since 2012.

The educational programme is developed in accordance with the State obligatory standards of higher and postgraduate education, approved by an order of the Minister of Education and Science of the Republic of Kazakhstan No. 604 dated 31 October, 2018; sample curriculum of the specialty 6D072000- Chemical technology of inorganic substances, approved by an order of the MES RK No. 425 dated 05.07.2017, industry qualifications framework «Chemical production», approved by 16 August, 2016, minutes №1.

EP «Chemical technology of inorganic substances» for training PhD doctors supposes fundamental educational, methodological and research training with in-depth study of modules on innovative technologies of inorganic substances. Duration of doctoral studies is 3 year. Training is conducted on credit technology in the state, Russian and English languages. The number of doctoral students on September 1, 2018 is 22 people.

Legal and actual address

M.Auezov South Kazakhstan State University:

160012, Shymkent, Tauke Khan Ave., 5

Phone: 8 (725)2 210141

Fax: 8(725)2 210141

Official website: www.ukgu.kz

CHAPTER 2

EXTERNAL REVIEW REPORT WRITTEN BY THE EXPERT GROUP

Introduction

This review was written by the expert group within visit of SKSU in March 11 and 12, 2019 to externally view the university and PhD program under accreditation 6D072000-Chemical technology of inorganic substances.

Compliance with standards of specialized (programme) accreditation

This report on results of the external review was written in accordance with the standards and guidelines on external review of IQAA. It contains overview of the expert group of how the activities of the educational organization comply with all 6 standards for accreditation of specialized programme 6D072000-Chemical technology of inorganic substances at SKSU.

Standard 1. Policy in Quality Assurance of the Study Programme

Analysis and evidence

As conclusion of interviewing Acting rector and vice-rectors the expert group believe that strategic mission of the university is led to develop entrepreneurial university. It correlates with mission of the university namely to form the country's intellectual elite based on the generation of new knowledge and the university transformation into an entrepreneurial university.

Internal quality assurance of doctoral studies regulates academic and research policy of the program, including research, innovative and educational activities. During the interview with PhD students the expert group could confirm the fact that students are familiar with the procedure on implementation of their commercially-applicable project, feed-back mechanism on academic and research satisfaction etc. All our interviewee could not suggest steps for improvement of the policy neither cases of negative feedback which helps to improve any procedures. Procedures exist but nobody saw how it works because interviewee did not give negative feedback.

Goals and objectives according to the mission of university meet transformation to interdisciplinary approach in academic and research sphere. University supports research activity in interdisciplinary area either providing to PhD students an additional supervisor in adjacent science or taking elective courses in adjacent sphere for PhD student. There are mechanisms to choose electively both area of research and supervisor by PhD students. This choosing undermines name of supervisor, scientific topic of research and name of collaborative external supervisor. There is mechanism to change either supervisor or topic of research which worked in a few cases due to supervisor replacement, non-actuality of research topic etc. We did not find any evidence when PhD student was not satisfied with supervision.

Academic policy corresponds to PhD student-centered study with all elements from involvement in curriculum elaboration of some PhD students to up to 90% courses given on elective base. During the interview the expert group confirmed that a representative of PhD students was involved in elaboration of the curriculum. In the last semester out of five courses only one was obliged, the rest four PhD students chose on elective base. Curriculum of the accrediting program corresponds fully with the National educational standards for higher and postgraduate education, goal and objectives lead to competences of the National qualification framework and align with the Dublin descriptors. Academic department responsible for curriculum design involves broad range of stakeholders such as faculty, employers, designated PhD students, corresponding managers from postgraduate department to elaborate the program.

According to interview with PhD students the expert group is aware that students understand goals, learning outcomes and competences which supposed to be taken after graduation of the program. Several students confirmed that they read the program and familiar with learning outcomes it prescribed. The program and its curricula is designed with 3 modules, such as innovative technologies for inorganic substances; methodology of scientific research, and optimization of chemico-technological processes. The program describes content for each module as well as learning outcomes the graduates should know.

Representatives of industrial enterprises on the production of phosphorus, mineral fertilizers, acids and salts - partners of CTIS Department, namely director of NDFZ Kazphosphate LLP FrangulidiL.Kh. in the framework the cooperation agreement participated and gave critics in the development and implementation of the Doctoral programme “Chemical technology of inorganic substances”. The representative of the partner university - doctor of technical sciences, professor of the Belarusian State Technological University, Dormeshkin O.B. (Minsk, Republic of Belarus) participate in the development of the doctoral education program.

The opportunities suggested by the program was not available at SKSU website: neither at <http://www.ukgu.kz/ckfinder/userfiles/files/tiptik/докторантура4.rar> nor at <http://www.ukgu.kz/ru/doktorantura>. This information could be helpful for prospective students or other clients to get familiar with the program.

Academic policy includes a few sorts of student internship with either pedagogical outcomes or research purposes. From our interview with employer we were aware of mechanism when employer gives its feedback to university as well as student has a chance anonymously assess the employer and internship itself by survey.

The university provided broad range of assessment survey for both PhD students and persons who involved in academic and research processes. We saw data of the following survey: Student satisfaction with teachers, student satisfaction with academic process, relevancy to chosen major, student satisfaction with teaching quality, types and applicability of teaching methods, attendance frequency, relevancy of courses with program, assessment of different academic indicators, accessibility to library and internet with level of satisfaction, assessment of

university services in whole, student satisfaction with research and research resources, student satisfaction with employers and employability, student satisfaction with internship, employer satisfaction with intern student, etc.

With wide range of survey and assessment data we did see neither evidence of reaction to problems nor mechanism for improvement steps taking into account the survey data. Analyzing assessment or survey data given in Annexes 6 and 7 we could see the same tendency when students do not give negative or critical marks and comments in such survey. As exclusion 30% PhD students criticizes monotony of teachers and teaching approaches.

Most graduates prefer to defend PhD at dissertation council held at the university. During 2015-2016 dissertation council at university was not appointed and PhD graduates defended dissertations at other university. Since 2012 total number of PhD graduates passed defense of PhD dissertation – 12. Dissertation council is now on action, among 12 members, 6 represents other academic institutions. All 12 members represents most areas of research in chemical engineering. Procedures to submit dissertation for the final certification and graduation criteria for defending are fully described and PhD students according to our interview are familiar with.

Detailed information for admission procedures and admitting examination is given at program web-page <http://www.ukgu.kz/ru/doktorantura>, while the program and its curriculum is provided by the Department at its web-site <http://xt.ukgu.kz/ckfinder/userfiles/files/mop/MEP.pdf>

However, there is no clear procedures and criteria how far and deep should be cooperation of PhD student with foreign supervisor. It is obvious profound cooperation between PhD students and foreign supervisor relies up on tight coordination of domestic supervisor with external one. If such cooperation is not tight and active that role of external supervisor becomes non-essential rather formal. There is no mechanism to assess or make survey on student satisfaction with foreign supervisor and mechanism to monitor their cooperation, for example by jointly published papers or jointly attended seminar or conferences.

The curriculum of program are well-balanced with minimum theoretical classes in favor of experimental research work. Nevertheless the content of program complies with the National standard of graduate higher education.

Good practice

PhD student-centered approach through selection of supervisor and area of research; most courses elective including at interdisciplinary majors; ease accessibility to research and librarian resources.

Areas for improvement

In order to improve academic policy the university should pay attention on operation of quality assurance mechanism in following area. The university needs to define clear policy on level of cooperation between PhD students and foreign supervisor, including mechanism for assessment of collaboration satisfaction by PhD students.

Standard 2. Quality of the Teaching Staff

Analysis and evidence on the basis of the criteria:

The university has adopted and approved the main regulatory documents defining the Quality Culture Policy. They are Charter of the University, The Internal Regulations, the Code of Corporate Ethics of SKSU. These rules introduce uniform requirements for the quality of education.

The University has developed, as stated in its Report, an effective system to support the career development of its staff. Measures are being taken to improve the conditions of scientific work.

All teaching staff have a basic education which corresponds to the profile of taught specialist disciplines, extensive experience in teaching and practical work, is systematically involved in educational, methodological and scientific activities, and participates in the implementation of research work and international educational grants.

Many teachers have practical experience in industrial companies related to the profile of doctoral studies and research institutes before starting their teaching activities.

The teaching staff conduct research within the framework of grants from the Ministry of Education and Science of the Republic of Kazakhstan and on the basis of economic agreements with enterprises.

In 2014-2018, the teaching staff participated in the management and implementation of 6 research projects financed by the MES RK (for the total amount of 41 million KZT) and in 2 contract work commissioned by the companies (for the total amount of 27 million 730 thousand KZT).

In addition, the department's teaching staff is involved in the implementation of 2 international educational projects:

- Water harmony – integration of education, research, innovation and entrepreneurship (The Norwegian University of Natural Sciences, universities of Ukraine, Belarus, Moldova, Kazakhstan and Tajikistan);

- Promoting internationalization of research through the establishment of the Cycle 3 Quality Assurance System in Line with the European Agenda (Nurmanbetov K.E., Seitmagzimova G.M., Tleouva A.B.

In 2013-2016 professor Besterekov U.B. was in charge of an international grant project of the NATO Scientific Committee Assessment of Transboundary Water Pollution in Central Asia.

The Faculty, together with chemical companies, has set up scientific and industrial complexes (ESICs), where doctoral students do their internships and conduct research. These are: LLP-KazNIIKhimproekt, Shymkent city; LLP-Kazphosphate, Taraz city; LLP-KazAzot, Aktau city; LLP "KazAtomprom", Suzak district.

Academic teachers use a variety of modern and innovative teaching methods in their classes. Lectures on specialization disciplines are conducted primarily in the form of: brainstorm, project method, analysis of situations of professional activity,

business game. They also use PowerPoint and Internet presentations, CD-ROMs, videos and audio.

In accordance with the current “On Education” Act, all academic staff, at least once every five years, must participate in training courses, courses or internships raising their substantive level. Teachers go to short-term seminars, internships abroad and vocational training in companies, improve their skills during language courses. In 2015 –2019,8 academics attended foreign universities in the UK, Russia, the Czech Republic, Germany, Spain, Belgium and Belarus. The advanced results of these training courses are among other things:

- advanced training program “Research University”;
- textbooks: “Chemistry and technology of inorganic substances”, “Intended chemical processes”, “Physical chemistry of melts”;
- lectures “Chemical kinetics and catalysis” and “Industrial water treatment”;
- development of a new one an educational programme in the field of English, in accordance with EL;
- the introduction of a new teaching method;
- tutorial “Chemical power sources”.

The results of professional development are used in the education process in developing curricula, new courses to choose from, and implementing the results of internships at lectures and practical classes.

The teaching staff present the results of their research in scientific articles published in peer-reviewed journals in Kazakhstan and abroad: in India, Japan, Turkey, Russia, Uzbekistan, Germany, Belgium and Belarus.

The University shall ensure the necessary balance between educational activity and scientific activity of teachers implementing educational programmes. The teaching burden for teaching staff is 750 hours per person per year. The research burden is evenly distributed among faculty, taking into account the positions and qualifications of each teacher, as well as their experience in scientific research.

Out of concern for the high quality of education, the Faculty also employs academic teachers representing foreign universities: from Great Britain, Belgium, the Russian Federation, the Republic of Belarus and the Republic of Uzbekistan. These professors act as scientific consultants – they support doctoral students' research, enable them to complete a research internship at their university, provide advisory services in the field of research, assist in the preparation of scientific publications and doctoral thesis.

SKSU as well as program stakeholder provides training and seminars on research activities, writing research papers etc. In the list of planning training the group saw monthly organized research-focused training given by different trainers, including external experts, visiting foreign researchers, librarians etc.

Good practice

It is worth noting the cooperation of teaching staff with representatives of companies interested in staff training.

Areas for improvement

In order to improve academic staff policy, the university should pay attention to the creation of favourable conditions for the creative activity and career development of staff. In this respect, particular attention should be paid to activities in some of the areas listed below.

The results of the “Teaching Staff Satisfaction” survey show that academics feel that they are one cohesive team (79.9%). Their contribution to improving the image of the university is appreciated (85.1%). They are satisfied with the social assistance offered by the university (64.7%). The worst results were achieved with the support that teachers can count on when it comes to their research work – only 43.4% of respondents are satisfied with the level of support for scientific research. It seems that the level of research funding at many universities and in many countries is not satisfactory. The report shows that academic teachers participate in academic mobility programmes - they go to foreign universities. However, it seems that this is not enough (8 people in 4 years), especially when it comes to trips to English-speaking countries. Due to the specific nature of the field of study, employees should be encouraged to go abroad more often and participate in academic mobility programmes abroad. This would be highly valuable, not least in view of the possibility of making research results public.

Standard 3. Quality of Research Work

Analysis and evidence on the basis of the criteria:

The Department «Chemical technology of inorganic substances» conducts doctoral research work in accordance with the regulations of the Republic of Kazakhstan and the Salzburg principles.

Particularly, the content of doctoral dissertations contains experimental results showing major achievements in the development of certain scientific fields, such as the study of the composition and properties of domestic mineral and technogenic raw materials, the improvement and development of effective technologies for their processing, which comply with the main issues of the doctoral study programme.

The department creates convenient atmosphere for doctoral students to conduct their research work in the framework of the topic of their dissertation, preparation the thesis and scientific articles, participation in international conferences and research internships.

The scientific research implementation is based on an interdisciplinary approach, which involves the first semester study of the following disciplines: “Research Methodology”, “Optimization of Chemical-and-Technological Processes”, “Management of Scientific Projects”.

The visit of the expert group to department’s laboratories shows that doctoral students organize well their research process, can interpret experimental data, conduct research results by using modern mathematical processing and substantiating the optimal technological mode of production of the object under the research study. Doctoral students’ answers to questions of expert group members demonstrate that they have deep knowledge in their relevant research field.

Their research work contains scientific novelty and practical relevance and concerns the modern theoretical, methodological and technological achievements of science, technology and industry by using advanced methods of scientific research, processing and interpretation of data and advanced information technologies.

The content of defended doctoral dissertation was viewed by the expert group and was concluded that the results of doctoral theses that performed during the doctoral study period are published in the form of articles and patents in accordance with the thesis topic, including these in scientific journals recommended by the Committee on the Control of Education and Science of MES RK, and in international scientific journals from informational database Thomson Reuters (ISI Web of Knowledge) which has non-zero impact factor or included in the Scopus company database, and in Proceedings of international conferences.

The doctoral dissertation topics correspond to the thematic plan of the research work of the department for 2015-2020, approved by the Academic Council of M. Auezov SKSU, and with scientific programs of fundamental or applied research financed by the MES RK.

The vision of the expert group shows that themes of some doctoral theses are carried out at the intersection of sciences, such as chemical technology of inorganic

substances and petrochemistry, chemical technology of inorganic substances and industrial ecology, the use of technogenic waste for mineral fertilizer production.

The laboratories of the department «Chemical technology of inorganic substances» are well equipped and PhD students are provided with all necessary experimental needs, such as equipments, reagents, raw materials and personal protective items. The employer, “Kazphosphate” LLP updated significantly the material and technical base of the department. There is an accredited laboratory of physicochemical methods of analysis “SAPA” and Testing Regional Engineering Laboratory “CBM” of M. Auezov SKSU, where doctoral students conduct research work. In addition, SKSU has bases of ESIC, scientific research institutes and research centers to carry out experimental research and approbation of results under industrial conditions.

The experts have checked the free on-line access to full-text multidisciplinary databases “Springer Link”, “Scopus”, “Plenipotentiary”, “Thomson Reuters ISI Web of Knowledge”, “Science Direct”, “Lan” “EBSCO”, to the electronic versions of scientific journals (on the platform of the Scientific Electronic Library), to the Kazakhstan’s databases “KazPatent”, “Epigraph”, “Zan” and “RMEB”.

The M. Auezov SKSU has a system of certification and evaluation of the research work of doctoral students (DSRW), conducted in the framework of approved individual work plans, which is governed by internal teaching and methodological documents (Guidelines for the organization of doctoral programs and the implementation of the research work of doctoral students of the specialty 6D072000 - Chemical technology of inorganic substances", Guidelines for internal quality assurance in doctoral studies).

The research internship by the PhD doctoral programme is compulsory and the all expenses (flight, living costs) of doctoral students for abroad internship are funded from the national budget. The internship has done by 10 doctoral students in 2014-2018.

The expert group member established fact that the research work behind the doctoral dissertation of graduated doctoral students’ contain at least 7 scientific publications, including 3 publications on the thesis topic in scientific journals recommended by CCES of MES RK, 1 publication in an international scientific journal with a non-zero impact factor according to the information database of the ISI Web of Knowledge, Thomson Reuters or incoming to the Scopus company database, 3 publications in proceedings of international scientific conferences, including 1 publication in materials of foreign conferences. This fact is in strong agreement with the report on the self-assessment of educational programme. However most publications are published in Russian spoken countries.

The monitoring of the dissertation councils’ work and general organization and control of the doctoral thesis defense are conducted by the Research Department of SKSU.

The scientific consultants guide to create individual work plans of doctoral students for entire study term. It contains research work, an individual study plan

(IEP), pedagogical and research practice, doctoral dissertation implementation plan and a plan of publications and internships.

The result of the interview with the academic staff shows that the normally foreign scientific consultants visit M. Auezov SKSU just once over the study period of his doctoral student for approximately for the one week time and this is not compulsory. Such attendance of foreign supervisor without additional financing support could be organized via online participation in council meetings.

The interview with the academic staff and postgraduates shows the lack of start-up projects and opening new industrial companies. There is a commercialized project for the production of concrete compounds for civil engineering industries.

Areas for improvement

Within the DSRW framework the individual work plan of a doctoral student provides for passing a research internship at a foreign university where the scientific consultant works and it lasts overseas 1 month in total. However, this time period seems to be very short, in order to gain more research experience on both theoretical and practical point of view. Instead of sending PhD student annually for 2-3 short visit, this budget could be accumulated for one longer 2-3 months staying overseas if the budget of doctoral student and university can afford it.

The number of English written articles by doctoral students must be increased in percentage out of total publication resulting in the rising of the number of citations.

Standard 4. Effective System of Support Provided to Doctoral Students

Analysis and evidence on the basis of the criteria:

This standard is based on two forms of support: the one provided generally to doctoral students but also that specifically provided for some specific kind of doctoral students. Let us analyze these two points successively.

First, about general support. To find out more about these supports and see if they correspond to the needs of doctoral students, we asked in many interviews what were the difficulties faced by doctoral students. Each time, it emerged that none existed, which we can only rejoice even if this may not fully reflect the reality.

Be that as it may, the doctoral student support system does exist. It is reflected by the investment of academic staff but also in an infrastructure way: technical equipment in laboratories, books, journals, databases, work rooms, all this is usefully offered to doctoral students. The existence of a student service center must be noticed in an original and very positive way. It is the same for the financial support of the international stays in the university of the foreign supervisor of the doctoral student.

This support must also be manifested by the possibility of defending his/her thesis. However, 6 doctoral students from SKSU could not defend in this university and were recommended to support their thesis in another institution, in Almaty, due to the non-accreditation of SKSU for 2 years and currently. Defense of dissertation at the external institutions could be important for broader discussion and opinion on his/her research work.

Then, with regard to the specific support given to some kinds of doctoral students, several things emerge:

- It is difficult to assess the support given to doctoral students with disabilities, since the various interviews (with doctoral students, with head of the academic unit delivering the study program) have shown that no doctoral student with disabilities has been enrolled in this doctoral program since its creation.

- It is the same with doctoral students transferred from other universities (no confirmed cases), that is to say from other Kazakh institutions.

Regarding the internal mobility of PhD students (i.e. from SKSU to another Kazakh university), it appears that no student benefits. The reasons seem to be the program's desire to focus on international mobility.

With regard to the external mobility of doctoral students (that is from SKSU to a foreign university), the interviews show that almost all doctoral students benefit, which seems positive.

This translates, firstly, into a stay in the foreign university of their international supervisor, a minimum stay of 2 weeks over the 3 years of the program and a maximum duration of 3 months over the 3 years of the program. On average, this stay lasts 1 month on the 3 years of the program. This international experience

is fundamental and it is very relevant that it is planned, but several points should be noted:

- Although this is naturally due to the difficulty of finding funding, its duration is quite inadequate, it would be more suitable if it lasts 1 month per academic year, i.e. 3 months in total over the total duration of the program, if the budget of doctoral student and university can afford this,
- This international supervisor is only invited to the defense of the doctoral student he/she has attended, his/her presence is not mandatory, which seems irrelevant in view of his role, even if he/she sends his/her comments before the defense. Of course, this can be explained by the lack of funding but it must be possible to find simple solutions, for example by organizing its participation in the defense by videoconference or skype participation.

This is followed by internships abroad. According to interviews with the heads of the structural units, these internships are mandatory for all students in addition to the international stay in the university of their international supervisor. They are made in Poland, Germany, Russia or Belarus for example, but few in English-speaking countries because of the small number of partnerships. These elements are quite interesting but reveal a real shift with the contents of the self-assessment report, which indicates in the annex 18, p. 89 that only 10 internships abroad were carried out in 4 years, mainly in Russian-speaking areas (5 in Russia, 4 in Belarus, 1 in the UK).

Be that as it may, we must now analyze the support that doctoral students receive in the framework of this international mobility. However, the support of the university seems real since, according to interviews with the heads of the structural units, all the expenses incurred by the doctoral students in internship is covered by the university (housing, transport, visa, stay cost) via national scholarship budget, which is really an excellent thing especially in a delicate financial context. In addition, these mobilities are managed not by dedicated staff within the doctoral program but by a specialized body within SKSU, the international institute, which is a guarantee of specialized skills. The system of equivalence seems well organized (calculation, adaptation). These international mobilities are perceived by those interviewed as being a real opportunity, particularly for access to laboratory equipment. No difficulty seems to exist, according to the interviewees, except for the long time of writing and publishing any resulting articles.

So PhD support on infrastructure accessibility is essential to ensure the quality of the program. The first question that guided the interviews was whether this complaint and dispute resolution system is used. However, as the analysis of the criterion mentioned in the above revealed, no difficulty of any kind seems to be met by the doctoral students of this program. No recourse to this complaint management system is therefore carried out. As a result, it is impossible to analyze the practical relevance of this device or the people involved (is there a great number of appeal from doctoral students, is there a trend upwards, downwards? who are these remedies trained for, how are they treated, how are they addressed and what are the impacts on the program?). Only a theoretical analysis can be done. This system is

based on a multiple entry: the head of department for all problems, but also a conciliation commission specifically for difficulties relating to the supervision of the thesis, the conflict can lead to a change of supervisor decided by the academic council or anonymous surveys. The governance of the university can also be solicited, in several ways (regular meetings of the rector with doctoral students, open personal blog of the rector, appeal committees during exam sessions ...).

Faced with this, several questions must be formulated:

- The conciliation commission seems a relevant idea but nothing is specified on its composition, yet fundamental point, or on its powers (beyond the change of thesis)
- Can the succession of actors and the complaint management system (4) not hinder its effectiveness? Is there complementarity or competition of the action levels?
- What is the frequency of meetings between the Rector and doctoral students? In what context do these meetings take place? (meeting specific to each doctoral program or common to the 19 programs then potentially bringing together the 134 doctoral students, system which would be inefficient?)
- No appeal is found because there is no problem or because the complaint management system did not work?

Once the procedure is completed, the self-assessment report specifies the follow-up given to the possible complaints: they are analyzed at different levels of the university (department, vice-rector, rector, etc.), after which the appropriate decisions are taken. This is relevant but presented in a general enough way that it is difficult to appreciate its relevance in a real way.

This qualification can be appreciated through several points:

- International openness through international supervisors: it is very positive to note that each doctoral student has two supervisors (one is Kazakh, the other from a foreign university). This makes it possible to give the subject treated and the work done a certain international dimension. It is therefore an excellent thing. In practice, however, the self-assessment report shows a more nuanced opening than it seems. Indeed, out of the 26 international supervisors, 16 are in Russian institutions and only 4 are in European institutions, including 2 English speakers. While the academic field of chemistry requires a strong link with the work written in English, the university has a Russian-speaking orientation.
- This international openness can also be appreciated through the mobility made abroad by academic staff. However, the available data shows that only 10 were carried out in 4 years abroad, although with a certain diversity (2 in Belgium, 1 in Germany, 1 in Spain, 1 in the UK) but very little in the English speaking area (1 only). The lack of proficiency in English by the vast majority of academic staff is probably one of the explanations, but it remains quite problematic in this academic specialty. This linguistic gap is also known to doctoral students, which is confirmed by the representative of the alumni.

- The conditions for an academic staff to supervise a thesis are simple: to hold a doctorate and to justify a 5-year academic experience. These criteria appear entirely relevant and justified.

The interviews showed that since its creation, the doctoral program audited has not hosted any doctoral student with a disability, nor a foreign doctoral student or transferred from another Kazakh university. This can be interpreted in a neutral way or reveal an issue of attractiveness of the doctoral program.

The assessment of support mechanisms for doctoral students with disabilities, transferred or foreign is therefore theoretical unless it means that the support does not exist at all that it causes the absence of this type of doctoral students:

- For doctoral students with disabilities, the existence of online courses such as the establishment of a dedicated tutor to help them on the academic but also psychological and social dimension is an excellent thing,
- For foreign doctoral students, the implementation of free language courses is a relevant idea. Nothing is specified however on the level of language required to be able to register in thesis and thus on the level of language to which these courses correspond,
- For transferred doctoral students, the proposal of organizational and academic advice by the supervisor is an idea of quality because they are delivered beyond the sole academic question and by the key person who constitutes the supervisor.

The assessment of support mechanisms for doctoral students is positive, since this support is based on online exchanges with the supervisor and a teacher.

Good practice

The student support center works perfectly both face-to-face and remotely to provide students with all necessary documents and assistance.

Areas for improvement

More efforts could be done to improve the attractiveness of the program (currently, there is no international neither transferred doctoral student).

Extension of the duration of mobility in the university of the international supervisor, the exchanges and encourage the maximum participation in the defense of this supervisor, if necessary by videoconference should be done. Instead of 2-3 times sending, finance resources could be accumulated for 1 substantial 3-6 months visit to partner university.

More efforts must be done especially by local scientific supervisors in order to increase the international mobility of academic staff and doctoral students. Target English-speaking countries as a priority. More generally, developing the English-speaking context for all stakeholders (doctoral students and academic staff) by mastering the English language and international English-speaking mobility.

Standard 5. Resources

Analysis and evidence on the basis of the criteria:

Facilities designated to Department of Chemical Inorganic Technologies and relevant to the program implementation cover 430 sq.m. and allocated 9 research laboratories which enlisted in Appendix 3. All of them were observed by the expert group. Availability and effective application of material resources for the implementation of the study programme in line with the legislation of the Republic of Kazakhstan. It also includes a computer class for teaching and performing the theoretical part of doctoral research, based on the fund of the Erasmus+ program in which teachers of the department participate in the implementation of the International Educational Project C3QA. This facility is designated for PhD students need and use.

Laboratories are equipped with updated modern analytical instruments, such spectrometers, electronic microscopes, chromatographies, ICP and atomic absorption tools, etc. The laboratories have necessary devices and equipment for performing laboratory scientific experiments. A pilot plant which was also demonstrated to the expert group in partial operation was installed with a capacity of up to 100 kg/h to produce complex-mixed mineral fertilizers of prolonged action, including a grinding complex, a screw mixer, a granulator, a rotary drum furnace and an emulsifier reactor.

Area of academic and research activities, major halls, and student non-curricula activity zones are fully covered with broadband wireless internet connection free for students.

The library which was visually observed by the expert group provides on-line access to the following databases: ScienceDirect, Thomson Reuters ISI Web of Knowledge, Scopus, Polpred, Lan, EBSCO and to Kazakhstan databases: KazPatent, “Epigraph”, “Zan”, “RMEB”. The library provides 3 different options for accessing own electronic information resources: from the “Electronic Catalog” terminals in the catalogs’ hall and library facilities; through the university’s information network for faculties and departments; remotely on the library web site <http://lib.ukgu.kz/>.

The Electronic Catalog (EC) reflects the book fund from 1998 till the present time, increasing annually by an average of 15,000 entries (including bibliographic records retro-input). EC consists of 9 databases: “Books”, “Articles”, “Periodicals”, “Works of SKSU teaching staff”, “Rare books”, “Electronic Fund”, “SKSU in print”, “Readers”, “SKO”. The total volume of EC is currently 208367 bibliographic records (March 12 access). The total budget of library shares with 40% amount to electronic resources purchasing and 60% leading to hard copy books and magazines.

For academic purposes educational portal www.portal.ukgu.kz operates in order to exchange educational and research information between PhD students and faculty. It gives the following information: detailed academic calendar, curriculum of the program, attendance list of class, teacher’s evaluation reports, all results of formal assessment, teaching and learning materials etc.

The expert found out lack of information at university web-site, especially in English pages, while we should positively notice that most information in 3 languages is provided by Department of Chemical Technology of Inorganics at its web-pages <http://xt.ukgu.kz/ru/content/himicheskaya-tehnologiya-neorganicheskikh-veshchestv> and at pages of Higher school of Chemical Engineering and biotechnology <http://xt.ukgu.kz/en>

Areas for improvement

University needs to pay attention on motivation of both PhD students and their supervisors for daily use of English language via research and database resources and way of discussions, seminar, thesis writing.

University needs to fulfill all necessary information at web-site of the university in English.

Standard 6. Efficiency of Learning Outcomes of the Study Programme and Public Information

Analysis and evidence on the basis of the criteria:

The Chemical Technology of Inorganic Substances Department conducts on the basis of the modular educational programme Chemical technology of inorganic substances training for PhD students. The curriculum of the study is developed in accordance with Kazakhstan obligatory standards of higher and postgraduate education, approved by the Minister of Education and Science of the Republic of Kazakhstan from 31 October, 2018 No. 604; and approved by order of the MES RK No. 425 from 05.07.2017, industry qualifications framework “Chemical production”, approved on 16 August, 2016, minutes №1 (Annex 1). Moreover, the doctoral modular education programme is implemented in accordance with the Salzburg principles. Thus, the curriculum contains goals, learning outcomes and competencies. The learning outcomes achieved through the evaluated educational programme are determined on the basis of general and professional competencies of PhD students.

The progress of doctoral students is monitored throughout the entire process of education in various forms, such as: oral exams, certified courses and the defence of the doctoral thesis. According to the assumptions of the training programme, the quantity and method of evaluation of the students’ doctoral thesis is included in the programme (Annex 1, No. 4. “Contents of educational program”). Bearing in mind the statements of students and the Faculty staff, it seems reasonable to consider the introduction of a part of exams in written form, which would later facilitate the writing of the doctoral thesis.

In the light of the results of the interview with the Heads of Structural Departments, the results of students’ knowledge are analysed by the Department staff and, if necessary, evaluated to improve the educational programme. The students’ surveys are also analysed by the Department of Monitoring and Quality Management, and the relation between the degree of students’ satisfaction and the quality of the educational programme allows to notice the strengths and weaknesses of the educational programme. This, in turn, allows the necessary changes to be made. The best evidence of the effectiveness of learning outcomes in accordance with the implemented programme are the results of the surveys contained in: Annex 9 “Employer satisfaction with the quality of graduates training” and Annex 7 “Student satisfaction with the quality of the organization of the educational process”, part “Quality learning outcomes” which clearly indicate the satisfaction of employers and PhD students.

In addition, the Department actively participates in the organization of practical trainings for PhD students in industrial companies. These trainings are also evaluated according to the following elements: the student's internship report and the professional characteristic given by the supervisor of the internship on behalf of the

student training company. The final evaluation of the internship is an element of the calculated GPA, which determines the completion of the academic year.

The defence of doctoral thesis mentioned above is a final test for a PhD student. It is assessed by reviewers and commission in terms of: scientific erudition, professionalism, theoretical and applied significance of the research.

According to the results of the meeting with the Head of the Department, Professor Seitmagzimova Galina Manuilovna, who implements the accredited programme to improve the outcomes of educational process, the suggestions of both the teaching staff and doctoral students are taken into account. Doctoral students can influence the development of the modular educational programme on the basis of completed questionnaires surveys. Additionally, the modular educational programme is annually updated to meet the requirements of employers. The heads of the companies of south Kazakhstan engaged in the production of phosphorus, phosphoric and nitric acids, salts and fertilizers, as specialists, can suggest changes in the contents of the modular educational programme.

A measurable indicator of the effectiveness of PhD students' learning within the educational programme Chemical technology of inorganic substances and the implementation of the individual doctoral thesis are the results presented at national and international conferences and papers published in peer-reviewed scientific journals.

The challenge for modern higher education is to modify the educational program, the implementation of which will give PhD students sufficient knowledge and skills to take up employment in accordance with the field of study. The adequacy of the assessed curriculum, Chemical technology of inorganic substances, in relation to the needs of the labour market is provided by the employment of 100% of such specialists in the region. Professional qualifications of graduates have also become a driving force for partnership agreements with enterprises in the region.

A major improvement in the evaluation of the progress of acquired knowledge and skills of PhD students in the field of Chemical technology of inorganic substances for all staff of the university and teachers is a developed ISVUZ system. The on-line integrated university management system (ISVUZ) together with the University and/or Department website (www.ukgu.kz, <http://www.xt.ukgu.kz/en/content/chemical-technology-inorganic-substances>) provides information on everything what is need for continuous assessment: educational programme, expected learning outcomes, teaching staff and of course all student grades.

For a wide range of interested, the University/Department in the “University” newspaper as well as on the website provides all the newest information related to the current activities of the University. In addition, the website is a source of information for potential students, informing them about all the necessary documents and conditions for enrolment in all faculties as well as Chemical technology of inorganic substances. The University website contains announcements on upcoming PhD thesis defence and even video recording of the procedure. From the point of view of PhD students of other universities, an interesting idea is to create an on-line,

full-text database of doctoral theses with access for doctoral students from all over the country. Unfortunately, the website does not contain information in English, which should be supplemented from the perspective of internationalisation of studies conducted by the University and especially “Chemical Engineering and Biotechnology” Higher School which provides education of PhD students in the following fields of study Chemical technology of inorganic substances.

Bearing in mind the evaluation of a standard concerning “Efficiency of learning outcomes of the study program and public information” in accordance with the provided documents, information published on the website and on the basis of statements obtained during interviews with individual staff and PhD students of the accredited research institution, it should be concluded that:

- the level of acquired knowledge and skills of PhD students is continuously monitored, mainly in form of oral examinations and the final test which is doctoral thesis defense,
- the quality of doctoral theses is the responsibility of both parties, i.e. the student and the all supervisors, who monitor and support PhD student activities and they development,
- the Monitoring and Quality Management Department collects the information and evaluates them to improve the quality of educational process,
- the university benefits from the assistance of graduates who, e.g. as members of the University Graduates’ Association, provide advice and suggestions and influence on changes in the curriculum,
- skills of some students are expanded through participation in short international internships,
- all the necessary information concerning the recruitment system, required documents, syllabus, learning outcomes and training opportunities can be found on the website www.ukgu.kz (Kazak language) as the Reference book Guide,
- the integrated management system - ISVUZ system, is used for quick and transparent evaluation of students' knowledge level and scientific work,
- the University and also PhD program of the Chemical technology of inorganic substances is promoted through publications in peer-reviewed journals, an updated website, a newspaper and the Open Days.

Areas for improvement

Curriculum and content of courses are well designed according to labor market needs while representation of course content in English was not interpreted. The university should have English translation of the study programme to make it available for international students or community.

Perhaps a change some of exams from oral to written form would help doctoral students in easy formulation of thoughts in written form useful in the case of writing a publication, and then to write their doctoral thesis.

CHAPTER 3

CONCLUSION

Standard 1. Policy in quality assurance of the study programme

The level of compliance – “substantially complies”

Good practice

PhD student-centered approach through selection of supervisor and area of research; most courses elective including at interdisciplinary majors; ease accessibility to research and librarian resources.

Areas for improvement

In order to improve academic policy the university should pay attention on operation quality assurance mechanism in the following area.

The university needs to define clear policy on level of cooperation between PhD students and external supervisor, including mechanism for satisfaction assessment by PhD students.

Standard 2. Quality of the teaching staff

The level of compliance – “substantially complies”

Good practice

It is worth noting the cooperation of teaching staff with representatives of companies interested in staff training.

Areas for improvement

In order to improve academic staff policy, the university should pay attention to the creation of favourable conditions for the creative activity and career development of staff. In this respect, particular attention should be paid to activities in some of the areas listed below.

The results of the “Teaching Staff Satisfaction” survey show that academics feel that they are one cohesive team (79.9%). Their contribution to improving the image of the university is appreciated (85.1%). They are satisfied with the social assistance offered by the university (64.7%). The worst results were achieved with the support that teachers can count on when it comes to their research work – only 43.4% of respondents are satisfied with the level of support for scientific research. It seems that the level of research funding at many universities and in many countries is not satisfactory.

The report shows that academic teachers participate in academic mobility programmes - they go to foreign universities. However, it seems that this is not enough (8 people in 4 years), especially when it comes to trips to English-speaking countries. Due to the specific nature of the field of study, employees should be encouraged to go abroad more often and participate in academic mobility programmes abroad. This would be highly valuable, not least in view of the possibility of making research results public.

Standard 3. Quality of research work

The level of compliance – “substantially complies”

Areas for improvement

Within the DSRW framework the individual work plan of a doctoral student provides for passing a research internship at a foreign university where the scientific consultant works and it lasts overseas 1 month in total. However, this time period seems to be very short, in order to gain more research experience on both theoretical and practical point of view.

Doctoral students must improve their English language skills to advanced level by the assistance of SKSU doctoral student support system.

Standard 4. Effective system of support provided to doctoral students

The level of compliance – “substantially complies”

Good practice

The student support center works perfectly both face-to-face and remotely to provide students with all necessary documents and assistance.

Areas for improvement

More efforts could be done to improve the attractiveness of the program (currently, there is no international neither transferred doctoral student).

Extension of the duration of mobility in the university of the international supervisor, the exchanges and encourage the maximum participation in the defense of this supervisor, if necessary by videoconference should be done. Instead of 2-3 times sending, finance resources could be accumulated for 1 substantial 3-6 months visit to partner university.

More efforts must be done especially by local scientific supervisors in order to increase the international mobility of academic staff and doctoral students. Target English-speaking countries as a priority. More generally, developing the English-speaking context for all stakeholders (doctoral students and academic staff) by mastering the English language and international English-speaking mobility.

Standard 5.Resources

The level of compliance – “substantially complies”

Areas for improvement

University needs to pay attention on motivation of both PhD students and their supervisors for daily use of English language via research and database resources and way of discussions, seminar, thesis writing.

University needs to fulfill all necessary information at web-site of the university in English.

Standard 6.Efficiency of learning outcomes of the study programme and public information

The level of compliance – “substantially complies”

Areas for improvement

Curriculum and content of courses are well designed according to labor market needs while representation of course content in English was not interpreted. The university should have English translation of the study programme to make it available for international students or community.

Perhaps a change some of exams from oral to written form would help doctoral students in easy formulation of thoughts in written form useful in the case of writing a publication, and then to write their doctoral thesis.

PROGRAMME
of the external review by IQAA expert group in higher education institution
(**M.Auezov South Kazakhstan State University**) in the framework of specialized
(**6D072000-Chemical technology of inorganic substances**) accreditation

Time	Activity	Participants	Location
Day 1: Day 11, 2019			
8:30-10:00	Placement of experts in the office. Introductory meeting	P, ET, C	Room 254
10:05 – 10:30	Interview with the rector of university	P, ET, C, rector	Room 340, Hall of academician S. Suleimenov
10:30-10:40	Private discussion of the expert team		Room 254
10:40-11:10	Interview with the vice- rector of university	P, ET, C, vice-rector	Room 340, Hall of academician S. Suleimenov
11:10-11:20	Private discussion of the expert team	P, ET, C	Room 254
11:20-13:00	Visual observation of school and academic unit delivering the study programme, library, support service	P, ET, C, dean, heads of academic units	See appendix 3
13:00-14:00	Lunch	P, ET, C	
14:00-14:45	Interview with doctoral students	P, ET, C, doctoral students	Room 250 & 342
14:45- 14:55	Private discussion of the expert team	P, ET, C	Room 254
14:55-15:40	Interview with employers	P, ET, C, employers	Room 250
15:40-15:50	Private discussion of the expert team	P, ET, C	Room 254
15:50-16:35	Interview with alumni of the study programme	P, ET, C, alumni	Room 250
16:35-16:45	Private discussion of the expert team	P, ET, C	Room 254
16:45-17:10	Interview with the dean of the department delivering the study programme	P, ET, C, dean	Room 250
17:10-17:40	Interview with the head of the academic unit delivering the study programme	P, ET, C, head of the academic unit	Room 250
17:40- 17:50	Private discussion of the expert team	P, ET, C	Room 254
17:50-18:30	Interview with the faculty	P, ET, C, faculty	Room 250 & 342
18:30-19:30	Discussion the results of the day	P, ET, C	Room 254
Day 2: March 12, 2019			
9:00-09:30	Private discussion of the expert team	P, ET, C	Room 254
09: 40 – 10:25	Interview with the heads of the structural units	P, ET, C, heads of the structural units	Room 250 & 342
10:30 -13:00	Visiting research labs and office-register Studying documentation Work of ET on recommendations, random invitation of the staff		See appendix 3
13:00-14:00	Lunch	P, ET, C	
14:00-15:00	Work of ET on external review report	P, ET, C	Room 254
15:00-16:00	Meeting with the leadership of university, presenting preliminary results	P, ET, C	Room 340, Hall of academician S. Suleimenov

Note:H - head of the expert group,EG - expert group,C - coordinator, RP - responsible person for accreditation from the university.

INTERVIEWEES

Responsible person for accreditation from the university, room 340, March 11, 2019, 10:05

No.	Name	Position	Academic Degree
1	Nurmanbetov Kairat Enbekshiyevich	Acting Rector	Can. Legal Sci., Associate Professor

University Management, room 340, March 11, 2019, 10:40

No.	Name	Position	Academic Degree, Rank
1.	Baibolov Kanat Seitzhanovich	Vice-Rector on Training and Methodical Work	Can. Tech. Sci., Associate Professor
2.	Raimberdiyev Talzhan Perdeshevich	Vice-Rector on Strategic Development and Internationalization	Dr. Tech.Sci., Professor
3.	Beisenbayev Sadybek Kalmakhanovich	Vice-rector on Social and Educational Work	Dr. Ped. Sci.
4.	Khodzhibergenov Dauletbek Turganbekovich	Director of Science and Production Department	

Heads of Structural Divisions (interviewed in 2 focus groups) room 250 and 342, March 12, 2019, 09:40

No.	Name	Position, Structural Division
1.	Omarshova Gaukhar Shapayevna	Director of Academic Affairs Department
2.	Pernebekov Saken Sadibekovich	Deputy Director of Academic Affairs Department
3.	Tasybayeva Sholpan Bakibuldayevna	Director of Center of Educational Programs Methodical Provision
4.	Adyrbekova Gulmira Menlibayevna	Head of Training Process Organization Center
5.	Abdizhapparova Bakhytkul Telkhozhayeva	Head of Accreditation Department
6.	Bekkuliyeva Ainur Seitkadyrovna	Head of department for planning the calculation of study load and staffing
7.	Ristavletov Raiymberdi Amanovich	Head of Scientific and Pedagogical Staff Advanced Training Department
8.	Kamaldinov Rakhymbek Absatovich	Director of Monitoring and Quality management Department
9.	Dzhunusbekova Saltanat Shabdanbekovna	Head of Quality Management and Monitoring Department
10.	Baineyeva Parida Turgunbayevna	Director of Register Office

11.	Li Natalya Alexandrovna	Head of Account of Student Movements and Administration Department
12.	KhodzhibergenovDauletbekTurganbekovich	Director of Science and Production Department
13.	NazarbekUlzhalgasBakhytovna	Director of Scientific and Research Department
14.	RybalkinaNadezhdaVladimirovna	Director of Educational and Informational Center
15.	Khassenova Laura Aibekovna	<i>Director of Center for Bologna Process and Academic Mobility</i>
16.	YesbolovaAinurYergaziyevna	Head of Academic Mobility Department
17.	YeszhanovaGulnarSeilikharovna	Head of Office on Work with Rating Agencies
18.	SarsenbayevaAigulAbdikaromovna	Director of Finance Department
19.	OtyynshiyevaZhanarShadiyarkobovna	Deputy Director of Financial Department
20.	KenzhebayevNursultanKaribayevich	Head of Administrative Department
21.	Koldassova Aida Sembekovna	Head of Electronic Training and Methodical Publications Center
22.	InkarbekovSayatAltynbekovich	Head of Compute Technologies and Telecommunications Center
23.	Orynbekkyzy Aida	Acting Head of International Cooperation Center
24.	YbyraiymAzimkhanOrazbayevich	Director of the Institute of Postgraduate Education
25.	KonarbayevaZulfiyaKemelkhanovna	Deputy Director of the Institute of Postgraduate Education
26.	KozybayevYenlikkhanSharipkhanovich	Director of Distant Training Institute
27.	ZhakashAdilbiZubaiirovich	Deputy Director of Distant Training Institute

Dean, room 250, March 11, 2019, 16:45

№	Name	Position	Academic degree,title
1.	BolysbekAidarbekAlibekuly	Dean of the HS of chemical engineering and biotechnology	Cand.Sc.(Engineering),Associate Professor

Head of chair, room 250, March 11, 2019, 17:10

№	Name	Position /chair	Academic degree,title
1.	SeitmagzimovaGalina Manuilivna	Head of the chair «Chemical technology of inorganic substances»	Can. Tech. Sci., Associate Professor

Faculty (interviewed in 2 focus groups) room 250 and 342, March 11, 2019, 17:50

№	Full name	Position, department	Academic degree and title
1.	Tleuov Alibek Spabekovich	professor	doctor of technical sciences, professor,
2.	Zhantasov Kurmanbek Tazhmakhanbetovich	professor	doctor of technical sciences, professor,
3.	Sataev Malik Syvambaevich	professor	doctor of technical sciences, professor,
4.	Besterekov Uilesbek Besterekovich	professor	doctor of technical sciences, professor,
5.	Dzhanmuldaeva Zhanyl Kemaladinovna	professor	cand.tech.scien., associate professor
6.	Tleuova Saltanat Talipovna	associate professor	cand.tech.scien., associate professor
7.	Koshkarbayeva Shaizada Tortaevna	associate professor	cand.tech.scien., associate professor
8.	Kadirbaeva Almagul Akkopykyzy	associate professor	cand.tech.scien.
9.	Taubayeva Aliya Sabirzhanovna	senior lecturer	PhD

PhD students (interviewed in 2 focus groups) room 250 and 342, 14:00

№	Full name	Course (GPA)
1.	Userbayeva Banu	3 / 3,40
2.	Zhanikulov Nurgali	2 / 3,67
3.	Pazylova Dana	2 / 3,87
4.	Smailov Bakhyt	2 / 3,13
5.	Asylkhankyzy Aigerim	1 / 3,74
6.	Kambatyrov Maksat	1 / 3,40
7.	Ormanova Gauhar	1 / 3,40
8.	Kozhakhmetova Aidana	1 / 3,80
9.	Asilbekova Gulnur	1 / 3,67
10.	Ziyat Aitzhan	1 / 3,67
11.	Dikhanbaeva Aizhan	1 / 3,67

Graduates (Alumni), room 250, March 11, 2019, 15:50

№	Full name	Specialty, graduation year	Place of work, position Contact details (mobile phone, e-mail)
1	Altybaev Zhaksylyk	6D072000 – Chemical technology of inorganic substances, 2014	International university “Silk way”, Senior lecturer of the department "Chemistry"

Representatives of employers, room 250, March 11, 2019, 14:55

№	Full name	Position, place of work	Contact details (mobile phone)
1	Yefimova Irina Yevgenievna	Rector of “Silk way” International University	

FACILITIES

Lists of all facilities the expert group visited and observed

1. Regional test laboratory with engineering profile «Constructional & Biochemical Materials»
2. Pilot equipment for physico-chemical type of water purification in the framework of International education project “Water Harmony” at Research institute of Ecology & Biotechnology
3. Research Laboratory «Monitoring of water quality, water resources of Kazakhstan», in the framework of international NATO project HATO to evaluate impurities in water of Syr Darya
4. Research laboratory named after S. Suleimenov for physico-chemical analysis «SAPA»
5. Training and research laboratory equipped with pilot industrial process «Syntheses of polycomponent mineral fertilizers »
6. Pilot process for production of composingly blended fertilizer «JAMB»
7. Accredited laboratory«Technology of Inorganic Acids & Salts»equipped by «Kazphosphat Ltd»
8. Accredited laboratory«Syntheses of polycomponent mineral fertilizers»