ҚОРАҚАЛПОҒИСТОНДА ФАН ВА ТАЪЛИМ

ҚАРАҚАЛПАҚСТАНДА ИЛИМ ҲӘМ ТӘЛИМ

НАУКА И ОБРАЗОВАНИЕ В КАРАКАЛПАКСТАНЕ

SCIENCE AND EDUCATION IN KARAKALPAKSTAN

1/1-сон
Нукус
2022 й.
ISSN 2181-9203

Science and Education in Karakalpakstan *ISSN 2181-9203* ***№1/1 (22) 2022***

Editorial office address:
1 Ch. Abdirov Str., Nukus 230100,
Karakalpakstan, Uzbekistan
Phone: 223-60-19

O‘zbekiston Respublikasi Вазирлар Махкамаси хузуридаги OAK Tartib-qoida komissiyasi qarori 24.05.2017 y., №5/2.
Постановление комиссия по регулированию ВАК Республики Узбекистан при Кабинете Министров от 24.05.2017 г. №5/2.
Resolution of the Regulation Commission of the Supreme Attestation Commission of the Republic of Uzbekistan from 24.05.2017 y. №5/2.

O‘zbekiston Respublikasi Вазирлар Махкамаси хузуридаги OAK Tartib-qoida komissiyasi qarori 24.05.2017 y., №5/2.
Постановление комиссия по регулированию ВАК Республики Узбекистан при Кабинете Министров от 24.05.2017 г. №5/2.
Resolution of the Regulation Commission of the Supreme Attestation Commission of the Republic of Uzbekistan from 24.05.2017 y. №5/2.

NATURAL SCIENCES

LOCAL AND 2-LOCAL DERIVATIONS OF COMPLEX SPIN-FACTORS

Seypullaev J.X.[1,2], Menlibaev N.[1], Jolimbetova A.[1]
[1]*Karakalpak State University*
[2]*V.I.Romanovskiy Institute of Mathematics Uzbekistan Academy of Sciences*

Summary: *In this paper, it is proved that each local and 2-local derivation on the spin factor is a derivation.*

Keywords: *spin factor, derivation, local derivation, 2-local derivation.*

In 1990, R.Kadison [7], D.Larson and A.Sourour [9] independently introduce the concept of local derivation. In [7], R.Kadison proved that every continuous local derivation from a von Neumann algebra into its dual Banach module is a derivation. In [9], D.Larson and A. Sourour proved that every local derivation from B(X) into itself is a derivation. For more information about local derivations, we refer to [3, 4, 10, 11].

The concept of 2-local derivation was firstly introduced by P.Semrl [11] in 1997. P. Semrl [11] proves that every 2-local derivation from B(H) into itself is a derivation for a separable Hilbert space H. Many other authors study 2-local derivations and there are several important results, we refer to [1, 2, 3, 5, 8, 12, 13].

Let H be complex Hilbert space with a conjugation $a \to \overline{a}$ and the triple product

$$\{a,b,c\} = (a,b)c + (c,b)a - (a,\overline{c})\overline{b},$$

where $a,b,c \in H$. Note that this triple product is linear in the first and third variables (a and c) and conjugate linear in the second variable b. Since, by the definition of the inner product, we have $(a,\overline{c}) = (c,\overline{a})$, the triple product is symmetric in the outer variables, i.e.,

$$\{a,b,c\} = \{c,b,a\}.$$

The space H with the above triple product is called the complex spin factor and will be denoted by S.

A triple derivation or simply a derivation δ on a real or complex spin triple factor S is a linear operator satisfying

$$\delta\{a,b,c\} = \{\delta a,b,c\} + \{a,\delta b,c\} + \{a,b,\delta c\}$$

for all $a,b,c \in S$.

A linear operator $\Delta : S \to S$ is called a local derivation if for any $a \in S$ there exists a derivation δ_a such that $\Delta(a) = \delta_a(a)$.

Theorem 1. Let S be a spin factor. Then every local derivation $\Delta : S \to S$ is a derivation.

Proof. Let $\Delta : S \to S$ be a local derivation. Since every derivation in the spin factor is skew-symmetric (see [6, Proposition 25.2.7]), by the definition of a local derivation, for each $a, b \in S$ we have

$$(\Delta(a), b) = (\delta_a(a), b) = -(\delta_a^*(a), b) = -(\Delta^*(a), b).$$

Thus

$$(\Delta^*(a), b) = (-\Delta(a), b)$$

for all $a, b \in S$, that is $\Delta^* = -\Delta$. Therefore, every local derivation Δ is a derivation. The proof is complete.

A map $\Delta : S \to S$ (not necessarily linear) is called 2-local derivation if for any two elements $a, b \in S$ there exists a derivation $D_{a,b}$ (depending on a and b) such that $\Delta(a) = D_{a,b}(a)$ and $\Delta(b) = D_{a,b}(b)$.

Theorem 2. Let S be a spin factor. Then every 2-local derivation is a derivation $\Delta : S \to S$

Proof. Let $\Delta : S \to S$ be a 2-local derivation. Let's first show homogeneity of Δ. By the definition of a 2-local derivation, for each $a \in S$ and every $\lambda \in$ there exists a derivation $\delta_{a,\lambda a}$ such that

$$\Delta(a) = \delta_{a,\lambda a}(a) \text{ and } \Delta(\lambda a) = \delta_{a,\lambda a}(\lambda a).$$

Then

$$\Delta(\lambda a) = \delta_{a,\lambda a}(\lambda a) = \lambda \delta_{a,\lambda a}(a) = \lambda \Delta(a).$$

Therefore, Δ is homogeneous.

We shall show that Δ is additive. Since every derivation in the spin factor is skewsymmetric (see [6, Proposition 25.2.7]), by the definition of a 2-local derivation, for each $x, y \in S$ we have

$$\left(\Delta(x),y\right)=\left(\delta_{x,y}(x),y\right)=\left(x,\delta_{x,y}^{*}(y)\right)=-\left(x,\delta_{x,y}(y)\right)=-\left(x,\Delta(y)\right).$$

Thus $\left(\Delta(x),y\right)=-\left(x,\Delta(y)\right)$ for all $x,y\in S$. For arbitrary $a,b,c\in S$, set $x=a+b$, $y=c$. Then from above we get

$$\left(\Delta(a+b),c\right)=-\left(a+b,\Delta(c)\right)=-\left(a,\Delta(c)\right)-\left(b,\Delta(c)\right)=$$

$$=\left(\Delta(a),c\right)+\left(\Delta(b),c\right)=\left(\Delta(a)+\Delta(b),c\right),$$

and so

$$\left(\Delta(a+b)-\Delta(a)-\Delta(b),c\right)=0$$

for all $a,b,c\in S$. Therefore,

$$\Delta(a+b)-\Delta(a)-\Delta(b)=0,$$

i.e. Δ is additive. Hence, Δ is a linear operator. Then Δ is a local derivation and, by theorem 1 is a derivation. The proof is complete.

References

1. Ayupov Sh, Kudaybergenov K., 2-local derivations and automorphisms on B(H). J. Math. Anal. Appl., 395. 2012. P. 15-18.
2. Ayupov Sh., Kudaybergenov K., 2-local derivations on von Neumann algebras, Positivity, 19. 2014. P. 445-455.
3. Ayupov Sh., Kudaybergenov K., Peralta A.M., A survey on local and 2-local derivations on C*- and von Neuman algebras, Topics in functional analysis and algebra, 73-126, Contemp Math., 2016. P. 672.
4. Fernández-Polo F.J., Molino Salas A., Peralta A.M., Local triple derivations on real C*-algebras and JB*-triples, to appear in Bull. Malaysian Math. Sci. Soc., 2016.P. 941-955.
5. Hamhalter J., Kudaybergenov K. K., Peralta A. M., Russo B., Boundedness of completely additive measures with application to 2-local triple derivations, Journal of Mathematical Physics, 57. 2016. 021709
6. Isidro J.M., Jordan Triple Systems in Complex and Functional Analysis, Mathematical Surveys and Monographs, vol. 2019. P.243.
7. Kadison R., Local derivations, J. Algebra, vol 130, 1990. P. 494-509.
8. Kudaybergenov K., Oikhberg T., Peralta A.M., Russo B., 2-local triple derivations on von Neumann algebras, preprint 2014, arXiv:1407.3878
9. Larson D., Sourour A., Local derivations and local automorphisms, Proc. Sympos. Pure Math., 51. 1990. 187-194.

10. Burgos M., Francisco J., Fernández-Polo., Peralta A.M., Local triple derivations on C*-algebras and JB*-triples, Bulletin of the London Mathematical Society, Volume 46, Issue 4, August 2014, P. 709–724, 2014, P. 709–724,
11. Semrl P., Local automorphisms and derivations on B(H), Proc. Amer. Math. Soc., 125. 1997. 2677-2680.
12. Seypullaev J.X., Pirekeev J.X., Abdireymov A.R., 2-local derivations of reversible JW- algebras, Science and Education in Karakalpakstan, 3. 2020. 73-79.
13. Прекеев Ж.Х., Абдиреймов А.Р., 2-локальные дифференцирования спин-фактора, Вестник КГУ. – Нукус, 2020. – №1. – С. 6-8.

Rezyume: *Maqolada spin-faktorlarda lokal va 2-lokal differentsiallashlar differentsiallash bo'lishi ko'rsatildi.*

Резюме. *В настоящей статье доказано, что каждое локальное и 2-локальное дифференцирование на спин-факторе является дифференцированием.*

Kalit so'zlar: *spin-faktor, differentsiallash, lokal differentsiallash, 2-lokal differentsiallash.*

Ключевые слова: *спин-фактор, дифференцирование, локальное дифференцирование, 2-локальное дифференцирование.*

EFFECT OF THICKNESS AND ETCHING ON OPTICAL PROPERTIES OF ZNSE /(001) GAAS EPITAXIAL FILMS

Sharibaev M.B., Bayramov O.D.
Karakalpak state university named after Berdakh

Summary. *The photoluminescence method was used to determine the emission spectra of deep levels in ZnSe / (001) GaAs epitaxial layers with different ZnSe thicknesses, grown by MBE on single-crystal GaAs (001) substrates. Epitaxial films ZnSe / (001) GaAs on concentrations of other elements and defects consists of two regions. The energy shift of the bands indicates a decrease in the compressive stress in epitaxial films and tensile stresses in the substrate. One of the ways to influence the characteristics of the A2B6 / GaAs structures interface is to use thin intermediate layers, which can delay the interdiffusion of the film and substrate components.*

Keywords. *photoluminescence, reflectance, epitaxial layers, relaxation.*

The optical and structural properties of undoped ZnSe epilayers grown by molecular beam epitaxy with thickness ranging from 0.5 to 2 μm on (001) GaAs subsrates were investigated by depth resolved optical and X-ray methods. It was shown that the epilayers with thickness above some value (>1 μm) contain three regions with different structural and optical quality. Two of them (near top surface and near interface ones) contain the higher defect density. The nature of luminescense line 446.1nm (4.2K) is discussed. Evidence is presented to show that it is not related to formation of free exciton. The radiation enhanced defect reactions mainly in top surface layer was observed.

In recent years, ZnSe-based II-VI heterostructures have been intensive investigated as a promising candidates for light-emitting devices in the blue-green spectral range. However, their application is still limited by degradation processes [1]. It is known that degradation rate depends on dislocation density in buffer layer. So the buffer layer of $h<h_C$ thickness (h_C - critical thickness for strain relaxation by misfit dislocations which is 0.15-0.2 μm for ZnSe/GaAs) is used as a rule. However the decrease of layer thickness results in the drop of thermal stability of heterostructures [2]. So the investigations of buffer layer characteristics in dependence of it's thickness in the region $h>h_C$ are to be interesting. In present paper dependence of the structural and luminescence characteristics of ZnSe buffer layers both on their thickness and as a function of depth has been investigated. As it will be shown the top region of thick (1.3÷2 μm) epilayers contains the higher concentration of the extended defects and plays a noticeable role in radiation enhanced defect reaction.

Five series of undoped ZnSe layers with different thickness (0.5-2 μm) were grown by molecular beam epitaxy (MBE) on semiinsulating Cr-doped oriented 3° off (001) towards [110] GaAs substrates in a CATYN' machine equipped with conventional effusion cells for Zn and Se. The details for layers growth described in [3]. Table 1 shows the parameters of growth process and samples.

We used X-ray diffraction methods and X-ray topography combined with exciton and impurity luminescence spectroscopy to control the epilayer properties. Photoluminescence (PL) of ZnSe was excited by the mercury 200 W lamp (λ_{exc}=365 nm). PL spectra were recorded in the range from 442 nm to 1400 nm in temperature interval 4.2-77 K using the grating spectrometer MDR-23.

Depth uniformity of ZnSe ELs was investigated with step etching [3]. For degradation process investigation the samples were subjected to the illumination by UV light of 500W mercury lamp.

An additional information about the epilayer quality was obtained from PL data. The PL spectra of the investigated ZnSe ELs at 4.2 K are shown on Figure 2. The spectra of thick samples (curve b,c) in the near band edge region consist of the narrow bands at λ_{m1}=442 nm, λ_{m2}=443.5 nm, λ_{m3}=446.8 nm and λ_{m4}=476.5 nm. The position of first two peaks corresponds to free-exciton transition I_{FX} , and neutral donor-bound transition, I_2 (D^0, X). The I_2 (D^0, X) peak at 2.796 eV is attributed usually to Ga_{Zn} .

The free-exciton peak I_{FX} for thicker samples is commonly a doublet like. These can be ascribed in light-hole (lh) and heavy-hole (hh) branches of the valence band split under the strain caused by lattice mismatch and differences in thermal expansion coefficients between ZnSe and GaAs cooling below the T_G.

The band at 446.8 nm labeled as I_V^0, was attributed to extended defects, as well as the band Y_0 at 476.5 nm. On the high energy side of I_V^0 peak the shoulder or the peak at 446 nm (I_X) is often observed in our samples also (see Fig.4). This peak position is close to position of two-electron satellite (2EL) of (D^0, X) transitions [4] and neutral acceptor bound exciton (connected with As or its complexes). Its possible nature will be considered further. In the spectral region between I_V^0 and Y_0 the weak luminescence of different DA-pairs, namely DAP-1(456.5 nm), Q-DAPs (460-461 nm) and DAP-2 (462 nm), is observed [5].

The low value of ratio $\xi \approx 1$ ($\xi = I(D^0,X)/I(FX)$ of donor bound exciton peak intensity to that of free-exciton) in our thick epilayers confirms their high optical quality. It should be noted that intensity of I_V^0 and Y_0 relatively to I_{FX} and and ratio I_2/I_{FX} increases with epilayer thickness increase (Fig. 2, curve b,c).

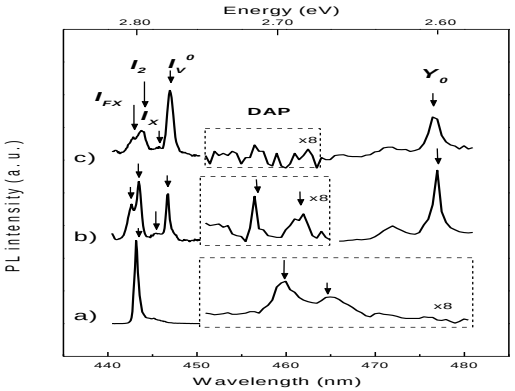


Fig.1. 4.2 K PL spectra of thick ZnSe film: a) unetched, b) etched down to 1.8 μm, c) etched down to 1.3 μm. The inset shows the peak heights of I_2^{Ga} and I_V^0 normalized by height of I_{FX} as a function of depth in the ZnSe epilayer.

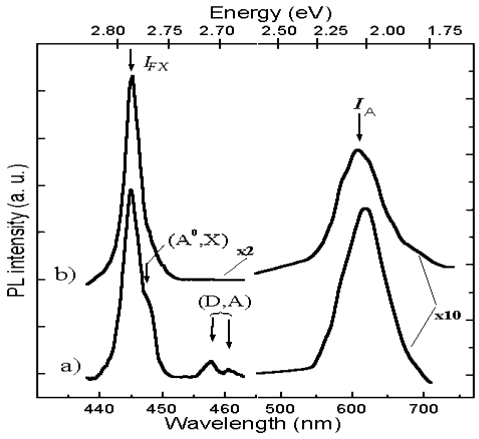


Fig.2. 77 K PL spectra of 36 sample before (a) and after (b) UV irradiation,

λ_{EXC}=365 nm.

For elucidation of the top imperfect layer contribution in degradation processes we investigated the influence of UV-radiation on it's PL characteristics. Fig. 2 shows the 77K photoluminescence spectra from ZnSe epilayers before (curve a) and after UV-irradiation (curve b). The near band edge emission from ZnSe EL shows the combination of band I_{FX} at 444 nm and shoulder at 447 nm. These PL bands were identified as free exciton transition (*FX*) and a neutral acceptor bound exciton (A^0,*X*) one (due to V_{Zn} as an acceptor) correspondingly. In addition a weak structural donor-to-acceptor (*D,A*) band connected with Ga (450-480 nm) and the one connected with V_{Zn}-Ga_{Zn} (620 nm) are observed. After UV irradiation within 3 hours at room temperature (*D,A*) band disappears completely. The intensity of the (A^0,*X*) band as well as the I_A band decreases as the time of treatment increases. By use of the step etching we show that UV light enhanced point defect reactions that include Ga_{Zn} and V_{Zn} occur in the near top epilayer region mainly.

In conclusion, for the case of $h>h_C$ the increase of epilayer thickness up to 1.3 μm results in the increase of its structural quality and decrease on impurity concentration but further h increase leads to epilayer deterioration. Besides, the thick samples are depth inhomogeneous and consist of three region with different extended defect and impurity concentration: (i) near the interface region with high density of misfit dislocations and impurity concentration; (ii) the region with low extended defect and impurity concentration and (iii) near the top surface region with higher extended defect concentration. Experiment on step etching and temperature dependence of PL spectra allow us to conclude that I_X line (λ=446 nm) is connected with extended defects (dislocations).

References

1. Ishibashi, J. Crystal Growth **159,** 555 (1996).
2. G. Bacher, D. Tonnies, D. Eisert, A. Forchel, M.O. Mooller, M. Korn, B. Jobst, D. Hommel, G. Landwehr, J. Sollner, and M. Heuken, J. appl. Phys. **79,** 4368 (1996).
3. J. Y. Leem, J. S. Son, C. R. Lee, C. S. Kim, Y. K. Cho, Hwack J. Lee, S. K. Noh, and I. H. Bae, Appl. Phys. Letters **71,** 3257 (1997).
4. Sharibaev M. Determination by photoluminescence of extended defects in epitaxial ZnTe / GaAs films. Magazine. Semiconductor physics and microelectronics. №.4., pp.45-48, 2019.
5. Шарибаев М. Исследование распределения точечных и микродефектов в эпитаксиальных слоях ZnSe/GaAs. Гелиотехника., №1., 2020., стр. 234-235

Rezyume: *Molekula nurli epitaktsiya uslubi bilan monokristall (001) GaAs podlojkasida o'sirilgan xar xili ZnSe qaliŋlikka ega bo'lgan epitaksial plenkalarning ZnSe/(001) GaAs chukur*

satxilardagi nurlanish spektrlari fotolyuminestsentsiya uslubi bilan aniqlanildi. Epitaksial plenkalar ZnSe/(001) GaAs boshqa elementlarning kontsentratsiyasi va defektlarga bog'liq ikkita regionnan tashkil topadi. Epitaksial plenkalardagi energetikaviy siljishlar qisilish kyshlanishining va podlojkadagi sozilish kyshlanishining kamayganligi hisobidan foyda bo'ladi.

Резюме: *Методом фотолюминесценций определены излучательные спектры глубоких уровней в эпитаксиальных слоях ZnSe/(001) GaAs с различными толщинами ZnSe, выращенных методом МПЭ на монокристаллические подложки (001) GaAs. Эпитаксиальные пленки ZnSe/(001) GaAs по концентрациям других элементов и дефектов состоят из двух регионов. Энергетическое смещение полос свидетельствует об уменьшении напряжения сжатия в эпитаксиальных пленках и напряжений растяжения в подложке. Одним из способов влияния на характеристики границы раздела A^2B^6/GaAs структур является использование тонких промежуточных слоев, которые могут задержать процессы интердиффузии компонентов плёнки и подложки.*

Kalit so'zlar. *Fotolyuminestsentsiya, fotoqaytish, epitaksial plenkalar, relaksatsiya.*

Ключевые слова. *Фотолюминесценция, фотоотражения, эпитаксиальная пленка, релаксация.*

SELECTION OF INFORMATIVE SIGNS ON THE BASIS OF THE REFLECTION CRITERION OF QUANTITATIVE SIGNS TO NOMINAL SIGNS IN CLASSIFICATION PROBLEMS

Eshmuratov Sh.A, Jalelova M.M
Karakalpak state University named after Berdakh

Summary. *In this article, one of the main problems in the intellectual analysis of data is the algorithm for selecting informative signs from each individual sign and latent (combined) signs, taken separately on the basis of the criterion of reflection of quantitative signs to nominal signs in classification problems.*

Keywords. *Classification problems, quantitative sign, reflection criterion, latent sign, set of informative signs.*

Introduction.

Today, the rapid development of information and communication technologies has led to the proliferation of information systems and a sharp increase in the volume of information. As a result, problems such as automatic analysis of information, identification of knowledge from a large volume of information, correlation of indicators, forecasting and drawing conclusions are becoming more and more important. The object of intellectual analysis of data is aimed at solving such problems and includes the problem of classification [3].

As a rule, the process of selection of informative sets of polytypic signs at classification with "teacher" is connected with the solution of such problems as [2]:

a) transformation of signs to uniform type of scales of measurements with minimal loss of initial information, or a task of system of vicinities of objects on a set of quantitative signs;

b) the choice of a measure of proximity between objects and a selection criterion.

This article discusses the calculation of each individual sign and latent (combined) signs using the criteria for the reflection of quantitative signs into nominal signs, the selection of sub-sets of informative signs. It is recommended to convert the values of the signs in the description of objects to a single (nominal) scale and to select only unrelated signs as candidates for the set of informative signs.

1. Selection of informative signs on the basis of the criterion of reflection of quantitative signs to nominal signs

In the standard problem of Pattern recognition $E_0 = \{S_1,...,S_m\}$ the selection (set of objects) to be studied is considered to be given in tabular form with n symbols. The E_0 set of objects, l consists of the non-intersecting $K_1,...,K_l$ set subclasses (classes). Each allowed object consists of n quantitative signs.

The algorithm for calculating the criterion for the representation of quantitative signs to nominal signs is given in [1] and is as follows: Let's designate through *I* respectively a set of quantitative signs from a set $X = (x_1, x_2,..., x_n)$. Let's consider that $\{\eta_i\}_1^m$ - a set of values of a

quantitative sign $x_q \in I$ objects from E_0, an $A=(a_0,...,a_l)$ -an integer vector which values of elements meet conditions: $a_0=0$, $a_l=m$, $a_r<a_{r+1}$, $r=\overline{1,l-1}$.

Let

$$\eta_{i_1},\eta_{i_2},...,\eta_{i_m} \tag{1}$$

the ordered sequence $\{\eta_i\}_1^m$ and $\left\{u_1^1,...,u_1^l,...u_l^1,...,u_l^l\right\}$ a set of integers in which u_t^p is amount of q-go values of a sign of objects of a class K_p in (1) with serial numbers from $a_{t-1}+1$ to a_t .

All values of the $x_q \in I$ quantitative signs in (1) with numbers from $a_{t-1}+1$ to a_t, $t=\overline{1,l}$ are equivalent to the nominal scale [1] according to the following criteria:

$$\left(\frac{\sum_{p=1}^{l}\sum_{i=1}^{l}\left(u_i^p-1\right)u_i^p}{\sum_{i=1}^{l}\theta_{ic}\left(\theta_{ic}-1\right)}\right)\left(\frac{\sum_{p=1}^{l}\sum_{i=1}^{l}u_i^p\left(\tilde{m}_c-\theta_{ic}-\sum_{j=1}^{l}u_j^p+u_i^p\right)}{\sum_{i=1}^{l}\theta_{ic}\left(\tilde{m}_c-\theta_{ic}\right)}\right)\to\max_{\{A\}}. \tag{2}$$

where $\tilde{m}_c$, θ_{ic}- number of (not omitted) values for the c- sign for all classes and for the K_i class, respectively [1].

This criterion is used to calculate latent signs, that is, the signs that are directly and inversely connected.

2. Computing experiment

The computational experiment used medical data on tachycardia with 108 objects divided into two classes [1]. The first class did not have tachycardia (60 objects), the second class died of tachycardia (48 objects). It consists of 7 quantitative signs that define the descriptions of objects.

Since signs are quantitative signs, we divide the values of these signs into non-intersecting intervals based on criteria (2). Here, $m=108$, $l=2$ is the number of classes and $|K_1|=60$, $|K_2|=48$ is the number of elements in the class. Interval allocation options are listed in Table 1.

Table 1.

№	Signs	Interval	Criterion value
1	Diastolic arterial pressure	(1-78), (79-108)	0,508
2	The number of cigarettes smoked in 1 day	(1-81),(82-108)	0,452
3	Systolic arterial pressure	(1-77),(78-108)	0,429
4	Body mass index	(1-66),(67-108)	0,303
5	Weight	(1-80),(81-108)	0,278
6	Age	(1-63),(64-108)	0,2853
7	Release of cholesterol	(1-77),(78-108)	0,2673

Informative signs are identified by showing the maximum values of the criterion (2) in descending order for each individual sign in this table. Here it is clear that the sign “Diastolic arterial pressure” has a high value in decision-making on the classification problem.

Below we will consider the calculation of two combined $x_i x_j$ (directly connected) and $x_i x_j^{-1}$ (inversely connected) latent signs by criteria.

Direct combined $x_i x_j$ latent signs are selected from top to bottom “Top 10” in descending order from the results of the calculation of the criterion values and are given in Table 2:

Table 2.

№	Integrated signs	Interval	Criterion value
1	Diastolic arterial pressure (direct)+ The number of cigarettes smoked in 1 day (direct)	(1-65),(66-108)	0.8294
2	Systolic arterial pressure (direct)+ The number of cigarettes smoked in 1 day (direct)	(1-65),(66-108)	0.7699
3	Body mass index (direct)+ The number of cigarettes smoked in 1 day (direct)	(1-74),(75-108)	0.5920
4	Release of cholesterol (direct)+ The number of cigarettes smoked in 1 day (direct)	(1-76),(77-108)	0.5489
5	Age (direct)+ The number of cigarettes smoked in 1 day (direct)	(1-63),(64-108)	0.5002
6	Age (direct) + Diastolic arterial pressure (direct)	(1-66),(67-108)	0.4831
7	Weight (direct)+ The number of cigarettes smoked in 1 day(direct)	(1-72),(73-108)	0.4807
8	Systolic arterial pressure (direct)+ Release of cholesterol (direct)	(1-71),(72-108)	0.4654
9	Systolic arterial pressure (direct) + Diastolic arterial pressure (direct)	(1-81),(82-108)	0.4524
10	Diastolic arterial pressure (direct) + Body mass index (direct)	(1-70),(71-108)	0.4506

From the data in this table, it was found that the direct connect between “Diastolic arterial pressure” and “The number of cigarettes smoked in 1 day” is very informative.

The results of the calculation of the criterion values of the inversely connected $x_i x_j^{-1}$ latent signs are given “Top 10” from top to bottom in Table 3:

Table 3.

№	Integrated signs	Interval	Criterion value
1	Diastolic arterial pressure (direct)+ Weight (teskari)	(1-69),(70-108)	0.5349
2	Diastolic arterial pressure (direct) + Body mass index (teskari)	(1-73),(74-108)	0.5327
3	Diastolic arterial pressure (direct) + Release of cholesterol (teskari)	(1-72),(73-108)	0.4808

4	Diastolic arterial pressure (direct) + The number of cigarettes smoked in 1 day (teskari)	(1-80),(81-108)	0.4706
5	Systolic arterial pressure (direct)+ Body mass index (teskari)	(1-80),(81-108)	0.4394
6	Systolic arterial pressure (direct) + Weight (teskari)	(1-79),(80-108)	0.4267
7	Systolic arterial pressure (direct) + Diastolic arterial pressure (teskari)	(1-72),(73-108)	0.4211
8	Systolic arterial pressure (direct)+ Release of cholesterol (teskari)	(1-75),(76-108)	0.4054
9	Systolic arterial pressure (direct) + The number of cigarettes smoked in 1 day (teskari)	(1-83),(84-108)	0.3904
10	Age (direct) + Body mass index (teskari)	(1-74),(75-108)	0.2997

In Table 3, the inversely connect between the “Diastolic arterial pressure” and “Weight” signs is found to be of great value.

In the analysis of the results of Tables 2 and 3 above, the values of the direct and inversely connected (combined) signs are listed in descending order as a result of the signs “Diastolic arterial pressure” and “The number of cigarettes smoked in 1 day” latent signs have been found to be informative signs in problems of classification.

The explanation of the decision-making process also shows the importance of latent signs in the selection of informative signs from each individual sign and latent (combined) signs, obtained separately on the basis of the criterion of reflection of quantitative signs to nominal signs using this database.

References

1. Ешмуратов Ш.А. Прозрачность принятия решения при синтезе искусственных нейронных сетей с минимальной конфигурацией: Дис…. канд. тех. наук. - Ташкент: УзМУ, 2008. - 120 с.
2. Игнатьев Н.А., Мадрахимов Ш.Ф. О некоторых способах повышения прозрачности нейронных сетей // Вычислительные технологии. - Новосибирск, 2003.- Т. 8, № 6. - С. 31 - 37.
3. Садуллаев Н.Д. Кластеризация масалалари ечишда оптимал алгоритмни танлаш //: — Казань, Молодой учёный, 2016. — № 9.5 (113.5). - С. 32-35.

Rezyume. *Bu maqolada ma’lumotlarni intelektual taxlilida asosiy masalalardan biri bo‘lgan klassifikatsiya masalalarida miqdoriy belgilarni sifat belgilariga akslantirish mezoni asosida alohida olingan har bir belgi va latent (kombinirlangan) belgilardan informativ belgilarni tanlash algoritmi amalga oshiriladi.*

Резюме. *В данной работе одним из основных задач интеллектуального анализа данных является алгоритм выделения информационных признаков из каждого признака и латентных (комбинированных) признаков, взятых по отдельности, на основе критерия отражения количественных признаков в качественные признаки в задачах классификации.*

Kalit so’zlar. *Klassifikatsiya masalasi, miqdoriy belgi, akslantirish mezoni, latent belgi, informativ belgilar to‘plami.*

Ключевые слова. *Задача классификации, количественный признак, критерий отражения, латентный признак, отбор информативных признаков.*

LOCAL INNER DERIVATIONS ON FOUR-DIMENSIONAL LIE ALGEBRAS

Alauadinov A.K.[1], Jumaeva Ch.I.[2]
[1]*Karakalpak state university,*
[2]*V.I.Romanovskiy Institute of Mathematics Uzbekistan Academy of Sciences*

Summary: *In this paper we investigate local inner derivations of four-dimensional Lie algebras.*

Keywords: *Lie algebra, derivation, inner derivation, local derivation, local inner derivation.*

1. Introductions. Currently, various types of derivations over algebras are being studied, for example, derivations, local derivations, 2-local derivations, almost inner derivations, etc. Local derivations were first considered in the work of R.Kaidison in 1990 [11] and, independently in the work of D.Larson and A.Surur [12]. In these papers, some conditions are indicated under which local derivations is derivations. R.Kaidison's paper considered local derivations on von Neumann algebras and in some polynomial algebras. L.Molnár [13] introduced the definition of local inner derivations on standard operator algebras.

The first results concern to local and 2-local derivations and automorphisms on finite-dimensional Lie algebras over algebraically closed field of zero characteristic were obtained in [2, 3, 5] and [8]. Namely, in [5] it is proved that every 2-local derivation on a semi-simple Lie algebra L is a derivation and that each finite-dimensional nilpotent Lie algebra with dimension larger than two admits 2-local derivation which is not a derivation. In [2] the authors have proved that every local derivation on a semi-simple Lie algebras is a derivation and gave examples of nilpotent finite-dimensional Lie algebras with local derivations which are not derivations. Concerning 2-local automorphism, Z.Chen and D.Wang in [8] prove that if L is a simple Lie algebra of type A_l, D_l or E_k, (k = 6,7,8) over an algebraically closed field of characteristic zero, then every 2-local automorphism of L is an automorphism. Finally, in [3] Sh.A.Ayupov and K.Kudaybergenov generalized this result of [8] and proved that every 2-local automorphism of a finite-dimensional semi-simple Lie algebra over an algebraically closed field of characteristic zero is an automorphism. Moreover, they show also that every nilpotent Lie algebra with finite-dimension larger than two admits 2-local automorphisms which is not an automorphism. Local automorphisms of certain finite-dimensional simple Lie and Leibniz algebras are investigated in [4]. Almost inner derivations of Lie algebras were introduced by C.S. Gordon and E.N. Wilson [9] in the study of isospectral deformations of compact manifolds. Almost inner derivations of nilpotent, some solvable Lie algebras and some nilpotent Leibniz algebras were studied in the papers by [6] and [1].

2. Preliminaries. To begin with , recall the definition of Lie algebras.

Definition 2.1. An algebra L over field F is called a *Lie algebra* if its multiplication satisfies the identities:

$$1)\ [x,x]=0,$$

$$2)\ [x,[y,z]]+[y,[z,x]]+[z,[x,y]]=0,$$

for all x, y, z in L.

The product $[x,y]$ is called the bracket of x and y. Identity 2) is called the Jacobi identity.

Let L be a finite-dimensional Lie algebra. For Lie algebra L we consider the following central and derived series:

$$L^1=L,\ L^i=\left[L^{i-1},L\right],\ i\geq 1,$$

$$L^{[1]} = L,\ L^{[k]} = \left[L^{[k-1]}, L^{[k-1]}\right],\ k \geq 1.$$

A Lie algebra L is *nilpotent (solvable)* if there exists $m \geq 1$ such that $L^m = 0$ ($L^{[m]} = 0$).

Definition 2.2. A *derivation* on a Lie algebra L is a linear map $D: L \to L$ which satisfies the Leibniz rule:

$$D([x, y]) = [D(x), y] + [x, D(y)] \tag{2.1}$$

for any $x, y \in L$. The set of all derivations of a Lie algebra denoted by $Der(L)$. Let a be an element of a Lie algebra L. Consider the operator of $ad_a : L \to L$ defined by $ad_a(x) = [x, a]$. This operator is a derivation and called *inner derivation.* The set of all inner derivations of a Lie algebra denoted by $InDer(L)$.

Definition 2.3. A linear operator Δ is called a *local derivation* if for any $x \in L$, there exists a derivation $D_x : L \to L$ (depending on x) such that $\Delta(x) = D_x(x)$.

Definition 2.4. A linear operator Δ is called a *local inner derivation* if for any $x \in L$, there exists a inner derivation $ad_x : L \to L$ (depending on x) such that $\Delta(x) = ad_x(x)$.

We present the following theorem which gives a classification of arbitrary four-dimensional Lie algebras.

Theorem 2.1. [7]. An arbitrary four-dimensional Lie algebra is isomorphic to one of the following algebras: L_0: abelian;

$L_1 : [e_1, e_2] = e_3;$

$L_2 : [e_1, e_2] = e_1;$

$L_3 : [e_1, e_2] = e_2, [e_1, e_3] = e_2 + e_3;$

$L_4 : [e_1, e_2] = e_2, [e_1, e_3] = \lambda e_3, \lambda \in C^*, |\lambda| \leq 1;$

$L_5 : [e_1, e_2] = e_1, [e_3, e_4] = e_3;$

$L_6 : [e_1, e_2] = e_3, [e_1, e_3] = -2e_1, [e_2, e_3] = 2e_2;$

$L_7 : [e_1, e_2] = e_3, [e_1, e_3] = e_4;$

$L_8 : [e_1, e_2] = e_2, [e_1, e_3] = e_3, [e_1, e_4] = \alpha e_4, \alpha \in C^*;$

$L_9 : [e_1, e_2] = e_3, [e_1, e_3] = e_4, [e_1, e_4] = \alpha e_2 - \beta e_3 - e_4, \alpha \in C^*, \beta \in C;$

$L_{10} : [e_1, e_2] = e_3, [e_1, e_3] = e_4, [e_1, e_4] = \alpha(e_2 + e_3), \alpha \in C^*;$

$L_{11} : [e_1, e_2] = e_3, [e_1, e_3] = e_4, [e_1, e_4] = e_2;$

$L_{12} : [e_1, e_2] = \frac{1}{3}e_2 + e_3, [e_1, e_3] = \frac{1}{3}e_3, [e_1, e_4] = \frac{1}{3}e_4;$

$L_{13} : [e_1, e_2] = e_2, [e_1, e_3] = e_3, [e_1, e_4] = 2e_4, [e_2, e_3] = e_4;$

$L_{14} : [e_1, e_2] = e_3, [e_1, e_3] = e_2, [e_2, e_3] = e_4;$

$L_{15} : [e_1, e_2] = e_3, [e_1, e_3] = -\alpha e_2 + e_3, [e_1, e_4] = e_4, [e_2, e_3] = e_4, \alpha \in C;$

3. Main results. In this section we will consider local inner derivations of four-dimensional Lie algebras.

The following theorem is the main result of this work.

Theorem 3.1. Any local inner derivation on the algebras L_1 – L_{12}, L_{14} is an inner derivation, and on the algebras L_{13} and L_{15} there exists a local inner derivation which is not inner derivation.

Proof. We verify that local inner derivations on the algebras L_1 – L_{12}, L_{14} are inner derivations.

The algebra L_0. First, consider the algebra L_0 from Theorem 2.1. Inner derivations on the algebra L_0 are zero. Therefore, any local inner derivation is also zero.

The algebra L_1. For the element $a=\sum_{i=1}^{4} a_i e_i \in L_1$ we define the inner derivation on L_1 as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4, a_1e_1+a_2e_2+a_3e_3+a_4e_4]=(x_1a_2-x_2a_1)e_3$$

where $x=\sum_{i=1}^{4} x_i e_i \in L_1$.

Let Δ be a local inner derivation of the algebra L_1. By definition of local inner derivation, checking the equality $\Delta(e_i)=ad_{e_i}(e_i)$ $(i=1,2,3,4)$ for the basis $\{e_1,e_2,e_3,e_4\}$, we obtain the following:

$$\Delta(e_1)=a_{21}e_3,\ \ \Delta(e_2)=-a_{12}e_3,\ \ \Delta(e_3)=\Delta(e_4)=0.$$

Since the operator Δ is linear, then

$$\Delta(x)=\Delta(x_1e_1+x_2e_2+x_3e_3+x_4e_4)=(a_{21}x_1-a_{12}x_2)e_3.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2]$. This means that the operator Δ is an inner derivation.

The algebra L_2. Repeating the previous technique for this algebra, we get that every local inner derivation on L_2 is a derivation.

For the algebras L_3 and L_4, we check the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_2+e_3

The algebra L_3. For the element $a=\sum_{i=1}^{4} a_i e_i \in L_3$ we define the inner derivation on L_3 as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4, a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(x_1a_2+x_1a_3-x_2a_1-x_3a_1)e_2+(x_1a_3-x_3a_1)e_3,$$

where $x\in L_3$.

Let Δ be a local inner derivation of the algebra L_3. Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_2+e_3, we obtain the following:

$$\Delta(e_1)=(a_{21}+a_{31})e_2+a_{31}e_3,$$

$$\Delta(e_2) = -a_{12}e_2,$$
$$\Delta(e_3) = -a_{13}e_2 - a_{13}e_3, \qquad (3.1)$$
$$\Delta(e_4) = 0,$$
$$\Delta(e_2 + e_3) = -2a_1e_2 - a_1e_3.$$

From the equality $\Delta(e_2 + e_3) = \Delta(e_2) + \Delta(e_3)$ i.e. $-2a_1e_2 - a_1e_3 = -a_{12}e_2 - a_{13}e_2 - a_{13}e_3$ we get $a_{13} = a_{12}$. Substituting the resulting equality into (3.1) we have that

$$\Delta(e_3) = -a_{12}e_2 - a_{12}e_3. \qquad (3.1')$$

Then $\Delta(x) = [x, a_{12}e_1 + a_{21}e_2 + a_{31}e_3]$. This means that the operator Δ is an inner derivation.

The algebra L_4. Repeating the previous technique for this algebra, we get that every local inner derivation on L_4 is a derivation.

The algebra L_5. For the element $a \in L_5$ we define the inner derivation on L_5 as follows

$$ad_a(x) = [x, a] = [x_1e_1 + x_2e_2 + x_3e_3 + x_4e_4, a_1e_1 + a_2e_2 + a_3e_3 + a_4e_4] =$$
$$= (x_1a_2 - x_2a_1)e_1 + (x_3a_4 - x_4a_3)e_3,$$

where $x \in L_5$.Let Δ be a local inner derivation of the algebra L_5.

Checking the equality of $\Delta(x) = ad_x(x)$ for values of x equal to e_1, e_2, e_3, e_4 we obtain the following:

$$\Delta(e_1) = a_{21}e_1, \quad \Delta(e_2) = -a_{12}e_1, \quad \Delta(e_3) = a_{43}e_3, \quad \Delta(e_4) = -a_{34}e_3.$$

Then $\Delta(x) = [x, a_{12}e_1 + a_{21}e_2 + a_{34}e_3 + a_{43}e_4]$. This means that the operator Δ is an inner derivation.

The algebra L_6. For the element $a \in L_6$ we define the inner derivation on L_6 as follows

$$ad_a(x) = [x_1e_1 + x_2e_2 + x_3e_3 + x_4e_4, a_1e_1 + a_2e_2 + a_3e_3 + a_4e_4] =$$
$$= (2x_3a_1 - 2x_1a_3)e_1 + (2x_2a_3 - 2x_3a_2)e_2 + (x_1a_2 - x_2a_1)e_3,$$

where $x \in L_6$.Let Δ be a local inner derivation of the algebra L_6.

Checking the equality of $\Delta(x) = ad_x(x)$ for values of x equal to e_1, e_2, e_3, e_4 and $e_1 + e_2, e_1 + e_3, e_2 + e_3$ we obtain the following:

$$\Delta(e_1) = -2a_{31}e_1 + a_{21}e_3, \ \Delta(e_2) = 2a_{32}e_2 - a_{12}e_3,$$
$$\Delta(e_3) = 2a_{13}e_1 - 2a_{23}e_2, \quad \Delta(e_4) = 0, \quad \Delta(e_1 + e_2) = -2a_3e_1 + 2a_3e_2 + (a_2 - a_1)e_3,$$
$$\Delta(e_1 + e_3) = (2b_1 - 2b_3)e_1 - 2b_2e_2 + b_2e_3, \ \Delta(e_2 + e_3) = 2c_1e_1 + (2c_3 - 2c_2)e_2 - c_1e_3.$$

Using the technique of defining equality $(3.1')$, we will have the following relations:

- $\Delta(e_1 + e_2) = \Delta(e_1) + \Delta(e_2) \Rightarrow \ a_{32} = a_{31}$;
- $\Delta(e_1 + e_3) = \Delta(e_1) + \Delta(e_3) \Rightarrow \ a_{23} = a_{21}$;

- $\Delta(e_2+e_3)=\Delta(e_2)+\Delta(e_3)\Rightarrow\ a_{13}=a_{12}$.

From these obtained equalities we have

$$\Delta(e_1)=-2a_{31}e_1+a_{21}e_3,\ \Delta(e_2)=2a_{31}e_2-a_{12}e_3,\ \Delta(e_3)=2a_{12}e_1-2a_{21}e_2,\ \Delta(e_4)=0$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3]$. This means that the operator Δ is an inner derivation.

The algebra L_7. For the element $a\in L_7$ we define the inner derivation on L_7 as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(x_1a_2-x_2a_1)e_3+(x_1a_3-x_3a_1)e_4,$$

where $x\in L_7$.Let Δ be a local inner derivation of the algebra L_7.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_2+e_3 we obtain the following:

$$\Delta(e_1)=a_{21}e_3+a_{31}e_4,\ \Delta(e_2)=-a_{12}e_3,\ \Delta(e_3)=-a_{13}e_4,\ \Delta(e_4)=0,$$
$$\Delta(e_2+e_3)=-a_1e_3-a_1e_4.$$

From the equality $\Delta(e_2+e_3)=\Delta(e_2)+\Delta(e_3)$ we get $a_{13}=a_{12}$ and

$$\Delta(e_3)=-a_{12}e_4.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3]$. This means that the operator Δ is an inner derivation.

The algebra L_8. For the element $a\in L_8$ we define the inner derivation on L_8 as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(x_1a_2-x_2a_1)e_2+(x_1a_3-x_3a_1)e_3+(\alpha x_1a_4-\alpha x_4a_1)e_4,$$

where $x\in L_8$.

Let Δ be a local inner derivation of the algebra L_8.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and $e_2+e_3+e_4$ we obtain the following:

$$\Delta(e_1)=a_{21}e_2+a_{31}e_3+\alpha a_{41}e_4,\ \Delta(e_2)=-a_{12}e_2,\ \Delta(e_3)=-a_{13}e_3,\ \Delta(e_4)=-\alpha a_{14}e_4,$$
$$\Delta(e_2+e_3+e_4)=-a_1e_2-a_1e_3-\alpha a_1e_4.$$

From the equality $\Delta(e_2+e_3+e_4)=\Delta(e_2)+\Delta(e_3)+\Delta(e_4)$ we get $a_{13}=a_{14}=a_{12}$ and

$$\Delta(e_3)=-a_{12}e_3,\ \Delta(e_4)=-\alpha a_{12}e_4.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3+a_{41}e_4]$. This means that the operator Δ is an inner derivation.

The algebra L_9. For the element $a\in L_9$ we define the inner derivation on L_9 as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(\alpha x_1a_4-x_4\alpha a_1)e_2+(x_1a_2-x_2a_1-\beta a_4x_1+\beta a_1x_4)e_3+(x_1a_3-x_3a_1-a_4x_1+a_1x_4)e_4,$$

where $x\in L_9$.

Let Δ be a local inner derivation of the algebra L_9.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_2+e_3,e_2+e_4,e_3+e_4 we obtain the following:

$$\Delta(e_1)=\alpha a_{41}e_2+(a_{21}-\beta a_{41})e_3+(a_{31}-\beta a_{41})e_4,\ \Delta(e_2)=-a_{12}e_3,\ \Delta(e_3)=-a_{13}e_4,$$
$$\Delta(e_4)=-\alpha a_{14}e_2+\beta a_{14}e_3+a_{14}e_4,\ \Delta(e_2+e_3)=-a_1e_3-a_1e_4,$$
$$\Delta(e_2+e_4)=-\alpha b_1e_2+(-b_1+\beta b_1)e_3+b_1e_4,\ \Delta(e_3+e_4)=-\alpha c_1e_2+\beta c_1e_3;$$

Then we have the follows

- $\Delta(e_2+e_3)=\Delta(e_2)+\Delta(e_3)\Rightarrow\ a_{13}=a_{12}$;
- $\Delta(e_2+e_4)=\Delta(e_2)+\Delta(e_4)\Rightarrow\ a_{14}=a_{12}$;
- $\Delta(e_3+e_4)=\Delta(e_3)+\Delta(e_4)\Rightarrow\ a_{14}=a_{13}$.

From these obtained equalities we get

$$\Delta(e_3)=-a_{12}e_4,\qquad \Delta(e_4)=-\alpha a_{12}e_2+\beta a_{12}e_3+a_{12}e_4.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3+a_{41}e_4]$. This means that the operator Δ is an inner derivation.

The algebra L_{10}. For the element $a\in L_{10}$ we define the inner derivation on L_{10} as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(\alpha x_1a_4-x_4\alpha a_1)e_2+(x_1a_2-x_2a_1-\alpha a_4x_1-\alpha a_1x_4)e_3+(x_1a_3-x_3a_1)e_4,$$

where $x\in L_{10}$.

Let Δ be a local inner derivation of the algebra L_{10}.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_2+e_3,e_3+e_4 we obtain the following:

$$\Delta(e_1)=\alpha a_{41}e_2+(a_{21}+\alpha a_{41})e_3+a_{31}e_4,\ \Delta(e_2)=-a_{12}e_3,\ \Delta(e_3)=-a_{13}e_4,$$
$$\Delta(e_4)=-\alpha a_{14}e_2-\alpha a_{14}e_3,\ \Delta(e_2+e_3)=-a_1e_3-a_1e_4,\ \Delta(e_3+e_4)=-\alpha b_1e_2-\alpha b_1e_3-b_1e_4.$$

Then we have the follows

- $\Delta(e_2+e_3)=\Delta(e_2)+\Delta(e_3)\Rightarrow\ a_{13}=a_{12}$;
- $\Delta(e_3+e_4)=\Delta(e_3)+\Delta(e_4)\Rightarrow\ a_{14}=a_{13}$;

and

$$\Delta(e_3)=-a_{12}e_4,\ \Delta(e_4)=-\alpha a_{12}e_2-\alpha a_{12}e_3.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3+a_{41}e_4]$. This means that the operator Δ is an inner derivation.

The algebra L_{11}. Repeating the previous technique for this algebra, we get that every local inner derivation on L_{11} is a derivation.

The algebra L_{12}. For the element $a\in L_{12}$ we define the inner derivation on L_{12} as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=\left(\frac{1}{3}x_1a_2-\frac{1}{3}x_2a_1\right)e_2+\left(x_1a_2-x_2a_1+\frac{1}{3}x_1a_3-\frac{1}{3}x_3a_1\right)e_3+\left(\frac{1}{3}x_1a_4-\frac{1}{3}x_4a_1\right)e_4.$$

where $x\in L_{12}$.

Let Δ be a local inner derivation of the algebra L_{12}.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_3+e_4,e_2+e_4 we obtain the following:

$$\Delta(e_1)=\frac{1}{3}a_{21}e_2+\left(a_{21}+\frac{1}{3}a_{31}\right)e_3+\frac{1}{3}a_{41}e_4,\ \Delta(e_2)=-\frac{1}{3}a_{12}e_2-a_{12}e_3,$$

$$\Delta(e_3)=-\frac{1}{3}a_{13}e_3,$$

$$\Delta(e_4)=-\frac{1}{3}a_{14}e_4,\ \Delta(e_3+e_4)=-\frac{1}{3}a_1e_3-\frac{1}{3}a_1e_4,\ \Delta(e_2+e_4)=-\frac{1}{3}b_1e_2-b_1e_3-\frac{1}{3}b_1e_4,$$

Then we have the follows

- $\Delta(e_3+e_4)=\Delta(e_3)+\Delta(e_4)\Rightarrow\ a_{14}=a_{13}$;
- $\Delta(e_2+e_4)=\Delta(e_2)+\Delta(e_4)\Rightarrow\ a_{14}=a_{12}$;

and

$$\Delta(e_3)=-\frac{1}{3}a_{12}e_3,\quad \Delta(e_4)=-\frac{1}{3}a_{12}e_4.$$

Then $\Delta(x)=[x,a_{12}e_1+a_{21}e_2+a_{31}e_3+a_{41}e_4]$. This means that the operator Δ is an inner derivation .

The algebra L_{14}. For the element $a\in L_{14}$ we define the inner derivation on L_{14} as follows

$$ad_a(x)=[x,a]=[x_1e_1+x_2e_2+x_3e_3+x_4e_4,a_1e_1+a_2e_2+a_3e_3+a_4e_4]=$$
$$=(x_1a_3-x_3a_1)e_2+(x_1a_2-x_2a_1)e_3+(x_2a_3-x_3a_2)e_4.$$

where $x\in L_{14}$.

Let Δ be a local inner derivation of the algebra L_{14}.

Checking the equality of $\Delta(x)=ad_x(x)$ for values of x equal to e_1,e_2,e_3,e_4 and e_1+e_3,e_2+e_3,e_1+e_2 we obtain the following:

$\Delta(e_1) = a_{31}e_2 + a_{21}e_3,\ \Delta(e_2) = -a_{12}e_3 + a_{32}e_4,\ \Delta(e_3) = -a_{13}e_2 - a_{23}e_4,\ \Delta(e_4) = 0,$

$\Delta(e_1 + e_3) = (a_3 - a_1)e_2 + a_2e_3 - a_2e_4,\ \Delta(e_2 + e_3) = -b_1e_2 - b_1e_3 + (b_3 - b_2)e_4,$

$\Delta(e_1 + e_2) = c_3e_2 + (c_2 - c_1)e_3 + c_3e_4.$

Then we have the follows

- $\Delta(e_1 + e_3) = \Delta(e_1) + \Delta(e_3) \Rightarrow\ a_{23} = a_{21};$
- $\Delta(e_2 + e_3) = \Delta(e_2) + \Delta(e_3) \Rightarrow a_{13} = a_{12};$
- $\Delta(e_1 + e_2) = \Delta(e_1) + \Delta(e_2) \Rightarrow a_{32} = a_{31};$

and

$$\Delta(e_2) = -a_{12}e_3 + a_{31}e_4,\ \Delta(e_3) = -a_{12}e_2 - a_{21}e_4.$$

Then $\Delta(x) = [x, a_{12}e_1 + a_{21}e_2 + a_{31}e_3].$ This means that the operator Δ is an inner derivation.

On four-dimensional Lie algebras $L_1 - L_{12}$ and L_{14}, an arbitrary local inner derivation is an inner derivation.

The algebras L_{13} and L_{15} admit a local inner derivation that is not an inner derivation.

The algebra L_{13}. For the element $a \in L_{13}$ we define the inner derivation on L_{13} as follows

$$[x, a] = [x_1e_1 + x_2e_2 + x_3e_3 + x_4e_4, a_1e_1 + a_2e_2 + a_3e_3 + a_4e_4] =$$
$$= (x_1a_2 - x_2a_1)e_2 + (x_1a_3 - x_3a_1)e_3 + (x_2a_3 - x_3a_2 + 2x_1a_4 - 2x_4a_1)e_4,$$

where $x \in L_{13}$.

Consider an operator

$$\Delta(x) = (a_{42}x_2 + a_{43}x_3 + a_{44}x_4)e_4.$$

This operator is a local inner derivation, because $\Delta(x) = [x, \varphi(x)]$ is true for the function

$$\varphi(x) = \begin{cases} \frac{1}{x_2}(a_{42}x_2 + a_{43}x_3 + a_{44}x_4)e_3, & x_1 = 0,\ x_2 \neq 0, \\ -\frac{a_{44}}{2}e_1, & x_1 = x_2 = x_3 = 0, \\ -\frac{1}{x_3}(a_{43}x_3 + a_{44}x_4)e_2, & x_1 = x_2 = 0,\ x_3 \neq 0, \\ \frac{1}{2x_1}(a_{42}x_2 + a_{43}x_3 + a_{44}x_4)e_4, & x_1 \neq 0. \end{cases}$$

Now let's show that Δ is not an inner derivation. Let $u = e_1 + 2e_2 + e_3 + e_4$ and $v = 2e_1 + e_2 + 2e_3 + 0,5e_4$. From L_{13} multiplications we get $[u, v] = 0$. Then

$$\Delta(u) = (2a_{42} + a_{43} + a_{44})e_3,\ \Delta(v) = (a_{42} + 2a_{43} + 0,5a_{44})e_3 \text{ and } \Delta([u, v]) = 0,$$
$$\Delta(u)v + u\Delta(v) = -(3a_{42} + 1,5a_{44})e_3 + 3a_{43}e_4 \neq 0.$$

Hence it follows that

$$\Delta([u, v]) \neq \Delta(u)v + u\Delta(v).$$

Since Δ is not a derivation, it is also not an inner derivation.

The algebra L_{15}. As in the case of the algebra L_{13}, the operator

$$\Delta(x) = a_{21}x_1e_2 + a_{31}x_1e_3 = [x, \phi(x)],$$

$$\phi(x) = \begin{cases} 0, \ x_1 = 0, \\ (a_{31} + \frac{a_{21}}{\alpha})e_2 - \frac{a_{21}}{\alpha}e_3 + \frac{(\alpha a_{31} + a_{21})x_3 + a_{21}x_2}{\alpha x_1}, \ x_1 \neq 0 \end{cases}$$

is a local inner derivation which is not an inner derivation.

References

1. Adashev J.K., Kurbanbaev T.K., Almost Inner Derivations of some Nilpotent Leibniz Algebras, Journal of Siberian Federal University. Mathematics & Physics 2020, 13(6), 1–13.

2. Ayupov Sh.A., Kudaybergenov K.K., Local derivations on finite-dimensional Lie algebras // Linear Algebra and its Applications. 493 (2016), p. 381–398.

3. Ayupov Sh.A., Kudaybergenov K.K., 2-Local automorphisms on finite-dimensional Lie algebras // Linear Algebra and its Applications. 507 (2016), p. 121–131.

4. Ayupov Sh.A., Kudaybergenov K.K., Local Automorphisms on Finite-Dimensional Lie and Leibniz Algebras // Algebra, Complex Analysis and Pluripotential Theory, USUZCAMP 2017. Springer Proceedings in Mathematics and Statistics. 264 (2017), p. 31–44.

5. Ayupov Sh.A., Kudaybergenov K.K., Rakhimov I.S., 2-Local derivations on finite-dimensional Lie algebras // Linear Algebra and its Applications. 474 (2015), p. 1–11.

6. Burde D., Dekimpe K., Verbeke B., Almost inner derivations of Lie algebras. Journal of Algebra and Its Applications, 17 (2018), no. 11, 26 pages.

7. Burde D., Steinhoff Ch., Classification of orbit closures of 4-dimensional complex Lie algebras. Journal of algebra. 1999.

8. Chen Z., Wang D., 2-Local automorphisms of finite-dimensional simple Lie algebras // Linear Algebra and its Applications. 486 (2015), p. 335–344.

9. Gordon C.S., Wilson E.N., Isospectral deformations of compact solvmanifolds. J. Differential Geom. 19 (1984), no. 1, 214–256.

10. Jacobson N., Lie algebras, Interscience Publishers, Wiley, New York, 1962 .

11. Kadison R.V., Local derivations, J. Algebra, 130 (1990) 494–509.

12. Larson D.R., Sourour A.R., Local derivations and local automorphisms of B(X), Proc. Sympos. Pure Math. 51 (1990) 187–194.

13. Molnár L., Locally inner derivations of standard operator algebras. (English). Mathematica Bohemica, vol. 121 (1996), issue 1, pp. 1-7

Rezyume. *Mazkur maqolada to'rt o'chamli Li algebralarining local ichki differensiallashlari o'rganilgan.*

Резюме: *В этом статье изучены локальные внутренние дифференцирования четырехмерный алгебр Ли.*

Kalit so'zlar: *Li algebrasi, differensiallash, ichki differensiallash, local ichki differensiallash.*

Ключевые слова. *Алгебра Ли, дифферницирование, внутренние дифференцирование, локальные внутренние дифференцирование.*

$CaO-Al_2O_3$ SYSTEM AND POSSIBILITIES OF SOL-GEL SYNTHESIS OF CALCIUM MONOALUMINATE ON ITS BASIS

Khomidov F.G., Kadyrova Z.R., Usmanov Kh.L., Niyazova Sh.M.
Institute of general and inorganic chemistry of the AS RUz

Summary: *Compounds of calcium monoaluminate were synthesized using the sol-gel method. The effect of soluble aluminum and calcium salts on the synthesis, kinetics, and mechanism of the phase formation reaction during sintering of calcium monoaluminate in the temperature range of 500-1000°C has been studied. The formation of calcium monoaluminate occurs through an intermediate compound - the mineral maenite.*

Keywords: *calcium aluminate, oxide compounds, aluminous cement, phosphors, Portland cement, state diagram, invariant points of the system, sol-gel method, dispersed system, eutectic, melting point*

Introduction. Calcium aluminates - are among the most widely studied compounds that are part of a number of technical products, such as aluminous cement, Portland cement, some special cements, abrasive products, phosphors, etc. Also, they are widely used in ceramics, as a binder in refractory cast products, for the steel industry of detectors, biomaterials and optical devices. They have different crystal structures and are formed during the production of a number of chemical products [1]. They are not found among natural materials, however, as intermediate compounds, they can be formed during the formation of rock eruption.

Many works [2-3] are devoted to research on the study of the physico-chemical properties of calcium aluminates. The following five individual chemical compounds are mainly formed in the $CaO-Al_2O_3$ system: $3CaO \cdot Al_2O_3$, $5CaO \cdot 3Al_2O_3$ ($12CaO\ 7Al_2O_3$), $CaO \cdot Al_2O_3$, $CaO \cdot 2Al_2O_3$, $CaO \cdot 6Al_2O_3$. Calcium aluminate $CaO \cdot Al_2O_3$ is one of the most widely studied oxide systems [4]. This is mainly due to the hydraulic properties of some oxide compounds in this system - $CaO \cdot Al_2O_3$ (CA), $CaO \cdot 2Al_2O_3$ (CA2), $12CaO\ 7Al_2O_3$ (C12A7) - used during the production of aluminous cement. Two other compounds - $CaO \cdot 6Al_2O_3$ (CA6) and $3CaO \cdot Al_2O_3$ (C3A) - are not included in the composition of high alumina cement.

For the first time, Rankin and Wright investigated and constructed a state diagram of the $CaO \cdot Al_2O_3$ compound system (Fig. 1.) [5]. Subsequently, the composition of some compounds was refined and a new compound $CaO \cdot 6Al_2O_3$ was discovered. Also, some authors believe that the $3CaO \cdot 5Al_2O_3$ compound described in Rankin's works actually corresponds to the formula $CaO \cdot 2Al_2O_3$, which was determined by Tawashi, and this formula is generally accepted.

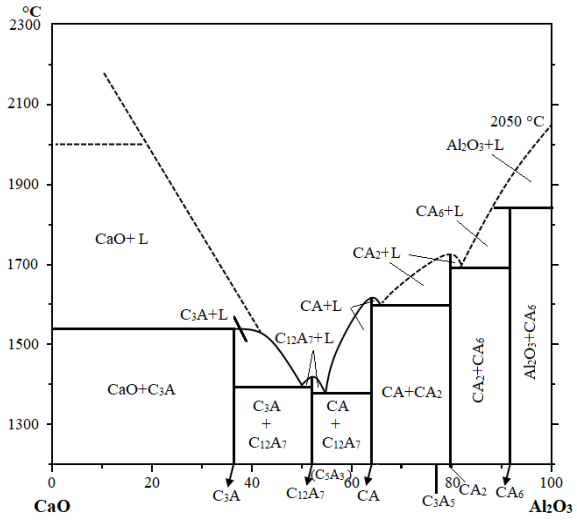


Fig.1. State diagram of the $CaO-Al_2O_3$ system, constructed based on the latest data

Based on this state diagram, the invariant points of the compounds of the $CaO-Al_2O_3$ system were determined (table).

Table

Invariant points of the system $CaO \cdot Al_2O_3$

Points	Phases	Process	Composition, weight. %		Temp. °C
			CaO	Al_2O_3	
1	CaO + Liquid (L)	Melting	100	0	2570
2	$CaO + 3CaO \cdot Al_2O_3 + L$	Melting	57,0	43,0	1535
3	$3CaO \cdot Al_2O_3 + 5CaO \cdot 3Al_2O_3 + L$	eutectic	50,0	50,0	1395
4	$5CaO \cdot 3Al_2O_3 + L$	Melting	47,8	52,2	1455
5	$5CaO \cdot 3Al_2O_3 + CaO \cdot Al_2O_3 + L$	eutectic	47,0	53,0	1400
6	$CaO \cdot Al_2O_3 + L$	Melting	35,4	64,6	1600
7	$CaO \cdot Al_2O_3 + CaO \cdot 2Al_2O_3 + L$	eutectic	33,5	66,5	1590
8	$CaO \cdot 2Al_2O_3 + L$	Melting	27,0	73,0	1765
9	$CaO \cdot 2Al_2O_3 + CaO \cdot 6Al_2O_3 + L$	eutectic	19,5	80,5	1730
10	$CaO \cdot 6Al_2O_3 + Al_2O_3 + L$	Melting	8,0	92,0	1850
11	$Al_2O_3 + L$	Melting	0	100	2050

Numerous methods are currently in use for the synthesis of the above compounds.

Chemically prepared powders are considered to be the most common type of starting material in the manufacture of ceramics. During the manufacturing process, materials are powdered to obtain ceramic particles of the desired size. Unfortunately, the processing of such powders remains a problem, although the resulting properties, such as high mechanical, electrical and thermal properties of coarse granular ceramics, differ significantly from their traditional homologues [6]. The main steps in the manufacture of nanoceramics are associated with obtaining non-agglomerated nanopowders with a uniform size distribution and sintering to a theoretical density without grain growth. Chemical methods for obtaining the synthesis of ceramic powders can basically be divided into three

classifications, depending on the medium in which the physical and chemical process occurs - liquid, gas, plasma [7]. In addition to these methods of synthesis in ceramics, the most common method is used - solid-phase synthesis.

Synthesis in a liquid medium: precipitation methods, heterophase synthesis, sol-gel method, hydrothermal method;

Synthesis in a gaseous medium: gas-phase synthesis, interaction of a solid body with a gas and processes of decomposition of salts, hydroxides, organoelement compounds;

Synthesis with the participation of plasma: Plasma-chemical, electroerosive, self-propagating high-temperature synthesis.

Reducing the temperature of synthesis and sintering in the technology of obtaining ceramic materials remains an urgent task, the solution of which leads to savings in fuel and energy resources. Recently, many scientists have paid special attention to the synthesis of the above materials using the sol-gel method.

The sol-gel method has a number of advantages, such as: to form the necessary phase compositions and structure of the material at lower temperatures (several hundred degrees) than those of traditional technologies, the possibility of obtaining powders with a controlled particle size distribution; the possibility of obtaining high purity and dispersion (100-10 nm); as well as high homogeneity of the material [8]. The sol-gel method of obtaining glass and ceramics from metal oxides is carried out by chemical hydrolysis to form a sol, and then a gel, which, when dried and pyrolyzed, produces an amorphous oxide.

In this work, $CaAl_2O_4$ was synthesized by the sol-gel method. The sol-gel method makes it possible to form the necessary phase compositions and material structure at lower temperatures.

For the study, 4-aqueous calcium nitrate ($Ca(NO_3)$ $4H_2O$ grade "pure") and 9-aqueous aluminum nitrate ($Al(NO_3)_3 \cdot 9H_2O$ grade pure), as well as citric acid, were used as initial components. The phase composition of the materials used and the synthesized calcium aluminate powder was determined on a LABX XRD-6100 SHIMADZU diffractograph using CuKα radiation and a Ni filter with a wavelength of 1.5418 Å.

4-aqueous calcium nitrate ($Ca(NO_3)4H_2O$) and 9-aqueous aluminum nitrate ($Al(NO_3)_3 \cdot 9H_2O$) were dissolved in distilled water at room temperature. After stirring, citric acid was added to the resulting solution. The precursor solution was stirred on a magnetic stirrer at a temperature of 70°C until a gel-like mass was obtained. The resulting gel-like mass was dried at a temperature of 130°C in an oven to obtain a xerogel. To determine the formation of the crystal structure, monocalcium aluminate and the influence of the exposure time during heat treatment on the synthesis process and the complete completion of the phase formation of tricalcium aluminate, the dried gel was fired at a temperature range from 500 to 1000°C with an exposure of 120 minutes in a SNOL 5/1300 muffle furnace.

The results of X-ray phase analysis of fired samples in the temperature range of 500-1000℃ are shown in Fig.2. On the X-ray diffraction patterns of the synthesized samples at a temperature of 500°C, the beginning of the formation of calcium monoaluminate (d=0.467, 0.297, 0.251, 0.192 nm) and the intermediate compound maenite (0.244, 0.152 nm) was observed. With an increase in temperature to 800°C, an intensive increase in the diffraction lines of calcium monoaluminate, as well as the mineral maenite, was observed. However, with an increase in temperature to 1000°C, an intensive formation of calcium monoaluminate occurs, due to a decrease in the amount of maenite,

which precedes the formation of calcium monoaluminate. In this temperature range, no diffraction lines are observed corresponding to calcium and aluminum oxides, which are in an amorphous state as a result of the decomposition of the corresponding nitrate compounds. Hence aluminum nitrate decomposes to γ-Al_2O_3 while $Ca(NO_3)_2$ decomposes in part to form calcium oxide. The resulting CaO reacts intensely with Al_2O_3 to form maenite $Ca_{12}Al_{14}O_{33}$ (C12A7). It should be noted that the formation of C12A7 via the $CaOAl_2O_3$ reaction is exothermic and has a high negative ΔG (energy). When introducing more energy into the system through increasing temperature, $Ca(NO_3)_2$ decomposes in large quantities and melts them, forming an amorphous form of CaO.

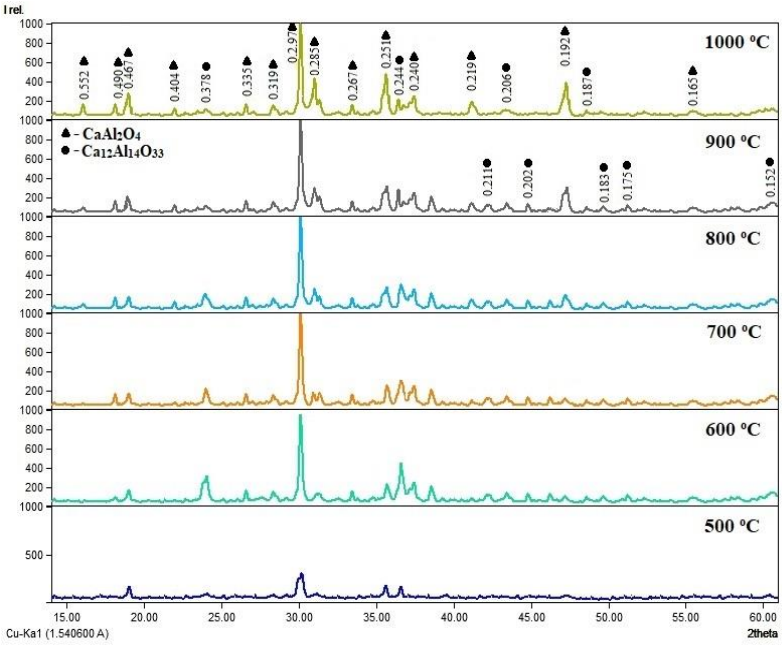


Fig.2. X-ray diffraction patterns of the synthesized samples in the temperature range 500-1000 ℃

Thus, calcium monoaluminate compounds were synthesized using the sol-gel method. The effect of soluble aluminum and calcium salts on the synthesis, kinetics, and mechanism of the phase formation reaction during sintering of calcium monoaluminate in the temperature range of 500-1000°C was studied.

It has been established that the formation of calcium monoaluminate occurs through an intermediate compound - the mineral maenite. When the temperature rises to 1000°C, maenite precedes the formation of calcium monoaluminate.

References:

1. Khomidov F.G., Kadyrova Z.R., Usmanov Kh.L., Niyazova Sh.M. Sol-gel synthesis of tricalcium aluminate using an alumina-containing component. Uzbek chemical journal. 2021. №2. P.39-44.

2. Arseniev P.A., Kolba L.M., Bogdasarov Kh.S. etc. Compounds of rare earth elements of I-III groups. M. Science. 1983. 280 p.

3. Bulatova M.M., Arifov P.A., Eshbaeva S. Polymorphism of aluminosilicates of alkaline earth metals. Uzbek chem. magazine. 2002. - No. 6. - P. 38-42.

4. Ianoș R., Lazău I., Păcurariu C., Barvinschi P. Fuel mixture approach for solution combustion synthesis of $Ca_3Al_2O_6$ powders. Cement and Concrete Research. 2009. Vol.39. P.566–572

5. Tropov N.A., Barzakovsky V.P., Lapin V.V. State Diagrams of Silicate Systems: A Handbook. Issue 1. - L. Nauka, 1969. - 822 p.

6. Kocjan A., Pouchly V., Shen Z. J. Eur. Ceram. soc. 2015. Vol.35 P.1285–1295

7. Morozov V. V., Susoev E. P. Nanotechnologies in ceramics: monograph. At 2 pm Part 1. Nanoparticles. Vladimir: Ed. Vladim. state Univ. 2010. 276 p.

8. Khomidov F.G., Kadyrova Z.R., Usmanov Kh.L., Niyazova Sh.M., Sabirov B.T. Features of the synthesis of aluminum-magnesium spinel by the sol-gel method. Glass and ceramics. 2021. №6. P.48-52.

Rezyume: *Zol-gel usulidan foydalanib kal'tsiy monoalyuminati sintez qilingan. 500-1000 oS harorat oralig'ida monokaltsiy alyuminatni pishishdagi faza hosil bo'lish reaktsiya mexanizmi, kinetikasi va sinteziga kal'tsiy va alyuminiyni suvda eruvchi tuzlarini ta'siri o'rganilgan. Monokaltsiyay alyuminati hosil bo'lishi maenit oraliq minerali bilan borishi aniqlangan.*

Резюме: *Синтезированы моноалюмината кальция с использованием золь-гель метода. Изучены влияние растворимых солей алюминия и кальция на синтез, кинетику и механизм реакции фазообразования при спекании моноалюмината кальция в интервале температур 500-1000°С. Установлено, что образование моноалюминат кальция происходит через промежуточного соединения - минерала маенита.*

Kalit so'zlar: *kaltsiy alyuminat, oksidli birikmalar, glinozemli tsement, lyuminofor, portlandtsement, holat diagrammasi, sistemaning invariant nuqtalari, zol-gel usuli, dispers sistema, evtektika, erish harorati.*

Ключевые слова: *алюминат кальция, оксидных соединений, глиноземистый цемент, люминофоры, портландцемент, диаграмма состояния, инвариантные точки системы, золь-гель метод, дисперсная система, эвтектика, температура плавления*

PORE FORMATION IN LIGHTWEIGHT CERAMIC MASSES BASED ON INDUSTRIAL WASTE OF UZBEKISTAN

Usmanov Kh.L., Nimchik A.G., Kadyrova Z.R., Khomidov F.G.
Institute of General and Inorganic Chemistry of the Academy of Sciences of the Republic of Uzbekistan

Summary: *The possibility of obtaining a high-quality porous material with high physical and mechanical properties based on local clay raw materials and man-made waste has been established. It is shown that the chemical industry wastes used accelerate the process of glass formation during firing, reducing the temperature of agglomeration and swelling by 20-40 °C, while obtaining a durable porous material. Regularities of the influence of physical and chemical features, used clay materials and flotation wastes of the Almalyk Mining and Metallurgical Plant on the mechanism of pore formation during the production of aggloporite are revealed.*

Keywords: *lightweight, flotation waste, phosphogypsum, solid waste from soda production, mechanism, sintering, swelling, roasting.*

Introduction. In connection with the rise in the cost of energy carriers, there is an urgent need to store the generated heat in buildings and structures. And in regions with a hot climate, reduce the cost of air conditioning and ventilation. To implement these important tasks, new inexpensive heat-insulating materials are needed using local natural and technogenic raw materials.

One of the building materials obtained exclusively with the use of industrial waste as a raw material component is agloporite, an artificial porous aggregate obtained by sintering sandy-clay materials on the grate of a sintering machine [1-3].

It can be obtained by replacing valuable natural raw materials - highly plastic clays with local industrial wastes: aluminosilicate flotation wastes from copper and lead processing plants of the Almalyk MMC, unenriched kaolin from the Angren deposit, and inorganic wastes from the chemical industry - solid waste from soda production and phosphogypsum.

In industrial practice, there are a number of projects to create a technology for the production of expanded clay based on slightly intumescent clays and man-made waste [4,5]. In a number of scientific sources, the main criterion for the suitability of the raw materials used is the ability to swell during heat treatment in the range of 1050-1200 ℃ and form a material with a cellular structure with a density in the range of 200-1000 kg/m^3.

In addition, attempts are being made to solve the problem of obtaining an effective porous lightweight filler based on slightly intumescent clays and aluminosilicate wastes by adding burnable additives in the form of diesel oil, coal, thermal power plant ash, etc. [6-8].

The purpose of our research is to develop a technology for obtaining granular porous sintered material (agloporite), using technology using effective swelling intensifiers, in the role of which chemical production wastes - phosphogypsum and solid waste from soda production can be used.

Of the variety of natural and technogenic raw materials of Uzbekistan, the most interesting as raw materials for the production of aggloporite can be aluminosilicate waste - flotation waste from the Almalyk Mining and Metallurgical Plant, the amount of which in dumps is hundreds of millions of tons. Flotation wastes from copper and lead (MOF and SOF) concentrating plants are used as a clay-replacing component in the synthesis of agloporite.

The study of the characteristics of the used components of raw mixtures was carried out by X-ray phase, petrographic and infrared-spectroscopic, petrographic and other modern methods of physical and chemical analysis. The temperature of the beginning of the formation of the liquid phase and swelling of the aggloporite, the degree of swelling and a number of other physico-chemical processes occurring during the agglomeration of silicate mixtures.

The MOF flotation waste is a gray sandy powder with a fractional grain size ranging from 1.00-0.01 mm. The main amount is grains 0.25-0.01 mm in size, containing mainly quartz and feldspar crystals. The chemical composition of the flotation waste is mainly quartz SiO_2 - 65%, Al_2O_3 - 14.12%, Fe_2O_3 - 9.05% (Tab.1).

Table 1.

The chemical composition of the materials used.

Name	Content of oxides, %								*LOI
	SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Na_2O	K_2O	SO_3	
MOF Tailings	61,18	14,61	9,86	1,32	0,11	2,31	1,76	5,69	4,10
SOF Tailings	45,75	8,72	7,19	14,59	7,10	2,00	0.98	2,98	8,83
Unenriched kaolin	58,6	18,95	1,87	3,91	0,53	0,12	1,11	0,12	14,72
Waste TOSP	1,10	0,40	-	47,1	4,2	-	-	3,8	42,40
Phosphogypsum	10,43	0,42	0,15	28,3	-	0,04	0,04	40,5	19,64

LOI* - weight loss on ignition

The flotation waste from the enrichment of lead-containing ore (SOF) contains residual amounts of lead and zinc in the amount of 0.24 and 0.20%, respectively. The main chemical component is silica, the content of which reaches 45% by weight.

X-ray diffraction analysis of raw materials [9] was performed on an XRD-6100 diffractometer (Shimadzu, Japan) with a vertical 4-9θ gonometer. The study of flotation waste by the X-ray phase method revealed the presence of the following main crystalline phases, the interplanar distances of which correspond to: quartz with d=(0.369; 0.334; 0.181; 0.153) nm, $CaCO_3$ with d= 0.303; 0.191; 0.181 nm, feldspars with d= (0.202; 0.166) nm and hydromicas with d= (0.442; 0.254; 0.148) nm (Fig.1,2.).

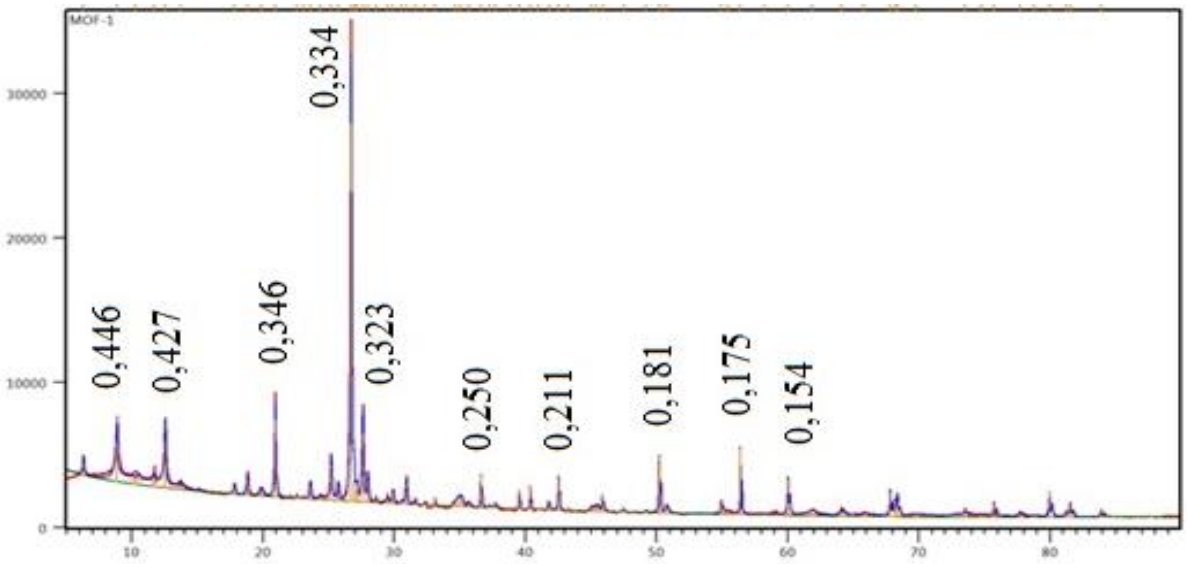


Fig.1. Radiographs of flotation waste MOF

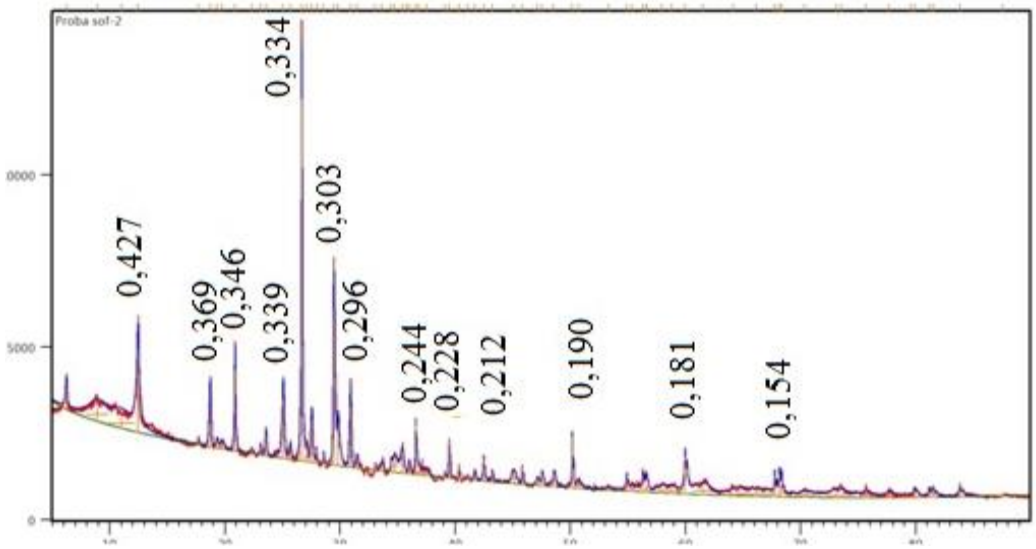


Fig. 2. Radiographs of flotation waste SOF

The characteristics of the chemical production wastes used are as follows. Phosphogypsum is a solid waste from the production of phosphoric acid by the sulfuric acid method. For 1 ton of phosphoric acid, from 3.5 to 6 tons of phosphogypsum are obtained in terms of dry matter. Depending on the conditions for obtaining phosphoric acid, $CaSO_4$ $2H_2O$ dihydrate, $CaSO_4$ 0.5 H_2O hemihydrate, or anhydrous calcium sulfate are formed in the precipitate, which determines the corresponding name of the products - phosphogypsum, phosphohemihydrate and phosphoanhydrite. Phosphogypsum is a gray fine-grained clumping powder with a moisture content of 25-30% containing up to 94% $CaSO_4$ per dry matter. The main impurities in it are unreacted phosphates, fluorine and strontium compounds, as well as unwashed phosphoric acid, and organic substances.

Solid waste from the soda production of the Kungrad soda plant is formed in the process of ammonia regeneration and brine purification, as well as overburning and other limestone calcination waste. The most voluminous waste from the production of soda ash by the ammonia method is the distiller suspension, which is formed in the amount of 8-10 m^3 per 1 ton of soda. It is a solution of calcium and sodium chlorides, calcium hydroxide and calcium sulfate. The solid residue of the

distiller liquid (calcium carbonate sludge) in dry form is a light gray mass with a density of about 970 kg/m^3, 70-80% consisting of particles 0.1-0.2 mm in size.

The raw materials were first dried and ground in a laboratory ball mill to a specific surface area of 1300-1500 g/cm^2. Then the components were weighed in stoichiometric quantities and mixed in a dry state. After that, water was added to the dry mixture. Granules with a diameter of 10-15 mm were made from the resulting mixture and fired in an electric muffle furnace with silicate heaters to temperatures of 1050-1200 °C (Tab.2).

Table 2.

The compositions of the studied raw materials for the production of porous silicate filler, in %

No. Charges	Flotation	rover Gray	TOSP	Phosphogypsum	Coal
1	80	14	-	-	6
2	80	14	20	-	6
3	80	14	-	20	6
4	80	14	20	20	6

The temperature of the beginning of the formation of the glass phase and the completion of the sintering of raw mixtures based on flotation waste with the addition of kaolin clay, as well as phosphogypsum and solid waste from the production of soda, as a result of which the patterns of the influence of the physicochemical properties of the components on the process of sintering and swelling, were established. A number of physical and chemical studies carried out have established that raw mixtures with MOF flotation waste have a higher ability to expand.

Table 3

Swelling of batches based on MOF flotation waste.

Compound Charges	Optimum swelling temperature, T °C	Minimum volumetric weight of fired granules, g/cm^3	Swelling coefficient	Swelling interval, T °C
1	1145	1.55	1,55	55
2	1138	1,48	1,61	55
3	1136	1,45	1,78	60
4	1122	1,38	1,96	65

Table 3 reflects the technological parameters of the light weight obtained, synthesized on the basis of charges with MOF flotation waste, reflecting the intensifying effect of inorganic additives TOSP and phosphogypsum on the optimal firing temperature, bulk density, expansion coefficient, expansion interval. The minimum volumetric weight of the optimal charge composition - sample No. 4 with the addition of 25% TOSP and phosphogypsum together, approaches 1.35 and the expansion coefficient increases to 1.95, in addition, the synthesis temperature decreases by 25 -35 °C.

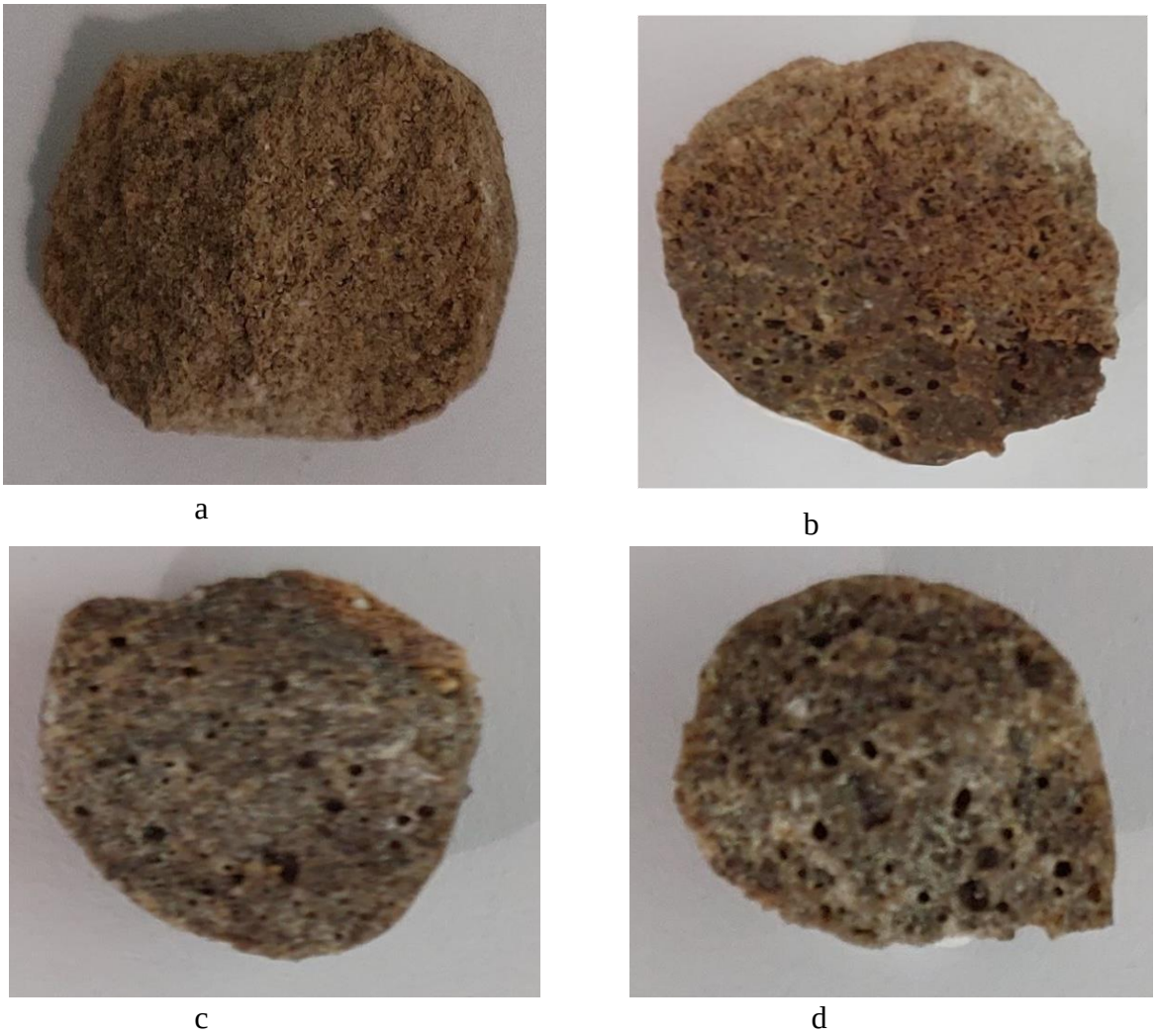


Fig. 3. Photographs of light weight samples with MOF and SOF flotation waste: (a, b) charge No. 4, (c, d) charge No. 1

Photographs of the light weight samples obtained with flotation waste used as the main raw material show the formation of a material with a large number of pores ranging in size from 0.5 to 0.01 mm when phosphogypsum and TOSP wastes are added as a pore formation intensifier in an amount of 20%, while in samples without chemical additions of pores much less and the density of the material is higher. Photographs of the light weight samples obtained with flotation waste used as the main raw material show the formation of a material with a large number of pores ranging in size from 0.5 to 0.01 mm when phosphogypsum and TOSP wastes are added as a pore formation intensifier in an amount of 20%, while in samples without chemical additions of pores much less and the density of the material is higher.

References

1. Petrov V.P., Tokareva S.A. Porous aggregates from industrial waste // Building materials, 2011. -№12. -P.46-50.

2. Abramov A. K., Efimov V. I., Nikulin I. B. Agloporite obtained from coal preparation waste as a filler for lightweight concrete // Mining sciences and technologies, 2013. -No11. - P.3-11.

3. Nimchik A.G., Usmanov H.L., Kadyrova Z.R. Physical and chemical processes for obtaining aggloporite from industrial wastes of Uzbekistan // Universum. Chemistry and biology.2019. No. 11(65), pp. 39-46.

4. Roshchupkina I.Yu., Abdrakhimov V.Z., Denisov D.Yu. Investigation of the phase composition of expanded clay based on the waste of a mining and processing plant during coal enrichment. // Bashkir Chemical Journal. 2010. Volume 17. No. 2. pp. 136-138.

5. Vasilenko A., Jafer A.S. The use of calcium-containing man-made materials in the production of expanded clay gravel. Proceedings of the Siberian Branch of the Section of Earth Sciences of the Russian Academy of Natural Sciences. Geology, exploration and development of mineral deposits. 2015. №2. (51), pp. 106-112.

6. Itkin Yu.V., Cherkinskaya K.T., Grekhov I.T. et al. Proceedings of the Institute of Combustible Minerals of the Ministry of Coal Industry of the USSR. 1997, No. 32.-p.126.128.

7. Abdrakhimov V.Z., Abdrakhimova E.S. Phase composition of ceramic products based on oil shale waste, coal preparation, oil production and ash and slag materials. Proceedings of the Samara Scientific Center of the Russian Academy of Sciences. 2013. No. 1. pp. 14-18.

8. Itkin Yu.V., Cherkinskaya K.T., Grekhov I.T. Phase composition of aggloporite based on the enrichment of coals from various deposits / Proceedings of the Institute of Combustible Fossils of the USSR Ministry of Coal Industry. 1997, No. 32.- P.126-128.

9. Pushcharovsky D.Yu. Radiography of minerals. M. 2000.- 288P.

Rezyume: *Mahalliy gilli xomashyo va texnogen chiqindilar asosida yuqori fizik-mexanik xossalarga ega bo'lgan yuqori sifatli g'ovak material olish imkoniyati yaratilgan. Ishlatiladigan kimyo sanoati chiqindilari kuyish paytida shisha hosil bo'lish jarayonini tezlashtirishi, aglomeratsiya va shishish haroratini 20-40 °S ga kamaytirishi, shu bilan birga bardoshli g'ovakli material olish imkoniyati aniqlangan. Olmaliq kon-metallurgiya kombinatining ishlatilgan gilli xomashyo va flotatsiya chiqindilarining agloporit ishlab chiqarishda g'ovak hosil bo'lish mexanizmiga ta'siri qonuniyatlari aniqlangan.*

Резюме: *Установлена возможность получения качественного пористого материала с высокими физико-механическими свойствами на основе местного глинистого сырья и техногенных отходов. Показано что, используемые отходы химической промышленности ускоряют процесс стеклообразования при обжиге, снижая температуру агломерации и вспучивания на 20-40 ^{o}C, при получении прочного пористого материала. Выявлены закономерности влияния физико-химических особенностей, используемых глинистых материалов и отходов флотации Алмалыкского горнометаллургического комбината на механизм порообразования при получении аглопорита.*

Kalit so'zlar: *yengil vaznli, flotatsiya chiqindilari, fosfogips, soda ishlab chiqarishning qattiq chiqindilari, mexanizm, pishish, ko'pchish, kuydirish.*

Ключевые слова: *легковес, флотоотходы, фосфогипс, твердый отход содового производства, механизм, спекание, вспучивание, обжиг.*

MEDICINAL TYPES AND BIOECOLOGY OF THE LAMIACEAE FAMILY

Nagmetullaev M.[1], Tursunboev X.[2]
[1]Master student of the Department of Agroecology and Introduction of Medicinal Plants
[2]Ph.D. in Biology, Associate Professor of the Department of Agroecology and Introduction of Medicinal Plants

***Summary**: In this article, we will focus on the family of mint (Lamiaceae). The small class of mint is one of the largest families on earth belonging to the mint tribe. Its representatives are mainly widespread in countries with hot and temperate climates.*

***Keywords**: Mint, Lamiaceae, Mint, medicinal, temperate climate, pharmaceuticals.*

Nowadays, whether we like it or not, it is common for people to prepare and use various forms of medicine from medicinal plants in their homes. Again, in our opinion, a significant inconvenience is that some medical professionals recommend plant raw materials imported from abroad, in addition to plant products grown in Uzbekistan and available in pharmacies. This situation makes it very inconvenient for patients treated with herbs to find the necessary herbal raw material. However, instead of the plant we are looking for in most cases, it is possible to recommend a plant raw material that grows in our area.

It is known that about 50% of medicines produced by pharmaceutical companies worldwide are made from medicinal plant raw materials. In particular, 77% of drugs used in the treatment and prevention of cardiovascular diseases, 74% of drugs used in the prevention and treatment of liver and gastrointestinal diseases, 73% of expectorants, 60% of hemostatic drugs are medicinal plants produced on the basis of raw materials.

Therefore, we will focus mainly on the family of mint (Lamiaceae). The small mint family is one of the largest families in the world, belonging to the mint family. Its representatives are mainly widespread in countries with hot and temperate climates. This family includes about 200 genera and 3,000 species. 360 species of 53 genera in Central Asia, 238 species of 39 genera in Uzbekistan. Differs from other families by its richness of species. Representatives of such categories as mint, marmarak, kiyikut, bozulbang, tograyhon, limonut, arslonkuyruk have been used in medicine since ancient times, and in the food, confectionery and perfumery industries.

Analysis of the use and application of Lamiaceae revealed the following, out of 238 species, a maximum of 143 species of honey-juice 60%, 69 medicinal 29%, 100 essential oils 42%, 27 decorative, ie ornamental 11.3%, 19 nutrients -food accounted for 8%. 74 species of plants belonging to the family are not used yet. Below is information on the bioecological properties of some medicinal representatives of the family Lamiaceae. Various toothed wall weed - Marrubium alternidens Rech. Perennial, numerous stems, sparsely hairy, less branched, 30-80 cm in height. The leaves are round, elongated, toothed. The flowers are numerous, ring-shaped, 9-11 mm long, covered with star-shaped hairs. The crown leaves are arrow-shaped, the outer side is occupied by star-shaped hairs, 9-11 mm long, the leaf is cut into two pieces. The nut is triangular ovoid, 1.5 mm long. Flowering and fertilizing in May-September.

As a weed it grows in gardens, on the edges of crops and in abandoned lands. Distributed in Tashkent, Fergana, Samarkand, Bukhara and Surkhandarya regions.

In folk medicine, the above-ground part is used. Decoction of the upper part is used in chronic rhinitis of the respiratory tract among the population, such as toothache, toothache, and in diseases of

the mouth and throat. Experiments have shown that tincture has a calming and blood pressure-lowering effect.

Field mint (water mint) - *Mentha arvensis* L. Perennial, herbaceous plant with erect stems, branched at the base, four-sided stem, 25-50 cm tall. The leaves are elongated, thick, covered with short hairs. The flowers are branched and form spiked ball flowers at the tip of the stem. The cup is 2.5 mm long with three sharp edges. The petals are pinkish-purple, 4-5 mm long. Flowering in July-August, the seeds ripen in August-September. It grows in the plains and foothills, on the banks of aric and water basins, on saxaul lands. Distributed in Tashkent and Fergana regions. Leaves and essential oils are used in medicine. Medicinal tinctures, tinctures, tinctures of the leaves are used to treat nausea and vomiting, as well as to improve digestion. Mint juice is also used to rinse the mouth and improve the taste of liquid medicines. Leaf sedative, herb drive and teas used in diseases of the stomach include extracts, essential oil tablets and drops that relieve abdominal pain, menthol ingofen.

***Lagochilus hirsutissimus* Vved**. Perennial, stems woody, erect, low-branched, height (10) - 15–30 cm. The leaves are rhombic ovoid, deeply incised, the tip is hairy. The flowers are located in the axils of leaves 4-8. The calyx is bell-shaped, with thorny tips, the lower calyx is 20-25 mm long. The petals are white, it has brown rays, 25-27 mm long. It blooms in June-July. In the foothills it grows on gravelly-fine soils. The Fergana region (Kurama ridge) is scattered at the foot of the mountain. It is used to accelerate bleeding, to stop the flow of bleeding.

Turkestan lion's tail - *Lenourus turkestanicus* V.Kresz.et, Kuprian. Perennial, stems numerous, erect, branched from the top, finely pubescent, 40-50 cm tall. The appearance of the leaves is divided into circular five-clawed pieces. The flowers are sessile, with a small number of rings. The calyx is 8-9 mm long, short hairy, the long ends turned into thorns. The petals are reddish-pink, 12-13 mm long, hairy on the outside. Nut fruit light brown, sharp triangular. Flowering in June-July, the seeds ripen in July-August.

Grows in moist, gravelly soils in the middle regions of the mountains. Distributed in Tashkent, Samarkand, Kashkadarya and Surkhandarya regions. The surface contains flavonoids (rutin, quercetin and quincvelozide), alkaloids, essential oil vitamin C, carotene, additives and substances. Medicinal tinctures, tinctures and liquid extracts are used as sedatives to treat high blood pressure, nervousness and some heart diseases, cardiac neurosis and cardiosclerosis.

Forest Jerusalem - *Stachys silvatica L*. Perennial, straight-growing stem, height 1m. The leaves are large, with large serrated teeth, the two surfaces are sparsely hairy, banded. The flowers are sparsely ringed and the flower is located in the axils of the leaves. The cup is 8-9mm long, triangular in shape, with a thorny tip. The petals are dark brown red, 14–16 mm long, the lower lip corolla 1.5 times longer than the top. It blooms in June. Grows in shrubs in the middle of the mountains. Distributed in Fergana region (Chodaksoy). The liquid extract prepared from the surface is used in the rapid contraction of the uterus, against inflammation, mining as a result of fibromyoma.

***Skutellariya oxystegiya* Juz.** Perennial - annual, sparsely cushioned, annual branches slender 5-10 cm long, herbaceous plant. The leaves are elliptical, in some cases the edges are straight. The flowers are located in the axils of the upper leaves. The calyx is 2 mm long, slightly elongated when the seed is ripe. The petals are pale yellow, 25-30 mm long. Flowering in June-August, the seeds ripen in July-September. Grows on rocks in the middle regions of the mountains. Distributed in Tashkent (shagalton), Fergana and Samarkand regions. The root of this plant is used against spasmodic diseases.

Thin desert mint - *Ziziphora tenuior* L. Annual, branched at the base, fluffy hairy, with long hairs on the inflorescences, 5-30 cm high. The leaves are 5–8 mm long, with a pair of elongated ovate, short-banded, fast-shedding, cup-shaped. Triangular-pointed, toothed. The petals are light purple. 8-11 mm long.

The nut is a 3-sided oblong nut. In brown. 1.5 mm long. Flowering in May-June, the seeds ripen in June-August. It is distributed in all foothills and middle mountainous areas of Uzbekistan in rocky, clayey, gravelly areas. Decoction made from the plant is used to improve bowel function, diarrhea and constipation to improve heart function.

69 species belonging to 26 families of the *Lamiaceae* family have medicinal properties, including *Lagochilus Bunge* ex Benth. 11 species, Ziziphora L. 8 species, *Salvia* L. 7 species, *Dracocephalum* L. 7 species. *Perovskia* Kag., *Stachys* L. 4, *Mentha* L., *Nepeta* L. Z, *Lycopus* L, *Lamium* L, *Skutellaria* L. 2, the remaining 14 genera were found to have only 1 medicinal representative.

References

1. Flora of Uzbekistan, Tashkent: Publishing House of the Academy of Sciences of the Uzbek SSR. 1961 .-- v. 5. from. 263-415.

2. Adylov T.A., Kamelin R.V., Makhmedov A.M. Notes on the family Lamiaceae, I // News of the System.Higher., 1986. - v.23. - p. 110-114.

3. The Red Book of Uzbekistan (2009) Plants and mushrooms. Chinor Publishing House, Tashkent, Vol. 1, 356.

4. Kurmukov A.G., Belolipov I.V. Dikorastushchiye lekarstvennyye rasteniya Uzbekistana (botanika, khimiya, farmakologiya, meditsina). - Tashkent, “Exfreneum press”, 2012. -288 s.

5.Khodzhimatov K.KH., Aprasidi G.S., Khodzhimatov A.K. Dikorastushchiye tselebnyye rasteniya Sredney Azii. - Tashkent, Izd-vo med. lit. im. Abu Ali ibn Sino, 1995. - 112 s.

Rezyume: *Ushbu maqolada biz yalpiz (Lamiaceae) oilasiga e'tibor qaratamiz. Yalpizlarning kichik sinfi yalpiz qabilasiga mansub yer yuzidagi eng yirik oilalardan biridir. Uning vakillari asosan issiq va mo"tadil iqlimi bo'lgan mamlakatlarda keng tarqalgan.*

Резюме: *В этой статье мы сосредоточимся на семействе мятных (Lamiaceae). Малый класс мятных — одно из самых больших семейств на земле, относящееся к племени мятных. Его представители в основном распространены в странах с жарким и умеренным климатом.*

Kalit so'zlar: *Yalpiz, Lamiaceae, Yalpiz, dorivor, mo"tadil iqlim, farmatsevtika.*

Ключевые слова: *мята, губоцветные, мята лекарственная, умеренный климат, лекарственные средства.*

UDK 517.98

PROPERTIES OF THE LATTICE OF TRIPOTENTS IN NEUTRAL SFS - SPACE

Ibragimov M.M.
Karakalpak State University named after Berdakh

Summary: In this paper, it is shown that in a real finite-dimensional neutral strongly facially symmetric space the lattice of tripotents is a Boolean lattice.

Keywords: Strongly facially symmetric space, orthomodular lattice, Boolean algebra.

1.Introduction. A strongly facially symmetric space (SFS - space) was first defined and studied by J. Friedman and B. Russo, in [1]. In this work, we use the concepts, terminology and notation from the works [1-2].

In [2, Proposition 4.5] it is proved that for any fixed geometric tripotent ω in a neutral SFS - space Z the set $L_\omega := \{v \in GU : v \le \omega\} \cup \{0\}$ is a complete orthomodular lattice with the smallest element 0, the largest element ω and the orthocomplement $v \mapsto v^\perp = \omega - v$. In this paper, we show that in a real finite-dimensional neutral SFS - space Z, the set L_ω is a Boolean lattice.

In [2, Proposition 4.5] it is proved that for any fixed geometric tripotent ω in a neutral SFS - space Z, the set $L_\omega := \{v \in GU : v \le \omega\} \cup \{0\}$ is a complete orthomodular lattice with the smallest element 0, the largest element ω and the ortho complement $v \mapsto v^\perp = \omega - v$. In this paper, it is shown that in a real finite-dimensional neutral SFS - space Z, the set L_ω is a Boolean lattice.

2. Preliminaries

Let Z be a real or complex normed space. Elements are $f, g \in Z$ *orthogonal* and write $f \lozenge g$, if

$$\|f + g\| = \|f - g\| = \|f\| + \|g\|.$$

The norm exposed face of the unit ball Z_1 of space Z is a non-empty set (necessarily $\neq Z_1$) having the form

$$F_x = \{f \in Z_1 : f(x) = 1\}$$

for all $x \in Z^*$, with $\|x\| = 1$.

For any subset $S \subset Z$ put $S^\lozenge = \{f \in Z : f \lozenge g,\ \forall g \in S\}$ and the set $S^\lozenge$ is called the *orthogonal* complement of S. Subsets $S, T \subset Z$ is called *orthogonals*$(S \lozenge T)$, if $f \lozenge g$ for all $(f, g) \in S \times T$. An element $u \in Z^*$ is called a projective unit if $\|u\| = 1$ and $\langle u, F_u^\lozenge \rangle = 0$. We denote by F and T the sets of all norm exposed faces Z_1 and projective units in Z_1^*, respectively.

Let us define a symmetrical face as a norm exposed face F in Z_1 with the following property: there is a linear isometry S_F from Z to Z with $S_F^2 = I$ (we call such a mapping a symmetry), whose fixes point set S_F is $\overline{spF} \oplus F^{\diamond}$.

Real or complex normed space Z is said to be weakly facially symmetric (WFS - *space*) if each norm exposed face in Z_1 is symmetric.

A geometric tripotent is a projective unit $u \in Z^*$ with the property that $F := F_u$ is a symmetric face and $S_F^* u = u$ for the symmetry S_F corresponding to F.

We denote by SF and GT the sets of all symmetric faces Z_1 and geometric tripotents in Z_1^* respectively. For $u, v \in GT$ we will write $u \le v$ if $F_u \subset F_v$.

A WFS - space Z is said to be strongly facially symmetric (SFS - space) if, for each norm exposed face F_u of Z_1 and each $v \in Z^*$ with $\|v\| = 1$ and $F_u \subset F_v$ we have $S_u^* v = v$, where S_u is the symmetry corresponding to F_u.

It can be seen from [1, Lemma 2.5] that in the WFS - space for $u, v \in T$ and $F_u, F_v \in F$ the conditions $F_u \lozenge F_v$ and $u \lozenge v$ are mutually equivalent..

Recall that the following notation and concepts are used for elements a and b in an orthomodular lattice L: write $a \perp b$ when $a \le b^{\perp}$; write $a \oplus b = a \vee b$ when $a \perp b$; We say that an element a commutes with an element b, if $b = (a \wedge b) \oplus (a^{\perp} \wedge b)$.

3. Main result

Let consider what meanings and properties these notations and concepts have when $L = L_{\omega}$ is a complete orthomodular lattice in a neutral SFS - space Z. First we prove the following lemma.

Lemma. *Let Z be a neutral SFS - space and let $u, v \in L_{\omega}$. Then the following conditions are equivalent:*

(i) $u \lozenge v$;

(ii) $u \le v^{\perp}$;

Proof. $(i) \Rightarrow (ii)$. Since $u \lozenge v$, then by [1, Lemma 2.5] we have $F_u \lozenge F_v$, hence $F_u \subset F_v^{\diamond}$. In [3, Lemma] it is shown that $F_{v^{\perp}} = F_{\omega - v} = F_v^{\diamond} \cap F_{\omega}$, therefore $F_u \subset F_{v^{\perp}}$, i.e. $u \le v^{\perp}$.

$(ii) \Rightarrow (i)$. $u \le v^{\perp} \Rightarrow F_u \subset F_{v^{\perp}} = F_{\omega - v}$. By [2, Lemma 4.2] we have $(\omega - v) \lozenge v$, since, from [1, Lemma 2.5] we obtain $F_v \lozenge F_{\omega - v}$, therefore $F_v \lozenge F_u$. Then, by [1, Lemma 2.5], we have $u \lozenge v$. ■

It can be seen from this lemma that in the neutral SFS - space for $u, v \in L_{\omega}$ the inequality $u \le v^{\perp}$ is equivalent to the orthogonality of u and v. Therefore, instead of the notation $u \perp v$, we

use $u \Diamond v$. Then for $u \Diamond v$ we have $u \oplus v = u \vee v = u + v$. Since, $(u \wedge v) \Diamond \left(u^{\perp} \wedge v\right)$, then we say that u commutes with v if

$$v = \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right). \tag{1}$$

Consider the conditions in the neutral SFS - space under which the equality (1) is satisfied or not satisfied for geometric tripotents from L_{ω}.

Case 1. If $u \leq v$ or $u \Diamond v$, then u commutes with v.

Indeed, if $u \leq v$, then the equality (1) coincides with the orthomodularity condition, i.e. $v = u + \left(u^{\perp} \wedge v\right) = \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$. If $u \Diamond v$, then $u \Diamond v$ and by the lemma we have $v \leq u^{\perp}$, hence $u^{\perp} \wedge v = v$, therefore $\left(u \wedge v\right) + \left(u^{\perp} \wedge v\right) = 0 + v = v$.

Case 2. If geometric tripotents $u, v \in L_{\omega}$ are mutually non-orthogonal and $u \wedge v = 0$, then $v \neq \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$.

Assume the opposite, let $v = \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$, then $v = u^{\perp} \wedge v$. Hence it follows that $v \leq u^{\perp}$, therefore, by Lemma we have $u \Diamond v$. This contradicts the condition, therefore $u^{\perp} \wedge v \neq v$, hence $v \neq \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$.

Case 3. If $u \wedge v = 0$ *or* $u \wedge v \neq 0$, *then* $v \neq \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$.

This can be seen from the following examples.

Example 1. Let Z be the predual space of the Cartan factor of type I_2. Let us take tripotents

$$\omega = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}, \; u = \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}, \; v = \begin{pmatrix} 1/2 & 1/2 \\ 1/2 & 1/2 \end{pmatrix}.$$

It's clear that $u, v \leq \omega$. Since u, v are atoms, then $u \wedge v \neq 0$. Since

$$uv = \begin{pmatrix} 1/2 & 1/2 \\ 0 & 0 \end{pmatrix} \neq 0,$$

then u and v are mutually non-orthogonal.

From this example, it can be seen that if $u \wedge v = 0$, then u and v, in general, mutually non-orthogonal. Then it follows from case 2 that the equality $v = \left(u \wedge v\right) + \left(u^{\perp} \wedge v\right)$ does not hold in this case.

Example 2. Let Z be the predual space of the Cartan factor of I_3. Let us take tripotents

$$\omega = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad u = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad v = \begin{pmatrix} \frac{1}{2} & \frac{1}{2} & 0 \\ \frac{1}{2} & \frac{1}{2} & 0 \\ 0 & 0 & 1 \end{pmatrix}.$$

Then $u,v \in L_\omega$ and

$$u \wedge v = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \neq 0 .$$

Further, $$u^\perp = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix}, \quad u^\perp \wedge v = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}.$$

Hence

$$(u \wedge v) + (u^\perp \wedge v) = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} + \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix} = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \neq v$$

Case 4. *If L_ω is a Boolean algebra, then the equality (1) holds for any $u,v \in L_\omega$.*

Indeed, from the distributivity identity and equality $u \vee u^\perp = \omega$ we get:

$$(u \wedge v) + (u^\perp \wedge v) = (u \wedge v) \vee (u^\perp \wedge v) = v \wedge (u \vee u^\perp) = v \wedge \omega = v .$$

Recall that a non-empty subset S of a lattice L is called a Foley–Holland set (see [8]) provided that for any distinct a,b,c elements S at least one of them a,b,c commutes with the other two. Denote $\langle S \rangle$ by the sublattice generated by the set S.

Theorem. *Let Z be a real finite-dimensional neutral SFS - space. Then for any $\omega \in GU$ the lattice L_ω is a Boolean algebra.*

Proof. By [5, Proposition 1], a face F_ω is a simplex, vertices at extreme points that are mutually orthogonal. By [6, Theorem 2.1.2], these extremal points are norm exposed points, therefore, the minimal geometric tripotents corresponding to these points from L_ω are mutually orthogonal. Then in any three element subset T of the set $M_\omega = L_\omega \bigcap M$ any element commutes with two others, i.e. M_ω is a subset of the Foley–Holland lattice L_ω. Since $\langle M_\omega \rangle = L_\omega$, then by [7, Main Theorem] it follows that L_ω is distributive, i.e., Boolean algebra.

References

1. Y.Friedman and B.Russo, *A geometric spectral theorem* // Quart. J. Math. Oxford. 1986. Vol. 37. 2. p. 263-277.

2. Y.Friedman and B.Russo, *Affine structure of facially symmetric spaces//* Math. Proc.Cambridge Philos. Soc. 106 (1989) 107-124.

3. Ibragimov M.M., Tleumuratov S. J. , Seypullaev J.X. *Some geometric properties of a strongly facially symmetric space* // Methods of functional analysis and topology. – 2005. – №3 (11). –P. 234-238.

4. T.S.Blyth and M.F.Janowitz, *Residuation theory*, Pergamon Press, Oxford, 1972.

5. Ибрагимов М.М., Сейпуллаев Ж.Х. *Описание n-мерных вещественных сильно гранево симметричных пространств ранга n-1*. Узбекский математический журнал. – 2015. – № 4. –С.39–46.

6. Ядгоров Н.Ж., Ибрагимов М.М., Сейпуллаев Ж.Х., *О экстремальных точках единичного шара конечномерных гранево симметричных пространств*. Узбекский математический журнал. 2012, №4, С. 167-171.

7. Richard J. Greechie, *On generating distributive sublattices of orthomodular lattices,* Proceedings of the American Mathematical Society Volume 67. Number I, November 1977.

8. G. Crown, *A note on distributive sublattices of an orthomodular lattice*, J. Natur. Sei. And Math. 16 (1976), 75-80.

Rezyume: *Mazkur maqolada haqiqiy shekli o'lshovli neytral kuchli tomoniy simmetrik fazosi tripotentlar panjarasi bul panjarasi ekanligi ko'rsatilgan.*

Резюме: *В данной работе показано, что в действительном конечномерном нейтральном сильно гранево симметричное пространство решетки трипотентов является булевой решеткой.*

Kalit so'zlar: *Kuchli tomoniy simmetrik fazo, ortomodulyar panjara, bul algebrasi.*

Ключевые слова: Сильно гранево симметричное пространство, ортомодулярная решетка, булева алгебра.

UDC 621.315.592

DETERMINATION OF THE TEMPERATURE GRADIENT OF A MONOCRYSTALLINE SILICON ELEMENT

Saidimov Ya.A.[1], Rumi R.F. [1], Saparniyazova Z.M.[2], Saparov F.A. [1], Umarov F.B. [1]

[1]Research Institute of Semiconductor Physics and Microelectronics at the National University of Uzbekistan named after M. Ulugbek,

[2]Karakalpak State University named after Berdakh

Summary: *The results obtained allow that the developed technique for monitoring radiation temperature and studying the formation of radiation defects by determining the temperature gradient on the front and back surfaces of a silicon crystal under laboratory conditions during irradiation of semiconductors.*

Keywords. *Semiconductor materials, temperature, dielectric, phonon conductivity, irradiation.*

Introduction. In metals, heat is transferred as a result of the movement of free charge carriers and vibrations of the atoms of the crystal lattice. Of these, heat exchange can be divided into two components: lattice (phonon) and electronic. The total thermal conductivity is equal to the sum of these components.

Since metals have a large number of free electrons, their contribution to the overall thermal conductivity is large, so the movement of freely charged particles is the main mechanism of heat transfer in metals.

Dielectrics are characterized mainly by the thermal conductivity of the crystal lattice (phonon), since energy transfer occurs as a result of vibrations of neighboring crystal lattices, since they do not contain free electrons. In such substances, heat transfer consists of one component.

Since the role of electronic conductivity in pure semiconductors is much smaller, the proportion of the crystal lattice in the heat exchange process is large. Therefore, the microscopic structure of crystals and the inputs involved in them as phonon scattering centers in them are very sensitive to thermal conductivity.

The thermal conductivity of semiconductors is very high compared to the thermal conductivity of other solids, especially at low temperatures.

The thermal conductivity of semiconductors is mainly related to the vibrations of the crystal lattice. However, in many cases, the semiconductor is doped with inclusions containing free electrons (holes), which leads to high electron (hole) thermal conductivity and low phonon conductivity (for example, lead telluride PbTe).

The temperature dependence of the thermal conductivity of semiconductors depends on their chemical composition and the degree of alloying. Also, the thermal conductivity of semiconductors ZnSb, CDs, CdSe, CdTe, etc. decreases with increasing temperature, but in some cases the thermal conductivity of some semiconductors increases with temperature, and then begins to decrease as a result of the influence of temperature on thermal conductivity. Such semiconductors include: GaP,

AlN, AlSb and some others. Figure 1 shows a graph of the temperature coefficient of thermal conductivity.

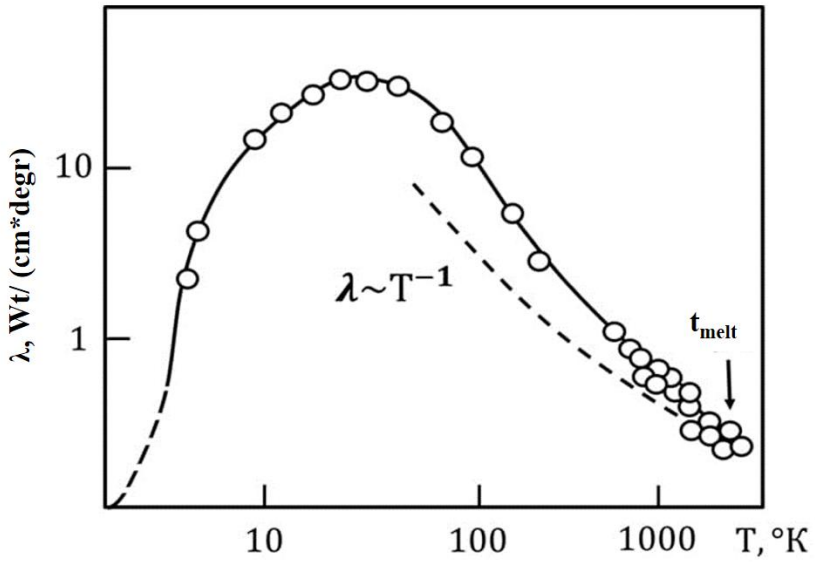


Fig.1. Graph of the temperature dependence of the thermal conductivity of silicon.

The thermal conductivity of a silicon element has been studied over a wide temperature range [1]. One of its characteristic features is that it is dimensionally dependent on temperature and reaches a maximum of about 30-40 °C.

Such a feature is that the temperature is inversely proportional to the phonon-phonon interaction. This feature is associated with the inverse effect of temperature on the processes of scattering (and transmission) of phonons (~ T^{-1}) and scattering of phonons at the crystal boundary [2].

The thermal conductivity of semiconductors is in a wide range. For example: 1.7 W/(m*K) for HgSe n-type, 490 W/(m·K) for SiC n-type. An interesting aspect of these values is that the value given for n-type SiC is greater than the thermal conductivity of copper (401 W/mK) and silver (458 W/mK) [3]. The results of calculations for various radiation sources (laser, electron beam, incoherent light) show that the thermal field is significantly influenced by the initial temperature of the sample and its thickness. The smaller the thickness of the sample and the greater its initial temperature, the greater the induced temperature [4].

The purpose of this work is not to determine the thermal conductivity of semiconductors, but to develop a method for monitoring the radiation temperature during irradiation of semiconductors in the EG-2 accelerator channel.

The method of the experiment. The irradiation of silicon single crystals with a proton beam with light ions at the EG-2 ion accelerator (electrostatic generator) (energy 2 MeV, current in the beam 2 mA) belonging to our institute has begun. In some cases, it is necessary to know the radiation temperature when irradiating semiconductors, since the sample heats up depending on the proton energy. Since preliminary work is underway to study the formation of radiation defects in semiconductor substances at this accelerator, it is technically not possible to measure the sample temperature directly in the irradiation chamber in advance. To solve this problem, we initially came

to the conclusion that by determining the temperature gradient on the front and back surfaces of a silicon crystal in laboratory conditions and measuring its temperature in the back surface when irradiated through a thermocouple, it is possible to draw any conclusions about the temperature of its front surface. Of course, if the temperature gradient consists of a linear function. To do this, we have created a special device, the schematic structure of which is shown in Figure 2. Figure 3 shows images of the device (with and without a thermostat).

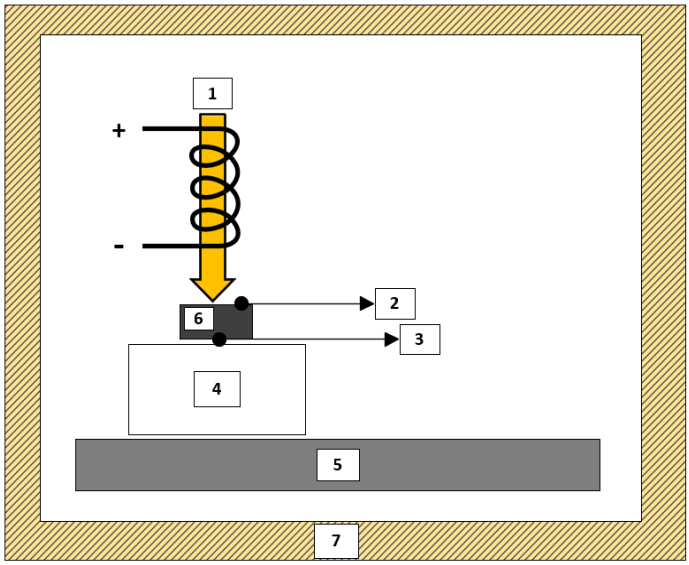
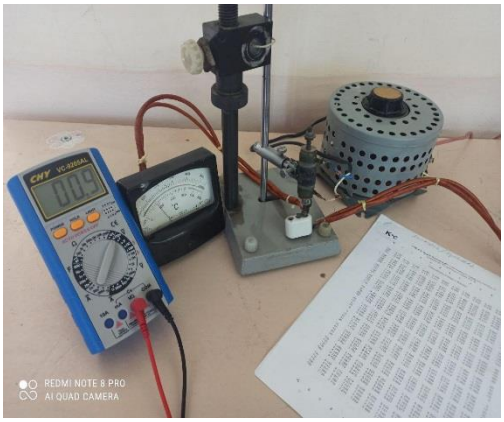


Fig. 2 Diagram of a device for measuring the temperature gradient of a silicon crystal.

In the diagram, the device: 1-copper rod, 2-3 thermocouples, 4 - porcelain base, 5 - base, 6 - silicon single crystal, 7 - thermostat.

In this work, the temperature gradient of an n-Si (KEF-5) single crystal with a thickness of 2 mm was studied. To do this, a enameled moisture-proof wire type resistor with a resistance of 1.2 (5%) was taken as a heater Om and mounted on a special tripod. The sample is mounted on a porcelain base with aluminum-chrome thermocouples attached to its front and back surfaces, which are placed inside the thermostat.

Using these thermocouples, the temperatures on the upper and lower surfaces of the sample were measured. The temperature on the front surface of the silicon was measured with a dial thermometer, and on the back surface with a voltmeter (calibrated by temperature). The results obtained are presented in Table 1.



a) without a thermostat a) with a thermostat

a) without a thermostat a) with a thermostat

Fig. 3 Experimental device for measuring the temperature gradient of a silicon single crystal.

The results obtained and their discussion.

The results were calculated based on the Origin Pro Lab program and connection schedules were built. As can be seen from the first and second graphs, the relationship between voltage and temperature is linear.

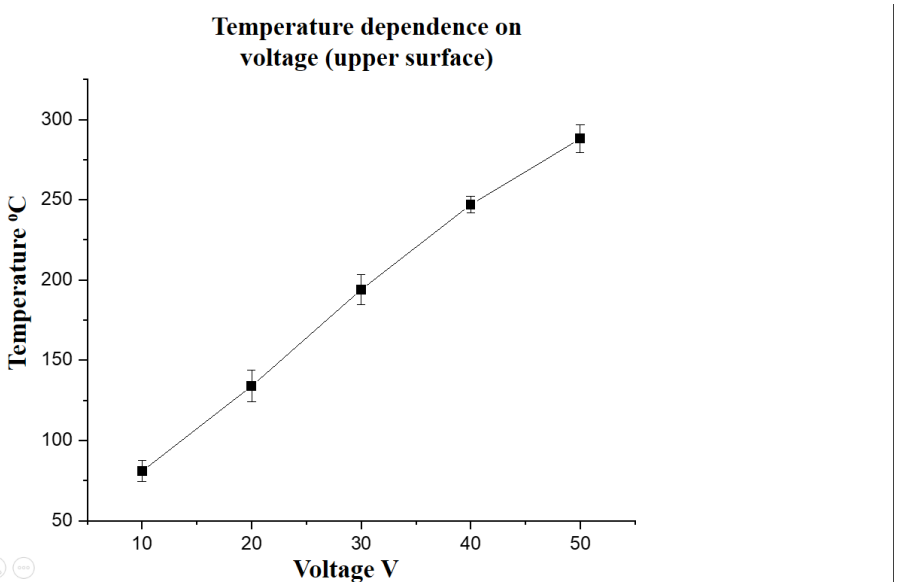
Figure 3 shows a graph of the dependence of the temperature coefficient (coefficient) on the voltage on the front and bottom surfaces of a silicon single crystal. As can be seen from the graph, the relationship between the voltage (temperature) and the coefficient k_{av} (of course, at the margin of error) is a linear function. This means that the temperature of the lower surface of the sample can be determined by measuring it directly (in the range of 90°-300°C) during irradiation.

Table 1

V	T_1^1	T_2^1	T_3^1	T_{av}^1	δ_1	T_1^2	T_2^2	T_3^2	T_{av}^2	δ_2
10	90	75	78	81	6.4	25	18	21	21	2,04
20	142	140	120	134	9.9	40	37	33	37	2,04
30	200	200	180	194	6,6	62	64	53	60	3,4
40	250	252	240	247	3,6	86	88	74	83	4,38
50	280	300	285	288	6	101	115	98	105	5,24

In the table: T_1^1, T_2^1 , T_3^1 and T_1^2, T_2^2, T_3^2- measured temperatures on the front and back surfaces of the sample, T_{av}^1, T_{av}^2 — their average values, the deviation δ_1, δ_2 from the actual value. The dependences between the voltage applied to the heater and the temperature on the front and back surfaces of the sample are shown in Figures 4 and 5.

Fig. 4. Graph of temperature versus voltage (upper surface)



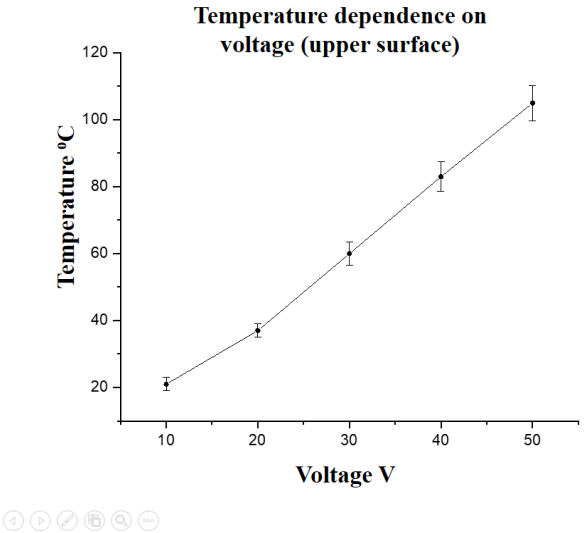


Fig. 5. Graph of temperature versus voltage (lower surface)

The ratio of temperatures on the front and back surfaces (in the range of 90-300 ℃) for a given sample thickness and their errors are shown in Table 2.

Table-2

V	T_1^1/T_1^2	T_2^1/T_2^2	T_3^1/T_3^2	k_{cp}	δ_k
10	3,6	4,17	3,71	3,82	0.24
20	3,55	3,78	3,63	3,58	0.11
30	3,22	3,12	3,39	3,24	0.11
40	2,90	2,86	3,24	2,9	0.20
50	2,77	2,61	2,90	2,68	0.14

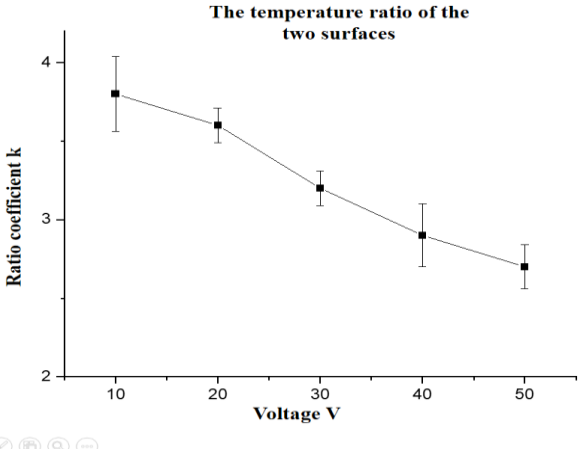


Fig. 3. Graph of the dependence of the coefficient of the temperature ratios of the two surfaces on the voltage

This means that the temperature of the lower surface of the sample can be determined directly by irradiating it (in the range of 90 ° -300 ° C) and determining its radiation temperature, knowing the coefficient for a given thickness.

References

1. Okhotin A.S., Borovikova R.P. and others. Thermal conductivity of solids. Reference book. Moscow: Energoatomizdat, 1984. - 320 p.
2. O. Y. Shevchenko. "Fundamentals of solid state physics" Textbook. St. Petersburg 2010.
3. Physical quantities. Guide. Edited by I.S. Grigoriev, E.Z. Meilikhova. M.: Energoatomizdat, 1991— - 1232 p.
4. Kaidanov V.I., Muromskiy A.B. Electrical conductivity, thermoelectric phenomena and thermal conductivity of semiconductors. Study guide. Leningrad, 1981. - 79 p.

Rezyume. *Olingan natijalar radiatsion haroratni nazorat qilish va radiatsion nuqsonlarning shakllanishini o'rganish, yarim o'tkazgichlarni nurlantirishda laboratoriya sharoitida silikon kristalining old va orqa yuzalarida harorat gradientini aniqlash uchun ishlab chiqilgan usuldir.*

Резюме. Полученные результаты позволяют, что *разработанная методика контроля радиационной температуры и изучения образования радиационных дефектов, определяя градиент температуры на передней и задней поверхностях кристалла кремния в лабораторных условиях при облучении полупроводников.*

Kalit sózlar. *Yarimótkazgich materiallar, temperatura, dielektrik, fononli ótkazuvchanlik, radiatsiya.*

Ключевые слова. *Полупроводниковые материалы, температура, диэлектрик, фононной проводимость, облучение.*

UDC 58

STUDY OF THE INFLUENCE OF DIFFERENT FACTORS ON THE GERMINATION OF SEEDS UNDER LABORATORY CONDITIONS

Davletmuratova V.B., Ibragimova Sh.U., Askarova B.Sh.
Karakalpak State University named after Berdakh

Summary: *This article presents data on the study of germination and germination of seeds in laboratory conditions under the influence of various factors. The seeds of Sorghum cernuum and Beta vulgaris L. were used for the experiment.*

Keywords: *seeds, laboratory, factor, period, sprouting, germination energy.*

The study of seed germination energy and sprouting is one of the main areas of plant physiology in the study of the latent period. Seeds with good sprouting and high germination energy always give friendly and full-fledged seedlings. Seed germination also has a great production value: it determines their suitability for sowing and their sowing rate. Seed sprouting is influenced by various environmental conditions: heat, light, moisture, the presence of minerals in the soil. We decided to find out what conditions are the most favorable for seed sprouting.

The purpose of this work is to determine the main parameters of seed sprouting under various germination conditions.

The object of study. For the experiment, we used the seeds of Sorghum cernuum - "Boy zhuary" (local variety) and Beta vulgaris L. (Bordeaux variety) from the general collection. Due to its resistance to dry and hot climate, sorghum has long been considered the most valuable food product and it is still one of the main food sources for the inhabitants of Karakalpakstan.

At present, sorghum is one of the five most popular plants in the world and is used in various fields of human activity. In turn, the common beet is a plant of dry habitat, semi-deserts and due to its taste it is widely used in the daily diet of local residents.

Materials and methods of research

The experiment was carried out from March 30, 2022 in laboratory conditions of the Faculty of Biology of Karakalpak State University (Fig.). The experiment was carried out in 3 variants, where the lighting and composition of the humidifier were changed:

- option 1 - seeds were germinated in the light, at room temperature, on water;
- option 2, differed from the first one in that a weak solution of NaCl was used instead of water;
- option 3 - differed from the first option in that the sprouting was carried out in the dark.

Fig. During the experiment in the laboratory of the Faculty of Biology

For seed germination, Petri dishes of 9 cm in diameter disinfected with ethyl alcohol were used. A label written in pencil was inserted into each dish. As a litter (bed) in Petri dishes, white filter paper was used. To moisten the litter, water at room temperature was used immediately before laying the seeds for sprouting. The seeds were laid out on the bed of a Petri dish evenly at a distance of 0.5–1 cm from one another. The repetition (1 cup - 20 seeds) was four times with statistical data processing. For statistical processing of the material conventional research methods were used.

The plants were observed daily, changes were noted, the plants were photographed on the 3rd and 7th days of germination, the seeds were considered germinated if there were a roots exceeding the length of the seeds. The germinated seeds were counted within 7 days from the beginning of sprouting. At a positive temperature and free air access, sorghum and beet seeds were germinated in the laboratory conditions under the influence of various environmental factors (table).Table

Influence of different conditions on seed germination

(seed laying on 03/30/2022)			
Experience Variant	Beginning of germination	Germination energy, %	Germination, %
1	2	3	4
Solar lighting - filter paper - water			
Sorghum cernuum 1	1/III	65	75
2	2/III	80	95
3	3/III	90	100
4	4/III	100	100
Beta vulgaris L. 1	1/III	0	0
2	2/III	5	5
3	3/III	10	20
4	4/III	20	20
Scattered light - filter paper - 1% NaCl solution			
Sorghum cernuum 1	-	0	0
2	-	0	0
3	-	0	0
4	-	0	0
Beta vulgaris L. 1	-	0	0

2	-	0	0
3	-	0	0
4	-	0	0
Darkness - filter paper - water			
Sorghum cernuum 1	1/III	50	65
2	2/III	80	80
3	3/III	85	85
4	4/III	85	85
Beta vulgaris L. 1	1/III	0	0
2	2/III	5	10
3	3/III	10	20
4	4/III	20	20

According to the first version of the study, the experiment was carried out in natural light conditions. According to the second variant, a 1% NaCl solution was used instead of water for the filter paper humidifier. Round-the-clock germination in the dark - in a thermostat with the turned off lighting was carried out in the third variant. At the same time, the germination temperature was + 20-25 °C.

Daily inspection of Petri dishes was carried out witl due regard bor the germination of seeds, removing all "normally" and "abnormally" germinated seeds.

Research results

In the course of the study, it was settled that at room temperature in natural light the dynamics of germination of sorghum and beet seeds differed: mass germination was observed in sorghum, the germination energy systematically increased on the 4th day and it reached its maximum value, stretched and single germination were observed in beets as well. Germination under moistening with a weak solution of NaCl did not give any results. NaCl had a negative effect, having suppressed germination completely. In the seeds of Sorghum cernuum at a temperature of +20-25 °C, the percentage of germination in the dark was ~ 78.7%, and in the light - ~ 95-100%. Seeds of Beta vulgaris at a temperature of +20-25 °C in the dark germinated by 12.5%, and in the light the percentage of germination was at an average 11,2%

As a result of a comparative study of the biology germination of seeds of sorghum and beet plants it was revealed that the highest germination rate is observed in sorghum 90-100%. Bright sunlight, variable positive temperatures (+20–25°C) have a stimulating effect on sorghum seeds, causing their mass germination. The process of germination of beet seeds was not significantly affected by light. But in the future, the lack or absence of light can adversely affect the development of plants - even lead to their death.

Thus, the data obtained by us in the course of the study on the studied samples indicate a high photosensitivity of sorghum seeds more than those of beets.

References:

1. Gulia V.O., Orlovskaya T.V. Determination of laboratory germination of seeds of various variations of Helleborus caucasicus and Helleborus abchasicus // International Journal of Experimental Education. - 2015. - No. 6 - S. 66-68.

2. Armor B.A. Methods of field experience (with the basics of statistical processing of research results) 5th ed., Revised. and additional — M.: Agropromizdat, 1985. — 351 p.; ill.¬ - (Textbooks and teaching aids for higher educational institutions).

3. Tovmasyan E. Study of the influence of plant life factors on the germination of common bean seeds https://znanio.ru/media/issledovanie_vliyanie_faktorov_zhizni_rastenij_na_prorastanie_semyan_fasoli_obyknovennoj-3638

Rezyume: *Ushbu maqolada laboratoriya sharoitida turli omillar ta'sirida urug'larning unish energiyasi va unib chiqishini o'rganish bo'yicha ma'lumotlar keltirilgan. Tajriba uchun Sorghum cernuum va Beta vulgaris L. urug‘laridan foydalanilgan.*

Резюме: *В данной статье представлены данные по изучению прорастания и всхожести семян в лабораторных условиях при влиянии различных факторов. Для эксперимента были использованы семена Sorghum cernuum и Beta vulgaris L.*

Kalit so‘zlar: *urug‘, laboratoriya, omil, davr, unib chiqish*

Ключевые слова: *семена, лаборатория, фактор, период, всхожесть,*

MONITORING AND PREVENTION OF TERMITES OF ANACANTHOTHERMES GENERATION IN THE CONDITIONS OF KARAKALPAKSTAN

Juginisov T.I., Kalilaeva B.R., Duysengaliev E.S., Dawletmuratov I.Z., Isaev R.T., Orazbaeva S.M.

Karakalpak state university named after Berdakh

Summary: *This article discusses the pest characteristics of termites of the genus Anacanthotermes, monitoring and development of modern technologies for their protection through the use of environmentally friendly drugs against them in the protection of building materials.*

Keywords: *termites of the genus Anacanthotermes, chemicals, ecological, pests, population, monitoring, prevention.*

Introduction. Due to the growth of humanity on a global scale and the global changes in the environment, the insect world is becoming more widespread and the scale of their pest impact is increasing. In particular, members of the termite family of insects are very common in nature, living as a community in a variety of soil-related ecological environments. To date, more than 2,900 species of termites have been identified, of which 120 species have been recorded as pests [4].

Termites are a real disaster in all tropical and tropical countries, as exemplified by the deterioration of housing, furniture, clothing and footwear, the drying up of various wild plants, trees and cereals, irrigation canals, piers, barges, dams and dams. suffice it to say that it turns into piles under water pressure. Termites also lead to the complete extinction of books stored in many archives and libraries [3].

There are two species of termites of the genus Anacanthotermes in Uzbekistan: Turkestan and the Great Caspian (A.turkestanicus Jacobs., A.ahngerianus Jacobs.), Especially in the last 20-30 years in almost all regions of the Republic and the Republic of Karakalpakstan. buildings and even historical monuments. [1].

Although measures have been developed to control termites, their latent lifestyle, protection from environmental factors, the functional specialization of their layers in termite nests, their large numbers in nests, their ability to regenerate their population at a short rate even in the event of control measures, the current control measures - clearly shows that the measures are not promising.

Given the above, it requires the development of new environmentally friendly, highly effective new control technologies against termites. From this point of view, in the conditions of Karakalpakstan, there is no complete research on termites of the genus Anacanthotermes, and therefore it is of theoretical and practical importance to conduct complex research on this problem.

Object and methodology of research. The materials required for the research were studied and compared in the context of Karakalpakstan in 2009-2020. It mainly studied the damage to buildings of state importance, schools, kindergartens, residential houses, historical monuments and their natural distribution. Populus afghanica (Aitch.et Hemsb.), Catalpa bignonioides (Walt.), Quercus ilex (L.), Quercus robur (Uzbek poplarus afghanica), catalpa bignonioides (Walt.) L.), oak - Quercus rubra (L.), Gumnoclagus dioicus (L.), Ailanthus altissima (Mill.), Juniperus seravschanica (L.), pine - Pinus silvestris (L.), turanga - Populus pruinosa (Schrenk.), black willow - Populus nigra (L.), white willow - Populus alba (L.), Picea abies (L.), Robinia pseudacacia (L), willow - Salix alba (L.), Betula pendula (Roth.) , Grataegus pontica (C. Koch.), Lime - Ulmus densa (Lithuania), Caragana arborescens (Lam.), Chestnut - Aesculus hippocastanum (L.), Gleditschia triacanthos (L.), Tilia tomentosa (Moench.), Acer platanoides (L), Biota orientalis (L.), Platanus orientalis (L.), Fraxinus pubescens (L.), Acer negundo (L.), tuxmak - Sophora japonica (L.), yulgin - Tamarix hispida (Willd.) , jiy da - Elaeagnus angustifolia (L.), saxaul - Haloxylon aphyllum (Minkw.) plant samples soaked in a mixture of water “Sermit (10%)”, “Fipronil Extra (20%)”, “Nort”, “Nortex-Lux”,

“ Nortex-Alpha ”,“ Pirilax ”,“ Piralax-Lux ”and“ Oligomer superplasticator ”chemicals proposed by the Tashkent Research Institute of Chemical Technology were tested. All data obtained from Biostat, Origin 6.1 [Microsoft U.S. software and G.F. However, it was carried out by the method of statistical processing [2].

Research results. The use of excessive chemicals against pests does not go unnoticed by the impact of abiotic, biotic and anthropogenic factors on the environment. For this reason, one of the most effective ways to combat termite damage to the Anacanthotermes generation today is to increase the resistance to the vital activity of the pest before using wood and other building materials. It has been clarified that such methods are environmentally friendly and reliable by testing them in laboratory and field experiments.

Two species of the genus Anacanthotermes: Turkestan and the Great Caspian (A.turkestanicus Jacobs., A.ahngerianus Jacobs.) Increase the resistance of wood and other building materials to termite damage under laboratory conditions. em. ”,“ Fipronil Extra (20%) sus. em. ”in Izhevsk, Udmurtia, Russia, chemicals offered by NPO Nort LLC (80 gr / m2 for wooden structures), Nortex-Lux (80 gr / m2, cardboard, fabric, concrete, brick 150 gr / m2), “Nortex - Alpha” (80 gr / m2; 150 gr / m2), “Pirilax” (100 gr / m2, 400 gr / m2 for flammable building materials), “Piralax - Lux” (280 gr / m2, 100 g / m2 for other insects, 400 gr / m2 for fire-resistant materials) 1/4 mixture with water was soaked in filter papers and fed as dried. For each experiment, 30 working termite layers were taken for each return and placed in dried Petri dishes, turbid in a water / soil mixture.

In addition, the local raw material "Oligomer superplasticator" - a white aqueous emulsion of 1m2 / 2.5 liters of water, produced by the Tashkent Institute of Chemical Technology, soaked in termite feed on sunflower stalks and dried and used as feed for termites. During the experiment, Petri dishes were blurred and 35 working termites were applied to each return, 50 g of feed was given to the total termites, however, as the processed sunflower stalk was stiff, water was constantly dripped on it every day.

In the control variant, termites were fed with filter paper and sunflower stalks treated with purified water. In experimental observations, termites were considered to be completely extinct, and they were completely extinct in 25 days. At this time, control termites were found to be on average 30.0 ± 0.6 active (Table 1).

Based on laboratory experiments, a mixture of chemicals Pirilax, Piralax-Lux with 1/4 of water, made of Populus alba tree, weighing about 40 g, 10/5 cm in diameter, on 10 wooden boards and local raw material "Oligomer superplasticator" - white watery The emulsion was soaked in a mixture of 1m2 / 2.5 liters of water (40 g) on a 15 cm long cut sunflower stalk and dried in the spring (March) 2018 as feed for termite nests at the Shibili ota shrine in Kegeyli district of the Republic of Karakalpakstan. Eleven 11 termite nests were selected for the experiment, and the top and sides of 6 nests were lined with chemical-impregnated wooden planks, and 3 nests were placed in the termite chamber corridors with sunflower stalks treated with local raw material Oligomer superplasticator. 2 termite slots were selected for control (Figure 1).

In the laboratory, the chemicals are Sermit (10%), Fipronil Extra (20%), Nort, Nortex-Lux, Nortex-Alpha, Pirilax, Piralax-Lux. em. and the biological effectiveness of Oligomer Superplasticator solution in increasing the durability of building materials against termites of the Anacanthotermes generation

№	Samples of chemicals and concentration sus. em. (¼)	The average number of dead termites per day						Biological efficiency (%)
		3 days	5 days	10 days	15 days	20 days	25 days	
1		2	3	4	5	6	7	9
1	*Sermit*	5,2±0,7	11,0±0,9	15,1±0,9	26,3±0,8	30,0±0,8	-	100,0±0,8
2	*Fipronil Ekstra*	3,5±0,3	5,3±0,8	9,4±0,9	16,2±0,8	20,2±0,9	26,6±0,9	88,6±1,3
3	*Nort*	6,6±0,2	8,0±0,7	11,3±0,8	14,2±0,9	16,3±0,9	18,8±0,9	62,6±1,0
4	*Norteks-Lyuks*	5,8±0,4	9,3±0,6	12,0±0,8	15,6±0,7	19,3±0,7	20,0±0,9	66,6±1,1
5	*Norteks-Alfa*	7,3±0,2	10,0±0,9	12,7±0,8	13,2±0,9	15,2±0,9	19,5±1,0	65,0±1,2
6	*Pirilaks*	10,2±0,7	16,2±0,9	18.2±0,9	20,5±0,8	24,4±0,9	27,3±0,9	97,3±0,9
7	*Piralaks-Lyuks*	12,5±0,8	21,5±0,7	24,3±0,9	26,5±0,9	27,0±0,9	29,3±0,8	99,3±0,8
8	*Oligomer superplastifikator*	11,6±0,6	14,2±0,9	16,8±0,8	18,8±0,9	20,3±0,7	24,6±0,9	84,6±1,1
9	In control, living beings	35,0±0,1	34,6±0,8	34,2±0,6	32,3±0,5	31,5±0,8	30,0±0,6	100±0,1

Note 7 .: n = 5, M ± m: accuracy with respect to control P <0.01: <0.005.

Figure 1. Installation in the termite nest of wood samples soaked in an aqueous solution of the chemical drug "Piralax - Lux" in the termite nest under natural conditions

The observation process was carried out every month for a year, as a result of which we have witnessed to this day that the food set for termites stands in this heart. At this time, it was found that the nutrients in the control variant were completely transported by termites. At the end of the experiment, termite nests were excavated. Chemicals Pirilaks local raw material Oligomer superplasticator soaked boards and a termite nest with a sunflower stem found a small amount of sludge in the feed. was It was found that termites covered the corridors with mud and plaster in all places where the food was installed.

References:

1. Abdullaev I.I. Ecology of termite populations and their importance in natural and urban ecosystems: Doctoral dissertation ..abstract. - Tashkent, 2016. - 68 p.

2. However, G.F. Biometrics. -Moscow: Vysshaya shkola, 1990. -323 p.

3. Xamraev A.Sh. and dr. Development of new tactical batteries with termites - dangerous biorazrushitelyami materials and soorujeniy // Uglublenie integratsii obrazovaniya nauki i proizvodstva v selskom khozyaistve Uzbekistana. Dokl. Mejd. nauchno - practice. conference - Tashkent, 2003. - P. 79-82.

4. Xamraev A.Sh. and b. Recommendations for the termite control system. -Tashkent: Temporary methodical manual, 2015. 3-36 p.

Rezume: *Mazkur maqolada Anacanthotermes avlodi termitlarining zararkunandalik xususiyatlari, monitoringi va qurilish materiallarini himyolashda ularga qarshi ekologik bezarar preparatlarni qullash orqali ulardan himoyolanishning zamonaviy texnologiyasini ishlab chiqish masalalari yoritib berilgan.*

Резюме: *В данной статье проанализированы вредные особенности термитов рода Anacanthotermes мониторинг и разработка современных технологий их защиты за счет использование экологических чистых препаратов против них при защите строительных материалов.*

Kalit so·zlar: *Anacanthotermes avlodi termitlari, kimyoviy preparatlar, ekologik, zararkunandalar, populiyasiya, monitoring, profilaktika.*

Ключевые слова: *рода термитов Anacanthotermes, химические препараты, экологические, вредители, популяция, мониторинг, профилактика.*

ЎУТ: 633·2: 631·4

STUDYING THE EFFECT OF LEGUMINOUS CROPS ON THE AGROCHEMICAL CHARACTERISTICS OF SOIL

Mambetnazarov B.S., Oteuliyev J.B., Esimbaev A.
Karakalpak state university named after Berdakh

Summary: *The effect of residues of leguminous crops planted after cotton on moderately saline soils on nutrients and humus in the 0-30 and 30-40 cm layer of soil was determined.*
Keywords: *cotton, legumes, nitrate, nitrogen, phosphorus, humus.*

Introduction. In recent years, along with the cultivation of cotton in the cotton-growing regions of the country, the area, where cereals, fodder, vegetables and other crops is being grown, is widening. This work was previously carried out mainly as a result of the development of new lands, but now the demand for agricultural products needs to be met through more efficient use of existing irrigated lands.

To do this, it is necessary to constantly increase soil fertility and rationally use all the internal opportunities for the development of agriculture.

When legumes are planted in the fields of cotton and other crops, they enrich the soil with organic matter and create an additional nutrient base. This is because legumes leave 3-4 tons or more of organic matter per hectare as root and body residue during the autumn, winter and spring seasons. At the same time, in the early spring, when there is a shortage of fodder for livestock, it allows to get 400-500 quintals and more of feed per hectare.

Legumes not only increase soil fertility and provide nutrients for livestock, but also perform a phytosanitary function of cleaning them from infections of various pests and diseases.

Another positive agro-technical effect of legumes on cotton fields is the viability of their root systems. This is because the roots of legumes grow in all layers of the soil, allowing nutrients to be further recycled or regenerated in different layers. They serve as a means of increasing the amount of organic matter in the soil and the storage of mineral fertilizers. Therefore, nutritious legumes are one of the main means of intensifying farming on cotton farms, and this measure is particularly effective in areas with water shortages and other desert areas. Because the heat and light energy of the sun here is enough even in autumn, winter and spring.

It is known that the effectiveness of mineral fertilizers is high only if the soil is high in organic matter. The experience of a number of research institutes and advanced scientists shows that mineral fertilizers applied to the soil also play the role of catalysts that accelerate the absorption of humus-containing nutrients in the soil by plants. This is because the amount is very small, despite the fact that farming has been started on new lands for a short time. When a lot of mineral fertilizers were applied to such lands, in addition to their low efficiency, it led to a further decline in soil fertility. This means that the desired effect can be achieved only as a result of the use of mineral fertilizers, taking into account the amount of organic matter in the soil.

No matter how positively the water problem is solved, its shortage is always felt in cotton farms, because of high water temperatures huge amount of water is used during the summer growing season, which in turn is a major obstacle to expanding the area under forage crops. Less water is used for legumes grown in autumn, winter and spring. The above-mentioned issues not only confirm the need for more widespread introduction of legumes in cotton growing, but also show that it is one of the additional measures in the development of animal husbandry along with cotton growing.

Objects. The studies were conducted in 2020-2022 in the experimental field of "Aynur-Aysara" farm in Shimbay district on moderately saline meadow-alluvial soils, "Navruz" and "Durdona" varieties were obtained from mung bean varieties.

The field experiment consists of 6 options 3 turns and placed in 1 tier. The growth and development of the fast-ripening varieties "Navruz" and "Durdona" of the studied mung bean is compared with the local

variety in all variants. Depending on the planting scheme of the crops, each variant will have 8 rows, the width of the variants will be 4.8 m, the length of the ridge will be 50 m, the width of the ridge will be 60 cm. Of the 8 rows in the variant, 4 in the middle are counting rows and 2 + 2 = 4 defensive rows are two on both sides. The total land area was 05 hectares. Irrigation in mung bean sowing variant separation was carried out on the basis of farm production experience in options 1,2 (control) and the normative ratio (NPK) of 0:75:75 kg / ha is the same in all control and other options, ie phosphorus 75 kg / ha, potassium was given 75 kg / ha. 100% of potassium fertilizer and 100% of phosphorus fertilizer are given before plowing and nitrogen fertilizers are not used to grow ecologically free products, as mung bean is a food product.

Methods of the research. The amount of humus in the soil was determined by the method of I.V. Tyurin, the total amount of nitrogen, phosphorus and potassium by the modified method of I.M. Maltseva, L.N. Gritsenko and E.A.Jarikov, active form of nitrogen and phosphorus was determined by the method of Granvald-Lyaju and B.P.Machigin, potassium on a flame photometer by the P.V.Protasov's method.

The salt content of the soil (HCO_3, CL, SO_4, ва Ca, Mg, Na, K) was determined by flame photometric methods. These analyzes were performed using the method "Methods of agrochemical, agrophysical and microbiological research in irrigational regions".

Results of the research. Of particular importance is the study of changes in the total amount of humus, nitrogen and phosphorus in cotton fields under the influence of legumes, which is one of the main indicators of the agrochemical properties of the soil. The high content of humus in the soil improves the supply of nutrients to plants, activates the activity of microorganisms, improves soil moisture retention and other positive properties. However, when crop rotation is not followed, such positive soil properties deteriorate and productivity decreases.

Therefore, enriching the soil with humus through crop rotation is an important issue for agriculture.

The process of humus formation from organic residues of legumes was studied at the end of cotton vegetation for three years in 0-30 and 30-40 cm layers of soil.

Organic residues in a 30-40 cm layer of soil are less prone to microbiological decomposition. This is because this layer cannot be adversely affected by cultivation during the cotton growing season. In all areas planted with legumes, the amount of humus, total nitrogen and phosphorus in both the lower (30-40 cm) and upper (0-30 cm) layers of soil were found to be higher than in the areas where legumes were not planted.

Among legumes, organic residues of mung bean are more resistant to decomposition. The difficult decomposition of organic residues of grain crops indicates that they contain a lot of cellulose, hemicellulose and others from polysaccharides, which are resistant and complex forms of hydrocarbons.

Therefore, in order to increase the efficiency of crop rotation, it is necessary to use mung bean and other legumes.

As with all agrophysical, agrochemical, and other changes in any form of crop rotation, the nitrogen content of the soil is subject to change.

The change in the total phosphorus content in the soil in the areas where cotton was grown for three years after planting legumes and harvesting for fodder can be seen from the data in Table 1.

In the study areas, on June 1, the amount of nitrates in the 0-50 cm soil layer was 11.2 mg in the control variant, 20.3 mg at 20 cm depth, 11.6 mg at 30 cm depth and 12.4 mg / kg at 40 cm depth. then the amount of nitrates in the soil increased again, ie on June 25, 34.5 mg at 20 cm plowing, 21.4 mg at 30 cm plowing and 28.6 mg / kg at 40 cm plowing, and in the control variant 14 , 0 mg / kg. During the first growing season of cotton, the highest amount of nitrates was observed in the shallow cultivated variant.

Table 1

The effect of legumes on changes in the total amount of humus, nitrogen and phosphorus in the soil,%

Experimenting variants	Soil layer, cm	Preliminary amount	in 2020	in 2021

The amount of humus				
Field where legumes were not sown	0-30 30-40	0,924 0,853	0,916 0,844	0,911 0,832
Mung bean sown field	0-30 30-40	0,916 0,828	0,918 0,831	0,919 0,835
Total nitrogen				
Field where legumes were not sown	0-30 30-40	0,064 0,055	0,062 0,054	0,063 0,055
Mung bean sown field	0-30 30-40	0,067 0,056	0,069 0,062	0,070 0,067
Total phosphorus				
Field where legumes were not sown	0-30 30-40	0,113 0,111	0,111 0,110	0,113 0,110
Mung bean sown field	0-30 30-40	0,117 0,112	0,115 0,112	0,114 0,111

From the second half of the growing season, i.e. from July 5, the accumulation of large amounts of nitrates was observed in the variants where organic residues were plowed to a depth of 30 and 40 cm. From this it can be said that deep excavation of organic residues indicates their gradual mineralization.

Conclusion. Studies have shown that the total amount of phosphorus in cotton fields has remained almost unchanged after a single sowing of legumes, while the amount of total nitrogen has increased.

References:

1. "Recommendations for the cultivation of legumes in Uzbekistan" T. “Mekhnat”. 1999.

2. B.Mambetnazarov., J.B.Oteuliev Improvement of irrigation regime of cotton varieties depending on soil and climate conditions of the Republic of Karakalpakstan. ACADEMICIA: An International Multidisciplinary Research Journal. 2021 and P.644–647 (№40, ResearchGate, IF-7.49)

3. Methods of conducting field experiments. UZPITI, Tashkent, 2007. p-1-74.

Rezyume: *O'rtacha sho'rlangan tuproqlarga paxtadan keyin ekilgan don dukkakli ekinlar qoldiqlarning tuproqning 0-30 va 30-40 sm qatlamidagi oziq elementlarga va gumusga ta'sir aniqlandi.*

Резюме: *Определено влияние растительных остатков бобовых культур, высаживаемых после хлопчатника на среднезасоленных почвах, на элементы питания и гумус в 0-30- и 30-40-сантиметровом слое почвы.*

Kalit so'zlar: *paxta, dukkakli don, nitrat, azot, fosfor, gumus.*

Ключевые слова: *хлопчатник, бобовые, нитраты, азот, фосфор, гумус.*

DISTRIBUTION MONITORING AND DISTRIBUTION FEATURES OF EARTHWORMS IN AGROCENOSES OF KARAKALPAKSTAN

Zhuginisov T.I., Raxmatullaev A.Y., Orazbaeva S.M, Duysengaliev E.S,
Davletmuratov I.Z, Isaev R.T, Rakhimova Zh.A.
Karakalpak State University named after Berdakh

Summary: *This article describes the level of monitoring of the distribution of earthworms in the agrocenoses of Karakalpakstan, the beneficial properties of soil softening and the occurrence of cases in the fields of cotton, orchards, alfalfa, vegetables and melons.*

Keywords: *earthworm, ecological, agrocenosis, chemicals, insects, monitoring, cotton, garden, alfalfa, vegetable and melon crops.*

Introduction. Rising global warming is leading to significant changes in soil conditions as a result of rising groundwater levels. This, in turn, leads to a significant decline in crop yields and food shortages in the anthropogenic biosystem.

Today, agriculture plays a key role in growing crops in agrocenoses by increasing soil fertility. The main biomass of earthworms in the fauna is the increase of soil fertility in ecologically clean, chemical-free cultivation and land clearing in the fields of agrocenosis. The importance of earthworms in soil fertility and in maintaining its natural fertility has been extensively studied in many sources on ecology, zoology, soil science and agriculture.During the period of historical development in the late XIX century Ch. Darwin said, "Rain worms are one of the oldest and most important tools of labor, just as man-made tools have been invented by man.

Preliminary observations of the development cycles of earthworms in Uzbekistan were made in the 1930s by A.L. Passed by Brodsky. B.V. on the monitoring of the distribution of animal fauna in the Central Asian republics.Valiahmedov (1962); T.S. Perel (1979); W. Michaelsen (1900) A.Yu.Rakhmatullayev (2004) has been widely covered in the work of scientists. Also, data on earthworms accelerating the decay of plant residues in the soil were provided by T.S. Perel and L.O. Studies by Karpachevsky (1968) and Atlavinite (1990) have shown that the decay of plant remains in the forest floor without the participation of earthworms slowed down by 2-3 times [1; P. 36].Due to the development of the earthworm’s lifestyle, the soil is softened, water and air permeability to it is improved, and plant debris penetrates into the deeper layers of the soil, resulting in an increase in productivity.

Due to the improvement of soil aeration, the process of aerobic decomposition of organic matter is accelerated. In addition, humic acids are formed from the decomposition of organic matter during the polymerization in the intestines of earthworms. These acids, together with the mineral components, form a complex compound humus. Special substances secreted by the glands located in the larvae of worms have the property of neutralizing the acid reaction of the soil. Today, due to the increase in groundwater, the problem of increasing food production in agriculture requires the wider use of chemicals in the implementation of mechanization in the development of agriculture.

However, these measures lead to soil contamination and compaction, which ultimately worsens their agrochemical properties. It is important to study animals that are natural ‘ameliorators’ in preventing such adverse events and maintaining fertile soils.

Object and methodology of research. The materials required for the research were studied and compared in 2019-2022 in the city of Nukus and Nukus district in the conditions of Karakalpakstan. The

study of the distribution of earthworms in agrocenoses, species composition and their impact on crop yields.

During the research, the climate, fertility, density and ameliorative conditions of the soil in the conditions of Karakalpakstan were studied, the experimental sites were selected agro-cenosis areas in Nukus, Kegeyli, Chimbay and Bozatov districts. During the experiments, research on the effect of earthworms on crop yields, the viability and regeneration of worms in different environments was carried out in the laboratory of Bioecology of Karakalpak State University.

Field studies collected 560 samples of earthworms, as well as the characteristics of each soil sample, such as soil type, duration, crop type and variety, agrotechnical condition, moisture regime, number of samples taken, the number of worms in the samples, soil distribution processes. The earthworms were shoveled out of the ground.

For this, fields with moist soil were selected. In the spring, when the soil is slightly moist, the worms accumulate in the upper layers of the soil. In hot summers, as the moisture in the upper layers of the soil decreases, the worms fall into somewhat deeper layers. Therefore, some dry soils were dug to a depth of 30-50 cm.

Faunistic and zoogeographic studies to study the species composition and distribution of earthworms were conducted in spring, summer and autumn.

The collection and fixation of earthworms was carried out on the basis of methods (Atlavinite, 1982;). Also, all the data in the experiment were obtained from Biostat, Origin 6.1 [Microsoft USA program and G.F. However, it was carried out by the method of statistical processing [2; 65-s., 3; 323-s.].

Research results. The experiment was conducted in spring, summer and autumn. The species composition and faunistic, zoogeographic distribution of earthworms in the field were studied. Rain worms were collected from the agrocenosis fields by shoveling wet soils.

In spring, when the temperature rises to + 200C, + 250C, when the soil is slightly moist, it was observed that the worms accumulated in the upper layers of the soil. In the hot summer months, however, as the moisture in the topsoil decreases, the worms are found to fall into some deeper layers. From this point of view, experiments were often conducted in spring and summer. Materials were collected from the surface layers in the spring at a depth of 30-50 cm in the summer.

The earthworms distributed around the world are generally divided into 5 families *Moniligastridae, Lumbricidae, Criodrilidae, Megascolecidae, Ocnerodrilidae* [4; 105-s.]. During the experiment, it was observed that species of earthworms belonging to the family *Lumbricidae* were recorded.

Without the name taxonomic concept, earthworms include several taxonomic groups of some of the larger earthworms whose lives are associated with soil. Named after earthworms, these animals do not differ in ecological characteristics and some morphological features. Monitoring of the distribution of species belonging to the family *Lumbricidae*in the agrocenoses of Karakalpakstan was studied (Table 1).

Table-1

In the agrocenoses of Karakalpakstan monitoring the distribution of earthworms

№	Section of districts	Agrocenoses	In the inspected areas (ha.)	Samples taken (kg)	Number of insects
1	Nukus district	cotton the garden vegetables	2,2±0,7	750±0,4	250±0,4

2	Kegeyli district	-//-	1,5±0,1	350±0,4	150±0,3
3	Chimboy district	-//-	3,2±0,4	800±0,7	550±0,6
4	Bozatov district	-//-	1,9±0,2	420±0,5	200±0,3

Note: nq5, M ± m: accuracy with respect to control P <0.01: <0.005.

Soil is a habitat for many organisms, including animals. Soil organisms actively influence soil formation processes. Earthworms are particularly active in these processes, known as soil genesis. The activity of earthworms in soil genesis can be largely related to the climate of the area, the characteristics of the soil-forming rock, and the influence of anthropogenic factors. Therefore, studying the effects of the above factors on earthworms will help to identify ways to use them to increase soil fertility.

In the course of observations, 2.2 ± 0.7 places were selected from cotton, orchards, alfalfa, vegetable and melon agrocenosis fields in Nukus district and 250 ± 0.4 kg of earthworms were found in soil samples of 250 ± 0.4 kg. indicators averaged 1.5 ± 0.4–3.2 ± 0.4; 350 ± 0.4-800 ± 0.7; 150 ± 0.3–550 ± 0.6. At the same time, the highest incidence of earthworms in the districts was in Nukus district, as it was found that the soils in the agrocenosis fields are rich in natural humus.

In general, earthworms play an important role in improving soil fertility and increasing productivity in agrocenosis areas. Worms have also been found to be abundant in areas rich in natural humus, high humidity and low soil chemistry.

References

1. RaxmatullaevA.Yu. Distribution and vertical distribution of earthworms in the agrocenoses of the Tashkent oasis.Biol. PhD dissertation dissertation ..... abstract. - Tashkent, 2004. - 36 p.

2. Atlavinite O.P., Galvyalis A. Influence of pesticides on the structure of soil biocenosisbespozvonochnyx (Lumbricidae) .- Vilnius: 1982.- 65 p.

3. However, G.F. Biometrics. -Moscow: The Great School, 1990. -323 p.

4. PerelT.C. RaspreredelenudozdevychcervejI (lubmrundae) vravninnychlesaachEvropejskojcastiSSSR // Pedobiologia. vond. 4. №1-2. 1964. P. 92-105.

Rezyume: *Ushbu maqolada Qoraqalpog‘iston sharoiti agrotsenozlarida yomg‘ir chuvalchangining tarqalishi monitoringi darajasi, cho‘chqa go‘shti, sabzavot bog‘i, beda, sabzi dalalarida qirg‘oqning yumshatilishining foydali xususiyatlari hamda agrotsenoz holatlari qayd etilgan. va qovoqlar.*

Резюме: *В этой статье освещается уровень мониторинга распространения дождевого червя в агроценозах условий Каракалпакстана, полезные свойства размягчения насыпи и возникновение случаев на полях агроценоза свинины, огорода, люцерны, моркови и бахчевых культур.*

Kalit so'zlar: *yomg'ir chuvalchanglari, ekologik, agrotsenoz, kimyoviy moddalar, insektitsidlar, monitoring, paxta, poliz, beda, sabzi va qovoq.*

Ключевые слова: *дождевые черви, экологические, агроценозные, химические препараты, инсектициды, мониторинг, хлопчатник, бахчевые, люцерна, морковь и бахчевые культуры.*

TECHNICAL SCIENCES

УДК 004. 056

IMPLEMENTATION OF THE RSA ALGORITHM IN AN EMBEDDED SYSTEM AND PRIVATE KEY GENERATION BASED ON PRIME NUMBER TESTS

Mirzataev S.[1], Yarashov I.[2]
[1]Karakalpak state university, [2]National university of Uzbekistan

Summary: *One of the main problems of an asymmetric cryptosystem is the distribution of keys, especially when a significant number of users are involved, that is, the creation of identical keys in completely different locations. To solve this problem, the goal is to develop a fully cryptographic secret key algorithm to generate the same secret key. During the key generation, the provided image reference, the original pattern and the character string length are retained and should not be interrupted since the algorithm is known. The algorithm must be a static interval of prime numbers and must be used because the output is a sequence of pseudo-random values. If the method is compromised, the resistor will have to guess the different levels of parameters in the original template and the length of the string. The generated private keys were identical in two completely different places. Another observation: Using a similar method and pattern length, completely different secret keys were generated, but with a different pattern start. Encryption is so important in most organizations that information must be encrypted because information security is an important element in protecting information and data in many institutions. Encryption also helps ensure the confidentiality and integrity of information during transmission over the communication channels. Given the importance of keys used in encryption as a key component in the strength of the algorithm, and the increase in its security in most cryptographic algorithms, key generation is the most important part of information encryption in a number of studies, and its importance lies in this In fact, duplicating keys that confirm higher results is theoretically impossible.*

Keywords: *Cryptography, asymmetric cryptosystem, cryptographic key, cryptographic algorithm, coding, key generation, secret key, public key, encryption, information security, confidentiality, integrity, communication channel, algorithm security, authentication, access to information and resources, number theory, Rabin-Miller algorithm, RSA algorithm*

Introduction.

When looking for a solution to a problem, it is useful to consider its scale and appearance. Therefore, using embedded systems to perform cryptographic operations was considered a viable option in this article. Embedded systems have the convenience of performing certain cryptographic operations. An embedded system is an electronic system that has software and is embedded in computer hardware. It can be programmable or non-programmable depending on the application. An embedded system is defined as a way of working, organizing, performing one or more tasks according to a set of rules. In an embedded system, all blocks are assembled and run together in a program. Examples of embedded systems include numerous products such as microwave ovens, washing machines, printers, cars, cameras, etc. These systems use microprocessors, microcontrollers, and processors such as chipboards. The

important characteristics of embedded systems are speed, size, power, reliability, accuracy, adaptability. Therefore, when the embedded system is performing operations at high speed, it can be used for real-time applications. The system size and power consumption must be very low so that the system can be easily adapted to different situations.

Fundamentals of Cryptography on Embedded Systems:

Cryptography is the art and science of manipulating data in such a way that outside parties cannot undo or simulate manipulation without knowing the secret. It includes high-level features such as:

- Confidentiality of information during storage and transmission
- Authenticate users
- Integrity of information received / received
- Refusal to complete transactions
- Availability of data and resources
- Controlled access to information and resources

Network security protocols such as IPsec and SSL, and key agreement and management applications such as Internet Key Exchange (IKE) use various cryptographic algorithms to achieve these high-level goals.

The basic idea of prime numbers

A prime number or just a prime number is a natural number greater than 1, which has no positive divisors other than 1, and by itself symbolically the number p is called prime if

$$p > 1 \quad (1)$$

$$p \text{ has no positive divisors other than } 1 \text{ and } p. \quad (2)$$

A prime number is an integer greater than 1 with only two divisors: 1 and itself. Another definition of primes was given by Borevich and Shafarevich as an element p of a ring D that is different from zero and is not a unit, cannot be factorized into factors $p = a * b$, none of which is a unit in D, in their classical text. "Number theory". It is well known that 2,3,5,7,11,13, ... are the first few primes. A natural number greater than 1 that is not prime is called a composite number. The property of being simple is called primacy. Two numbers a and b are considered mutually prime if they do not have common prime divisors.

The history and revolution of prime numbers

There are some hints that the ancient Egyptians had an idea of prime numbers. But they had different definitions of primes and composites than what we are talking about today. However, it is a fact that ancient Greek mathematicians were the first to study prime numbers and their properties during 300 BC. NS.

Then the great Greek mathematician Euclid came to the conclusion that there are infinitely many primes. This achievement can be considered the beginning of the abstract theory of prime numbers. Euclid used the contradiction method to prove that there are infinitely many primes.

Suppose that the number of primes is finite, and let p denote the largest number. Consider one more than the product of all primes, namely, $n = (2,3,5, \ldots . p) + 1$. Now n cannot be divisible by any of the prime numbers from 2 to p, because any such division leaves a remainder of 1. But we assumed that the primes up to p make up all the primes. Therefore, n cannot be divisible by any prime number. Thus, the assumption that the number of primes is finite contradicts. That is, the number of primes is infinite.

Another valuable fact suggested by Euclid is the Fundamental Arithmetic Theorem (FAT), also known as Unique Factorization. This means that every positive integer greater than 1 is either prime or a product of primes in a unique way. Thus, there is no question that primes are the building blocks of positive integers.

Sometimes later, in 200 BC, the Greek mathematician Eratosthenes created an algorithm known as the Sieve method to calculate prime numbers up to a certain integer. In addition, Gauss, Fermat and Mersenne made remarkable contributions to this field of primes. Herbert Hardy, an English mathematician, was the first to study prime numbers, so there are several classes of primes, for example,

Mersenne primes: primes of the form $2^p - 1$, where p is also a prime,

Fermat primes: primes of the form $2^{(2^n)} + 1$, where n is a positive integer,

Twin primes

They meet on both sides of an even number p and $p + 2$, for example: $-3\ and\ 5.5\ and\ 7$ ... ...

We know there are infinitely many primes, but can we come up with an equation to find the nth prime. However, this is a problem that needs to be addressed. There is no exact set of primes among composites, hence they are random. However, in 1792, Gauss approximated a pattern that is the path to the prime number theorem.

In number theory, the Prime Number Theorem (PRT) describes the asymptotic distribution of primes. TFC gives a general description of how primes are distributed among positive integers. He formalizes the intuitive idea that primes become less common as they increase. Prime numbers fill the space left after multiplying natural numbers greater than 1, for example, if we denote all natural numbers greater than 1 as the product of the multiplication between them by (composite numbers), we can assert that all natural numbers of the numbers will be equal:

$$N = \{1\} \cup M \cup P \tag{3}$$

The distribution of primes is an ongoing research topic in number theory.

Looking at individual numbers, the primes appear to be randomly distributed, but the "global" distribution of primes obeys well-defined laws. For example, all primes can only end in 1, 3, 7, and 9, starting with 11, but not all natural numbers ending in 1, 3, 7, and 9 are prime numbers.

PKI is based on asymmetric cryptography

The need to ensure the security of communications is growing rapidly every day. Along with this requirement, more methods have been proposed to achieve maximum safety. The method most commonly used is in two different cryptographic methods. The first of these is called private key or symmetric cryptography; it can be applied very quickly, but the key is difficult to manage since each user only has one key. Despite this problem, it still plays a role in most security systems. Another type of cryptography is proposed to overcome this problem called public key or asymmetric cryptography, where each user is given a pair of keys: a public and a private key. Since the public key is not a secret, the key management problem has been resolved, but an equivalent problem has been raised, which is an authentication or name management problem. Public Key Infrastructure (PKI) was developed to address this problem and support public key cryptography. Authentication is the process of using all PKIs. We have presented several PKIs with different architectures and processes, and briefly discussed a comprehensive overview of these PKIs.

PKI is an abbreviation for Public Key Infrastructure, it was designed to support public key (asymmetric) cryptography. In this type of cryptography, the message will be encrypted by the sender using the recipient's public key, and then that recipient appears to be the only one who can decrypt that

message using the corresponding private key. This trend in cryptography has been introduced since 1976 [1] to solve the key management problem using a directory called Public File, in which the entries are name, number, and public key. The sender searches the recipient in the open file by his name to find his public key. In this case, the sender does not have complete certainty that the key really belongs to the intended recipient. Kohnfelder [2] proposed a solution with a certificate or digital signature for each entry in a "public file" so that certificates can be distributed securely over the network.

In the 1980s, the International Telecommunication Union (ITU) decided to create a larger catalog covering all people and devices around the world, and the result was a standard called X. 500 [3] that defines all the characteristics of this catalog. Another standard called X. 509 was proposed for authentication purposes, no one could change any directory entry except if they had permission. The X. 509 standard defines the format of the certificate; it links the identity of the owner of the key to the public key of the owner. All of these evolutionary changes in public key cryptography have led to the creation of a public key infrastructure (PKI), in which digital certificates represent its heart. To increase the level of trust, a Certification Authority (CA) [4] was introduced, which is the trusted party responsible for verifying and signing certificates. Thus, PKI helps the sender to obtain the public key of the desired recipient with confidence that this key is indeed the public key of the recipient. Recently, various PKI models have emerged with different schemas; the article will present some of these models and consider the most popular ones.

Unlike the physical world, the Internet is anonymous, and it is very difficult to find out who is on the other end of the communication. PKI is today a widely accepted global standard for Internet security, as the main challenges for online communication include building online trust similar to the physical marketplace and communication binding contracts for online transactions. That is why information security is of wide interest to researchers today, but PKI implementation is a challenge for most developing countries. In addition, to achieve interoperability, countries need to establish PKIs in accordance with widely accepted standards.

Proposed scheme for generating a pair of primes.

The Miller-Rabin simplicity test or the Rabin-Miller simplicity test is a simplicity test: an algorithm that determines whether a given number can be prime is similar to Fermat's simplicity test and the Solovey-Strassen simplicity test. Gary L. Miller opened it in 1976; The Miller test version is deterministic, but its correctness is based on the unproven extended Riemann hypothesis. Michael O. Rabin modified it to get an unconditional probabilistic algorithm in 1980. It is often said that this test was discovered by M.M. Artyukhov in 1967, but this is not true: reading Artyukhov's article (in particular, his Theorem E) shows that he discovered Solovey. -Strassen test, not Miller-Rabin test.

The sieve of Eratosthenes and Bertrand's postulate are important milestones in the creation of primes. The Sieve of Eratosthenes is a very simple ancient algorithm that generates all prime numbers up to any given limit. In 1845, Joseph Bertrand postulated that for any integer $n > 3$ there is a prime p such that $n < p < 2n - 2$. And its slightly weaker form is that there is a prime p such that $n < p < 2n$, n is an integer. ≥ 2. In 1850 Pafnuty Chebychev [12] for the first time analytically proved this postulate. In 1932 Paul Erdos [5] gave an elementary proof using facts about the binomial mean coefficient. In 2002, Manindra Agarwal, Niraj Kayal, and Nitin Saxena [1] presented an unconstrained

deterministic polynomial time algorithm that determines whether an input is prime or composite. The problem of computing $\pi(x)$, the number of primes less than or equal to x, is one of the oldest problems in mathematics, $x \in N$. For a very long time, the sieve of Eratosthenes was a practical way of computing $\pi(x)$ despite its time complexity. Legendre [11] discovered a combinatorial formula known as the Legendre sum for the number of primes p for which $x\ 1\ 2 < p \leq x$. Since then, a large number of authors have suggested variations and improvements to the formula. Between 1870 and 1885, the astronomer Meisel [13] - [17] developed a practical combinatorial method for calculating $\pi(x)$, and in 1959 Lemaire [11] expanded and simplified Meisel's method. In 1985, the Meisel-Lehmer method [10] was used to calculate several values of $\pi(x)$ up to $x = 4.1016$, and in 1996 Delegleise and Rivat [6] developed a modified form of the Meisel-Lehmer method that saved a lot of computation.

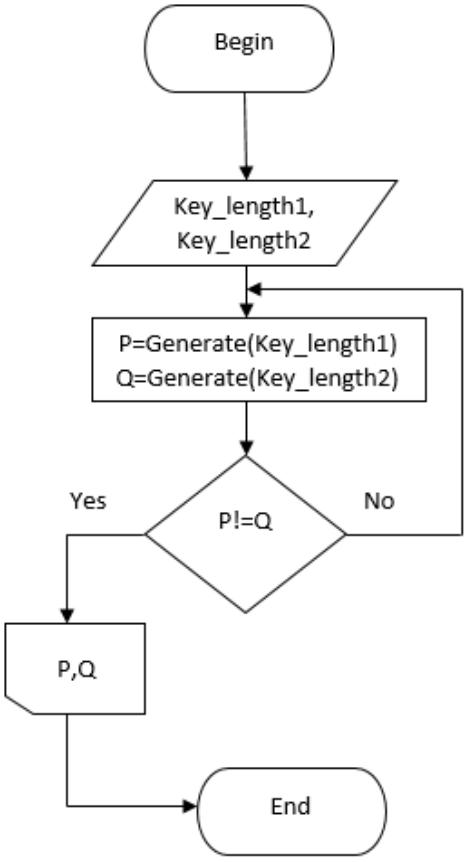


Figure 1. Proposed scheme for generating a pair of prime numbers

The set of unique natural numbers is a set of subnatural numbers that consists of primes and T-semiprime numbers. A T-semi-prime number is a natural number divided by one or more primes. Although primes have been widely covered by modern and historical scholars, basic questions remain unresolved. This study attempts to provide a new way to find out how prime numbers are distributed over an infinite natural number. The definition of a prime number is quite simple, but the problems (headaches) that his research gave number theorists were enormous. It contains a gift from the earliest social chronicles originating from the Greeks, and elements of Euclid in 13 books written by Euclid. It includes important theorems on primes [1]. The first ten primes can be listed: $2,3,5,7,11,13,17,19,23\ and\ 29$. In the literature, many articles cover specific topics broadly, but there

are no interesting overviews of simplicity. early evidence, questions asked, answers, and unresolved questions in the literature that mathematicians should investigate. Although the fields of primes are outdated, a number of questions still remain unanswered. One of these questions - the double prime hypothesis - is the first in a long list of unanswered questions. He looks at the distribution of primes like 11 and 13, separated by one even integer. The question is simple, can pairs of primes go on indefinitely [2]. Other questions about the division between primes also remain unanswered, for example, is there an infinite set of primes divided by 3 composite numbers [3]. Another unproven question is Goldbach's conjecture, which assumes that every even integer can be split into the sum of two primes or 1, and all odd integers greater than 5 can be expressed as the sum of three primes [4]. In addition, Euler used a number of primes, in addition, he showed that the primes are infinite [9-17]. An additional unproven hypothesis was the Riemann hypothesis [3]. He found that there is a correlation between the zero values of the zeta function and prime numbers, and the Riemann zeta function is still not proven [3]. But Euclid's proof that primes are infinitely prime numbers in Proposition 20 of Book IX of Euclid's "Elements" asserts [6].

This article shows a scheme for forming a pair of primes, in which candidates for primes are based on a certain interval and on the basis of which the prime numbers themselves are found. Of course, you need to check that the pairs are not equal to each other so that the two primes do not overlap. This can be done using the conditional statements property. Now, if two primes take the same value, they will reference the prime number generator again. Yes, the fact that this is unlikely to remain the same does not mean that such a situation is not observed at all. (Figure 1)

Proposed RSA private key generation scheme based on Asn.1 encoding format

ASN.1 is a formal notation used to describe data transmitted over telecommunication protocols, regardless of the language implementation and physical representation of this data, regardless of the application, complex or very simple.

The notation provides a number of predefined basic types such as:

integers (INTEGER),
booleans (BOOLEAN),
character strings (IA5String, UniversalString...),
bit strings (BIT STRING),
etc.,
and makes it possible to define constructed types such as:
structures (SEQUENCE),
lists (SEQUENCE OF),
choice between types (CHOICE),
etc.

Subtype constraints can also be applied to any ASN.1 type to constrain its set of values.

Unlike many other syntaxes that claim to be extensible, ASN.1 offers extensibility that solves the problem and provides interoperability support between previously deployed systems and new, updated versions that were developed years apart.

ASN.1 sends information in any form (audio, video, data, etc.) wherever it needs to be transmitted digitally. ASN.1 only covers the structural aspects of information (there are no operators to process values after they have been defined or to perform computations). Hence, it is not a programming language.

The ASN.1 definition can be contrasted with the ABNF concept of "valid syntax" or the XSD of "valid document", which focuses on the actual encodings of the data, without considering any meaning that may be added to such encodings. That is, without any necessary semantic links.

One of the main reasons for the success of ASN.1 is that this notation is associated with several standardized encoding rules such as BER (Basic Encoding Rules) or, more recently, PER (Packed Encoding Rules), which have proven useful for applications that be subject to bandwidth limitations. These encoding rules describe how the values defined in ASN.1 must be encoded for transmission (ie, how they can be translated to bytes "over the wire" and back), regardless of machine, programming language, or whether how they are represented in the application program. ASN.1 encoding is more optimized than many competing notations to provide fast and reliable transmission of scalable messages — an advantage for wireless broadband. Since ASN.1 has been an international standard since 1984, its coding rules are mature and have a long history of reliability and interoperability.

Certificate ::= SEQUENCE {
tbsCertificate TBSCertificate,
signatureAlgorithm AlgorithmIdentifier,
signatureValue BIT STRING }

The ASN.1 structures

This is how the certificate should look like - SEQUENCE of objects.

The first object contains everything of interest that will be signed, which is why we call it a signed certificate.

The second object contains the type of signature that the CA used to sign this certificate (for example, sha256).

The last object is not an object, it is just a few bits that correspond to the TBSCertificate signature after it has been DER encoded.

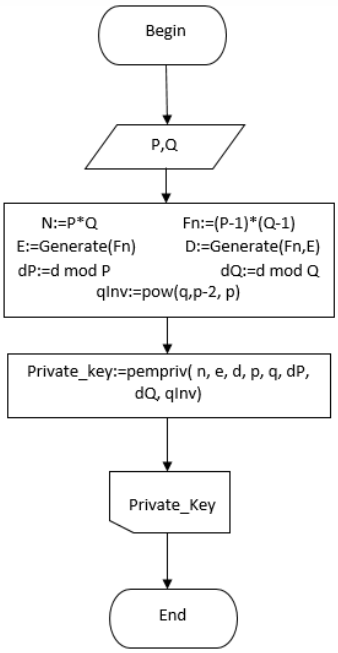


Figure 2. Proposed RSA private key generation scheme based on Asn.1 encoding format

It is necessary to ensure the secure transfer of information between the sender and the recipient, therefore the encryption process is one of the mechanisms that ensure information security in the transmission of data, a secure method must be provided, because today security has become an important resource for the most effective fulfillment of the various requirements of any organization. The main goal of security is the transmission of sensitive and confidential information, protected and unreadable only by authorized persons or recipient persons [1].

Data protection is an important way to provide a powerful tool - the use of encryption, which depends on many security mechanisms in the process of encrypting and decrypting information. Encryption allows us to securely store confidential data or transmit it over insecure networks that cannot be understood by anyone, only the recipient (Kahn, 1967). The use of encryption is a powerful tool to ensure the confidentiality, integrity, and integrity of data. Encryption distinguishes between two types of public encryption and private encryption that has a long history: one secret key is used for encryption and decryption in this symmetric encryption, and two keys are used in asymmetric encryption, one is public and the other private. However, asymmetric encryption is one of the encoding methods, which is 1000 times slower than analogue because it requires more computational processing [2].

Results

$2^{63} - 2^{64}\ interval$

Name	Value
P	12240554565167680513
Q	15867982759887797419
N	194232908811546629074388809428657995947
$\varphi(N)$	194232908811546629046280272103602518016
RSA Private key	
-----BEGIN RSA PRIVATE KEY----- MGACAQACEQCSH+XETPOB2v6+VQdEg4CrAgYBdVrDEccCDADIY1h6GjogAAAAA AIJAKnfL4YWmwwB AgkA3DZmP3kifKsCCBXIyg4RDyruAghlWZQCYgKdRgIIIK8cs+zqCJE= **-----END RSA PRIVATE KEY-----**	

$2^{127} - 2^{128}\ interval$

Name	Value
P	299371360540940510259859267463804102639
Q	226896552080662214268590697266360095327
N	67926329498436213444915553461902992352381656878209684968531799683977732267953
$\varphi(N)$	67926329498436213444915553461902992351855388965588082244003349719247568069988
RSA Private key	
-----BEGIN RSA PRIVATE KEY-----	

MIGpAgEAAiEAlizwp7E0CewVqklJJNSW/On5Vm568qesGT2BqFa5n7ECBgF1WsS58wIc
AM3xfbOe
jegAAAAAAAAAAAAAAAAAAAAAAAAAAAIRAOE406eTwHhDMy0ExRQEJ+8CEQ
Cqsq+3dDwdzDmZLUTn
oBJfAhEAurGhOkltBMFlICIjDrVXEAIQY2+gopFwnzIryLr7YlxwhgIQBbfMzhVMCykhqv
dXfFh1
nQ==
-----END RSA PRIVATE KEY-----

$2^{255} - 2^{256}$ *interval*

Name	Value
P	865666692508952077593484897778000155333102743245028266857863734 59551220116833
Q	100314168518953955164873189000049849278848173304018448159511751 316932243993731
N	868386344735885141476766615188474971621326125162372164970652174 028778224258841709355313180759695281490754983807913549113694015487 0873053930898264339573923
$\varphi(N)$	868386344735885141476766615188474971621326125162372164970652174 028778224258823021271536195843402859322877198821432333268931163359 6 027755806121780875463360
RSA Private key	
-----BEGIN RSA PRIVATE KEY-----	

MIIBOQIBAAJBAKXN1yFp6AEqdV6i6vrFFc2dmcEqCmq1RMDOetE2KtKQIODY1nNKr
6JB7m3nwvIO
oEDq8YtCEe7JiGr4151Q7KMCBgF1WsfHawI8AONgHudgj3AAAAAAAAAAAAAAAAA
AAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAiEAv2L/nEyoN1C3i
lmyeaQyEXEuoksi4HJm
b8wGvb2brWECIQDdx86st0rMI1Iv4SyPmSgQh3xciLsIQFScoh1VYh+0gwIgP6XhZw+nLY
+wYPhx
CwSwKTQhyBKRLKNFaKHepaVSbWkCIGbn9NjToyXpLy3954AayD8tEbMp0/0GP1J5EO
ODpYDBAiEA
pZZfol45VG0r/GMmN1lyaTD2mk6J7y07bqsBiMZy/R0=
-----END RSA PRIVATE KEY-----

$2^{511} - 2^{512}$ *interval*

Name	Value

P	860961901273875919999283744757354420050041852857680691119995000 206242761890227564730296999074544130024315925294663137423283261966920057214878949673223767 9
Q	119098582171620079063615761758676796449438499917438989628262330 718108965524165328329092943819151362442797899442048795759667009279614130941348898406705996723
N	102539341745500965283243668237461904911876836874864558617356085 958088618538236001292246474197741125164902480870337329400311997469515745708114317269784559114675804358833695813999932464495360583777113108457644851548644038470386228702769745088738480579173750119218046378887785080691568885431342472060369831125917
$\varphi(N)$	102539341745500965283243668237461904911876836874864558617356085 958088618538236001292246474197741125164902480870337329400311997469515745708114317269784559094156327128932928707645518841054136738332844588136938977522460964597062057383961264876474107918596205596268849227376834881158021254817676188381032392891516

RSA Private key

-----BEGIN RSA PRIVATE KEY-----

MIICXAIBAAKBgQCSBVe2Lay18aM7SjhKopV2ZIsSPtlDlQpfu7NUwQNqh5bE4vy8L2nA
AjoIZHzw
03coVMrjORUBVGNo5zbLA3YeRPilaRVaBgGvAL29gqUVwbbfyQhLj2LiDXULblKRlfm
hqLBOlHDg
/c/Zb02KASmIIcxKjNhqx6c6hTUmRErjnQIGAXJqP7yRAnwAydW8qM1QcAAAAAAAA
AAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAkEApGLw7QT3zbq7
9MvP/d7Jac8sU5fgpvcnl2P+BnYBb7mS1ZMnXSiugLgKepuBCKSBcltytZD6khpTp4zE8Hi/
bwJB
AONmLKBqzq2DnmFhX0Q+2czL0KZXPYHzSstf5m32x4wXIX6pFEZt/ry5/0awtuZ75S/Zl
EyyCf6u
JrJXEIbvB7MCQQChP4Xp7kT2XoLtsOz2ED1g9TDtDw4OKNrhBXqG70n5yqL6NL3tNsE
NGwuRb089
lCDtJEQxxOxzn+BBbC7uWmzOAkEAjJpggDepMzXxkU1m/v//Pcht9SVHmsHt/7jd3WqzN
+dX8KMh
hkEviRoL79g9SkbEifza//Yg1LAgQ6YvPJxREgJBAI4vngBrivmfhakm2LRBItEBRXZLNriV
zZSg
5eOTgcHEykW+s7BIBi94myjg7EgwtvgKMDlrF0BZjEHTNOtUQQA=

-----END RSA PRIVATE KEY-----

Conclusion.

The research is relevant for information security issues. In the study, a prime number test was performed using an embedded system, and prime numbers in different defined intervals were found. This article attempts to describe and review several articles that are used to generate keys that require prime numbers and to compare them with one another. In this article, the prime numbers were generated based on a selected interval using Miller's rabbinical prime probability test. The RSA cryptographic key pair was generated using the ASN.1 encoding format using the generated prime pair. To ensure that the numbers in a pair of prime numbers do not overlap, the condition is checked using operators. Based on RSA asymmetric cryptography, the PKI private key was implemented. Asn.1 format was used for implementation and it is possible to create a public key using the created private key. The algorithms in the article may be applied to solve primitive problems in information security systems, in systems working with confidential data, various information systems for information security issues.

References

1. Sklavos N. Cryptographic hardware & embedded systems for communications //2012 IEEE First AESS European Conference on Satellite Telecommunications (ESTEL). – IEEE, 2012. – С. 1-6.
2. Ali S. et al. Embedded systems security for cyber-physical systems //Cyber Security for Cyber Physical Systems. – Springer, Cham, 2018. – С. 115-140.
3. Elmiligi H., Gebali F., El-Kharashi M. W. Multi-dimensional analysis of embedded systems security //Microprocessors and Microsystems. – 2016. – Т. 41. – С. 29-36.
4. Sepasgozar, S., Karimi, R., Farahzadi, L., Moezzi, F., Shirowzhan, S., M Ebrahimzadeh, S., ... & Aye, L. A systematic content review of artificial intelligence and the Internet of things applications in smart home. *Applied Sciences*, *10*(9), (2020), 3074.
5. Kabulov, A. V., Yarashov, I. K., & Jo'Rayev, M. T. COMPUTER VIRUSES AND VIRUS PROTECTION PROBLEMS. *Science and Education*, *1*(9), (2020),179-184.
6. Lakshmanan, R., Djama, M., Selvaperumal, S. K., & Abdulla, R. Automated smart hydroponics system using internet of things. *International Journal of Electrical and Computer Engineering (IJECE)*, *10*(6), (2020), 6389-6398.
7. Kabulov A. et al. Algorithmic method of security of the Internet of Things based on steganographic coding //2021 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS). – IEEE, 2021. – С. 1-5.
8. Blackstock, M., & Lea, R. (2014, October). Toward a distributed data flow platform for the web of things (distributed node-red). In *Proceedings of the 5th International Workshop on Web of Things* (pp. 34-39).
9. Kodali, R. K., Mandal, S., & Haider, S. S. (2017, September). Flow based environmental monitoring for smart cities. In *2017 International Conference on Advances in Computing, Communications and Informatics (ICACCI)* (pp. 455-460). IEEE.
10. Kabulov, Anvar, Erkin Urunbaev, and Aziz Ashurov. "On functions correcting the sets of incorrect algorithms." 2020 International Conference on Information Science and Communications Technologies (ICISCT). IEEE, 2020.
11. Duru C. C., Azubogu A. C. O., Aniedu A. N. Review of embedded systems security //Journal of Engineering and Applied Sciences. – 2020. – Т. 17. – №. 2. – С. 196-206.
12. Kabulov, A., Yarashov, I., & Vasiyeva, D. SECURITY THREATS AND CHALLENGES IN IOT TECHNOLOGIES. *Science and Education*, *2*(1) (2021).
13. Tabaa, M., Chouri, B., Saadaoui, S., & Alami, K. Industrial communication based on modbus and node-RED. *Procedia computer science*, *130*, (2018), 583-588.
14. Pimentel A. D. A case for security-aware design-space exploration of embedded systems //Journal of Low Power Electronics and Applications. – 2020. – Т. 10. – №. 3. – С. 22.
15. Madrahimova, D., & Yarashov, I. LIMITED IN SOLVING PROBLEMS OF COMPUTATIONAL MATHEMATICS THE USE OF ELEMENTS. *Science and Education*, *1*(6), (2020).
16. Massimo J. An Analysis of Primality Testing and Its Use in Cryptographic Applications. – 2020.
17. Sedlacek V., Jancar J., Svenda P. Fooling primality tests on smartcards //European Symposium on Research in Computer Security. – Springer, Cham, 2020. – С. 209-229.

Rezyume: *Asimmetrik kriptotizimning asosiy muammolaridan biri bu kalitlarni taqsimlash, ayniqsa foydalanuvchilarning sezilarli qismi ishtirok etganda, ya'ni butunlay boshqa joylarda bir xil kalitlarni yaratish. Ushbu muammoni hal qilish uchun maqsad bir xil maxfiy kalitni yaratish uchun to'liq kriptografik maxfiy kalit algoritmini ishlab chiqishdir. Kalitni yaratish jarayonida taqdim etilgan rasm ma'lumotnomasi, asl naqsh va belgilar qatori uzunligi saqlanib qoladi va algoritm ma'lum bo'lganligi sababli ularni to'xtatmaslik kerak. Algoritm tub sonlarning statik oralig'i bo'lishi kerak va undan foydalanish kerak, chunki chiqish psevdo-tasodifiy qiymatlar ketma-ketligidir. Agar usul buzilgan bo'lsa, rezistor asl shablondagi parametrlarning turli darajalarini va satr uzunligini taxmin qilishi kerak. Yaratilgan shaxsiy kalitlar ikkita butunlay boshqa joyda bir xil edi. Yana bir kuzatish: shunga o'xshash usul va naqsh uzunligidan foydalanib, butunlay boshqa maxfiy kalitlar yaratildi, ammo boshqa naqsh boshlanishi bilan. Ko'pgina tashkilotlarda shifrlash shunchalik muhimki, ma'lumot shifrlanishi kerak, chunki axborot xavfsizligi ko'plab muassasalarda axborot va ma'lumotlarni himoya qilishning muhim elementidir. Shifrlash, shuningdek, aloqa kanallari orqali uzatishda ma'lumotlarning maxfiyligi va yaxlitligini ta'minlashga yordam beradi. Algoritmning mustahkamligida asosiy komponent sifatida shifrlashda qo‘llaniladigan kalitlarning ahamiyatini va ko‘pchilik kriptografik algoritmlarda uning xavfsizligini oshirishni hisobga olsak, kalitlarni yaratish bir qator tadqiqotlarda axborotni shifrlashning eng muhim qismi hisoblanadi va uning ahamiyati shundaki. bu Aslida, yuqori natijalarni tasdiqlovchi kalitlarni takrorlash nazariy jihatdan mumkin emas.*

Резюме: *Одной из основных проблем асимметричной криптосистемы является распределение ключей, особенно когда задействовано значительное количество пользователей, то есть создание идентичных ключей в совершенно разных местах. Чтобы решить эту проблему, цель состоит в том, чтобы разработать полностью криптографический алгоритм секретного ключа для генерации такого же секретного ключа. Во время генерации ключа предоставленная ссылка на изображение, исходный шаблон и длина строки символов сохраняются и не должны прерываться, поскольку алгоритм известен. Алгоритм должен представлять собой статический интервал простых чисел и должен использоваться, поскольку на выходе получается последовательность псевдослучайных значений. Если метод скомпрометирован, резистору придется угадывать разные уровни параметров в исходном шаблоне и длину строки. Сгенерированные приватные ключи были идентичны в двух совершенно разных местах. Еще одно наблюдение: при одинаковом методе и длине паттерна были сгенерированы совершенно разные секретные ключи, но с другим началом паттерна. Шифрование настолько важно в большинстве организаций, что информация должна быть зашифрована, потому что информационная безопасность является важным элементом защиты информации и данных во многих учреждениях. Шифрование также помогает обеспечить конфиденциальность и целостность информации при передаче по каналам связи. Учитывая важность ключей, используемых при шифровании, как ключевого компонента стойкости алгоритма, а также повышение его защищенности в большинстве криптографических алгоритмов, в ряде исследований генерация ключа является важнейшей частью шифрования информации, и ее важность заключается В действительности, дублирование ключей, подтверждающих более высокие результаты, теоретически невозможно.*

Kalit so'zlar: *Kriptografiya, assimetrik kriptotizim, kriptografik kalit, kriptografik algoritm, kodlash, kalit yaratish, maxfiy kalit, ochiq kalit, shifrlash, axborot xavfsizligi, konfidensiallik, yaxlitlik, aloqa kanali, algoritm xavfsizligi, autentifikatsiya, axborot va resurslardan foydalanish, raqamlar nazariyasi, Rabin-Miller algoritmi, RSA algoritmi.*

Ключевые слова: *Криптография, асимметричная криптосистема, криптографический ключ, криптографический алгоритм, кодирование, генерация ключа, секретный ключ, открытый ключ, шифрование, защита информации, конфиденциальность, целостность, канал связи, безопасность алгоритма, аутентификация, доступ к информации и ресурсам, теория чисел, Алгоритм Рабина-Миллера, алгоритм RSA.*

UDC 666.3-127.7

IMPROVING THE THERMAL PERFORMANCE OF WALL CERAMIC MATERIAL BASED ON LOW-GRADE LOESS-LIKE LOAMS AND MODIFIED LIQUID SILICATE

Ilyasov A.T., Allamuratov A., Pishenbaev K.
Karakalpak State University named after Berdakh

Summary: *Application of low-grade loess-like loams (LLL) in the production of effective wall ceramics requires development of methods to increase the frost-resistance of ceramic porous matrix. It can be attained by adjusting the porosity of structure. In the Karakalpak State University, the possibility of manufacturing an effective wall ceramic material is studied on the basis of LLL with the use of fly ash additives from Angren Thermal Power Plant and modified liquid silicate as a modifier of porous structure. It is determined that an introduction of the FA additive in an amount of 25 % by weight of LLL and burning at a temperature of 750^{o}C allow getting material with the minimum open porosity and maximum conditionally closed porosity. Research on the frost-resistance showed that ceramic material on the basis of LLL can withstand 100 cycles of alternate freezing and thawing while maintaining the low level of average density of ceramic body (1140 kg/m^{3}).*

Keywords*: micro-porosity ceramics, wall ceramics, loess-like loam, fly ash, frost resistance, porosity.*

As is well known, porosity is one of the most important properties of wall ceramic material, which predetermines the heat-shielding characteristics, frost resistance of products, and material costs of construction. The Karakalpak State University conducts studies on the possibility of manufacturing a porous wall ceramic material based on low-grade loess-like loam (LLL) and modified liquid silicate using the addition of fly ash (FA) (as a structure regulator) formed during coal combustion in the Angren deposit.The aim of the research is to determine the rational consumption of FA and the optimal firing temperature of the silica material based on LLL to ensure increased frost resistance and maximum heat-shielding characteristics. In the studies conducted, the consumption of the FA additive and the firing temperature in the manufacture of ceramic products based on LLL were determined by the method of mathematical modeling of the experiment according to the program developed in Tashkent State Transport University (TSTU) [1].

In the experiments, low-grade loess-like loams of the Bestyubenskoye deposit (Republic of Karakalpakstan) were used. To mix the raw mixture, a water solution of liquid silicate modified with a surfactant was used [2].

The following responses were recorded: average density, water absorption and water saturation by weight, open and conditionally closed porosity.

The tests were conducted with the samples in the form of cylinders weighing 40 g and 40 mm in diameter, made by semi-dry pressing at a specific pressing force of 20 MPa.

The levels and factors of variation are presented in Table 1.

Table 1

Levels and factors of variation

Level of variation	**Coded value**	**Fly ash content,** *% of LLL weight*	**iring temperature,** *^{0}C*

Lower ($X_{i\,mm}$)	-1	15	700
Medium (X_{i0})	0	20	750
Upper (X_{imax})	+1	25	800
Variation interval	-	5	50

The plan of a mathematical two-factor experiment in coded and natural values is given in Table 2, the responses of the experiment are given in Table 3.

Table 2

The plan of the experiment in coded and natural values

№ of the experiment	Coded values		Natural values	
	x_1	**(a) x_2**	**(i) X_j, %**	**1)** X_2, ^0C
1	**+1**	**+1**	**25**	**800**
2	**-1**	**+1**	**15**	**800**
3	**+1**	**-1**	**25**	**700**
4	**-1**	**-1**	**15**	**700**
5	**0**	**0**	**20**	**750**
6	**+1**	**0**	**25**	**750**
7	**-1**	**0**	**15**	**750**
8	**0**	**+1**	**20**	**800**
9	**0**	**-1**	**20**	**700**

Table 3

Experiment responses

№	Amount of fly ash, *%*	Firing temperature, ^0C	Physical and technical properties of the material				
			Y_1 **ρ_m,** *gcm^3*	Y_2 B_m, *wt. %*	**Y_3** $B_{вак}$, *wt. %*	Porosity	
						Y_4 open, *%*	**Y_5** conditionally closed,, *%*
1	25	800	1,12	39,4	40,0	44,13	0,67
2	15	800	1,17	36,5	37,0	42,71	0,59
3	25	700	1,16	40,0	42,1	46,40	2,44
4	15	700	1,11	42,8	44,0	47,51	1,33
5	20	750	1,14	40,8	41,1	46,51	0,34
6	25	750	1,14	40,4	41,1	46,06	0,80
7	15	750	1,16	45,9	46,1	53,24	0,23
8	20	800	1,20	37,8	38,6	45,36	0,96
9	20	700	1,10	41,8	43,9	45,98	2,31

Research results. As a result of processing the experimental data, the following adequate

regression equations for the properties of a ceramic material based on LLL and modified liquid silicate with FA were obtained for the coded values of variables:

1) average density (ρ_m):

$Y_1 = 1{,}156\text{-}0{,}004 \cdot X_1 + 0{,}019 \cdot X_2 - 0{,}005 \cdot X_1^2 - 0{,}011 \cdot X_2^2 - 0{,}023 \cdot X_1 \cdot X_2$;

2) water absorption by weight (B_m):

$Y_2 = 41{,}9\text{-}0{,}9 \cdot X_1 - 1{,}817 \cdot X_2 + 0{,}7 \cdot X_1^2 \cdot 2{,}65 \cdot X_2^2 + 1{,}425 \cdot X_1^2 \cdot X_2^2$;

3) water saturation during evacuation by weight ($B_{вак}$):

$Y_3 = 42{,}42 - 0{,}65 \cdot X_1 - 2{,}4 \cdot X_2 + 0{,}517 \cdot X_1^2 - 1{,}85 \cdot X_2^2 + 1{,}225 \cdot X_1^2 \cdot X_2^2$;

4) open porosity ($П_{откр}$):

$Y_4 = 48{,}34 - 1{,}145 \cdot X_1 - 1{,}115 \cdot X_2 + 0{,}392 \cdot X_1^2 - 3{,}088 \cdot X_2^2 + 0{,}6325 \cdot X_1^2 \cdot X_2^2$;

5) conditionally closed porosity ($П_{усл\text{-}зам}$):

$Y_5 = 0{,}586 + 0{,}29 \cdot X_1 - 0{,}64 \cdot X_2 - 0{,}19 \cdot X_1^2 + 0{,}93 \cdot X_2^2 - 0{,}2575 \cdot X_1^2 \cdot X_2^2$

Figures 1 - 4 show the graphs of dependences of the physical and mechanical properties of an effective ceramic material on the content of the additive and the firing temperature.

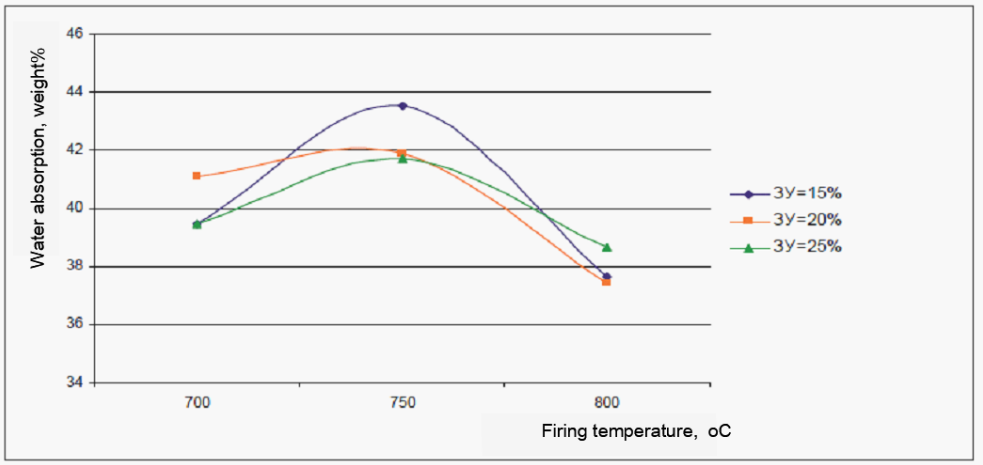


Fig. 1. Dependence of water absorption of the material on the content of fly ash and the firing temperature

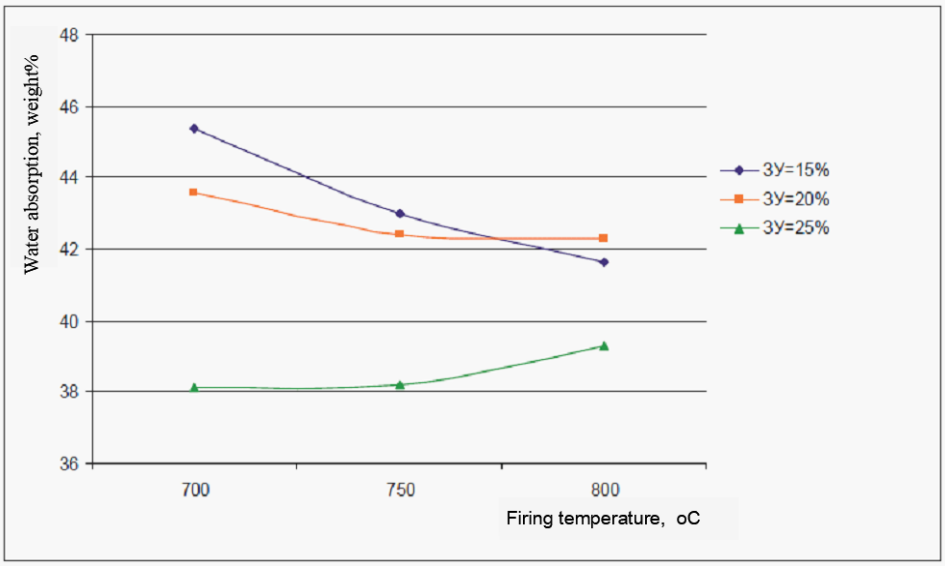


Fig. 2. Dependence of water saturation of the material on the content of fly ash and the firing temperature

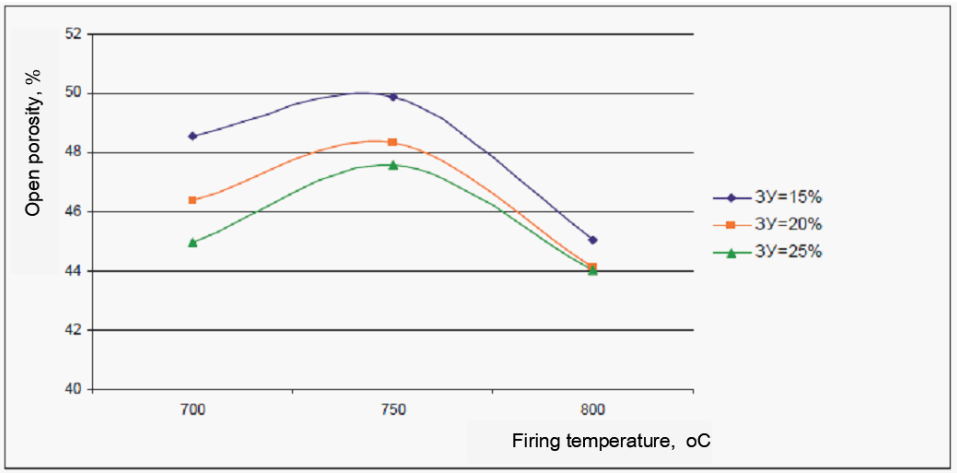


Fig. 3. Dependence of open porosity on the content of fly ash and the firing temperature

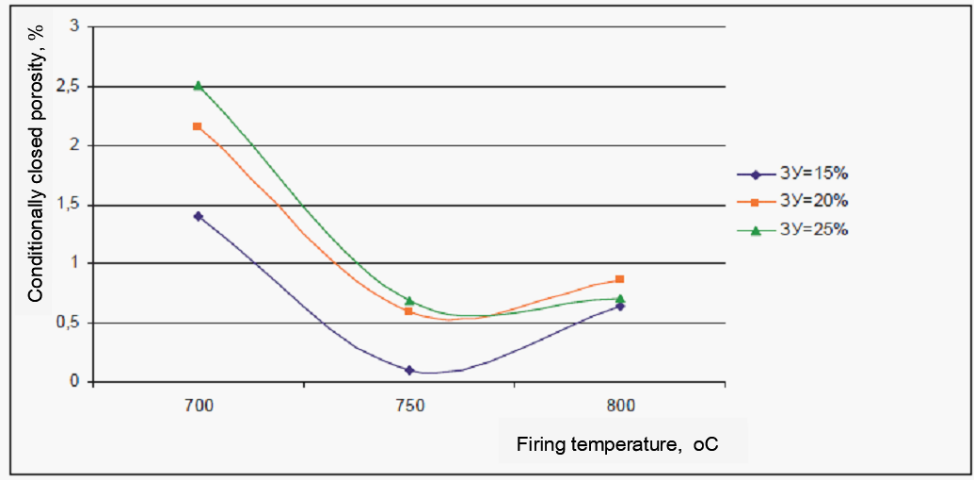


Fig. 4. Dependence of conditionally closed porosity on the content of fly ash and the firing temperature

It was determined that the porosity of the ceramic material significantly depends on the amount of the FA additive and the firing temperature. At a temperature of 750^{0}C, the burnout of graphitized organic impurities in LLL and fly ash is completed, while open porosity and water absorption increase. However, with an increase in the FA content to 25%, a gradual increase in conditionally closed porosity is observed due to inhibition of the process of excessive cristobalitization. The latter phenomenon is typical for silica materials based on LLL and liquid silicate without the FA addition at a firing temperature above 700 ^{0}C.

The introduction of the FA additive in an amount of 25% by weight of LLL and firing at a temperature of 750°C make it possible to obtain a material with a minimum open porosity and maximum conditionally closed porosity, which has a positive effect on the frost resistance of ceramic material (Figs. 3 and 4).

Additional studies of frost resistance showed that the LLL-based ceramic material withstands 100 cycles of alternate freezing and thawing.

Developed pore space in the material is formed during the burnout of organic impurities in the raw material, dehydration of the hydrated phases of the raw material, removal of free moisture and adsorption moisture, as well as the initial micro-porosity of LLL and FA particles [3]. This leads to the formation of a low-density ceramic body with improved thermal characteristics (classes 1, 2) according

to state standards GOST 530-2012 “Ceramic brick and stone. General technical conditions".

References

1. Adylkhodzhaev A.I., Makhamataliev I.M., Kesariyskiy A.G., Tsoi V.M. Methodological foundations of the study of multi-component high-quality concretes of a new generation. Monograph. Tashkent: Publishing house "Fan va tekhnologiya", 2018. 195 p.
2. Nizamatdinov Zh.Sh., Ilyasov A.T., Pishenbaev K.B. Study of salt efflorescence formation and the ways to eliminate it. Science and Education in Karakalpakstan. 2021 №3 P. 73-76.
3. Adilkhodjaev A.I., Makhamataliev I.M., Ilyasov A.T. On porosity parameters of ceramic bricks made of low-grade raw material using burnout additives of agricultural production. European Science Review-Austria, 2018. - №7-8. - P. 60-64.

Rezyume: *Samarali devorbop keramika ishlab chiqarishda past navli lyossimon loylardan (LL) foydalanish keramik go’vakli matritsaning sovuqqa chidamliligini oshirish usullarini ishlab chiqishni talab qiladi. Bunga strukturaning tartibga solish orqali erishish mumkin. Qoraqalpoq davlat universitetida Angren IES dan qo‘shimcha – uchuvchi kul va g‘ovak strukturaning modifikatori sifatida modifikatsiyalangan suyuq shishadan foydalangan holda past navli lyossimon loylar asosida samarali devorli keramika materialini ishlab chiqarish imkoniyatlari o‘rganilmoqda. O’rnatildikiy, PLL og'irligi bo'yicha 25% miqdorida uchuvchi kul qo'shimchasini kiritish va 750 ° C haroratda pishirish minimal ochiq va maksimal shartli yopiq g'ovaklikka ega bo'lgan materialni olish imkonini beradi. Sovuqqa chidamliligi bo'yicha tadqiqotlar shuni ko'rsatdiki, PLL asosidagi keramika materiali past o'rtacha zichlikni (1140 kg / m^3) saqlagan holda 100 ta tsiklda muzlash davriga bardosh bera oladi.*

Резюме: *Применение низкосортных лёссовидных суглинков (НЛС) в производстве эффективной стеновой керамики требует разработки способов повышения морозостойкости керамической поризованной матрицы. Это может быть достигнуто путем регулирования пористости структуры. В Каракалпакском государственном университета изучается возможность изготовления эффективного стенового керамического материала на основе НЛС с использованием добавки- золы-унос Ангренской ТЭС и модифицированного жидкого стекла в качестве модификатора пористой структуры. Установлено, что введение добавки золы-унос в количестве 25 % от массы НЛС и обжиг при температуре 750 °С позволяют получить материал с минимальной открытой и максимальной условно-замкнутой пористостью. Исследования морозостойкости показали, что керамический материал на основе НЛС выдерживает 100 циклов попеременного замораживания и оттаивания при сохранении низкой средней плотности черепка (1140 кг/м^3).*

Kalit so'zlar*: mikrog'ovak keramika, devorbop keramika, lyossimon tuproq, kul, sovuqqa chidamlilik, g'ovaklik.*

Ключевые слова*: микропоризованная керамика, стеновая керамика, лёссовидный суглинок, золы-унос, морозостойкость, пористость.*

DETERMINATION OF CALCIUM HYPOCHLORITE BASED ON SOYRY HYPOCHOLORITE AND CALCIUM CHLORIDE

Umirov F.E., Nomozova G.R., Khudoiberdiev F.I., Khamidova G.O.
Nukus branch of the Navoi State Mining Institute

Summary: *Sodium hypochlorite salt, a by-product of the caustic soda shop of Navoiazot JSC, was converted to calcium chloride salt at temperatures of 50, 75 and 100°C. The conversion process of the solution was carried out in two ways: without evaporation and with evaporation. Calcium hypochlorite formation during the process was calculated at 20, 40, 60, and 80 min. In the case of using the concentration of calcium hypochlorite for a specified period of time, the value of the constant of the conversion process was calculated.*

Keywords*: sodium hypochlorite, calcium chloride, secondary product, conversion, defoliant, velocity constant, activation energy, conversion rate*

Introduction: The world uses various chemicals to grow crops and obtain high yields from them. One of the most pressing issues is the synthesis of highly efficient, environmentally friendly and low-cost defoliants, especially when growing cotton. This requires special attention to the production and use of defoliants based on local raw materials and chemical industry wastes and their technology. Artificial fall of cotton leaves using defoliants is important for high-quality and short-term cotton harvesting [1; from. 53-58., 2; from. 33-35]. Therefore, as a priority solution to this problem, secondary products of the caustic soda shop of Navoiazot JSC will be processed and new products will be obtained through research on the production of hypochlorite and calcium chlorate based on sodium and calcium hypochlorite. chloride.

It is known that in the process of obtaining caustic soda from the caustic soda shop of OJSC Navoiazot, secondary products are formed due to the formation of 50-60% chlorine, 30-35% sodium hypochlorite and the conversion of part of the chlorine into hydrochloric acid. . In order to convert part of the residual chlorine into calcium chloride and prevent its non-use at the enterprise, studies were carried out on the interaction of existing by-products of sodium hypochlorite and calcium chloride [3; from. 78., 4; from. 1405-1410]. To do this, we first studied the composition and properties of sodium hypochlorite and calcium chloride. The results obtained showed the possibility of obtaining new hypochlorites and chlorates from these by-products [5; from. 88-93., 6; from. 1911-1915].

This paper presents the first results of scientific research on the conversion of sodium hypochlorite to liquid calcium chloride, which was carried out as follows: a certain amount of sodium hypochlorite was added. The test tube was placed in a thermostat with a known temperature and vigorously stirred. Over time, it was separated into liquid and solid phases and the corresponding chemical analyzes were carried out. The amount of steam water was found from the difference in the weight of the original mixed pipe and the pipe after a certain time, as well as from the general balance equation in the process of transformation and evaporation.

He showed the following chemical reactions:

$$CaCl_2+2NaClO= Ca(ClO)_2+2NaCl \quad (1)$$

Calcium chlorate was obtained by the formation of calcium hypochlorite and filtering the resulting product and heating the solution to 75-800°C for 40-50 minutes.

$$3Ca(ClO)_2 \rightarrow Ca(ClO_3)_2+CaCl_2 \quad (2)$$

In addition, the process of conversion of the resulting mixture of calcium chloride with sodium hypochlorite was carried out by evaporating calcium hypochlorite at a temperature of 50, 75, 100°C for 20, 40, 60, 80 minutes.

When running the conversion process without evaporation (Table 1), it was found that the conversion rate increased with temperature. At 50, 75 and 100° C., the first 60 minutes conversion was 11.02%, 17.40% and 24.90%, respectively. After 80 minutes, the conversion increased to 13.52%, 22.40% and 31.75%, respectively, for the above temperatures. The amount of calcium hypochlorite in the liquid phase after 9 minutes at the above temperatures was 9.41%, 13.12% and 16.61%, respectively. Subsequent increases in the duration of the conversion showed that the conversion rate did not increase in practice.

This situation is explained by the fact that after 80 minutes of the transformation time (1), a sufficient amount of sodium chloride is formed in the reaction, the sodium chloride formed then negatively affects the course of this reaction, the results are shown in tables 1-2.

The rate constant and the activation energy of the conversion process were determined by the following calculation formula

$$E_a = \frac{RT_1T_2}{T_1 - T_2} ln\left(\frac{k_1}{k_2}\right)$$

$$ln\, k_0 = \frac{T_1 lnk_1 - T_2 lnk_2}{T_1 - T_2}$$

Table 1

Conversion rate constant without evaporation and dependence of the conversion rate on temperature and duration of the process.

Tempera-ture °C	Time (τ), min	Quantity $Ca(ClO)_2$ in the liquid phase, %	Conversion rate ($C_к$), %	Rate constant, $K \cdot 10^{-2}$, τ^{-1}	Activation energy (E), кdj/мol
50	20	0,565	7,9	0,244	18,984
	40	0,872	12,2	0,252	- // -
	60	1,006	14,06	0,261	- // -
	80	1,121	15,67	0,243	- // -
	Average 0,25				
75	20	7,43	10,39	0,435	18,984
	40	9,46	13,23	0,436	- // -
	60	11,32	15,83	0,432	- // -
	80	13,12	18,35	0,428	- // -
	Average 0,432				
100	20	8,43	9,25	0,647	18,984
	40	11,39	17,56	0,644	- // -
	60	14,05	24,90	0,637	- // -
	80	16,61	31,75	0,636	- // -

	Average 0,641

When the conversion process is carried out by evaporation, the intensity of the process increases significantly, which is also seen from the data in Table. 2. Evaporation of 15.50% water from the reaction mixture after 60 minutes at 50°C leads to a conversion of 21.69%, and evaporation of 18.83% of water from the reaction mixture after 80 minutes leads to a conversion of 27.74%. As the temperature rises, the conversion process accelerates and the rate of water evaporation increases. At a temperature of 70°C and a duration of 60 minutes, the conversion and water evaporation rate were 80.13% and 79.15%, respectively. At 100°C, 30 minutes is enough to evaporate 74.32% of the water and increase the conversion to 93.68%.

Table 2

Dependence of the composition of the liquid phase and the rate of transformation on the temperature and rate of water evaporation

Tempera-ture, °C	Time (τ), min	Quantity Ca(ClO)2 in the liquid phase, %	Conversion rate (Cк), %	Degree of water evaporation, %	Rate constant, $K \cdot 10^{-2}$, τ^{-1}	Activation energy (E), кdj/мol
50	20	4,85	7,68	7,15	0,5328	56,746
	40	7,64	15,19	11,53	0,5489	- // -
	60	10,23	21,69	15,50	0,5448	- // -
	80	12,74	27,74	18,83	0,5427	- // -
	Average 0,542					
75	20	16,15	32,64	36,50	2,635	56,746
	40	30,09	55,11	55,87	2,671	- // -
	60	42,97	70,13	69,55	2,686	- // -
	80	54,08	80,13	79,15	2,694	- // -
	Average 2,666					
100	20	9,81	20,39	17,25	9,129	56,746
	40	17,38	36,68	30,20	9,143	- // -
	60	24,89	50,14	40,60	9,283	- // -
	80	31,64	60,82	47,33	9,373	- // -
	Average 9,255					

The results show that the composition of the solution (Ca(ClO) 2) formed during the conversion was analyzed using chemical, physico-chemical methods. The presence of SIO ions was analyzed by permanganometric method, Sa2+ atomic absorption photometry and complexometric methods, and the following results were obtained.

The composition of the obtained theoretical calcium hypochlorite, %:

Ca^{2+}	ClO^-	Na^+	Cl^-	OH^-	H_2O
17	43,77	14,79	19,2	1,74	3,5

Practically obtained content of calcium hypochlorite, %

Ca^{2+}	ClO^-	Na^+	Cl^-	OH^-	H_2O

15,98	43,14	15,34	20,71	1,68	3,14

Conclusion: The process of obtaining calcium hypochlorite based on sodium hypochlorite and calcium chloride, a secondary product of the caustic soda shop of Navoiazot OJSC, was studied by the method of evaporation and evaporation of water for 20, 40, 60, 80 minutes at a conversion temperature of 50, 75, 100 ° C. The results obtained revealed the formation of calcium hypochlorite in solution and its composition using chemical, physico-chemical methods. By conducting research on methods for obtaining calcium chlorate in the next stage from the resulting calcium hypochlorite, it is possible to control the production of calcium chlorate defoliant for agriculture, i.e. cotton. Secondly, secondary products are processed and new products are obtained.

References

1. Ажиметова Г.Н. Мировой опыт и обзор развития хлопководства в Казахстане //Современные проблемы науки и образования»-2011.-№1.; URL:https://science-education.ru/ru/article/viewed=4578 (дата обращения; 05.01.2018). -С. 53-58.

2. Умиров Ф.Э., Номозова Г.Р., Шодикулов Ж.М. Физико-химические свойства и агрохимическая эффективность новых дефолиантов на основе хлоратов натрия, магния и кальция, содержащих ПАВ // Universum: Химия и Биология. Москва -2021. №1 1(79). С. 33-35.

3. Временный технологический регламент. // Производство каустической соды мощностью 75 000 т/год (включая каустическую соду 32 % и 50 %, чешуированную твердую и производство хлористого водорода). Навои. 2020. С. 78.

4. Хамракулов З.А., Аскарова М.К., Тухтаев С. Растворимость компонентов в системах $MgCl_2$-$CaCl_2$-H_2O, (48,2%$CaCl_2$+51,8%$MgCl_2$)-$NaClO_3$-H_2O //Журнал неорганической химии.-Москва, 2015. –Т.60, №10. С. 1405-1410.

5. Умиров Ф.Э., Номозова Г.Р. Получения хлората натрия на основе гипохлорита натрия из цеха каустической соды// Научный вестник Узбекистана. – Наманган, 2021. -№5.-С. 88-93.

6. Research of Process of Obtaining Chlorate Magnesium Defoliant Containing Surface-Active Substances/ Умиров Ф.Э., Закиров Б.С., Номозова Г.Р.// International Journal of Advanced Research in Science, Engineering and Technology Voi. 2019 Issus 4, April Copyright to IJARSET www.ijarset.com 9011-9015

Rezyume: *“Navoiyazot” AJ kaustik soda tsexining qo‘shimcha mahsuloti bo‘lgan natriy gipoxlorit 50, 75 va 100°C haroratlarda kalsiy xlorid tuziga aylantirildi. Eritmani konvertatsiya qilish jarayoni ikki usulda amalga oshirildi: bug'lanishsiz va bug'lanish bilan. Jarayonda kaltsiy gipoxloritining hosil bo'lishi 20, 40, 60 va 80 daqiqalar uchun hisoblangan. Kaltsiy gipoxlorit konsentratsiyasini ma'lum vaqt oralig'ida ishlatgan taqdirda, konvertatsiya jarayonining konstantasi qiymati hisoblab chiqilgan.*

Резюме: *Гипохлорит натрия, побочный продукт цеха едкого натра ОАО «Навоиазот», был переведен в хлористо-кальциевую соль при температурах 50, 75 и 100°С. Процесс конверсии раствора осуществлялся двумя способами: без упаривания и с упариванием. Образование гипохлорита кальция в процессе рассчитывали на 20, 40, 60 и 80 мин. В случае использования концентрации гипохлорита кальция за заданный период времени рассчитывали значение константы процесса конверсии.*

Kalit so'zlar*: natriy gipoxlorit, kalsiy xlorid, ikkilamchi mahsulot, konversiya, defoliant, tezlik konstantasi, aktivlanish energiyasi, konversiya tezligi.*

Ключевые слова: *гипохлорит натрия, хлорид кальция, вторичный продукт, конверсия, дефолиант, константа скорости, энергия активации, скорость конверсии.*

DEVELOPMENT OF THE BASIC EQUATIONS OF TANGENTIAL MOTION OF GAS WITH PARTICLES IN A DUST COLLECTOR BY A VORTEX SWIRLING FLOW

Barakaev N.R.[1], Jalilov R.S.[2]
[1]*Bukhara Engineering Technological Institute*
[2]*Navoi State Mining Institute, Navoi*

Summary: *The motion of a two-phase system at different distances from the axis of symmetry is considered, however, the approach about the independence of the influence of the solid phase on the flow of the carrier medium is also used here. It should be noted that a general numerical study of the equations of interpenetrating continuums for various Stokes numbers is not given in this paper.*

Keywords: *tangential, vortex dust collectors, numerical methods, swirling vortex flow*

In subsequent years, in the foreign practice of dust collection, a normal geometric series of dust collectors for swirling vortex flows with a maximum unit gas capacity of up to 8 m3 / s and apparatus body diameters from 40 to 2000 mm was created; m3/s. At present, two types of swirling flow dust collectors have been established as the main ones, differing from each other in the way the secondary flow is introduced into the dust collector.[1-2]

Swirling flows of multiphase media are widely used in the development of modern technological lines for the intensification of heat processes. and mass transfer and separation. The optimal design of both the entire line as a whole and its individual units, for example: gas cleaning devices, combustion chambers, etc., requires knowledge of all hydrodynamic flow parameters. Since in most cases both the devices themselves and the processes occurring in them are quite complex, the determination of the hydrodynamic structure of the flow is possible only on the basis of a computational experiment.[3]

Conducting a computational experiment based on a mathematical model of the flow:

Equations of interpenetrating continuums are used as a mathematical model. The numerical method is based on the well-known, both in our country and abroad, the method of large particles [4]. This numerical method is universal and suitable for calculations on any computer.

In this paper, the study of swirling dispersed flows was carried out on the example of the operation of apparatuses with counter swirling flows used to clean industrial emissions from coarse. and fine dust (Fig. 1.1).

In the upper part of the body of the apparatus there is a swirler (4), to which a secondary dusty flow in the amount of G2 is tangentially supplied through the inlet channel of the collector (2). The number of primary G1 and secondary G2 dusty flows is determined by the area of the flow section in the swirlers (4). Thus, in the cylindrical part of the apparatus (8) there is an interaction of counter dusty flows swirling in one direction. The interaction of flows due to the speed mode of the device is organized in such a way that the secondary flow reaches the rebound vibe (7), turns around and moves along with the primary flow

towards the outlet pipe (5). Dust particles under the action of centrifugal forces are thrown to the side wall of the apparatus, where they are carried by the secondary flow through the annular slot (9) into the dust collector (3). The stream cleared from a solid phase through an exhaust branch pipe (5) is removed from the device.

Since the movement of gas and particles in a vortex swirling flow depends on a number of geometric and hydrodynamic defining parameters, then, by assigning certain values to these parameters, it is possible to ensure that all particles fall into the dust collector (3), or into the outlet pipe, or part of the particles fell into the dust collector, and some . into the outlet pipe.[5-6]

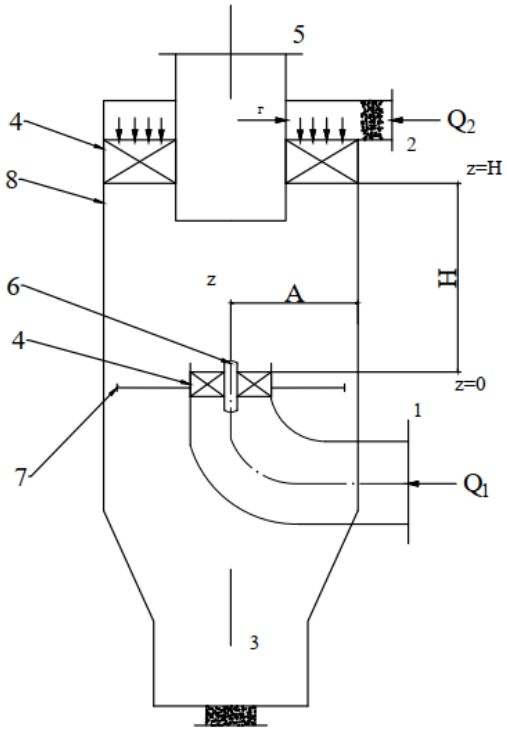


Figure. 1. Schematic diagram of the apparatus with a vortex swirling flow

As shown in fig. 1.1, the vortex swirling flow apparatus is a vertical cylindrical body, into the lower part of which, through an axially bladed or screw-type swirler (4), coaxially along the inlet pipe (1), a dusty flow is supplied, hereinafter referred to as "primary". In the central part of the swirler (4) there is a fairing (6). A baffle washer (7) is located on the outer side of the swirler, separating the body of the vortex dust collector from the hopper (3). The diameter of the baffle washer (7) is equal to 0.95 D (D is the diameter of the cylindrical part of the housing (4), which provides an annular gap for transporting dust to the dust collector bin).

As already noted, the subscript i = 1 will be referred to the parameters of the carrier phase; i = 2 . to the parameters of particles flying in the primary gas flow; 1= 3 . to the parameters of particles flying in the secondary gas flow. In addition to the main assumptions of 2.1, we will make the following additional assumptions that simplify the mathematical description of the mixture:

a) the mixture is monodisperse, i.e. the second and third dispersed phases in each elementary macrovolume δV are present in the form of spherical inclusions of the same diameter d ; moreover, the volume concentration of both the second and third phases is . small:

$$\text{a)} \quad \alpha_2 << 1, \alpha_3 << 1 (\alpha_i = \frac{g_i}{g_i^0}$$

where $\int_i^0$. true particle density.

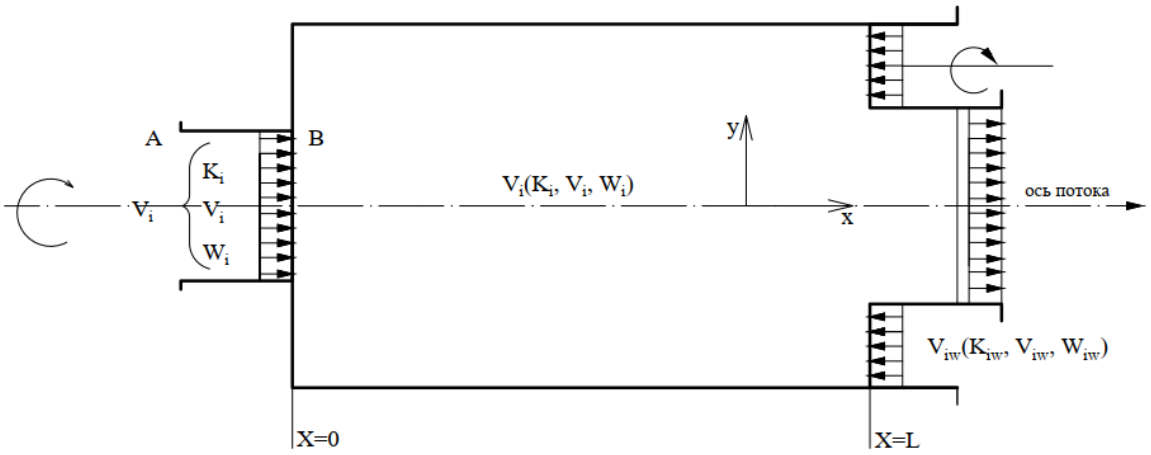


Figure. 2. Schematic representation of the longitudinal section of the apparatus with a vortex swirling flow

b) one can neglect the energy and other effects (including Brownian) internal (rotation and deformation) motions of dispersed particles.

c) direct interaction and collisions between particles of the same phase can be neglected.

d) there are no processes of crushing, sticking (coagulation) and the formation of new dispersed particles. Let us write down the equations describing, in the framework of the three-velocity, three-temperature model of interpenetrating continuums, the unsteady two-dimensional motion of a three-phase medium in a channel:

continuity equations for gas and particles (*1* = 1, 2, 3):

$$\frac{\partial g_i u_i}{\partial t}+\frac{\partial g_i u_i}{\partial x}+\frac{\partial g_i v_i}{\partial y}+\frac{g_i v_i}{y}=\delta J_{ji} \qquad (1.1)$$

equations of motion for the gaseous and dispersed phases:

$$\frac{\partial g_i}{\partial t}+\frac{\partial g_i u_i^{\,2}}{\partial x}+\frac{\partial g_i u_i v_i}{\partial y}+\frac{g_i u_i v_i}{y}=(\delta-1)\frac{\partial p}{\partial x}-f_{ij}^{x}+\delta J_{ij}u_j,$$

$$\frac{\partial g_i v_i}{\partial t}+\frac{\partial g_i v_i u_i}{\partial x}+\frac{\partial g_i v_i^{\,2}}{\partial y}+\frac{g_i v_i^{\,2}}{y}=(\delta-1)\frac{\partial p}{\partial y}-f_{ij}^{x}+\frac{g_i w_i^{\,2}}{2}+\delta J_{ij}v_j, \qquad (1.2)$$

$$\frac{\partial g_i w_i}{\partial t}+\frac{\partial g_i w_i u_i}{\partial x}+\frac{\partial g_i w_i v_i}{\partial y}+\frac{2 g_i w_i v_i}{y}=f_{ij}^{y}+\delta J_{ij}w_j,$$

$i\neq j; i, j=1,2,3$

equations for the total energy of the mixture and the internal energy of the particles:

$$\sum_{i=1}^{3}\left[\frac{\partial g_i E_i}{\partial t}+\frac{\partial (g_i E_i+\delta p)u_i}{\partial x}+\frac{\partial (g_i E_i+\delta p)v_i}{\partial y}+\frac{(g_i E_i+\delta p)v_i}{y}\right]=0,$$

$$\frac{\partial g_i e_i}{\partial t}+\frac{\partial g_i e_i u_i}{\partial x}+\frac{\partial g_i e_i v_i}{\partial y}+\frac{g_i e_i v_i}{y}=\vec{f}_{ij}(\vec{v}_j-\vec{v}_i)+J_{ji}\left[\frac{1}{2(\vec{v}_j-\vec{v}_i^{\,2})}+e_j\right], i, j=2,3 \qquad (1.3)$$

Here is the subscript 1 ≠ j ; 1 , j = 1, 2, 3 refers to the parameters of gas and particles flying along with the primary and secondary flow; ρ_i, $\vec{v}_1$, e$_1$, E$_1$,reduced density, velocity vector, internal and total energy of the 1st phase; ρ. pressure in the gas, $\vec{f}_{1j}$. intensity vector of force interaction between phases.

$$\vec{f}_{23} = g_2 g_3 (\vec{v}_2 - \vec{v}_3) / \beta_{32}^{(v)}, \text{, где } \beta_{32}^{(v)} = \frac{g_2^0 d}{k^{(r)} g_{200} R} \quad (1.4)$$

. parameter of speed non-uniformity of particles of the 2nd and 3rd phases;

$$J_{32} = \frac{g_2 g_3 |\vec{v}_3 - \vec{v}_2|}{\beta_{32}^{(m)}}, \beta_{32}^{(m)} = \frac{g_2^0 d}{k^{(J)} g_{200} R} \quad (1.5)$$

parameter of intensity of mass transfer between particles of the 2nd and 3rd phases due to collisions. For this type of task$\beta_{32}^{(\vartheta)} = \beta_{32}^{(m)}$.

It should be noted that the parameters$\beta_{32}^{(v)}$and $\beta_{32}^{(m)}$ vortex swirling flow does not have a significant effect on the flow of gas suspension in the working area of the apparatus, with the exception of individual modifications of the apparatus, which will be discussed below. Since, at low relative velocities of flow around a particle, the main contribution on the right-hand side of (1.5) comes only from the first term, in the first approximation, instead ofRe_λ , $\beta^{(v)}$ one parameter can be considered, namely the Stokes number Stk = $\frac{27}{4}\beta^{(v)} Re_\lambda$.

The article formulates a boundary value problem and writes out the basic equations for the motion of gas-dispersed swirling flows in rectangular regions. The correctness of setting the boundary conditions for the solid phase on the side wall of the apparatus by a vortex swirling flow is discussed. Using as characteristic parameters of the problem: the linear size of the apparatus, the physicochemical and kinematic characteristics of the phases at the entrance to the vortex swirling flow, the main similarity criteria are obtained that simulate the operation of a wide class of vortex-type apparatuses.

Refereences

1. Matsubayashi, T., Katono, K., Hayashi, K., Tomiyama, A. (2012). Effects of swirler shape on swirling annular flow in a gas–liquid separator. Nuclear engineering and design, 249, 63–70.
2. Sayfidinov, O., Bognár, G. V. (2021). Numerical Solutions of the Kardar-Parisi-Zhang Interface Growing Equation with Different Noise Terms. Vehicle and Automotive Engineering, 3, 302–311.
3. https://doi.org/10.1007/978-981-15-9529-5_27
4. Yusupbekov N., Mukhitdinov D., Kadirov Yu., Sattarov O., Samadov A. Management of non-standard dynamic objects by misalignment adaptation based on neural networks (2020) International Journal of New Trends in Engineering Research, 8 (9), No. 62, pp. 5273-5278. DOI: 10.30534/ijeter/2020/62892020
5. Voinov, N. A., Nikolaev, N. A., & Kustov, A. V. (2009). Hydrodynamics and mass exchange in vortex rectifying column. Russian journal of applied chemistry, 82(4), 730–735.
6. Syred, N. (2006). A review of oscillation mechanisms and the role of the precessing vortex core (PVC) in swirl combustion systems. Progress in Energy and Combustion Science, 32(2), 93–161.
7. Voinov, N. A., Lednik, S. A., Zhukova, O. P. (2014). Vortical contact stage for heat-and mass-exchange processes. Chemical and Petroleum Engineering, 49(9), 579–583.

Rezyume: *Ikki fazali tizimning simmetriya o'qidan turli masofalardagi harakati ko'rib chiqiladi, ammo bu erda qattiq fazaning tashuvchisi muhit oqimiga ta'sirining mustaqilligi yondashuvi ham qo'llaniladi. Shuni ta'kidlash kerakki, bu ishda turli Stokes sonlari uchun o'zaro kirib boruvchi kontinuumlar tenglamalarini umumiy sonli o'rganish amalga oshirilmagan.*

Резюме: *Рассматривается движение двухфазной системы на различных расстояниях от оси симметрии, однако здесь также используется подход о независимости влияния твердой фазы на течение несущей среды. Следует отметить, что общее численное исследование уравнений взаимопроникающих континуумов для различных чисел Стокса в данной работе не проводится.*

Kalit so'zlar: *tangensial, girdobli chang yig'uvchilar, sonli usullar, aylanma girdob oqimi.*

Ключевые слова: *тангенциальные, вихревые пылеуловители, численные методы, закрученный вихревой поток.*

УДК 621.313

ACCOUNTING FOR THE TECHNOLOGICAL CLASSIFICATION OF THE DIAMERT OF CRUSHED COAL PIECES ACCELERATED ABSTRACT BOILING DRYING DRYING DEVICE

Kurbanbaeva M.Sh.,[1] Kurbanbaeva Z.X.,[1] Babaxodjaev R.P.,[1] Qtaybekov M.Q.[2]
[1]Tashkent State Technical University named after Islam Karimov. Uzbekistan 100095,
[2]Karakalpak State University named after Berdakh

Summary: *The article determines the technological characteristics of the device depending on the diameter of the crushed coal pieces, the calculations are included in the excel program. This is mainly due to changes in heat consumption, the amount of energy used to drive the supplied air, and the efficiency. As a result, the change in the efficiency ratio ranged from 15% to 9% and was analyzed using graphs. The analysis showed what is the technically and economically optimal value of the equivalent diameter of coal seams. In addition, the value of other key parameters increases or decreases as the equivalent diameter of the coal segments increases. Hence the value of these parameters is directly proportional to the equivalent diameter of the coal seams. The results of the calculation were made for use in local heat supply systems where Angren brown coal is ignited.*

Keywords: *intensified fluidized bed, coal drying, coal moisture content, energy intensity, critical speed.*

Introduction

Drying is the process of removing moisture from the material by evaporating it as a result of heat transfer to the material being dried. There are many types of drying and enrichment devices. Each has its own disadvantages and advantages.

Dryers are classified as:

According to the principle of action:

a) continuous; b) periodic.

Type of heat carrier used:

a) air; b) gas; c) steam.

According to the hydrodynamic regime:

a) boiling layer; b) mixed layer; c) boiling layer.

According to the mode of movement of the material to be dried in the devices:

a) abstract boiling layer dryers;

b) vibrating abstract boiling layer dryers;

c) pneumatic pipe dryers;

g) simple and combined air dryers;

d) simple and combined cyclone dryers;

e) single and multi-section sliding devices.

Problem statement

The coal preparation process used at the Angren TPP is very complex, which is disproportionate to the station's economy. In addition, additional energy is required for drying and enrichment due to the high ash and moisture content in terms of Angren B2 brown coal content. Therefore, the Angren TPP is designed to carry out coal enrichment and drying operations in a single unit, using the hot smoke gases released during fuel combustion as secondary energy. The main task of the article is to determine the

technological parameters of the abstract boiling layer drying device, in which the periodically operating heat carrier is air, and on this basis to determine the rational value of the equivalent diameter of coal supplied to the device.

Problem solving method

To solve the problem, an experimental version of an abstract boiling layer dryer was created.

The following are used as a drying medium for an abstract boiling layer dryer: heated air, flue gases or mixtures of flue gas with air. The following is a brown coal dryer using an abstract boiling layer device.

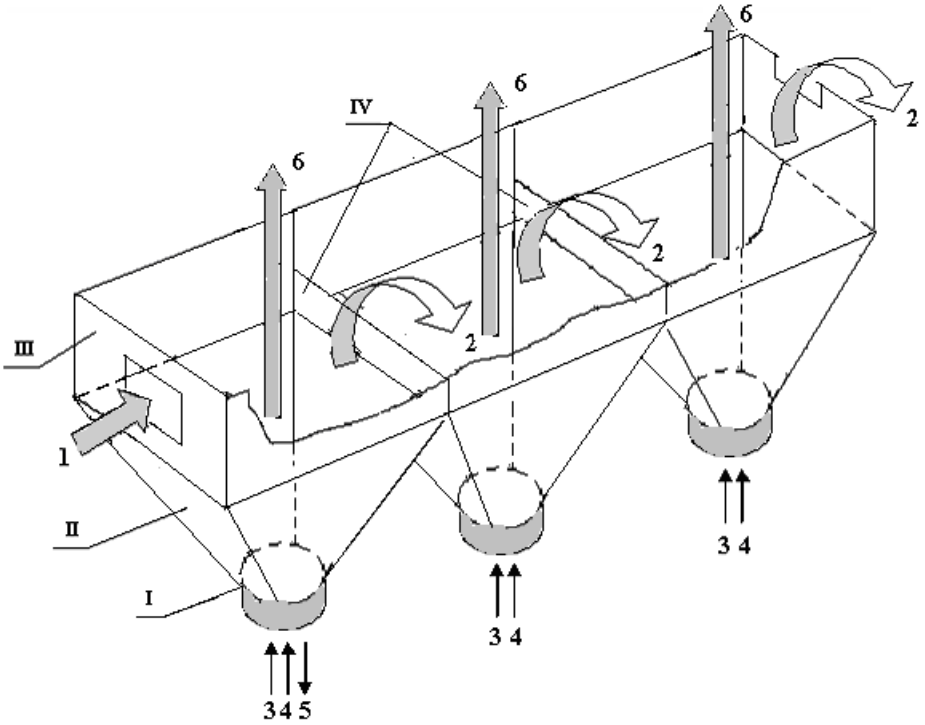


Figure 1.- Abstract boiling layer coal drying device.

1st fuel supply pipe, 2nd working chamber, 3rd, 4th air supply corridor, 5th wet coal residue removal path, 6th air direction

In this case, the size of the coal should be in the range of 2 mm - 20 mm. The proposed device consists of a working chamber 2 in the form of a parallelepiped, a conical air supply passage 3.4 and a fuel inlet pipe 1, and several such devices are attached. Coal is supplied to the chamber (2) through the fuel supply pipe (1), hot air is supplied from the bottom, ie from the conical corridor (3,4). As the air is supplied at a high speed, the pieces of coal rise to a certain height. Due to the weight of the moisture content of the coal, the wet and dry pieces of coal are separated accordingly. At this speed, the pieces of dry coal fly to the next chamber, while the pieces of wet coal cannot pass due to their high weight. In this way, dry and wet pieces of coal are separated in both chambers.

In this device it will be necessary to determine the technological parameters of the coal supplied for research. For this purpose, heat and mass-exchange calculations of the boiler of the local heating supply system, which burns high-ash Angren brown coal, were carried out. The boiler is designed to burn 100 kg/h of coal.

Table 1 shows the initial parameters and we only considered the change in technical parameters relative to the equivalent diameter.

The equivalent diameters of the coal segments were 0.003 m, 0.005 m, 0.006 m, and 0.01 m.

№	Parameter	Design ation	Unit of measurement	Value
1.	Density of coal	ρ	kg/m^3	730
2.	Thermal conductivity of coal,	λ ,	m^2/hour	$0.638*10^{-3}$
3.	The maximum allowable temperature of the material,	t_1	^0C	170
4.	Heat capacity of air,	c_g,	kDJ/ kg*grad	1,01
5.	Atmospheric pressure,	P	mm.w.c	10^4
6.	Humidity of incoming air,	x_0	kg/kg	0,01
7.	The heat of vaporization of water	r,	kDJ/kg	2260 (540 kkal/kg)
8.	Heat capacity of dry coal,	C_m,	kDJ/kg*grad	1,3
9.	The temperature of the air entering the device,	t_2	^0C	170
10.	Relative humidity of air at the exit of the device	φ_2		0,8

The calculations are performed algorithmically using the following formulas:

Air speed. From the graph of the relationship between the Lyashenko criterion and the Archimedes criterion Ly = f (Ar), we find L_{kr} by the value of Ar determined from the following formula:

$$Ar = \frac{d_e^3 \cdot \rho_m \cdot g}{\nu^2 * \rho_g} ; \quad (1)$$

where: d is the equivalent diameter of the coal, m; g - free fall acceleration, m/s^2 ; ν- kinematic viscosity m^2/s ; ρ_g- density of the gas, kg/m^3.

We determine the Archimedean criterion from the graph [1].

To determine the critical velocity of air entering the device, we use the following formula:

$$\omega_{cr} = \sqrt[3]{\frac{Ly_{cr} \cdot \nu \cdot \rho_m \cdot g}{\rho_g}}, m/s. \quad (2)$$

here: Ly_{cr}- The critical value of the Lyashenko criterion

The number of abstract boiling layers is represented by the ratio of the values of the Lyashenko criterion depending on the porosity of the layer:

$$К_w = \sqrt[3]{\frac{Ly}{Ly_{cr}}}; \quad (3)$$

In this case, the air velocity (taking into account the full cross section of the apparatus) is calculated as follows:

$$\omega = \omega_{cr} \cdot К_w \text{ m/s.} \quad (4)$$

here: ω_{cr}- critical velocity of air, m/s.

The diameter of the device. We determine the minimum diameter of the device from the minimum air flow L_{min}, which in turn is found from the material balance equation for heat and the heat balance equation:

$$L_{min} = \frac{rG(u_1 - u_2) + Gc_m(\theta_1 - \theta_{2)}}{c_g(t_2 - t_1)} \text{ kg/hour.} \quad (5)$$

here: u_1, u_2- initial and final moisture content of coal, %; θ_1, θ_2- inlet and outlet temperatures of the material to be dried, ^{0}C; [2].

We then determine the minimum diameter of the device from this formula:

$$D_{min} = \sqrt{\frac{V_{sek}}{0.785\omega}}, \ m. \quad (6)$$

here: V_{sek}- the size of the device, m^3.

Abstract boiling layer height. For the approximate calculation, we use the kinetic equation obtained with respect to the Fure criterion (Fo):

$$F_0 = \frac{0.35 \cdot 10^6}{\frac{E}{1-E}} \left(\frac{t_1 - \theta_1}{\theta_1}\right)^{-2.2} \left(\frac{c_м G}{c_г L}\right) К_0^{0.7} Ar^{-0.58}; \quad (7)$$

here : К - the initial value of the number of boiling layers

The average stability time of the material in the abstract boiling layer:

$$\tau_{ave} = F_0 \frac{d^2}{\lambda}, \text{hour.} \quad (8)$$

The amount of material in the layer:

$$G_{sl} = \tau_{ср} G, \text{kg.} \quad (9)$$

Abstract boiling layer size:

$$V_{sl} = \frac{\tau_{ср} G}{\rho_m(1-\varepsilon)}, m^3. \quad (10)$$

here: ε- porosity of the layer

$$h = \frac{V_{sl}}{S_{sl}}, \text{m}. \quad (11)$$

here: S_{sl}- the surface of the abstract boiling layer, m^2 .

The diameter of the device:

$$D = \sqrt{\frac{\frac{BG}{\rho_m(1-\varepsilon)}}{0.785^2 \cdot h \cdot K_\omega}}, \text{m}. \quad (12)$$

Output air parameter. In doing so, we calculate the amount of moisture that has evaporated:

$$W = G(u'_1 - u'_2), \text{ kg/hour}. \quad (13)$$

The amount of air:

$$L = \omega p_g \ , \text{ kg/hour}. \quad (14)$$

The amount of moisture:

$$x_2 = x_0 + \frac{W(1+x_0)}{L}, \frac{\text{kg}}{\text{kg}}. \quad (15)$$

Results

Some examples are given below, in which only the equivalent diameter of 0.003 m was calculated, while the calculation of the remaining diameters is given in Table 2.

The energy expended to drive the air:

$$\text{N} = \frac{\text{V}_{\text{sek}} \cdot \Delta\text{p}}{1000 \cdot \eta} = \frac{w_{cr}^{\frac{0.8}{1.2}} \cdot 2^{\frac{G \cdot 9{,}81 \cdot 0.877}{S_{sl}}}}{1000 \cdot \eta} = \frac{0.65 \cdot 0.66 \cdot 2 \cdot 100 \cdot 9.81 \cdot 0.877}{1000 \cdot 0.5 \cdot 1{,}2 \cdot 0{,}758 \cdot 0{,}81^2} = 2{,}39, \text{kW}; \quad (16)$$

here: Δp – hydraulic resistance to air movement, Pa.

The amount of heat consumed in an air heater:

$$\text{Q} = \text{L}_{\text{sek}} \cdot \text{c}_\text{r} \cdot (\text{t}_1 - \text{t}_0) = 0{,}65 \cdot 3 \cdot 0{,}01(170 - 40) = 2{,}535, \text{ kW}; \quad (17)$$

The thermal efficiency of the dryer (FIC of the dryer) is determined as follows 3:

$$\eta = \frac{r}{\text{q}} = \frac{2260}{14941.82} = 15.12, \%; \quad (18)$$

$$q = \frac{Q}{W} = \frac{123.68 \cdot 3600}{29.8} = 14941.2, \frac{kDJ}{kg * humidity}; \quad (19)$$

here: q- specific fuel consumption, kDJ/ kg*humidity;

The amount of moisture per unit area of the abstract boiling layer:

$$A_v = \frac{(u_1 - u_2)G}{V_{sl}} = \frac{(0.3 - 0.002) \cdot 100}{0.7579} = 39.31, \frac{\text{кг}}{m^3 * hour}; \quad (20)$$

Specific consumption of dry air:

$$l = \frac{L}{W \cdot (1 + x_0)} = \frac{2980}{29.5 \cdot (1 + 0.01)} = 99.01, \frac{kg}{m^3 * hour}; \quad (21)$$

1-table

d	N	Q	E	q	η	l	A_v
0,003	2.39	123,685	127,095	14941,82	15,12534	99,0099	39,3182
0,005	4,550741	141,126	145,6767	17048,77	13,25609	111,419	30,24609
0,006	5,480106	165,4236	170,9037	19984,06	11,30901	130,602	28,84576
0,01	7,501584	201,9463	209,4478	24396,19	9,263741	159,4366	25,25814

The calculations were performed in excel, using the above equations, and the results were analyzed graphically.

The graphs show the relationship between the equivalent diameter and heat consumption, the change in the amount of energy expended to drive the supplied air, the change in the efficiency of the apparatus.

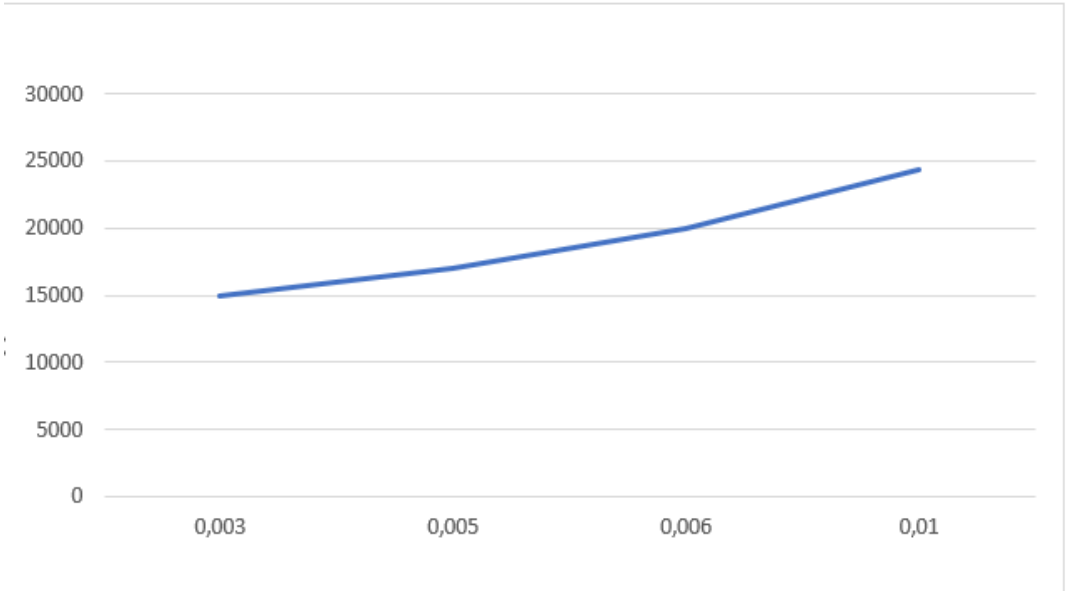


Figure 2. Graph of the relationship between equivalent diameter and heat consumption.

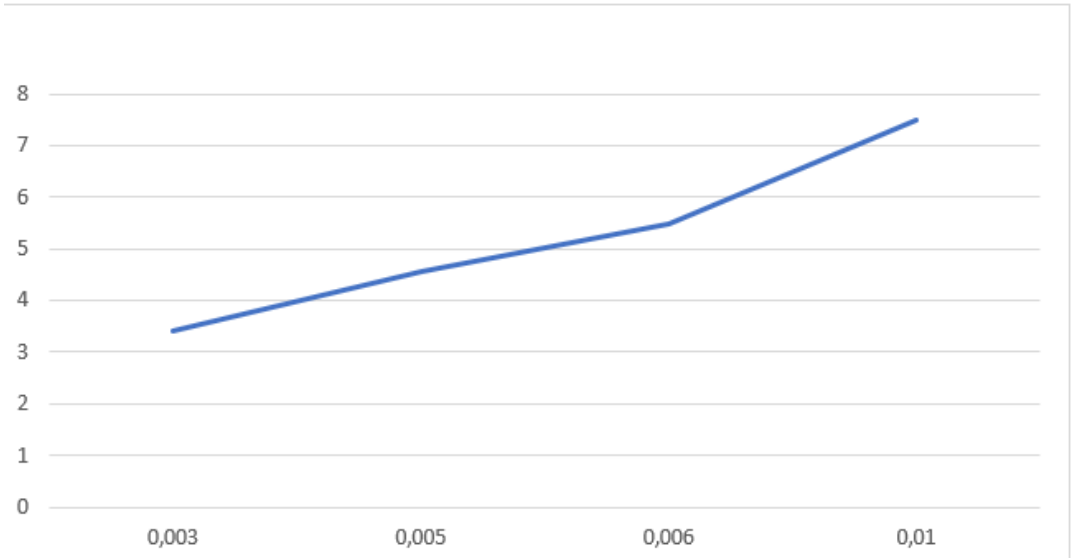


Figure 3. Graph of the change in the amount of energy expended to drive the air supplied for drying.

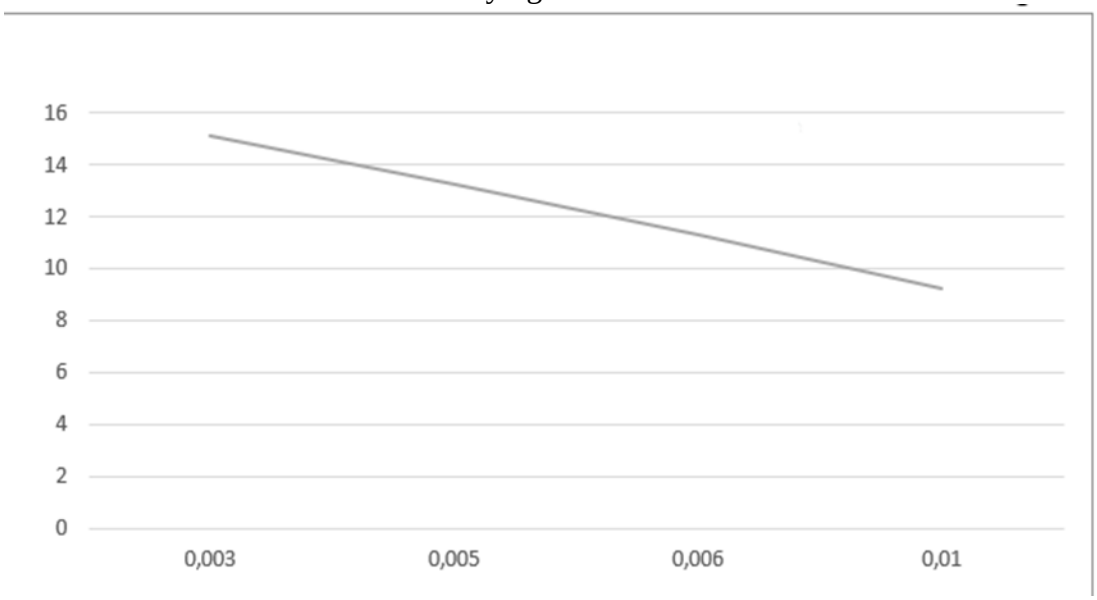


Figure 4. Drying device Efficiency graph of the dependence of the diameter of the coal particles.

Conclusion

From the graphs above, we have seen that as the diameter of the coal seams increases, the heat consumption, energy losses increase, and the Efficiency decreases. By analyzing the changes in other parameters, it was clearly concluded that it was possible to use pieces of coal with an equivalent diameter of a certain rational size. That is, the maximum Efficiency value of the device among the selected diameters was obtained as 0.003 m.

References

1. Babakhodzhaev R.P. Study of the process of micro-tanning in an intensified fluidized bed for burning low-grade coals // YII All-Russian Conference with international participation "COMBUSTION OF SOLID FUEL". Sat. reports. Part 2. -Novosibirsk: 2009. P.15-19.

2. Babahodjaev R. P. Intensified fluidized bed burning of the Angren brown coal containing an increased amount of ash. // N. Syred and A. Khalatov (eds.), Advanced Combustion and Aerothermal Technologies. 2007. Springer. p. 65-72.

3. Babahodjaev R. P. Energy-saving at operation of the distillation water-desalinating installation of power station. II international conference «Strategy of quality in industry and education». Materials in 2 volumes. Volume 1. Varna (Bulgaria), June 2-9 2006. P.265-266

4. R. P. Babakhodzhaev, A. A. Shakirov, and A. A. Karimov, Mathematical modeling of two-phase flow hydrodynamics in pre-furnaces with an intensified fluidized bed. Energy and fuel resources of Kazakhstan. Specialized scientific and practical industry magazine. - Almaty. No. 4. 2010. S. 14-16.

5. M. Sh. Kurbanbayeva, R. P. Babakhodzhaev "Innovative way to enrich brown coal and reduce carbon emissions". International Scientific and Technical Conference "Trends in the Development of Alternative and Renewable Energy: Problems and Solutions". Tashkent- 2021.p. 408-411.

6. Yusupaliev R.M. Fundamentals and theory of combustion of organic fuels in steam boilers of thermal power industry Tashkent-2018

7. I.Yu.Aleksanyan, L.M.Titova, A.Kh.Nugmanov Modeling of the drying process of dispersed material in a fluidized bed. // ISSN 2074-9414. Food Processing: Techniques and Technology. RF-2014. from. 96-100.

8. Wei Wang, Guohua Chen, Arun S. Mujumdar. A Model for Drying of Porous Materials: From Generality to Specific Applications // Drying Technology: An International Journal. Special Issue: Selected Papers Presented at the 17th International Drying Symposium (IDS2010), Part 1 . – Vol. 29, Issue 13, 2011. – P. 659–668.

9. Reihaneh Golestani, Ahmadreza Raisi, Abdolreza Aroujalian. Mathematical Modeling on Air Drying of Apples Considering Shrinkage and Variable Diffusion Coefficient // Drying Technology: An International Journal. – Vol. 31, Issue 1, – 2013. – P. 40–51.

10. Patrick Perré. A Review of Modern Computational and Experimental Tools Relevant to the Field of Drying // Drying Technology: An International Journal. Special Issue: Selected Papers Presented at the 17th International Drying Symposium (IDS2010), Part 1. – Vol. 29, Issue 13. – 2011. – P. 1529–1541.

11. Babahodjaev R. P. and others. Burning Angren low-grade brown coal in the intensified fluidized bed. // Burning of solid fuel. VI - All-Russia conference. Collected reports. Part 2. - Novosibirsk, 2006, p. 20-27.

12. Romankov P.G., Rashkovskaya N.B. Suspension drying. Publishing house "Chemistry" Leningrad branch, Nevsky prospect, Templan 1967 p. 168.

13. V. V. Lebedev "Drying of grain materials in a device with a modified vortex layer". Dissertation for a candidate of technical sciences. - TVER, TGTU, 2007. - 121 p.

14. Nesterov A.V. Industrial drying, St. Petersburg: Lan, 2021, 304 p.

15. Leontieva A.I., Bryankin K.V., Degtyarev A.A., Orekhov V.S. "Modeling and calculation of the drying process of thermolabile materials in a vibroaerofluidized layer" - Tambov: Publishing House of GOU VPO TSTU, 2011. - 80 p.

16. Zikeev T.A., Korelin A.I., Energy fuel analysis. M.: - Gosenergoizdat, 1948. - 328 p.

17. Klein M.S., Vahonina T.E., Coal beneficiation technology: "Processing of minerals". Kemerovo 2011. 127 p.

18. Santiago-Pineda, T.; Anaya-Sosa, I.; Alamilla-Beltrán, L.; Chanona-Pérez, J.J.; Gutiérrez-López, G. F.; Vizcarra-Mendoza, M.G. Hidrodynamics and operational parameters of a continuous multistage vertical fluidized bed system. Revista Mexicana de Ingeniería Química, vol. 6, núm. 1, 2007, pp. 59-63.

19. Dytnersky Yu.I. Processes and apparatuses of chemical technology: a textbook for universities. Ed. 2nd. In 2 books. Part 2. Mass transfer processes and apparatuses. - M.: Chemistry, 1995. - 368 p.

20. N. L. Ovchinnikov, l. N. Ovchinnikov, and s. V. Natareev, acoust. Drying and raining in boiling layer. Gouvpo ivan. Gos. Chem.- technol. Un-t. Ivanovo, 2009. 106p.

Rezyume: *Maqolada maydalangan ko'mir bo'laklari diametriga qarab qurilmaning texnologik xarakteristikasi aniqlangan, hisob-kitob ishlari excel dasturiga kiritilgan. Bunda asosan issiqlik sarfi, berilayotgan havoni haydashga sarflangan energiya miqdori va foydali ish koeffitsientining o'zgarishi keltirilgan. Natijada foydali ish koeffitsientining o'zgarishi 15% dan 9% gachani tashkil qildi va grafiklar yordamida tahlil qilindi. Tahlillar ko'mir bo'laklari ekvivalent diametrining texnik-iqtisodiy jihatdan maqbul qiymatini ko'rsatdi. Bundan tashqari boshqa asosiy parametrlarning qiymati ko'mir bo'laklarining ekvivalent diametriga ortishi bilan ortadi. Demak bu parametrlar qiymati ko'mir*

bo'laklarining ekvivalent diametriga to'g'ri proportsionaldir. Hisob natijalari Angren qo'ng'ir ko'miri yoqiladigan mahalliy issiqlik ta'minoti tizimlarida foydalanish uchun amalga oshirilgan.

Резюме: *В статье определены технологические характеристики сушилной установки в зависимости от диаметра измельченных частиц угля, проведены расчеты в программе Excel. Это в основном связано с изменениями в потреблении тепла, количестве энергии, используемой для привода подаваемого воздуха, и эффективности. В результате изменение коэффициента полезного действия составило от 15% до 9% и было проанализировано с помощью графиков. Анализ показал, каково технически и экономически приемлемое значение эквивалентного диаметра угольных частиц. Кроме того, значение других основных параметров увеличивается с увеличением эквивалентного диаметра угольных частиц. Следовательно, значение этих параметров прямо пропорционально эквивалентному диаметру угольных частиц. Расчеты выполнены для котельной системы местного теплоснабжения, работающие на буром угле.*

Kalit so'zlar: *jadallashtirilgan mavhum qaynash qatlami, ko'mirni quritish, ko'mir namligi, quvvat sarfi, kritik tezlik.*

Ключевые слова: *интенсифицированный кипящий слой, сушка угля, влажность угля, энергоемкость, критическая скорость.*

ANALYSIS OF OPERATIONAL TECHNOLOGIES FOR THE USE OF AIRCRAFT IN AGRICULTURAL MECHANIZATION

Alimov A.M.
Head of the Department for Monitoring and Controlling over the Quality of Training and Developing Ratings at the State Inspectorate for Quality Control in Education under the Cabinet of Ministers of the Republic of Uzbekistan

Summary: *Today, the use of aircraft in agriculture in Uzbekistan has sharply decreased, mainly due to the lack of monitoring to study the real demand in this area, the physical obsolescence of the existing fleet of agricultural aircraft, lack of scientific research in the field, insufficient sources of information for research. This article provides information on the work that can be done in agriculture using aircraft, which analyzes the operational technologies of using aircraft. The analysis of operating technologies focuses on the need to address the following important issues: substantiation of the most important agrotechnical requirements; purchase of energy-saving units and their preparation for operation; field preparation; commissioning (operation) of aggregates; work quality control; ensuring compliance with nature and labor protection requirements.*

Keywords: *agriculture, arable land, aviation equipment, operation technologies, aerial chemical works.*

Until recently, the main crops in Uzbekistan were cotton and cereals. The rest were sugar beets, field crops, corn, rye, barley, potatoes, perennial grasses, sunflowers and others [1]. *Aerochemicals* were used mainly in cotton and cereal crops [2]. Agricultural aircraft was also used in forested areas, shrubs and haloxylon areas. In recent years, the area under cotton and cereals has almost equalized (and even cotton fields slightly reduced) to about **2.2** million hectares.

The following can be done through agricultural aircraft [3] :

1) The aerial spraying of fertilizers to the fields;
2) Managing weeds (in chemical way);
3) Fertilizing crops with mineral and organic fertilizers;
4) Defoliation (the process of making leaves fall of a plant);
5) Desiccation (the removal of moisture from plants);
6) Protecting crops from pests, diseases and weeds [2].

The aerial spraying of fertilizers to the fields.

A fertilizer is natural or chemical substance applied to supply crops with necessary nutrients and increase the productivity of soil. Before spreading fertilizers, special operational technology is developed to use the method of aircraft [4] and it is important to spray without wasting fertilizers at the right time and keep the efficiency of them at high level. Fertilizer spreading process is mostly done before ploughing the field or planting crops to the ploughed land.

Weed Growth Control (aerochemical method).

Weed Growth Control is mainly implemented with the use of chemical substances. Including,

use of herbicides;

systemic herbicides in crop rotation;

hybrid (complex) chemistry.

However, mechanical and biological methods of weed control may not always produce the expected outcome.

Often, strong weed roots do not completely disappear even on deeply plowed land. In such cases, a chemical method of influencing weeds, that is, air chemical treatment, is widely used in agriculture. This method is more often used on cereals and legumes, corn, sugar beet, flax, sunflower and other crops, as well as in vegetable gardens, berry and vineyards.

High yields cannot be obtained by applying mineral and organic fertilizers or by carrying out other agrotechnical treatments on heavily overgrown fields [7]. An effective way to control weeds is the competent implementation of agrotechnical measures in combination with chemical methods. With the help of herbicides, it is possible to clear crops of weeds by 75-90%. Their use makes it possible to fully mechanize the process of caring for a number of crops.

One of the most urgent tasks of modern agricultural production is the improvement of the air chemical method of weed control, aimed not only at increasing the biological effectiveness of herbicides, but also at increasing their economic efficiency and environmental safety.

Fertilizing plantings with mineral and organic fertilizers

Special operational technologies are used for the use of air equipment when fertilizing crops with mineral and organic fertilizers. The effective performance of this work with the help of aviation method will depend on the physical properties of the fertilizer. That is, the types of fertilizers that are well soluble in water should be selected, since the aqueous solution is passed through the microcracks of the air sprayer installed on the plane at a high speed and is evenly distributed over each crop in the field.

Defoliation (shedding of harvest leaves)

Defoliation is the shedding of plant leaves with the help of defoliants. As a rule, cotton fields are defiled using aviation method to drop cotton before harvesting. This method is also used for shedding shrub leaves before harvesting fruits, obtaining vegetable seeds and drying alfalfa.

Desiccation (drying crop)

Desiccation is the process of artificially drying crops in a field until they are ready to be harvested. Dryers used in peas and sunflowers are especially effective because of the uneven ripening of these crops. It is also advisable to desiccate the dryers in cold areas, in areas where the crops ripen later, as well as during the rainy seasons, using aerial techniques to prevent excess moisture from drying out the plants on their own. This method allows you to process large areas of crops in a short period of time, and the muddy conditions caused by high soil moisture do not stop the process.

Protect crops from various pests, diseases and weeds

According to world experience, agricultural machinery is used in 40% of work to protect crops from various pests and diseases, and in 50% of weed control [5]. To do this, pesticides are sprayed on the plants in two ways: by spraying the plants with pesticides (dry method) and by spraying the plants with an aqueous mixture of pesticides (wet method). A separate operating technology will be developed for both cases.

It is convenient to use very light aircraft to work the fields with the help of aircraft [6]. Such aircraft are equipped with very small high-efficiency seeding equipment, the cost of which is much lower than the cost of a conventional tractor.

In the field of agricultural mechanization, according to the scientific principles of operational technologies, field fertilization, weed treatment, feeding crops with mineral and organic fertilizers, defoliation (shedding of crop leaves) , desiccation (drying of crops), it is necessary to address the following important issues related to the protection of crops from various pests, diseases and weeds:

- substantiation of the most important agrotechnical requirements;
- purchase of energy-saving units and their preparation for operation;
- field preparation;
- commissioning (operation) of aggregates;

- work quality control;
- ensuring compliance with environmental and labor protection requirements.

The scientific solution of the issues raised at the end of the article can pave the way for more efficient use of aircraft in agriculture in the future.

References:

1. Толипов Г.А. Земельные ресурсы Узбекистана и проблемы их рационального использования. Tashkent, 1992 – 236 б.
2. To‘rayev M.T., Iskandarova G.T. va boshqalar. O‘zbekiston Respublikasida ishlatish uchun ruxsat etilgan o‘simliklarni himoya qilish vositalari ro‘yxati. Toshkent, 2003 – 200 b.
3. Корычко В.П. Авиация в сельском хозяйстве: история, техника, технология, экономика - Харьков, 2002 – 404 b.
4. Х.Г.Сарымсаков. Сельскохозяйственные самолеты. Москва, 1979 – 184 с.
5. Фарков А.Г. Проблемы и перспективы развития сельскохозяйственной авиации в России. «Экономические науки» - Научный журнал.
6. Будрик Е.С. Крыля земледелцев: Справочник фермера и инженера. – Краснодар, 2001. – с
7. Говдя В.В. Экономическая эффективность использования удобрений и средств защиты растений в сельском хозяйстве: Монография. – Краснодар: КГАУ, - с

Internet sites

1. www.agro.uz
2. www.airtractor.com
3. https://agroserver.ru/b/aviakhimraboty-selkhozaviatsiya-836980.htm
4. https://www.freepatent.ru/patents/2129969
5. https://agrostory.com/info-centre/mechanization/aviatsionnaya-obrabotka-ozimykh-posevov/
6. https://cyberleninka.ru/article/n/problemy-i-perspektivy-razvitiya-selskohozyaystvennoy-aviatsii-v-rossii/viewer

Rezyume: *Bugungi kunda O‘zbekiston qishloq xo‘jaligida aviasiya texnikasidan foydalanish ishlari keskin kamayib ketgan bo‘lib, buning asosiy sababi, ushbu yo‘nalishda haqiqiy extiyojni o‘rganishga qaratilgan monitoring yo‘qligi, qishloq xo‘jaligi ishlariga mo‘ljallangan amaldagi samolyotlar parkining jismonan eskirganligi, sohada ilmiy izlanishlar olib borilmayotganligi, tadqiqotlar olib borish uchun etarlicha ma’lumotlar manbaasining mavjud emasligidir. Ushbu maqolada qishloq xo‘jaligida aviasiya texnikasi yordamida bajarilishi mumkin bo‘lgan ishlar haqida ma’lumotlar berilgan bo‘lib, unda aviasiya texnikasidan foydalanishning operasion texnologiyalari tahlil qilinadi.*

Operasion texnologiyalarning tahlil quyidagi muhim masalalarni echish zarurligiga qaratiladi: eng muhim agrotexnik talablarni asoslantirish; tejamkor agregatlarni sotib olish va ularni ishga tayyorlash; dalani tayyorlash; agregatlarni ishga tushirish (ishlatish); ishning sifatini nazorat qilish; tabiat va mehnat muhofazasi talablarining bajarilishini ta’minlash.

Резюме: *На сегодняшний день использование самолетов в сельском хозяйстве Узбекистана резко сократилось, в основном из-за отсутствия мониторинга для изучения реального спроса в этой сфере, физического устаревания существующего парка сельскохозяйственных самолетов, отсутствия научных исследований в этой области и недостаточного источники информации для исследования. В данной статье представлена информация о работах, которые можно выполнять в сельском хозяйстве с использованием*

летательных аппаратов, в которой проанализированы эксплуатационные технологии использования летательных аппаратов.

При анализе технологий эксплуатации акцентируется внимание на необходимости решения следующих важных вопросов: обоснование важнейших агротехнических требований; приобретение энергосберегающих агрегатов и подготовка их к эксплуатации; подготовка поля; ввод в эксплуатацию (эксплуатация) агрегатов; контроль качества работы; обеспечение соблюдения требований охраны природы и охраны труда.

Kalit so‘zlar: *qishloq xo‘jaligi, ekin maydonlari, aviasiya texnikasi, operasion texnologiyalar, aviakimyoviy ishlar.*

Ключевые слова: *сельское хозяйство, пашня, авиационная техника, технологии эксплуатации, авиахимические работы.*

STUDY OF THE INFLUENCE OF TECHNOLOGICAL PARAMETERS ON THE QUALITY OF CALCIUM PEROXIDE

Kholov I.,[1] Iskenderov A.,[2] Erkaev A.,[3] Reymov A.,[4] Maxamatkulova D.[3]

[1]Tashkent State Technical University named after Islam Karimov,
[2]The branch of the Federal State Budget Higher Education Institution "National Research University" MEI in Tashkent", [3]Tashkent Institute of Chemical Technology,
[4] Karakalpak State University named after Berdakh

Summary: *Proposals a technology for producing calcium peroxide from a 30% solution of calcium nitrate with pH=4-5 and aqueous solutions of ammonia and 40% hydrogen peroxide cooled to a temperature of 10 °C. It was found that, in contrast to the known methods, an increase in the molar ratio will not lead to a significant increase in the yield of calcium peroxide.Consequently, choosing a particular synthesis methodology is always a tedious task in light of the lack of a single detailed literature covering the comparison and effects of different synthesis procedures. Crystalline preparations with a content of more than 90% $CaO_2 \cdot 8H_2O$ can be obtained only from dilute solutions of calcium nitrate, ammonia and hydrogen peroxide. The use of concentrated solutions promotes the formation of amorphous formations with an indistinctly expressed structure. The obtained results of the study made it possible to establish the storage conditions of calcium peroxide depending on the time, which is very important when selling the product to consumers.*

Keywords: *Calcium peroxide, hydrogen peroxide, peroxide compounds, active oxygen, conversion method, ammonia solutions, temperature, cooling, filtration, mixing, microparticles, energy dispersive X-ray spectroscopy, X-ray diffraction pattern.*

Introduction

Many peroxide compounds, being in a liquid or solid state, are stable for a long time and, under certain conditions, can release oxygen in an active state. The highest forms of oxygen compounds are inorganic peroxides. They were discovered more than two centuries ago and do not cease to attract the attention of researchers due to their extraordinary oxidizing ability. A lot of research is devoted to the properties of barium, magnesium, calcium, zinc peroxides [1-2], searches are underway for the synthesis of peroxides of intransient elements, for example, stannates, silicates and phosphates and others [3-13], but all of them are united by one property - they are solid carriers of hydrogen peroxide or active oxygen.

These include calcium peroxide compounds - calcium peroxide CaO_2 and its products with water and hydrogen peroxide, as well as higher oxide-basic calcium superoxide. Oxygen is easily released from these compounds in an active form, which is due to the originality of its bond in the crystal. This ultimately determines the possibility and wide areas of use of these compounds.

The world production of calcium peroxide is currently several thousand tons per year. In Russia, its annual production is estimated at several tons. Peroxide compounds are used as raw materials oxidizing agents for air regeneration in sealed facilities, for decontamination of various media, including soil and waste water, feed for animals and birds, as well as in the extraction of precious and non-ferrous metals, fish farming and crop production, environmental cleaning. Calcium peroxide has a high content of active oxygen, 22.2%, is thermally stable up to 350 °C, non-hygroscopic. The product of its reaction with carbon dioxide, calcium carbonate, is an ecologically safe substance and can be used further without processing, for example, in agriculture [14]. Calcium peroxide is used as an additive not only in baked goods but also in biscuits. Employees of the Institute of General Chemistry of the RAS named after NS

Kurnakov and OJSC "Corporation"Roskhimzashchita" [1-3,16,17] made a great scientific contribution to the study of synthesis methods, the study of physical and chemical properties and areas of application of calcium peroxide compounds in Russia. Today, more than 300 patents are known related to the development of methods of obtaining and fields of practical use of calcium peroxide. The leading countries are Japan (more than 100 patents), the USA and Great Britain (more than 60 patents). China's patenting activity has increased in recent years. The main field of application of calcium peroxide in Japan and China is agriculture, where CaO_2 is used in formulations for coating rice seeds, disinfecting soil, etc. As shown by many years of scientific and applied research by scientists from different countries, the most popular methods at present to ensure the production of high-purity calcium peroxide and implemented in industry are methods based on carrying out reactions with hydrogen peroxide solutions:

1) conversion interaction of solutions of calcium salts with hydrogen peroxide in an ammonia or alkaline medium [1-3,15,17,18-20];

2) the reaction of direct interaction of calcium oxide or hydroxide with a solution of hydrogen peroxide of various concentrations [1-3,21-33].

The conversion method, as a rule, is first obtained with an octahydrate crystalline hydrate of calcium peroxide $CaO_2 \cdot 8H_2O$, then it is dehydrated at a temperature of 100-110 °C at atmospheric pressure or in a vacuum and anhydrous CaO_2 is obtained.

A known method of producing calcium peroxide [14], including the parallel introduction into the reactor while cooling aqueous solutions of calcium nitrate or chloride, hydrogen peroxide and ammonium hydroxide at a molar ratio x $[Ca(NO_3)_2]$:$[H_2O_2]$: $[NH_4OH]$=1:(1.3-1.4):(2.6-2.8). The resulting suspension of crystalline calcium peroxide hydrate is kept under stirring, after which the precipitate is separated from the mother liquor, washed from impurities and subjected to thermal dehydration. The disadvantages of this method for producing calcium peroxide are the need to use pure reagents and the use of large volumes of solutions of ammonia and hydrogen peroxide.

This work solves the problem of expanding the raw material base for the production of calcium peroxide CaO_2, increasing the purity of the resulting calcium peroxide CaO_2, reducing the volume of the initial solutions of ammonia and hydrogen peroxide.

As a solution for the production of calcium peroxide, the main waste of the enrichment of low-grade phosphorites from the production was used.

1. In this work, the influence of the rate of hydrogen peroxide, temperature and pH of the reaction medium on the yield of CaO_2 was investigated. The resulting product and liquid phase were analyzed for the content of active oxygen [34], nitrogen [35], calcium oxide [36] using well-known methods of analysis.

2. The data obtained are given in tab. 1-3.

In the proposed method, anhydrous calcium peroxide CaO_2, the feedstock interacts with an aqueous solution of ammonia NH_4OH and an aqueous solution of hydrogen peroxide H_2O_2. A solution containing $Ca(NO_3)_2$ (30%) with a pH of the solution of 3.8, an aqueous solution of hydrogen peroxide H_2O_2, cooled to a temperature of -5-10 ° C is used as a feedstock. In this case, the reaction time is 1-2 minutes.In the proposed technology, in contrast to the known methods, a smaller amount of starting reagents is used, so the molar ratio of $Ca(NO_3)_2$: H_2O_2: NH_3 can be equal to 1:0.8:1.2, while an increase in the molar ratio does not lead to a significant increase in the yield calcium peroxide.Cooling of hydrogen peroxide H_2O_2 leads to an increase in the yield of the main reaction product. In the temperature range -5-10 °C, the highest content of the obtained calcium peroxide in the sediment is noted. It should also be noted that the reaction time affects the yield of the product. In a time, interval of 1-2 minutes, the highest content of the obtained calcium peroxide CaO_2 in the sediment is noted. An increase in the reaction time leads to a decrease in the yield of calcium peroxide CaO_2. For example, to 14.4 g of

a solution containing 30% $Ca(NO_3)_2$, 1-90 g of a 24% ammonia NH_4OH solution, then 2.6-5.19 g of a 40% solution of hydrogen peroxide H_2O_2, cooled to temperature -5 °C. The reaction time is 1 min. The formed precipitate is filtered off and dehydrated at a temperature of 110-130 °C. Get 1.4-3.9 calcium peroxide CaO_2 with a content of 85.04%, the content of active oxygen was 13.5-20.5%. Table 1 shows examples of the implementation of the proposed method. The table shows the optimal conditions for the reaction.

Table 1

Influence of technological parameters on the yield of calcium peroxide

No. experience	Concentration and consumption (g) solutions %			pH	Reactiontemperature 0C	Solidphase, gr	Humidity,%	Ratio, W: T	Filtration rate, kg / m2s solid / liquid phase	Activeoxygencontent, %	Output, %
	$Ca(NO_3)_230$ %	H_2O_2 40%	NH_3 25%								
1	14,40	15.55	61,6	9,5	10	3,1	59,4	28,32:1	76,29 2160,7	12,01	14,14
2	14,40	5.19	48,3	9,5	10	3,9	61	16,17:1	245,3 3968	12,20	54,07
3	14,40	2.61	92,1	9,5	10	2,2	46,8	48:1	113,2 5444	13,81	68,74
4	14,40	5.19	52	11	10	2,1	38,8	31,5:1	42,45 1338,28	13,90	33,17
5	14,40	2.61	96,2	11	10	2,2	42,3	49:1	41,5 2037,74	14,72	73,27
6	14,40	5.19	11,3	10	10	2,3	39,6	10,69:1	130,18 1392,45	12,81	33,48
7	14,40	2.61	10,9	10	10	2,2	43,1	10,68:1	138,36 1477,99	12,01	59,78
8	14,40	5.19	3,8	9	10	2,4	48	8,25:1	194,07 1601,08	11,90	32,46
9	**14,40**	**2.61**	**2**	**9**	**10**	**2,4**	**57,1**	**7,58:1**	**271,69** **2060,38**	**12,01**	**65,22**
10	14,40	5.19	5	9	0	2,3	52,27	7.25:1	325.47 3283.03	12,61	32,96
11	14,40	2.61	1,9	9	0	1,7	43,58	10.52:1	192.45 1992.46	11,97	46,04
12	14,40	5.19	5,1	9	-5	2,1	42,85	9.14:1	237.73 2173.59	12,03	28,71
13	14,40	2.61	1	9	-5	1,4	45,16	12.9:1	198.11 2561.33	10,79	34,18

It can be seen from the table that an increase in the H_2O_2 norm, pH and process temperature negatively affects the output technological parameters of the calcium peroxide production process.With an increase in the H_2O_2 norm from 110 to 230%, the product yield increases from 2.2 to 3.9 g. An increase in the norm to 600% leads to a decrease in the product yield by 0.6 g from 3.5 to 3.1 g. Therefore, further

experiments were carried out at a rate of 110 and 230%. An increase in pH to 10 and 11 also leads to a decrease in product yield from 3.9 to 2.3 and 2.1, respectively, at a rate of 230%. (table 1). Also from table. it can be seen that with a decrease in the synthesis temperature from 10.0 to -50C, the product yield decreases from 2.4 to 1.7 and 1.4 g, respectively.

Table 2

Active oxygen content and density of the liquid phase

Sampleno.	**Activeoxygen,%**	**Density, kg / m3**		
		Temperature, 0C		
		0	10	20
1	1	1020	1015	1010
2	0,4	1018	1014	1012
3	0,4	1097	1090	1085
4	0,3	978	974	970
5	0,2	946	940	935
6	0,4	1031	1024	1020
7	0,2	1030	1021	1015
8	0,2	1057	1050	1046
9	0,2	1061	1057	1050
10	0,2	1056	1051	1046
11	0,4	1060	1067	1072
12	0,4	1072	1064	1059
13	0,6	1067	1070	1075

Table I data show that the content of active oxygen in the liquid phase does not exceed 0.2-0.4%; at a rate of 600%, it reaches up to 1%. The density of the liquid phase in the temperature ranges of 0-20 ° C fluctuates in the range of 940-1075 kg / m^3.

Table 3

Chemical composition of CaO_2 samples during storage

№	**Daterecei ved**	**Date of analysis for active oxygen content**								
	22.05. 2021	**27.05. 2021**	**28.05. 2021**	**29.05. 2021**	**30.05. 2021**	**31.05. 2021**	**01.06. 2021**	**02.06. 2021**	**03.06. 2021**	**04.06. 2021**
1	13,4	14,11	14,91	16,7	16,9	17,77	17,9	18,6	19,1	20,6
2	13	14,19	14,6	16,31	16,7	17,61	17,7	18,6	19,2	20,11
3	13,2	13,8	14,2	16,5	16,11	17,3	17,4	18,8	19,3	20,3
4	12	13,9	15,01	16,3	15,73	17,1	17	18	19,1	20,2
5	12,2	14,6	15,7	16,13	15,5	16,8	17,1	18,2	19	20,1

The purpose of the experiment was to assess the possibility and storage time of wet calcium peroxide in the form of a paste or suspension without a noticeable loss of active oxygen. These results are necessary to consider the possibility of producing and supplying CaO_2 in the form of a paste or suspension for some areas at lower prices by eliminating the costly energy-intensive technological operation of drying a calcium peroxide suspension, since, for example, in animal husbandry, dry powder is diluted with water for soldering young animals.

The experiment was carried out as follows. Calcium peroxide sample obtained under the conditions of 9 experiment (tab. 1). They were mixed with water at the ratio T:H_2O:1:0; 1:1.052; 1:0.011; 1:0.25; 1:0.66. Samples 1 and 5 were periodically dried at a temperature of 25 °C, then the content of active oxygen in the dry sample was analyzed, which was converted to CaO_2.Table 3 shows the results of a study of the effect of the exposure time of the calcium peroxide suspension on the quality of the final product. From the literature [6] it follows that with an increase in the holding time of the CaO_2 suspension over 3 h, the mass fraction of active oxygen in the paste and the final product decreases, and after 49 days of storage of the suspension, the loss of the main substance in the final product was almost 2% [6]. This occurs as a result of the decomposition of the CaO_2 suspension, that is, the reverse reaction of the interaction of calcium peroxide with water takes place. It is also seen that the quality of the final product decreases in the case when the CaO_2 suspension after synthesis is not aged, but is immediately subjected to filtration and drying. Here, the loss of the main substance in the final product is about 1%.The study of the stability of the CaO_2 paste during storage was carried out at room temperature. During the study, sample I was stored in a glass container with a tightly screwed lid.During almost 14 days of observation of the CaO_2-H_2O system in samples No. 1 (suspension), the CaO_2 content decreased to 0.4%, in sample No. 5 the loss of active oxygen in the CaO_2-H_2O system (suspension) increases regardless of the S:L ratio. No loss is observed; on the contrary, active oxygen increases by 20.11% in sample 2.The final reaction is the decomposition of CaO_2 and the formation of $Ca(OH)_2$ with the loss of active oxygen in the CaO_2 solid - H_2O system:

$$CaO_2 + H_2O = Ca(OH)_2 + 1/2\ O_2$$

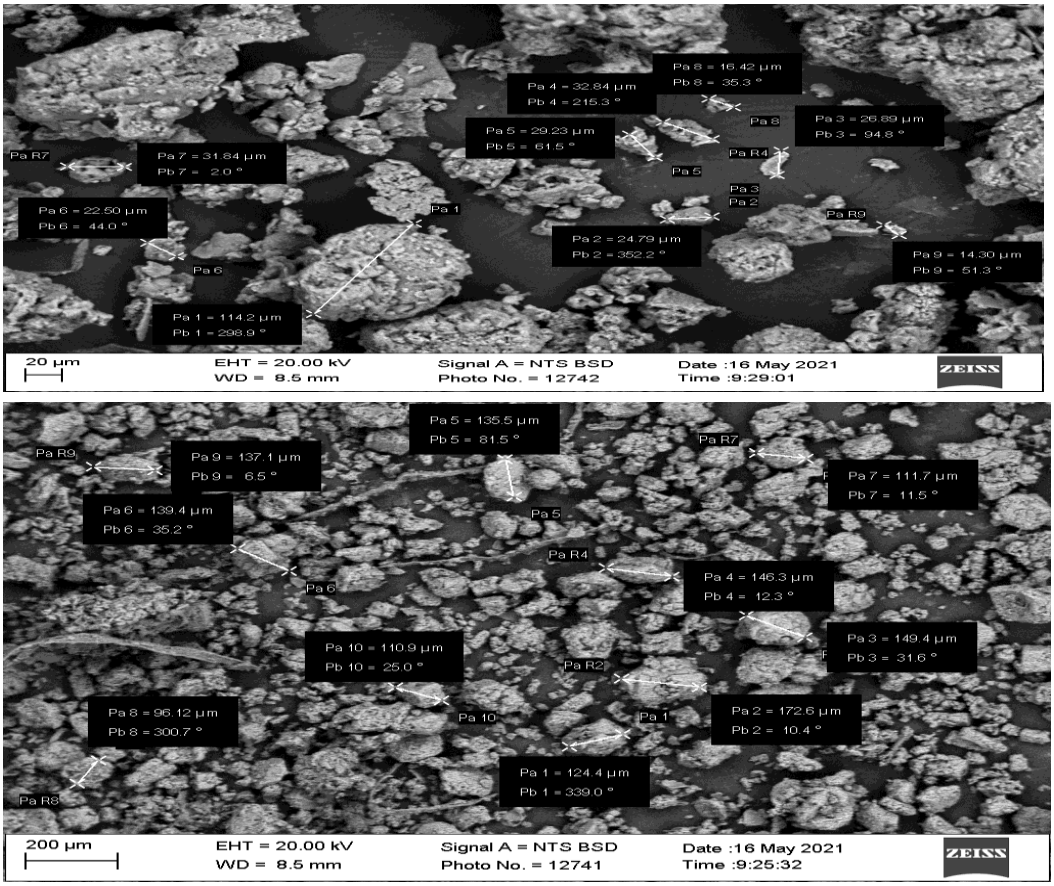
As the X-ray phase analysis shows, the sample obtained in experiment 9 (Table 1) contains 90% $CaO_2 \cdot 8H_2O$.During storage of samples, $CaO_2 \cdot 8H_2O$ is dehydrated and therefore the content of active oxygen in the product increases.

From the results obtained, the following advantages of storing paste-like calcium peroxide in comparison with a suspension can be noted:

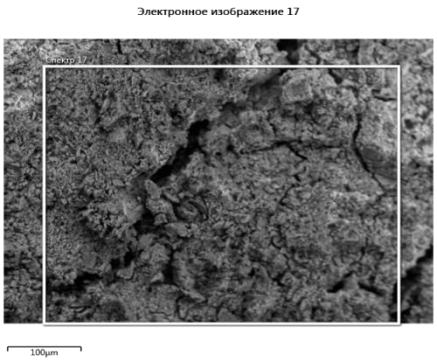
- the content of active oxygen is higher;
- the paste takes up less volume with a higher content of active oxygen;
- wet calcium peroxide in the form of a paste, containing about 45% moisture, is more stable during storage than in the form of a suspension in equilibrium with the liquid phase;
- calcium peroxide paste can be packed in any polymer tightly closed container, excluding air access, and transported over long distances or stored in a polymer container when cooled for 2-3 months, while the suspension decomposes much faster [14].

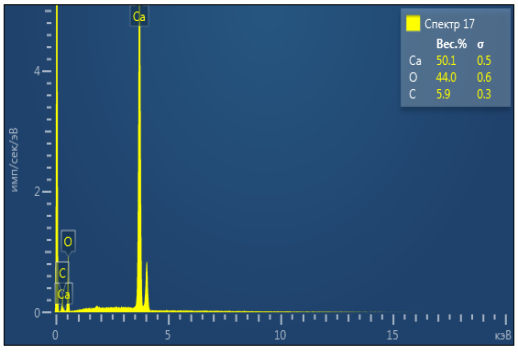
After filtration, the CaO_2 paste should not be stored for more than 2 hours at room temperature. Exceeding this time leads to the loss of active peroxide oxygen, and, consequently, to a decrease in the CaO2 content in the dried product.Morphological studies of the surface of the samples were carried out using a SEM-EVO MA 10 scanning electron microscope (Zeiss, Germany). Experiments on a scanning electron microscope were carried out as follows. To carry out the sample preparation process, powders of the test sample in the required amount were applied to a round holder made of a metal alloy, on top of which an aluminum foil with a double-sided adhesive surface was glued. This sample preparation process was used to determine the size of microparticles, as well as to study the microstructure of individual particles. The measurements were carried out on a scale of 200 μm-20 μm. During the measurement, an accelerating voltage (EHT-Extra High Tension) of 20.00 kV was applied, the working distance (WD-working distance) was 8.5 mm. Images were captured at various scales using SmartSEM software. (fig. 1)

Fig. 1 (b) SEM image of CaO_2 powder (sample 9, tab. 1)



To determine the elemental composition, energy-dispersive X-rayspectroscopy (EDS) was carried out at a local site, in which they were determined using an energy-dispersive elemental analyzer of the brand - Oxford Instrument – Aztec Energy Advanced X-act SDD. To do this, a sample in the form of compressed tablets 0.7 cm in diameter and up to 2 mm thick was glued onto a separate holder, on top of which an aluminum foil with a double-sided adhesive surface was glued. When obtaining data on the elemental composition, electronic photographs with highlighted local areas, a composition table, and a graphical spectrum were presented.





Element	Theweight.%	SigmaWeight%

C	5.93	0.30
O	43.96	0.58
Ca	50.10	0.54
Sum:	100.00	

Fig. 2 Energy dispersive spectrum of samples (sample 9, table 1)

As shown by the energy dispersive spectra (Fig. 2), the content of calcium and oxygen in the washed samples is more than 50.1; 43.96%, respectively, and the carbon content does not exceed 5.93%.

The morphology of the CaO_2 powder was investigated by scanning electron microscopy (SEM); SEM Neon 40 (Carl Zeiss, Germany) was used as an instrumental basis for research.Micrographs of the samples are shown in Fig. 1;2. Powder CaO_2 (sample No. 9, table 1), synthesized from a solution of calcium chloride in an alkaline medium, consists of microparticles of the amorphous phase, which have an arbitrary shape and size from several tens to several hundred micrometers. On the surface of these aggregates, arrays of finely dispersed shapeless formations less than 1 micron in size are observed.

Micrographs of a CaO_2 sample synthesized from a calcium nitrate solution in an ammonia environment demonstrate that a powder with a content of 93% CaO_2 [37] has a crystalline structure in the form of particle agglomerates.Under certain conditions, nanocrystalline CaO_2 can be obtained from dilute solutions of calcium, ammonia and hydrogen peroxide salts, which is used to purify soils and groundwater from toluene and other organic substances. For Nano sized CaO_2 powder, the surface-to-volume ratio increases, which makes it possible to increase the reaction rate, and hence the reactivity of such a substance when used. The energy dispersive X-ray microanalysis of the surface of CaO_2 crystals of sample No. 9 in three randomly taken areas with a size of 100 x 100 μm gave the results presented in Table 1. Measurements of the phase characteristics of the studied powders were carried out on a Panalytical Empyrean X-ray powder diffractometer. This instrument is a general purpose vertical goniometer general purpose X-ray diffractometer, and is a system for performing a wide range of X-ray diffractometry analyzes. The use of a high-precision vertical goniometer allows the analysis of various samples, such as powders, thin films, as well as minerals, semiconductor compounds and metals. All control over the operation of the equipment is carried out by means of a computer using the DataCollector program, X-ray diffraction patterns were analyzed using the HighScore program with a PDF 2013 database. X-ray phase analysis of the studied powders was carried out on a Panalytical Empyrean X-ray diffractometer equipped with a Cu tube (Kα1 = 1.5406 Å). The measurements were carried out at room temperature in the 2θ range of angles, in the range from 5° to 90° in the step-by-step scanning mode with a step of 0.013 degrees and the signal accumulation time at point 5 s. (fig. 3)

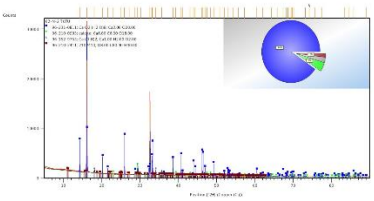


Fig 3. Radiograph (sample 9, table 1)

From the X-ray diffraction pattern (Fig. 3) it follows that the obtained sample 6 is mainly composed of the minerals $CaO_2 * 8H_2O$, and also contains a small amount of CaO and Ca $(OH)_2$.

Table 4

Visible	Ref. Code	Score	Compound Name	Displ.[°2θ]	Scale Fac.	Chem. Formula	%
*	96-231-0811	47	$CaO_28(H_2O)$	0.007	0.280	Ca2.00 O20.00	90
*	96-210-0993	43	Calcite	-0.067	0.058	Ca6.00 C6.00O18.00	5
*	96-152-9753	46	$Ca\ (OH)_2$	0.032	0.034	Ca1.00 H2.00 O2.00	3
*	96-210-2411	4	2102410	0.102	0.009	O8.00 C80.00 H40.00	2

Conclusion

Thus, it has been proved that the interaction of calcium nitrate and hydrogen peroxide solutions for 1-2 min at pH 9-9.5 and a temperature of 10-0 °C produces calcium peroxide octohydrate CaO_2*8H_2O. During storage, it gradually transforms into anhydrous calcium peroxide CaO_2.

Anhydrous calcium peroxide CaO_2 is proposed to be obtained by the interaction of the feedstock with aqueous solutions of ammonia and hydrogen peroxide-H_2O_2. According to the proposed technology, a solution containing 30% -$Ca\ (NO_3)_2$ with a pH of 4-5 and a 40% aqueous solution of hydrogen peroxide cooled to a temperature of 10 ° C is used as a feedstock. It was found that, in contrast to the known methods, a smaller amount of starting reagents is used, so the molar ratio of $Ca(NO_3)_2$:H_2O_2 can be equal to 1:1; 0:1.2, an increase in cathode does not lead to a significant increase in the yield of calcium peroxide CaO_2. An analysis of the results obtained indicates that the structure of the CaO_2 powder depends significantly on the conditions and method of synthesis, and the effect of the composition of the initial components is more noticeable than the method of dehydration of the reaction product. Crystalline preparations with a content of more than 90% $CaO_2 \cdot 8H_2O$ can be obtained only from dilute solutions of calcium nitrate, ammonia and hydrogen peroxide. The use of concentrated solutions promotes the formation of amorphous formations with an indistinctly expressed structure. The results obtained made it possible to evaluate the conditions for obtaining and storing calcium peroxide depending on the time, which is very important when selling the product to various consumers.

References

1. Volnov, I.I. Peroxides, superoxides and ozonides of alkali and alkaline earth metals. Moscow: Nauka, 1964.143 p.

2. Volnov I.I. Peroxide compounds of alkaline earth metals. Moscow: Nauka, 1983.135 p.

3. Pat. 2259344 RF, IPC C 06 B 33/12. Ignition composition for solid oxygen sources / KopytovYu.F., UlyanovaM.A.; FSUE "TambovNIHI". 2005.

4. Pat. 2056341 RF, IPC C 01 B 13/02. Pyrotechnic composition for oxygen production / Sinelnikov S.M., Razumova A.P., Sasnovskaya V.D., KlyucharevV.V.; TIHP RAS. 1996.

5. Pat. 2052283 RF, IPC B 01 J 7/00, C 01 B 13/02. Pyrochemical oxygen generator / Sasnovskaya V.D., Razumova A.P., Aleshin V.V., Klyucharev V.V., Sinelnikov S.M., Logunov A.T., Smirnov I.A., ShibkovV.G..; TIHP RAS. 1996.

6. Pat. 8283004 JP, IPC A 62 D 9/00, C 01 B 13/02. Oxygen generator / Nishii Shigeki, Asai Yukio; Daicel Chem. 1996.

7. Pat. 2008137880 JP, IPC C 06 B 33/00, C 06 B 43/00. Gunpowdercomposition for launching shooting-up fireworks / Fukui H., Hatanaka S.; Rokkusu Japan KK., Kawai Sekkai KK. 2008.

8. Pat. 54020987 JP, IPC C 01 B 13/02. Oxygen generating capsule / MonmaKimimichi. 1979.

9. Pat. 2434063 RF, IPC C 22 B 11/02, G 01 N 33/20. Method for determining gold in ores and concentrates / Lobanov V.G., Vikulov V.I., NabiullinF.M.; FGAOUVPO. 2011.

10. Pat. 860001093 KR, IPC C 10 L 9/10. Solid fuel / Kim Su-Hui. 1986.

11. Pat. 4072169 JP, IPC A 47 J 36/30, B 65 D 81/34. Container with exothermic function / Hayashida Y., Sato Shunichi; Asahi Chem. Ind. 1992.

12. Pat. 7081986 JP, IPC C 04 B 28/08, C 04 B 5/06. Decoloring and usage of blast furnace water granulated slag and blast furnace cement composition / HanadaMitsuo. 1995.

13. Pat. 101921645 CN, IPC C 10 L 9/10. New application of calcium peroxide and fire coal combustion-supporting solid sulfide additive / Liangying Wen, Chong Zou, ChenguangBai; Univ Chongqing. 2010.

14. Gladyshev N.F., Gladysheva T.V., Lemesheva D.G. and other Peroxide compounds of calcium. Synthesis. Properties. Application // 2013, Moscow: Spectrum Publishing House.

15. Pat. 101275095 CN, IPC C 10 L 9/10. Coal burning additive / XuelongXu. 2008.

16. Pat. 4755493 US, IPC C 04 B 35/00, C 04 B 35/465. Ceramic composition for dielectric ceramic bodies / Takeuchi Y., MasumoriH.; NGK Insulators Ltd. 1988.

17. Pat. 4221480 DE, IPC B 05 D 1/08, C 04 B 35/01. Forming coherent refractory masses / Meynckens Jean-Pierre, Mottet Leon-Philippe; Glaverbel. 1993.

18. Pat. 2318002 RF, IPC C 08 F 4/34, C 07 C 409/34. Method of polymerization of ethylenically unsaturated monomers in the presence of diacyl peroxides as a source of free radicals / Tammer M.K., De Jong Johannes J.T. et al. 2008.

19. Pat. 649434 IT, IPC C 08 F 14/24. Process for the polymerization of perhalogenatedolefines / Ragazzini M., GozzoF.; Sicedison SPA. 1965.

20. Pat. 1325391 GB, IPC C 03 C 17/32, C 08 L 81/00. Polysulphide sealant containing ultra-violet absorbers as adhesion stabilizers / Thiokol Chem. Corp. 1973.

21. Pat. 2010084080 JP, IPC B 60 C 1/00, C 08 J 3/24. Rubber composition and production method of the same, and carbon black master batch / Nakamura N. Hayashi H.; Toyo Tire & Rubber Co. 2010.

22. Application of inorganic peroxides to change the properties of polymers / T.V. Gladysheva, N.F. Gladyshev, B.V. Putin, G.F. Rachinsky, D.G. Lemesheva, V.B. Masliev, V.P. Konovalov // Materials of the XI Intern. conf. on the chemistry of organic and elementorganic peroxides. M., 2003.

23. Pat. 2596432 FR, IPC C 11 D 3/39, C 11 D 7/54. Process for bleaching household linen in a household washing cycle / Dubreux B., DugenetY.; Atochem. 1987.

24. Pat. 2598728 FR, IPC C 11 D 3/39, D 06 L 3/02. Method and composition for bleaching laundry / Dubreux B., ChossonF.; Atochem. 1988.

25. Pat. 8011106 JP, IPC B 27 K 5/02. Bleaching and décoloring of timber / Murotani M., YasuiT.; Shinsanso Kagaku KK. 1996.

26. Pat. 2031858 RF, IPC C 02 F 1/72. Method of wastewater treatment from dyes / Babkina S.B. and etc.; TFMO "Polimash". 1995.

27. Pat. 10226630 JP, IPC A 61 K 8/22, A 61 Q 5/10. Oxidation dyeing agent of hair / Doehling A., LauscherD.; Wella AG. 1998.

28. Application WO 0017312, IPC C 11 D 17/00, C 11 D 3/39. A laundry detergent bar composition containing a peroxygen bleach / Trajano Trace Wendell de Guzma, Tee Johannson Jimmy Jr.; Procter & Gamble. 2000.

29. Pat. 2000319401 JP, IPC C 08 G 63/08, C 08 G 63/91. Method for decoloring grafted cellulose derivative / KajikawaYasuteru; Daicel Chem. 2000.

30. Pat. 2006115437 US, IPC A 61 K 8/22. Dental whitening compositions / Hayman R., Quan N.N., Macdonald J. 2006.

31. Pat. 101575199 CN, IPC C 04 B 18/30, C 04 B 30/02. Production method of paper mill sludge landscape ornamental material / Jinping Pan, Hongwei Yu; Jinping Pan. 2009.

32. Pat. EP 2180095, IPC D 21 C 9/10, D 21 C 9/16. Production method for bleached organic fiber materials, use of a bleaching agent for bleached organic fiber materials and bleached fiber materials / KraeuterReinhard; Bene Fit Systems Gmbh& Co. KG. 2010.

33. Pat. 102206001 CN, IPC C 02 F 1/52, C 02 F 1/72. Composite décolorizer as well as preparation method and application thereof / Fengting Li, Bingru Zhang; Univ Tongji. 2011.

34. GOST 32387— 2013 “Method for determining the mass fraction of active oxygen” Moscow Standartinform 2019.

35. Educational-Methodical Manual "Quantitative elemental analysis of organic substances and materials" Doctor of Chemical Sciences. V.P. Fadeeva, Ph.D. V.D. Tikhova. Novosibirsk 2013 48-56 p.

36. GOST 25390-93 (ISO 2069-76) "Method for determination of calcium oxide" Minsk.

37. Pat. 102400403 CN, IPC D 21 B 1/00, D 21 C 3/22. Clean and industrial production method for high-grade rice paper pulp / Chaowang Li. 2012.

Резюме: *Kalsiy nitratning pH=4-5 li 30% li eritmasidan va ammiak va 40% li vodorod peroksidning 10°S haroratgacha sovutilgan suvdagi eritmalaridan kaltsiy peroksid olish texnologiyasi taklif qilingan. Ma'lum bo'lgan usullardan farqli o'laroq, molyar nisbatning oshishi kaltsiy peroksid hosildorligining sezilarli darajada oshishiga olib kelmasligi aniqlandi. Binobarin, u yoki bu sintez texnikasini tanlash har doim zerikarli vazifa bo'lib qoladi, chunki turli sintez jarayonlarini taqqoslash va ta'sirini o'z ichiga olgan yagona batafsil adabiyot yo'q. 90% dan ortiq CaO_2•$8H_2O$ bo'lgan kristalli preparatlarni faqat kaltsiy nitrat, ammiak va vodorod peroksidning suyultirilgan eritmalaridan olish mumkin. Konsentrlangan eritmalardan foydalanish noaniq tuzilishga ega bo'lgan amorf shakllanishlarning shakllanishiga yordam beradi. Tadqiqot natijalari mahsulotni iste'molchilarga sotishda juda muhim bo'lgan vaqtga qarab kaltsiy periksni saqlash shartlarini belgilashga imkon berdi.*

Резюме: *Предложена технология получения пероксида кальция из 30% раствора нитрата кальция с pH=4-5 и водных растворов аммиака и 40% перекиси водорода, охлажденных до температуры 10°C. Установлено, что, в отличие от известных методов, увеличение мольного соотношения не приведет к существенному увеличению выхода пероксида кальция. Следовательно, выбор той или иной методики синтеза всегда является утомительной задачей в связи с отсутствием единая подробная литература, охватывающая сравнение и эффекты различных процедур синтеза. Кристаллические препараты с содержанием CaO_2•$8H_2O$ более 90% можно получить только из разбавленных растворов нитрата кальция, аммиака и перекиси водорода. Использование концентрированных растворов способствует образованию аморфных образований с нечетко выраженной структурой. Полученные результаты исследования позволили установить условия хранения пероксида кальция в зависимости от времени, что очень важно при реализации продукта потребителям.*

Kalit so‘zlar: *Kaltsiy peroksid, vodorod peroksid, peroksid birikmalari, faol kislorod, konversiya usuli, ammiak eritmalari, harorat, sovutish, filtrlash, aralashtirish, mikrozarrachalar, energiya dispersiv rentgen spektroskopiyasi, rentgen tasviri.*

Ключевые слова: *пероксид кальция, пероксид водорода, пероксидные соединения, активный кислород, метод конверсии, растворы аммиака, температура, охлаждение, фильтрация, перемешивание, микрочастицы, энергодисперсионная рентгеновская спектроскопия, рентгенограмма.*

SOCIAL SCIENCES

УДК 336.2:338.1

WAYS TO IMPROVE THE MECHANISM OF TAXATION IN THE DEVELOPMENT OF THE ECONOMY

Kudiyarov K.R, Sabirbaev N.K.
Karakalpak State University named after Berdakh

Summary: *In this article, the problem of economic meanings of taxes and its role in formation of profit part of the budget, and also reforming process in this sphere, is considered. And also this article tells about the economic reforms carried out in our country to ensure sustainable economic growth, and their impact on the welfare of the people.*

Keywords: *tax, budget, economy, export.*

Today leading international finance institutions, highly accomplished experts to develop tax mechanism, namely to use firms of effectiveness of tax system are carrying out scientific surveys. According to analyses of experts of Heritage Foundation the high level of tax charge decreases tax payers' activity and forces to find ways of tax evasion. Fiscal freedom is one of the readings that indicates overall level of economic freedom and through this criterion the experts of Heritage Foundation fond try to explain situations of different countrys'.

In the center of reforms that are accomplished in our Republic is reforms that are done in the field of tax. With initiative of the president of Republic of Uzbekistan Shavkat Mirziyoyev << reducing tax charge and simplifying for all kinds of business, on the basis of this the necessity of expanding manufacturing and the tax base has been said, he dominant trends of tax system << the policy of stimulating burgeoning enterprises >> is paid attention. Hence through the accepted tax conception necessary directions to develop tax system have been assigned. By introducing tax policy's modern conception taxing enterprises in the taxing system big changes are done. Namely, dramatic reduction of the numbers of the taxes and compulsory payments that are paid by commonalties, the decrease of tax rate is very crucial for increasing the financial resource of enterprises.

For creating environment encourages enterprise's output and if the enterprise increases manufacturing products to 10% than previous year, in accordance with it rate of profit tax is count by reducing to 3%. [1.34].

As for to increase activity of enterprises on developing tax privileges, to mean tax privileges, from our point of view because of not existing meaning of it which fully means and commonly accepted meaning as compared to this issue the low level of progress of concerning subjects to tax and taxation is assigned with insufficiency level of progress of concerning subjects.

Presence of this kind of case, in its turn, the meaning of privileges of tax According to O.T.Yuldashev's opinion, accomplishing this issue should be done by strictly following rules of logic in the sequence as follows : a) defining rules or following strictly to orders ; b) <<privilege>> clarifying meanings of this word on how purposes are used ; v) indicating things that direted at ; g) demonstrating compulsory characters of privileges of tax (difference, distinction) [2,8].

O.T.Yuldshev pointed to rules of using privileges, how to apply. So, hence the concessions made on the subject under study :

So, from our point of view profit tax and improvement and development social infrastructure tax and unification of them with this attitude the privileges on these taxes on tax legislation shoulde be reconsidered and on counting works should be done on direction reducing profit tax composition of not withholding.

In our Republic, reducing enterprises' tax charge especially VAT tax reducing step-by-step, applying reduced rate to social important products and cancelling excise tax and cutting excise tax as compared to the products that are not produced in our country to the products that are imported suitable to aim.

By I.Niyozmetov in big enterprises reducing numbers of tax and on goal of cutting their tax charge unifying money that allocated comulsorily to government funds, based on mechanism reducing rate and cancelling step-by-step.

Of course here we also are considering filling budget's income section. Counting this we are taking into consideration filling budget's income section as follows.

Paying tax is main means of distributing newly created value enterprise subjects and individuals between country. Imagining community without tax system is impossible. Because, taxes not only base of forming budget incomes , but also promotes manufacturing, multiply investments, multiply competitive products, develop small-scale business, create market infrastructure relating to opening individual enterprise, satisfy necessity of government and service to create these kind of services.

In condition of market economy country amasses main part of necessary fund through taxes in order to accomplish domestic and foreign missions, different social, economic and political measures [3.17].

Of course when we tax payers we should take into consideration the tax charge. Because the higher the tax charge is, this breeds discomforts to tax payers and hinders to pay on time.Because of this, principle of justice of tax is important on taxes being paid on time. Using tax preferences and privileges on different fields and regressive tax rate is important on being paid to budget and increasing income of budget. Steady development of enterprises is one of the main factors which influences to steady development of economy. Stable development of enterprises contributing a large share on national economy and on working effectively of economy financial resources of enterprises and using these resources wisely is very important. Today, lots of work are done on using effectively enterprise's financial resources and on expanding household subjects' investment activity. Above all, on implementing economic reforms developing tax policy, simplifying types of tax and action mechanism is one of the important issues.

President Sh. Mirziyoyev in his declarations emphasizes giving preferences and privileges on tax system, alleviating tax charge, unifying and providing stability of tax legislation and using experience of developed countries.

Today as a result of reforms in tax field For forming budget for 2021-year following things are taken into consideration: on conition of inflation rate 9 -10 % GDP to increase 5,1% for 2021-year social-economic development prognosis ; on consolidated budget decreasing tax charge from 26,2 to 24,5 and on country's budget decreasing from 22% to 21,3 cancelling tax and customs preferences and on other directions for 2021-year main directions ; prognosis of price change that products' which has strategic importance in world market.

To keep stability of Government's budget following tax rates have been kept:

Value added tax rate - 15%

-Profit tax rate - 15%

-Income tax for individuals - 12%

-tax rate for turnover- 4%

-profit tax as a dividend -5%
-tax rate for property of enterprises - 2%
-land tax rate for agriculture - 0,95%
-social tax rate – 12%/25%

Government's budget income prognosis for 2021-year. In 2021-year in composition of budget income contribute of indirect taxes that provide 42,4% of budget receipts is increasing.Indirect taxes constitute 62.5 trillion sums, in budget of government 42,5% and in GDP 9,1%. On establishing tax policy directions our government is paying special attention to cutting tax charge and multiplying types of tax preferences and privileges. Because taxes have been recognized as a decisive factor for developing government's economy all over the world. Tax preferences is crucial for encouraging enterprises economically.

By accomplishing tax policy with sequence, In first place cutting tax charge policy is designed to structural changes in economy, to increase activity of enterprises and financial stability and to create new workplaces.

It is important to point out that on this topic the followings ideas can be proposed, Today on the basis of tax preferences stimulating function of taxes is increasing and in its turn it is influencing to developing economy. If tax preferences are accomplished by analyzing regions and fields whose contribution is less on economy, it will have positive effect on fields which is developing slowlier In addition to this to encourage export enterprises using a number of regressive tax types and reducing tax rate more would be suitable to aim. We hope that our offers will have positive effect on not only in tax system but also on national economy.

References

1. Toshmatov Sh.A. Korxonalarni rivojlantirishda soliqlar roli. –T., "Fan va texnologiya".-2008. –B.147.
2. Yuldashev O.T. O'zbekistonda soliq imtiyozlarini takomillashtitish yo'nalishlari. Iqt.fan.nomz. dissertaciya avtoreferati. Toshkent – 2011. 8-b.
3. A.Vahobov, A.Jurayev. Soliqlar va soliqqa tortish. Toshkent 2009y

Rezyume: *Bu maqolada soliqlarning iqtisodiyotdagi va byudjetning daromadlar qismini shakllantirishdagi ro'li, shuningdek soliq sohasida amalga oshirilayotgan islohotlar haqida yozilgan. Shuningdek bu maqolada mamlakatimizda barqaror iqtisodiy o'sishni ta'minlash borasida amalga oshirilayotgan iqtisodiy islohotlar va ularning xalq farovonligiga ta'siri haqida yo'zilgan.*

Резюме. *В данной статье рассматривается экономическое значение налогов и его роль в формировании доходной части бюджета, а также ход реформ в этой отрасли. А также в данной статье рассказывается об экономических реформах, осуществляемых в нашей стране для обеспечения стабильного экономического роста, и их влияние на благополучие народа.*

Kalit so'zlar*: soliq, byudjet, iqtisodiyot, eksport*
Ключевые слова: *налог, бюджет, экономика, экспорт.*

THE IMPORTANCE OF THEATER ART IN THE PRIVATE DEVELOPMENT OF CHILDREN

Yusupov K.B.
Karakalpak State University named after Berdakh

Summary: *This article examines the importance of theatrical art in the spiritual upbringing of children in the form of theatrical performances, in which children always analyze the basic cultural values of their society, its traditions, beliefs and worldview in general. The mechanisms by which theatrical art reveals a child's spiritual and creative potential and creates a real opportunity for him or her to adapt to the social environment are analyzed.*

Keywords: *theatrical art, child personality, art education, music, performance, speech, dance, fine arts, theater pedagogy, performing arts, moral education, aesthetic taste, acting skills, cognitive function.*

Every child strives to get the attention, love, and approval of others. This desire is a natural necessity like the need for water, food, air. The fact that many modern children are unable to come to terms with their predecessors in the community is markedly different by intimacy. They have difficulty expressing their feelings, understanding the feelings of others, accepting someone's point of view, and negotiating.

Theatrical art is one of the most powerful means of promoting culture, spirituality, it is the education of a new generation of enlighteners. It is one of the most democratic and accessible art forms for children, helping the child to discover his spiritual and creative potential [1,572.b]. The synthetic nature of the theater moves in a complex way: both the literary work and the stage work are influenced by the artistic design of the performance (decoration, props, make-up) and the music used in the performance.

In the process of theatrical activity, a visible product is obtained, which in itself is important for the child. Theatrical art is based on the idea of using the possibilities of theatrical pedagogy, which allows the development of the child's personality, optimization of speech, voice, sense of rhythm and plasticity of movements. Theater, with its unique performances, is first and foremost an art of action. Even the heroes are called 'actors'. The children, along with the protagonists of the play, seek answers to these questions. This develops an active life position in them. They become more energetic, curious, free. Theater is a symbiosis of many arts interacting with each other.

The distinctive features of theatrical art are the mass character, the synthetic character, which creates a number of rich opportunities both in the aesthetic upbringing of children and in the organization of their leisure time. Therefore, classes in the theater group are combined with lessons in dance, music, fine arts, and applied crafts. For centuries, children's theatrical creativity has been closely linked with the formation and development of cultural traditions in the broadest sense of the word.

In the forms of theatrical performances, children are constantly introduced to the basic cultural values of their society, its traditions, beliefs, and worldview in general. Theater in a child's life is a holiday, a wave of emotions, a fairy tale, the child expresses sympathy with the hero all the way, becomes sympathetic, lives spiritually. In the process of theatrical play, memory, thinking, imagination, imagination, expression of speech and actions are developed and practiced. Theater takes a lot of work and time. Children create, they do everything from the heart. Every child wants to express themselves despite their appearance, speech defects, and lack of acting ability, but theater makes them a sensitive, audience that can appreciate the work of a great artist or actor.

Everyone involved in theater pedagogy knows how important the first year is in the process of learning the art of acting. This is the unique basis of theatrical art. Acting skills are shaped according to key elements. These are: attention, imagination, fantasy, communication, fact assessment, the ability to pause, the scene is organic [2,377.b]. They are necessary for the child in any field of activity, especially reading. Theater lessons help to develop these qualities, making them habitual. We try to figure out what each element is, how to develop it in children, and how to use it when working on a stage image.

K.S. As Stanislavsky points out, "biological, evolutionary is built on the principle of the development of living life, of matter: from the cell to the complex organism, from the frost to the adult plant, and this is the most important thing." The use of literary works of different genres or fairy tales for children in the play always has a moral direction of children (friendship, kindness, courage). With this, the child learns the world with his mind and heart and not only knows, but also expresses his attitude to good and evil. Favorite characters become role models and identifiers. It is the ability to identify a child's favorite image that allows teachers to make a positive impact on children through theatrical activities.

Performing arts were born in ancient times. At different times he was called to entertain, to teach. The possibilities of theatrical art are diverse, the power of influence is enormous. Theater has always been the main source of information about the world, life, the creation of a work of thought. It is one of the most democratic and convenient forms of art for children, which allows to solve many current problems of modern pedagogy and psychology:

- upbringing children with art education;
- formation of aesthetic taste;
- moral upbringing;
- development of communicative qualities of the person (teaching verbal and non-verbal forms of communication);
- Development of will, memory, imagination, initiative, imagination, speech (monologue and dialogue);
- to create a positive emotional mood, to eliminate tension, to resolve conflicting situations through play [3,139.b]. Theater reveals a child's spiritual and creative potential and gives him or her a real opportunity to adapt to the social environment. Thus, one of the most important functions of theater is cognitive function. On its basis, the experience is passed from generation to generation, from one country and nation to another. Therefore, it is especially important to introduce the younger generation to the theater.

A child engaged in theatrical activities naturally uses all the resources of his body. When he works on an etude or role, he inevitably includes the physical, emotional, moral, mental, intellectual levels of his being, fully understands himself and enjoys it. Exactly the ability to turn on all the strings of your instrument in a timely manner, i.e. yourself, is the key to a child's subsequent successful development and awakens in him an active, lively, creative taste. In addition to the cognitive function of the performing arts, there are a number of other legitimately (aesthetic, entertainment, communicative, social, playful, normative, etc.).

Theater can become an effective means of combating the fear of public speaking, a means of cultivating self-confidence. Children reincarnated in this or that character on stage realize that the events they describe are not true, which makes them feel freer, more natural, and more free to express their feelings. Thus, theater allows weak and insecure children to be more courageous and determined. Many psychologists and educators emphasize the special role of theater in their works dedicated to identifying opportunities for the development of creative abilities of schoolchildren [4,117.b].

Because theater is a collective art, the creator of the play is not an individual, but a creative ensemble, where each child has his own creative task, which gives him the opportunity to express himself

and join the team work. There are no main and non-main participants in the show. The person responsible for the musical arrangement or technical support is no less than the lead actor. Everyone feels their need, the importance of their contribution to the overall work.

With all of the above attitudes of all children, a one-stop show can emerge. After all, theater is a living art that will be in the public eye. Here the team is tested, everyone's ability to find a way out together, to be behind the scenes, to help a confused partner on stage, to correct mistakes made during the movement is tested. The more friendly the team, the easier it will be to overcome these challenges.

In short, the peculiarity of theatrical art in the field of additional education is the educational process carried out through different areas of work: cultivating the basics of audience culture, developing performance skills, gathering knowledge about theater, which are closely interrelated, interdependent, serves to shape the moral qualities of the child's personality. Thus, theatricality helps the child to develop in all respects.

References:

1. Volkov N.D. Directing lessons by K.S. Stanislavsky [text]: Conversations and recordings of rehearsals / N.D. Volkov. - M.: Art, 1995. pp.572.

2. Gippius S.V. Acting training [text]: Gymnastics of the senses / S.V. Gippies - us. - St. Petersburg: Prime - EUROZNAK, 2008. pp.377.

3. Golkin V.V. School of creativity. Author's programs for the aesthetic education of children by means of the theater [text]: Educational and methodological library "I enter the world of art" / V.V. Golkin.-M.: VTsKhT, 1998.- pp.139.

4. Nikitina A.B. Theater where children play: Educational and methodological manual for leaders of children's theater groups. M.: Humanitarian publishing center VLADOS, 2001. –pp.117.

Rezyume: *Ushbu maqolada teatr san'atining bolalarni ma'naviy tarbiyalashdagi ahamiyati teatrlashtirilgan tomoshalar ko'rinishida ko'rib chiqiladi, bunda bolalar doimo o'z jamiyatining asosiy madaniy qadriyatlari, uning an'analari, e'tiqodlari va umuman dunyoqarashini tahlil qiladilar. Teatr san'ati bolaning ma'naviy-ijodiy imkoniyatlarini ochib berish, uning ijtimoiy muhitga moslashishi uchun real imkoniyat yaratish mexanizmlari tahlil qilinadi.*

Резюме: *В данной статье рассматривается значение театрального искусства в духовном воспитании детей в форме театрализованных представлений, в которых дети всегда анализируют основные культурные ценности своего общества, его традиции, верования и мировоззрение в целом. Анализируются механизмы, с помощью которых театральное искусство раскрывает духовно-творческий потенциал ребенка и создает для него реальную возможность адаптации в социальной среде.*

Kalit so'zlar: *teatr san'ati, bola shaxsi, badiiy ta'lim, musiqa, ijrochilik, nutq, raqs, tasviriy san'at, teatr pedagogikasi, sahna san'ati, axloqiy tarbiya, estetik did, aktyorlik mahorati, kognitiv funksiya.*

Ключевые слова: *театральное искусство, личность ребенка, художественное воспитание, музыка, исполнительство, речь, танец, изобразительное искусство, театральная педагогика, исполнительское искусство, нравственное воспитание, эстетический вкус, актерское мастерство, познавательная функция.*

UDC 316. ¾ LBC 60.54

EQUAL OPPORTUNITIES-GUARANTEE OF THE WELFARE OF THE SOCIETY

Seitova Z.
National State Pedagogical Institute named after Ajiniyaz

Summary: *The article considers the concept of the state program to improve the status of women and enhance their role in society. Attention is paid to the issue of supporting women in the life of the state and society. Ensuring gender equality, protecting the rights, freedoms and interests of women have become relevant in our country today and have risen to the level of state policy. The author emphasizes that the reforms carried out to create equal rights and opportunities for women and men increase the number of socio-political participation of women in the socio-political life of the country.*

Keywords: *gender, strategy, cooperation, politics, political activity, social partnership.*

Relevance: The reforms carried out in today's renewed Uzbekistan laid the foundation for building a democratic rule of law state in order to strengthen a strong civil society. Building a truly democratic and humane democratic state, a state of law and social justice that meets the goals, national and cultural traditions of our people, the rights and interests of all citizens and various social groups, is a task of great political importance, based on the action strategy for 2017-2021. In recent years, issues faced by compatriots have been increasingly resolved, a number of legislative acts have been adopted in this direction. One of these documents was the Decree of the President “On measures to further accelerate work on systemic support for families and women” dated March 7, 2022, which outlines priorities and tasks in this area.

Uzbekistan has developed an integral concept of the state program for improving the status of women and enhancing their role in society, protecting motherhood and childhood, and the family. It is aimed at developing a policy of equal opportunities for women and men, eliminating discrimination against women on the basis of sex in the field of employment, increasing their wages and promotion. One of the most important areas of activity is the strengthening of families. If everything is calm in the cell of society, it is strong and prosperous, this creates the basis for a healthy spiritual and moral climate in society. Existing issues are identified and studied in a timely manner, address lists of people who experience various kinds of difficulties and need help are created, they are provided with social, legal, psychological and material support. Work is underway to improve the living conditions of low-income families in the region and to address other social issues. As part of the program "Every Family is an Entrepreneur", compatriots are provided with practical support in obtaining soft loans to establish a family business. The adopted legal documents and practical measures are an important step in the gender policy of Uzbekistan, which is fully consistent with international norms and standards of lawmaking and the practice of their application. At the same time, some of these documents and measures are based on the proposals of UN human rights agencies.

At a new stage in the development of Uzbekistan, the legal, economic and social protection of women, the creation of favorable conditions for them was identified as a priority of state policy. Particular attention is paid to the creation of new mechanisms for the gradual implementation of national programs to improve the role and status of women in the state and society. In recent years, the leadership of the republic has created a vertical system for the implementation of state policy on issues of direction, and made the most important steps. In particular, on September 2, 2019, two laws were adopted - "On Guarantees of Equal Rights and Opportunities for Women and Men" and "On the Protection of Women from Harassment and Violence", providing for comprehensive support for women. At present, these documents are the basis for protecting compatriots by providing assistance to victims of domestic violence, providing them with shelter, bringing them to mandatory responsibility not only for physical violence, but also psychological or economic, as well as through the created helplines for victims of harassment and violence.

In order to implement the idea of President Sh. Mirziyoyev "Respect for women is a criterion of goodness and justice" [1.53], an appropriate regulatory and legal framework has been created in the Republic to ensure the equal participation of women in the implementation of democratic reforms, the formation of a civil society, which is being improved every year. From June 1, 2022, a new procedure for training women in professions in state and non-state institutions on the basis of a state order is being introduced. At the same time, qualification assessment centers are being formed at the Ishga Markhamat monocenters of the Republic of Karakalpakstan, regions and the capital, which will develop requirements for the professional qualities of candidates and begin to place state orders in educational institutions. In the structure of the Senate of the Oliy Majlis of the Republic of Uzbekistan, a Committee on Women and Gender Equality has been established, which is engaged in the implementation of international norms to ensure women's rights and eradicate all forms of discrimination into national legislation. At the same time, the Commission on Ensuring Gender Equality of the Republic of Uzbekistan conducts its activities.[4.62-65]

Methods: the methods of historical, comparative and logical analysis are used, the systematic and impartial essence of the problem is highlighted. The adopted legal documents and practical measures are an important step in the gender policy of Uzbekistan, which is fully consistent with international norms and standards of lawmaking and the practice of their application. At the same time, some of these documents and measures are based on the proposals of UN human rights agencies.

Of course, in all reports, articles, speeches from high tribunes, it is said that the women of Uzbekistan honestly and selflessly work and participate in the ongoing social changes in our country, in economic reforms in all spheres of the economy, science, culture and education. That our state creates all conditions for protecting the socio-economic interests of women, strengthening the family, educating the younger generation in a harmonious and healthy way. All this is true. For example, "... the experience of Uzbekistan in ensuring the rights and freedoms of women in the framework of the implementation of the 2030 Agenda for Sustainable Development is distributed among the UN member states as an official document of the 75th session of the UN General Assembly.

At the same time, it is emphasized that the trends observed in Uzbekistan in this area are in line with global processes of expanding the representation of women at the highest levels of government, eliminating gender inequality, and increasing their number in parliament, government and the judiciary. According to the annual report of the IPU Women in Parliament and data from UN Women, for the first time in history, as of January 2021, the global proportion of women in national parliaments was more than a quarter - 25.5%. According to the results of the parliamentary elections at the end of 2019, they made up 32% of the deputies of the Legislative Chamber of the Oliy Majlis, 25% in the Senate. According to this indicator, Uzbekistan entered the top 50 countries (out of 190), ahead of almost all post-Soviet countries." [5]. "The presence of a critical mass of women in leadership positions has a positive character in the development of society in all countries. Thus, world practice shows that the increase in the representation of women in public administration leads to the fact that legislation is developed taking into account gender factors, the participation of women in politics suggests that the daily problems of women also begin to grow in parliamentary debates. Thus, increasing the representation of women in public administration can improve the protection of women's interests," said Helena Fraser, UNDP Resident Representative in Uzbekistan.

Conclusions: The equality of women and men is explained by equal rights and the creation of equal opportunities for them in all spheres of society and the state in the exercise of rights in practice. Equality between women and men must be based on the principles of equality of human rights and fundamental freedoms. In recent years, significant practical and scientific research has been carried out on many issues aimed at ensuring the legitimate interests of women, the realization of their abilities and potential, the protection of motherhood and childhood, strengthening their participation in public and socio-political life, their role in decision-making. In the process of democratic reforms in the field of public administration, an integral part of the reforms should be attention to the norms and norms aimed at ensuring the equality of women and men, raising the status of women, and expanding their rights.

It should be noted that the solution of problems in gender relations contributes to the development of the state and society on the basis of democratic requirements. In the process of forming gender relations in society, it is necessary to rely on the socio-historical experience of the country and the democratic requirements of public administration. Thus, the recognition of the importance of the role of women in the socio-economic life of the country and the desire to change the traditional attitude towards them in the minds of the population is an important factor in the stability of Uzbek society. Without the active participation of women and taking into account their interests at all levels of the decision-making process, today it is impossible to talk about the democratization of society. Social development becomes sustainable only where citizens - both men and women - actively participate in the life of their country.

References:

1. Mirziyoev Sh. New strategy of Uzbekistan. – T.: 2021. B.: 53.
2. Decree of the President of the Republic of Uzbekistan No. PF-4947 dated February 7, 2017 “On the strategy for the further development of the Republic of Uzbekistan”. https://www.lex.uz/acts/3107036.
3. Resolution of the Senate of the Oliy Majlis of the Republic of Uzbekistan No. SQ-297-IV dated May 28, 2021. On approval of the strategy for achieving gender equality in the Republic of Uzbekistan until 2030 https://lex.uz/docs/5466673. 94
4. Increasing the role and participation of women in political processes. Analytical review and recommendations for the countries of Central and Eastern Europe and the Commonwealth of Independent States. Bratislava 2009. S. 62-65.
5. The policy of gender equality in modern Uzbekistan // http://uza.uz/posts/257250
6. The role of women in modern Uzbekistan // https: uzbekistan.lv/

Rezyume: *Maqolada xotin-qizlarning mavqeini oshirish va ularning jamiyatdagi rolini oshirishga qaratilgan Davlat dasturi konsepsiyasi ko‘rib chiqiladi. Xotin-qizlarni davlat va jamiyat hayotida qo‘llab-quvvatlash masalasiga e’tibor qaratilmoqda. Mamlakatimizda gender tengligini ta’minlash, xotin-qizlarning huquq, erkinlik va manfaatlarini himoya qilish bugungi kunda dolzarb bo‘lib, davlat siyosati darajasiga ko‘tarildi. Muallif ayollar va erkaklar uchun teng huquq va imkoniyatlar yaratish borasida amalga oshirilayotgan islohotlar xotin-qizlarning mamlakatimiz ijtimoiy-siyosiy hayotidagi ijtimoiy-siyosiy faolligini oshirishga xizmat qilayotganini alohida ta’kidlaydi.*

Резюме: *Статья рассматривает* ***концепцию государственной программы улучшения положения женщин и повышения их роли в обществе.*** *Уделяется внимание вопросу поддержки женщин в жизни государства и общества. Обеспечение гендерного равенства, защита прав, свобод и интересов женщин стали сегодня актуальными в нашей стране и поднялись до уровня государственной политики. Автор подчёркивает, что реформы, проводимые для создания равных прав и возможностей для женщин и мужчин, увеличивают число социально-политического участия женщин в общественно-политической жизни страны.*

Kalit so'zlar: *gender, strategiya, hamkorlik, siyosat, siyosiy faoliyat, ijtimoiy sheriklik.*

Ключевые слова*: гендер, стратегия, сотрудничество, политика, политическая активность, социальное партнерство.*

FEATURES OF THE DEVELOPMENT OF THE LEASING MARKET IN UZBEKISTAN

Kalmuratov B., Allamuratova G.
Karakalpak State University named after Berdakh

Summary: *This article discusses the general theoretical principles of leasing operations, detailed analyzes of market conditions for leasing services in Uzbekistan and the peculiarities of the development of leasing operations, recommendations for the selection of the source of financing and business partner.*

Keywords: *leasing, investment, credit, firms, leasing services, leasing company, lessor, market, leasing portfolio, property.*

To take a worthy place among the leading countries of the world is a strategic goal facing our state after gaining independence. Investment resources play a big role in solving this problem.

Modernization, technical and technological renewal of industries also includes the renewal of fixed assets of enterprises. Today, many enterprises have difficulties in acquiring investment resources due to lack or lack of working capital. Uzbekistan is in dire need of investment funds that can be used for these purposes. Of course, a developed credit system allows you to get a loan, but this often requires collateral.

This problem can be solved by a new financing system - leasing, which, as the experience of countries with developed economies shows, is one of the effective methods of investing in the renewal of the fixed capital of economic entities. In Uzbekistan, this form of financial transactions has also received some development, but its scale is still small.

The purpose of this article is to analyze and identify the features of the development of leasing operations in Uzbekistan.

The Law of the Republic of Uzbekistan "On Leasing" says:

"Leasing is a special type of financial lease in which one party (the lessor), on behalf of the other party (the lessee), acquires from a third party (the seller) the property stipulated by the leasing agreement (the leasing object) and provides it to the lessee for a fee on certain conditions for possession and use for a period not exceeding 12 months" [1].

The legislation distinguishes two types of leasing: operational and financial. In case of operational leasing, equipment rental also includes its maintenance, but the client cannot purchase the leased item into ownership or operate it until it is completely worn out. In this case, payments are made for the use of the property and additional services provided to the client. They also include remuneration of the leasing company.

In the case of financial leasing, the equipment is gradually bought out by the client by the lessee. Leasing payments are made in installments. As with operational leasing, the client additionally pays remuneration to the leasing company and compensates for the cost of all services delivered to him under the contract. Until the end of the contract, the lessor remains the owner of fixed assets.

Before making a decision on the source of financing and choosing a business partner, and the leasing company is exactly that, it is necessary to analyze the offers in this type of market and choose the most optimal one in terms of price, efficiency and reliability. After all, if an entrepreneur misses the opportunity to enter the market in time, to respond to this or that demand, i.e. if he does not occupy his "niche" in time, then it will be in conditions of fierce competition that rent will be made.

The authority of a leasing company is determined not only by the number of its customers, the current portfolio, but also by its reputation in the market, i.e. the timeliness of fulfilling its obligations to partners.

It is also necessary to carefully calculate how effectively the leasing object will be used. After all, in case of downtime due to a decrease in demand, the entrepreneur will not be able to pay the fee in a timely manner, and late payments often lead not only to the accrual of penalties, but also to the return of the leasing object. Sometimes, if the amount of the debt is not covered from the sale of the leased object, the lessor may recover other assets of the lessee, and all his lease payments are not refundable. Therefore, external financing should be applied only with very high, or even 100% confidence in the implementation of your project.

The history of leasing goes back centuries to the state of the Sumerians. However, the first company whose activities were based on leasing operations was the United States Leasing Corporation, established in 1952, i.e. the birthplace of modern leasing is the USA.

The leasing market in Uzbekistan began to form, one might say, from the first years of our independence. For example, the National Airline "Uzbekistan Airways", when updating its fleet back in 1993, used leasing operations when purchasing airliners from leading world manufacturers.

A qualitatively new stage in the development of the leasing services market, as an element and instrument of the market economy, began after 2002.

However, the formation of the leasing services market faces a number of subjective and objective problems, such as insufficient development of the stock market, unwillingness to perceive the leasing process, etc. Therefore, the potential of leasing in the domestic economy is not yet fully used. However, this market is developing quite dynamically.

This is evidenced by the following data: the annual increase in objects leased over the years was 7%, 12,6%, 21,7%, 80,5% and only in 2020, the increase compared to 2019 was 2% [3]. This is due to the sudden termination of the activities of some leasing companies and the termination of leasing operations by commercial banks. As for the number of leasing transactions, in 2020, compared to 2019, it decreased from 6,692 to 48, or by 38%.

Nevertheless, the leasing portfolio, i.e. a set of investments in equipment, machinery, real estate and other objects, increased by 90.6% over the period under review and reached 2139 billion sum against 1122 billion sum in 2015 [2].

During this time, Uzbekistan has not only increased the total portfolio of leasing operations, but also expanded the list of objects received for leasing. So, if in 2002 94% of the total volume of leasing operations was agricultural machinery, and the share of technological equipment ranged from 0.5-5.5%, today the share of technological equipment is almost 32%, vehicles - 28.9%, agricultural machinery - 28.6%, real estate - 10.5%. [3]

As of the beginning of 2015, the number of lessors in the republic amounted to 88, of which 64, i.e. 72.7% are leasing companies. By the end of 2020, the amount of leasing companies' transactions amounted to 592.6 billion sum or 71.7%, and the banking sector accounts for 233.9 billion sum or 28.3%. It is noteworthy that, starting from 2019, the share of agricultural machinery is decreasing (by 2.8%), and the share of technological equipment is growing — by 27.7%.

The dynamics of the volume of leased property indicates that it is growing from year to year. So, if in 2015 it was 401.7 billion In 2020, this indicator increased more than 2 times and amounted to 826.2 billion sum [4]. Based on the above, the following are the most significant characteristics of the development of the leasing market in Uzbekistan:

— the leasing services market is one of the most dynamic, which characterizes the state of the institutional environment and the characteristics of its subjects;

— medium and small firms predominate among domestic lessees, and large enterprises either use their own funds or turn to a bank loan. In other countries, this is not observed;

— high market concentration, manifested in the presence of several clear leaders in the leasing services market, which combines low entry barriers and developing competition;

— the territorial boundaries of the market are growing due to the emergence of new regional companies, the expansion of one hundred personal firms;

— firms focused on equipment manufacturers have a significant advantage in development.

Reference list:

1. The Law of the Republic of Uzbekistan "On leasing" of April 14, 1999 No. 756I. Amendments have been made to this Law in accordance with Section XXI of the Law of the Republic of Uzbekistan No. 447II of 13.12.2002.
2. Materials of the Association of Lessors of Uzbekistan.
3. www. promzona. uz
4. Decree of the President of the Republic of Uzbekistan dated August 28, 2002 N UP3122 "On measures to further stimulate the development of the leasing system".
5. Resolution of the Cabinet of Ministers of the country "On measures to further develop and streamline leasing services in the Republic of Uzbekistan" dated May 21, 2011.
6. Leasing in Russia. The newspaper "Business Bulletin of the East" 18.06.2002
7. Leasing in the USA. The newspaper "Business Bulletin of the East" 29.08.2002
8. Leasing Agreement. The newspaper "Business Bulletin of the East" 07.11.2002
9. Leasing in Kazakhstan. The newspaper "Business Bulletin of the East" 19.12.2002
10. Leasing companies of Uzbekistan. The newspaper "Business Bulletin of the East" 17.10.2002
11. What opportunities does leasing offer? Newspaper "News of Uzbekistan", 06.02.2004
12. "Leasing in Central Asia". IFC, March 2005.
13. Leasing // Big Economic Encyclopedia. Moscow: EKSMO, 2007. pp. 328-329.
14. Khamraeva, D. Factors influencing the development of leasing // Money and credit market. Tashkent, 2012. No. 9. - pp. 56-58.
15. Niyazov, F. Leasing in Uzbekistan // Money and credit market. Tashkent, 2012. No. 6. - pp. 31-35.
16. Tojiddinov, G. Leasing development issues // Market, money and credit. Tashkent, 2012. №4. – pp. 36-38.
17. Khamraeva, D. Opportunities of leasing: Modern technologies and equipment // Market, money and credit. Tashkent, 2013. №4. – pp. 48-52.

Rezyume: *Ushbu maqolada lizing operatsiyalarining umumiy nazariy tamoyillari, O‘zbekistonda lizing xizmatlari bozori konyukturasi va lizing operatsiyalarini rivojlantirishning o‘ziga xos xususiyatlari batafsil tahlil qilingan, moliyalashtirish manbasi va biznes hamkorni tanlash bo‘yicha tavsiyalar berilgan.*

Резюме: *В данной статье рассматриваются общие теоретические основы лизинговых операций, подробный анализ конъюнктуры рынка лизинговых услуг в Узбекистане и особенности развития лизинговых операций, рекомендации по выбору источника финансирования и делового партнера.*

Kalit so'zlar: *lizing, investisiya, kredit, firmalar, lizing xizmatlari, lizing kompaniyasi, lizing beruvchi, bozor, lizing portfeli, mulk.*

Ключевые слова: *лизинг, инвестиции, кредит, фирмы, лизинговые услуги, лизинговая компания, лизингодатель, рынок, лизинговый портфель, имущество.*

IMPROVING THE EFFICIENCY OF LENDING TO INVESTMENT PROGECTS BY COMMERCIAL BANKS

Isakov J.Ya[1]., Elbusinova U.K[2]., Isakov I.J[3].
[1,2]Tashkent State University of Economics.,
[3]Master, employee of the Central Bank

Summary: *Loans from commercial banks are an important source of financing for investment projects. The main part of the investment project will be financed by loans from commercial banks for the construction of new facilities and the purchase of equipment and technology. In turn, increasing the efficiency of lending to investment projects by commercial banks will create the need to strengthen the long-term resource base of banks and improve risk management of investment projects. The article identifies the problems associated with improving the efficiency of lending to investment projects of commercial banks and develops scientific proposals to address them.*

Keywords: *commercial bank, credit, lending efficiency, investment project, risk, interest rate, inflation,*

Introduction. The Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021 recognizes the expansion of lending by commercial banks for promising investment projects as one of the necessary conditions for ensuring macroeconomic stability and maintaining high economic growth [1]. This, in turn, creates the need to increase the efficiency of commercial banks in lending to investment projects.

At present, the large amount of overdue loans in commercial banks, the high interest rates on loans indicate the low efficiency of lending by banks.

Review of literature on the subject. Prof. O.I. According to Lavrushin, there is a system of indicators that characterizes the effectiveness of credit, among which the indicators that characterize the problem loans and the profitability of loans play an important role [2].

Prof. N.E. According to Sokolinskaya, careful monitoring of risks, formation of a quality credit collection folder, having a good database to manage the lending process are the main aspects of ensuring the quality content of the loan [3].

S. Based on the results of his research, Wayne recognized that the level of reserves created on loans plays an important role in ensuring the effectiveness of loans [4].

According to the experts of the International Bank for Reconstruction and Development, in order to ensure the effectiveness of loans from commercial banks, it is important to ensure the normal level of reserve allocations to cover loan losses and achieve stable interest income on loans [5].

According to J. Sinki, the analysis of the cash flow of the borrower plays a key role in ensuring the effectiveness of loans from commercial banks [6].

According to T. Mazurina, in order to ensure the effectiveness of lending to the real sector of the economy, the following conditions must be met:

- availability of effective state investment and industrial policy;
- development of investment infrastructure, which will reduce the level of risks associated with the implementation of investment projects;
- Increasing the investment attractiveness of enterprises [7].

I. According to Alimardonov, in order to increase the efficiency of lending, in addition to the composition of financial ratios, it is necessary to improve the methodology for determining the

creditworthiness of customers by including profit margins, debt service ratio and creditor debt turnover ratio [8].

According to H. Otamurodov, ensuring the balance of credit potential and the composition of loans will improve the quality of the loan portfolio of commercial banks [9].

Discussion. Long-term investment loans of commercial banks are one of the necessary conditions for ensuring the sustainable development of the economy of Uzbekistan.

In 2020, a total of 48.4 trillion soums will be allocated for more than 281,000 projects to provide employment to small businesses, including the population and the development of family business, financial support for women's and youth entrepreneurship initiatives. soums were allocated. This year, at the expense of foreign credit lines, commercial banks have allocated 2.9 billion soums to finance about 17,000 projects of business entities.

USD (in 2019: 2.1 bln. USD, 12 thousand projects), including 2.5 bln. USD (84%) (in 2019: 1.57 billion USD, 74%) were allocated [10].

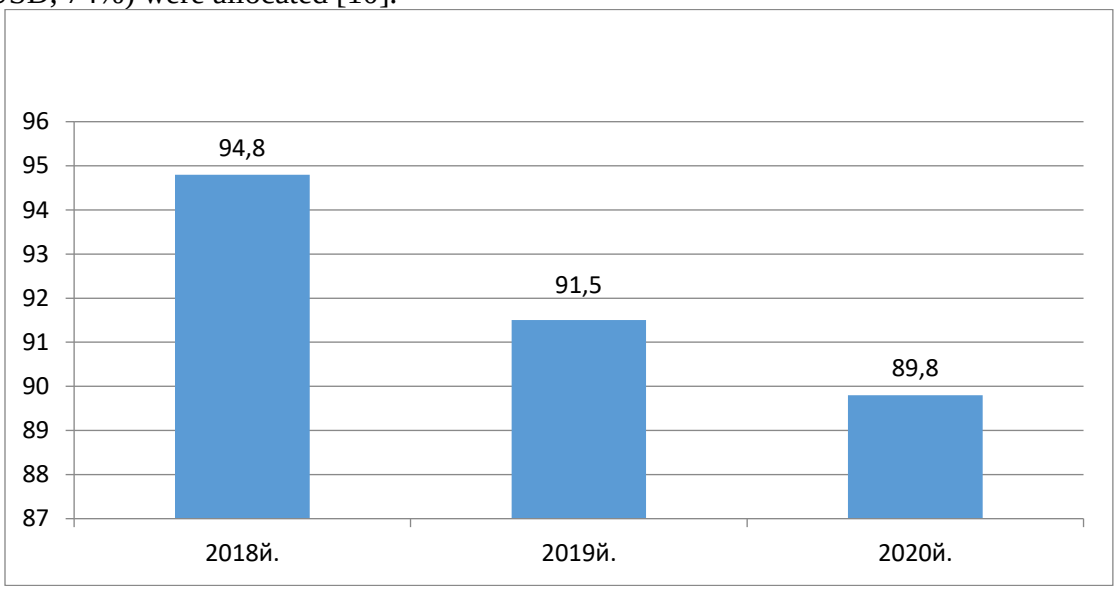


Figure 1. The share of long-term loans in the total volume of loans of commercial banks of the Republic of Uzbekistan,% [11]

Figure 1 shows that in 2018-2020, long-term loans accounted for the largest share in the total volume of loans of commercial banks of the Republic of Uzbekistan.

Figure 1 shows that in 2018-2020, the share of long-term loans in the total volume of loans of commercial banks of the country had a downward trend. High inflation in the Republic of Uzbekistan leads to high interest rates on investment loans of commercial banks in the national currency.

Table 1. Annual inflation rate in the Republic of Uzbekistan and the average annual interest rate on investment loans of commercial banks in the national currency [12]

Indicators	2018 y	2019 y	2020 y
Inflation rate	14,3	15,2	11,1
Interest rate on investment loans in national currency	20,9	23,8	22,5

According to Table 1, high inflation in the Republic of Uzbekistan in 2018-2020 has led to high interest rates on loans of commercial banks in the national currency.

The high rate of devaluation of the national currency in Uzbekistan causes problems in the repayment of loans issued by banks to finance investment projects. The essence of the problem is that the high rate of depreciation of the national currency has led to higher prices for imports and higher inflation. As a result, there was an increase in the costs associated with the repayment of loans in foreign currency and the cost of products. As a result, their level of solvency has declined.

The low level of money supply in the economy does not solve the problem of insolvency. In addition, non-repayment of loans issued by banks will further deepen the problem of default.

Rising inflation will also force commercial banks to raise interest rates on loans. This is because an increase in the inflation rate will lead to a decrease in the real value of interest income from commercial banks' loans. As high inflation in the economy reduces the profitability and value of financial resources in the hands of entrepreneurs, it creates the need and problems to cover the deficit with credit resources. After all, the commercial activity of banks, whose activities are mainly based on borrowed funds, forces them to lend at a higher rate than inflation, which further complicates the crisis for entrepreneurs.

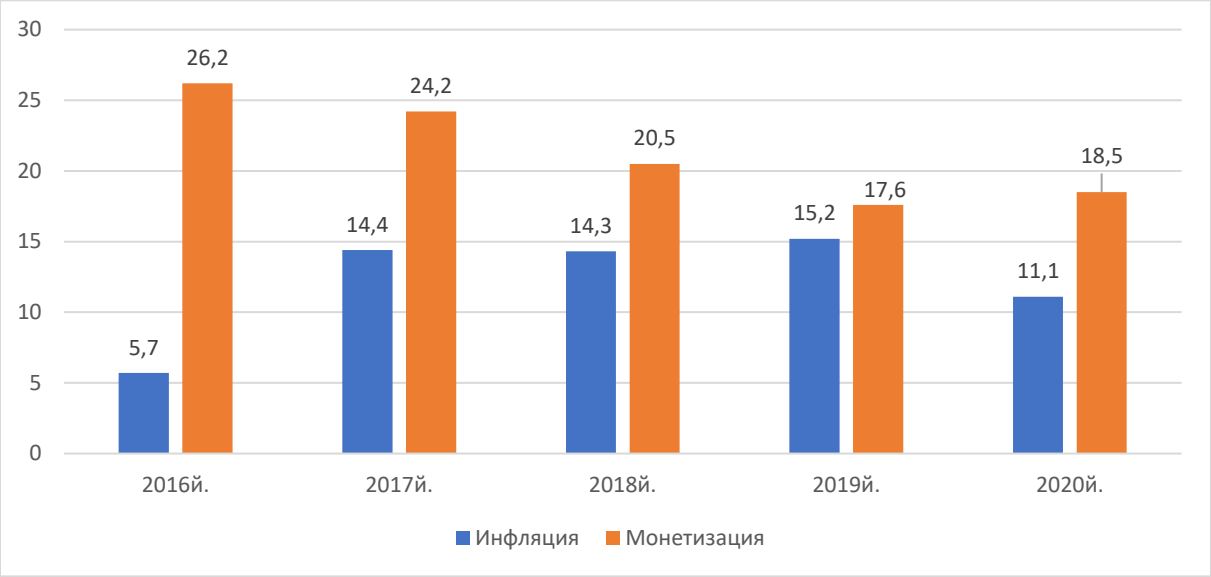


Figure 2. Annual inflation rate in the Republic of Uzbekistan and the level of money supply of the economy, in percent.

As can be seen from the data shown in Figure 2, the inflation rate in the country is high, and the money supply of the economy remains low. High inflation leads to high production costs in the food industry. The low level of cash supply to the economy is leading to a slowdown in the turnover of receivables of food industry enterprises.

The high depreciation rate of the national currency of the Republic of Uzbekistan, the soum, has a negative impact on the stability of food industry enterprises. In particular, it leads to an increase in the costs of these enterprises related to import duties.

Loans to finance large investment projects, errors in complex expertise, non-export of products, non-performance of projects at full capacity, the devaluation of the national currency and high inflation have led to an increase in overdue loans. For example, new equipment and technologies have been introduced to implement some projects, which will allow to produce innovative goods. But these techniques and technologies are not provided with quality raw materials.

Based on econometric analysis of Trustbank's performance for the last 10 years (2011-2020), the increase in the reserve fund's expenses to cover problem loans of the bank's investment loans by 1 soum

led to a decrease in the average income from investment lending by 0.016 soums and an increase of 1 soum in liabilities on deposits and savings will lead to an average increase in income from investment lending by 1.57 soums. Excluding other factors, the 1% increase in the annual devaluation rate of the soum against the US dollar will increase the loan portfolio of commercial banks by 0.52%, the central bank's reserve requirement for deposits in the national currency by 1%, the loan portfolio of commercial banks by 7.19% and the central bank an increase in the annual refinancing rate by 1% will lead to a decrease in the loan portfolio of commercial banks by 7.53%. However, an annual increase in inflation of 1 percent will lead to an increase in the loan portfolio of commercial banks by 5.69 percent. In general, excluding other factors, the annual devaluation rate of the soum against 1 US dollar, the annual inflation rate, the central bank's reserve requirement rate on national currency deposits and the Central Bank's annual refinancing rate increase by 1% simultaneously. , Leading to a decrease of 55 percent.

The main part of the income of the private joint-stock bank Trustbank is accounted for by bank loans, including investment loans, and investments in securities do not constitute a significant part of banking activities. This situation deprives the bank of investment activity income, which is a significant source of income for banks in the world practice. This is due, in part, to the underdevelopment of the stock market in our country and other factors. In addition, the increase in the bank's equity does not provide a positive incentive to change the volume of investments.

The effectiveness of credit and investment operations of the private joint-stock bank Trustbank can be positively assessed. In particular, the fact that the return on investment loans is higher than the total return on loans indicates that investment lending operations are more efficient than other types of lending operations. Although investment funds did not have a significant share in the bank's assets, they were more effective than investment loans.

Conclusion. In 2018-2020, long-term loans accounted for the largest share in the total volume of loans of commercial banks of the Republic of Uzbekistan. However, during this period, the share of long-term loans in the total volume of loans of commercial banks of the country has been declining.

High inflation in the Republic of Uzbekistan in 2018-2020 has led to high interest rates on loans of commercial banks in the national currency. The high rate of devaluation of the national currency in Uzbekistan causes problems in the repayment of loans issued by banks to finance investment projects. The low level of money supply in the economy does not solve the problem of insolvency. This prevents the timely repayment of investment loans issued by commercial banks.

To ensure the effectiveness of lending to investment projects of commercial banks of Uzbekistan, it is necessary to take the following measures:

1.In order to reduce the level of risks arising in the process of lending investment projects by commercial banks, it is necessary, first of all, to increase the accuracy of forecasting demand for products by improving the quality of marketing research; secondly, secondly, it is necessary to assess the degree of influence of the factors that affect the reputation of the project initiator; third, it is necessary to constantly monitor compliance with the schedule at each stage of project implementation;

2. In order to ensure the normative level of reserve allocations to cover losses from investment loans by improving the structure of classified investment loans, it is necessary to determine the liquidity of collateral for investment loans, customer cash flow stability, customer creditworthiness.

In 2016-2020, the level of reserve allocations to cover losses from investment loans in a number of commercial banks of the country was higher than the norm. This is a negative situation in terms of improving the investment lending practices of these banks.

The normative level (1.0%) recommended by the experts of the International Bank for Reconstruction and Development on the level of reserve allocations to cover the losses incurred on loans was adopted as a universally recognized criterion in international banking practice.

References:

1. Decree of the President of the Republic of Uzbekistan dated February 7, 2017 No PF-4947 "On the strategy of actions for further development of the Republic of Uzbekistan" // Collection of legislation of the Republic of Uzbekistan. - National database of legislation, 31.07.2018, No. 06/18/5483/1594.
2. Lavrushin O.I. Banking: modern credit system. - M .: KNORUS, 2008. - C. 36-37
3. Sokolinskaya N.E. Problems of credit portfolio management in modern conditions // Bankovskoe delo. - Moscow, 1999. - №9. - S. 18-19.
4. Vayn S. Optimization of resources of a modern bank. - M .: Alpina Pablisher, 2013. - p. 150-151.].
5. www.worldbank.org - International Bank for Reconstruction and Development
6. Sinki Dj. Finansovyy menedjment v kommercheskom banke i v industrii finansovyx uslug. Per. s angl. - M.: Alpina Pablisher, 2017. - p. 485 - 486.
7. Mazurina T.Yu. Bankovskoe investitsionnoe kreditovanie: sovremennoe sostoyanie, problemy i perspektivy razvitiya // Dengi i kredit. - Moscow, 2013. - №4. - S. 33.
8. Alimardonov I.M. Improving the methodological and practical framework for lending to small businesses. I.f.d. ilm. dar. ol. three taqd.et. diss. avtoref. - Tashkent, 2018. - B. 28.
9. Otamurodov H.H. Improving the loan portfolio management of commercial banks. I.f.b.f.d. diss. avtoref. - Toshkent, 2019. - Б. 24.
10. Report on the activities of the Central Bank of the Republic of Uzbekistan in 2020 (P. 55-56). www.cbu.uz.
11. Loans from commercial banks. www.cbu.uz
12. Monetary policy. www.cbu.uz.

Rezyume: *Tijorat banklarining kreditlari investisiya loyihalarini moliyalashtirishning muhim manbai hisoblanadi. Investitsiya loyihasining asosiy qismi tijorat banklarining yangi ob'ektlar qurish, texnika va texnologiyalarni xarid qilish uchun kreditlari hisobidan moliyalashtiriladi. O'z navbatida, tijorat banklari tomonidan investisiya loyihalarini kreditlash samaradorligini oshirish banklarning uzoq muddatli resurs bazasini mustahkamlash va investitsiya loyihalari risklarini boshqarishni takomillashtirish zaruratini yuzaga keltiradi.*

Maqolada tijorat banklarining investitsiya loyihalarini kreditlash samaradorligini oshirish bilan bog'liq muammolar belgilab berilgan va ularni hal etish bo'yicha ilmiy takliflar ishlab chiqilgan.

Резюме: *Кредиты коммерческих банков являются важным источником финансирования инвестиционных проектов. Основная часть инвестиционного проекта будет финансироваться за счет кредитов коммерческих банков на строительство новых объектов и приобретение оборудования и технологий. В свою очередь, повышение эффективности кредитования инвестиционных проектов коммерческими банками создаст необходимость укрепления долгосрочной ресурсной базы банков и совершенствования управления рисками инвестиционных проектов.*

В статье обозначены проблемы, связанные с повышением эффективности кредитования инвестиционных проектов коммерческих банков, и разработаны научные предложения по их решению.

Kalit so'zlar: *tijorat banki, kredit, kreditlash samaradorligi, investisiya loyihasi, risk, foiz stavkasi, inflyatsiya.*

Ключевые слова: *коммерческий банк, кредит, эффективность кредитования, инвестиционный проект, риск, процентная ставка, инфляция.*

RESEARCH OF THE CONDITION OF SPARSE AND DENSE VEGETATION IN PASTURES WITH REMOTE SENSING METHODS AND GEOINFORMATION SYSTEMS

Sultashova O.G.[1], Gabbarov S.N[2]., Jaqsibaev R.N[3].

[1]Karakalpak state university, [2]Nukus branch of the Navoi state Mining and Metallurgical Institute, [3]"Tashkent institute of irrigation and agricultural mechanization engineers" National research university

Summary: *This article examines the level of vegetation cover of pastures using modern methods. Plant vegetation studied as a group of sparse and dense vegetation and Landsat 8 satellite images were used. Based on the condition of the vegetation, scientifically based recommendations on the duration of pasture use have been developed. The information in the article includes the months of 2021.*

Keywords: *Pasture lands, sparse vegetation, dense vegetation, normalized difference vegetation index (NDVI), remote sensing (RS), geoinformation systems (GIS).*

Introduction. Information about the state of the earth is obtained through observation of the earth. Earth observation gives us geospatial data. Geophysical data helps us assess the state of the natural environment and monitor changes [7].

Regular monitoring of pastures in the desert areas with severe natural conditions allows to get quick information about the processes of changing the natural state of the region [1].

It should be noted that global climate change leads to changes in the natural environment. To predict the dynamics of land conditions, it is necessary to determine the local characteristics of the development of natural processes. Plants are a component that responds quickly to changes in the environment.

Changes in vegetation can show us the environmental conditions associated with annual changes in crop yields, changes in desert boundaries, and the spread of pests and diseases.

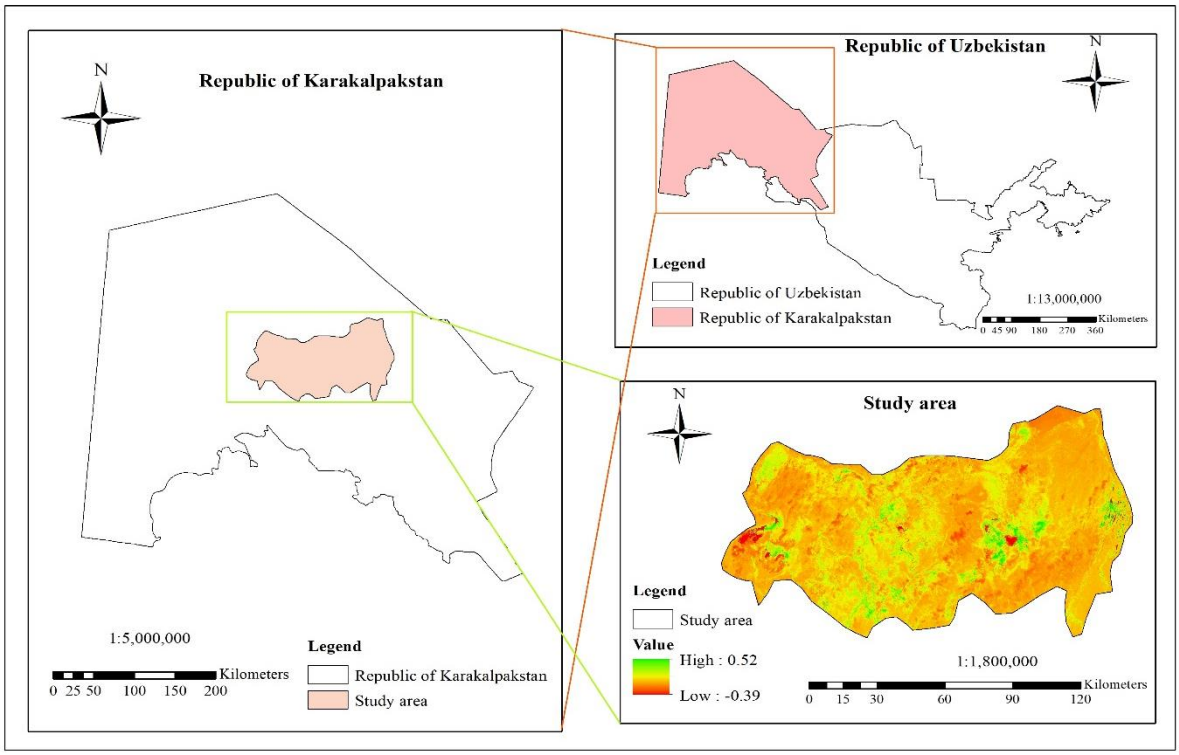
At present, modern technical data on the state of desert ecosystems in a large area are obtained using remote sensing methods. In particular, aerospace imagery allows for an accurate assessment of the situation and effective measures to assess the condition of natural pastures and their rational use [1].

One of the most promising ways to study the Earth and its atmosphere is to use satellites [2].

Landsat satellite data is used to map land cover, land use, soil and sea surface temperatures, and to monitor deforestation, desertification, and other processes. Due to the fact that the Landsat data includes medium infrared ranges, it is easy to create land cover and land use maps. [10].

The methods of research.

Study area. The southern Aral Sea region of the Republic of Karakalpakstan was selected as the study area. The Republic of Karakalpakstan is located in the northwestern part of the Kyzylkum Desert, southeastern part of the Ustyurt Plateau and in the Amudarya delta. The climate is sharply continental, with dry summers and relatively cold winters, with little snowfall [4]. The highest point in Karakalpakstan is 473 meters [3].



I picture. Location scheme of the Republic of Karakalpakstan and research area

Taking into account the natural conditions of the study area, it is advisable to study the state of green vegetation using the formula for calculating the normalized difference vegetation index (NDVI). This has been confirmed by scientific research on similar topics around the world.

NDVI is associated with the physiological state of the plant and the process of photosynthesis. It helps to find information about the state of the soil in terms of greenery, chlorophyll content, water content and etc. NDVI is a remote sensing index used to distinguish green plants from non-green plants [8] and is calculated as follows.

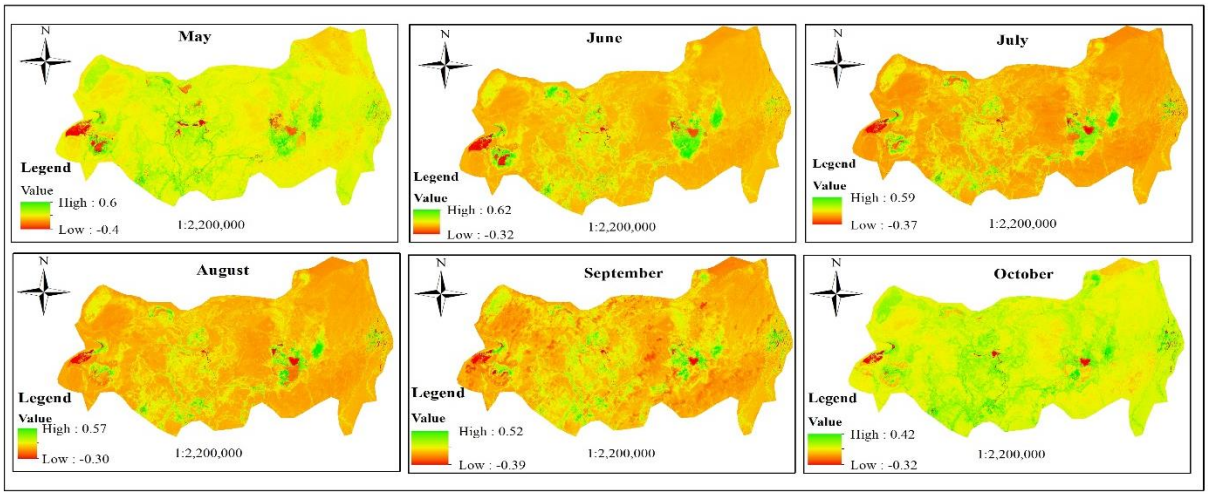
$$NDVI=NIR-RED/NIR+RED$$

here: NDVI – Normalized difference vegetation index, NIR - close to the infrared of the spectrum and RED – reflection of the spectrum in red [2,5,6,7].

NDVI values range from -1 to +1. Healthy green vegetation normally has the highest positive values while surfaces without vegetation, such as bare soil, water, snow, ice or clouds usually have low NDVI values that are near zero or slightly negative. Stressed vegetation or vegetation with small leaf area has positive but reduced NDVI values [6,9].

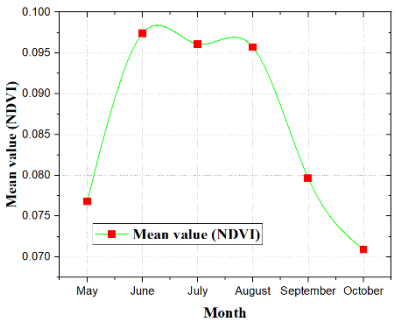
Results and discussion: Based on the above data, the following results were obtained. During March, vegetation is almost non-existent. So vegetation condition of the study area was studied in May, June, July, August, September and October (II picture).

Basically, a normalized difference vegetation index with a value higher than 0.3 of the index obtained using the calculation formula was considered a sparse and dense plant, and the development status was studied during the above months.

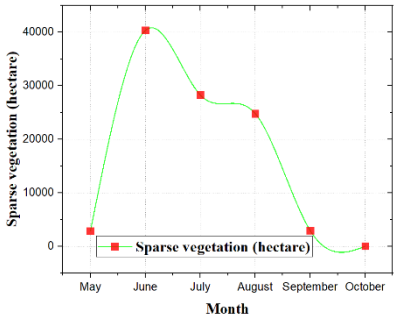


II picture. Vegetation condition of the study area

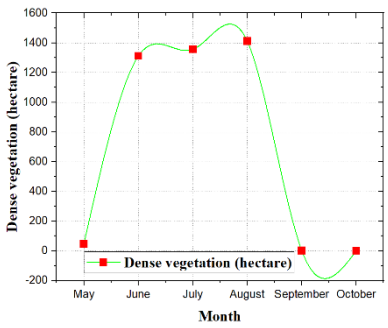
Analyzes have shown that the vegetation process in plants begins in April and peaks in June and July and decreases in late October (I figure).



I figure. Monthly change in the average value of NDVI



II figure. Sparse vegetation area changes over months



III figure. Dense vegetation area changes over months

Using remote sensing and GIS technology to study areas and classify the state of green vegetation, we can determine the area of sparse and dense vegetation. Sparse plants have the largest area in June. In July, the area of sparse plants area begins to decline significantly. But, the area of sparse plants area in August did not decrease significantly compared to July. By September, the area decreased dramatically, and by the end of October, almost no sparse vegetation remained (II figure). Dense vegetation began to increase sharply from May to June. In June, July and August, the area of dense vegetation gradually increased. The largest area is reached in August. However, in late August and early September, the area of dense vegetation decreased sharply and did not remain at all until October (III figure).

Conclusion.

- It is advisable to use modern methods to study the use of pastures and to determine the period of development of green plants;
- By studying the condition of green plants using the formula for calculating the normalized difference vegetation index and classifying them, it is possible to create maps of pastureland use and develop ways of efficient use of pastureland;

- The use of Landsat 8 data provides high accuracy and reliable data in a short time. This, in turn, helps to make efficient and quick decisions on pasture use;
- It is advisable to use pastures in the study area in late April and early May to late October. The most productive months are June, July and August.

References:

1. Бердаева О.М. "Экосистемы средних пустынь Казахстана и их инвентаризация методами дистанционного зондирования". Автореферат диссертации на соискание учёной степени доктора биологических наук. Калининград 2009.

2. Панасюк М.В., Сафиоллин Ф.Н., Логинов Н.А., Пудовик Е.М. Картография, фотограмметрия и дистанционное зондирование земли. Учебное пособие. Казань – 2018. 121 с.

3. Солиев А. Ўзбекистон иқтисодий ва ижтимоий географияси. – Тошкент.:Ўзбекистон миллий университети, 2014. 387 б.

4. Ўзбекистон миллий энциклопедияси. 11-том.

5. Avdan U., and Jovanovska G., 2016, Algorithm for Automated Mapping of Land Surface temperature Using LANDSAT 8 Satellite Data - Hindawi Publishing Corporation. Journal of Sensors, pages 8

6. Jaksibaev R.N., 2020, Determination of vegetation index, land surface temperature and precipitation amounts using remote sensing data. Journal of Agro processing. Volume 5. Issue 2. http://dx.doi.org/10.26739/2181-9904-2020-5-1. Pages 4-10

7. Jaksibaev R.N., Gabbarov S.N., 2021, Geoinformational analysis of the negative effects of the Aral Sea on pastures. International Scientific Journal Theoretical & Applied Science. Issue 06. Volume 98. e-ISSN: 2409- 0085 (online). https://dx.doi.org/10.15863/TAS. Pages 362-365

8. Raut, S. K., Chaudhary, P., & Thapa, L. (2020). Land Use/Land Cover Change Detection in Pokhara Metropolitan, Nepal Using Remote Sensing. Journal of Geoscience and Environment Protection, 8, 25-35.

9. Shisanya C. A., Recha C., Anyamba A. Rainfall Variability and Its Impact on Normalized Difference Vegetation Index in Arid and Semi-Arid Lands of Kenya. International Journal of Geosciences, 2011, 2, 36-47 doi:10.4236/ijg.2011.21004

Rezyume. *Mazkur maqolada yaylov yerlarning o'simlik qoplami bilan qoplanish darajasi zamonaviy usullar yordamida o'rganilgan. O'simlik vegetatsiyasi ikki guruhga, siyrak va zich vegetatsiyalarga ajratib o'rganilgan. Landsat 8 sun'iy yo'ldoshi tasvirlaridan foydalanilgan. O'simlik vegetatsiyasi holatiga asoslanib yaylov yerlardan foydalanish davrlari to'grisida ilmiy asoslangan tavsiyalar keltirilgan. Maqoladagi ma'lumotlar 2021 yil davomidagi oylarni o'z ichiga oladi.*

Резюме. *В данной статье исследуется уровень растительного покрова пастбищ с использованием современных методов. Растительность изучалась как группа разреженной и густой растительности, использовались космические снимки Ландсат 8. На основании состояния растительности разработаны научно обоснованные рекомендации по продолжительности использования пастбищ. Информации в статье включает месяцы 2021 года.*

Kalit so'zlar: *Yaylov yerlar, siyrak o'simliklar, zich o'simliklar, normallshatirilgan vegetatsiya indeksi (NDVI), masofadan zondlash, geoaxborot tizimlari.*

Ключевые слова: *Пастбища, скудная растительность, густая растительность, нормированный разностный вегетационный индекс (NDVI), дистанционное зондирование, геоинформационные системы.*

HUMANITIES SCIENCES

LITERARY AND AESTHETIC VIEWS OF ABU NASR FARABI

Xodjimatova M.
The Uzbekistan state institute of arts and culture

Summary: *This article provides information about the Eastern thinker Muhammad Farabi. The author focuses on his works in the field of art from the standpoint of modernity: Farabi radically changed world science, made a great contribution to the development of a number of disciplines, including philosophy, music, poetry, rhetoric and political science. Farabi's view on the problems of understanding the role of art in poetics is given, as well as his position on art, in particular his literary and aesthetic views on poetry and theater. In addition, the author acknowledges that, despite the variety of poetic forms, there are specific aspects of speech and expression. Along with the science of Mohammed Farabi, other great scientists have shed light on how speech can affect a stage, and experts say that speech beautifies the human mind and broadens one's horizons.*

Keywords: *poetics, art, oratory, pretending, musical theater, the audience, the rhythm, the sound.*

Extensive activity was characteristic of most Eastern thinkers. One of the writers who laid the foundation stone of several sciences is Farobi. That is why it is not accidental that he is recognized as a "second teacher". He was one of the first teachers to make Aristotle more famous in the East. It has a special place in the development of a number of disciplines, such as philosophy, music, poetry, rhetoric, political science. Poetic views of the writer, more precisely, literary and aesthetic views "Ixsa-ul-ulum" ("Properties of sciences"), "Khitoba" ("Rhetoric"), "Harmony in music", "Poetry", "On the laws of the art of poets", "Thoughts of the inhabitants of the city of noble people","Philosophy of Plato","Philosophy of Aristotle".

A meaningless word, a meaningless speech, is like a grain without wheat. That is why Farobi often emphasizes the need to know the semantic richness of the native language, expressive speech, the treasury of meanings. Ixsa-ul-ulum (Origin of Knowledge) focuses on this issue. Explains the rules of poetic thinking from a linguistic point of view. The author also admits that although the forms of poetry are different, there are specific aspects of speech and expression. Farobiy devides human opinions for 5 types. 1. Argument, (strange-confusing, misleading, misleading). 2. Jadaliy (dialectical). 3. Sufastoiy (Sophisticated). 4. Rhetorical. 5. Poetic. Some of his remarks are close to Wilhelm Gegel’s philosophy of dialectics. We have chosen to dwell on its rhetorical and poetic views in terms of the purpose of our subject. Human perception is within the realm of naturalness and art. Poetry is a product of artistic perception. He wears an artistic dress to the words, increasing his sensitivity with the harmony of experience in his performance. "As for poetic words, "writes Farobi, "they are used to describe more clearly, and to reinforce what is being said in a conversation, or a situation, an advantage or a disadvantage." [2. 19]

Pay attention to the words description and reinforcement here. Reinforcement means exaggeration through art, more precisely through poetic arts. So, it is an art to express an ideological goal by depicting things and events related to good and evil in a somewhat exaggerated way. Art is an expression of truth built on naturalness in the veil of art. Although Farobi's Book of Poetry was influenced by Aristotle's Poetics, it can be considered an independent collection of ideas. While reflecting on the words in the bytes and the meanings they express, the thinker acknowledges that there is an imitative relationship in the context of similarities. Here he quotes the term "mimesis." Mimesis means imitation.

From this it can be concluded that in the essence of art the meaning of analogy is hidden. The writer thus affirms that the basic law of poetry, the principle of which is Mimesis, (the art of imitating life). In the process of perception, a person imagines the words in a poem by reading or hearing them, and it is as if he sees its reflection in life. For this reason, man cannot comprehend the truth of life, nor can he comprehend its artistic truth. "When we feel the words of poetry,"says Muhammad Farobi in "Properties of Science," if the similarity of the imagination formed in our souls is described, we feel as if we see the same thing (in the poem) itself. " [2. 16] Even in the art of acting, the skill of feeling through the imagination and being able to interpret it in action, verbally, is required.

Farobi uses a combination of "conversational spectacles." This, of course, refers to Greek tragedies. People often act on their own imagination, not on the basis of their own opinions and scientific knowledge, and draw conclusions. Usually in conversational performances, situations similar to an event or action involuntarily move the viewer into a state of mind. In the speech and actions of the characters, the audience sees themselves in the background of their relationship with others. Recognizing that the understanding of the world, life events, and phenomena that people feel and feel is based on imagination, Farobi says that "this idea does not belong to science, but to fine art and poetry. "The above remarks of the author are in line with Aristotle's views on poetry in Poetics: “There are two reasons for the origin of poetic art, both of which are natural. First, imitation is a characteristic of man from childhood. Man is also distinguished from other beings by his ability to imitate. In fact, he gets his first knowledge from imitation, and the results of this process bring joy to all. ” [3. 27]

According to Aristotle, the first reason for the origin of the art of poetry is the tendency of people from childhood to imitate, to simulate, to revive, to depict events, works, movements. To further clarify this point, it should be said that such an ability is weak in one, strong in another (artists, poets), and it is called innate talent. The second reason, according to Aristotle, is the imagination of the people. He is also a talent, and he is different and shaped differently in different people.

Inspired by Aristotle, Farobi also points to a third reason and source for the origin of poetry: In this case, the parts of the poem are connected to the melody, so they look like some letters and sounds. [2. 18] Here Farobi says that the fragments of the poem, the rhyme, are like sounds, like melody, like music. The fact that most of the classical ghazals correspond to the melodies of "Shashmaqom" proves the truth of Farobi's opinion. In the poem, Farobi rightly points out that if the bytes, weight, rhythm are not the same, similar in quantity, the tone of the poem is distorted and its influence is reduced.

Muhammad Farobi says that mimesis - imitation exists not only in poetry but also in rhetoric - in the art of rhetoric, while in poetry and drama imitation is necessary, while in rhetoric imitation is an auxiliary tool, not the main, as an actor enters the image and enlivens speech. In ancient Greece, most poets were skilled orators, and some orators were poets. Muhammad Faroobi's words are in line with Aristotle's Poetics: There are two types of imitation that occur with a verb:

1.Man creates a shape resembling something with his own hands, so that man develops (depicts) the image of someone and tries to make him look like a certain person or something else (tree, mountain, forest, lion, horse, etc.). [4. 22]

Farobi here refers to the art of painting and sculpture. Indeed, an artist can depict life scenes, different situations, images, characters of people in a color image. The work of the sculptor (their depiction area is more limited because the stone is harder to carve) is more limited. However, the status of the statue is higher in state policy, because only those who have shown heroism for the homeland, who have done great things, will be erected bronze, copper or marble statues, and these works will not disappear even after thousands of years.

2. "Or, a person acts in the same way as another person." This idea of Farobi is expressed in the art of comedy and tragedy, in part in the art of dance. Indeed, the actor enters the psyche of the protagonist

on stage, rejoices, grieves, loves, hates as the person portrayed, imitating the good or bad character of the protagonist, and at the same time organically expresses the situation. If an actor can look like a real-life hero on stage as convincingly as he does, that is, he can imitate clearly, he is so talented. To be more precise, the imitation of artists, poets, writers and actors by their heroes is another phenomenon, the imitation of the style of another poet or artist by another poet or artist is another phenomenon. The first imitation means artistry, the second - negative meaning, lack of talent.

Regarding the fact that speakers can also express social, philosophical, and scientific opinions in poetic speech, Farobi says: “Most poets (and speakers) are innately capable of expressing their (scientific) opinions to the extent that they satisfy others. They expressed those satisfactory considerations in a poetic way. As a result, they accepted it as a work of poetry because it was written by a poet in the eyes of many. In fact, it was a rhetorical reflection, and those poets turned away from the poetic path and turned to the rhetorical path. ”

The study of poetry in literature is divided into two types, namely, spiritual and verbal arts:

Spiritual arts serve to vividly express the ideas in the work, to embody lyrical and epic symbols more vividly, to more effectively reflect their spiritual imagery, emotions (they are rhetoric, allegory, parable, analysis, diagnosis, laff and publication; Verbal arts help to ensure the linguistic attractiveness and melody of the work (they are tajnis, iyhom, tanosub, ishtiqaq, tazod, ta'dil, raddul ajuz, tardu aks, jam', distribution, tafriq, jam' and distribution, jam' and tafriq, takrir, mukarrar, tazmini muzdavaj, qitobot, talmi', balance, history, raddi matla', essay). It is obvious that both arts have their own characteristics and scope of possibilities. In both the spiritual arts and the verbal arts, there are important factors that we learn in performance. When working on classical poetic works, more diagnostic (spiritual art), question and answer, intoq (M.S), iyhom (verbal art), fable (example) art forms are both interesting and more readable, suitable for the performance of artistic word art.

Diagnosis is the art of transferring human nature to animals, birds, and abstract objects:

Qoshingga sajda qildim misli mehrob,
Qaro zulfingga qo‘ydim jomil chirmob.

(Xuvaydo)

Yoki
O‘ldururg‘a bir-biri birla qoshing kengash etib,
Bosh qo‘shib anga ikki nargis degan xunnor ham.

(Furqat)

It is an art based on the parable of an event in the first stanza of a verse, expressing the meaning of the parable. Alisher Navoi's ghazal, which begins with "Orazin yapgoch ..." is a figurative expression in the first verse with the phenomenon of the sun disappearing after the appearance of the stars; based on the similarity between the incident of tears streaming from the lover’s eyes when the lover hides his face.

It is not difficult to understand Farobi’s literary aesthetic views through these considerations. He writes: "In proof - in scientific evidence, in controversy - in general opinion (tubika-topika), in rhetoric - in persuasion - as important as persuasion, in poetry imagination and imagination (image, scene) are necessary." [4. 23-24] Farobi says that the imagination and imaginary image, landscape, image, character description in the work of the writer may or may not coincide with the reader, the reader's life views, knowledge, moral and spiritual level. For example, in the imagination of a man of pure conscience, a believer, oppression or theft is a grave sin, a humiliation. If he is unscrupulous, unclean, cruel, a thief, he imagines his sins, cruelty, theft as businesslike, cunning, clever.

It follows that in order to correct people's behavior, to turn them away from evil and oppression, it is necessary to correct the mistakes in their imagination. That is, to love them from a young age (before they were evil and cruel), beauty, justice, tolerance, love of country, humility, diligence, courage,

kindness, nobility as great blessings, virtues, even if they are in others - in friends, parents it is necessary to teach them to appreciate, even in their mothers and compatriots. In order to read and study fiction, each reader must feel it more deeply.

The upbringing of a perfect person who is interested in and loves the art of comprehensive speech, through words, his deep observation, attitude to being and understanding and interpretation of being, social life and its spiritual-enlightenment systems, is more relevant today than ever. Literature and art should not only give people peace and aesthetic pleasure, but also help them to acquire enlightenment and spirituality.

References

1. Abu Nasr Faroobi. Brochures. Fan, T. 1975y.
2. Abu Nasr Faroobi. The art of poetry. T. 1979y.
3. Abu Nasr Faroobi. A city of noble people. –T .: People's Heritage Publishing House named after A.Qodiriy. 1993y.
4. The Morality of Aristotle's Poetics Kabir - New Age Generation. T. 2012y.
5. Abu Nasr Faroobi. A city of noble people. 2nd edition. –T .: State Scientific Publishing House, 2012.
6. Ahmad Yassavi. Hikmatlar.T. 1991y.
7. Pirimqul Qodirov. Language and El.T. "Spirituality". 2010y.
8. Cicero.Two pamphlets on the art of oratory.T. New Century Generation ”2007.
9. Kaykovus. Nightmare. Creative publishing house "Teacher". T. 2006y.
10. X.F. Vohidov. Harmony of philosophy and art. Yearbook - 2006y.

Rezyume: *Ushbu maqolada Sharq mutafakkiri Muhammad Forobiy hamda uning san'at yo'lidagi qilgan buyuk ishlari haqida so'z boradi. Farobiy o'zining ilmi orqali dunyo ilmida keskin o'zgarish qildi. Uning falsafa, musiqa, poetika, ritorika, siyosatshunoslik kabi qator fanlarning rivojiga xissa qo'shganligi haqida maqolada keng yoritilgan. Farobiy san'atni, poetikani chuqur idrok qilganligi bilan ajralib turadi va uning san'atga bo'lgan pozitsiyasi, xususan, poeziya va teatr borasidagi adabiy-estetik qarashlari ushbu maqolada tadqiq qilinadi. Yana adibning nazmu-nasr shakllari turli bo'lgani bilan so'z aytishning, ifodalashning ham o'ziga xos jihatlari borligini e'tirof etganligi maqolada keng yoritilgan. Muhammad Farobiy ilmi bilan birgalikda boshqa buyuk olimlarning sahnada nutq qanday ta'sirga ega bo'lishligi haqida va mutaxassislarning nutq insonning ongini go'zallashtirishi va tafakkurni keng qilishi haqida yoritib berilgan.*

Резюме: *В данной статье представлены сведения о восточном мыслителе Мухаммаде Фараби. Автор акцентирует своё внимание на его трудах в области искусства с позиций современности: Фараби коренным образом изменил мировую науку, внес большой вклад в развитие ряда дисциплин, включая философию, музыку, поэзию, риторику и политологию. Дан взгляд Фараби на проблемы понимания роли искусства в поэтике, а также - его позиция в отношении искусства, в частности его литературно-эстетические взгляды на поэзию и театр. Кроме того, автор признает, что, несмотря на разнообразие поэтических форм, существуют специфические аспекты речи и выражения. Наряду с наукой Мухаммеда Фараби другие великие ученые пролили свет на то, как речь может влиять на сцену, и эксперты говорят, что речь украшает человеческий разум и расширяет кругозор.*

Kalit so'zlar: *poetika, badiiylik, notiqlik, taqlid, musiqa, teatr, tomoshabin, vazn, ritm, ohangdorlik.*

Ключевые слова: *поэтика, художественность, ораторское искусство, пародия, музыкальный театр, зритель, ритм, звучание.*

DEFINITION OF BEHAVIOR, LOGIC AND CONSURANCE IN THE PROCESS OF WORK

Usnatov R.J.
The Uzbekistan state institute of arts and culture

Summary: *In order to educate and bring up the youth a teacher must solve a lot of problems. The teacher must develop the student's creativity, sense of humor, sensitivity, artistic techniques, he or she must enrich the student's world view, understanding.*

How can we solve the problem of connection between the meaning and order of sense? In which situations actor must only play the role and not over do it and feel the meaning of sense. In the present article some thoughts about actor's ability of feeling the meaning and order are given.

Keywords: *actor, logic, revenge, reality, consistency, art, behavior, imitation, music, theater, audience, condition, rhythm, melody.*

The art of acting, by its very nature - the art of performance and its ultimate goal - is to instill a different image in the natural state as a result of the actor's perfect harmony with the role.

The actor, like all creators, with his work tries to convey to society and his contemporaries any problem or shortcoming of life, the pain that afflicts him.

The actor is the creator of the stage. He embraces all the beings around him with deep, joy, and feels the life of the emblems he interprets as if it were his own, taking on their pain and happiness and living their lives.

The high skill of the actor, his rich, impressive ability, the adjustment of his nerves, his deep feelings - these are his ability to fully accept life. [1.G.X.Muxamedova. "Singer's acting skills" 2009 7-b].

As we work with the students on the selected work, we will definitely come across ideas that we want to talk about. Not only do we need students to approach the tragic parts of the role with tension and rape, but even as many actors do, they need to feel and sincerely believe in the small and big truths of physical actions that come gradually, consistently, logically one after the other, not all at once. we teach Often we act on the logic and sequence of physical actions that are noticeable, visible, and easy to understand.

How to solve a complex problem like "logic and consistency of emotion".

We are actors, not scientists. Our field is activity, behavior. We use practice, human experience, life memories, logic and consistency, we need to achieve the authenticity and reliability of what we do on stage.

The actor asked himself, "What would I do if I were tragically helpless in real life?" is to ask the question. Just answer this question humanely, that's all, you don't need anything else.

To the question, "What would I do if I fell into a state of" tragic despair, "that is, a complex state of mind?" You answer with a series of very logical, consistent actions.

Since we are unable to solve a complex mental problem on our own, such as the logic and consistency of emotion, we leave it to its own devices and move the investigation to a separate, understandable area, the logic of behavior.

As we create a logical and coherent outlook for physical behavior, if we look closely, a logical and coherent path of our other emotions also emerges within us as we approach this path. This is understandable: after all, our inner feelings arise for us without feeling the actions, which are also closely connected with the life of these actions.

The logic and consistency of proven physical and mental behaviors build confidence in

authenticity and emotion.

We need to re-examine our daily life experiences, our emotions.

In the realm of emotion, we again encounter the same present-day-logic and consistency.

Now let's talk about feeling logical and consistent in the process of creative experience.

This issue needs to be addressed anyway. Indeed, our art, based on real experience, cannot bypass the sense of logic and coherence. After all, without them, there is no truth, no trust, no "I exist", no involuntary nature of all our members based on our art, creativity, experience.

Let us consider this issue not from the point of view of science, but from the point of view of our own real personal life, which is very familiar to us, rich in experience, practical knowledge, emotion, skill, habits, and so on.

- Ask yourself, "What would I do as a human being if I fell into the given conditions of the role I am interpreting?"

Answer this question simply, not formally, but honestly and sincerely. Let them participate and answer this question not only with the mind, but mainly with the will.

This is still rare, I would like to get the answer not through words but through physical actions.

In order to understand and determine the logic and consistency of the inner, mental state of a person's spiritual life, we turn to specific, intelligible, specific physical behaviors of our body. We understand, identify, and record their logic and consistency through physical actions, not mental terms.

If they are sincere, effective, and purposeful, and confirmed by sincere human experiences from within, then a close connection between external and internal life will emerge. This is what should be used in the realization of creative goals.

Rather than whimsical, uncontrollable feelings, we turn to physical behaviors that are closer to us, seek them out from our own inner desires, and receive the necessary information from life experiences that are very familiar to me as a human being. At times like these, I indulge in my own memories and nature.

If you want to interpret this or that situation, this or that feeling, first of all, ask, "What would I do if I found myself in a similar situation?" Take notes, turn them into behaviors, and copy them into your role in exactly the same way. If the pesa is strong and depicts real life, then it may be partially consistent, even if not all of our actions are.

I highly recommend that you write down such questions and answers about your new role. This is why it is useful:

During a written question or answer, you will have to look for a word that hits a specific target. And you can't do that without a deep understanding of the question.

For the actor, such recordings are an invaluable creative product.

Imagine that over the course of your acting career, such recordings that you may encounter, that correspond to all the inner states and moods in the play and the roles, gradually accumulate.

Indeed, if we had at our disposal a list of all the moments created from a person's passions, if we logically and consistently experienced each component of the passion we create on that list, like some actors, without rushing to cover it all at once, slowly, piecemeal we would have explored.

In these recordings, you will have added a large part of your mental product to your emotional memory. This is a great thing: it can be very useful in studying the logic of emotion.

Here, for example, is love ... When does this human passion take shape and what actions does it inspire?

If you do each of these actions thoughtfully, with evidence, with deep thought, sincerity and completeness, you will approach the behavior of the person you love first, and then his or her inner state.

In a comprehensive play, all or the most important aspects of such cases are manifested to one degree or another. The actor starts looking for them and finds them in his role. With such demands, we perform a series of tasks and actions on stage, resulting in a situation that arises from their combination, which we call love. It is created piece by piece, not “at all”. The actor does not exaggerate in such cases, but acts, does not act like an actor, but acts humanely, he does not bacchanalize the essence of the feeling, but feels it. "Stage behavior should be meaningful, logical and consistent," said KS Stanislavsky. Therefore, the main task of the educator is to direct the student to the right goal. [2.K.S.Stanislavsky Selected works. Volume 2, M., 1954 y. 57-b.].

References:

1. Muxamedova G.X. Singer's acting skills. -Tashkent: Navruz, 2009. -218 p.
2. Stanislavskiy K.S. Selected works. 2 vols. -Moscow: Art, 1953. -370 p.
3. Zaxava B. Mastership of actor and director. -Moscow: Prosvesheniye, 1978. -287 p.
4. Stanislavskiy K.S. Nemirovich-Danchenko Vl. About the art of the actor-singer. -Moscow: Art, 1973. -324 p.

Rezyume: *Sahna ijodkorlarini tarbiyalab, voyaga yetkazishda pedagogning ko'plab qiyinchiliklarni yengib o'tishiga to'g'ri keladi. Bu har bir talabaning o'ziga xos ijodiy qirralarini ochish, faolligini oshirish, hazil-mutoyiba tuyg'ularini, ta'sirchanlik qobiliyatini uyg'otish va rivojlantirish, ijodiy taassurotini ochish, voqelikni chuqur va badiiy qabul qilish, dunyoqarashlarini boyitish, bilimlarini kengaytirish va shu bilan birga aktyorlik mahorati texnikasining asoslarini singdirishdir.*

Tuyg'uning mantiq va izchilligi dek murakkab masalani qanday hal qilish mumkun. Aktyor qanday hollarda oshirib o'ynamaydi, balki xatti-harakat qiladi, aktyorlarcha qiliq qilmaydi, balki insonlarcha kechinadi, u tuyg'uning mohiyatini bachkanalashtirmaydi, balki uni his qiladi. Aktyor ijrosining ijodiy kechinma jarayonida mantiq va izchillikni his qilish haqida tushunchalar to'g'risida so'z yuritiladi.

Резюме: *В процессе воспитания молодёжи педагог сталкивается с различн ыми трудностями. Для этого ему приходится решать проблемы касающиеся раскрытию своеобразных творческих граней, повышения активности, воспитания и развития способности чувствовать, обогащения мировоззрения, расширить технику актёрского мастерство.*

Приходится решать сложные вопросы, связанные с логичностью и продолжительностью чувств. Актёр роль не играет, он её чувствует, мысленно входит в этот мир, общается с этим миром. Ведётся разговор о логике процесса исполнения роли и о чувстве системы творческого переживания.

Kalit so'zlar: *aktyor, mantiq, kekchinma, voqelik, izchillik, badiiy, xatti-xarakat, taqlid, musiqa, teatr, tomoshabin, shart-sharoit, ritm, ohangdorlik.*

Ключевые слова: *актер, логика, месть, реальность, последовательность, искусство, поведение, подражание, музыка, театр, публика, состояние, ритм, мелодия.*

THE ROLE OF LAWYER IN RAISING THE LEGAL CULTURE OF THE SOCIETY AND PROTECTING THE RIGHTS OF CITIZENS

Janibekova A.
Law college of Republic of Karakalpakistan

Summary: *The article describes legal status of lawyer and his role in protecting the rights and interests of citizens and legal entities.*

Keywords: *Constitution, lawyer, prosecutor, judge, investigator, consulting, justice.*

The role of advocacy in protecting the legitimate interests of citizens is very important.Therefore, in order to further develop the legal system, the President of the Republic of Uzbekistan Sh.M.Mirziyoev paid special attention adopting a number of normative documents aimed at enhancing the status of this institution in society and created a broad legal framework[1.].

Moreover, it is no exaggeration to remark that the amendments and additions to the Code of Administrative Responsibility of the Republic of Uzbekistan ten years ago are commendable. In particular, supplementing the article 31th in which gaining attorney status is reflected, registering law firms and bureaus in the text of Article 4,and protection of judicial bodies in accordance with the regulations established by the Cabinet of Ministers of the Republic of Uzbekistan for the adoption of "legal consultation" are all noteworthy. The fact that the state is not indifferent to the activities of the Chamber of Advocates, and if its necessary, supports them, is a great gratitude for lawyers[2,P.8].

One of the main areas of advocacy is giving advice and explanations on legal issues to citizens and legal entities, issuing references and preparation of applications, complaints and other documents of a legal nature, the task of which is reflected in Article 5 of the Law on Advocacy.

One of the peculiarities of the legal profession that is not engaged in advocacy, including inquiry officers, investigators, prosecutors, judges, legal scholars, teachers, justice officers, etc., directly to individuals and legal entities are not imposed to extremely diverse tasks, such as advising, filing a complaint, or compiling other documents. This means that the lawyer, while continuing his professional activity, is an active participant in the implementation of the policy of the state, aimed primarily at raising the legal awareness and legal culture of citizens. Consequently, the day-to-day work of advocacy requires the promotion of legal knowledge among members of the public, and the inculcation of the essence of the law in the minds of officials.

Persons in need of the assistance of a lawyer shall be aware of the content of their constitutional rights and duties in the process of communicating, create certain legal insights into what laws and methods can be used to protect violated rights and interests; get acquainted with the essence of the laws governing this or that legal relationship. It should be noted that citizens who apply to a lawyer, after communicating with him, gain legal knowledge, albeit a small one, in the field of law in which they are interested. Therefore, the activity of a lawyer in this direction saves some members of our society from the mood of legal nihilism (indifference), serves to increase their political and legal activity [3, P.45-47]. A lawyer is, firstly, a member of this society, and therefore, as an ordinary citizen, he or she is an important advocate in raising the legal awareness of citizens, explaining the essence of laws, presidential decrees and government decisions. Free participation of lawyers in neighborhood and housing administrations, public legal counseling, their involvement in public affairs, relevant committees, commissions, working groups and other events organized by local self-government bodies, as well as raising the legal awareness of members of society through the media show that the lawyer also has a worthy role in raising the legal culture.

The right to protection is an inalienable natural right of every individual. Its naturalness is that man can never be deprived of the right to life, conscience and honor. The right to protection as a social right is reflected in a person's common relationship with others.

It occurs only when the interests of different individuals collide, at the risk of violating the interests of the individual. In the absence of such a threat or overt threat, the right to protection also does not apply. Benefit, whether legal or illegal, is the only factor for using the right to protection.

Protection of interests is implemented in different ways. In jurisprudence, as a rule, disputes, conflicts, excesses are settled on the basis of the law and through the administration of justice. In most cases, the interests of society and the state are protected, and a person who violates the law is punished by a court. In order to protect human interests in a state governed by the rule of law, there are impartial courts that are independent of the interests of the parties - the constitutional court, courts of general and special jurisdiction. Of course, the right to protection is not exercised only through the courts. It is advisable to provide self-informed protection before the trial.

The state, the public and the citizen - each of them must coordinate their interests with the interests of others, as far as possible not to seek justice. In doing so, they must rely not only on judicial and legal laws, but first and foremost on the force of moral norms. Therefore, the moral aspects of the exercise of the right of protection are of particular importance. Indeed, man must protect his interests first and foremost through moral norms and relying on them. The moral aspects of exercising the right to protection are multifaceted. Anger accumulated as a result of unjust violation of interests, humiliation of honor and pride, creates in a person feelings of resistance, revenge, the desire to retaliate. Protection must be consciously and spiritually acceptable. Therefore, the task of the defender is, first of all, to persuade the protected person to resort to immoral (and therefore unjust) methods and techniques. Action based on the right of defense depends on the mind and will of the right holder. The first duty of the defender is to explain to the protected person the whole essence of the defense, to arouse his activity in choosing the path of protection and to help him. Another important duty of the defense counsel is to analyze the suspect or accusation of the case, to determine the availability and degree of validity of the accusatory evidence, and to discuss them with the client.

Only in this way should it be determined whether the accusation is so fair and well-founded, what is suspected and what is uncertain in general, and what petition should be filed to gather and examine the evidence. From the point of view of the ethical aspects of the defense, of course, it is necessary to discuss all issues with the protected person, to determine the opinion on the actual situation and his position in the future.

The unanimity in the explanation of the issue between the defense and the defendant is extremely important and expedient. Unfortunately, this is not always the case. Even the most diligent efforts of the defender sometimes do not provide a compromise. The subject matter, scope and methods of defense are largely based on the opinion of the defendant.

The defense attorney, on the other hand, has the right to express his opinion and must do his best to implement the defendant's plan. This is morally and legally correct.

It is the defense counsel's sole responsibility to assist the client in identifying circumstances that mitigate his or her guilt and release him or her from liability. Therefore, protector has no right to refuse this function. The suspect, accused and defendant have the right to give explanations on the case, to testify at any stage of the inquiry, preliminary investigation and trial, to change their previous testimony. The explanation and testimony of a person suspected or accused of committing a crime is not only a means of proof but also a means of defense. It is therefore not possible to prohibit or restrict the existing right. This rule applies to cases where a witness, in defense of an indictment, rejects the testimony of the victim, exposing or establishing their falsity.

The nature, size, and form of the explanation and narration may vary. The investigator and the judge have the ability to regulate their direction and evaluate them. Is a lawyer legally and morally allowed to persuade a client to admit his guilt or change his chosen position? This question is very topical and delicate, and I think it is possible to unconditionally allow it, to try to persuade in secret, not in the presence of the inquiry officer, investigator, prosecutor and other persons in court. It is natural that the confession or denial of guilt, as well as the various circumstances of the crime, should be discussed in the conversations of the person under defense. The content of such a conversation is the secret of advocacy. The fact that a lawyer should be prosecuted not only morally but also criminally for opening it should be reflected in the Criminal Code.

From an ethical point of view, the question of whether the defense is entitled to use the evidence knowing that it is not valid is also very sensitive. The defender is somewhat independent in the choice of means and methods of protection, but it still depends on the position of the protected person. If the defender's and the defendant's views on particularly important issues contradict each other, the defense counsel has the right to withdraw from the proceedings due to the unfairness of the defendant. The other way is that the defender goes against his conscience. The defense counsel must state such cases separately, take steps to explain to the protected person his rights and obligations, and how harmful, dangerous and immoral the position he has chosen is.

The defendant usually chooses his position at the initial stage of the investigation. Therefore, the ethical and legal question arises: does a lawyer have the right to influence and advise the defendant to choose a position that is correct and meets the requirements of the case in the opinion of the lawyer on the main issue of guilt?

If the defendant pleads guilty under pressure from others, the defense counsel is obligated to reassure him not to cover the real offender.

If the lawyer concludes that the defendant's denial of his guilt will aggravate his situation, he is limited to explaining that the position he has chosen is wrong.

The lawyer should explain to the defendant that the content of the evidence in the case is more appropriate to repent of his actions than to plead not guilty. However, it cannot force the defendant to plead guilty. The question of admitting or denying guilt is the product of a deep moral, spiritual process that the defendant has felt.

Reference list:

1. Mirziyoyev Sh.M. Our parliament must become a real school of democracy, the initator and main executor of reforms. // Speech by President Shavkat Mirziyoev at a video conference with representatives of the Oliy Majilis,political parties and the EcologicalMovement of Uzbekistan||Electronic source//Access procedure URL htpp//parliament.gov.uz.events /22842 application time :22.0.2017
2. Mingboev U.Q protection increased. // jurist. -2009. -№1. –P. 8.
3. Lawyer and advocacy: tutorial. –Fergana: Fergana State University, 1999y. –P.45-47.

Rezyume: *Mazkur maqolada advokatning huquqiy maqomi va fuqarolarning va yuridik shaxslarning huquqlari va manfaatlarini himoya qilishda advokatning roli tasvirlangan.*

Резюме: *В статье описывается правовой статус адвоката и роль адвоката при защите прав и интересов граждан и юридических лиц.*

Kalit so'zlar: *Konstitutsiya, advokat, prokuror, sudya, tergovchi, maslahat, yustitsiya.*

Ключевые слова: *Конституция, адвокат, прокурор, судья, следователь, консультация, юстиция.*

EXAMINATION OF REGULATORY LEGAL DOCUMENTS AND ITS ROLE AND IMPORTANCE IN IMPROVING THE LEGAL REGULATION

Prekeeva T.M.
Law college of the Republic of Karakalpakstan

Summary: *This article analyzes the concept and essence of normative documents. In addition, the development strategy and the expert of normative-legal acts in the current period and its role and importance in improving legal regulation have been studied. The researcher analyzed the relevance of the science of the theory of state and law through comparative-legal analysis of the legal framework for the expressiveness of the draft laws in this field, as well as improving the legislation and understanding the legal nature of legal expertise.*

Keywords: *law, document, legal expertise, state, law.*

In the current context of globalization, improving the legislative process has become one of the most pressing issues.In particular, in implementing the 100 goals set out in the New Uzbekistan Development Strategy, the state relies on excellent legislative activity that glorifies human dignity. The perfect laws that have been carefully thought out and discussed by the people today help to solve the most difficult problems of our people, ie the rights and freedoms of citizens by regulating such important social relations as the “Yoshlar daftari”, “Ayollar daftari”, “Temir daftari” serves to establish a people's state.

Of course, the role of legal expertise in the performance of such tasks is invaluable. Secondly, as the President of the Republic of Uzbekistan Sh.M.Mirziyoev said in his speech at the solemn ceremony dedicated to the 24th anniversary of the adoption of the Constitution of the Republic of Uzbekistan, at the same time, it serves to ensure the rights and interests of citizens.At the same time, it is important to note that the laws are complete, vital and have direct enforcement mechanisms.

It is noteworthy that this issue has been studied by our leading legal scholars since the early days of our independence. In particular, professors of law and lawmaking A.A Azizkhodjaev, Z.M Islamov, A.H Saidov, M.A Akhmedshaeva, H.T Odilkoriev, I.T Tulteev, F.H Otakhanov reflected in his works, articles and monographs. In our master's thesis, we also analyzed them and aimed to study them in connection with the new legislation[1, 1-2-b]

It is known that the examination of normative legal acts includes, first of all, the Constitution of the Republic of Uzbekistan (1992), the law "On the Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan" (2002) and “On the Senate of the Oliy Majlis of the Republic of Uzbekistan” (2002), “On Local Government” (1993), “Preparation of Draft Laws and Submission to the Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan” (2006),“ On the Cabinet of Ministers of the Republic of Uzbekistan” (2019), “On normative legal acts” (2021) Decree of the President of the Republic of Uzbekistan “Norma On approval of the concept of improving creative activity” (2018) and other normative legal acts plays an important role in the implementation of the assigned tasks and the improvement of legal regulation.Therefore, first of all, we decided to analyze the normative-legal document itself.

Accordingly, a normative legal act is an official document adopted in accordance with the Law on Normative Legal Acts, aimed at establishing, amending or repealing legal norms as mandatory state instructions.

The next question is to analyze the concept of the term legal expertise based on the purpose of our research. For example, "Expertise" is a French word meaning "Experienced". But in social life it is

understood in a broader sense - the analysis, the inspection on a particular issue. Also, the legal examination of normative legal acts - compliance of the project with the Constitution and laws of the Republic of Uzbekistan, other normative legal acts of higher legal force, goals and objectives of reforms in the country, the rules of legislation, as well as applicable norms. verification of the validity and appropriateness of its application. In particular, the draft normative legal act may be subject to economic, financial, scientific, linguistic, ecological expertise, as well as other types of expertise at the discretion of the developer or the body authorized to adopt the normative legal act.

Second, organizations and (or) individuals who are not directly involved in the preparation of the draft regulatory document are involved as experts. Scientists and experts, including scientists and experts from other countries and international organizations, may be involved in the examination. The experts are independent in evaluating the draft normative legal act and do not depend on the point of view of the body that commissioned the examination.

Third, the conclusions of the experts on the draft normative legal act are of a recommendatory nature and should be considered by the developer or the body authorized to adopt the normative legal act. It is noted that a reference will be prepared with explanations on the omitted items of the conclusion.

Article 26 of the law contains the legal basis for the legal examination of the draft normative legal act. According to him, in the process of legal examination, the draft normative legal act complies with the Constitution and laws of the Republic of Uzbekistan, other normative legal acts of higher legal force, the requirements of legal and technical registration, including the normative legal act. The validity and appropriateness of the application of the applicable norms in the project will be checked.

Legal examination of draft regulations is carried out by the legal service of the developer or the body authorized to adopt regulations, as well as the Ministry of Justice of the Republic of Uzbekistan, its territorial divisions and other organizations in accordance with the law.

Rules and norms of the Ministry of Justice of the Republic of Uzbekistan, which create conditions for the legal examination of draft regulations, including corruption, other offenses, and impose excessive administrative and other restrictions on individuals and legal entities conducts a legal examination to determine whether it is possible, as well as the possibility of codification of the legislation, reflecting the necessary norms in a single normative legal document and repealing other norms regulating the relevant relations.

The preparation of draft resolutions of the Council of People's Deputies is entrusted to the standing committees of the Council of People's Deputies based on their areas of activity.

After the draft decision is prepared, a legal examination by a legal officer is mandatory.

Once the project has been reviewed by a legal officer, it will be sent to the relevant authorities and organizations for final approval.

After reviewing the draft decision, the employee of the legal service of the municipality will prepare a certificate with the signing of the decision, if the draft decision is really of legal significance, fully meets the requirements of the legislation and legislative techniques. The certificate is then submitted to the territorial body of justice together with the draft decision for legal examination.

In conclusion, legal expertise plays an important role in the quality and improvement of regulatory documents.

References:

1. O‘zbekiston Respublikasi Prezidentining “2022 — 2026 yillarga mo‘ljallangan yangi O‘zbekistonning taraqqiyot strategiyasi to‘g‘risida” gi Farmoni, 28.01.2022 yildagi PF-60-son. [Decree of the President of the Republic of Uzbekistan "On the development strategy of the new Uzbekistan for 2022-2026", No. PF-60 dated 28.01.2022]. Available at: https://lex.uz/ru/docs/5841063

2. O‘zbekiston Respublikasi Prezidentining “2022 — 2026 yillarga mo‘ljallangan yangi O‘zbekistonning taraqqiyot strategiyasi to‘g‘risida” gi Farmoni, 28.01.2022 yildagi PF-60-son. [Decree of the President of the Republic of Uzbekistan "On the development strategy of the new Uzbekistan for 2022-2026", No. PF-60 dated 28.01.2022]. Available at: https://lex.uz/ru/docs/5841063

3. O‘zbekiston Respublikasi Prezidentining “Norma ijodkorligi faoliyatini takomillashtirish konsepsiyasini tasdiqlash to‘g‘risida” gi Farmoni, 08.08.2018 yildagi PF-5505-son. [Decree of the President of the Republic of Uzbekistan "On approval of the Concept of improving the normative activity", No. PF-5505 dated 08.08.2018]. Available at: https://lex.uz/ru/docs/3858817

4. O‘zbekiston Respublikasi Prezidenti Sh.Mirziyoevning O‘zbekiston Respublikasi Konstitutsiyasi qabul qilinganining 28 yillik bayramidagi nutqi.[Speech by the President of the Republic of Uzbekistan Sh. Mirziyoyev on the occasion of the 28th anniversary of the adoption of the Constitution of the Republic of Uzbekistan]. Available at: https://president.uz/uz/lists/view/3990

5. Yangi saylangan O‘zbekiston Respublikasi Prezidenti Shavkat Mirziyoevning lavozimga kirishish tantanali marosimiga bag‘ishlangan Oliy Majlis palatalari qo‘shma majlisidagi nutqi. Yangi O‘zbekiston taraqqiyot strategiyasi asosida demokratik islohotlar yo‘lini qat’iy davom ettiramiz.[Speech of the newly elected President of the Republic of Uzbekistan Shavkat Mirziyoyev at the joint session of the Oliy Majlis of the Republic of Uzbekistan dedicated to the inauguration ceremony. We will resolutely pursue the path of democratic reforms based on the new development strategy of Uzbekistan]. Available at: https://president.uz/uz/lists/view/4743

6. Abdullaev B. Dj. O‘zbekiston Respublikasida qonun hujjatlari huquqiy ekspertizasini takomillashtirish muammolari. Yurid. fan. nomz. ilmiy daraj. olish uchun yozil. diss. avtoref. – Toshkent: TDYuI, 2009. – B.25.

Rezyume: *Mazkur maqolada normativ-huquqiy hujjatlar tushunchasi, mazmun-mohiyati tahlil etilgan. Shuningdek, Taraqqiyot strategiyasi hamda hozirgi davrda normativ-huquqiy hujjatlar ekspertizasi va uning huquqiy tartibga solishni takomillashtirishdagi o‘rni va ahamiyati o‘rganilgan. Tadqiqotchi tomonidan ushbu sohadaqonun loyihalarini ekspretizadan o‘tkazishning huquqiy asoslarini qiyosiy-huquqiy tahlil etish hamda qonun hujjatlarini takomillashtirish va huquqiy ekspertizaning huquqiy tabiatini tushunish orqali davlat va huquq nazariyasi fanining dolzarbligi tahlil etilgan.*

Резюме: *В данной статье анализируется понятие и сущность нормативных документов. Кроме того, была изучена стратегия развития и эксперт нормативно-правовых актов в текущем периоде, а также ее роль и значение в совершенствовании правового регулирования. Исследователь проанализировал актуальность науки теории государства и права посредством сравнительно-правового анализа правовой базы для выразительности законопроектов в этой области, а также совершенствования законодательства и понимания правовой природы юридической экспертизы.*

Kalit so‘zlar: *qonun, hujjat, huquqiy ekspertiza, davlat, huquq.*

Ключевые слова: *закон, документ, правовая экспертиза, государство.*

THE EFFECTIVENESS OF THE USE OF PEDAGOGICAL TECHNOLOGIES FOR FOREIGN LANGUAGE STUDENTS IN TEACHING ENGLISH

Reymova Yu.E.
Law college of the Republic of Karakalpakstan

Summary: *The paper describes and provides with tools for the foreign language classroom its practical usage in language classroom. The authors come to the following conclusions: improving Internet and computer technology competence through mastering various Internet tools and applications can be traced.*

Keywords: *ICT tools; tools for language learning; blended learning; assessment; autonomous learning; language skills.*

From my own experience, I point out that when learning any foreign languages the following tips and mentioned below were really helpful for me. Firstly, everyone should have an eager and desire to grasp the new language. Mobile applications such as: Fluent U, Duo Lingo, Lingo tube have been truly essential to boost my speaking skill and now I am able to use the learnt language fluently in my oral speech. These applications include lots of quizzes, practical games, activities with sounds which create naturalist in the daily conversations. Besides, I grasped other languages, for instance: Russian, Deutsch and a bit French from the Duo Lingo. By the way, other modern tools like Skype, Zoom Cloud Meetings, Ted Talks enables every language learner best videoconferencing atmosphere to develop their fluency in the language. I also utilised the program Skype which was actually helpful to keep in touch with friends worldwide. Last but not least, being able to speak as well learn any foreign languages requires personalising every new vocabulary, methods and also using them in a proper way during our daily speech. 5 Most Powerful Tech-based Tools for the Foreign Language Classroom

1. Music and Videos

If you're not using this one already, you're really missing out! Remember the first rule of language learning: Input, input, input!

Students can't sustain their skills on textbook explanations alone — they need the constant reinforcement that authentic sources provide. An important part of the language learning process for your students will be simply listening to native speakers and picking up new phrases, grammar patterns and more. When they hear their language lessons brought to life, they will better understand how to employ their knowledge. Audio listening exercises can be good for testing what students can distinguish on their own. That being said, when it comes to music and videos, the video is the pedagogical powerhouse of the two. The combination of pictures, intonations and gestures gives students context clues that they can't get from classroom interactions alone. So, the next time you think about teaching the German subjunctive, consider something like Die Prinzen's "Ich wäre so gerne Millionär" for catchy input.

2. Educational Websites

After your students have been getting good input from authentic sources, have them try some guided practice activities provided by useful websites. Here are some of my favorites from the (digital) vaults:

Quizlet

Quizlet is a powerful and flexible online learning platform based on a tried-and-true memorization tool: the flash card. The "sets" of digital cards can be used to drill vocabulary, but also work well for grammar topics like gender or verb conjugation. Teachers can create and organize sets for their classes and monitor students' activity and progress on a given set. Students in turn have access to a huge archive of sets and can easily search for topics like "Konjunktiv I German" or browse by language. The activities

are fun, with plenty of opportunities for working in pairs. All in all, a great tool for homework and in-class playfulness. Try it on for size.

Foreign Language News Sources

What could be more authentic and relevant than current events? News in the target language affords the student a fascinating glimpse into the everyday life and attitudes of people who speak it. These are also topics that your students should be somewhat familiar with, giving them a clear context to build from. A photograph of houses lying in rubble with the headline "Erdbeben!" will be enough to communicate the idea "Earthquake!" If they're familiar with the story from NPR (…or Facebook), the word "China" will be enough of a hint. In addition, many national news sources, such as BBC and Deutsche Welle, offer slowly-spoken news and supplementary activities specifically for language learners.

FluentU FluentU teaches language using strictly authentic materials such as news, music videos and movie trailers. This has the major advantage of ensuring that all material is up-to-date and culturally relevant. In a word: meaningful. This is just the thing students have been missing during hours of regurgitating fabricated textbook conversations about what they like to buy in the supermarket.

It's designed to get students familiar with foreign vocabulary in a fun, friendly, totally approachable way. FluentU makes it possible to learn languages from music videos, commercials, news, inspiring talks, cartoons and more. With FluentU, your students will learn the real language—the same way that natives speak it. They'll hear their new vocabulary words in context, spoken naturally and casually. Every student is guaranteed to find videos they love to watch, and you're guaranteed to find videos that meet your teaching needs. FluentU has a very wide variety of videos, as you can see here:

FluentU App Browse Screen.

FluentU has interactive captions that let you tap on any word to see an image, definition, audio and useful examples. Now native language content is easily within the reach of any student, at any skill level, thanks to the interactive transcripts. Didn't catch something? Go back and listen again. Missed a word? Hover your mouse over the subtitles to instantly view definitions. You can learn all the vocabulary in any video with FluentU's "learn mode." Swipe left or right to see more examples for the word you're learning. And FluentU always keeps track of vocabulary that your students are learning. It uses that vocab to give students a 100% personalized experience by recommending videos and examples.

You can organize chosen videos into "courses," name your courses and assign them to your students for homework or in-class activities. They can each sign in using nothing but a secret password that we bestow to you, the teacher. Then you can track their progress individually and as a group. How many videos and activities have they progressed through? What percentage of the exercise questions are they getting right? You'll be able to see all this information and more.

Start using FluentU on the website with your computer or tablet or, better yet, download the FluentU app from the iTunes store or from the Google Play store to access material on your Android and iOS devices. The second rule of language learning? Output, output, output! Living languages are living for a reason. They need to be produced in spoken and written form. Here are some tools to get students to work together!

Google Documents For those of us teaching without Smartboards, Google Docs can be a useful tool when collaborating on a single assignment. You can load up your Google Drive with tons of in-class activities or start a new document on the fly. With the click of a mouse, any of your students can edit the document. It's perfect for doing writing activities in pairs!

4. Skype

Speaking of output: Give your students the opportunity to interact with a native speaker in their native environment!

Language and culture are intimately connected, making it essential that your students get a good feel for the target language in a cultural context and not just in the classroom. For more reluctant learners, the appeal of an exotic culture might be just the motivation they need to finally master the genders of common toiletries. This kind of cultural exposure can be difficult to get, especially if you're not a native speaker of the target language yourself. Never fear, modern technology is here!

The free online video chat program Skype provides a useful way to connect with people, groups and places across the globe. Explaining cultural differences and nuances is one thing, but transporting your students to an environment where they can witness them is another! Aside from its use as a transportation device, Skype is also a good way to get your students to interact with a speaker other than, say, you. Activity idea: Plan a Skype date with a native speaker in another country. As a homework assignment, have your students each come up with three questions they want to ask the visitor. After the Skype call, ask your students to recall the answers to their and others' questions.

5. Apps for Smartphones and Tablets

Highly motivated learners will always be on the lookout for supplementary materials that will help flesh out and diversify their language-learning experience. Here are three of my favorite (free!) apps that you can recommend for practice at home or on the run.

FluentU The FluentU website is an outstanding learning and teaching tool on its own. But for the hungry student it also serves as a great source of meaningful and interesting supplementary materials. Thankfully, the scores of videos, trailers, quizzes and other authentic language learning materials are available as an app to take with you on the go!

DuoLingo For those students who just can't get enough practice: there's an app for that. DuoLingo is a free language-learning platform for beginning learners who want to really nail the basics, but it also works well as an after-class review of important grammar and vocab topics.

Memrise The magic of Quizlet in an optimized portable app! Memrise includes "courses" (similar to "sets" in Quizlet) composed of hundreds of meticulously selected words and phrases in the target language. Perfect for getting in a little vocabulary expansion on the weekend!

References:

1. Basic theory of communication: Textbook / Ed. Prof. M.A.Vassilik, Moscow: Gardariki, 2003, 615
2. Speech influence in the field of mass communication, Moscow: Nauka, 1990, 136
3. Sanderson Using Newspapers in the Classroom, Cambridge: Cambridge University Press, 1999, 265

Rezyume: *Maqolada chet tili sinfi uchun til sinfida amaliy foydalanish vositalari tasvirlangan va taqdim etilgan. Mualliflar quyidagi xulosalarga kelishadi: turli xil Internet vositalari va dasturlarini o'zlashtirish orqali Internet va kompyuter texnologiyalari vakolatlarini takomillashtirish mumkin.*

Резюме: *В статье описываются и приводятся инструменты для занятий иностранным языком, их практическое использование на уроках иностранного языка. Авторы приходят к следующим выводам: можно проследить повышение компетенции в области Интернета и компьютерных технологий за счет освоения различных интернет-инструментов и приложений.*

Kalit so'zlar: *AKT vositalari; til o'rganish vositalari; aralash o'rganish; baholash; avtonom o'rganish; til ko'nikmalari.*

Ключевые слова: *средства ИКТ; инструменты для изучения языка; смешанное обучение; оценка; автономное обучение; языковые навыки.*

TERMS OF BEVERAGES IN KARAKALPAK LANGUAGE

Esbergenova R.B.
Karakalpak State University named after Berdakh

Summary: *In this article we have studied the theoretical meaning of the term of beverages in the field of Karakalpak culinary and how to prepare them in practice.*

Key words: *Beverages, fruits, corns, milk, thirst-quenching beverages, alcoholic beverages, tea, champagne, compote, yoghurt, written monuments of ancient Turkic peoples, camel milk drink and others.*

In addition to dense dishes, liquid food and liquid drinks are widely consumed by Karakalpak people. Beverages are made from fruit products, as well as dairy products. Accordingly, we have divided the beverages into two types:

1. Terms of fruit or grain crops (edible cereals) products
2. Terms of dairy products

1. Beverages made from fruit or grain crops include compote, juice, tea, vinegar, kvass, syrup, nutmeg, champagne and others. We have divided these types of beverages into a) thirst quenching drinks b) alcoholic beverages.

a) Most types of thirst quenching beverages are made from fruits and other products to quench thirst in summer.

Compote is a drink made by adding sugar or sweets to the fruit. Depending on the fruit from which it is made: compote made from dried apricot with, it is also divided into compotes made from apples, pears and other fruits.

Kvass is a sour drink made from grains, oats or various fruits. Juice is a liquid made from various fruits and other products.

Syrup is a type of drink made from fruit products.

In addition to the above, there is also a drink made only from the plant itself. Tea is an example of this.

Weak tea is actually a shrub that is prepared after the leaves have dried and grows in the southern regions. This type of plant is specially prepared by drying and crushing. There are two types of tea: strong (black) tea and green tea.

Strong tea is a type of milk tea, which is made by adding tea from a special package, pouring boiling water over it, boiling it at the same time, and pouring milk on it.

The type of tea that is made by pouring boiling water over tea is called green tea. Our people consume more tea than any other beverage.

b) Alcoholic beverages include alcohol, nutmeg, champagne, port, alcohol, vodka and so on.

Boza is a beverage made by grinding, boiling and fermenting wheat, millet, oats, rice and others.

Several beverages are made from grapes, they are: Champagne is a drink made from grapes. Port wine is made from grapes. This is a type of wine that contains alcohol. Muscat is a wine made from grapes.

A variety of drinks are made not only from fruit and milk, but also from other products. These include alcohol, vodka, somogon.

Alcohol is a bitter beverage made from sugar and starch.

Vodka is a drink made from alcohol, specially prepared for intoxication.

Somogon is a type of handmade drink.

2. Terms of dairy products. The population of Karakalpakstan is busy with cattle-raising so they uses a lot of milk and dairy products.

Milk is the first food a person tastes at birth. The fact that milk is necessary for human life has been tested in practice by our ancestors. That is why milk has a special place among the foods consumed by humans, and it is recognized by both ordinary life experience and medicine. The terms of beverages made from milk products can include milk, yoghurt, ayran (a drink of thin yoghurt), koumiss, shalap, camel's milk drinks (shubat).

Beverages made from milk are of great importance in the life of the people. At the same time, it plays an important role in enriching the vocabulary of the language.

Milk is a Turkish word. Syut in the old Turkic written monuments [2.518], in the old Kipchak monuments: in the Karaim, Kazakh, Karakalpak languages - syut; syud in the Azerbaijani language; set in the Tatar language; occurs in the Chuvash language as sut [3.305]. In modern Turkic languages the word milk can be found in phonetic variants: milk in Kazakh and Kyrgyz languages; milk in Uzbek; suyt in the Turkmen language.

Another product made from milk, which is common among the Karakalpaks, is sour milk. Sour milk is a type of condensed milk. This word is gatyg in Turkish and in Azerbaijani; katik in Uzbek; sour milk "sır" in the language of Qumıq; It is used in the Turkmen language in the phonetic variants the gatyk . Sour milk is prepared in a unique way. The preparation process is as follows; To do this, boil raw milk. Once the milk is cooked, you have to wait until it becomes warm. Then a leaven or ferment (uytqı) addition to the milk and wrapped. This milk becomes yogurt in 1.5–2 hours. When sour milk is added to boiled milk while it is still hot, the yoghurt will not be flat and may turn sour.

Ayran (a drink of thin yoghurt) beverage also has its own style of preparation. To make this drink, you will need yoghurt, sour cream and water, as well as a tool called gubi and atlaw. A cylindrical wooden vessel about one meter long, designed to turn sour milk into butter.

Initially, the cream is then added to the sour milk and mixed. The products should be mixed with atlaw, then water is added to the mixture according to the amount. Atlaw is rotated repeatedly between the two arms and again the liquid must be constantly tapped up and down with the tool. The reason is that butter must come out of it due to the hard blow. This process can take an hour or an hour and a half. It depends on the butter that comes out of it. Once the process is complete, the butter is extracted with a tool called a piskek. The liquid that remains after taking the butter is called ayran.

Shalab– is a drink made by mixing water with ayran or sour milk.

K(o)umiss (fermented mare's milk) a drink made from mare milk. It is also one of the most delicious dishes of the national cuisine of the Turkic peoples. This word is used in the phonetic variants of gimiz in Turkmen, kimiz in Uzbek, and kumuz in Kazakh. As the Kazakh poet Jambyl said, "Healing the sick is the strength of a healthy person, medicine is our koumiss." K(o)umiss is a fragrant beverage that opens the appetite. There are several types of koumiss. According to the gathering season of our people, koumiss is called bitter taste koumiss, summer koumiss, autumn koumiss, winter koumiss, yellow koumiss.

Sawmal is not fermented mare's milk.

Shubat is a drink made from camel's milk.

So whenever, in the culinary field of Karakalpak lexicon, the terms of drinks are the majority. Basically, a certain portion of the drink consists of beverages made from dairy products. Because the demand for milk in Karakalpakstan is very high. However, some dairy products are now forgotten. This indicates that the names of these dishes are on the verge of extinction in the future. Thus, the terms of dishes that are currently used and no longer used in the lexicon of Karakalpak cuisine are very important. We therefore considered this article current.

References

1. Lahjashunosicheskiy slovar 'zangarskogo yazika. Kazan, 1969.
2. Dialectological dictionary of the Tatar language. Kazan, 1969.
3. Suyuncheev H. I. Karachaevo-Balkar and Mongolian lexical parallels. Sherkessk, 1977.

Rezyume: *Biz ushbu maqolada qoraqalpoq pazandashilik sohasidagi ichimliklar nomlarining nazariy ma'nosi va ularni amalda tayyorlash usullarini o'rgandik.*

Резюме: *В данной статье мы изучили теоретическое значение названий напитков в сфере каракалпакской кулинарии и способы их приготовления на практике.*

Kalit so'zlar: *Ichimliklar, meva, don, sut, chanqoq bosti ichimliklar, spirtli ichimliklar, choy, shampan, kompot, qatiq, ayron, eski turkiy yozma yodgarliklar, tuyaning sutidan tayyorlanadigan ichimlik va boshqalar.*

Ключевые слова: *Напитки, фрукты, злаки, молоко, напиток для утоления жажды, алкоголь, чай, шампанское, компот, йогурт, железо, старотурецкие письменные памятные вещи, напиток из верблюжьего молока и многое другое.*

THE IMPORTANCE OF THE RULE OF LAW IN ENSURING HUMAN RIGHTS

Nuratdinova I.M.
Law College of the Republic of Karakalpakstan

Summary: *In this article, the principle of the rule of law is one of the main principles of modern statehood. It implies the mandatory observance of laws as normative legal acts adopted by the parliament (or as a result of the direct expression of the will of the people) on the most important issues of society and state life, as well as the supremacy of the law over everything else. This means that the law must be legal, that is fair, accurate, and objectively necessary. This principle is therefore often referred to as the so-called rule of law or the principle of the rule of law. Subjects of the research are international legal instruments, legislation of foreign states and the Republic of Uzbekistan on the rule of law and human rights, and international treaties.*

As research methods, in this study were used: general scientific and special methods of research and cognition, such as logical, comparative-legal, comparative-typological, comparative-functional, systemic, system-structural, historical-legal, analysis and synthesis methods.

Aims and objectives of the study are theoretical and practical analysis of the rule of law as a basis for ensuring and protecting human rights.

Keywords: *Rule of Law, Human Rights, Democracy, Judiciary, Public Administration, Principles, Constitution, Normative-Legal Document, Decree.*

In jurisprudence, it is common for two different regimes or concepts to complement and reinforce each other, and overloading each other leads to a better understanding and implementation of the latter or both. Accordingly, the rule of law and human rights can also be harmonized and strengthened. There are at least two approaches to understanding the interrelationship between the rule of law and human rights.

One is that the rule of law is a necessary condition for better implementation of human rights. Only in societies where the rule of law prevails can human rights be protected. Secondly, the concept of human rights is a necessary component of the rule of law, and the rule of law can be put into practice where human rights are well recognized.

Some of the key components of the rule of law have been recognized as human rights and therefore the rule of law itself can now be considered a human right.

It is well known that the rule of law is a concept of law, justice, and morality; it can mean to rule according to the law, and to rule according to the supreme law, and it is universally recognized. It is also well known that human rights today - whether civil, political or economic or cultural; whether the first generation, the second or third generation more widely accepted. Although they are more widely accepted, they both have some theoretical shortcomings that are of practical importance. Studying their complex relationships can really help you overcome these shortcomings that prevent them from doing their best.

In his report, "More Freedom: Development, Security and Human Rights for All" (A / 59/2005), the UN Secretary-General stated that "needs and fears must be eliminated, but this is not enough". All human beings have the right to be treated with dignity and respect"[paragraph 27] [The rule of law and human rights. URL: https://www.un.org/ruleoflaw/ru/rule-of-law-and-human-rights]. The guarantee of the proper and respectful treatment of people is the full enjoyment of human rights, the protection of which is the rule of law.

The international system of human rights, as well as the principles of international humanitarian law, international criminal law and international refugee law, serve as the basis for ensuring a decent freedom of life. These key elements of the legal and regulatory framework are complementary law enforcement agencies aimed at achieving a common goal: the protection of human life, health and dignity. The rule of law is a mechanism for the development and protection of our common legal framework. It promotes a system in which the government implements agreed rules that guarantee the protection of all human rights.

As defined by the Secretary-General, the rule of law requires that litigation, institutions and basic norms be in line with the concept of human rights, including equality before the law, accountability before the law and the fundamental principles of justice in law enforcement [S / 2004/616, 6-band]. Without the protection of human rights in societies, the rule of law cannot be ensured, on the contrary, the protection of human rights cannot be ensured in societies where there is no effective rule of law. The rule of law is a mechanism for the realization of human rights and helps to put the principle of human rights into practice.

Ensuring the rule of law is an integral part of strengthening economic, social and cultural rights in national constitutions, laws and regulations. If the rights are protected by law or other legal protection of such rights is provided, measures shall be taken to ensure the rule of law in case of non-observance of such rights or misuse of public resources.

The rule of law and human rights are two aspects of the same principle - freedom of life. As a result, the rule of law and human rights are inextricably linked. This interdependence has been fully recognized by member states since the adoption of the Universal Declaration of Human Rights, which states that "human rights must be protected by the rule of law to ensure that they are not compelled to appeal to human rights." In the Declaration of the Millennium, member states agreed to redouble their efforts to strengthen the rule of law and respect all internationally recognized human rights and fundamental freedoms. The Member States recognized that the rule of law and human rights are one of the universal and inalienable core values and principles of the United Nations. A democratic state based on the rule of law is a state where the rule of law prevails.

The lack of clarity in the content of the rule of law category is largely due to the controversy and the lack of clear answers to the key questions that may give an idea of this phenomenon. What is the legal basis and content of the rule of law? What does the law on the case in question mean, and what types and levels of regulation does it take precedence over? What is the rule of law and what are its mechanisms? Is it appropriate to highlight and evaluate the rule of law as an independent legal phenomenon for the development of legal education and practice?

It is known that the doctrine of the rule of law as a certain system of views on the structure and development of legal reality was formed over several centuries, historically its "homeland" was a system of common Anglo-Saxon law, where its content was first determined, which later allowed the rule of law to be affirmed as a fundamental constitutional principle of English law. The English scholar A.V. Dicey gave a conceptual justification of the foundations of public law in England, the content and essence of the rule of law, including preventing the administration from abusing its powers, subjecting all subjects of the country to English law and courts. Subjugation, protection of human rights and freedoms through the courts.

Modern theorists of English constitutional law have enriched their ideas about the limitation of state power by law, the limitation of judicial activity not only by law, but also by the rule of law and the special role of the judiciary in protecting human rights and freedoms. At the same time, it is important to note that the rule of law is linked to the universally recognized principles of international law and the

fundamental human rights guaranteed by the Universal Declaration of Human Rights of 1948 and the Convention for the Protection of Human Rights and Fundamental Freedoms of 1950.

The rule of law is systematically enshrined in key policy documents of the Council of Europe, as well as in various conventions and recommendations. It is specifically mentioned in the preface as an element of common heritage

The concept of the rule of law means that the rules must be predictable in their publication, stability and application. An important requirement is the openness of the justice system, its independence from the executive and legislative branches. From a logical point of view, the rule of law does not in itself provide an assessment of the fairness of the rules, but rather defines the procedural features that the legal system should have. Today, the rule of law is a global goal of the international community, which can be achieved only through international integration, globalization and technological development, which contributes to the strengthening of cooperation between states at the international and regional levels.

The Rule of Law Index The World Justice Project is the world's leading source of authentic, independent information on the rule of law. The index, which covers 128 states and jurisdictions, measures how the rule of law is adopted and enforced around the world, based on a national survey of more than 130,000 households and 4,000 legal practitioners and experts. [WJP Rule of Law Index 2020]

The authors of the rating evaluate it on eight main indicators:

1. Limitation of powers of state institutions.
2. Absence of corruption.
3. Order and security.
4. Protection of fundamental rights.
5. Transparency of government agencies.
6. Obeying the laws.
7. Civil litigation.
8. Criminal proceedings.

In 2019, Uzbekistan ranked 94th out of 126 participants and 12th out of 13 participants in Eastern Europe and Central Asia. [The World Justice Project Rule of Law Index 2019] According to the compilers of the index, the situation with the rule of law in the country has improved, which allowed it to rise by 2 places in the world rankings. Uzbekistan's place in the region has not changed. Uzbekistan's overall score is 0.46.

In 2020, Uzbekistan rose to 92nd place among 128 countries, [Декларация совещания на высоком уровне Генеральной Ассамблеи по вопросу о верховенстве права на национальном и международном уровнях] this is a good figure as the country has risen 2 places over the year. The WJP evaluates countries on a number of factors, including the absence of corruption, order and security, fundamental rights, civil justice, and more. We have the lowest scores on government transparency and non-corruption, and the highest scores on order and security, ranking 11th in the world. [WJP Rule of Law Index 2020].

Of course, the Republic of Uzbekistan must develop a specific national methodology for calculating the rule of law index, as well as develop and effectively implement mechanisms to improve the performance of this index, especially the less important factors. Systematic and routine measures should be taken to monitor all identified systems, identify deficiencies and address them.

At the same time, not only government agencies, but every citizen of Uzbekistan should be engaged in ensuring the rule of law, because raising the rating of our country is in the interests of each of us. One of the main contradictions of modern social development is that a state that declares a de jure state of law but refuses to obey de facto law develops along a vector that leads to its collapse. The main

problems of the rule of law, expressed in the implementation of its basic principles, are the most essential topic of multifaceted public discussion: the future of the country and its role in the modern development of a multipolar world. Its globalization depends on their solution. In general, it can be said that the legal positions of the supreme judicial bodies, in particular the constitutional courts, are becoming the most important means of ensuring the doctrine of the rule of law and the implementation of legal life. At the same time, there are the following considerations - the impact of the rule of law on the judiciary, as the most important doctrinal and legal tool for developing the will and activity of judges, the integration of national judicial practice and international judicial practice, their suprapositive common legal values is the installation.

In conclusion, it should be noted that the doctrine of the rule of law, adopted in legal practice, undoubtedly contributes to the implementation of international law, the development of the national legal system in the context of human rights and freedoms, as well as rights and freedoms, reveals more prospects and opportunities. One of the main tasks is to optimize the functioning of the sovereignty of the individual, public authorities and administration, and the limits of their impact on public relations, strengthening the independence of the judiciary.

Both the rule of law and human rights are relevant. The role of the rule of law in strengthening human rights and the role of human rights in the formation of the rule of law are much more favorable, especially at a time when everything is material. A better understanding of their relationship will help us to strive for the highly coveted and lofty ideals of a society of equality and prosperity.

References

1. Constitution of the Republic of Uzbekistan from 08 December of 1992.
2. Qonun ustuvorligi davlat boshqaruvining asosiy vazifalaridan biri sifatida, Mammadov E
3. Odamlar va kuch: tarix va zamonaviylikdagi o'zaro ta'sir: Sat. ilmiy tr. / javob. ed. I.V. Mixeeva, F.A. Seleznev. Nashr. 2. - Nijniy Novgorod: Rastr MChJ, NRU HSE - Nijniy Novgorod. 2015. - B.153
4. Zamonaviy Rossiyada qonun ustuvorligi g'oyasini amalga oshirish, Sobirova L.L.]
5. Kuzmenko V.I. Davlat va huquq nazariyasi muammolari: Darslik. / IN VA. Kuzmenko, S.V. Kuznetsov - Elabuga: EI (F) K (P) FU nashriyoti, 2017. -S.9
6. Qonun ustuvorligi va inson huquqlari. URL: https://www.un.org/ruleoflaw/ru/rule-of-law-and-human-rights

Rezyume: *Mazkur maqolada qonun ustuvorligi tamoyili zamonaviy davlatchilikning asosiy tamoyillaridan biridir. Bu jamiyat va davlat hayotining eng muhim masalalari bo‘yicha parlament tomonidan qabul qilingan (yoki xalqning bevosita xohish-irodasini bildirishi natijasida) normativ-huquqiy hujjatlar sifatida qonunlarga majburiy rioya qilishni, shuningdek, qonunlar tomonidan hamma narsadan ustunlikni nazarda tutadi. Bu qonun qonuniy bo'lishi kerakligini anglatadi, ya'ni. adolatli, to‘g‘ri, xolisona zarur. Shuning uchun bu tamoyil ko'pincha qonun ustuvorligi yoki qonun ustuvorligi printsipi deb atalishi haqida so’z yuritiladi. Tadqiqot predmeti xalqaro-huquqiy hujjatlar, xorijiy davlatlar va O‘zbekiston Respublikasi qonun ustuvorligi va inson huquqlarini ta’minlash to‘g‘risidagi qonun hujjatlari va xalqaro shartnomalar hisoblanadi.*

Tadqiqot usullari sifatida Ishda tadqiqot va bilishning mantiqiy, qiyosiy-huquqiy, qiyosiy-tipologik, qiyosiy-funksional, tizimli, tizimli-tarkibiy, tarixiy-huquqiy, tahlil va sintez usuli kabi umumiy ilmiy va maxsus usullaridan foydalanilgan.

Tadqiqotning maqsadi va vazifalari qonun ustuvorligining inson huquqlarini ta'minlash va himoya qilishning asosi sifatida nazariy va amaliy tahlil qilish.

Резюме: *В данной статье принцип верховенства права выступает одним из основных принципов современной государственности. Предполагает обязательное соблюдение законов как нормативных правовых актов, принятых парламентом (или в результате прямого*

волеизъявления народа) по важнейшим вопросам общественной и государственной жизни, а также верховенство закона. над всем остальным. Это означает, что закон должен быть законным, т.е. справедливо, точно и объективно. Поэтому этот принцип часто называют верховенством права или принципом верховенства права. Предметом исследования являются международно-правовые документы, законодательство зарубежных стран и Республики Узбекистан о правовом государстве и правах человека, а также международные договоры.

В качестве методов исследования в исследовании использовались общенаучные и специальные методы исследования и познания, такие как логический, сравнительно-правовой, сравнительно-типологический, сравнительно-функциональный, системный, системно-структурный, историко-правовой, методы анализа и синтеза.

Целями и задачами исследования являются теоретический и практический анализ правового государства как основы обеспечения и защиты прав человека.

Kalit so'zlar: *Qonun ustuvorligi, Inson huquqlari, demokratiya, huquq ustuvorligi, sud tizimi, davlat boshqaruvi, tamoyillar, Konstitutsiya, normativ – huquqiy hujjat, Farmon.*

Ключевые слова: *Верховенство закона, права человека, демократия, верховенство закона, судебная власть, государственное управление, принципы, конституция, нормативно-правовой акт, декрет.*

THE CONCEPT OF COMPLAINT OVER THE DECISIONS OF ADMINISTRATIVE BODIES, ITS SPECIFIC FEATURES

Qoshjanova D.S.
Law college of the Republic of Karakalpakstan

Summary: *This article provides an overview of the Uzi-specific characteristics of the issues of judicial review of the decisions of the administrative body, highlighting the concept of Appeal, as well as the procedural procedure for reviewing the decisions of the administrative body, and analyzes them after reaching the conclusion of a number of legal scholars. Complaints filed against the decisions of the administrative body as the subject of the study are subject to the law regulating the conduct of proceedings and the foreign Yale experiences obtained by the Bolsa, through the judicial review of the decisions made by the administrative body, the cancellation of decisions that contradict the legislation and the implementation of the protection of the rights.*

Keywords: *Administrative body, state bodies, governing body, administrative document, administrative-legal relations, decision, dispute, request.*

One of the types of judicial proceedings in the field of administrative law is proceedings on complaints and applications filed against public authorities and other bodies, as well as on the actions (decisions) of officials [1,16-p.]. The role of works in this category in civil law today, the positive characteristics of citizens in solving their applications and complaints in court order are manifested in the protection of the interests of the individual, their legal rights and Freedoms, which in practice give their effect. Procedural scientists who expressed their opinion on the issues of this type of proceedings in court can be divided mainly into two large groups. Although the opinions expressed by them are inextricably linked to each other and complement each other, it is important to know how accurate and controversial the views of these scholars are from the point of view of the requirements of the present day, as well as how important each opinion expressed is in getting a good knowledge of the issues related to the, it is important to have an in-depth analysis of the issues of how the proceedings relate to the protection of the right in the form of a claim and what is its role in determining its specific aspects. If for the first time the term of mass legal disputes was proposed by Tixomirov, then in the doctrine this type of dispute is understood as the procedure for consideration by authorized bodies having a public character established by law [2, 8-13-p.].

Cases arising from this sphere of law in administrative and legal relations are solved mainly in administrative order, and not by judicial means. The third sub-section of the current FPK:

In the Grajden procedural code of the year 1963, which lost its power, it was called" proceedings on cases arising from administrative-legal relations", and" proceedings on complaints and applications filed against public authorities and other bodies, as well as on the actions (decisions) of officials", the same type of proceedings: "proceedings on cases arising from administrative-legal relations". In the current civil code, too, it is indicated that in the cases provided for by law "on the type of proceedings described above" civil rights can be protected in the Administrative Procedure, to appeal to the court over the decision taken in the Administrative Procedure (Part 2 of Article 10 of the FC) [3, 6-p.]. Therefore, in this study, it can be used as "administrative bodies", "administrative-legal relations" in some cases. "The administrative body shall exercise its right in relation to the person in charge at all times, in practice in most cases so. (Taking away the driver's document, imposing a fine on the person who committed an administrative offense and levying it, etc.). It is necessary that the administrative body, which has the authority of power and acts within its competence, has a role in relation to the

implementation of its actions in administrative and legal relations in its particular state. Therefore, there is an opinion that there is no need to establish judicial control over the actions of administrative bodies [4, 4-p.]. Because, issues related to the independent realization of the actions of administrative bodies in connection with the exercise of their rights within the scope of their powers belong to their competence in cases provided for by law [5, 21-p.].

However, in the law, cases in some categories arising from administrative-legal relations in some cases, including cases related to complaints over inaccuracies in the voters ' list [6, 105-p.]; Conduct proceedings on complaints and applications filed over the actions (decisions) of state bodies and other bodies, as well as officials [7, 100-p.] defined as having jurisdiction over the courts.

The suitability of cases arising from administrative-legal relations to the courts is established by law, and cases in such a category are considered in accordance with the general rules of civil and judicial proceedings, as specified in the law [7, 101-p.] (Article 265 of the FPK). Therefore, it is impossible to adequately shed light on its peculiarities, without comparing the type of judicial proceedings in cases arising from this sphere of law with the type of judicial proceedings in the case of the plaintiff.

The main essence of the administrative-legal relationship to the courts,-says some procedural scientists, is the relationship between the owners of this power and those who obey it, and in such a relationship there can be no dispute about the right, because in all cases the khokim body independently exercises its powers in relation to another subject of the legal relationship. Therefore, the task of the court should not be to resolve the dispute on the right, but to check the legality of the actions of the state authorities and public administration bodies (officials), - they argue [8, 12-46-p.].

Therefore, although these authors indicate that public, administrative and financial-legal relations can not be in a controversial state, as we have already explained above, although they have no doubts about the existence of a dispute in the case of a lawsuit, but there is no “dispute” in the case arising from the administrative-legal relationship to the court, but in our opinion there is Therefore, even P.F.Eliseykin does not base his opinion on some of the opinions expressed in the legal literature with relevant evidence [9, 22-p.]. “There will be a dispute about the right in the case arising from state, administrative and financial-legal relations and the law to the courts, and this relationship may not be in a completely disputable relationship, such as civil relations. Therefore, we can not agree with the opinion of the Author above,” we emphasize that the authors ' conclusion is partly close to reality.

The presence of the right in the judicial proceedings in cases arising from administrative-legal relations, the interests of which prove the existence of conflicting parties and the obligation of their participation. In fact, it is a factor that incorrectly calculates the action of the administrative body of a citizen and makes an appeal to the court with a complaint, and therefore the citizen himself does not agree with the action of the administrative body, he testifies to the conflict over such an action, which in turn indicates the disputable nature of the administrative In this case, the judicial procedure is carried out on the basis of a controversial printout, which proves that the actions of the administrative body of a citizen are indecent, and the administrative body, in turn, can prove how legitimate and justified their actions are and demand the rejection of the complaint of a citizen in the event that they do not agree with the

As we have already explained, in the case arising from administrative-legal relations, some authors believe that the main task of the court should be to investigate the legality of the action of officials of the state authorities and management bodies, and not to resolve the dispute on the rights. In our opinion, some ground in such considerations seems to be all the same, since in the case of matters arising from administrative and legal relations, when one side participates in the bodies of state power (a person who commits a wrongful act, violates the rights and freedoms of citizens established by law), and on the other side participates in a person who

So, the basis of such a category of work lies in the administrative requirement, and not the legal requirement of a civil dispute. Legal relations arise between officials of state power and management and persons whose rights are violated.

Referring to the functions of civil and judicial proceedings, I.A. “The task of judicial proceedings in all civil cases is homogeneous, " Jeruolis said. If it is, the task is to quickly and correctly consider civil affairs in order to protect the interests of the social system, state property, socio-economic, political, labor, residential and other rights of citizens of a personal and property character and protected by law, as well as the rights and legitimate interests of state enterprises, organizations, institutions, collective farms, other types of companies and If the function of judicial proceedings in the case is achieved through the consideration of the dispute on the right, the decision is made by the confirmation of the right of non-character on other cases (proceedings for the proceedings in a separate order) or by the determination of whether there are cases or legal facts that are important for the case. All disputes related to the right must be resolved in court only in the order of judicial proceedings in the case of the plaintiff. When a dispute between the two parties concerning the right is resolved in court, they shall exercise procedural rights of one Hilda and shall assume equal procedural obligations [10, 151-155-p.]

References:

1 Textbook "Proceedings on complaints and applications against the actions (decisions) of state bodies and other bodies, as well as officials" page 16 http://library.ziyonet.uz/ru/book/259371 See:

2 Tikhomirov Yu. A. Public law disputes // Law and Economics. 1998. No. 6. S. 8–13.

3 As amended by the Law of the Republic of Uzbekistan No. ZRU-683 of April 21, 2021 - National Database of Legislation, April 21, 2021, No. 03/21/683/0375) https: //uz.denemetr .com / download / docs-46194 / 810-46194.doc

4 Code of Administrative Procedure of the Republic of Uzbekistan. See: http://www.lex.uz/pages/SearchResult.aspx?f=1&sid=983422318&a1=1&a2=1&a3=1&a4=1&form_id=3964&action=show_result

5 Article 272 of the Code of Civil Procedure of the Republic of Uzbekistan (approved by the Law of the Republic of Uzbekistan dated 30.08.1997 No. 477-I)

6 Article 264 of the Code of Civil Procedure of the Republic of Uzbekistan (approved by the Law of the Republic of Uzbekistan dated 30.08.1997 No. 477-I)

7 Article 265 of the Code of Civil Procedure of the Republic of Uzbekistan (approved by the Law of the Republic of Uzbekistan dated 30.08.1997 No. 477-I)

Rezyume: *Ushbu maqolada ma'muriy qarorlarni sud tomonidan nazorat qilish xususiyatlari, apellyatsiya tushunchasi, shuningdek, ma'muriy qarorlarni qabul qilishning protsessual tartibi bo'yicha bir qator huquqshunos olimlarning fikrlari o'rganiladi. Agar ma’muriy organlarning qarorlari ustidan berilgan shikoyatlar bo‘yicha ish yuritishni tartibga soluvchi qonun hujjatlari va xorijiy tajriba, ma’muriy organning sud qarorini sudda bekor qilish to‘g‘risidagi qarori hamda fuqarolar va yuridik shaxslarning huquqlari hamda ularni himoya qilish jarayonlari tadqiqot predmeti bo‘lsa. sud orqali manfaatlar va bu jarayonda yuzaga keladigan jamoatchilik munosabatlari tadqiqot ob'ekti sifatida qabul qilinadi.*

Резюме: *В данной статье рассматриваются особенности судебного пересмотра административных решений, понятие обжалования, а также изучение взглядов ряда ученых-правоведов на процессуальный порядок принятия административных решений. Если предметом исследования является законодательство, регулирующее производство по жалобам на решения административных органов и зарубежный опыт, решение административного органа об отмене решения суда в судебном порядке и право граждан и юридических лиц и процессы*

осуществления защиты своих интересов через суд и общественные отношения, возникающие в этом процессе, взяты в качестве объекта исследования.

Kalit so'zlar: *Ma'muriy organ, davlat organlari, boshqaruv organi, ma'muriy hujjat, ma'muriy-huquqiy munosabatlar, qaror, nizo, da'vo.*

Ключевые слова: *Административный орган, государственные органы, орган управления, распорядительный документ, административно-правовые отношения, решение, спор, иск.*

LEGAL STATUS OF DEPUTY OF JOKARGY KENGES OF THE REPUBLIC OF KARAKALPAKSTAN

Matirzaev U.S.[1], Turdimuratova D.[2]
[1]*Karakalpak State University named after Berdakh*
[2]*Law college of the Republic of Karakalpakstan*

Summary: *This article examines the concept and essence of a member of the representative body of the Jocargy Kenes of the Republic of Karakalpakstan, a deputy of the Jokargi Kenges as a representative of citizens in a representative body, ways of conducting their activities in direct cooperation with voters, as well as analyzed scientific materials of scientists who have researched on this topic. In a scientific article, we exchanged views with these scientists. The significance of the activity of the deputy of the Jokargi Kenges of the Republic of Karakalpakstan is comprehensively analyzed.*

Keywords: *Constitution, deputy, government, republic, Oliy Majlis, Jokargi Kenges, State Duma, law, citizen, people, party, territory, parliament, society, mandate, imperative, principle.*

It is recognized that the present period is the only source of people-state power in the legal – democratic society. Of course, the ideas of people's power and democracy are realized through a parliament, which is considered the Supreme representative body of state power, which is formed by the people themselves. In this sense, the president of the Republic of Uzbekistan Shavkat Mirziyoyev said: «Where does democracy begin? – from the parliament" [1,3].

Deputies are full-fledged representatives of the people working in the representative bodies of power. The activity of the deputy of the Jokargi Kenges of the Republic of Karakalpakstan has an important role in strengthening the independence of the Republic, in the process of establishing a state, in achieving a full democracy of the content of society.

The Jokargi Kenges is, by its very nature, a representative body, first and foremost in its formation, with the direct participation of the citizens of Uzbekistan. It can embody the features of representation and direct democracy through the deputies, the deputies acting in it are the representatives of the citizens, they take their power from the voters, they act on their behalf. Elected deputies are directly involved in legislative activity. A member of the Jokargi Kenges, as a representative of citizens in a representative body, conducts his activities in direct cooperation with the electorate.

As noted by Doctor of Law, Professor Khusanov O.T., “The main goal can be achieved only when deputies use all their skills, knowledge and experience to achieve the common interests of the electorate, the people, the region and the party. Therefore, their main duty is to feel their responsibility to the people and to take part in the realization of their wishes and desires”[2,3].

Analysis of the activities of members of parliament of foreign countries shows that this is primarily a parliament that is directly related to the deputy. The formation of the parliament and the people who can become deputies are of great importance. The reason for this is that not every citizen of the society is considered worthy of it, because in order to become a member of the parliaments of foreign countries, a citizen can be elected as a deputy who meets the requirements of the rules of any country.Deputy (Lat. Deputatus - represented, sent) - a person who is duly elected a member of the legislature or other representative body [3,39]

Various concepts and definitions of the activities and duties of deputies are given in the scientific literature. In particular, the "Constitutional Law (Explanatory Dictionary)" provides the following definition: "A deputy is a representative of the people working in the representative bodies of state power. He shall be elected by popular vote and shall be authorized by the people to serve in the appropriate

organs. Deputies are elected for a fixed term"[4,150]. The deputy is in regular personal contact with the representative bodies and the electorate, and at the same time acts for a specified period.

A deputy is an elected person who represents the people's demands in local self-government bodies [5,131]. According to this definition, deputies will have to comply only with the demands and wishes of the voters who voted for them in local self-government bodies. This does not correspond to the definition of deputies as a person representing the interests of the whole people.

The content of the activity of the deputy is fundamentally distinguished by its specific features: the person elected as a deputy, he/she protects the interests of the citizens living in the territory of the elected constituency, he/she participates in the relevant representative bodies as a representative of his constituents.

The definition of "legal terms in the encyclopedic dictionary" is given: a deputy is a person who is part of his or her character, a representative of the electoral body of a particular nation or people and all nations, legislative, representative or other self-elected representative of a presidential body. The status of a deputy working in a representative body on a professional basis and on a non-professional basis without separation from the main place of work shall be established by the Constitution and legislation"[5,131].

Summarizing the above points, one can conclude that the deputy is primarily responsible before the elected voters, while the rest is responsible before the whole people. While the deputy conducts his activities professionally, it is necessary to justify the trust of citizens with his worthy participation in the legal, social and political processes. It is necessary for the deputy to understand his honor, duty and dignity, to demonstrate these characteristics in practice. In our point of view, we vote that it is worthwhile to introduce a unanimous definition of the identity of the Deputy into our laws that determine the exact size of the deputies.

In particular, a deputy is a responsible person who is directly elected by voters to the representative bodies of the state governorship and participates in the implementation of powers of these bodies, protects the interests of the whole people.

The present-day deputy is devoted to his work, has a great spirituality, is educated, has a progressive outlook and sincerely serves the interests of the Motherland, the people and for the development of our independence. The deputy has an effective influence on the growth of the nation and the people. It is the duty of every deputy to always be with the homeland, to overcome difficulties together, to rejoice in its achievements, to fight for its honor and dignity. The biggest enemy of a deputy is negligence, indifference, lack of timely awareness of vocabulary [6,3].

At present, the rapid formation of civil society creates ample opportunities for the participation of each deputy in public control over the state and government structures, ensuring and strengthening the implementation of laws on the ground, guaranteeing the rights and freedoms of citizens. Deputy activity has its own characteristics in the parliaments of different countries, based on historical, national aspects, the form of government and formation of the state, the formation and functioning of parliament. It is known that there are specific forms of the mandate of deputies, the interdependence between the mandates, their distinctive features.

It is known from the history of the development of parliamentarism that there are basically two types of parliamentary mandates: the imperative mandate and the free mandate. As for the concept of mandate, the Mandate (lat. Mandatum - assignment) [7,14] is a document that guarantees the deputy the exercise of his powers and rights.

The problem of the deputy's mandate is directly related to the will of the deputy as a member of parliament, the direct participation of the parliament in the decision-making of its chambers, the protection of the interests of the electorate. A deputy is legally accountable to his constituents for his

work in parliament. Voters may raise the issue of giving deputies the instructions they need to follow and, in some cases, recalling them.

The famous French thinker J.J.Russo assessed the work of the deputies of his time as "People's deputies cannot be the direct representatives of the people, they are only those who are authorized by it" [8,222].

The principle of the imperative mandate was based on the experience of the Paris Commune of 1871, which was recognized in the activities of the parliaments of the former socialist countries, which enshrined this experience in their legislation. The Paris Commune formed a new type of political organization of society in which deputies had to strictly follow the behavior of their constituents and could be replaced at any time [9,637].

However, there was a perception among legal scholars that under the socialist system there was no basis for talking about an imperative mandate that did not help to solve problems in society quickly and stifled the creative activity of the legislature [9,638]. However, the nature of the relationship between deputies and voters was determined by the fact that in the former Soviet Union, the ability of voters to guide their deputies, as well as to recall elected deputies, to listen to their reports was enshrined in law.

Thus, the totalitarian system includes three institutions that are largely formal in the context of the authoritarian mandate of the deputy: the right to recall deputies, the right to give deputies directions and listen to their reports.

According to the Law of the Republic of Ukraine "On the Status of People's Deputies of Ukraine" [7,15], a deputy is responsible and accountable to the voters in his constituency, and if he does not gain the trust of voters, he is recalled from parliament. So, in the Republic of Ukraine there are manifestations of the imperative mandate. Deputies are obliged to fulfill the instructions given by voters in a timely manner.Professor S.A. Avakyan, Doctor of Laws of the Russian Federation, describes the content and essence of the imperative mandate as follows: [10,232]. There are uncertainties in the views of Professor S.A. Avakyan, which raise the question of whether all three of the above elements are binding on the imperative mandate or whether one of them is sufficient to describe it.

According to N.M. Ismailov: “Deputies of the Parliament have an imperative mandate, that is, they are accountable only to their constituents. This method was used, including during the former totalitarian regime. When I was elected to the District Council in 1985, my constituents instructed us to open a shop. After I was selected I didn't fulfilled the task. But this kind of method does not bring much benefit to society. That is why now, in independent Uzbekistan, the mandate of deputies is free ”[11,4]. However, it must be acknowledged that in practice the law on recall of deputies is still in force.

According to the researcher-lawyer E.I. Kolyushin, "during the Soviet era, a people's deputy had the mandate of an imperative deputy" [12,248].

Doctor of Law O.Z. Muhammadjanov noted that despite the denial of the imperative mandate, it is a party mandate that subordinates a deputy to the party and does not always allow him to act in accordance with his conscience and beliefs, but in the national interest is always recognized. This is a very complex problem and should be addressed in the legislation defining the status of a party member [13,175].

The idea of an imperial mandate in our throne, which is understood as the obligation of a broadrok, that is, a member of Parliament to fulfill the expressed will of its constituents, expressed in tug-tug-tug-tug-tug, and in the remaining cases to act freely, brings about serious reverence. If a member of Parliament considers the will of his electorate to be contrary to national interests, he / she must fulfill this will or resign from it, or if he / she does not find it, he / she must be beaten.

In the states of America kushma, emphasizes that the investigator A. Tokvil said, " when voters elect a deputy, it will assign thematic tasks that the deputy should perform by introducing him to their

plans. Voters hope that MPs will be able to fulfill their personal exteriors, together with finding what jobs on the reels of the country's prosperity"[14,194]. It is clear that, together with the fact that the voters express their interests, they demonstrate that they have the hope of adding their contributions to the development of the country.

Also N.M.Ismoilov stressed that "in the parliaments of developed countries around the world, deputies usually find themselves in a position where they work professionally, having a free mandate. Such a deputy represents the interests of all citizens of the country and is not considered to be directly subject to the will of its voters"[11,2]

In the implementation of its activities, the deputies, first of all, taking full advantage of their opportunities, operate in a state where their own point of view, their individual activity directions is determined by the thematic. In fact, the more confident the deputies perform their duties, the more they are respected and reassured by such voters.

Deputies in most developed countries have a free mandate: o all nationalities, which are considered representatives of the people, Hech who are not willing to give them instructions who are obliged to perform; they cannot be Chakra ahead of time[15,243].

The content of the mandate of a free deputy can be described in the general way as follows: a) the mandate is a general one (that is, the deputies elected on behalf of the whole nation, according to the electoral districts, establish work); b) the mandate is not imperative, but rather facultative, since its implementation is free of force (the deputy does not have to the will of the people-the unity of the will of the people is without doubt a shock).

At the same time, the absolutization of the mandate Printing House of a free deputy is not successful for aim. It should be taken into account that the deputies elected on the lists of the parties are forced to walk in the heart of their faction, subordinating to the system of the current party, even in those cases where they have no opinion on the issue under way when voting in the parliament.

In India, for example, not only voluntarily quit the party, perhaps the possibility of voting in an arbitrary manner or voting contrary to the instructions of the party can provide a basis for the abolition of the mandate of both deputies[16,505].

The deputy does not consider this approach to resolving the issue of subordination to the party as a positive one. After all, in the same case, the party's mandate, which does not ignore the denial of the Imperial mandate, burns its urn by subjecting the deputy to the party, gives him the opportunity to act in compliance with his conscience and ethic, and not in the interests of the party, but in the interests of the national interests, is always recognized.

A scientist of the Russian Federation, a lawyer, who approached the concept of the mandate of a free deputy V.Zinovev scientifically assimilates the legal status of Deputies and comes to the conclusion that the "free mandate" is very democratic, and the deputy does not have any obligations before his voters, and voters are also deprived of the right to overturn the deputy. Nothing to say!. Deputies are well paid for their work and are free from any obligations."[17,184].

It is well known that freedom of choice suffers from the right of recall. When voters elect a deputy, they express confidence in him. In this case, on June 23, 1999, the federal law "on the maternity leave of a member of the Federation Council of the Russian Federation and a deputy of the State Duma"does not provide for the impoverishment of a deputy. This attitude of MPs shows that they do not want to have any obligations to their constituents.[18,28].

According to the Russian researcher-lawyer N.V.Vitruk [19,7], “The mandate of the deputies of the representative bodies of state power of the subject of the Russian Federation is semi-free. The deputy is not obliged to fulfill the instructions of the electorate, but at the same time it is lawful for the deputy to squat when he does not fulfill his obligations. The recall of a deputy may begin in the event of his /

her failure to perform his / her duties, damage to the honor and decency of the deputy, as well as loss of contact with the electorate."

The content of the mandate of a deputy of the Jokargi Kenges of the Republic of Karakalpakstan needs to be clarified in our laws. The norm on the freedom or imperativity of the deputy's mandate is not established in the documents of the law.

The adoption of the law "On the procedure for recalling a deputy of the Republic of Karakalpakstan", adopted in our country on June 28, 1996, reflects the characteristics of the imperative. Deputies are in constant contact with both the people and the electorate.

It is necessary to determine on what mandate the deputy of the Jokargi Kenges is currently acting. To this end, the law "On the status of a deputy of the Jokargi Kenges of the Republic of Karakalpakstan" should include a specific rule defining the mandate of a deputy. In our opinion, it is expedient to define the parliamentary mandate as a "semi-free mandate". Because, in our current laws, there is the basis of both the imperative mandate and the free mandate. In particular, in Article 7 of the law "on the status of the deputy of the Jokargy Kenges of the Republic of Karakalpakstan", it is stated that if the deputies' giving information before the voters directly expresses a free mandate, in this article itself, the deputy who could not restore the confidence of the voters can be crushed in the manner prescribed by This represents the Corinthian of the Imperial mandate.

References

1. Mirziyoyev Sh.M. It should be a real democracy school of our parliament, the initiator of reforms and main performer. Speech by President Shavkat Mirziyoyev at the video program with the chambers of the Oliy Majlis, political parties and the Ecological Movement of Uzbekistan. // [electronic source]. - Introduction: URL: http://parlion.gov//uz/events/suz/events/other/22842/ (application time: 22.07.2017). .

2. Husanov O.TAcAs and responsibility. Yarasha in the alms. №1.-b. 3.

3. .Contentative Law (Explanatory Luhad). Azizhojaeva ..., Husanov O. Azizov X.- Tashkent: MIA Academy.2001.-39 p.

4. Vydrin I.V., Cocotov A.N. Municipalnoe Pravo Rossii.m.: 1997.-S.150-151.

5. COMMUNITY DUMBATE OF LEGAL TAMMIES. Responsible editor-editor: H.R.Rakhmonkulov Literator-editor: A. Eshpulatov-Tashkent: Shunk. 2003, - 131 p.

6. Mustafaev B., K. Nazarov. Who can be a deputy? Tashkent: TDUII. 2004. 3 p.

7. See: \ vww.5 ballov.ru

8. RUSSO J.J. Tractaty. Moscow: Nauka. 1969. -222 s.

9. Constitutionalnoe Pravo Rossii. V 3-x tomax. M.: Lawyer, 2001.- 637-638 s.

10. Avakyan S. Federal Sathranie- Parliament Rossii, - M. Rossiyskiy Yuridicheskiy Izdelelsky Dom », 232 C.

11. Ismailov N. The deputy is the trust of people. - Voice of Uzbekistan. 2004.16Niast September.

12. Kolyushin E.I. Constitution (GsaydarStavennoe) Pravo Rossii. - M.: Lawyer. 1999. -248 s.

13. Mukhamedjanov O. 3. In the Republic of Uzbekistan, the Republic of Uzbekistan forms organizational and legalations of the bicameral parliamentary activity. Dissertation for the degree of Doctor of Law Tashkent: 2004, - 175 p.

14. Tokvil A. Democracy V is American. M.: 1992, - 194 s

15. ugly v.e. Constitutionraining Pravo Zarubejnyx stran. - m.: Zertasalo. 1997, - 243 C.

16. Constitutionalnoe (Gsudaristvennoe) Pravo Zarubejnyx stran. Общая Fast. 3-e Izdanie. Toma 1-2.m.: Beck. 1999, - 505 C.

17. ____OVA A.V. Constitutionraining Pravo Rossii, - m.: SPB. 2000. -184 s.

18. Maltsev g .. Ekimov A. BUIDE LI Nastaischi Parliament? Narodnyy deputy. 1992. - 7. - S.28-29.

19. Rossiyskaya newspaper 1997. 15 January 15

Rezyume: *Mazkur maqolada Qoraqalpog'iston Respublikasi Jo'qorg'i Kengesi deputati vakillik organ a'zosi tushunchasi va mohiyati, Jo'qorg'i Kenges deputati fuqarolarning vakillik organdagi vakili sifatida, o'z faoliyatlarini bevosita saylovchilar bilan xamkorlikda olib borish usullari hamda mazkur mavzuni o'rganib chiqqan olimlarning ilmiy ishlari tadqiq qilingan. Ilmiy maqolada ushbu olimlar bilan*

munozaraga kirishilgan. Qoraqalpog'iston Respublikasi Jo'qorg'i Kengesi deputatirining faoliyati muxim ahamiyati har tomonlama tahlil qilingan.

Резюме: *В данной статье исследуются понятие и сущность члена представительного органа Жокаргы Кенгеса Республики Каракалпакстан, депутата Жокаргы Кенеса как представителя граждан в представительном органе, способы ведения своей деятельности в прямом сотрудничестве с избирателями а так же проанализированы научные материалы исследовавших ученых на эту тему. В научной статье обменялись мнениями с этими учеными. Всесторонне проанализирована значимость деятельности депутата Жокоргы Кенгеса Республики Каракалпакстан.*

Kalit so'zlar: *Konstitutsiya,deputat, hokimiyat, respublika, Oliy Majlis, Jo'qorg'i Kenges, Davlat Dumasi, qonun, fuqaro, xalq, partiya, xudud, parlament, jamiyat, mandat, imperativ, printsip.*

Ключевые слова:*Конституция, депутат, правительство, республика, Олий Мажлис, Жокаргу Кенгаш, Государственная Дума, закон, гражданин, народ, партия, территория, парламент, общество, мандат, императив, принцип.*

HISTORY CREATION OF THE CONSTITUTION OF THE REPUBLIC OF UZBEKISTAN

Kazakhbaev R.J., Prekeeva T.M.
Law college of Republic of Karakalpakstan

Summary: *The article provides historical and legal characteristics of the process of creating the Constitution of the Republic of Uzbekistan*

Keywords: *Constitution of the Republic of Uzbekistan, Temur tuzuklari, UN, OSCE*

The constitution (from lat. "constitution" – device, structure) – the basic law of the state. It defines the state structure, the system of authorities and management, their competence and the order of formation, the electoral system, the rights and freedoms of citizens, the relationship between society and the individual, as well as the judicial system and the interaction of the state and society. The term "Constitution" was known in ancient Rome (the law was called the imperial constitution). And also, "Amir Temur Tuzuklari" had the character of a constitutional document of a special form characteristic of the civilizations of the countries of the East and Asia.He, along with sharia law, had a strong influence on the fate of the peoples of the Central Asian region. Looking at the complex and important, at the same time honorable chronology of the creation of our basic law, we are undoubtedly convinced that the constitution of Uzbekistan is the result of our people's long search for a rule of law state. First of all, during the construction of the constitutional “building”, he relied on three thousand years of experience of national statehood. Today's Uzbekistan embodies ancient Khorezm and Sogdiana, Karakhanids, Khorezmshahs, Amir Temur and Temurids, Uzbek khanates, enlightened ancestors, historical traditions of our people and their centuries-old dream of an independent state. Moreover, based on our interests and aspirations, our Basic Law was created taking into account the best constitutional experience accumulated by 97 countries of the East and West, South and North.

The main legal step towards the creation of the constitution is the publication of the draft constitution in the press for public discussion. The Constitutional Commission approved the work done and on September 8, 1992 decided to publish the draft Constitution for general discussion. At this meeting, a working group was created to finalize and edit the draft. The first draft of the new Constitution was ready on September 26, 1992 and was published in the press on the same day. When the draft was published, its public discussion became very broad. These public discussions took place from the end of September to the beginning of December 1992 in the spirit of political activity, creative enthusiasm of citizens and became an effective and practical school for the development of democracy in Uzbekistan. The Constitutional Commission received about 600 letters of feedback.More than a hundred materials on the draft constitution were published in the republican press itself. The number of proposals made by our citizens has exceeded 5 thousand [1, 15-16-b].

The last time the draft constitution was discussed by the Constitutional Commission was on December 6, 1992. It should be noted separately that the Constitutional Commission proceeded from a holistic understanding of the role of the basic law, referring to foreign constitutional experience. At the same time, a number of advanced aspects of world constitutional practice were taken into account. The draft constitution has been thoroughly examined by such authoritative international organizations as the United Nations, the Council for Security and Cooperation in Europe, as well as experts from democratic countries such as the United States, Great Britain, Germany, France. In particular, the nationwide discussion of the draft constitution made it possible to identify the will of the people of Uzbekistan and collect a wealth of material.This material has been thoroughly and comprehensively studied, summarized and in the form of the general will of the people submitted for discussion at the eleventh session of the

Supreme Council of the Republic of Uzbekistan of the twelfth convocation. About 80 amendments, additions and clarifications were proposed to the draft Constitution submitted for discussion at the session of the Supreme Council. After discussion of the draft by the deputies of the Parliament and making a number of other changes to it, the Constitution of the Republic of Uzbekistan was adopted on December 8, 1992. Since that day, December 8 has been declared a national holiday. It is not by chance that such a high and objective assessment is given in relation to our basic law. This can be explained, among other things, by the following reasons[2, 30-35-b]

Firstly, our constitution is indeed a democratic constitution. A document that has incorporated proven in the history of democracy, universal values, and international expertise.

Secondly, our constitution was created on the basis of the historical experience of the most developed, developed states. At the same time, we did not follow the path of blind copying of the finished Constitution of any state, but studied and took into account the most advanced foreign Constitutional experience. As a result, our country and on a global scale freely fights with the Constitution of any developed state.

Thirdly, the ideas and norms of the constitution are based on the deep historical roots of our people, contain centuries-old experience and spiritual values, the legal heritage of our great ancestors.

References:

1. Constitution of the Republic of Uzbekistan - T .: Uzbekistan, 2019. - 76p
2. E.D.Qutibaeva, Q.U. Umarova. B.A.Daumenov.M.E.Adilova.Constitutional Law (Textbook).). - Nukus. : // Qaraqalpaqstan //. 2020./424b
3. O.T. Xusanova. Constitutional Law (Textbook).- Tashkent. : // Justice //. 2013./584b
4. Z.M.IslamovTheory State and Law (Textbook).- Tashkent. : // 2007. / 855b
5. B.T.Musayev, K.R. Aliyeva, B.A.Narimanov.Constitutional Law (Textbook)- Tashkent. : // 2007. / 855b

Rezyume: *Maqolada O'zbekiston Respublikasi Konstitutsiyasini tuzish jarayonining tarixiy-huquqiy xususiyatlari keltirilgan.*

Резюме: *В статье дается историко-правовая характеристика процесса создания конституции Республики Узбекстан.*

Kalit so'zlar: *O'zbekiston Respublikasi Konstitutsiyasi, Temur tuzuklari, Kodeks, BMT, YEXHT.*

Ключевые слова: *Конституция Республики Узбекистан, Темур тузуклари, Кодекс, ООН, ОБСЕ.*

PRIORITY AREAS FOR TRANSPORT PROJECTS OF UZBEK CHINESE COOPERATION

Mambetkadyrov S.A.
Independent Researcher

Summary: *In this article, The priority directions of the Uzbek-Chinese cooperation for transport projects, cooperation between China and European countries, opportunities created for the national interests of Uzbekistan, as well as relations between East Asia and European regions are discussed.*

Keywords: *transport projects, international relations ,cooperation, routes great importance, regional development, railway, transit potential, investment, telecommunication, geographically link, central geostrategic location, infrastructure.*

A current stage analysis on the international relations of the People's Republic of China (PRC) points to special attention to enhancing its relations with the European region countries in the sphere of economy, while focusing not only to bordering states and regions, but also exploring new chapters of relations with other countries of the world towards the economic cooperation development.

At present, we observe three key priority areas of cooperation amongst parties -the fight against the COVID-19 pandemic, promoting the favorable investment climate and expanding the mutual trade networks.

Cooperation between China and European countries opens certain opportunities for countries located between the East Asia and Europe regions, including the national interests of Uzbekistan. Since the ancient times the "Great Silk Road" was the major avenue for shipment of goods manufactured in China to Europe. Obviously, nowadays Central Asia demonstrates its geo-economic importance as the major transit space connecting two major regions.

For China, overland routes to Europe through the Central Asian region are essential compared to the time allotted by sea, considering the reduction by 15-20 days. At present, the northern branch of the "New Silk Road" passes through the territory of Kazakhstan likein ancient times.

According to experts, China's interest in the fastest and cheapest transport routes to Europe is traditional. "**The Northern route** through the Russian Federation *(Trans-Siberian Railway)* and Kazakhstan *(Alashonkou-Dostyk, Altynkol-Khorgos)* is successfully operating. These routes provide convenient geographical opportunities only for the administrative-territorial entities located in the central and northern part of China"[1].

In our opinion, the importance of **the Southern route** is also growing for the Celestial Empire, with its escalating economic power. The advantage of the Southern route for China stands for two perspective trans-communication systems, namely:

1) Central Asia, Caspian Basin, Caucasus, and then Eastern Europe;

2) Central Asia, the Middle East, the NearEast and Southern Europe.

When utilizing the Southern Route, predominantly, a great importance lays in the natural relief of the Central Asian states'location and convenience for road construction.In this regard, it is obvious that in case of operationalizing the Southern Route and its two corridors, the territory of Uzbekistan occupies a central place.

For instance, we all know that in 2020 a second transit railway corridor through Uzbekistan was launched to further facilitate the PRC's export of goods to European markets. This means that the Southern Corridor, like the TRACECA project, along with regional development, will provide ample opportunities to enhance trade and transport ties between China, Central Asia and the Caucasus. The project encompasses the international road network that runs from Lanzhou (Gansu Province) of the

Dongchuan Logistics Center through Kashgar (Xinjiang Uygur Autonomous Region) to the border post Irkeshtam (Kyrgyzstan), then to Osh (Kyrgyzstan) and, finally, extends to Tashkent (Uzbekistan).

It is worth to note that the shipment of goods is carried out by the following route between Kashgar, Irkeshtam and Osh - partly by road and the rest by train. This part of the combined transport corridor exactly corresponds to the directions of the Southern corridor.

The route from China to Uzbekistan through Kyrgyzstan is shorter than the route through **Khorgos** (Chinese-Kazakh border) by 8-10 days. The corridor through Uzbekistan saves up to five days of cargo delivery, playing a tremendous role in regard to senders' money turnover and moving shippers' containers.[1]

Therefore, the design of a railway connecting China and Uzbekistan through the territory of Kyrgyzstan has launched. This railway can provide incredible opportunities for the development of mutual trade relations and upscaling investment flows. Long-term goals can be attained by establishing ***the China-Central Asia-Caucasus-Europe and China-Central Asia-Afghanistan-Iran-Turkey-South Europe corridors***.

Firstly, according to experts, the reduction of the route from East Asia across the Central Asia and the Near East to the countries of southern Europe will be about 1,000 km shorter to compare the existing international corridors (via Khorgos at 1,292 km, via Dostyk at 1,831 km) and will save around 6-7 days.

Secondly, the construction of this internationally vital road will ensure the development of transport infrastructure in Central Asia and provide an opportunity for the countries of the region to obtain convenient access to the ports of the Persian Gulf and the Indian Ocean.[1]

In addition, as one of its foreign policy priorities, Uzbekistan considers a cooperation with the states of the Caspian basin - Kazakhstan, Turkmenistan, Russia, Azerbaijan, Iran, grounded from cultural and ethnic proximity, centuries-old friendship and cooperation. Therefore, Uzbekistan is concerned in bringing to new level not only bilateral, but also multilateral relations with the basin states. Such perspective approach is primarily related to the complementary nature of the economies of Uzbekistan and the Caspian basin countries for the prospective development of relations in the field of transport and communications.

From this angle, applying the transit potential of the ***Baku-Tbilisi-Kars*** railway will allow the Central Asian countries to diversify transport routes. Consequently, for the countries of the Caucasus (Azerbaijan, Armenia, Georgia), the Central Asian region can become a unique place providing access to China and South Asia[1].

From our standpoint, in the nearest future, the China-Europe road passing through Uzbekistan may become another crucial network - the Trans-Afghan Transport Corridor. As the root causes of such assumption, we presume that access to Indian Ocean ports across the Afghanistan is now envisaged as a priority dimension in Uzbekistan's foreign policy. The key component of this interregional corridor could be the construction of the ***Termez-Mazari-Sharif-Kabul-Peshawar*** railway. Inevitably, it will extend the transit capacity of the international North-South transport corridor.

Another ultimate task has been initiated in December 2020, when the first train from Hebei Province (PRC) launched a new project with a total length of more than 5,000 km with transit time of approximately 80 hours. It was a part of the ***China-ASEAN*** international railway service. This program creates incredible conditions for the supply of Chinese products to the markets of the ASEAN countries.

It is noteworthy for us that in October 2020, the first freight train was launched from Hebei Province to Tashkent. Undoubtedly, the establishment of regular freights along this route will allow the countries of Central Asia, on the one hand, to increase the supply of goods to Europe, on the other hand, to enter the markets of the countries in the Southeast Asian region across China.

Above mentioned projects and their implementation can provide a great deal of opportunities for China and Uzbekistan. However, along with the existing opportunities, these projects encounter a quite number of bottlenecks.

For instance, currently Kyrgyzstan and Uzbekistan have different opportunities for building a railway. The Kyrgyz side is not ready to borrow money from China for construction due to the changing political situation in the country. According to independent experts, the estimated cost of construction is around $3 billion.

In addition, China offers construction work by investment. In order to accomplish this, the dimensions of the rail pitch must comply with their standards, i.e. 1,435 mm. The same 1,435mm standards applied in the rail system of European countries. In the contrary, in the former Post-Soviet countries, the railway infrastructure was built to a width of 1,520 mm. Hence, Kyrgyzstan, who is willing to connect its Southern and Northern (inland) railways by building a transit road from China to Uzbekistan, does not hold the full capacity to meet these requirements.

Besides, the participation of Kyrgyzstan is due not only to the lack of railways, but also to the complexity of the geographical terrain where the country is located - a mountainous area. For example, the delivery of goods from Kyrgyzstan to Andijan takes a long time: despite the distance is 76 km by car, it takes more than two and a half hours to overcome it. Furthermore, most trucks in Kyrgyzstan are obsolete (the average life of vehicles is over 11 years, which is likely to increase fuel, lubricants, and maintenance costs).

In summary, we would like to note that the system of international telecommunication networks passing through Central Asia is largely connected with the transport infrastructure of Uzbekistan, which can easily geographically link the transport systems of the region. In general, despite to a number of existing problems, Uzbekistan remains a central geostrategic location, connecting international transport corridors with its active foreign policy and potential.

References:

1.Chinese imports from Central Asia and the Caucasus collapsed in 2020 -https://russian.eurasianet.org/china-imports-from-central-asia-and-caucasus-in-2020-collapsed Jan 22, 2021

2. Uzbekistan stands for the development of a Strategy for the development of regional transport corridors in Central Asia https://xs.uz/ru/post/uzbekistan-vystupaet-za-razrabotku-strategii-po-razvitiyu-regionalnykh-transportnykh-koridorov-tsentralnoj-azii-2 August, 14 2020

3.Vitaly Volkov. “New Silk Road”: Does China stake on Uzbekistan? https://www.dw.com/ru/new-silk-road-china-betting-on-uzbekistan/a-5376218811.06.2020

4. Dmitry Kosyrev. The future of China is the West. But not what you think. (The date of application to the site is 02.05.2021) https://uz.sputniknews.ru/columnists/20200624/14404528/Buduschee-Kitaya-Zapad-No-ne-tot-chto-vy-dumaete.htm 24.06.2020

Rezyume: *Bu maqolada O'zbekiston Xitoy hamkorligining transport loyihalari uchun ustuvor yo'nalishlari, Xitoy va Yevropa davlatlari o'rtasidagi hamkorlik Sharqiy Osiya va Yevropa mintaqalari o'rtasida joylashgan O'zbekistonning milliy manfaatlari uchun yaratilgan imkoniyatlari va shuningdek muommalari haqida so'z boradi*

Резюме: *В данной статье обсуждаются приоритетные направления узбекско-китайского сотрудничества по транспортным проектам,сотрудничество между Китаем и европейскими странами, возможности, созданные для национальных интересов Узбекистана, а также отношения между регионами Восточной Азии и Европы*

***Kalit so'zlar**: transport loyihalari, xalqaro aloqalar, hamkorlik, yo'nalishlar, katta ahamiyatga ega, mintaqaviy rivojlanish, temir yo'l, tranzit salohiyati, investitsiya,telekomunikatsiya, geografik bog'lanish, Markaziy geostrategik joylashuv,infrastruktura*

***Ключевые слова:** транспортные проекты, международные отношения, сотрудничество, маршруты, большое значение, региональное развитие, железная дорога, транзитный потенциал ,инвестиции, телекоммуникации, географическая связь, центральное геостратегическое расположение, инфраструктура.*

FEATURES OF THE CIVIL STATUS OF SPORTS ORGANIZATIONS

Tleumuratov M.B.
Karakalpak State University named after Berdakh

Summary: *In the light of new developments and the emergence of new, more complex forms of systematization of legislation in Uzbekistan and many other countries, it is necessary to study the legal nature of legal entities in the field of physical culture and sports, theoretical and legal personality.*

The main strategic goals of the development of physical culture and sports in the Republic of Uzbekistan, the tasks of developing a new state policy in the field of sports, preparation for several events, major international sports events in the coming years offer great prospects for sports development in Uzbekistan. However, this task cannot be effectively addressed without systematizing the current legislation and defining the status of physical culture and sports organizations.

Keywords: *sports organization, athlete, legal status, sports law, sports legislation, registration, legal capacity, physical education.*

The legislation on physical education and sports is one of the newest areas of jurisprudence, which covers public relations arising in this area, which is currently continuing to be formed. The main subjects of these relations are sports organizations (clubs, centers specializing in various types of training, federations, etc.) and athletes. Sports organizations are a structure that deals with such issues as the training of ordinary athletes, the organization and conduct of relevant competitions, the registration of legal aspects of sports activities.

In particular, the legislation should specify the legal status of participants in physical education and sports activities, specify the types of activities of commercial and non-profit organizations, specify the procedure, conditions for the implementation of this activity, determine the forms and methods. Responsibility of physical education and sports organizations and others, ways and methods of improving the legislation of the Republic of Uzbekistan in the field of Sports.

Among the numerous shortcomings of modern Uzbek legal regulation in the field of sports , the following are the most import firstly, the commercialization of sports is becoming more and more widespread, and the legislation does not contain provisions on commercial activities related to sports. In the field of sports, the peculiarities of the subjective right of legal entities are not taken into account, otherwise their legal capacity will not be determined. There are also norms of self-financing and subsidizing of physical culture and sports organizations, there is no pricing policy for physical culture and sports services, etc.;

• secondly, there is no institute of responsibility of physical culture and sports organizations that may arise in the course of commercial activities. Based on the above, we can say that to date there is no single regulatory legal act regulating the fundamental aspects of commercial corporate relations in the field of physical culture and sports.

The presence of blanket and reference standards in the law of the Law of the Republic of Uzbekistan No.394 "On physical education and sports" confirms its declaration in relation to the legislation of European countries.

This is evidenced by the fact that the activities of physical education and sports organizations are poorly covered by this law. Articles on physical education and sports organizations are covered in the law "On physical education and sports recreation", in which there is nothing but a little more attention to sports federations."

Numerous decrees of the President of the Republic of Uzbekistan, resolutions of the government of the Republic of Uzbekistan, numerous amendments have been made to the orders of the Ministry of Sports of the Republic of Uzbekistan, which led to the chaos of the system of sports legislation and its instability in the law "On physical education and sports".

At the same time, the law "On physical education and sports" should occupy a priority place in the system of normative legal acts and perform not only regulatory functions, but also other functions, for example, profilactics, etc. and in relation to other normative legal acts, functions intended to solve the main network legislation.

Taking into account the above, the law "On physical education and sports" requires amendments. Despite the constant improvement of the norms of the Civil Code of the Republic of Uzbekistan on the legal entity, its concept remains unchanged. It was determined that the content of the concept of a legal entity does not correspond to its essence. Thus, any legal entity, as a subject of civil legal relations, will have not only the right to be treated, but also the right to exercise, that is, a legal entity, otherwise any legal entity will have the right to exercise and exercise, through its own bodies, the rights to perform their actions, as well as to create and perform tasks. At present, in civil law, the rights are divided into three types: real, creditor rights and property, legal and liability rights, which consist of the obligations of the debtor. In this regard, it is necessary to change the concept of "legal entity" and include it in the following edition of Article 39 of the Civil Code of the Republic of Uzbekistan:" a legal entity is a legal entity, which has its own property, which has its own name: property, exclusive and other property and non-property rights and obligations, which has a separate property.

Since public activities can only be carried out by organizations that fully possess the characteristics of a legal entity, there is no concept of Organization, for example, in the field of physical education and sports and without the establishment of a legal entity. From this point of view, in legislation, it is necessary to legalize (create) the concept of "organization". It is also proposed to adopt the following concept: "an organization is a collective organization that performs the functions of Social Security, solves the problems of satisfying the material and intangible needs and interests of citizens and legal entities." This concept can be legalized as an addition to the paragraph of Article 39 of the Civil Code.

Taking into account the concept of a legal entity as a legal entity, we can conclude that this concept represents the unity of legal and legal dignity, but it can not mean either a certain set of rights, or a set of rights that are constantly changing. The content of the legal capacity is a complex component that determines the legal status of this legal entity. Having analyzed in depth the content of Article 40 of the Civil Code, it is proved that it determines the legal status of legal entities. It means that legal entities are divided into legal entities, which have the universal right of the subject, that is, they can have civil rights and absorb the civil obligations necessary for the implementation of any type of activity, and which are determined by the right of the subject, determined by law. . Article 41 of the Civil Code to change the name and describe it in the following wording: "the right of a legal entity to subjectivity" is proposed.

Analysis of legislative acts in the field of physical education and sports can be concluded that the conduct of physical education and sports, that is, the legal subject of physical education and sports organizations, has not yet been determined in accordance with the classification adopted by civil legislation.

Article 16 of the law "On physical education and sports" states that physical education and sports organizations can be established in any organizational and legal form illegally. For example, it is impossible to establish a physical education and sports organization in the form of a production or Consumer Cooperative, a religious organization or a peasant (farmer) farm. Studies have shown that

physical education and sports organizations, including clubs, sports leagues, and others, can be both commercial and non-commercial.

Consequently, a special legislative document on legal entities and organizations in the field of physical education and sports activities is required or amendments and additions to the law "On physical education and sports".

Physical education and sports can be created in the form of economic entities and partners, in particular, in the form of full cooperation, limited cooperation, limited liability company, additional liability company, Joint Stock Company, taking into account the provisions provided for in Article 40 of the Civil Code of commercial organizations. And citizens can also carry out physical education and sports activities as an individual entrepreneur. Accordingly, the procedure for their creation, activity, reorganization and liquidation shall be carried out in accordance with the civil legislation of the Republic of Uzbekistan and in accordance with their constituent documents.

In connection with the development of commercialization of sports, it is desirable to develop and legalize it in a similar way to the concept of "entrepreneurial activity", the concept of "physical education and sports activity", in this regard, the author's version of this concept is proposed namely - "physical education and sports activity, taking into account the organizational and legal form of this legal Entrepreneurs can be directed and benefit but regardless of this, the purpose of the activity should be directed towards the development of physical education and sports in the countrytirishga. "This concept offers the introduction of Article 3 of the law"on physical education and sports".

Physical education and sports organizations as a legal entity are subject to the right – based on the fact that "physical education and sports are developed in the country", the law "On physical education and sports" should establish the order and conditions for their formation.

Physical education and sports organizations as a legal entity are subject to the right – based on the fact that "physical education and sports are developed in the country", the law "On physical education and sports" should establish the order and conditions for their formation.

When conducting sports events, there is a corporate relationship between physical education and sports organizations, they have special offenses. The effectiveness of each physical education and sports organization is determined by their constituent documents. The analysis of corporate legal relations in the field of physical education and sports, including their offenses and sanctions, revealed the need to combine the basic concepts of corporate legal relations between physical education and sports organizations not only in their constituent documents, but also in the law.

In addition to the proposed amendments and additions to the law "On physical education and sports", it is necessary to develop a system of acts in the field of physical education and sports. In general, taking into account the regulation of physical education and various sports and special regulations, it is proposed to develop a set of legislative documents. For example, instead of the declarative proposals for the codification of sports legislation, it is proposed to develop a law "On physical education and sports organizations", in which all stages of the organization, conduct and termination of physical education and sports organizations, including their organizational and legal forms, are collected in the Republic of Uzbekistan. To him it is the responsibility of legal entities in sports, the introduction of a section of sanctions applied to them, more accurately determine the methods of self-management of physical education and sports organizations and determine the state policy in this field of activity. As an independent department, the introduction of Labor and other relations in the field of sports is required.

All the above opinions on amendments and additions to the Law of the Republic of Uzbekistan No. 394 "On physical education and sports" undoubtedly solve a number of issues raised in this scientific article. The changes introduced not only systematize the norms of sports legislation, but also greatly facilitate and simplify the work with the legislative act. In addition, the legal status of legal entities that

carry out their activities in the field of physical education and sports is regulated, which regulates the relationship between the subjects of physical education and sports.

In Uzbekistan, at present, relations between state bodies and various public associations can not be called ideal.

The theme of relations between the state and various organizations involved in sports is one of the central themes of the legislation on physical education and sports. On September 4, 2015, after the adoption of the Law No. 394 "On physical education and sports", this became a new phenomenon, because at the legislative level of the first marathon, self-government in the field of physical education was recognized, and the combination of state regulation and self-management was declared one of the principles of legislation in this area. However, the combination of this principle did not completely solve the problem. On the contrary, despite the recognition of self-government, the legislation of Uzbekistan could not answer the question of what should be trusted in this area,what should be considered, in what forms, what subjects and in what cases are permissible, how to combine it with state regulation, and in general, whether it should be combined or not.

To some extent, the concept of sports autonomy was also adopted in the legislation of Uzbekistan. In fact, the legislative acts of 1990-2000 years laid the foundation for the activities of independent physical education and sports organizations from the state.

At the same time, it is impossible to agree with the fact that the legislator of Uzbekistan did not give the necessary assessment of the actions of international and national sports organizations. So, E.V.Pogosyan notes that "in the legislation on physical education and sports, local acts of physical education and sports organizations are not recorded at all, which leads to difficulties in the implementation of the rules established in them". With all the importance of the acts of international and National Physical Education and sports organizations, it is difficult to associate them with legislation, which is understood as a system of normative legal acts in the doctrine and law enforcement of the internal law. Also, with the adoption of the law "On physical education and sports", the legislator took a big step towards recognition of the role and position of non-state (non-state) organizations of physical education and sports in the regulation of physical education and mutual relations. this is evidenced by the inclusion of the principle for the unification of Sports, state regulation and independence of organizations among the principles of legislation on physical education and sports.

The combination of state regulation and independence of relations in the field of physical education and sports has been concretized principle. Article 16 of the law on physical education and sports, dedicated to the rights and obligations of sports federations. So to speak about the subjects of self-control, which are shown in art. In Article 3 of this law, the legislator first referred to the specific type of physical education and sports organizations, that is, sports federations.

This identification of these organizations is not surprising because they are recognized as responsible for the development of sports. The independence of the activities of sports federations is expressed as follows. First, they have the right to approve the norms that determine the rights and obligations for the subjects of physical education and sports, including sports sanctions, which recognize these norms (paragraph 16 of Article 1 of this law, paragraph 5 of this law).

At the same time, although the legislator distinguishes the subjects that can refer to the normative guidelines of sports federations, in fact we must admit that we are talking about a circle of unknown persons, because the subjects of physical education and sports are wide (in particular, they include sports organizations of physical education, citizens engaged in physical education and sports, etc.).

I would like to note that the fact of the independence of physical education and sports organizations exists, but the state itself sometimes unreasonably removes from the obligation to legalize

the sphere of professional sports. The theoretical basis of physical education and Sports Communication (Sports Law) is rapidly developing in the conditions of the market economy.

Sports clubs, especially under public control, sometimes become bosses under sports headlines after another major transfer agreement. In this regard, the question arises: What is the legal status of a sports club, what mandatory requirements should it meet, what is its role?

In accordance with the generally accepted foreign doctrine of Uzbekistan, a professional sports club is a legal entity that is established and operates on the basis of state laws, enters into membership or contractual relations with a sports federation or professional sports organization, participates in sports competitions which take advantage of this activity.

The law "On physical education and sports "gives the following definition to the concept of Sports Club:" sports clubs are legal entities that carry out educational activities, are competitive, carry out physical education and educational activities. Sports clubs, regardless of their organizational and legal forms, are formed and conduct their activities in accordance with the legislation of the Republic of Uzbekistan. Sports clubs can be established by legal entities and individuals. Sports clubs can be assisted by state government agencies, local self-government bodies:

1) construction, reconstruction, repair of sports facilities and other sports facilities;

2) free use or long-term lease of state-owned buildings, buildings and structures on preferential terms;

3) providing sports equipment and equipment;

4) provision of normative-legal acts of state executive bodies, other assistance in the manner and in cases established by the normative-legal acts of state executive bodies.

Thus, within the framework of the sample of international private law, the 28th plenary session of the Parliamentary Assembly of the CIS member states (the 28th resolution of May 31, 2007) adopted a standard law on professional sports, regulating the legal, organizational and social foundations of public relations in the field of professional sports, as well as defining the legal status of professional athletes,

Article 6 of the above-mentioned sample law established the basic rights and obligations of professional sports clubs, respectively, in conjunction with the right of sub-subjects to the Sports Club, gives the right to become a participant of both domestic economic activity and external activity.

The Sports Club has the following rights:

● development and adoption of internal regulations and other local documents containing the norms of sports legislation;

● concludes, changes and cancels contracts on sports activities in the manner and on the conditions established by regulatory documents containing the norms of sports legislation;

● encourage professional athletes, professional coaches and other sports personnel to achieve high sporting results;

● to require professional athletes, professional coaches and other sports personnel to perform the duties specified in the employment contracts concluded in the field of professional sports, as well as to comply with the internal labor regulations of the professional sports club;

● disciplinary and material responsibility of professional athletes, professional coaches and other sports personnel for violations of regulatory documents containing the norms of sports legislation

● exercise other powers in accordance with the provisions of the sports legislation.

While the obligations of the Sports Club :

to pay the monthly salary to a professional athlete, professional coach and other sports workers in a fixed amount not less than the established subsistence minimum for persons who are able to work in the country, as well as other payments under the contract for sports. activities and norms of national labor legislation;

organization of mandatory preliminary, preliminary and extraordinary medical examinations, while retaining from their own funds the place of work (position) of professional athletes, professional coaches and other sports workers and the average salary during these medical examinations;

registration of labor contracts in the field of professional sports in the sports federation within the periods established by the normative legal acts of the sports federation;

provide a professional athlete, professional coach and other sports personnel with the Sports Form, equipment, medical care and other means necessary for them to fulfill their labor obligations under the contract on sports activities;

to create appropriate technical equipment that meets the requirements of labor protection and safety for the places where sports competitions and training camps are held, and to ensure the safety of professional athletes and other sports workers;

to ensure the daily needs of a professional athlete, professional coach and other sports worker in connection with the fulfillment of the labor obligations stipulated by the agreement on sports activities

when preparing for sports competitions or directly participating in them, in the event that a professional athlete receives a stroke, as well as in other cases established by the National Labor legislation, organizes free qualified medical assistance to a professional athlete, and also ensures the examination and recording of such an unfortunate event during the period of temporary incapacity of a professional athlete, professional coach and other sports worker due to a sports injury, they are paid to them in full the salary from the account of their own funds, the amount of which is agreed by the parties in the contract on sports activities, but not less than the established subsistence minimum

- to combat the use of prohibited doping and other harmful means and (or) methods in sports during the preparation for sports competitions and participation directly in them;
- organization of promotion of popularization and popularization of sports among the population in accordance with national legislation;
- implementation of compulsory social and medical insurance for professional athletes, professional coaches and other sports personnel in accordance with the procedure established by national legislation;
- training of reserve athletes among young people, creation of children's sports schools, training of coaches and referees on the main type of sport;
- compliance with laws and other regulatory legal acts, which include the norms of sports legislation, the performance of tasks arising from membership in the sports federation or sports professional organization, as well as other duties in accordance with regulatory legal acts, which include the norms of sports legislation.

It gives a clear idea of the above rights and obligations under consideration in the example of the CIS countries, and hence the fact that it is a full-fledged legal entity that has the right to become a subject within the framework of international private-legal relations. At the moment, the Sports Club is a private participant of economic activity, both in the framework of relations with other sports clubs, with the state, and with individuals - with athletes in the framework of labor activity.

References:

1. Мерзликина Р.А., Бычкова А.В. Физкультурно-спортивные организации в гражданско-правовых отношениях: проблемы теории и практики // yberleninka.ru/article/n/fizkulturno-sportivnye-organizatsii-v-grazhdansko-pravovyh-otnosheniyah-problemy-teorii-i-praktiki
2. Погосян Е. В. Формы разрешения спортивных споров. М., 2011. С. 12–13

3. Модельный закон № 28-8 «О профессиональном спорте» от 31 мая 2007 года. Принят на 28 пленарном заседании Межпарламентской Ассамблеи государств-участников СНГ.

Rezyume: *Rivojlanishning yangi voqeliklari va O'zbekistonda va dunyoning boshqa ko'plab davlatlarida qonunchilikni tizimlashtirishning yangi, tarkibiy jihatdan ancha murakkab shakllari paydo bo'lishida jismoniy tarbiya va sport sohasidagi yuridik shaxslarning huquqiy tabiati, yuridik shaxsini nazariy va huquqiy o'rganish zarur.*

O'zbekiston Respublikasida jismoniy tarbiya va sportni rivojlantirishning asosiy strategik maqsadlari, sport sohasida yangi davlat siyosatini ishlab chiqish vazifalari, bir nechta tadbirlarni o'tkazishga tayyorgarlik kelgusi yillarda bo'lib o'tadigan yirik xalqaro sport tadbirlari O'zbekistonda sportni rivojlantirish uchun ajoyib istiqbolni taqdim yetadi. Biroq, bu vazifani amaldagi qonunchilikni tizimlashtirmasdan, jismoniy tarbiya va sport tashkilotlarining maqomini belgilamasdan samarali hal etish mumkin emas.

Резюме: *В свете новых явлений и появления новых, более сложных форм систематизации законодательства в Узбекистане и многих других странах необходимо изучение правовой статус юридических лиц в сфере физической культуры и спорта, в теоретическом и правовом аспекте.*

Основные стратегические цели развития физической культуры и спорта в Республике Узбекистан, задачи разработки новой государственной политики в области спорта, подготовка ряда мероприятий, крупных международных спортивных мероприятий в ближайшие годы открывают большие перспективы для спорта и развития в Узбекистане. Однако эффективное решение этой задачи невозможно без систематизации действующего законодательства и определения статуса физкультурно-спортивных организаций.

Kalit so'zlar: *sport tashkiloti, sportchi, huquqiy maqom, sport huquqi, sport qonunchiligi, ro'yxatdan o'tish, huquq layoqati, jismoniy tarbiya.*

Ключевые слова: *спортивная организация, спортсмен, правовой статус, спортивное право, спортивное законодательство, регистрация, дееспособность, физическое воспитание.*

THE USE OF MODALITY IN THE NOVEL "PRIDE AND PREJUDICE" BY JANE AUSTEN

Utegenova M., Khadjieva D.
Karakalpak State University named after Berdakh

Summary: *This article explores the use of modality markers in the literary text written by an English Novelist Jane Austen.It is crucial to recognize the basic concept of modality and modal verbs in context as it will allow the learners to reveal the correct use in order to eliminate the misunderstandings.The writer makes great use of modality that implies the writer's idealogy of certainty and uncertainty about the proposition in literary texts.*

Keywords: *Modality, modal verbs, literary text, types of modality.*

Understanding the notion of modality is a great significance as they occur frequently in most cases. Modal verbs are one of the aspects of English that make learning the language so challenging as one modal verb can mean some different expression and one expression convey several modal verbs.

Therefore,it can be said that the meaning of modal verbs are context- dependent.

According to Palmer, modality is defined as semantic information associated with the speaker's attitude or opinion what is said.[1;15p]

By bee points out a broader definition; what the speaker is doing with the whole proposition.[2;156p]

This enables speakers to consider what will happen in the communication process. They may express ability, certainty, possibility,obligation or necessity of message. Halliday points out that modality is the intermediate degrees between the positive or negative poles that lies between the positive or negative poles that lies between yes and no.[3;115p]

When language functions as a proposition to exchange information,which means „maybe" or „sometimes", there are two possibilities co-existing in modalization: Probability and Usuality. When language function as a proposal to exchange goods servise, there are also two kinds of possibilities in modulation: Obligation and Inclination, which distinguish command from offer.

Perkins notes that modality is the representation of either rational, social or natural lows Perkins argues that "all the modal auxiliaries are compatible with either a subjective or an objective interpretation where as the vast majority of non-auxilary modal expressions – especially those containing be-are inherently objective".[4.68]

According to Perkins in the framework of modal logic "a given event or proposition may be relative to, or may be qualified by, a particular world view, state of affairs, set of principles etc" [4;9]

Halliday argues that modality can be expressed by using:

1) Modal vervs such as can, would, should, or might, as in:

I was afraid they **might** not, and we overtook William Goulding in his curricle, so I was determined he **should** know it, and I let my hand just rest upon the window frame, so that he **might** see the ring, and then I bowed and smiled like anyting."

In these lines, the author has used the modal verbs "might" and "should".

"Might indicates uncertainty about the future, while "should"shows strong obligation.

"How good it was in you, my dear Mr.Bennet! But I knew I **should** persuade you at last. I was sure you loved your girls too well to negleet such an acquaintance.Well, how pleased I am! And it is such a good joke, too, that you **should** have gone this morning and never said a word about it till now".

In this extract, the author has skillfully used the modal verb "should"in two different meanings. The first one indicates what the speaker considers right –whether morally or as a matter of expediency.

Thomson and Martinet state that should in construction with the perfect infinitive is used to express an unfulfilled obligation or a sensible action that was neglected. It is given in the second use of modal verb "should".

"I **would** not wish to be hasty in censuring anyone; but I always speak what I think."

In this line, Jane Austen has used the modal verb "would" to discuss the past habits of a particular group of people.

"Mr Collins **might** never make the offer, and fill he did,it was useless to quarrel about him"

The modal verb "might" has been used to show uncertainty about the past.

2) Nouns such as possibility, chance, hope, expectation, intention and determination, as in:

"I have a excessive regard for Miss Jane Bennet, she is really a very sweet girl, and I wish with all my heart she were well setted But with such a father and mother, and such low connections, I am afraid there is no **chance** of it."

His regard for her was quite imaginary; and the **possibility** of her deserving her mother's reproach prevented his feeling any regret.

She follows him to town in **hope** of keeping him there,and tries to persuade you that he does not care about you.

3) Adjectives such as possible, likely, obvious, certain as in:

Conceal the unhappy truth as long as it is **possible**, I know it cannot be long.

"I wonder" said he, at the next opportunity of speaking, "Whether he is **likely** to be in this country much longer."

4) Adverbs such as hardly, perhaps, evidently, assuredly, fortunately, regrettably, surprisingly.

Perhaps we might be deceived.

To be sure that did seem as if he admired her-indeed I rather believe he did – I heard something, about it – but **hardly** know what- something about Mr.Robinson."

She concluded with many good wishes that Lady Lucas might soon be equally fortunate, though **evidently** and believing there was no chance of it.

5) Verbs such as doubt, thimk, believe, predicit, suggest, want, prefer, desire, permit, forbid eta; as in;

My brother admires her greatly already; he will have frequent opportunity now of seeing her on the most intimate footing; her relation all wish the connection as much as his own; and a sister's partiality is not misleading me, I **think**, when I call Charles most capable of engaging a ny woman's heart.

She is all affability and condescension, and I **doubt** not but you will be honoured with some portion of her notice when service is over.

Modal categories have a key function in literary texts because any characters statements about other characters and narrator's statements about characters are always influenced by the selection of specific modalities Jane Austen, the author has skillfully used modality in their real usage. Researchers divide the type of modality differently.According to Downing and Locke, Cruse, Saed and Larsen-Freeman, modality is classified into two types;

Epistemic was derived from the Greek word episte`me` "knowledge". Thus, epistemic modality is related to a speaker's knowledge on the proposition.

The degree of certainty on the knowledge of a proposition may fall under several grades; certain, probable and possible. Epistemic modality has been defined in many ways. According to Lyons,"epistemic modality is concerned with matters of knowledge, belief, or opinion rather than fact" [5,p793]

Palmer regards epistemic modality as a sub-type of "propositional modality"and suggests that with epistemic modality speakers express their judgments about the factual states of the proposition".

[6,p8] Coates contends that epistemic modality "is concerned with the speaker's assumption or assessment of possibilities and,in most cases, indicates the speaker's confidence in the truth of the proposition expressed." [7;p18]

All things considered, it is accepted that epistemic modality indicates the addresser's judgment of the truth of the statement.

The meanings of epistemic modality are classified on the basis of the degree of certainty; thus they may be differentiated into;

Certainty, probability, and possibility.

Epistemic certainty is commonly expressed with the modal verb "must".

"From all that I can collect by your manner of talking, you**must** be two of the silliest girls in the country. I have suspected it some time ,but I am now convinced".

Jane Austen has used epistemic certainty with the help of "must" in order to describe girls.

Conditional clauses may express the meaning of epistemic certainty. If a condition is fulfilled it is certain that another condition will take place.

"I do not believe a word of it,my dear. **If** he had been so very agreeable, he would have talked to Mrs.Long."

A number of modal adjuncts may carry the meaning of epistemic certainty such as certainly, definitely, surely, etc.

"My dear,you flatter me, I **certainly** have had my share of beauty, but I do not pretend to be anything extraordinary now."

"It would **surely** be much more rational if conversation instead of dancing were made the order of the day."

Lexical verbs such as believe and guarantee may also express epistemic certainty.

"There is, I **believe**, in every disposition a tendency to some particular evil- a natural defect, which not even the best education can overcome"

Epistemic certainty may also be expressed by the lexico-modal auxiliaries be certain to, be found to and be sure.

"Whatever can give his sister any pleasure is **sure** to be done in a moment. There is nothing he would not do for her".

Epistemic probability conveys the median degree of confidence based on the speaker's knowledge on the proposition.

Firstly, modal operators should and ought to convey epistemic probability.

For example;

"He is just what a young man **oughtto** be" said she,"sensible, good –humoured, lively; and I never saw such happy manners!-so much ease, with such perfect good breeding!"

"One cannot wonder that so very fine young man, with family, fortune, everything in his favour, **should** think highly of himself"

"I **should** not care how proud I was."

Secondly, the modal adjuncts which express epistemic probability are probably, perhaps, and maybe.

"Your conduct would be quite as dependent on chance as that of any man I know; and if, as you were mounting your horse, a friend were to say, 'Bingley, you had better stay till next week,' you would **probably** do it, you would **probably** not go-and at another word, might stay a month.

"**Perhaps** he must, if he sees enough of her."

Thirdly, the lexical verbs guess, think and suppose may express epistemic probability.

"Oh! You mean Jane, I **suppose**, because he danced with her twice"

"Wickham, perhaps, is my favourite, but I **think** I shall like your husband quite as well as Jane's".

Next, epistemic probability can be realized in a clause such adjectives as likely, probable, etc.

"I wonder," said he, at the next opportunity of speaking, "Whether he is **likely** to be in this country much longer"

"I have never heard him say so; but it is **probable** that he may spend very little of his time in the future.

Epistemic possibility conveys the lowest degree of confidence based on the speaker's knowledge on the proposition.

"Can", "Could", "May", "Might" are modal verbs which express epistemic possibility.

"Neglect! I am sure you neglect nothing that **can** add to beauties of that noble place.

Charles, when you build your house, I wish it **may** be half as delightful as Pemberley".

What **could** be the meaning of it? If was impossible to imagine; it was impossible not to long to know. In the examples below, there is given the use of modal verb "might" and modal adjunct "possibly" in order to express epistemic possibility.

"If he means to be but little at Netherfield, it would be better for the neighbourhood that he should give up the place entirely, for then we **mightpossibly** yet a settled family there.

Deontic Modality.

The term deontic was derived from the Greek word deontic meaning "which is obligatory", but, this word is adopted as a term which refers to a type of modality which covers obligation and permission.

According to Kreidler, deontic modality is the necessity of a person to do or not to do in a certain way. It shows the speaker's desire for the proposition expressed by the ufferance.[8;241p]

Saeed describes that deontic modals convey two kinds of social knowledge, obligation and permission.

Obligation is concerned with "what a person must do", whereas permission deals with "someone's authority to permit somebody else to do something."

All things considered ,deontic modality is concerned with the meaning of a proposal in the meaning of a proposal in the positive and negative poles in prescribing and proscribing.

The meanings of deontic modality are classified on the basis of the degree of obligation;thus they may be differentiated into; necessity, advisability and possibility (permission).

Deontic necessity conveys the highest degree of obligation of a command.

The modal verbs "must" and "have to" express deontic necessity.

"Mr.Darey, you **must** allow me to present this young lady to you as a very desirable partner."

"Indeed, Mr.Collins, all praise of me will be unnecessary. You **must** give me leave to judge for myself, and pay me the compliment of believing what I say."

Deontic necessity can also be realized in a clause with the adjectives necessary and urgent followed by either an infinitive or a that–clause.

"It was **necessary** to make this circumstance a matter of pleasure, because on such occasions it is the etiquette; but no one was less likely than Mrs.Bennet to find comport in staying home at any period of her life.

Deontic advisability conveys the median degree of obligation of a command and the linguistic properties which may express such meanings are given in the given examples below. Deontic advisability "should" and "ought to" convey mostly this case.

"Upon my word, Caroline, I **should** think it more possible to get Pemberley by purchase than by imitation".

"The Church **ought to** have been my profession I was brought up for the Church, and I **should** at this time have been in possession of a most valuable living, had it pleased the gentleman we were speaking of just now."

Deontic possibility conveys the lowest degree of obligation of a command so that it implies the sense of permission. The modal operators which may convey deontic permission are "may" and "can" "I see no occussion for that you and the girls **may** go, or you **may** send them by themselves, which perhaps will be still better, for as you are as handsome as any of them, Mr.Bingley **may** like you the best of the party."

In this paper, we analyzed the modality which has been used in the Novel "Pride and Prejudice" by Jane Austen. According to our understanding, the way modals work could also lead to better appreciation of literary texts and know how to apply modals could make one's literary work more indicative. In this work, it has been revealed modality and its types with their different meanings in context. Epistemic frequency and percentage of the epistemic modals differ from one genre to another, and are lower than deontic modal in this literary work.

References:

1.Palmer,F.R . 1986.Mood and Modality.Cambridge;Cambridge University Press.
2.Bybee,Joan L.1994.The Evolution of Grammar:Tense,Aspect and Modality in the Languages of the world.
3.Halliday,M.A.K.2004.An Introduction to Functional Grammar.Third Edition,London;Edward Arnold.
4.Perkins,M.R (1983)Modal expressions in English;Greenwich:Aalex Publishing Corporation.
5.Lyons,John.1997.Semantics,Volume 2.Cambridge:Cambridge University Press.
6.Palmer,F.R.2001.Mood and Modality(2nd edition)Cambridge and New York,Cambridge University Press.
7.Coates,J (1995).The expressions of root and epistemic possibility in English.Amsterdam and Philadelphia,PA: John Benjamins Publishing Company.
8)Kreidler,C. W (1998)Introducing English Semantics London:Routledge.
9)Saced,J,L(2003).Semanties 2nd Oxford ;Blackwell Publishing.

Rezyume: *Ushbu maqolada ingliz yozuvchisi Jeyn Osten tomonidan yozilgan badiiy matnda modallik belgilaridan foydalanish ko'rib chiqiladi. Modaliylik va modal fe'llarning asosiy tushunchasini kontekstda tanib olish juda muhim, chunki bu bizga to'g'ri foydalanishni aniqlash imkonini beradi. Badiiy matnlardagi tushunmovchilik va hukmdagi noaniqliklarni bartaraf etish.*

Резюме: *В данной статье исследуется использование маркеров модальности в художественном тексте, написанном английской писательницей Джейн Остин.Крайне важно распознавать базовую концепцию модальности и модальных глаголов в контексте, поскольку это позволит нам выявить правильное упортребление,чтобы устранить недоразумения.Писатель широко использует модальности,подразумевающую авторскою иеалологию уверенности и неопределенности относительно суждения в художествунных текстах.*

Ключевые слова: *модальность, модальные глаголы, художественные тексты, виды модальности.*

Kalit so'zlar: *modallik, modal fe'llar, badiiy matnlar, modallik turlari.*

MORPHOLOGICAL WAYS OF EXPRESSING THE MEANINGS OF POSSESSIVENESS IN THE KARAKALPAK LANGUAGE

Bekbergenov H.U.[1], Tajieva A.[2]
[1]Karakalpak State University named after Berdakh,
[2]Nukus State Pedagogical Institute named after Ajiniyaz

Summary: *This article deals with the category of personal possessiveness of the noun in the Karakalpak language and its corresponding equivalents in English. Grammatical forms and their meanings, the main phonetic changes of possessive affixes are described. Their formal indicators and semantic correlations between the language units are analyzed.*

Keywords*: noun, affixes, category of possessiveness, morphological means.*

Introduction.

The category of personal possessiveness is used to express that something belongs to somebody or something and shows both possessive relation and meaning between a possessor and an object possessed. The noun itself by means of affixes indicates which person (first, second, or third person) is the owner of the thing in the Karakalpak language. In other words, one and the same noun exhibits both an object possessed and its possessor. Suffixes added to the noun are called possessive affixes and there are different types of affixes for each person and for both singular and plural number.

E.g. qálemim, qálemiń, qálemi, qálemlerimiz.

In these words, the base morpheme is *qálem (pencil)* and affixes *-im / -iń / -i* indicate the owner of the thing (-im - first person singular, -iń – second, -i – third-person SG), and the word *qálemim* corresponds to *my pencil*; *qálemiń-your pencil* and *qálemi is his\her pencil* in English.

One should bear in mind that the relation between a possessor and an object possessed may be expressed either synthetically with special affixes in the Karakalpak language as in the examples above (*qálemim)* or syntactically by using a possessive adjective before a synthetic form (*meniń qálemim – my pencil*). Therefore, the word expressed with a possessive affix follows a noun or a pronoun in the possessive case: *Azamattıń kitabı / onıń kitabı*.

Thus, the category of possessiveness of the noun in Turkic languages, including the Karakalpak language, plays a major role in building both morphological and syntactic structures of the noun as the main part of human speech and possessive affixes are almost common in terms of their forms and meanings in almost all Turkic languages. Additionally, the affixes of five cases in Karakalpak can be attached to the noun taking any of the possessive affixes. On the other hand, English lacks any possessive affixes, and there is an only analytical form of expressing the meanings of possessiveness of the noun. For example, the word *anama* can be separated into three morphemes *ana/m/a* (root morpheme *ana*; 1st person possessive affix *-m* and dative case affix *–a)* and in English, the meaning of this word is expressed with the help of two or three different words: *to my mother/my mother.*

In Karakalpak grammar, there are three ways of expressing possessiveness: morphological; morphological-syntactic and syntactic ways. [3,10; 2, 99-101]

Morphologically, the meanings of possessiveness are conveyed by both word-changing affixes (special possessive endings) and word-building affixes. The special possessive affixes are in turn divided into two: a) concrete possessive affixes b) abstract possessive affixes.

By means of special affixes, the noun indicates (even without personal pronouns) which person (I, II, III) the object belongs to [2:99]. In other words, the noun with these affixes shows both grammatical person and number at the same time. That's why this form is called expressing *concrete*

personal possessive meaning. The category of possessiveness is closely connected with the forms of personal pronouns, especially possessive adjectives (*meniń / seniń / onıń, etc.*) because the concrete possessive affixes express the concept '*my', 'your', 'his'*, etc. Therefore, instead of *meniń úyim*, one may also use only *úyim*, which also means *my house*.

Possessive endings follow the rules of Vowel Harmony, and the sound alternation of consonants and a vowel sound omission process occur where necessary. All the concrete possessive affixes with phonetic variants for each person are as follows:

Person	**Concrete possessive affixes**			
	After vowels		After consonants	
	Singular	Plural	Singular	Plural
I	*-m*	*– mız / miz* *-larımız/lerimiz*	*-ım / im*	*-ımız/imiz* *-larımız/lerimiz*
II	*-ń*	*– ńız / ńiz* *- larıńız / lerińiz*	*-ıń / iń*	*- ıńız / ińiz* *- larıńız / lerińiz*
III	*–sı / si*	*–sı / si* *– ları / leri*	*-ı / i*	*-ı / i* *– ları / leri*

Note. Adapted from Dáwletov A., Dáwletov M., Qudaybergenov M. Házirgi qaraqalpaq ádebiy tili. Morfemika. Morfonologiya. Sóz jasalıw. Morfologiya. Nókis, ‹‹Bilim››, 2010. 99 b.

The last sounds ending in voiceless consonants (*p, k, q*) changes to corresponding voiced ones (*b, g, ǵ)* when the voiceless consonants follow the vowels in the word. *E.g. kitabım (kita**p** + ım = kita**b**ım)*

As it is clear from the example, '*p*' changes to the sound '*b*' and the first-person possessive affix *–ım* is added. This affix *-ım* shows the owner is *I* (first-person SG) and denotes the concept '*my*' in English: *kitab/ım=book/my*.

The sound *'-k'* changes into *'-g': júre**k** –júre**g**im, tere**k**-tere**g**i,balıq-balıǵı.*

The sound *'-q'* changes to '*-ǵ*': *qula**q**-qula**ǵ**ım, qula**ǵ**ı, qula**ǵ**ı, saba**q**-saba**ǵ**ı.*

We may distinguish two types of spelling rules for the consonants *–p, -q, and -k*.

1) Assimilation of the sounds *-p, -q, -k* when they come before vowels in a word.

p ~ b	***p***	becomes	***b***	*t**o**p-t**o**b**ı**, sh**ó**p-sh**ó**b**i**, hár**i**p-hár**i**b**i**, sád**e**p-sád**e**b**i**n.*
q ~ ǵ	***q***	becomes	***ǵ***	*tar**aq**-tar**aǵ**ı, qab**ıq**-qab**ıǵ**ı, qaraqalp**aq**-qaraqalp**aǵ**ım.*
k ~ g	***g***	becomes	***g***	*sher**ik**–sheri**g**i, galst**uk**-galstu**g**im, zont**ik**-zont**ig**in.*

However, there are some exceptions where the sounds *-p, -q, and -k* remain unchanged even if they come after vowels in a word: *átir**ap**-átir**ap**ında, tár**ep**-táre**pi,** m**áp**-m**áp**i, huqı**q**-huqı**q**ım, huqı**q**ı.*

And it should also be noted that after the sound ***-g*** the affix ***–ım*** (not *–ım*) should be added and after ***-ǵ*** the affix ***-ım*** is joined as their original pronunciations in the Karakalpak language are [ǵı] and [gi] and can never be vice-versa.

In the words *xalıq-xa**lq**ı, kórik –kó**rk**i, orın-ornı, erin–erni, murın-murnı, qarın-qarnı* the sounds ***ı*** and ***i*** are removed, and in this case, the sounds *p, q, k* remain unchanged as they come right after consonants.

The sound assimilation does not occur in the spellings of the words of foreign origin ending in *p, f* even if they follow vowel sounds*: mikroskop-mikroskopı, princip-principi, mif-mifi, telegraf-telegrafı, shkaf-skafı, sharf-sharfi*. But in speech, they are pronounced like *shkabı, mikroskobı* by changing the sound from *p, f* to *b* [3:15]. However, the words *mifi* and *telegrafı* remain the same in both spelling and pronunciation and there's no strict rule why they are pronounced in this way because all these sound changes depend on the organs of speech which are responsible for producing different sounds.

2) When the sounds *-p - q - k* follow any consonants in the same words, they are not subject to any sound assimilation: *ci**rk**-ci**rk**i, pa**rk**-pa**rk**i, ba**nk**-ban**ki**, kio**sk**-kio**sk**i, oche**rk**-oche**rk**i, e**rk**-e**rk**i, xa**lq**ı, kó**rk**i, qu**lp**ı, minez–qu**lqı**, tu**rqı**.*

A vast majority of nouns in Karakalpak follow the laws of sound harmony while taking possessive affixes and there are only a few exceptions which we have just discussed.

Various types of possessive relations take place between humans and the world that surrounds us. Depending on an individual possessor's and possessors' (1st, 2nd, 3rd persons Sg/Pl) sharing the object(s) possessed, the category of the personal possessiveness is divided into two subcategories: shared or common possession (*sheriklik tartım*) and individual or unshared possession (*daralıq tartım*). Since the category of possessiveness depends on both personal pronouns in the genitive case (in two numbers singular/plural) and the noun with the possessive affixes (in two numbers: Sg/Pl), four types of possessiveness are distinguished [1:45].

1. If an object possessed takes singular possessive affixes as in the table above *(-m / ım / im / ń / ıń / iń / ı / i / sı / si*), then a possessor should also be a person (I, II, III) in the singular. This is called individual possessiveness (*daralıq tartım)* in Karakalpak grammar.

E.g. kitabım / kitabıń / kitabı (my book / your book / his book – one person - one book, i.e., a person does not share it with anybody else)

2. A noun takes plural possessive affixes *-larım / lerim / larıń / leriń / ları / leri*, but persons are in the singular. This form is also considered to be individual possessiveness.

E.g. kitaplarım / kitaplarıń / kitapları (my books /your books / his or her books – one person possesses many books)

3. If a person is in the plural and a noun takes one of these possessive affixes (*mız / miz / ńız / ńiz / i / i, etc.*) then it is called shared possessiveness (*sheriklik tartım*).

E.g. kitabımız / kitabıńız / kitabı (our book / your book / their book – we all have or share one book)

4. The fourth type is a relation where many people possess many objects, and this relation is called either common or individual possessiveness because people may or may not share things with each other.

E.g. kitaplarımız (our books – that can be everybody has their own books or they share books with each other).

In other words, individual and common possessiveness depend on the possessor (personal pronouns) and not on the objects possessed. If three persons (possessors) are in the singular (I/you/he/she/it) this possessive relation expresses the meanings of individual possessiveness, whether an object is in the singular or plural. On the other hand, in the shared possessiveness, the owners are always plural persons (we/you/they) with one or many objects possessed.

Four tables below show different forms of possessive affixes for all persons.

Table 1. For singular person and singular noun (Individual possessiveness).
Daralıq tartım (birlik bet hám atlıqtıń birlik sanı ushın).

Person / According to last sound harmony	**I-person** My -Meniń	**II-person** Your –Seniń Siziń (polite)	**III-person** His/Her/Its-Onıń
After vowels (all)	-m	-ń, -ńız, -ńiz	-sı, -si
After consonants (all) with sound alternation	-ım, -im	-ıń, -iń, -ıńız, -ińiz	-ı, -i

1st person affix *–m* and its phonetic variants – *ım* and *-im* indicate the thing belongs to a speaker, while the 2nd person affix *–ń* and its phonetic variants *–ıń* and *-iń* show a listener is the owner of an object. In the second person singular, the affix *–ń/ıń/iń* is a simple and more common affix while *–ńız/-ńiz/-ıńız/-ińiz* is used to express a word more politely. Possessive adjectives used for the second person are *seniń* (your – one person), and *siziń* (your – one person, more polite form).

*E.g. Seniń kitab**ıń** (Your book); Siziń kitab**ıńız** (Your book –more polite)*

In English, the same form (*Your*) is used to express both simple and polite forms.

As it is clear from the table, in the 1st and 2nd persons the last consonants in the word take additional sounds *–ı* and *–i* before the sound *–m* and *–ń*: *qale**m**+**i**+**m.*** In other words, the affixes beginning with consonants *–m, -ń, -ńız, -ńiz, -sı, -si* are attached to vowel sounds, whereas the affixes *-ım, -im, -ıń, -iń, -ıńız, -ińiz, -ı, -i* which begin with vowels are only attached to consonants with sound changes if necessary.

The meanings of the III-person affix (*sı,-si -ı, -i*) are much broader than the first and second person affixes. The 1st and 2nd person affixes indicate that the owner is a human being whereas the III-person affixes show a possessor may be either a human being or a thing. Since there are an unlimited number of objects in the world, the III-person affix may indicate any relations between a possessor and (an) object (s) possessed outside the first and second persons. For example, in the words *kitabı, balası, beti* the owner may be any person or a thing in the world: *onıń kitabı, balanıń kitabı, qızdıń kitabı, muǵallimnıń kitabı, kitaptıń beti, etc.*

Table 2. For singular person and plural noun (Individual possessiveness)
Daralıq tartım (birlik bet, atlıqtıń kóplik sanı ushın)

Person / According to last sound harmony	**I-person** My –Meniń Noun-plural	**II-person** Your –Seniń Siziń (polite) Noun-plural	**III-person** His/Her/Its-Onıń Noun-plural
After vowels (all)	-larım / lerim	-larıń / leriń, -larıńız / lerińiz	-ları / leri
After consonants (all) no sound alternation	-larım / lerim	- larıń / leriń, -larıńız / lerińiz	-ları / leri

Plural forms of possessive nouns for the persons in the singular are made by the combination of plural markers of the noun *–lar/ler* (which corresponds to plural inflection –s in English) and possessive affixes for the persons in the singular *–ım / im / in / i* (i.e., person sg / noun pl), and we produce possessive forms *-larım / lerim* (for the first-person), *larıń / leriń* (II-person) and *ları / leri* for the III-person. If the last syllable of a noun has one of these back vowels *–a, -ı, o,* then the noun takes *-larım*, elsewhere *–lerim is used: d**o**slarım in**i**lerim.* No sound alternation phenomena take place with consonants: *kita**plarım.*** The 2nd person plural form *-larıńız/lerińiz* is a polite form of *–larıń/leriń* and the noun taking this form follows a personal pronoun *siziń* (but not *seniń*, which is a simple form): *siziń kitaplarıńız.*

	Karakalpak	***English***
Word (root/base)	*qol*	*hand*
Plural form	*qollar*	*hands*

Possessive form	*qollarım (I-person)*	*my hands*
Word (root/base)	*bala*	*child*
Plural form	*balalar (II-person)*	*children*
Possessive form	*balalarıń*	*your children*
Word (root/base)	*kitap*	*book*
Plural form	*kitaplar*	*books*
Possessive form	*kitapları (III-person)*	*his/her/their books*

Table 3. For plural person and singular noun (common possessiveness)
Sheriklik tartım (kóplik bet – birlik san ushın)

Person / According to last sound harmony	**I-person** Our –Bizlerdiń Noun-singular	**II-person** Your –Sizlerdiń Noun-singular	**III-person** Their-Olardıń Noun-singular
After vowels (all)	-mız / -miz	-ńız / -ńiz	-sı /- si
After consonants (all) **with** sound alternation	-ımız / -imiz	-ıńız / -ińiz	-ı / -i

Both I and II-person plural affixes (*-mız / miz / ńız / ńiz*) indicate the object(s) belongs to more than one person (not a thing) or a group of people: *awılımız (our village) kósheńiz (your street)*.

The owner may be either a person or a thing when the noun takes the III-person possessive affixes: *bası (head-any person's or thing's head).*

Table 4. For plural person and plural noun (shared or individual possessiveness) Daralıq yamasa sheriklik tartım (kóplik bet-kóplik san)

Person / According to last sound harmony	**I-person** Our -Bizlerdiń	**II-person** Your -Sizlerdiń	**III-person** Their-Olardıń
After vowels (all)	-larımız / lerimiz	-larıńız / lerińiz	-ları / leri
After consonants (all) **no** sound alternation	-larımız / lerimiz	-larıńız / lerińiz	-ları / leri

If the possessors are plural persons (Bizler-We; Sizler-You; Olar-They) with the nouns (the objects possessed) in the plural, the same plural possessive affixes are used whether the noun ends in a vowel or consonant sound. And no sound alternation occurs when affixes are joined to consonants:

Bizlerdiń bal**a**larımız / Bizlerdiń saba**q**larımız *(-q* does not change into *-ǵ*)

Bizlerdin kósh**e**lerimiz / Bizlerdiń tere**kl**erimiz (*-k* does not change into *-g*)

The only difference is in the use of *-lar* and *–ler*, i.e., if the last syllable consists of one of these sounds *a, o, u, ı* we use *–lar (batırlarımız)* and the plural *–ler* is used for *á, e, i, ó, ú* (*eg**i**nlerimiz)* respectively.

In the III-person, the same affixes for the singular noun (*sı, ı*) are used for both singular person (*ol-he/she/it*) and plural person (*olar-they*): *onıń bala**sı**-his\her son*; *olardıń bala**sı**-their son,* and the affixes for plural noun (*ları\leri*) are also the same: *onıń balaları-his\her sons; olardıń balaları – their sons.*

CONCLUSION

The category of possessiveness plays a significant role among the categories of nouns. All the fundamentals of language units, such as form, function and meaning are so broad that this category has a powerful capacity of using various morphological and syntactic means in creating diverse meanings. Formally, possessive nouns are made not only by means of special word-changing possessive affixes but also by other language means such as word-building affixes. There are special possessive affixes which are usually attached to a noun and one and the same form exhibits both person and number. Normally, possessive phrases consist of two parts: the first component is a possessive adjective and the second one is a possessive noun. In order to express *my son/my father, etc.*, one may or may not use possessive adjectives before a noun in Karakalpak as it is in English where possessive adjectives are mandatory. Therefore, possessive nouns in English are expressed by syntactic ways (my + son) whereas in Karakalpak they are expressed by both morphological (*balam*) and morphological-syntactic ways (*meniń balam*). In Turkology, the combination of genitive form (*meniń-my*) with the possessive noun (*balam*) is called 'expressing possessive meaning by morphological-syntactic ways.'

References

1. Házirgi qaraqalpaq tili Morfologiya. ‹‹Qaraqalpaqstan baspası›› Nókis -1981.
2. Dáwletov A., Dáwletov M., Qudaybergenov M. Házirgi qaraqalpaq ádebiy tili. Morfemika. Morfonologiya. Sóz jasalıw. Morfologiya. Nókis, ‹‹Bilim››, 2010. 251 b.
3. Patullaeva G. Qaraqalpaq tilinde tartım mánisiniń bildiriliw usılları. Monografiya. Tashkent, ‹‹BAYOZ››, 2015, 80 bet.
4. Qıdırbaev A. Házirgi qaraqalpaq tilinde atlıq sózler. Nókis, 1961.
5. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language.* London and New York: Longman.
6. Ronald Carter., Michael McCarthy. Cambridge Grammar of English. A Comprehensive Guide. Spoken and Written English. Grammar and Usage. Cambridge University Press, 2006.

Rezyume: *Bu maqolada qoraqalpoq tilidagi otning egalik kategoriyasi va ingliz tilida bu kategoriyaga mos keladigan ekvivalentlari muhokama qilinadi. Egalik affikslarining qo'llanilishidagi asosiy fonetik o'zgarishlar kabi grammatik shakllar tavsiflanadi, ularning shakl ko'rsatkishlari va til birliklari orasidagi semantik munosabatlar tahlil qilinadi.*

Резюме: *В данной статье рассматривается категория принадлежности имени существительного в каракалпакском языке и соответствующие ему эквиваленты в английском языке. Описаны такие грамматические формы, как основные фонетические изменения в употреблении притяжательных аффиксов, проанализированы их формальные показатели и семантические соотношения между языковыми единицами.*

Kalit so'zlar*: ot, affikslar, egalik kategoriyasi, morfologik usullar.*

Ключевые слова: *имя существительное, аффиксы, категория принадлежности, морфологическое способы.*

THE INFLUENCE OF FOLKLORE ON THE RENEWAL OF POETIC LANGUAGE IN THE POETRY OF THE CLASSICAL PERIOD

Tajibayeva L.
Karakalpak State University named after Berdakh

Summary: *This article analyses the influence of folklore on the emergence of new Uzbek poetry, and reveals the methodological and semantic changes in poetry on the example of Muqimi's work. The linguistic features of Muqimi's poetry are also analyzed.*

Keywords: *Image, plot, folklore, style, content, idea, renewal, poetry, literary language, literary theory, colloquial language, period, condition.*

“In the late 19th and early 20th centuries, Uzbek poetry underwent a process of renewal. The emergence of new poetry was directly related to the significant socio-political changes that took place in the country and the formation of a new artistic consciousness. First of all, it should be noted that the process of renewal in Uzbek poetry is primarily associated with the renewal of content. Poems in the spirit of the times began to appear. Sensing the demands of the times, the creators began to write poems in a language understandable to the general public, in images directly related to their lives, as a result of which poetry came closer to the life of the people "[1, 80]. The poets of the late 19th century, continuing the best traditions of our ancient literature, brought a new theme, a new idea, a new style. Not only did they deviate from the strict rules of classical literature and expand the scope of the subject of poetry, but also tried to advance the ideas of the new era in a new style, to bring literature closer to the hearts of the people. In order to express the general mood of the period, the words *"g’altak ", "kosov", "arava", "malaria", "iskab topar", "paxsa", "loy"* were used. This, in turn, signaled the approach of poetry to the life of the people. A feature that ensures the simplicity, fluency and sincerity of the style of enlightened artists is undoubtedly the closeness of poets to the folklore and its effective use. The creators of this period creatively assimilated the exemplary words of the folk sages - folk proverbs and used them in their poems very widely and appropriately. For example, Zavqiy uses folk proverbs to convey his ideas to the people:

Farq aylamay yaxshi-yomon,
Kim arpa –bug’doy,kim somon,
Tuhmat, haqoratlar hamon,
Ne muddaosiz afandilar.[2,130]

In the above verses, the poet skillfully uses the proverb of the people: "You are barley and wheat, we are straw, all is good, I am bad."

Elsewhere, the poet creatively uses folk proverbs and reproduces them as follows:

Karnay cholib bemorg’a
Zavqiy osilmas dorg’a,
Arzim shu do’st-u yorg’a;
Kim ho’l balosiz,afandilar.[2,130]

Such verses, stanzas, and even whole poems, written in the spirit of folk melodies and folklore, can be found in Muqimi's works. For example: - *“Darig’oki, baxtim qaro bo’lmasa, Senga tushmas*

erdim, xudo urmasa"(Maskovchi boy ta'rifida), Gado qo'lida ko'rsa nogoh non, Degay: -"bergan odam emas musulmon!"(Voqiai Viktor), "Har kishiki ko'rpasiga poy uzatmaydur qarab" (sentence about sentences), "Sadqai odam ket-u yuz hayfisan, Asrorqul, Zaxar ichkan, kiygoning bo'lsun kafan, Asrorqul"(Asrorqul), "Bu padar la'nat harom o'lgur otim, Har qachon kim man minar bo'lsam kasal" (Otim) and so on.

Muqimi sometimes succeeded in trying to adapt his poems to the general content of folklore in general, to resemble folk songs. That is why Muqimi's poems are reminiscent of the precision and sincerity of folk songs, their sharp meaning and lively style. For example, the following excerpts from his poem "Let me tell you my story":

Arzimni aytay bodi sabog'a,
Shoyad gapurgay ul gulqabog'a.
Albatta kelsun, holimni so'rsun,
Andisha qilsun, ro'zi jazog'a.
Necha zamondur, ko'zga nihondur,
Har kim yomondur, soldim xudog'a.[3,61]

The short weighted lines in this piece, the rhyming style, and finally the general style and spirit of the poem are reminiscent of the best examples of folk songs. The language of Muqimi's poetry differs from that of other poets in its important features. Their most characteristic feature is their closeness to the language of the living people. In particular, the dictionary of the Muqimi language contains a lot of words from the treasury of the living vernacular. There are, of course, Arabic and Persian elements in his poems. But they are very few. It is no coincidence that the language of Muqimi's poetry is so close to the vernacular. The thematic scope of Muqimi's work, especially its humor, real personalities, and characters based on prototypes, that is, the real, vital content of Muqimi's works, also determined their linguistic features and ensured the popularity of the language.

Another characteristic feature of the language of Muqimi's poetry is that it uses a whole combination of expressions and expressions used by the people to express complex ideas. For example, in the poem "Election"("Saylov") he describes the situation of the commander as follows:

Teraklar bargidek titrab, jamii qozi – mingboshi
Degoylarkim: "yuzini teskari qil, ey xudo, saylov".
Yoki yana bir she'rida shunday deyiladi:
Mubtalo bo'lg'il iloho tortanakning torig'a,
Uchrasa anga yana hargiz qutulmas pashshalar.[4,84]

Turn your face upside down in these verses (*yuzini teskari qil,mubtalo bo'lg'il iloho*), the divine conjunctions derived from the treasures of the vernacular are the stylistic conjunctions introduced into the literary language by Muqimi. These features of the language of Muqimi's poetry - the approach to the living language of the people, the bold introduction of Russian-international words into the literary language - meant that the Uzbek literary language was enriched by new elements. Thanks to the work of prosperous poets, including Furkat, Muqimiy, Zavqiy, Kamil Khorezmi, it has reached a new stage of development.

Muqimi, an enlightened literary figure who could not remain indifferent to the spiritual and economic crisis in the Khanate, realistically described in his comedies all the shortcomings of the bill and monetary reform.

Har ishki xalqimizg'a hokimlar etsa farmon,
Qilmay iloji yo'qtur dushvoru xohi oson,
Nuqra-kumushlaridin boylar hijil, pushaymon,
Yuz dod qilmasunmu bechorai musulmon,
Har tangada miridin yaqqol ziyoni chiqdi.[4,37]

Explaining the ideological content of Muqimi's work, this muhammas shows how responsive, meticulous and prudent he was to the events in the socio-political life of the national poet, and how much he hated the current system.

In conclusion, Muqimi's work is one of the brightest pages of Uzbek literature of the second half of the XIX century - the beginning of the XX century. They continued the traditions of our past literature, connected them to the literature of the new era, and enriched our literature with new works and became a visible symbol of our national spirituality. The new Uzbek literature is connected with the living standards of the working people in terms of its birth and origin. It emerged as an expression of the idea that created these conditions and developed under the influence of various literary and cultural factors. Therefore, the essence of the new Uzbek literature, its creative and aesthetic foundations are the ideas of nationalism, patriotism, enlightenment, and the scope of the topic is determined on the basis of these advanced ideas.

References:

1. Карим Б. Янгиланиш соғинчи. – Т.: Адабиёт жамрармаси, 2004.
2. Zavqiy. Ajab zamona. – T.: Sharq. 2003.
3. Muqimiy. Tanlangan asarlar. 1-jild. – T.: Davlat badiiy adabiyot nashriyoti, 1960.
4. Muqimiy. Tanlangan asarlar. 2-jild. – T.: Davlat badiiy adabiyot nashriyoti,1960.

Rezyume: *Ushbu maqola yangi o'zbek she'riyatining vujudga kelishida xalq og'zaki ijodining ta'siri masalasi o'rganilgan bo'lib, Muqimiy ijodi misolida she'riyatdagi uslubiy va mazmuniy o'zgarish ochib berilgan. Shuningdek Muqimiy she'riyatining til xususiyatlari tahlil qilingan.*

Резюме: *В данной статье исследуется влияние устного народного творчества на формирование новой узбекской поэзии, раскрываются методологические и содержательные изменения в поэзии На примере творчества Мукими. Также проанализированы языковые особенности поэзии Мукими.*

Kalit so'zlar: *Muqimiy, xalq og'zaki ijodi,, uslub, mazmun, go'ya, yangilanish, poeziya, adabiy til, so'zlashuv tili, davr, muhit.*

Ключевые слова*: Мукими, устное народное творчество,, стиль, содержание, гея, обновление, поэзия, литературный язык, разговорный язык, эпоха, среда.*

ORGANIZATIONAL AND LEGAL ASPECTS OF THE DEVELOPMENT OF THE ELECTRONIC GOVERNMENT OF THE CIS COUNTRIES (ON THE EXAMPLE OF THE REPUBLIC OF BELARUS AND THE REPUBLIC OF KAZAKHSTAN)

Shagilova G.K., Nizamatdinov K.K.
Karakalpak State University named after Berdakh

Summary: *The article discusses the experience of developing the Electronic Government of the two CIS countries - Belarus and Kazakhstan, which have achieved significant success in the shortest possible time and improved their positions according to the "E-Government Development Index" published by the UN Department of Economic and Social Affairs. Emphasis is placed on the coverage of the organizational and legal aspects and features of development inherent in each of these states. The article also contains the authors' recommendations on possible measures, practices and reforms to be applied in Karakalpakstan based on their experience, as well as conclusions on areas that should be paid attention to in the development of e-government.*

Keywords: *e-government, ICT, development features, information space, e-services.*

It is well known that e-government projects in many countries have become a powerful impetus for the development and improvement of an innovative society.

By a generalized definition, the "Electronic government" system is "an innovative model of public administration that transforms the relationship of the state with civil society based on information technology"[1]. In this model of interaction between the state, citizens and business, as well as the state bodies themselves, information and communication technologies are actively used: websites, information systems, databases integrated with each other. Simply put,

e-government is a system that:

- facilitates communication with government authorities;
- contributes to the reduction of queues;
- simplifies the process of obtaining certificates, certificates, licenses and other documents, helping all parties: government agencies, entrepreneurs, and ordinary citizens to work more efficiently.

The study of regional and international experience in this direction is very important, since almost all countries that today have achieved significant success in the development of e-government have certain historical ways of implementing

e-government programs or strategies.

The only indicator that assesses the current situation and progress in the field of e-government in all UN member states is the UN Department of Economic and Social Affairs (DESA), which publishes the **World Countries Ranking for Development of e-Government** (EGDI) every two years[2].

According to the 2020 ranking, Uzbekistan occupies the 87th position among all 193 UN member states. Among the CIS countries, our republic occupies the 10th place, and the Republic of Kazakhstan heads this list (table 1).

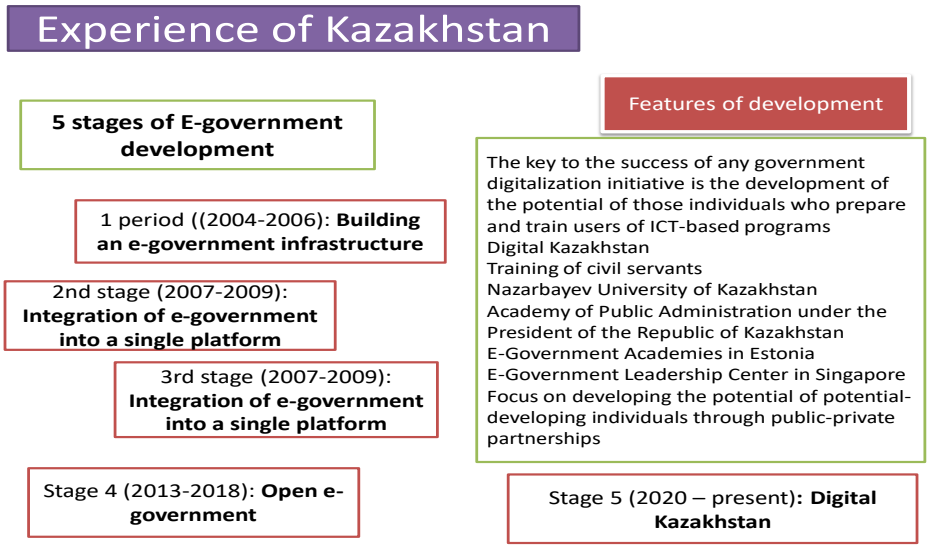
Table 1. Change in the e-government development index

	Index online service		Human capital index		Telecommunication infrastructure index		Overall rating		Place in the ranking	
							Development Index electronic government*		Development Index electronic governments	
Year	**2018**	**2020**	**2018**	**2020**	**2018**	**2020**	**2018**	**2020**	**2018**	**2020**

Kazakhstan	0.8681	0.9235	0.8388	0.8866	0.5723	0.7024	0.76	0.84	39	29
Russia	0.9167	0.8126	0.8522	0.8833	0.6219	0.7723	0.80	0.82	32	36
Belarus	0.7361	0.7059	0.8681	0.8912	0.6881	0.8281	0.76	0.81	38	40
Georgia	0.6944	0.5882	0.8333	0.8717	0.5403	0.6923	0.69	0.72	60	65
Armenia	0.5625	0.7000	0.7547	0.7872	0.4660	0.6536	0.59	0.71	87	68
Ukraine	0.5694	0.6824	0.8436	0.8591	0.4364	0.5942	0.62	0.71	82	69
Azerbaijan	0.7292	0.7059	0.7369	0.7713	0.5062	0.6528	0.66	0.65	70	70
Moldova	0.7708	0.7529	0.7274	0.7432	0.4787	0.5683	0.66	0.69	69	79
Kyrgyzstan	0.6458	0.6471	0.7628	0.7873	0.3418	0.5902	0.58	0.68	91	83
Uzbekistan	0.7917	0.7824	0.7396	0.7434	0.3307	0.4736	0.62	0.66	81	87
Tajikistan	0.3403	0.3176	0.7002	0.7274	0.2254	0.3496	0.42	0.47	131	133
Turkmenistan	0.1319	0.1765	0.6626	0.6783	0.3011	0.3555	0.37	0.40	147	158

Experience of Kazakhstan

To date, Kazakhstan has gone through four periods [3]development of ES in the country



(Table 2)

First period (2004–2006): **Building the e-government infrastructure.**

The main characteristic of the first period is the preparation for the launch of the first e-government project, which was completed with the opening of the official portal in 2006. Official preparations began in 2004 with the introduction of the first e-government. The Government Strategy **(E-Government Directive No. 1471, 2004)** has been adopted by the central government as the main policy document for all ICT-based transformations in government and public administration.

The achievement of this strategic goal implied, first of all, the operation of the **Presidential Decree on the formation of a common information space** and the **Concept of a single information space of Kazakhstan** in 1998, as well as the operation of the **Law "On Electronic Document and Electronic Digital Signature"**, which regulates the exchange of electronic documents. In particular, this law was aimed at regulating the use of electronic digital signatures, changing or terminating legal relations, as well as the rights and obligations of the parties in the process of filing an electronic document[4].

Second period (2007–2009): **Integration of e-government into a single platform.**

It can be characterized as a period when all e-government projects were finally integrated into a single area of the concept in both political and technological terms. Another feature of the period is the

clarification of official stakeholders in various e-government programs and the identification of the main places of administrative and technological support.

Third period (2010–2012): **Emphasis on interactive e-government.**

It can be described as a milestone in the conceptual implementation of the idea of digital government and the complete transformation of implementation strategies, which are now more focused on promoting transactional services, improving the structure and ergonomics of the project and, more importantly, in facilitating the development of tools and platforms, striving to improve the country's global position. in EGDI and focusing on projects closely monitored and studied by e-government experts from the UN.

Fourth period (2013–2018): **Open e-government.**

And it is probably one of the most interesting periods in the history of this phenomenon in Kazakhstan. The emergence on the horizon of new platforms to promote concepts such as open government and open data, which are now being actively implemented in many countries around the world, and, more importantly, the need to promote civic participation and engagement in this regard, which are perhaps two key components of the successful implementation of any modern e-government project, provide both new opportunities and challenges in implementing the idea in Kazakhstan. Thus, this period can be seen as critical and decisive for the future development of the paradigm in this Central Asian country.

Fifth period (2020–present): **"Digital Kazakhstan"**

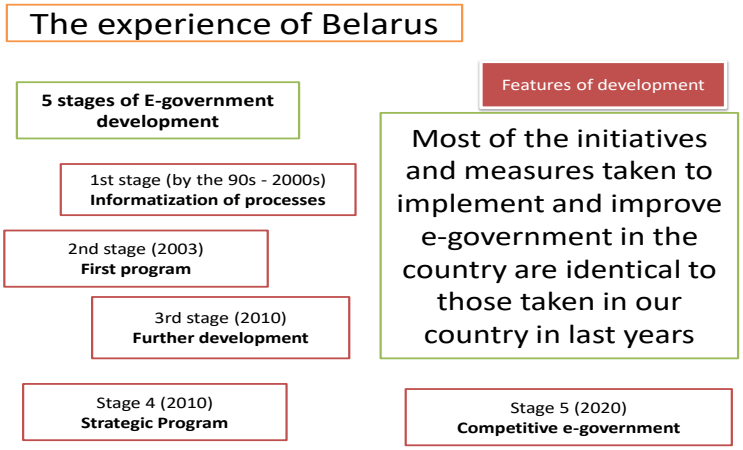
Approved by the Government for implementation in the period 2018-2022, the Digital Kazakhstan State Program is aimed at accelerating the country's economic development, improving the quality of life of the population and creating the necessary conditions for the transition to a digital economy.

Development Features. The UN study states that "the key to the success of any government digitalization initiative is to develop the capacity of those who train and educate users of ICT-based programs. **Digital Kazakhstan** coordinates ongoing training programs that improve the capabilities of Chief Digital Officers and IT professionals at all levels of government to equip government officials with the ICT skills and support they need to contribute to the digital government transition. Training seminars focus on economic sectors, trends in new technologies and project management skills. To date, civil servants have been able to participate in training programs at Nazarbayev University in Kazakhstan, the Academy of Public Administration under the President of the Republic of Kazakhstan, e-Governance Academy in Estonia and the e-Government Leadership Center in Singapore. Key to this lifelong learning program is the focus on developing the capacity of capacity builders through public-private partnerships. The challenge is to ensure that individual digital government experts and leaders internalize and can develop in others the strategic thinking and competencies for today and for the future. Transformational leadership must be developed at the individual level so that public servants have the skills and strategies needed to address rapidly evolving and increasingly complex issues, and develop digital, institutional, organizational and social capacity.

Belarus experience

As can be seen from Table 1, Belarus occupies the 40th position in the general list of countries and the 3rd position among the CIS countries.

The electronic government of Belarus has developed in stages as follows (table 3.)



(table 3)

1st stage (late 90s - late 2000s)	Implementation of large projects, greater orientation of state institutions to their own needs. Ideas about informatization of processes.
2nd stage (2003 first program)	Development of telecommunications infrastructure, creation of a nationwide automated information system;
3rd stage (2010 Further development)	Adoption of the "National program for the accelerated development of services in the field of information and communication technologies for 2011-2015", within the framework of which there was a deepening of electronic interaction between citizens and state bodies.
4th stage (2015 Strategic Program)	"Informatization development strategy in the Republic of Belarus for 2016-2022", goal: to be among the first 50 countries in the UN e-participation index. Result: 2016 - 49th place, 2018 - 38th place.
5th stage (2020 Competitive e-government)	Approval of the program "Digital Development of Belarus for 2021-2025". Purpose: development of e-government technologies, in particular, the modernization of digital services and the creation of new ones.

Development Features. At this preliminary stage of studying the Belarusian experience in the development of ES, the conclusion suggests itself that most of the initiatives and measures taken to implement and improve ES in the country are identical to those measures that have been taken in our country in recent years. The country has made a big leap towards digital and electronic development, the experience of which is certainly interesting for countries that are gaining momentum in line with technological progress.

Since the study of any experience implies the possibility of its application, the question arises: what can we learn from these countries in the development of
e-government in Karakalpakstan?

Taking into account the importance of the development of e-government, its role in reforming the public administration system and economic transformations, as well as on the basis of studying

successful regional and international experience, it seems appropriate to consider the following main measures for the strategic development of e-government in Karakalpakstan.

1. Implementation of the concept of "one government", implying the integration of websites of all public administration institutions for the joint provision of public services to the population on the principle of a "single window" where information about ministries, leaders, news, goals and objectives, publications and statistics will be presented. At the same time, it is important to unify the design and format of sites so that users have a clear idea that they are using a single platform. For greater efficiency, integration should be both **horizontal** (intersectoral, interdepartmental) and **vertical** (interaction of national institutions with regional administrations) in nature. This will allow citizens to use a single site and account and receive more advanced services that require the interaction of several organizations.

2. Ensuring the central role of users in the e-government system. Technological advances provide governments with the opportunity to deliver services to their citizens with greater speed, reach, and efficiency, while providing feedback to further incorporate their views into the design and improvement of public services. Most developed countries, including the leaders of EGDI, emphasize **the centrality of users** as a basic principle in their strategies for the development of e-signature, i.e. any changes and initiatives must **take into account the daily needs and expectations of people.** This contrasts with the approach where countries rely on their organizational structures, established processes and physical infrastructure to build an e-signature system.

Conclusion. As the experience we have studied of Belarus and Kazakhstan, which are friendly to us, in the development of which there are many similar directions and elements, shows that the main feature of the successful implementation of e-government in them is the initiation by the state of effective interaction between its bodies and e-government, which manifests itself in interconnected and interdependent processes of implementation of transformations. (reforms). All the processes taking place in the system of introducing e-government in these countries, namely: the formation of new, innovative methods of government due to the inability of the bureaucracy to meet the modern requirements of society; development of new branches of science; overcoming technological inequality both within the country between different segments of the population, and between countries; support and legal regulation of the implementation of ES by an effective legislative framework that contributes to the improvement of mechanisms for the implementation of development strategies and programs; acceptance of all used information and communication technologies (ICT) - e-government, e-commerce, e-justice, etc., not as independent isolated areas of activity, but as an integrated range of knowledge, experience, technologies, which is a "backbone" for the transformation of society, the transition to the digital economy, to the global level of development of the state have become the main factors of its development.

References:

1. Vershinin M.S. Political communication in the information society - St. Petersburg: Publishing house Mikhailova V.A., 2001: El.resource: https://studfile.net/preview/7631332/page:15/
2. UN Study: E-Government 2020. United Nations, 2020. https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20-%20Russian.pdf.
3. Maxat Kassen. E-Government in Kazakhstan: A Case Study of Multidimensional Phenomena. London: Routledge, 2017. https://www.researchgate.net/publication/318585255_E-government_in_Kazakhstan_A_case_study_of_multidimensional_phenomena.
4. Yeszhanova N. Electronic government in Kazakhstan: implementation and prospects. Electronic scientific journal "edu.e-history.kz" No. 2(06), 2016/https://edu.e-history.kz/ru/publications/view/474

Rezyume: *Maqolada qisqa vaqt ichida sezilarli muvaffaqiyatlarga erishgan va BMT tomonidan e'lon qilingan "Elektron hukumat taraqqiyoti indeksi" Iqtisodiy va ijtimoiy masalalar bo'limi bo'yicha o'z pozitsiyalarini yaxshilagan MDHning ikki davlati – Belarus va Qozog'istonning "Elektron hukumat" tizimini rivojlantirish tajribasi muhokama qilinadi.Shuningdek, maqolada muallifning Qoraqalpog'istonda qo'llanilishi mumkin bo'lgan chora-tadbirlar, amaliyot va islohotlar bo'yicha o'z tajribasidan kelib chiqqan holda tavsiyalari hamda elektron hukumat tizimini rivojlantirishda e'tibor qaratish lozim bo'lgan yo'nalishlar bo'yicha xulosalari o'rin olgan.*

Резюме: *В статье рассматривается опыт развития Электронного правительства двух стран СНГ – Беларуси и Казахстана, достигших значительных успехов в кратчайшие сроки и улучшивших свои позиции согласно «Индексу развития электронного правительства», опубликованному Департаментом ООН по экономическим и социальным вопросам.*

В статье также содержатся авторские рекомендации по возможным мерам, практикам и реформам, подлежащим применению в Каракалпакстане на основе их опыта, а также выводы по направлениям, на которые следует обратить внимание при развитии электронного правительства.

Kalit so'zlar*: elektron hukumat, AKT, rivojlanish xususiyatlari, axborot maydoni, elektron xizmatlar.*

Ключевые слова: *электронное правительство, ИКТ, особенности развития, информационное пространство, электронные услуги*

PRIORITY AREAS FOR THE DEVELOPMENT OF EDUCATIONAL AND ENLIGHTENMENT IDEAS IN KARAKALPAKSTAN DURING THE YEARS OF INDEPENDENCE

Purkhanov Yu.E.
Karakalpak state university named after Berdakh

Summary: *The article discusses the priority areas for the development of pedagogical ideas in Karakalpakstan and the research work of pedagogical scholars during the years of independence*

Keywords: *pedagogy, education, upbringing, a person, music, competency, education, management.*

Today, the research in the development of pedagogical ideas, achievements in education and training, and problems waiting to be solved are of paramount importance as a methodological basis for the development of the world education system.

Based on the world comparativist approach, a number of scientific studies are carried out to identify the main trends and priorities in the development of pedagogical ideas, to improve national models based on best foreign practices under internationalization and globalization of educational processes, to develop pedagogical principles of humanization and transparency in education [1;5]. In this regard, in the Republic of Karakalpakstan great attention is paid to the in-depth study, research, popularization of best practices of scientific and pedagogical heritage, scientists-researchers are conducting a number of scientific studies, which is a clear evidence of further improvement of the educational process. In addition, based on research of the development of pedagogical ideas, it is of particular importance to clarify future directions for the development of education.

We see that the priority areas of development of educational and enlightenment ideas in Karakalpakstan during the years of independence have been developed in the following forms:

1. The research on Karakalpak folk pedagogy and the pedagogical possibilities of educating students and young people through folk pedagogy is widely revealed. The experience, methods and means, specific customs and traditions of the Karakalpak people in the field of education, which have existed for many centuries to prepare the younger generation for life, have found their embodiment in folk pedagogy. At a time when folk pedagogy had not yet been formed as a science, our ancestors tried to form and develop patriotism, courage, labor, kindness, justice, humanity, friendship and moral qualities in the youth.

During the years of independence, the theory and history of pedagogy in Karakalpakstan, the content of pedagogical ideas have been enriched with innovative ideas. Especially, the publication of new textbooks in the Karakalpak language recently is a clear proof of this. In particular, the textbook “The theory of Pedagogy” (volume 28.5 pages, 456 pages) co-authored by candidates of pedagogical sciences, associate professors A. Pazilov, K. Kosnazarov, K. Seytmuratov and Z. Kurbaniyazova was published as the first textbook during the years of independence [2].

The textbook is also an essential reference book for teachers, students and researchers at institutions of higher education and specialized secondary vocational institutions working in the sphere of pedagogy. Also, the publication of the textbook "History of Pedagogy" in Karakalpak language for students of higher education institutions, co-authored by Karakalpak scholars U. Aleuov, A. Pazilov, K. Seytmuratov, T. Utebaev, was a descriptive account of pedagogical advancement in Karakalpakstan [3]. The textbook covers 13 topics, and at the end of each topic there are questions, tasks and tests for student

evaluation. Overall, this textbook can be used by students and teachers of higher education and researchers in the field of pedagogy.

In the future, promising directions include the enrichment of the content of education on the basis of ethno-pedagogical materials and the education of students in the spirit of intercultural and inter-ethnic tolerance.

2. In studies on the theory of education, special attention is paid to the continuity and succession of the educational process and competent and technological approach to education. For example, researcher N. Nagmetova in her studies, based on diagnostics and education of adolescent boys, defines ideal life (meaning of independent life, duties and responsibilities of man in family and society, youth pride, courage, bravery, heroism, interest in profession) on the basis of mutual optimization. The scientific work of the researcher J. Asamatdinova, also explains the development of technology of value orientations development in students in the process of moral and aesthetic upbringing. Nowadays, the process of upbringing is considered as a factor of personality socialization, formation of the system of values. The formation of value awareness and worldview among students is especially important in the process of moral and aesthetic education. Moral and aesthetic education is interconnected, and the world of refinement operates inseparably from the kindness and goodness, impartiality. On this basis, researcher J. Asamatdinova defines the concept of "moral and aesthetic education" as follows: "Moral and aesthetic education is a systematic pedagogical process aimed at equipping students with norms of morality and ethics, forming moral and aesthetic consciousness, behavior and habits, and shaping competence to manifest moral and aesthetic values in practice". [4]

In general, the development of social competences in students on the basis of educational paradigms, the improvement of the technology of teaching the subject "Education" is of great importance in the prospective directions of education theory research in Karakalpakstan.

3. Research on the use of information and pedagogical technologies has improved adaptive mechanisms for the application of progressive information and pedagogical technologies in educational practice.

Scientific researches on use of electronic music software in development of professional competence of students of musical and art educational institutions of the world, formation of information culture, improvement of integration of disciplines, i.e. interrelation of informatics and information technologies and work on programs of music education is carried out. Today, a number of studies in the field of culture and art have been conducted, and the educational and material and technical base for music education has been strengthened, as in all spheres. Prof. U. Aleuov paid attention to the role of music in human life. He emphasized that music has a miraculous power for human thinking, i.e. it acts as an aesthetic tool in the education of youth. According to the scholar, music elevates human spirits and inspires one to look to the future with hope [5; 55]. Indeed, the power of music to influence the human psyche is known to us all. In the twenty-first century the rapid development of science, technology, and engineering has made it possible to create music and computer educational programs at its disposal, and the need for research work by researchers has arisen in this regard.

The researcher G. Abilova scientifically and methodologically justified and improved the relevance of teaching computer science in the development of professional competencies of future music teachers in her research work [6]. The scientific significance of the results of the study is that the content of the course "Informatics and Information Technology" in higher education in music shows how to assess the quality of computer science and effectively use the opportunities created in the development of professional skills of future music teachers. The result of the study is the development of electronic information resources for the development of creative abilities in teaching music, a comprehensive educational and methodological support to improve the professional competence of teachers on the basis

of self-development. In particular, the peculiarity of the research lies in the fact that the content of the course “Notation and Performance in Computer Programs” developed on the basis of Sibelius program is explained by the fact that the parameters of motivational activity and assessment criteria aimed at improving the quality of students' reading have been improved on the basis of Sibelius program. Researcher G. Abilova's creation of e-textbook on teaching the basics of Sibelius program in further development of professional pedagogical abilities of higher music students was of great importance for future music teachers.

The researcher J. Otepbergenov improved the technology of development of cognitive competence of students in his research work “The technology of development of cognitive competence of students in the information and educational environment” [7]. This research is explained by the fact that in today's information technology environment the process of shaping students' cognitive competence is enhanced by providing a meaningful connection between the teacher and a set of information resources. In addition, the systematic application of problem-based, collaborative, motivational methods in the process of individualization, cognitive games, learning discussions, motivation and anticipation shows the importance of research in achieving quality and efficiency of education.

Promising directions are the development of creative technologies for the development of over-thinking, the unlocking of the didactic potential of digital pedagogy (digital pedagogy is a pedagogical process in which various digital technologies (computers, software, etc.) are involved).

4. Some new approaches to the structure and development of methods of teaching the content of general education subjects have been revealed in the research on teaching methodology, didactics.

In Karakalpakstan in the third decade of independence the researchers in the area of education and teaching methodology such as G. Karlibaeva, G. Abilova, S. Tajbenova, I. Allambergenov, N. Babaniyazova, D. Nurishev, B. Erimbetov, A. Sultanova, N. Orinbetov successfully completed their research work. New didactic views and innovative ideas of these scientists have become important in the further advancement of pedagogical science.

It is well known that science and culture prospered in Central Asia during the period of Oriental awakening. In particularly, various subjects were widely developed on the territory of Uzbekistan, and the Academy of Sciences in Khorezm became the centre of world science. The genius of the Eastern Renaissance made an invaluable contribution to the development of world science with his scientific creations and discoveries.

Schools named after M.Ulugbek and Al Khorezmi has been specialized in the advanced study of natural sciences in our country in recent years. The adoption of the Presidential Decree "On measures to improve the quality of physics education and development of scientific research" has created a sense of greater power and responsibility among physics teachers and research scientists. In this regard, a number of research works have been carried out, contributing to a certain extent to the further improvement of physics teaching methodology.

In particular, the researcher G.Karlibaeva’s dissertation work the degree of methodological training of future physics teachers was analysed and its pedagogical and psychological factors were improved [8].

The indicators of professional pedagogical reflex, which determined the degree of interaction with the content of socio-spiritual, pedagogical and psychological criteria of methodological training of future physical education teachers was determined on the basis of indicators of professional pedagogical reflex during the study. Also, at the stages of students' preparation for professional activity are defined in research work on the basis of empirical concepts such general methods of physical sciences as pedagogical observation, participation in research work, creation of scientific imagination,

systematization of materials and solution, development, application of problems, and as a system-oriented approach to practical and theoretical knowledge.

More significantly, the researcher's suggestions on the dominating functions of information-methodological support of physical science, integrated and didactic tools, functional capabilities, use of modular technologies, self-development methods, control, analysis are important as a scientific and methodological resource for future physics teachers to benefit from. In the future, the development and implementation of modern secondary science teaching methodology based on national curricula is one of the important tasks ahead for research scientists.

5. Methodological suggestions and recommendations to improve the quality of education have been elaborated as the fifth direction of education management research. But the level of basic and applied research in this direction is not enough. With this view, innovation management and strategic management in future education, improvement of organizational and pedagogical processes of education quality improvement based on international assessment programs should be accounted for.

In summary, the research in the field of education and training in Karakalpakstan in recent years has been conducted in an effective manner, taking into account the national mentality of the Karakalpak people and best international practices. And, this is a clear example of the development of pedagogical science.

References:

1. Пурханов. Ю.Е. Мустақиллик йилларида Қорақалпоғистонда педагогик фикрлар тараққиётининг асосий йўналишлари: Пед.фан.бўйича.фалсафа доктори(PhD) дис… Автореф. Н.:2022.-5 б
2. Пазилов А. ва бошқалар Педагогика теориясы.-Т: 2018.-456 б.
3. Алеўов Ө, Пазылов А, Сейтмуратов Қ, Өтебаев Т. Педагогика тарийхы. Н: Билим , 2020.-256 б.
4. Асаматдинова Ж.П. Ахлоқий-эстетик тарбия жараёнида ўқувчиларда қадриятга йўналганликни ривожлантириш технологияси: Пед.фан.бўйича.фалсафа доктори(PhD) дис… Автореф. Н.:2019.-27 б.
5. Алеуов У. Қарақалпақ халқының этнопедагогикасы. – Нөкис: Билим, 1994. – 55 б.
6. Абилова. Г. Совершенствование научно – методических основ преподавания информатики в музыкально – образовательном направлении: Автореф..дисс. доктора философии (PhD) по пед. наукам. Н.:2018.-27 стр.
7. Отепбергенов Ж.С. Ахборот таълим муҳити шароитида талабаларда когнитив компетентликни ривожлантириш технологияси: Пед.фан. бўйича. фалсафа доктори (PhD) дис… Автореф. Н.: 2020.-22- б.
8. Карлибаева Г.Е. Бўлажак физика ўқитувчиларининг методик тайёргарлигини такомиллаштириш:Пед.фан.док(DSc).дис…. Автореф. – Н.:ТДПУ, 2019. – 24 б.

Rezyume: *Maqolada mustaqillik yillarida Qoraqalpog'istonda pedagogik fikrlar taraqqiyotining ustuvor yo'nalishlari va pedagog olimlarning tadqiqot ishlari so'z yuritiladi.*

Резюме. *В статье говорится о приоритетных направлениях развития педагогических идей в Каракалпакстане и научно-исследовательских работах ученых-педагогов в годы независимости.*

Kalit so'zlar: *pedagogika, ta'lim-tarbiya, shaxs, musiqa, kompetentsiya, raqamli pedagogika, ta'lim menejmenti.*

Ключевые слова: *педагогика, образование, воспитание, личность, музыка , компетенция, менеджмент образованием.*

EXAMINATION OF LEGAL REGULATION AND NORMATIVE LEGAL ACTS

Prekeeva T.M
Tashkent State Law University, Master student in the direction of the history of legal theory (12.00.01. Theory and history of state and law)

Summary: *It is known that legal documents form the basis of the national legal system. Any state develops on the basis of this system. Therefore, the legislation is the basis of building a society and a state, the highest expression of the will of the people and an important tool for maintaining law and order in the country. The process of building a democratic state based on the rule of law and the formation of civil society in our country is carried out on the basis of universally recognized principles and a strong legal system. This article provides useful information on the process of building a democratic state and civil society, and provides useful and useful information on its application in national practice.*

Keywords: *normative-legal documents, system of normative regulation, mechanism of legal regulation, norm of law, legal relations.*

Frequently asked questions arise in everyone’s daily life, such as how to approach it properly in different situations at work, or in public places, at home, and so on. In short, the question arises as to how the state should behave or forgive its actions in the interests of society and others.

However, it should be noted that the system of social norms emerges only as a certain part of the system of normative regulation. The reason is that there are two different norms (legal rules) in society, including:

a) social (social) technical;

b) social norms.

In particular, norms are used to regulate the relationship of human behavior with nature, the scope of social relations.

A system of normative regulation is a set of social norms that regulate the behavior of people in society, their unity, their interaction in the form of society, and regulate their relationship with nature. In society, law plays an important role in regulating economic, cultural and social relations between people. This is of great importance for the implementation of internal and external tasks of the state. It is done through a mechanism that regulates various social relations between law and people. The mechanism of legal regulation is a complex process, consisting of legal parts - legal norms, legal relations, subjective rights and duties, and is characterized by the term "mechanism". The word "mechanism" is made up of several parts that work in an interconnected way.

The mechanism of regulation of the law is a system of legal measures, organized in sequence, in order to eliminate the contradictions in the interests of the subjects of law.

The purpose of the law enforcement mechanism is to clear or prevent obstacles to the movement of subjects to achieve their interests.

A regulatory mechanism is a system of legal measures that vary in nature and function to help achieve a goal.

The need for different legal measures in force in the regulatory mechanism is determined by the different actions of the subject's interests in achieving a particular goal, or the presence of contradictions in the way.

There are concepts of legal influence and legal regulation in the regulation of social relations between people and legal norms in society. The legal influence on social relations extends beyond legal regulation, which includes economic, political, and other social relations governed by the customs,

morals, and rules of life in society, in addition to legal norms. And legal regulation is only regulated by social relations between people.

The mechanism of legal regulation is the implementation of various social relations between people in this society by legal norms, subjective legal and duty.

The mechanism of legal regulation of social relations between people in society is carried out in special ways. These methods depend on the subject of legal regulation of social relations. These are authoritarian and autonomous methods. In the authoritarian method, the regulation of social relations between people by legal norms is carried out by the state in legal relations, that is, strictly. For example; administrative legal and criminal legal relations. In this legal relationship, one of the subjects is represented by the relevant state bodies on behalf of the state.

As the Republic of Uzbekistan transitions to a market economy, its new Constitution will serve as the main basis for regulating the legal mechanism of social relations. For this, it is important to create all the laws, legal norms and update the legal framework in Uzbekistan. For example; Civil Code of the Republic of Uzbekistan, Tax Code, etc.

Uzbekistan has the ability to develop its national statehood and legal system in accordance with market relations. This is based on the following spiritual legal, state practices; universal state, based on legal experience; restoration of the legal and spiritual heritage of our people; respect for human rights and freedoms; Observance of the Constitution and the rule of law; formation of national legal and worldview, etc.

The mechanism of legal regulation regulates various social relations between people in a society by legal norms. Therefore, the mechanism of legal regulation of the state is the law-making activity will play an important role in the development, application and improvement of law.

The regulatory mechanism is divided into four stages. First, the creation of a legal norm regulating social relations in society. Second, the emergence of the rights and obligations of the parties on the basis of applicable law and compliance with the law. Third, the exercise of subjective rights and obligations when the parties have rights and obligations in cases provided by law. Fourth, law enforcement.

The rule of law emerges as the primary legal basis for legal regulation, because its disposition reflects the model of behavior formed and necessary. Legal norms express the will of the people, the power of the state, which is communicated to the participants of the social relations regulated by the norm. The legal norm specifies the rights and duties of the parties to the legal relationship, the scope of powers and methods of their implementation.

Legal norms define the rules of life that people follow in life. These rules of life are the basis for regulating social relations between people. For example; citizens have the right to work. This is a general constitutional norm. Article 25 of the Mehat Code of the Republic of Uzbekistan provides for the implementation of this norm and provides for the issuance of orders by the heads of enterprises, organizations and institutions. Recruitment of the employee takes place after the order is issued.

Legal relationships are a key tool in determining who enforces the rule of law. Regulating the social relations of legal norms. Types of legal relationships arise that regulate and intimidate, depending on the types of coercion, authorization, and prohibition. Regulatory legal relations are divided into coercive, authoritative and prohibitive relations.

Enforcement of rights and obligations is the actual behavior of the subjects. Here the regulation of the law: the mechanism ceases to exist, because the factual and real behavior of the subjects is ensured, because whatever the legislature's order is aimed at, it achieves its result.

The mechanism of regulation of the law operates through legal relations, and through it the application of legal norms takes place. Relationships between individuals (participants in a legal

relationship) have a certain individualized character, and as soon as one or another of the participants in the legal relationship, their relationship with the state is specified by rights and obligations.

The legal status or relationship of the parties (participants) (it is not a simple relationship, because if one party is assigned a right, the other party is assigned a different obligation) is determined differently in the legal relationship.

But its essence is in the unity of rights and obligations. Enforcement acts, both direct and indirect, play a key role in the regulatory mechanism. Initially, they are responsible for enforcing the law.

Thus, it can be said that subjective rights are exercised in the form of exercise, while legal obligations are exercised in the form of action and performance.

References:

1. O'zbekiston Respublikasi Konstitutsiyasi. -Toshkent; 2021 yil.
2. Islom Karimov. Mamlakatimizda demokratik islohotlarni yanada chuqurlashtirish va fuqarolik jamiyatini rivojlantirish konsepsiyasi. -T.; 2010, 8-
3. Shavkat Mirziyoyev. Qonun ustuvorligini ta'minlash va inson huquqlari -mamlakat taraqqiyoti va xalq farovonligi, 2016 yil 8-dekabr 6-bet.
4. Shavkat Mirziyoyev. Biz jasur va olijanob xalqimiz bilan erkin va obod, demokratik O'zbekiston davlatini ko'ramiz! 2016 yil 15 dekabr
5. www.lex.uz

Rezyume: *Ma’lumki, yuridik hujjatlar milliy-huquqiy tizimning asosini tashkil qiladi. Har qanday davlat shu tizim asosida rivojlanib boradi. Binobarin, qonunchilik hujjatlari jamiyat va davlat qurilishining asosi, xalq irodasining oliy ifodasi hamda mamlakatda huquqiy tartibotni ta’minlovchi muhim vosita hisoblanadi. Mamlakatimizda huquqiy demokratik davlat qurish va fuqarolik jamiyatini shakllantirish jarayoni umum e’tirof etilgan tamoyillar hamda mustahkam huquqiy tizim asosida amalga oshirilmoqda. Ushbu maqola demokratik davlat qurish va fuqarolik jamiyatini shakllantirish jarayonida foydali ma’lumotlarni ifoda etadi va milliy amaliyotda qo’llash haqida kerakli va foydali ma’lumotlarni ifoda etadi.*

Резюме: *Известно, что правовые документы составляют основу национальной правовой системы. Любое государство развивается на основе этой системы. Поэтому законодательство является основой построения общества и государства, высшим выражением воли народа и важным инструментом поддержания правопорядка в стране. Процесс построения демократического правового государства и формирования гражданского общества в нашей стране осуществляется на основе общепризнанных принципов и сильной правовой системы. В данной статье представлена полезная информация о процессе построения демократического государства и формирования гражданского общества, а также полезная и полезная информация о его применении в отечественной практике.*

Kalit so'zlar: *normativ-huquqiy hujjatlar, normativ tartibga solish tizimi, huquqiy tartibga solish mexanizm, huquq normasi, huquqiy munosabatlar.*

Ключевые слова: *нормативно-правовые документы, система нормативного регулирования, механизм правового регулирования, норма права, правоотношения.*

LINGUISTIC MEANS OF CREATING IMAGERY IN LITERATURE

Erimbetova E.
Karakalpak State University named after Berdakh

Summary: *The article tells about the linguistic concept between imagery and figurative language, internal relations between parts of an utterance and between logically organized utterances. Images are found throughout literature in poems, plays, short stories, novels and other creative works. Imagery can be considered as the opposite of accuracy, although some stylists are of the opinion that imagery has its own kind of accuracy.*

Keywords*: Imagery in literature, the structure of images, literary work, figurative language, semantic method.*

It is well-known that the study of imagery has a long history. Genetic roots of this phenomenon go back to the works by ancient philosophers – Aristotle, Cicero and others. The first scientific description of this notion is found in the theory of poetic image by A.A. Potebnya and VV. Vinogradov. They studied imagery at the level of the text and regarded it as an important component of text semantics.

The deep structure of imagery consists of three components:

1. Image referent;
2. Image agent (reflected object);
3. Image basis (common features which arise from the principle of similarity) [2,62].

Imagery is the generic feature of the belles-lettres style assumes in literary works a compressed form: it is rich in associative power, frequent in occurrence and varied in methods and devices of materialization.

“An image”, writes A.E. Derybyshire, “is a use of language which relates or substitutes a given word or expression to or for an analogue in some grammatical way, and which in so doing windows that word or expression with different lexical information from that which it has in its set. An image, in this sense, is merely a linguistic device for providing contextual information” [2,18].

In spite of its being rather complicated, there is a grain of truth in this definition of an image, for an image does give additional(contextual) information. This information is based on associations aroused by a peculiar use of a word or expression. An interesting insight into the essence of imagery is given by A.A.Potebnya: “Poetical image” he writes, “is not a frozen picture, but movement, not a static reproduction but the developing idea of an artist’’ [3,43].

Following I.R. Galperin, we define imagery as a use of language media which will create a sensory perception of an abstract notion by arousing certain associations (something very remote) between the general and the particular, the abstract and the concrete, the conventional and the factual [4, 243].

Imagery is found throughout literature in poems, plays, stories, novels, and other creative compositions. Here are a few examples of imagery in literature. It is hardly possible to under-estimate the significance of imagery in the belles-letters style of language. Imagery may be regarded as the antipode to precision, although some stylistic hold the view that imagery has its own kind of precision.

“The essence of image”, writes L.V. Sherba, “...is in the multifariousness of the associations it provokes” [5,48].

The image, as a purely linguistic notion, is something that must be decoded by the reader. So are the subtle inner relations between the parts of the utterance and between logically arranged utterances.

Instances of detached construction, asyndeton, etc. must also be interpreted. We shouldn't confuse the relationship between imagery and figurative language. Usually this confusion involves one of two things:

- Describing imagery as a type of figurative language;
- Describing imagery as the use of figurative language to create descriptions that engage the physical senses.

According to our observationsиfigurative language is language that creates a meaning that is different from the literal interpretation of the words. For instance, the phrase "you are my sunshine" is figurative language (a metaphor, to be precise). It's not literally saying that you are a beam of light from the sun, but rather is creating an association between "you" and "sunshine" to say that you make the speaker feel warm and happy and also give the speaker life in the same way sunshine does. Imagery is neither a type of figurative language nor does it solely involve the use of figurative language to create descriptions.

An image can be decoded through a fine analysis of the meanings; the associations which are awakened by the image should all be called into play. The easier the images are decoded, the more intelligible the literary utterance becomes to the reader. If the image is difficult to decode, then it follows that either the idea is not quite clear to the writer himself or the acquired experience of the reader is not sufficient to grasp the vague or remote associations hidden in the given image.

Images from a linguistic point of view are mostly built on metaphor, metonymy and simile. These are direct semantic ways of coining images. Images may be divided into three categories: two concrete (visual, aural), and one abstract (relational) [4, 245].

Visual images are the easiest of perception, an as much as they are readily caught by what is called the mental eye. In other words, visual images are shaped through concrete pictures objects, the impression of which is present in our mind. Thus in:

"As she unfolded the white linen and let it billow over the fine mahogany table, she would look once more at the large water mark. She never set the table or passed through the dining room without looking at it. Like a lighthouse keeper drawn to his window to gaze once again at the sea, or a prisoner automatically searching out the sun as he steps into the yard for his hour of exercise, Ruth looked for the water mark several times during the day". [6,123].

In this passage from *Song of Solomon*, Toni Morrison uses visual imagery to capture the color and motion of the table cloth as it settles over the table. She also uses figurative language ("like a lighthouse keeper...") to describe the way that Ruth in the passage looks at the water stain on the table. The figurative language doesn't just describe the color or sound or smell of the scene, it captures the obsessive *way* that Ruth glances at the water stain, and the way that seeing it gives her a sense of ease. Here the figurative language deepens the imagery of the scene.

The simile has called up a visual image, that of a lighthouse keeper or a prisoner.

We will analyze next extract: Imagine a cartwheel half-mired in muddy water, its hub just clearing the surface. The spokes are the satellite cities that form Metropolitan Toronto: Etobicoke and York to the west; North York in the north; Scarborough and East York to the east. The Toronto city core is the hub". **[**8,193]

Hopkinson evokes the image of a cartwheel to allow readers to visualize the setting's geographic layout. This imagery also connects to an older era of farming to set up the broader context of a dystopian future where Hopkinson's characters have returned to an agrarian lifestyle to survive. A relational image is one that shows the relation between objects through another kind of relation, and the two kinds of relation will secure a more exact realization of the inner connections between things or phenomena [4,247].

If a man of Virtue and upright Principles happens to find it, it will have it cried, and the Owner may come to hear of it again; but how many times shall such a thing fall into Hands that will make no scruple of seizing it for her own, to once that it shall come into good Hands. [7,123].

Such notions as: a man of Virtue, Door of necessity, the Door of Inclination all create relational images, in as much as they aim at showing the relations between the constituents of the metaphors but not the actual(visual) images of in, in this case, "virtue", "necessity", "inclination".

A striking instance of building up an image by means other than metaphor, metonomy and simile is to be scene in the following passage of emotive-prose from "Moll Flanders". Daniel Defoe has created in this particular case an atmosphere of a new life opened before the heroine.

At length a new Scene opened: There was in the House where I.Lodge's, a North Country Woman that went for a Gentlewoman, and nothing was more frequent in her Discourse than he account of the cheapness of Provisions, and the easy way of living in her country; how plentiful and how cheap everything was, what good Company they kept, and the like; till at last I told her she almost tempted me to go and live in her Country; for I that was a Widow, the' I had sufficient to live on, yet had no way of increasing it; and that London was an expensive and extravagant Place; that I found I could not live here under a Hundred Pound a year, unless I kept no Company, no Servant, made no Appearance, and buried myself in Privacy, as if was obliged to it by Necessity [7,124].

The first thing that strikes the close observer is the insistent repetition of words, constructions, phrases. This example illustrates the means by which an image can be created by syntactical media and repetition. Actually we do not find any transferred meanings in the words used here, i.e. all words are used in their literal meanings and yet so strong is the power of syntactical arrangement and repetition that the reader cannot fail to experience himself in a scene of a new life of a main character.

In conclusion, we consider thatimagery can make something abstract, like an emotion or theory, seem more concrete and tangible to the reader. Imagery allows readers to *see* and *feel* what's going on in a story. It fully engages the reader's imagination, and brings them into the story. By using imagery, writers can evoke the feeling they want to talk about in their readers...and by making their readers feel, writers can also help readers connect to the messages in their work.

References

1. Ashurova D.U., Galieva M.R. Text Linguistics "Turon -Iqbol" Tashkent: –2016.
2. Darbyshire, A. E. A Grammar of Style. Ldn, 1971.
3. D. Defoe. "Moll Flanders" Wordsworth Classics, Wordsworth edition Limited Great Britain. 1993. 339 p.
4. Galperin I.K. "Stylistics" M.2002 .334p
5. Nalo Hopkinson, "*Brown Girl in the Ring"* Canada, Warner Aspect, 1988, 256p.
6. Potebnya "Poetical image:" – M.: ART,1976.
7. Sherba L.V. Избранные работы по русскому языку M.1957.
8. Toni Morrison "*Song of Solomon"* United States Publishing house Alfred A. Knopf, 1977
9. http://belletrist.ru/books/detectivbook/defo-pravd. html
10. http://reading-room.narod.ru/authors/defo.html
11. http://belletrist.ru/books/aroundbook/daniel defo.html

Rezyume*: Ushbu maqolada obrazlilik va majoziy til o'rtasidagi lingvistik tushunchalar, so'zning qismlari va mantiqiy tashkil etilgan so'zlar o'rtasidagi ichki munosabatlar haqida hikoya qilinadi. Obrazlilik she'r, p'esa, qissa, roman va boshqa ijodiy asarlarda adabiyot davomida aytiladi, ayrim uslubchilar obrazlilikning o'ziga xos aniqligi bor degan fikrda bo'lsalar-da, obrazlilik aniqlikning teskarisi sifatida qaralishi mumkin.*

Резюме: *В статье говорится о лингвистическом понятии между образностью и образным языком, внутренних отношениях между частями высказывания и между логически*

организованными высказываниями. Образы встречаются в литературе в стихах, пьесах, рассказах, романах и других творческих произведениях, образность можно рассматривать как антипод точности, хотя некоторые стилисты придерживаются мнения, что образность имеет свой собственный вид точности.

***Kalit so'zlar**: Adabiyotdagi obrazlilik, obrazlar tuzilishi, badiiy asar, obrazli til, semantic usul.*

***Ключевые слова:** Образность в литературе, структура образов, литературное произведение, образный язык, семантический способ.*

MODERN TECHNOLOGIES FOR INTENSIVE TEACHING OF THE RUSSIAN LANGUAGE

Atajanova G.Yu.
Karakalpak State University named after Berdakh

Keywords: *intensification, technology efficiency, rationalization, communicative block, design component, microclimate, quality monitoring, aspects.*

Summary: *The article contains new teaching methods to improve the assimilation of large amounts of information, improve the involvement of students in the lesson, touches on the details that the teacher should pay attention moreover; the aspects of intensive training are outlined.*

The intensification of communication is the transfer of a larger amount of educational information to students with the same duration of training without reducing the requirements for the quality of knowledge. For the successful intensification of the educational process, it is necessary to develop and implement scientifically based methods of managing the cognitive process that mobilize the creative potential of the individual. Increasing the pace of learning can be achieved by improving the content of educational material and teaching methods.

Improving the content involves: - rational selection of educational material with a clear allocation of the main, basic part and additional, secondary information in it; main and additional literature should be highlighted accordingly; - redistribution in time of educational material with a tendency to present new educational material at the beginning of the lesson, when the perception of students is more active;

- concentration of studies at the initial stage of mastering the course in order to develop a backlog of knowledge necessary for fruitful independent work;
- rational dosage of educational material for multi-level elaboration of new information, taking into account the fact that develops not according to a linear, but according to a spiral principle;
- ensuring the logical continuity of new and already learned information, the active use of new material for repetition and deeper assimilation of the past;
- economical and optimal use of every minute of study time.

Improvement of communication methods is ensured by:

- wide use of collective forms of cognitive activity (pair and group work, role-playing and etc.);
- development of the teacher's appropriate skills in organizing the management of the collective educational activities of students;
- application of various forms and elements of problematic communication;
- improving the skills of pedagogical communication, mobilizing the students;
- individualization of learning when working in a student group and taking into account personal characteristics in the development of individual tasks and the choice of forms of communication;
- striving for the effectiveness of training and uniform advancement of all students in the process of learning, regardless of the initial level of their knowledge and individual abilities;
- use of the latest scientific data in the field of social and educational
- the use of modern audiovisual means, IST, as well as information teaching aids.

The concept of "learning intensification" is related to the concept of "learning activation". The activation of educational activity is understood as the purposeful activity of the teacher, aimed at the development and use of such forms, content, techniques and teaching aids that contribute to increasing the in the assimilation of knowledge, the formation of skills in their practical application, as well as the formation ability to predict the production situation and make independent decisions.

In the modern period, there is a real need to develop and apply open systems of intensive communication. These systems give the opportunity to choose the appropriate learning technology and develop an individual program for the formation and actualization of personality. But the implementation of the synthesis of open systems of intensive learning is possible only if a number of conditions are met:
- comprehensive consideration of the characteristics of the pedagogical environment in which the learning process will take place: the content characteristics of the pedagogical environment are determined by knowledge, skills, cognitive and potentials, forms and methods of organizing training and independent work of students;
- observance of the principle of adapting the learning process to the personality of the student; this principle is implemented in practice through the non-linear structuring of the discipline (the compilation of its external and internal modules) and the compilation of a branched program for its study
- accelerating the individual development of general scientific and special knowledge by students due to the design of the "logical construct" of the discipline, in which basic knowledge is given in a collapsed form.

The effectiveness of technologies, the rationalization of teaching methods, effective teaching methods are integral attributes of all modern pedagogical technologies.

Efficiency (from Latin effectivus - giving a certain result, effective) means "the ratio of the result achieved (according to one or another criterion) to the maximum achievable or pre-planned result, when measuring the effectiveness of a training group, the choice of criteria is concentrated around indicators of success and effectiveness".

Rationalization of educational activities (from "rational" - reasonably justified, expedient) implies the expediency of the activities of the teacher and students, by improving learning technologies in order to increase productivity, i.e. efficiency.

We consider it expedient to consider the criteria of efficiency, rationalization and optimization of the educational process as the main criteria for intensive learning technologies. The main “three pillars on which the land of learning rests” are distinguished by teachers - activity, independence and creativity. Based on our experience with the use of intensive technologies, we consider it appropriate to consider these provisions as three system-forming principles of intensive technologies that stimulate communicative competence: activity technology, creativity technology, independence technology.

In order for a student to be independent, to actively show his creativity, it is necessary to take into account possible options for technologies of independent activity. According to the level of independence, four types of technologies for independent cognitive activity are distinguished:
1) goal setting and task planning is carried out with the help of a teacher;
2) the teacher helps to set the goal, the students themselves plan the work;
3) students both set a goal and plan work (as part of the teacher's task);
4) the work is carried out by the student on his own initiative: he determines the goal, content, plan and performs it himself.

Independent means to be able not so much to solve a problem as to be able to pose it. Therefore, independence is impossible without creativity. “To be independent means to be able and able to set a task for yourself, to build a plan for solving it yourself, and then to implement it. Independence always contains elements of creativity or requires its manifestation.

The design or goal-setting component involves designing goals and determining the final results, in which the student himself participates, based on his motivations and requests.

Comfortable conditions or a comfortable microclimate in the educational process means that the teacher creates situations of success for students, knows how to maintain contact with him, shows

tolerance, expresses emotional support and understanding, removes and prevents negative stressful moments. These provisions are considered by us as basic in training with intensive technologies.

The diagnostic component or monitoring of the quality of education is used as a method for evaluating the results of educational activities, taking into account its real learning opportunities and the initial level of knowledge. As a promising assessment system in intensive technologies, the rating of knowledge, the rating of the student, and the rating of the teacher are used. Diagnostic data is used to correct educational activities.

Intensive technologies, which we consider as a means of stimulating the development and formation of the communicative competence of future specialists, in the light of the concept of humanization of education, are determined by the following components: - attitude towards the student as a subject of life, capable of self-improvement of communicative competence as a value quality of the individual;

- attitude to an educational institution as a valuable educational space, where in the process of communication and communicative activity, psychological and pedagogical stimulation of communicative competence as a valuable, humanistic quality of a future specialist is carried out.

Sometimes the usual practical Russian language course, which presents a large amount of material in a short time and involves the energetic actions of the teacher, is mistakenly called "intensive", although it is conducted on the basis of a traditional textbook.

Intensive communication is learning communication. We are talking about a two-dimensional organization of communication, when the principle of indirect goal setting becomes the main form of implementation of the educational process, i.e. game in the broadest sense of the word. We can say that the intensive course is one big, well-organized game, and above all role-playing.

What are the Intensive Course Study Materials?

This is, first of all, a polylogue text, in which all its participants are involved, who have received their roles-legends. Why "polylogue"? because in it all the characters can speak, as well as two, three, a monologue statement can also be included in it.

What are the requirements for the situation? It should be a model of communication, and the speech units included in it should be presented in a variety of options. In other words, in other, very different life conditions and circumstances (options), the student resorts to the same speech units in his statements.

It is very important that the polylogue consists of communicative blocks, semantic blocks around selected situations.

A communicative block is a set of communicative units that has the coherence and value of a speech work, with the change of several communicative roles. The communicative block determines the motivation and purpose of the speech situation.

When selecting lexical and grammatical structures, their functionality is taken into account, i.e. those that provide the possibility of carrying out speech activity in a given area of communication and can most effectively serve a situationally organized text are selected.

When choosing vocabulary, in addition to the criterion of functionality and particularity, in intensive learning, one more thing must be taken into account - paralinguistic. That is, if we have 2-3 synonymous units that are equally used in a given situation, then we give preference to the word that can be remembered using non-verbal means - facial expressions, gestures, intonations, movements, etc.

It is imperative to include in the dictionary words that make up a modal synonymy, for example: *so-so, not very good, nothing*, etc. We really need words and constructions that are familiar to a native speaker to help express this or that attitude, i.e. all these: *Well! That's it! Ah, that's it! Here's to you! What more!* etc.; evaluative existential sentences: *That's how it works! Hey song!* etc.; Genitive sentences: *Not*

a drop of pity; Not a shadow of sadness, etc. Work on the text of the polylogue in its traditional sense is not carried out. Only events, actions, the reaction of the hero to what is happening can be discussed. Another thing is if the text is used in regular speech development classes. In this case, other tasks are possible, but, of course, communicative ones, and the text of the polylogue can be studied by dividing it into semantic parts.

References:

1. Bespalko V.P. Pedagogy and progressive learning technologies. - M.: Publishing House of the Institute of Vocational Education , 1995. 336 p.
2. Blinov G.I. Panov B.T. Practical and laboratory classes according to the methodology of the Russian language. M., 1986.
3. Gross N.V., Foteev V.P. Independent work of students //Specialist 2000. No. 3 S. 13-16.
4. Selevko G.K. Modern educational technologies: Textbook. - M.: Public education, 1998 - 256, 288, 292 p.
5. Stepucheva T.D. Management of independent activities of students. / Specialist 1996 №6 S.I.
6. Kuznetsova L.V. Management of independent activity of students. // Specialist 1996 No. 5 p. 15
7. Erganova N. E. Fundamentals of the methodology of vocational training: Textbook. 2nd ed., - Yekaterinburg: Ural Publishing House. state prof.-ped. un-ta, 1999. - 138C. Links:
8. Selevko G.K. Modern educational technologies: Textbook. - M.: People's education, 1998. 256 S.
9. Selevko G.K. Modern educational technologies: Textbook. - M.: People's education, 1998. 288 C.
10. Stepucheva T.D. Management of independent activities of students. //Specialist 1996 No. 6 S.I.
11. Selevko G.K. Modern educational technologies: Textbook. - M.: People's education, 1998. 292 S.
12. Bespalko VP Pedagogy and progressive learning technologies. - M.: Publishing House of the Institute of Vocational Education , 1995. 336 p.
13. Blinov G.I., Panov B.T. Practical and laboratory classes according to the methodology of the Russian language. M., 1986.
14. Gross N.V., Foteev V.P. Independent work of students // Specialist 2000. No. 3 . 13-16 C.
15. Kuznetsova L.V. Management of independent activity of students. // Specialist 1996 №5 15 S.
16. Erganova N. E. Fundamentals of the methodology of vocational training: Textbook. 2nd ed., rev. and additional - Yekaterinburg: Ural Publishing House. state prof.-ped. un-ta, 1999. - 138 p.

***Rezyume**: Maqolada katta hajmdagi ma'lumotlarni o'zlashtirishni yaxshilash, o'quvchilarni darsga jalb qilishni yaxshilash bo'yicha yangi o'qitish usullari mavjud bo'lib, o'qituvchi e'tibor berishi kerak bo'lgan tafsilotlarga to'xtalib o'tilgan, bundan tashqari, intensiv o`qitishning jihatlari ko'rsatilgan.*

***Резюме:** Статья содержит новые методы обучения для улучшения усвоения больших объемов информаций, улучшения вовлеченности студентов к занятию, затронуты детали, на которые должен обращать внимание преподаватель, более того изложены аспекты интенсивного обучения.*

***Kalit so'zlar**: intensivlashtirish, texnologiya samaradorligi, ratsionalizatsiya, aloqa birligi, komponent loyihasi, mikroiqlim, sifat monitoringi, aspektlar.*

***Ключевые слова:** интенсификация, эффективность технологий, рационализация, коммуникативный блок, компонент проектирования, микроклимат, мониторинг качества, аспекты.*

UDK 81'27 : 811.111

NATIONAL CHARACTERS AND MENTALITY REPRESENTED IN ENGLISH AND KARAKALPAK PROVERBS

Xudaybergenova T.[1], Tajieva A.[2]
[1]Karakalpak State University named after Berdakh,
[2]Nukus State Pedagogical Institute named after Ajiniyaz

Summary: *This article aims at investigating the significance of proverbs in linguistic research. The paper tries to shed light on the definition and importance of proverbs by a number of scholars, their relations to the issue, its characteristics, functions and comprehension. Analyzed proverbs reflect life style of the Karakalpak and the English nation, the investigated expressions either coincide in some basic categories or express polar points of view and attitudes. Being a valuable object of linguo-cultural investigations proverbs realise not just functions of the language but that of culture as well.*

Keywords*: proverbs; national character; linguo-cultural peculiarities; scholars' view.*

INTRODUCTION

Nowadays the theme of national character or mentality is rather urgent in the linguistic science. This may be connected with various factors, especially globalization and the arrangement of effective intercultural communication. In the present days it becomes doubtless that at least elementary knowledge of the culture is necessary for productive communication with the representative of this or that country. Cultures of different nations differ from each other greatly. In order to identify these differences, it is of importance to analyze the essence of concepts that lie within. The cultural cognitive mechanisms belong to the cognitive concepts, reflecting basic beliefs, traditions, customs, etc. G.D. Tomakhin [8:23] distinguishes between geographical, socio-political and ethnographic culture-specific concepts.The aim of the article is to consider the layer of the lexis which presents cultural peculiarities of every nation, that is proverbs. Most of the proverbs are not of literary origin, but of folk one. The experience of nations, the observations of life by the ancient people are represented in proverbs, this layer of lexis is quite unique.

Proverbs represent a rich source of information, especially for linguocultural investigations being a unique means of cognition and interpretation of culture, mentality of language representatives.

In the proverb the experience, habits and traditions of a certain nation are reflected, that is why the study of the proverbs enables us to get deeper into the essence of such notions as "national character", "mentality". The proverb is crystallized generalization of national wisdom.

Writing on proverbs, Morris-Brown [6:98] defines proverb as short excerpts from stories about life's lessons. They are stuffed with cultural symbolism which expresses important ideas about the human nature, health and social relations that often transcend their culture of origin. Proverbs are timeless, succinct, clever, often funny and usually memorable.

Lange [4:200] describes proverb as not only a short statement that reflects the thought and insight of a people into the realities of life but also, a technique of oral expression.The writer further made mention of proverbs being tradition, custom, heritage and also narrates the traditional background of the people as a seed nurtured and passed from generation to generation through ancestors.

However, according to Mieder [5:17], a proverb: is a short, generally known sentence of the folk which contains wisdom, truth, morals, and traditional views in a metaphorical, fixed and memorable form which is handed down from generation to generation.

Norrick [7:67] identifies two basic characteristics that differentiate proverbs generally from free formed utterances. First, proverbs are performed inventorised linguistic units; and second, they have traditional item of folklores.These characteristics have important consequences for the interactional meaning proverbs realize in context. He further asserts that an initial consequence in their very availability as performed utterances. By choosing a ready-made utterance with a standard ideational meaning and perhaps a standard textual and interactional meaning as well, the speaker avoids the necessity of formulating an original utterance of his own. Another consequence of proverbs being inventorised is their value in signaling group membership. Here proverbs are like clichés, jokes, especially inside jokes, allusions, quotes and the way of speaking generally, all of which can lead to bonding between people.

Proverbs derive from the actual observation and use of everyday life and they can express different topics.Some proverbs are universal and are found in almost all languages, some are often culture-bound and language specific. The comprehension of proverbs depends on the linguistic as well as the nonlinguistic context in which they are used in.

Translating proverbs word-by-word is not sufficient way to express the meaning of a proverbs in the other languages because of culturemes that exists in its content in a target language. It may cause to misunderstand the basic meaning of a proverb. Therefore, the method of finding equivalents of proverbs in English and Karakalpak is used to investigate peculiarities of proverbs about in these languages.

The same type of proverbs in Karakalpak and English are available not only in Karakalpak and English, but in all peoples or languages, and these types of proverbs are of general importance because they refer to the general characteristics of people, their usual behavior in the world. These proverbs are love, friendship, time, life, happiness, success, family, death etc.

1. English proverb: **“Love is blind”**- means that two people don’t just love each other based on appearances or external factors. They cherish and care for that person beyond normal standards. So they cannot see any imperfections and the faults in that person. Karakalpak language have equivalent of this proverb: “**Muxabbattiñ kòzi kòr**”, which has the same meaning in this language.
2. English proverb: **“Like mother, like daughter”**- means that a daughter will have traits similar to her mother upon reaching adulthood and this idea is also followed by Karakalpak nation and their proverbs sounds **“Anasin kòrip qizin al”.**
3. English proverb: **“A friend at hand is better than a relative at a distance“-** means that in life close companions are more valuable than your family in some cases. Your neighbor is more important in your life than your relatives if they live far away. Because if something happened to you, your neighbor could be there to help you. Karakalpak language has the exact proverb **“Uzaqtaǵi aǵayinnan jaqindaǵi qoñsiñ jaqsi”.**
4. English proverb: **“A friend in need is a friend indeed”** and Karakalpak proverb **“Jaqin dos is tuskende biliner”** mean that a friend that sticks with you and helps you when you’re in trouble is a true friend. For example: If you have a friend who helps you even when you have nothing to give back to them at that moment, they’re a true friend.
5. English proverb: **“Dry bread at home is better than roast meat abroad”-** means that everyone has favorite place of birth. If you go to another country for a long time with work or study or move, you miss your home and want to live in your homeland, no matter how good or bad it is, and Karakalpaks compare this process with being the shepherd in your own country, than a king in a foreign country. The proverb sounds like **“Kisi elinde patsha bolǵansha,òz eliñde shopan bol”.**
6. English proverb: **“There is no better manure than the farmer’s foot”**- means that if the farmer is hardworking and industrious, he will be the best manure on the ground himself. The proverb glorifies

labour, hard-working and in this case Karakalpaks use the proverb **"Aǵash miywesi menen taniladi, adam miyneti menen taniladi".**

7. English proverb: **"You cannot teach an old dog new tricks"**- means that changing longstanding habits or ways, especially in an old person is very difficult because how person getting older, his/her mental ability is getting slower to learn something new. Karakalpaks give this idea in another way, mentioning that the habits got in youth is forever in their proverb **"Jasliqta alǵan bilim tasqa oyilǵan naǵis kibi".**

8. English proverb: **"What children hear their parents say by the fireside, they repeat in the highway"**- means that children are very fast learners. They learn upbringing in the family from their parents. They understand and accept what their parents have done. This means that if parents set a good example they will be brought up in a good way. Karakalpaks say that every bird does the things he learned in the nest and the proverb sounds **"Qus uyasinda kòrgenin qiladi".**

We cannot say that all the proverbs in the compared languages are the same. We noticed a great number of different proverbs and their meanings. The reasons why proverbs are different we see in the language, religion, culture, customs, place of residence, and way of life of that people. Each nation is unique in its own way, and we can understand them their feelings, their attitudes to life, their lifestyle from the proverbs. For example: Karakalpak people have been engaged in animal husbandry *"Mal adamniñ bawir eti", "Mal ashiwi – jan ashiwi"*, agriculture *"Ekseñ jerdi qandirip, alasañ ònim jandirip", "Qapta qalǵansha, tapta qalsin",* fishing *"Baliqshiniñ ùyine barsañ qarma jiyseñ, Diyqanniñ ùyine barsañ jarma isheseñ", "Tutip alsañ sazandi, toltirasañ qazandi"*and hunting *"Aw mergeni basqa, jaw mergeni basqa", "Oǵiñ ekew bolsa, birewin gizne"* since ancient times. Because their place of residence was very convenient to carry out these activities. When the Aral Sea was flooded, fish were the main source of income for the locals. They also hunted birds from the lakes and hunted various animals from nearby forests. Livestock is very well developed due to the abundance of land.

Now if we take the British, they have a long and vibrant history. When we hear the word of the British, we inevitably think of ancient distant kings, palaces, soldiers *"A good soldier is a poor scout"* and wars *"He that makes a good war, makes a good peace", "All weapons of war cannot arm fear"*, battles *"It takes two bolws to make a battle"* and from the recent past trade *"The trend is your friend"* and industry *"Want is the mother of industry", "Industry keeps the body healthy, ... and the purse full".* Just as the origins and developmental periods of each nation are different, so the British are different from the Karakalpaks. In other words, unlike us, they had a lot of wars and battles. Where there was a war, blacksmithing (*"Blacksmith's children are not afraid of sparks")* practiced because of the strong need for weapons. Farriers were also needed because horses were well used. Over time, trade and industry developed, and factories, mills, and shops opened.

CONCLUSION

Proverbs are short, eloquent and wise forms of expressions. They are important structures in all languages of the world and they play an important role in cultural as well as linguistic studies. Proverbs are found in almost all cultures and they are often derived from other cultures. The origin of proverbs are often unknown or missed with time. Proverbs reflect the cultural aspects of the language users. Proverbs derive from the actual observation and use of everyday life and they can express different topics.Some proverbs are universal and are found in almost all languages, some are often culture-bound and language specific. The comprehension of proverbs depends on the linguistic as well as the nonlinguistic context in which they are used in.

As a result of the analysis of the similarities and differences between Karakalpak and English proverbs in terms of national character and mentality, we have learned that there are many similarities in both, which are common to all peoples of the world. But each nation has its own origins and period of

development, which differ depending on their language, religion, culture, customs, place of residence and lifestyle.

In conclusion, taking into account the above, there are many articles in the world that have a common meaning, but at the same time there are different articles that are unique to each nation.

Reference:

1. Jennifer Speake. The Oxford Dictionary of Proverbs. The fifth edition. Oxford University Press, 2008- 625
2. Karakalpak folklori. Kòp tomliq 88-100-tomlar. Nòkis “Ilim” 2015
3. Lange, D.W. (2013). A dictionary of Japanese proverbs. Floating World editions;bilingual edition (August 16,2013). ISBN -10 1891640518, ISBN-13 978-1891640513. -252 p
4. Louis, A.S. (2000). The book of updated proverbs. Abelard Schuman publisher (January 1.2000). -64 p
5. Mieder, Wolfgang. (2004). Proverbs - A Handbook. Westport, CT; Greenwood Press.
6. Morris-Brown. (1993). The Jamaica Handbook of proverbs: With standard English translations and explanations. Island Heart Publishers (Jan. 1.1993) ISBN-10 976809141x, ISBN-13 978-9768091413. - 197 p
7. Norrick, N.R. (1985). How proverbs mean: semantic studies in English proverbs. Walter de Gruyter publisher,1985. ISBN 3110101963, 9783110101966. – 213 p
8. Tomahin, G.D. (2007). Realities in Culture and Language. Realia - The Object and Reality - the Word / Tomahin, G.D. // Methodological Mosaic. - №8. - C.20-28

Rezyume: *Ushbu maqola maqolalarning tilshunoslik tadqiqotlaridagi ahamiyatini òrganishga qaratilgan. Maqolada bir qator olimlar tomonidan matallarning ta’rifi va ahamiyati, ularning masalaga munosabati, uning xususiyatlari, vazifalari va tushunchalarini yoritishga harakat qilingan. Tahlil qilingan maqollar qoraqalpoq va ingliz xalqining hayot tarzini aks ettiradi, òrganilayotgan iboralar ba’zi bir asosiy toifalarda mos keladi yoki millat nuqtai nazar va munosabatlarni ifodalaydi. Maqollar lingvo-madaniy tadqiqotlarning qimmatli ob’ekti bòlib, nafaqat tilning, balki madaniyatning funktsiyalarini ham amalga oshiradi.*

Резюме: *Эта статья направлена на изучение важности пословиц в изучений национальной особенности и менталитета. В статье делается попытка проанализировать определения и данные учёными их отношения к проблеме, их характеристики, функции и понимание.Изученные пословицы отражают жизненные опыты Каракалпакской и английской нации, которые либо совпадают в некоторых основных категориях, либо выражают национальные точки зрения и отношения. Являясь ценным объектом лингвокультурологических исследований, Пословицы реализуют функции не только языка, но и культуры.*

Kalit sòzlar*: maqollar; milliy xarakter; lingvo-madaniy òziga xosliklar; olimlarning qarashlari.*

Ключевые слова*: Пословицы; национальный характер; лингвокультурные особенности; взгляд учёных.*

FROM THE HISTORY OF RELATIONS OF THE KARAKALPAKS WITH THE UZBEKS

Tleumuratova N.M.
Regional center of Public education of Karakalpakistan Republic

Summary: *This article is about the relations stady of the Karakalpaks with the Uzbeks and the historiography of Karakalpakstan, taking into consideration of ethnic-cultural relations of Karakalpaks with the neighbor people in the 18th and beginning of the 20th century.*

Keywords: *people of Central Asia, works A.N.Samoylovich, P.P.Ivanov, S.P.Tolstov, T.Jdanko, S.Kamalov and other historians.*

At the present time one of the most high-priority tasks standing before scientific workers is forming and developing of national self-consciousness and revival of Central Asian peoples` cultural values, and also studying of historical-cultural relation between the people of Central Asia. The first president of the Republic of Uzbekistan I.A.Karimov paid a special attention to this problem. In his speech at the second session of Oliy Majlis he called the creative intelligenzia spokesman for studying and propaganda of historical friendship of Central Asia people. “Just imagine that our homeland is Turkistan – a big house, a great household, a great family, how comfortable and abundant the household will be”. The conclusion is simple: the most actual task of nowadays is to form a single economic, spiritual, political environment in Central Asia. I think that it`s time to attract the creative intelligent Zia`s attention to this problem. They must evoke the feeling of historical unity and idea of great sacred Turkistan. In his speeches our first president I. A. Karimov mentioned specially the relations of Uzbek and Karakalpak people, considering himself as the son of not only of Uzbek people, but also Karakalpak people. Taking everything to consideration, we are responsible for creating new works on history of Uzbek-Karakalpak relations.

There have been written not so many generalizing works describing the historical and cultural relations of Turkic – people with other countries and regions. The same we may say about the historiography of Karakalpakstan, taking into consideration of ethnic-cultural relations of Karakalpaks with the neighbor people in the 18th and beginning of the 20th century.

Studying the cultures of people makes closer countries. The distance between cultures shortens a little space is left for national enmity and primitive chauvinism. At the same time, the study of cultural relations is a separate field of science, which allows to open deep historical roots of friendship and brotherhood of people and helps to keep the peace between peoples.

It`s desirable to mention that at present time the study of relations between people is the most important thing. We see the ignoration of this matter leads to cruel and bloody conflicts on national ground. In this case scholars should research the process of development of relations between people especially the people who are close to each other on the fields of ethno genesis, language, folklore and religion.

As it was mentioned above many scientific works were devoted to historical-cultural relations of Uzbek-Karakalpak people.

In in whole all works including their source materials, it deverces attention in further research.

In the 20th century scholars began to pay attention to historical and cultural relations of Karakalpak people with neighboring people. The problems of history and culture of Karakalpak people were depicted on the works of historians published in 1930s of the 20th century. in 1930s of 20th century famous orientalists as A.N.Samoylevich, P.P.Ivanov wrote the history of Karakalpak people.

Khorezm archeological and ethnographical expedition made a huge contribution to solving of this problem.

Russian orientalist P.P.Ivanov studied the history of Karakalpak people of the 18th century and the beginning of 20th century. He was one of the moat active researchers of the history of Central Asia of 16th and 19th centuries. In 1930s he actively studied the history of Karakalpak people alongside with the other scholars.

Has first work in this field was "study of the history of the Karakalpaks". Above mentioned Russian researchers paid a great attention to foreign political events in the history of Karakalpaks. For example, in the last work of P.P.Ivanov, there were given the separate facts on cultural life of the Karakalpaks, highlighting the value of folklore works of the Karakalpak people. But not having known the language and traditions of these people. The authors could not study the problems of cultural relation with neighboring people: Uzbeks, Kazakhs and so on…[3;394]

The most important work was the work of Khorezm archeological and ethnographical expedition under the leadership of S.P.Tolstov, who made research, works in Karakalpakstan in 1930s nad 1940s of the 20th century.

The expedition opened new pages of the history of Karakalpak eople for the science. In these works of the expedition member T.A.Jdanko were mentioned a lot of information on the culture of the Karakalpak people with Central Asian people.

In the works of T.A.Jdanko were firstly analyzed the problems of history and the ethnography of Karakalpak people, their ethno and cultural relations, society system, household, spiritual culture and so on… [2;298]

There was published a collective work of ethnographer of Moscow, Leningrad, Tashkent, Nukus and other cities.

Academician S.K.Kamalov devoted his many works to the studying of history and culture of the Karakalpak people of the 17th and the 19th centuries. In his works we find new facts from the biography of Karakalpak poet Jien Jiraw, the author of "Posqan el" (Ruined people).[4;266]

The first time in the historiography of Karakalpakstan became the main object of research works of Andrianova B. V. [1;354]

Ethnographer L.S.Tolstova made a great contribution to learning the culture relation of the Karakalpak people with other neighboring people. L.S.Tolstova all her life collected ethnographic and folklore materials of Karakalpaks living in Karakalpakstan, Zarafshan and Fergana valley. In her research works she highlighted great importance of historical folklore for studying ethno genesis and cultural relations.

L.S.Tolstova was one of the initiators in publishing the compilation of scientific works of ethnographers "Ethnic history and folklore". It was published by the workers of Ethnography Institute of Russian Science of Academy. There were the articles of famous ethnographers and also L.S.Tolstova`s article "Historical folklore of the Karakalpaks as the source for studying ethno genesis and ethno-cultural relations of these people".

From 1950 years, L.S.Tolstova began studying the history of local groups of the Karakalpaks, who lived in the neighboring regions of Uzbekistan, especially in Fergana valley, Samarkand, Bukhara regions and also Karakalpakstan. These materials have been very interesting up to date. After long research works L. S. Tolstova published her work "Karakalpaks outside Khorezm oasis". There were mentioned rich and interesting materials showing spiritual and material culture of the Karakalpak people.

Her work "Historical legendry of South Aral" depicts ancient historical and cultural relations of Karakalpaks.

There were also published the works of other historians, especially A.Koshanov`s ones. He is a participator of many collective works on history of Karakalpaks.

The research work was written by PH D.K.Mambetov on the basis of public and literally legendary PH D.N.Japakhov wrote articles on history of Uzbek-Karakalpak relations.

Karakalpak folklorists made a great contribution to folklore heritage of the Uzbek and Karakalpaks.

A voluminous compilation of Karakalpak folklore deserves a great attention. Here we can fin many interesting materials on folklore relations of Karakalpak people with the folklore of Uzbek people.

Academician of Uzbekistan Ya.G.Gulyamov devoted his research to the history of irrigation system of Khorezm. He wrote many facts about the participation of the Karakalpak people in the irrigation construction in Khorezm oasis.

M.Muminov paid a great attention to the problems of Karakalpak literature from the point of philosophy. He worked on the problem of social and political points of view of Uzbek people from the ancient time till the beginning of 20th century.

He wrote valuable ideas on history of social and political ideas of Karakalpak people. He specially highlighted the influence of Uzbek philosophers on works of Karakalpak writers as Berdakh, Ajiniyaz and other classics of Karakalpak literature.

The works of professor A.S.Sadykov play a great role in studying historical and cultural relations of Khorezm people. In his work there were depicted social-economic life of Khiva Khanate at the end of the 19th –beginning of the 20th century. there was also depicted the influence of Russian culture on public education, culture, Russian teachers, doctors, engineers, activities in Khiva Khanate.

In the works devoted to the ethnography of Uzbekistan, especially in the works of K.Shaniyazov there were depicted the problems of ethnic history of Uzbek people and their ethno-cultural relations. Professor I.Jabbarov has many scientific works on Uzbek ethnography, which developed the science of ethnography in Uzbekistan.

After the acquiring the independence of the Republic of Uzbekistan, our historians made many research works on history. There was created a three volume history of Uzbekistan depicting the new and the newest history.

Under the leadership of doctor of history science D. Alimova were held scientific seminars on Uzbek history. There was created a scientific magazine of Uzbekistan, where published valuable materials on homelands` history up to present. There was paid a minor attention to depicting historical and cultural relations of Uzbek and Karakalpak people. Even in collective works, there is no a special section or chapter about cultural interrelations.

Our article may be used in solving important and perspective scientific problems. Also our article may be used in other fields of ethnology and literature.

References:

1. Андрианов Б. В. Этническая территория каракалпаков в Северном Хорезме. Труды Хорезмской археолого-этнографической экспедиции. т.III., 1958.

2. Жданко Т.А. Очерки исторически этнографии каракалпаков. М.Л. 1950.

3. Иванов П.П. Новые данные о каракалпаках. Исторические заметки. Советское Востоковедение, 1945. т. III.

4. Камалов С. К. Каракалпаки в XVIII –нач.XIXвв. / к истории взаимоотношений с Россией и Среднеазиатскими ханствами Ташкент, 1968

Rezyume: *Ushbu maqola qoraqalpoqlarning 18-asr va 20-asr boshlarida qoraqalpoqlarning qo‘shni xalqlar bilan etnik-madaniy aloqalarini hisobga olgan holda qoraqalpoqlarning o‘zbeklar bilan munosabatlari va Qoraqalpog‘iston tarixnafisligi haqida.*

Резюме: *Статья посвящена изучению отношений каракалпаков с узбеками и историографии Каракалпакстана с учетом этнокультурных отношений каракалпаков с соседними народами в 18-начале 20 века.*

Kalit so‘zlar: *O‘rta Osiyo xalqlari, A.N.Samoylovich, P.P.Ivanov, S.P.Tolstov, T.Jdanko, S.Kamalov va boshqa tarixchilarning asarlari.*

Ключевые слова: *народы Средней Азии, труды А.Н.Самойловича, П.П.Иванова, С.П.Толстова, Т.Жданко, С.Камалова и других историков.*

NORMUROD NORKOBILOV SPEECH IN SMALL PROSE WORKS

Xayrullayev A.X.[1], Norqulova M.G‘.[1], Karimbayeva Ch.[2]
[1]Tashkent State University, [2]Karakalpak State University named after Berdakh

Summary: *In this article, in the example of the stories "Scholar son", "Well", "Motherhill", "Day of the Sun eclipse", "Song", "Stormy Day", "Hill" by the writer Normurad Norkobilov, language of literary work, artistic speech, author's speech, character's speech, monologue, features of dialogue are discussed. Also opinions about the forms of the author's speech and its importance in describing the state and psyche of the protagonists, the role of the characters' speech in characterizing the character, and the features of the dialogue in revealing specific aspects of the protagonist's character are expressed.*

Keywords: *Normurad Norkobilov, story, language of literary work, artistic speech, forms of artistic speech, author's speech, character’s speech, monologue, dialogue, character, individualization.*

Human is an integral part of nature. Today, the subject of human and nature is becoming a topical issue not only in literature, but in all areas.

In the last century, great writers such as Sh.Kholmirzaev, T.Murod, M.Safarov in Uzbek literature and J.London, Ch.Aitmatov, S.Thompson in world literature on the theme of human and animal world, nature also wrote in their works. Normurad Norkobilov is one of the few writers in Uzbek and world literature who does not imagine human in isolation from nature, depicts him in harmony with nature, understands the subtleties of world of non-organic things, flora and animals, and considers this subject as the main issue of his work. The happiness of Normurad Norkobilov as a writer is that the virtue of bloodshed with mother's milk, the ability to enjoy the complexities of nature determines the basis of his work [6,3].

In a number of researches and articles of the leading literary scholars U.Normatov, A.Rasulov, K.Yuldashev, the writer N.Norkobilov is recognized as a writer with his own style of interpretation and eloquence. Although Normurad gained popularity for his two novels and short stories such as "Bilbog", “Dog of the jungle”, “Whiteneck”, “Man of mountain”, "Death day", "Fluff", "Enimies", "Belt" "White house at the station", "The Wolf in the Village", a significant part of the author's work consists of about a hundred stories. Although the author's stories have been partially studied in the research of scholars such as D. Kholdorov, U. Rasulova, the author's stories have not been studied in terms of artistic speech, its forms and features, the author's speech, dialogue and the role of monologue in the poetics of the story genre. For this reason, in the stories of the author, we will focus on the forms and features of artistic speech, its importance in fully revealing the character of the characters.

Major representatives of Russian literature, such as VV Vinogradov, G. O. Vinokur, MM Bakhtin, also spoke about the language of fiction. Research has been conducted by Uzbek scientists such as M. Kushjanov, G. Imamova, Y. Solijonov.

Although we say "the language of literary work", it is in fact a matter of artistic speech, because a literary work is a text created by the elements of language, that is, the phenomenon of speech [11. 182]. It is well known that the language of literary work consists of two major interrelated parts, the author's speech and the character's speech [9.153]. When it comes to forms of artistic discourse, the first thing to consider is the author's discourse. Because in a literary work, the author's speech introduces the reader to the characters, draws the characters, describes the place and time in which the events take place. In general, the author's speech is a factor that binds all the major and minor parts of the literary work [7.200]. In this regard, we will focus on the features of the author's speech in the stories of N. Norkobilov. The author's story "Stormy Day" describes the situation of a woman who is angry with the work of men who

always talk to women on the street. "As she hurried out, she stepped out the door and saw an ax in her hand. She didn't think about when she had got it. The only thing she thought was that it wouldn't last long. The pain, which had been suffocating for a long time, touched the surface, burning to clear the area of men. She chases men around the table first, then she quarrel Bahrom butcher. Eshqul now sees what he sees in her"[5.266]. In the story, the author draws her state through the actions of Aunt Sanam for the reader. As Aunt Sanam rushes out with an ax in her hand, the author's speech portrays a woman who is full of hatred and wants to get rid of everything in the eyes of the reader. At the "peak" of the story, the author describes the image as a woman drowning in pain. It was this dull affair that took Aunt Sanam out into the street and, in the words of the writer, swept through the square.

In the story of the "Song", we focus on the old man's condition. "The old man looked outside. When the daughter-in-law did not return, he got up, tired of his niece's words. He met a woman in the yard and gasped again. At the same time, he looked at his nephew with contempt. He tilted his head as if to reflect the stone inside. He raised his head in shock, feeling a pleasant grin in front of him. The bride was washing and ironing. He's a bot. He obeyed her instinct, stroked her hair, and caressed her with sweet words, saying that she smelled of you. He could not dare this [4.6]." The wife of a niece from the city reminds the old man of the old woman she cares for. The author describes the old man's psyche, sufferings, and inner feelings in such phrases as "excited again," "scared," "stunned again." In this way, the author's speech allows the reader to express the inner feelings of the protagonist, which can not be expressed in his speech. In some cases, the author's speech directly describes the events that take place around the characters. "She's walking down her sister's house alone, holding something in her long sleeve. It is clear that his wife yelled after him. At the door of the hut outside, two sisters-in-law are shouting. No one seems to have touched the neighbors' quarrels. Two young men are chirping like chickens in a pond by the pool. A third perished without being able to separate them. The brother of one on the right and the uncle of the other on the left are hurrying towards Saikhan" [5.236]. In the story "Tombstone", the reader, following the author's statement, sees a lively, lively scene and enters the world of the literary work. The author's speech is as emotional as the language of the whole literary work. This emotionality is sometimes manifested in the transfer of the author's speech to the character's speech. Berdimurod who is sitting on a low platform raised from a stone, is looking at his mother from under the canopy. He wants to scream from the inside. "Enough now," but something's bothering me. It doesn't sound like it's better to be crushed than to scream. His mother became more and more angry" [5.244]. In describing the mood of the character, the author describes the suffering in it through his own words. This will increase the emotionality of the work we are reading.

Everyone's language and way of speaking in life gives a clear idea of how they lived, their culture, their psyche. Accordingly, the speeches of the protagonists in the literary work , as well as the way of speaking, are different, unique, and play a role in understanding the essence of their character. [10.99]. The speech of a sharp person, which comes to life in our imagination as a result of people's actions, thoughts, arguments, and interactions with others, is called character speech. In turn, the speech of the characters in the play is divided into several forms. One of these is monologue speech. Thoughts, inner experiences, speeches of the protagonists to themselves (character self-argument or self-analysis A.X.) or to others are called monologues. In Normurad Norkobilov's stories, monologue is not observed in a specific way, that is, in a large volume or as a whole. However, in the author's story "The Hill", dialogic speech becomes monologue to express the strong experiences of the protagonists with excitement [1,324]. We see this in the story, first in Soqol and then in Sharif's speech. This is how the author describes Sharif's image as a simple, bitter man, his dreams and aspirations.

"Are you talking like you don't know?"

Sharif stared at him and patted him on the head.

"I'd be a pilot if my father died and I didn't have to worry about living here!" I was floating in the sky with your eyes burning!

"Her eyes are full of sadness and she sighs deeply."

- But ... you shouldn't give up on your dreams. Here are the brothers growing up. Now everyone is worried for himself. no one say that brother, how are you? Now there is a wish! Envy! But I will definitely make one of my children a pilot"[4.47].

Through the following monologue from the story, the reader becomes aware of the character's mental state, his inner world, his spiritual image, as well as his deep thoughts and thoughts about life and people.

"Of course you don't know me," he said, blowing smoke, "but the whole republic knows me."

-Soqol's eyes suddenly flashed angrily and he pointed his index finger upwards.

-Artists know! And you ... He fainted, fell silent for a moment, and then said, "Because ... you have no growth!" As you were born, so you are! Oh my God, what a horror it is!

-Soqol pressed his right paw to his mixed forehead.

- What a horror! If only they were born that way! If it doesn't grow, if it doesn't grow! If he only knew how to survive, he would have to wander around like a pair of oxen!

He took his paw from his face and looked sad. He almost whispered the next sentence:

-How awful! "[4.36]

We also see in the author's story, The Scholar Son, a monologue of old Shayman's speech [3.55], in which he analyzes the old man's unspeakable, painful pain ... silently. I'm told, that he has a lot of money, otherwise he would not sit leisurely. But how do I ask? Asking for money from a child ... after all, I am asking for his brother. If it doesn't help then, when he will help. Hey, let's tickle it. If he understands, he understands, if he doesn't understand, it's his father's fault. Through a short speech by the old man, the writer reveals to the reader certain features of his character. The author skillfully describes the condition of the old man, his inner experiences, through the speech of the protagonist, so that the reader fully understands the psyche of the old man as a result of emotional speech. Although Shaiman is old enough to work, he is not allowed to ask his child for money, but the whole burden of living is on him.

Dialogue is the most common form of literary discourse after monologue in today's prose. Dialogue plays an important role in fiction: it reveals the character of the protagonists, represents the period, reflects the situation [2.176]. N. Norkobilov uses dialogue extensively in his stories and understands its place in the work. The author builds the plot of the story " Day of the Sun eclipse" on the basis of dialogue. In the story, we see that dialogue plays an important role in revealing the main aspects of the characters' character, their moral and spiritual image.

"After all, his brother your uncle ...

- This guy doesn't have this excuse ...

"Even if you die dying, is he dead in this world?"

"I'm standing next to you!" [5,226]

This dialogue exacerbates the situation between the protagonists. The author does not interfere in the debate between the characters in order to increase the intensity of the conflict. In the author's story "The Hill", the dialogue also shows the characteristics of the characters, their worldview.

"Maybe we'll grow up tomorrow!" he said for a moment.

- No, we will grow today! -Nortoji polvon stood up. "If I don't grow up, I'll die!"

"I'm going to die, too!" Sharif still didn't understand anything, but didn't want to be left out.

- Where ... where do we grow? Samandar's hand looked at the tray from time to time. " [4,226].

As a result of the author's use of dialogic speech in the stories "Scholar Son", "Well", "Motherhill", "Day of the Sun eclipse", "Hill", "Pants or Women's Scandal" and "Kidnapping" will have a wide range of opportunities, such as individualization, improvement. In the stories named above, dialogic speech emerges as a key element in the development of the plot.

Normurad Norkobilov is an experienced writer with an aesthetic principle. [6.6] We know that the characters in the story are mostly ready, but in the subsequent actions and activities of the protagonists in the work, the role of artistic speech in revealing the characteristics of their character is great. important. In the writer's stories, we do not see the author's speech in the form of a narrative or description, but the characters' thoughts, psyche, suffering, various inner experiences, the reality of the work, all of which lead to the main idea of the work.

Also, in no story does the author's speech take the place of the narrator's. In the stories of Normurad Norkobilov, the author's speech occurs in several forms. When a writer creates a certain character, it takes a lot of work to individualize it. Important means of characterization are manifested in speech [8.82]. We can also observe in the individualized speech of each of the characters in the stories "Scholar Son", "Well", "Motherhill", "Day of the Sun eclipse", " Tombstone", "In the steppe", "Song", "The stormy day" and "Hill". For example, in the story "Scholar Son" the old man and his son Shaiman, and in the story "The Day of the Sun eclipse" Sabir Polvon and Boborayim Govlar spoke. In these stories, we see the role of dialogue in shaping the characters, from the conflict between them to the development of the plot.

References

1. Adabiyot nazaryasi. I-tomToshket. 1978.-414 b.
2. Boboev T. Adabiyotshunoslik asoslari. Toshkent:O‘zbekiston, 2002.-557 b.
3. Imomova G. Tipik milliy xarakter yaratishda badiiy nutqning roli. F.f n. Ilmiy darajasini olish uchun yozilgan dissertatsiya. -Toshkent:1993.-136 b.
4. Norqobilov N. Bekatdagi oq uycha.- Toshkent: Sharq, 2000.-383 b.
5. Norqobilov N. Bo‘ron qo‘pgan kun. -Toshkent: Sharq, 2007.-303 b.
6. Rasulov A. Bo‘ron qo‘pgan kun. Shaydolik. -Toshkent: Sharq, 2007.-303 b.
7. Sulton I. Adabiyot nazariyasi. -Toshkent: O‘qituvchi,1980.-391 b.
8. Solijonov Yu. XX asrning 80-90-yillari o‘zbek nasrida badiiy nutq poetikasi. F.f.d. ilmiy darajasini olish uchun yozilgan dissertatsiya -Toshkent: 2002.-301 b.
9. Umirov H. Adabiyotshunoslik nazariyasi. -Toshkent: A.Qodiriy nomidagi Xalq merosi nashriyoti 2004.-262 b.
10. Xudoyberdiev E. Adabiyotshunoslikka kirish. Toshkent: O‘qituvchi,1995.-270 b.
11. Quronov D. va boshqalar. Adabiyotshunoslik lug‘ati. – Toshkent: Akademnashr, 2013. – 406 b.

Rezyume.*Maqolada yozuvchi Normurod Norqobilovning “Olim o‘g‘il”, “Quduq”, “Enatepa”, “Quyosh tutilgan kun”, “Qo‘shiq” “Bo‘ron qo‘pgan kun”,“Tepalik” hikoyalari misolida badiiy asar tili, badiiy nutq, muallif nutqi, personajlar nutqi, monolog, dialogning xususiyatlari haqida fikr bildiradi. Shuningdek, muallif nutqining shakllari hamda qahramonlar holati va ruhiyatini tasvirlashdagi ahamiyati, xarakterni individuallashtirishda personajlar nutqining o‘rni, dialogning qahramonlar xarakterining o‘ziga xos qirralarini ochib berishdagi xususiyatlari xususida so‘z boradi.*

Резюме*. Статья основана на рассказах Нормурада Норкобилова «Сын ученого», «Колодец», «Энатепа», «Солнечное затмение», «Песня», «День грозы», «Горка». произведение, художественная речь, авторская речь, речь персонажей, монолог, особенности диалога. Также рассматриваются формы авторской речи и их значение в описании состояния и психики главных героев, роль речи персонажей в характеристике характера, особенности диалога в раскрытии конкретных сторон характера главного героя.*

Kalit so‘zlar: *hikoya, badiiy asar tili, badiiy nutq, badiiy nutqning shakllari, muallif nutqi, personajlar nutqi, monolog, dialog, xarakter, individuallashtirish.*

Ключевые слова: *рассказ, язык художественной литературы, художественная речь, формы художественной речи, авторская речь, речь персонажа, монолог, диалог, персонаж, индивидуализация.*

LEGAL FOUNDATIONS OF ARCHIVE OFFICE WORK IN THE REPUBLIC OF UZBEKISTAN

Jumaniyazov D.Q., Kamalov B.T.
Karakalpak state university named after Berdakh

Summary: *The article describes the creation of a regulatory archive office work in the Republic of Uzbekistan. The effective application of the Regulations on archives and other regulatory documents made it possible to reorganize the archives in accordance with the requirements of the time.*

Keywords: *National Archives of Uzbekistan, Archive Agency, Oliy Majlis, Cabinet of Ministers, Council of Ministers of the Republic of Karakalpakstan, archival fund.*

After the independence of our country, a necessity of studying the history of our country on an objective, new conceptual and methodological basis was appeared.

This situation has put on the agenda the task of radically improving the activities of the archives, which are the historical memory of our people. Therefore, attention was paid to creating a legal framework for archival work in independent Uzbekistan. The legal basis of archival work is the relevant laws and documents issued in the appropriate form - government decisions, regulations, programs.

On June 19, 1992, the Law "On the Main Archive Department under the Cabinet of Ministers of the Republic of Uzbekistan ("Uzbasarkhiv")" and the Resolution No. 296 "On approval of the network of central state archives of the Republic" were adopted. The charter defines the guarantees and responsibilities of the main archival department of the country, the authorized body in charge of the archive system in the country. The adopted Regulation stipulates that there are 3 central state archives in the country - the Central State Archive of the Republic of Uzbekistan, the Central State Archive of Cinema, Photo and Audio Documents of the Republic of Uzbekistan, the Central State Archives of Scientific, Technical and Medical Documents of the Republic of Uzbekistan.

The Law "About Archives" adopted by the Oliy Majlis on April 15, 1999 was a necessary step in creating a legal framework for the activities of archives in Uzbekistan [1, 420 -428]. This law established a single procedure for maintaining the integrity of the archives of Uzbekistan, accounting, examination, registration and use of archival documents.

For the first time in the years of independence, the issue of returning archival documents taken from Uzbekistan in previous periods was on the agenda. This issue was considered at the highest level - in the parliament of the republic. Thus, on May 11, 1999, a special commission was established under the Oliy Majlis of Uzbekistan to import archival documents exported from Uzbekistan. The main task of this commission is to identify documents of scientific significance, which have been taken abroad for various reasons in the past, to study them and prepare recommendations for their return to our country, and to recommend these suggestions to the relevant government agencies [2 , 68-70].

After the adoption of the Law "About Archives" there was a need to reconsider the existing regulations, to adopt some new regulations. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 482 of October 30, 1999, approved the following 4 normative documents:

- "The Law about the National Archive Fund of the Republic of Uzbekistan";
- "Procedure for state registration of documents of the National Archive Fund of the Republic of Uzbekistan";
- "The Law about the Main Archive Department under the Cabinet of Ministers of the Republic of Uzbekistan (Uzbasarkhiv)";

• “Model Law on Archives of Public Authorities and Public Administration Organizations, Enterprises, Institutions and Organizations of the Republic of Uzbekistan”.

The adoption and implementation of these normative documents allowed to improve the work of the archive.

An important innovation in the archives during the years of independence was the establishment of the National Archive Fund. The law and other normative documents provide for the inclusion of documents of the State Archive Fund and the State Archive Fund in the National Archive Fund (NAF). The establishment of the NAF has allowed not only the state archives, but also the necessary documents belonging to non-governmental legal entities and individual citizens to be recorded and stored.

During the years of independence, attention has been paid to radically improving the activities of the competent state bodies managing the archive system. To this aim, on February 3, 2004, the Cabinet of Ministers of the Republic of Uzbekistan adopted Resolution No. 49 "On further improvement of archival work in the Republic of Uzbekistan." Based on this decision, the Main Archive Department under the Government (Uzbasarkhiv) was abolished and replaced by the “Uzarkhiv” Agency under the Cabinet of Ministers. Territorial archive departments have been established instead of archival departments of the Council of Ministers of Karakalpakstan, regional and Tashkent city government. The “Uzarkhiv” Agency and regional archive departments have been tasked with implementing a unified state policy in the field of archives throughout the country and regions.

As the law “About archives” was first adopted in Uzbekistan, it later became clear that the law did not cover all areas of archives. Therefore, there was a need to make certain changes and additions to the law. On April 30, 2004, the Oliy Majlis adopted a new version of the Law “About Archives”.

As a result of the new version of the law and the implementation of the tasks set out in government decisions on the activities of archives, the Agency "Uzarkhiv" by its order No. 1 of January 4, 2007 approved the "Rules of Procedure of the State Archives of the Republic of Uzbekistan". The requirements for state archives, as well as many years of archival practice, were taken into account in the development of the rules. The rules reflect the tasks of state archival institutions on the organization of NAF, providing the storage of documents, their accounting, the creation of a scientific reference device for archival documents, the examination of documents, the organization of their use.

In order to comprehensively address the problems in the field of archival work, the Cabinet of Ministers adopted Resolution No. 104 "On additional measures for the further development of archival work in the Republic of Uzbekistan" on August 26, 2008. Along with the decision, the "Program for the development of archival work and office work until 2011" was approved.

It should be noted that the above-mentioned normative documents and the law "About Archives" adopted on April 15, 1999 and its new edition adopted on April 30, 2004 has been of great importance in the development of archival work in Uzbekistan during the years of independence. [3]. But over the years, great changes have taken place in our country and in the work of the archive. The process of development in society has put on the agenda the task of radically updating the Law "About Archives". Based on this, the “Uzarkhiv” agency has developed a new project of law. The project was discussed at a meeting of the Public Council on Archives on December 26, 2008 in Tashkent. The meeting approved the project of the law, as well as made recommendations to enrich its content.

The new Law of the Republic of Uzbekistan "About the work of Archives" was adopted by the Legislative Chamber on November 3, 2009 and approved by the Senate on May 7, 2010 [4].

The Law "About the work of Archives" differs somewhat from the previous law. The previous Law consisted of 21 articles and was not divided into chapters. The new law consisted of 6 chapters and 35 articles.

The new law includes "special valuable documents", "unique documents", "archives", "office work", "National Archive Fund", "State Catalog of the National Archives Fund", "insurance copy", "individual content". new concepts such as “documents”.

A separate chapter of the Law "About the work of Archives" deals with public administration in the field of archives. It covers the guarantees of the Cabinet of Ministers, the “Uzarkhiv” Agency and local authorities in the field of archival management. The new law reflects the composition of the National Archive Fund, the inclusion and issuance of documents in the National Archive Fund, the maintenance of the state catalog of the NAF. At the same time, the law includes new articles on the examination of the value of documents, access to archival documents, services provided by archives and archives of the organization, the types of archives.

In recent years, new normative documents related to archival work have been adopted in accordance with the new law. The Cabinet of Ministers of the Republic of Uzbekistan approved the following provisions by its decision No. 101 of April 5, 2012 "On improving the archival work in the Republic of Uzbekistan":

- “The Law on the Procedure for Collection, Country Registration, Storage and Use of Archival Documents”;
- “The Law on the State Catalog of the National Archive Fund of the Republic of Uzbekistan”;
- “The Law on the Procedure for Organizing, Reorganizing and Disposing of Archives”;
- "The Law on the procedure for providing services by archives and office archives";
- “Regulations on the procedure for attestation of archival specialists by ordering documents of enterprises and organizations of the Republic of Uzbekistan”;
- "Regulations on the procedure for export of archival documents from the Republic of Uzbekistan and import of archival documents into the Republic of Uzbekistan".

In accordance with section 6 of the Presidential Decree No. PF-5834 "On measures to improve archival work and record keeping in the Republic of Uzbekistan" dated September 20, 2019 on the basis of the Central State Archive under the National Archive of Uzbekistan and the Agency "Uzarkhiv" as the form of an organization, the Scientific-Methodological Center for Professional Development in Archival Affairs and Record Keeping, the Fund for the Development of Archival Work, which does not have the status of a legal entity, was established.

At present, the rules set out in these regulations are consistently applied to the practice of archival work.

Thus, during the years of independence, the legal basis for archival work has been created in our country. The effective use of the Regulations “About Archives” and other normative documents has made it possible to reorganize the activities of archives in accordance with modern requirements.

Sources and literature

1. New laws of Uzbekistan. Vip. 21. T .: Justice, 1999.
2. Notification in the field of archival work and office work. №37.
3. Haytov Sh. A., Hamraev V. H. Archive legislation of the Republic of Uzbekistan. Bukhara, 2008.
4. https://lex.uz/docs/4523373

Rezyume: *Maqolada Uzbekiston Respublikasıda arxiv ishining huquqıy asoslarining yaratilishi tadqiq etilgan. “Arxivlar tuǵrisida” gi Nızom va boshqa normativ hújjatlarning turmushga nátijali tadbiq qilinishi, arxivlar faoliyatining zamon talablari asosida qayta tashkillashtirilishiga imkon berdi.*

Резюме*: В статье рассказывается о создании нормативного архивного делопроизводства в Республике Узбекистан. Эффективное применение Положения об архивах и*

других нормативных документов позволило реорганизовать архивы в соответствии с требованиями времени.

Kalit sózlar: *O‘zbekiston Milliy arxivi, “O‘zarxiv” agentligi, Oliy Majlis, Vazirlar Mahkamasi, Qoraqalpoǵiston Respublikasi Vazirlar Kengashi, arxiv fondi.*

Ключевые слова: *Национальный архив Узбекистана, Агентство «Архив», Олий Мажлис, Кабинет Министров, Совет Министров Республики Каракалпакстан, архивный фонд.*

METHODS AND IMPORTANCE OF FORMATION THE HISTORICAL KNOWLEDGE OF STUDENTS IN THE SUBJECT OF HISTORY OF KARAKALPAKSTAN IN SECONDARY SCHOOLS

Tleumuratova N.M.
Regional Center for Retraining and Enhancement of Public Education of the Republic of Karakalpakstan.

Summary: *This article talks about the processes of formation of historical knowledge of students on the example of "History of Karakalpakstan" (grade 8) and their implementation by teachers.*
Keywords: *history of Karakalpakstan, teaching method , the ways of increasing the course.*

The process of forming the historical knowledge that secondary school students acquire in history lessons consists of several interrelated sections. The use of these approaches is one of the most important tasks facing the education system. For this reason, today's modern history teacher needs to master these processes. This article is based on the example of the subject "History of Karakalpakstan" (for 8th grade) and analyzes the role of the teacher in the process of formation of historical knowledge in students and their implementation by teachers.

On August 3, 2017, at a meeting with creative representatives of Uzbekistan, President Shavkat Mirziyoyev in his statement "Development of literature and art and culture is a solid foundation for the development of our people's culture" [1: 2] highlighted the achievements, problems and shortcomings of this field. In a statement, the President said, “We must never forget one thing. "It would be a mistake to say that 'mass culture' is coming from the west," he said. He emphasized that the issue could be between us.In fact, in order to prevent from such evils in our society, it is necessary to use literature as a tool to nurture our children's sense of consciousness and "mass culture".

Preparing students to learn new reading material - from using their attention and activity in learning during and after class time and homework, to focusing their attention and knowledge on completing tasks that students need to learn - it is about remembering the activity of the student, getting the students interested in the issues they need to learn, and setting the tasks they will take on.

While the teacher begins to teach new material, she connects it with previous materials, using all the knowledge necessary for students to compare new information and draw conclusions in this way.

There are given a number of questions related to each topic in the textbook «History of Karakalpakstan» for 8th grade, and these questions help students to revise the previous topics in order to understand the new ones, and find out the connections between the studied and being now studied evidences,then compare and summarize them. [2:142]

For instance,in the coursebook «History of Karakalpakstan» for 8th grade the following question are the one of them: «What do you know about karakalpak khans ?» («Karaqalpaks under ruling the khanate of Khiva (1810-1873)» (page 34)).This question not only makes students remember the studied materials, but also prepares them to generalize their knowledge about the khans of Karakalpakstan in the XVIII-XIX centuries. Such questions are also in the textbooks "History of Karakalpakstan" for grades 6-7.

On the topic of the "People's uprising of 1827-1828 under the leadership of Aydos Biy" (p. 64), there are given tasks such as how many people must be sent to the excavation among karakalpaks per or how much zakat was collected.If this material is repeated at the beginning of the lesson, students will better understand the reasons for the emergence of the popular uprising led by Aydos Biy.

Another effective tool in activating students' new knowledge is to set learning tasks before teaching them new material.In the methodological literature, these tasks are often called logical tasks, because they are performed in a logical way on the basis of historical material.The learning tasks given to students include: identifying the causes and significance of the event being studied, pointing out the general differences between historical events, identifying key stages in the development of the event, expressing their views on the event or historical figure, and more.In some cases, the reading task include to plan the material to be studied, to state the main ideas in the material, to summarize the conclusions, and so on.

Students' performance of reading tasks activates their previous knowledge necessary for them to master the new material, the tasks given when the teacher asks the students for the previously passed material related to the previous material are related to the topic and encourages to analyse and summarize the new material. For example, in the process of asking students the material about the emergence of the Khiva khanate in the XVII-XVIII centuries, it is necessary to connect it with the subject "History of Uzbekistan" and the social and political life of the Bukhara and Kokand khanates of that time.

As a result of the reform of the education system in the Republic of Uzbekistan, leading teachers use a variety of methods in their work, often using the method of creating problem situations in order to activate the cognitive activity of students and strengthen their free thinking. One way to create a problem situation is to make the lesson topic problematic.

Prior to the study of the new material, the teacher raises the issue of the need to freely identify the causes and consequences of the event to be studied, to reveal their content, and students will solve this problem during the next task.

Giving the problems to students requires the teacher to select and divide the evidence into ways that students are free to explore and think about.

Here is an example of how to create a problem situation in a lesson before learning new material. When the teacher started the topic "People's uprising under the leadership of Ernazar Alakoz in 1855-1856" in the 8th grade, he asked question the students when the uprising against the Khiva khanate would appear among the Karakalpaks and focuses on the obvious causes of the problem.[2:56]

The student should do this exercise by analyzing the evidence that the teacher already knows in the lesson and that the lesson text will be learned during the reading.

The students' interest in the causes of the popular uprising led by Ernazar Alakoz in 1855-1856 on the previous topic will help them to understand the origins of the uprising of the people under the leadership of Aydos Biy in 1827-1828.Students will be reminded of this knowledge and compare the causes of the two uprisings, which will bring them closer to the desired results, their conclusions will be more evidence-based, and they will be able to come to a more conscious conclusion.

As an introductory part of the lesson, and in some cases, it is a way to use contradictory or documentary information that embodies the importance of the problem being studied and allows students to freely reflect on a particular problem and find a solution. [2:32-34]

As mentioned above, another way to organize a rich and effective history lesson is to be able to bring up the situation and use didactic games in the process.In history textbooks, the teacher can use manuals, cards and various game methods on each topic, first of all, based on the nature of the topic in each lesson, he appealed to the rich pedagogical experience of our people, to use the opportunities.

We think that it is necessary to state what the aims of the effectiveness of the lesson are .

1. In addition to explaining the purpose of the topic, students should directed to learn actively the selected material. That is, the presentation of the material by the teacher through problematic questions should ensure that students are encouraged to think freely, to study the topic consciously.

2. It is important to ensure that the teacher is able to work on the topic at the same time as the systematic, consistent presentation of the material in the allotted time.

Teacher should ask such problematic questions in terms of lesson materials,as a result a student should think, explore, analyze the historical event in the process of describing the topic.As a consequence, it is possible to achieve a thorough identification of the topic. The teacher should not forget one more important thing, that is, it is necessary to take into account the peculiarities of the new class community and the individuality of each student.

3 . At present, there are restrictions on the participation of students in the identification and assessment of knowledge, the expression and consolidation of knowledge, as well as the absence of long-distance learning, the activity and experience of students in the expression of knowledge should be used. This, in turn, reminds the student of the previous knowledge, strengthens new knowledge, deepens the system of problematic educational system.

4. Creating problematic situations in history lessons allows the student to develop perseverance and strength in logical thinking, to develop a culture of speech, to be able to analyze relevant skills and knowledge in practice.

5. In the process of history lessons, the relevance of the study material to other disciplines is taken into account, and the topics complement and strengthen each other.

The aspects we have listed above highlight the need for inclusive education in history lessons, and problematic situations remain an important tool for increasing lesson effectiveness.

References:

1. Sh.M.Mirziyoyev. "Adabiyot va sanyat, madaniyatni rivojlantirish - xalqimiz mánaviy olamini yuksaltirishning mustahkam poydevoridir" nomli ma'ruzasi.// «Xalq sózi», 2017 yil, 4 avgust.
2. Qaraqalpaqstan tariyxı. (8-klass) M.Tleumuratov, J.Berdiev, Z.Tleumuratova. N., 2014
3. Toshpólatov T., Ǵafforov Ya. Tarix óqitish metodikasi. T. "Universitet". 2002.

Rezyume: *Bu maqolada «Qoraqalpoǵiston tarixı» (8-sinf) fani mısolida óquvchilarda tarixiy bilimlarni shakllantirish jarayonining asosiy quram bólaklari va ólarning óqituvchi tamonidan bajarilishi haqida tahlil qilishga harakat etilgan.*

Резюме: *В этой статье говорится о процессах формировании исторических знании учеников на примере «Истрия Каракалпакстана» (8-класс) и их выполнение со стороны преподавателей.*

Kalit sózlar: *Qoraqalpoǵiston tarixi, óqitish uslublari, dars samaradarligini oshirish yóllari.*

Ключевые слова: *История Каракалпакстана, методика обучения, пути повышения эффективности занятий.*

THE IMPORTANCE OF A TEXTBOOK IN PROVIDING EFFICIENCY

Xayrullayev A.[1], Karimova D.[2]
[1]Tashkent State University, [2]Karakalpak State University

Summary: *This article is created for schools where education is provided in another language. The advantages and disadvantages of the Uzbek language textbook are shown. Appropriate recommendations are included to increase the effectiveness of the course.*

Keywords: *education, Uzbek language, textbook, school, society, literature, oral, written speech, skill, qualification, monthly assignments.*

When talking about the great achievements and milestones of our country during the years of independence, the national programs implemented in the education system, among other areas, and their great results are mentioned first of all. Today, the level of development of any nation, state and society is measured, first of all, by its attention to human capital, human development, and its efforts in this direction. This is confirmed by the fact that education is included in the United Nations Millennium Development Goals as a priority.

We think it is appropriate to recall the following words of our first President Islam Karimov. “The 21st century in which we live is a century dominated by intellectual wealth. If one does not realize this fact in time, if intellectual knowledge, the pursuit of intellectual wealth does not become the essence of daily life for any nation and people, such a state will inevitably be left out of the path of world development". Indeed, the economic, social, and cultural development of a country is determined by the knowledge, activism, morale, and intellectual, especially exploratory, potential of those working in those fields.

An important factor in lesson quality is the textbook. Today, the challenge is to create excellent textbooks that meet international standards and reflect the idea of national independence. Therefore, new textbooks and manuals are being developed for general secondary schools in accordance with the requirements of the National Training Program and the Concept of Creating a New Generation of Textbooks for Continuing Education. In this regard, practical work is being done in the public education system. The Asian Development Bank (ADB) loan project "Improving the system of publishing textbooks and textbooks for secondary schools" provides for the creation of a new generation of textbooks on a competitive basis. Certain results have been achieved in this regard.

A new generation of Uzbek (state language) textbooks for general secondary schools has emerged. The textbook "Uzbek language" for 10th and 11th grades was created by H.S. Muhitdinova, G.Z. Mukhamedjanova, F.S. Talipova, and R.B. Eshbayeva.

Each topic in the textbook is provided with relevant questions and assignments. They are structured according to the nature of the topic, the size of the material, and the intended purpose and objectives. This means that questions and assignments are structured according to the size, nature, and purpose of the material to be studied. Their content is also colorful. Some questions focus on learning new information about a particular language phenomenon. Some of the questions are related to other subjects and arts. Another set of questions is to improve students' oral and written communication.

The teacher can approach them creatively. Experienced teachers can create questions and assignments based on the content of the text. This will dramatically increase student engagement. They will be able to master the content of the text, and most importantly, there will be a lively atmosphere of teacher-student interaction.

While some questions encourage you to observe the sequence and logic of events (“Read the text and divide it into sections and put a title in each section”), others encourage you to think creatively (“What I like” rsatuv ». There are a lot of questions in the textbook that require practical and creative activity ("Make a story based on a picture").

Assignments include expressive reading, role-playing, text memorization, storytelling, and short storytelling. They help to develop students' oral skills. There are also assignments that focus directly on writing. The beginning of the study of the state language due to its specificity will create a certain basis for the formation of a mature reader. When working with the 10th grade textbook, new steps are taken to help students understand, feel, and comprehend the essence, magic, and beauty of the literary text, and on this basis, the delicacy of the Uzbek language. But it is important to remember that each text requires a different approach. The texts to be studied in the syllabus and textbooks were selected according to their artistic value, educational value, and age, mental capacity, and level of intellectual development of the students.

In the process of teaching the Uzbek language, educational and pedagogical goals are realized on the basis of the formation of communicative and verbal skills. To do this, Uzbek literature should become an integral part of Uzbek language education. The works selected for literary reading should reflect the traditions, culture, and history of the Uzbek people, cover current issues and be characteristic in terms of artistic maturity. Unlike previous textbooks, the 10th grade textbook has a wide range of literature samples. In particular, the life and work of our artists such as H. Olimjon, A. Mukhtor, E. Vahidov, Oybek, G. Gulom, O. Umarbekov, Zulfiya, O. Hoshimov, A. Qodiriy, A. Aripov, M. Yusuf along with information about and excerpts from his works and poems. The textbook also includes excerpts from works recommended for extracurricular reading, which will help students become more familiar with Uzbek literature and increase their vocabulary.

In the Uzbek language program for schools with other languages of instruction, the main content of the subject is the teaching of the Uzbek language through the acquisition of oral and communicative skills implies. The textbook also includes small texts and stories such as "The Wisdom of Reading a Book", "About the Virtue of Books", "Speaking Seventy Languages", "The Eye of Work", "The Dervish Who Cried the Ruler", and "The Flower of Manners" that they encourage students to observe.

Good knowledge of the native language system helps students to teach Uzbek. Skills and abilities in the native language are transferred to the Uzbek language. Taking into account these aspects, the textbook includes tasks such as "Translate into your native language." But a single task is not enough to compare with the native language. The dictionaries in the textbook are also intended for Russian groups. There are no explanations of complex words for students in sister languages, especially Karakalpak, Kazakh, and Turkmen. In general, the textbook is designed for Russian groups, without taking into account the capabilities and interests of students studying in Karakalpak, Kazakh and Turkmen groups. In schools with Russian and Tajik languages of instruction, the knowledge of Uzbek cannot be equated

with the knowledge of Karakalpak, Kazakh or Turkmen students. Because the lexical layer of Karakalpak, Turkmen, Kyrgyz, Kazakh languages, the structure of speech is very close to the Uzbek language. Given the closeness between the Karakalpak and Uzbek languages, we consider it appropriate to create special textbooks in Uzbek for schools with Karakalpak language of instruction.

To sum up, I can say that in the conduct of the educational process, the content of education, the purpose of education, the clear definition of the expected outcome, the correct choice of teaching methods, forms and tools, the knowledge of students it is advisable to pre-develop real criteria for assessing skills and competencies, to implement them effectively within the time allotted to the training, and to focus on their compatibility with each other.

References

1. O‘zbekiston Respublikasining Kadrlar tayyorlash Milliy Dasturi.-T.,2001 “Oliy ta’lim vazirligi me’yoriy hujjatlar to‘plami”
2. X.S.Muhitdinova,G.Z.Muxamedjanova, F.S.Talipova, R.B.Eshbayeva. “O‘zbek tili” 10-sinf uchun darslik–T.:”Davr nashriyoti” 2017
3. I.N.Bekniyazova Ta’lim qoraqalpoq tilida olib boriladigan maktabarning boshlang’ich sinflarida o‘quvchilar so‘z boyligini oshirish (predmet belgisini bildirgan so‘zlar misolida) ped.fan.nom.dis…Avtoref.-TDPU, 1998.

Rezyume:*Ushbu maqolada ta’lim boshqa tilda olib boriladigan maktablar uchun yaratilgan. O‘zbek tili darsligining yutuq va kamchiliklari ko’rsatib berilgan. Dars samaradorligini oshirish uchun tegishli tavsiyalar kiritilgan.*

Резюме: *Эта статья предназначена для школ, где обучение ведется на другом языке. Показаны преимущества и недостатки учебника узбекского языка. Включены соответствующие рекомендации для повышения эффективности курса.*

Kalit so’zlar: *ta’lim, o’zbek tili,darslik, maktab,jamiyat,adabiyot, og’zaki nutq, yozma nutq, ko’nikma, malaka, o’yin toshiriqlar*

Ключевые слова: *образование, узбекский язык, учебник, школа, общество, литература, устная, письменная речь, навыки, компетенции, игры*

PROPERTY RIGHTS IN CIVIL LAW AND THE CONTENT OF PROPERTY LAW

Seytnazarov J.
Karakalpak State University named after Berdakh

Summary: *This article discusses the legal content of property rights and property rights in the field of civil law, the types and peculiarities of property rights and property rights.*

Keywords: *property, property right, property right, right of possession, right of use, right of disposal, bases of formation of property right.*

In the civil law of our country, property rights and property rights are considered interrelated. In particular, property rights are subdivided into property rights in two senses: objective and subjective.

Objective property law in the objective sense means a set of legal norms that represent measures in the interests of the people to identify, regulate and strengthen the existing resources, methods of social development of natural resources. For example, the general rules of property are the norms of objective law.

Subjective property rights are the rights of individual persons, ie subjects of law (state, legal entities and citizens) to own, use and dispose of property arising from the norms of objective law.

The concept of the right to own, use and dispose of property at will and for one's own benefit, as well as to demand the elimination of any violations of property rights, constitutes the content of property rights. These elements, which constitute the content of the subjective property right, are transferred to the property owner within the limits established by law.

According to the Law of the Republic of Uzbekistan "On Property" [1] and Article 164 of the Civil Code, the owner has the right to own the property at his own discretion, in accordance with his wishes and interests does, uses it, and manages it. In this sense, the owner exercises his rights to his property voluntarily. The will of the owner means that he acts voluntarily, in accordance with his own will, without any pressure or undue influence from anyone (third parties). If the owner is subjected to violence in such a case, the law guarantees and protects the free will of the owner. At the same time, the owner must act in accordance with the law, fairness and justice.

It is in the interest of the owner to exercise his property rights at will. This interest may be directly related to him, his relatives or others. For example, when a parent places a deposit in a bank in the name of a minor, even if it appears to be in the interest of a third party, the owner's actions are in fact based on the parent's duty. Forcing the owner to enter into property transactions against his will or against his interests, as a general rule, makes such transactions invalid [2., 48].

As mentioned above, property rights consist of three elements - the ownership, use and disposal of property.

The right to own property is to keep the property in one's possession or somewhere that allows one to exercise one's rights over it. A person who legally maintains the property in his own hands or under the influence of his own will has the right to possess the property. This right belongs primarily to the owner. First of all, the right to own property can be owned by another person under the law or contract. For example, in the case of lease of property under a contract, temporary gratuitous use, deposit or transfer to any organization or citizen for temporary storage under administrative acts, the right of ownership may be held by a person who is not the owner of the property.

Legal possession of property in accordance with the requirements of the law is defined as illegal possession of property belonging to someone without legal grounds, for example, illegal possession of someone’s stolen or lost property.

The right to use property is the acquisition of useful properties of property, the economic benefit of property. A person who uses the property in accordance with the law has the right to use the property. The right to use the property is closely related to the right to own the property. It is impossible to use property without owning it. For example, under a property lease, the lessor first hands over the property to the lessee in accordance with the law or the contract. At the same time as the transfer, the lessee also has the right to own the property and can then use the leased property. When a property is produced or used in daily life, it is either completely consumed or gradually becomes obsolete over a period of time.

If the use of someone's property is done without a legal or contractual basis, such use is illegal. For example, the use of stolen or lost property.

The right to dispose of property is to determine the legal fate of the property, that is, the legal relationship with other persons on the property the right to seize, modify or cancel.

According to the right of disposal, the owner of the property can enter into various agreements, contracts, including agreements on the sale, gift, lease of property. If the item becomes completely useless, the owner can discard the item and dispose of it by any means. This right entitles the owner to take any action not unlawful with respect to his property, including the use of the property as collateral or by other means to impose an obligation on him, alienate him or otherwise dispose of the property allows you to

With the loss of this right, the right of ownership over the property is also lost. For example, when the right of possession of a thing is transferred to another person, the right of possession and use of a thing is transferred to another person, and the right to possess, use and dispose of all three elements of the subjective right of sale: (to the new owner).

In some cases, such as in the event of loss or theft of property, the owner retains the right of ownership in the cases and for the periods prescribed by law, even if the owner is deprived of the opportunity to own, use and dispose of his property. In the event of theft of property belonging to a citizen, it can be claimed for a period of three years established by law after determining who owns it. Otherwise, the ownership of the property will be lost. In general, the person who possesses the element of disposition of property (although not in the hands of the property, that is, in the possession or use of the property) is considered the owner. After all, the element of disposal is confirmed by certain documents (order, receipt, etc.), depending on the form and legal status of the property.

Owners of property are not allowed to use their property rights for illegal purposes to the detriment of anyone.

The limits of the rights and powers of the owner are set out in Article 54 of the Constitution of the Republic of Uzbekistan, according to which the owner must not harm the environment, violate the rights and legally protected interests of citizens, legal entities and the state.

This Constitutional norm is interpreted in detail in Article 172 of the Criminal Code. According to this article, the owner must comply with the following conditions for the exercise of his property rights:

1. The exercise of the owner's rights must not violate the rights and legally protected interests of others;

2. In cases, conditions and within the limits provided by law, other owners are obliged to allow limited use of his property (for example, the owner of a real estate plot of land from the owner of a neighboring plot of land to the owner of a neighboring plot of land) if necessary, require the owners of other land plots to grant the right of limited use (servitude) of another's land plot can be.

Establishment of a servitude on a land plot does not deprive the landowner of the right of ownership. A servitude agreement is concluded between the user of the servitude and the owner of the land plot, which is registered as real estate transactions. The owner of the plot on which the servitude is

established has the right to demand a proportional fee for the use of the plot from the person for whose benefit the servitude is established, unless otherwise provided by law (Article 173 of the Civil Code);

3. The owner has no right to abuse his dominant position, to take other actions that infringe on the rights and legally protected interests of others;

4. In exercising his right, the owner is obliged to take measures to prevent damage to the health of citizens and the environment.

The content of property rights includes not only the rights of the owner, but also the duty to maintain the property. According to Article 174 of the Civil Code, the owner of the property is responsible for the maintenance of his property, unless otherwise provided by law or contract. If the owner fails to comply with this obligation, in some cases a claim for restriction of his property rights or confiscation of the property may be instituted without prior notice.

References

1. Ўзбекистон Республикаси Олий Кенгашининг Ахборотномаси, 1990 й., 31-33-сон,

2. Раҳмонқулов Ҳ. Ўзбекистон Республикаси Фуқаролик кодексининг биринчи қисмига умумий тавсиф ва шархлар. 1-жилд. Тошкент, 1997. – 48-б.

Rezyume: *Ushbu maqolada fuqarolik huquqi sohasidagi mulk huquqi va ashyoviy huquqlarning huquqiy mazmuni, mulk huquqi va mulkiy huquqlarning turlari va xususiyatlari muhokama qilinadi.*

Резюме: *В данной статье рассматривается юридическое содержание права собственности и вещных прав в сфере гражданского права, виды и особенности права собственности и права собственности.*

Kalit so'zlar: *mulk, mulk huquqi, mulk huquqi, egalik huquqi, foydalanish huquqi, tasarruf etish huquqi, mulk huquqini shakllantirish asoslari.*

Ключевые слова: *имущество, право собственности, право собственности, право владения, право пользования, право распоряжения, основания формирования права собственности.*

IMPORTANCE OF WATERWAYS AND STUDY OF THE HISTORY OF WATER VEHICLES IN THE SOUTH ARAL SEA REGION

Jangabaev J.J.
Karakalpak State University

Summary: *This article focuses on the role of waterways and water transport in the development of transport communications in the South Aral Sea region. The article describes the types of water transport, their size and place in the life of the people on the basis of historical sources.*

Keywords: *ship, boat, sail, sled, parachute, barge, barge carriers, Amudarya.*

In the socio-economic life of the South Aral Sea region, the role of the Aral Sea in the system of transport communications was very large. The Aral Sea accounted for 7% of the fish in the former Soviet Union and 98.7% of the fish caught in Uzbekistan. In the international market there was a great demand not only for Aral fish, but also for Aral muskrat skins. In addition, the ports of the Aral Sea, which receive and send cargo, would send several hundred thousand tons of cargo a year.

Unfortunately, in the twentieth century, one of the greatest global environmental problems of our time has emerged. As a result of careless and immeasurable use of the waters of the Amudarya and Syrdarya, the Aral Sea disappeared in the eyes of almost a generation. Irreparable damage was done to the socio-economic life of the region and the environment. Maintaining the health and improving the quality of life of the people living around it has become one of the most pressing issues in the whole world.

UN Secretary-General Ban Gi-Mon, who visited Karakalpakstan in 2010 to see the current state of the Aral Sea, said: “I have seen many places in the world where disasters have occurred. However, this is the first time I have seen such a difficult environmental situation ”[1: 212].

In addition, on September 19, 2017, President Sh.M. Mirziyoyev attended and addressed the 72nd session of the UN General Assembly. In his report, he touched upon many issues, including the Aral Sea problem: “I would like to draw your attention once again to the Aral Sea problem, one of the biggest environmental disasters of today. Overcoming the consequences of the drying up of the sea requires an active combination of efforts at the international level. We support the full implementation of the program adopted by the United Nations this year to provide practical assistance to the people affected by the drying up of the Aral Sea. " [2: 250].

As a result of the drying up of the Aral Sea and the depletion of water in the Amudarya, their use for transport purposes has also stopped. This has significantly limited the transport and communications system of our country, international trade relations.

As we all know, it is difficult to imagine the way of life and economic needs of the people in any society without vehicles. The materials of the Khorezm archeological and ethnographic expedition provide the following information about the means of communication in the northern districts of Karakalpakstan: , went to the district center for work. "

The ship was considered a means of communication mainly in villages where the profession was fishing. However, after 1873, when the Karakalpaks became subject to Russia and the Ural Cossacks were relocated to the Karakalpak territory, the type of ship changed. In the fishing villages, light boats of the Urals were later used as "budar" [6:35]. The sailing of the ship against the current also coincides with this period. The reason is that during the research of A. Butakov in the 1850s there were no sails on local boats [5: 550].

The old Karakalpak boats were made of pieces of wood, first attached with wooden nails, and then from the 19th century with iron nails. In 1873, MG Cherniyaev, who was exploring the Karakalpak territory on the left bank of the Amu Darya, wrote of boats: . We see a similar description of the boat in L. Sobolev: "engil light boats made of separate pieces, reinforced with iron and reeds" [5: 549].

In the first pages of his work, A.V. Kaulbars pays great attention to describing the difference between a Khiva ship and a smaller fishing vessel made of small wood. He writes that he is very good in the structure of a small fishing boat. According to him, “the new ship will not pass any water. However, it is made of local turbulence and its material is not satisfactory, so the service life of such a ship will not exceed 6-7 years. Views of boats from the 1970s are given in Karazin's paintings [5: 550].

The Karakalpaks went to the upper reaches of the Amu Darya to Charjo, to the lower reaches of the Aral Sea, and from there to the lower reaches of the Syr Darya. The labor of the sailor-barge carriers was very heavy. They were forced to walk the ship along the Amudarya and the canals from Kungrad to Khiva and beyond against the river flow. According to Ivan Letnikov, a Cossack who had previously been captured in Khiva, he had towed a 400-pound cargo ship from Kungrad to Khojaly in five days with five men [3: 110].

Barge carriers crossed internal canals and roads in areas inhabited by Karakalpaks. As far as we know, Kegeyli, Kuvonshyorma, Shortanboy on the right bank of the Amudarya, Qiyatyorgan, Chomonoy, Hanep on the left side of the Amudarya are considered to be navigable roads. Many sailors have served on the ferry across the Amudarya between Khojaly and Nukus, which has existed since ancient times. The Russian explorer Qaulbars recorded the existence of a ship ferry through Kuvanshyorma [3: 111]. According to Danilevsky, Karakalpak sailors were engaged in transporting cargo of small caravans of traders (goods were transported on ships, camels and horses were sailed) through Lake Oyboir. [3: 111]. He also used salts for fishing in lakes and on ferries.

The ferry service could not meet the growing demand of the Amudarya oasis. Therefore, many boats were on the move in the Amudarya. Large boats were able to carry 2-4 thousand pounds, medium boats 200-1000 pounds, small boats 200 pounds. In total, there are 1,500 boats on the Amu Darya, of which 1,000 were Khiva-type boats with an average carrying capacity of 1,500 pounds, and 500 were Bukhara-type boats with an average carrying capacity of 1,500 pounds. The boats served 4-5 years. Pulling the current against the current, its speed did not exceed 20-30 versts per day, and the boats moved with the sails in the wind. The speed of the boats depended on its equipment, the water horizon on the Amudarya, the mobility of the wind, and the speed of movement of the barge carriers. From Petro-Alexandrovsk to Chorzow, barges or boats sailed for 20-30 days to the upper reaches of the river, and 5-15 days to the lower reaches of the river. Boat traffic from New Urgench to Charjou was estimated at 15 cents per pound. Depending on the amount of cargo (especially cotton and alfalfa), the cost of transporting them increased to 12-40 cents per pound. 17-21 people worked on the big boats, 12-15 people on average, and 9-12 people on the small ones.

According to Russian sources of the late 19th century, ships on the Amu Darya were large, medium, and small, with large ships 56 feet long, 14 feet wide, 4 feet high, and 1 foot deep (1 foot 30.48 cm according to the International System of Units). was equal to. Other sources state that small boats were 5 sajens in length, 10 sajens on average, and 15 sajens in large ones (1 sajen equals 2.13 meters) [4: 231].

The organization of the Amudarya flotilla in 1887, the launch of large ships and steamships on the river, testified to the great attention paid by the Russian military and political circles to the Amudarya waterway. In the early days of the opening of the Russian flotilla on the Amu Darya, two ships "Tsar" and "Tsaritsa" and two iron barges were launched. The ship sailed from Chorjoi to Petro-Alexandrovsk

(450 versts) for 8-9 days, against the current for 18-20 days. In addition, about 600 more boats sailed along the Amudarya, transporting mainly cotton and grain products [4: 243].

When the ice was covered, a sledge was considered a means of communication used instead of a ship. The type of sledge powered by the hand sledge is called the sledge sledge. In the XVIII-XIX centuries, most of this type of transport was in the life of the people.

During the thinning of the ice, the sledge was thrown under the ship (boat). It was a sledge when the ice was frozen, and when it slid over the ice, it acted as a ship in the places where the ice was cut. That is why he called it a ship or a boat.

There were also species of sleighs that included horses and oxen. They are named after the attached animal [6:35].

Indeed, the people of Karakalpakstan have served our people for centuries because of the great role of water transport in the transport system, trade relations, economic life, as it is a convenient mode of transport.

References:

1. Мирзиёев Ш.М. Буюк келажагимизни мард ва олижанов халқимиз билан бирга қурамиз. Т., «Ўзбекистон», 2017.
2. Мирзиёев Ш.М. Халқимизнинг розилиги бизнинг фаолиятимизга бериган енг олий баҳодир. 2 жилд, Т., «Ўзбекистон», 2018, с. 250
3. Камалов С.К. Каракалпаки в XVIII-XIX веках. Т., 1968.
4. Мавланов Ў. Марказий Осиёнинг қадимги йўллари. Т., 2008.
5. Труди Хорезмской археолого-етнографической экспедиции 1945-1948. М., 1952.
6. Қосбергенов Р. Қарақалпақ халқының колониаль дәўирдеги мәденияты ҳәм турмысы. Н.,1970.

Rezyume: *Ushbu maqolada Janubiy Orol hududida transport kommunikaciyasining rivojlanishida suv yo'llari suv transporti vositalarining ahamiyatiga to'qtab o'tilgan. Maqolada suv transporti vositalari turlari, ularning o'lchamlari va xalq hayotida tutgan o'rni tarixiy manbalar asosida yoritib berilgan.*

Резюме: *В данной статье рассматривается роль водных путей и водного транспорта в развитии транспортных коммуникаций Южного Приаралья. В статье на основе исторических источников описаны виды водного транспорта, их размеры и место в жизни народа.*

Kalit so'zlar: *Kema, qayiq, sol, chana, paraxod, barja, barj tashuvchilar, Amudaryo*

Ключевые слова: *Корабль, катер, парус, санки, пароход, баржа, бурлаки, Амударья.*

OUTSOURCING: CIVIL LEGAL DESCRIPTION OF THE CONTRACT

Baxtiyarov G.B.
Karakalpak State University named after Berdakh

Summary: *This article discusses the concept of outsourcing agreement, its legal features, the procedure for concluding this agreement.*

Keywords: *ustsorsing, contract, legal content, parties to the contract.*

There is no definition of an outsourcing contract in the Civil Code of the Republic of Uzbekistan. That is, part two of the Civil Code of the Republic of Uzbekistan, which provides for the legal regulation of individual contracts, does not contain such an agreement as an outsourcing agreement. At the same time, it should be taken into account that citizens and legal entities are free to conclude an agreement, while the parties can conclude an agreement, both provided and not provided for by law or other legal acts (according to the Civil Code of the Republic of Uzbekistan).

Therefore, individuals and legal entities have the right to conclude outsourcing agreements.

This type of contract is of foreign origin, and it is understood as a bilateral transaction that provides for the transfer of certain functions of the contracting authority to external performers who are more qualified in a particular issue.

In practice, these contracts began to be concluded relatively recently, while they, as a rule, are understood as contracts for the provision of personnel, also called outstaffing contracts.

At the same time, it should be borne in mind that "outstaffing" is a narrower concept than "outsourcing", since outstaffing, based on the name, should only provide personnel, and outsourcing - both personnel and other external resources, but in fact on practice is the same. So, in paragraph 3 of the Methodological Guide for entrepreneurs participating in state and municipal procurement, in order to participate in placing an order, there may be two options for resolving the issue:

the first is to entrust the preparation of the application to one of their employees;

the second is to transfer this function to a specialized company that has specialists and experience in this area (outsourcing).

The fact that in practice the contracts of outsourcing and outstaffing are one and the same is also evidenced by the following position of the court.

Such contracts are characterized by a complex of relations, the regulation of which is carried out both by the norms of labor law and civil law, since there are two subjects of regulation - property relations and labor relations.The court concluded that there are civil law relations between the parties that have some signs of paid services, while the subject of the contract is the provision of personnel, and the customer pays for this service, and not for the work of specific employees.

Labor relations, on the other hand, connect the contractor and those employees who are provided as customer personnel. Thus, the subject of both labor relations and civil law relations exists in the physical form of labor..At the same time, labor relations are not the result of the service, but the process of its provision, while civil law relations under the contract for the provision of services cover precisely the result of the activity of the contractor or a certain amount of services rendered under the contract for the provision of services. At the same time, the Civil Code of the Republic of Uzbekistan does not provide for such a type of contract as an agreement on the provision of personnel (outsourcing). The provision of personnel (outsourcing) is a paid provision of services.

The subject of the outsourcing agreement is the provision of the contractor's personnel to the customer. Employees transferred under an outsourcing agreement are on the staff of the providing

organization. With this organization, employees are in labor relations, that is, they enter into employment contracts, receive wages, sick leave and compensation. At the same time, the organization to which employees are involved under an outsourcing agreement does not formalize any legal (including labor) relations with them.. As follows from the foregoing, the outsourcing contract is governed by the provisions Civil Code of the Republic of Uzbekistan, regulating the provision of paid services (Chapter 39 of the Civil Code of the Republic of Uzbekistan). At the same time, the rules governing lease relations (Chapter 34 of the Civil Code of the Republic of Uzbekistan) do not apply to this agreement. By virtue of the Civil Code of the Republic of Uzbekistan, under a contract for the provision of services for a fee, the contractor undertakes, on the instructions of the customer, to provide services (perform certain actions or carry out certain activities), and the customer undertakes to pay for these services. The rules of chapter 39 of the Civil Code of the Republic of Uzbekistan (paid services) apply to contracts for the provision of communication services, medical, veterinary, auditing, consulting, information services, training services, tourism services and others, with the exception of services provided under contracts provided for by the chapters of the Civil Code of the Republic Uzbekistan. Judicial practice on this issue takes a position according to which the outsourcing contract is a contract for the provision of services for a fee and is regulated by the provisions of the chapter of the Civil Code of the Republic of Uzbekistan. Therefore, an outsourcing contract is:

- consensual;
- compensated;
- bilateral [1., 87].

The essence of the outsourcing agreement is that the employer, whose staff includes personnel of a certain category (outsourcer, performer), for a fee provides it to an organization or individual entrepreneur (customer) to participate in the production process, production management or to perform other functions related to production. An outsourcer (executor) remains an employer for persons carrying out work under such an agreement. The employment contract between the personnel and the outsourcer (executor) is not terminated, and the employees continue to be registered at their former place of work, respectively, the customer does not conclude labor contracts with the personnel hired under the outsourcing contract [2].

The parties to the outsourcing agreement are only persons engaged in entrepreneurial activities, i.e. organizations (both commercial and non-commercial) and individual entrepreneurs.

In view of the foregoing, the essential terms of the outsourcing agreement are the following conditions: the subject of the agreement, the cost of services, the procedure for payment, the term of the agreement, the rights and obligations of the parties, the procedure for accepting work, the conditions for providing personnel (including the number of involved workers of a certain profession and qualification), scope of work to be performed.

References:

1. Зокиров И.Б. Ўзбекистон Республикасининг фуқаролик ҳуқуқи. – Тошкент: ТДЮИ, 2009. – 87-б.
2. Гражданский кодекс Республики Узбекистан. // lex.uz

Rezyume: *Ushbu maqolada autsorsing shartnomasining tushunchasi, huquqiy belgilari, ushbu shartnomani tuzish tartibi haqida keng mazmunda so'z yuritiladi.*

Резюме: *В данной статье рассматривается понятие договора аутсорсинга, его правовые особенности, порядок заключения данного договора.*

Kalit so'zlar: *austsorsing, shartnoma, huquqiy mazmuni, shartnoma taraflari.*

Ключевые слова: *аустсорсинг, договор, правовое содержание, стороны договора.*

INTERESTS OF A CIVIL DEFENDANT IN CRIMINAL PROCEEDINGS

Matjanov I.
Karakalpak State University named after Berdakh

Summary: *The article analyzes the rights and legitimate interests of a civil defendant in criminal proceedings. A possible list of personal interests of the civil defendant and ways to protect them are also indicated.*

Keywords*: criminal process, interest, civil defendant, legal person, criminal case.*

According to a civil claim in criminal proceedings, as a rule, the defendant (defendant, convict) is responsible and compensates for the property damage or moral damage, which, after a civil claim is presented to him, is called a civil defendant. However, a civil defendant may be a third person who, not being the person who caused the harm, is obliged to compensate for the harm caused by the act, in respect of which a preliminary investigation or trial is underway. Parents, guardians, trustees and legal entities who are liable for property and moral damage caused by the actions of the accused may be involved as civil defendants.

A civil defendant is a natural or legal person who, in accordance with civil law, is liable for harm caused by the criminal actions of the accused, and who, under the conditions and grounds specified in the law, is involved in a criminal case [1, 32].

The interests of the civil defendant are caused, first of all, to settle material and property legal relations in criminal proceedings. In connection with this, in the literature there is an opinion that the interests of a civil defendant are, first of all, of a material nature and are accompanied by procedural interests. In particular, I. Ilnitskaya believes that “the totality of material interests is expressed in the general procedural interest of the civil defendant, which consists in finding the accused guilty and in satisfying the civil claim if there are grounds and in the manner prescribed by law” [2, 154].

According to Article 58 of the Code of Criminal Procedure of the Republic of Uzbekistan, a person, enterprise, institution or organization that, by virtue of the law, bear property liability for harm caused by the accused or a person who committed a socially dangerous act in a state of insanity, can be involved in the case as a civil defendant. The inquirer, investigator, prosecutor shall issue a decision on the involvement as a civil defendant, and the court shall issue a ruling.

Since property or moral damage is stipulated here, the interests of the civil defendant are primarily related to civil law interests, which consists of:

- in a reasonable determination of the amount of harm caused,
- in subsidiary liability for joint infliction,
- in limiting the amount of liability for obligations,
- in the termination of obligations, if there are grounds for this provided by law,
- in exemptions from compensation for harm in the manner prescribed by law.

It seems that the above civil procedural interests of the civil defendant are satisfied with the implementation of the following criminal procedural interests, which consists of:

- in recognition as a civil defendant in the indisputable proof of the guilt of the accused,
- in providing opportunities will defend their rights and therefore object to the claim,
- in the speedy progress of the case,
- in an accurate and reasonable determination of the pecuniary damage that the civil defendant must compensate,

- in an accurate and reasonable determination of the share of material liability, if several civil defendants appear in the case.

The interest in being recognized as a civil defendant in the indisputable proof of the guilt of the accused is the most important, since the proof of the guilt of the accused in causing harm is a factor that entails the consistent appearance of the figure of a civil defendant. Identical to this, lack of evidence or evidence that puts the guilt of the accused in doubt cannot be the basis for bringing material liability.

The interest in being able to defend one's rights with a consistent defense of the claim is of no small importance to the civil defendant. As a general rule, like all participants in the criminal process with personal interests, the civil defendant can use the procedural rights granted to him from the moment he appears as such.

In the legal literature, there are different opinions on the definition of this moment. Some authors believe that in order to involve a civil defendant in a criminal process, it is necessary to file a civil claim and recognize the person who suffered material damage as a civil plaintiff [3, 121]. According to other authors, a civil defendant can appear in a criminal process only after a person is involved as an accused in the presence of a civil lawsuit [4, 12]. Some authors believe that the appearance of a figure of a civil defendant as a participant in the process is still associated with the moment the person conducting the inquiry or the investigator issues a decision to recognize the person as a civil defendant [5, 175]. The latter seems to be more legitimate.

To protect the interests of a civil defendant, the criminal procedure legislation gives them broad procedural rights. According to Article 59 of the Code of Criminal Procedure of the Republic of Uzbekistan, a civil defendant has a system of procedural rights that give him the opportunity to know: the essence of the accusation and the civil claim; object to a claim; give explanations; have a representative to defend their interests; present evidence; make motions and challenges; at the end of the preliminary investigation, get acquainted with the materials of the case and write out the necessary information from it; participate in court sessions, bring complaints against the actions and decisions of the inquirer, investigator, prosecutor and court; to appeal against the sentence and the ruling of the court in the part relating to the civil suit; to know about the complaints and protests brought in the case and to file objections to them.

The civil defendant is also endowed with subjective rights in civil legal proceedings.

The interests of the civil defendant, in the first place, are connected with the defense against a civil claim. In this regard, the fact of determining the infliction of property or moral damage is of greater importance. It is also worth noting that, due to the absence of a criterion for determining non-pecuniary damage, the exact damage in determining which the civil defendant is interested and which he must compensate may entail some difficulties of a procedural nature.

As we noted above in the previous paragraphs, due to the absence of a criterion for determining moral damage in the claims filed, civil plaintiffs indicate different amounts that are several times higher than the possible (permitted) amount for compensation for moral harm or are significantly behind. Consequently, this forces the judge to approach the determination of a specific amount in different ways. And this is contrary to the interests of both participants.

The interest in an accurate and reasonable determination of the pecuniary damage that the civil defendant must compensate arises from the need to compensate only for such damage that is actually caused directly by the criminal act. In connection with this, there are a number of requirements in the literature, which indicate that “Firstly, the harm must be caused directly by the crime. Secondly, the harm must be caused to the legitimate interests of the victim. Thirdly, a causal relationship must be established between the act and the ensuing consequences” [5. 197].

We believe that in criminal proceedings only such harm should be compensated that was caused intentionally and directly by the crime. Since civil defendants are more interested in reducing the size and amount of the harm to be compensated, the harm caused must be proven and, therefore, exist, and the factor for determining harm should not include lost profits, since these are not the subject of criminal proceedings.

Interest in an accurate and reasonable determination of the share of liability, if several civil defendants appear in the case, is due to the fact that civil defendants are interested in compensating for that part of the harm that they directly caused. This largely depends on the officials conducting criminal proceedings, with proper proof of all the circumstances of the fact of causing harm as a result of the crime.

Thus, the process of realizing this interest of a civil defendant requires detailed consideration. This is due to the fact that during the adoption of an amnesty act, persons guilty of a crime are exempted from criminal punishment. For example, if there are three civil defendants in a case and an amnesty act was applied to two of them with successive release from punishment, then it may appear that the obligation to compensate for harm remains with one who did not apply the amnesty act. Note that this opinion, the emergence of which is possible, is distorted. Indeed, the act of amnesty exempts from all forms of criminal liability, and not civil liability (property). Consequently, the plaintiff can file a civil lawsuit and persons who have been exempted from criminal punishment are generally liable in civil proceedings.

References

1. Масленникова Л.В. Гражданский ответчик в российском уголовном процессе: дисс…канд…юрид..наук. – Краснодар, 2001.
2. Ильницкая Л.И. Личные интересы участников уголовного процесса: дисс.. канд..юрид..наук. – Краснодар. 2002.
3. Шпилев В.Н. Участники уголовного процесса. – Мн.: Издательство БГУ, 1970.
4. Матюхин В.А. Защита гражданских прав в уголовном процессе: Автореф.. дисс.. канд.. юрид..наук. – Свердловск, 1988.
5. Володина Л.М., Сидорова Н.В. Уголовный процесс: учебное пособие. 2-изд., испр. и доп. – Тюмень: Издательство ТюмГУ, 2007.

Rezyume: *Maqolada jinoyat protsessida fuqarolik javobgarning qonuniy manfaatlarini taminlash va himoya qilish masalalari tahlil qilinadi. Shuningdek, gumon qilinuvchining shaxsiy manfaatlari tizimi va ularni taminlash usullari kursatilgan.*

Резюме: *В данной статье анализируются вопросы обеспечения и защиты личных интересов гражданского ответчика в уголовном процессе. Также указан возможный перечень личных интересов подозреваемого и способы их обеспечения.*

Kalit so‘zlar*: jinoyat protsessi, manfaat, fuqarolik javobgar, yuridik shaxs, jinoyat ishi.*

Ключевые слова: *уголовный процесс, интерес, гражданский ответчик, юридическое лицо, уголовное дело.*

THEORETICAL BACKGROUNDS OF THE GERMANIC LANGUAGES

Seytjanov J.E.[1], Jiemuratova G.[2]
[1]Karakalpak State University, [2]Nukus State Pedagogical Institute

Summary: *The article deals with theoretical backgrounds and sub grouping of West Germanic languages. It considers the modern Germanic languages, their distribution and classification.*

Keywords: *Germanic family, language, linguistics, origin, feature*

The correct internal sub grouping of West Germanic is more controversial [17, 99]. Old English and Old Saxon are often assumed to form a North Sea Germanic or Ingvaeonic subgroup to the exclusion of Old High German. This hypothesis is not uncontroversial; however, the debate centres around the affiliation of Old Saxon, which shares certain features with Old High German that the two do not share with Old English [21, 255]. For our purposes it is important simply to note that Old Saxon can be considered phylogenetically and geographically intermediate between Old English and Old High German.

The Germanic family is an appropriate one to use as a test bed for syntactic reconstruction for a number of reasons. First, the older languages are comparatively well attested, and well studied, if not always well understood; for an introduction to these languages [19, 110], and Harbert for an overview with references [16, 110; 17, 121]. Secondly, as Harris observes, focusing on a clearly delimited language family at a relatively shallow time depth renders the task of reconstruction more manageable and less speculative. As discussed in Hopper [18, 54], most past attempts at syntactic reconstruction [16, 26] have attempted to address Proto-Indo-European, and are therefore dealing with a much more amorphous language family at a much greater time depth; Kuldashev provides a useful discussion of work in this area [20, 222]. Such long-distance, big-picture syntactic reconstruction is by no means excluded in principle by the methodology outlined in this thesis. The most profitable way to proceed, however, would be to work from the ‘bottom up’, starting with smaller pieces of the puzzle such as the details of the common West Germanic or Northwest Germanic and proceeding to a greater time depth only when acceptance of some of these details is reached.

Gothic is the earliest robustly attested Germanic language, and the only member of the East Germanic branch with such attestation. Spoken by the William, two highly mobile tribal groupings, it has survived primarily in fragments of a translation of the New Testament from Greek, attributed to Bishop Wulfila [22, 140]. The manuscript, known as the Codex Argenteus, dates from the 6 th century and was most likely produced in Italy [6, 156].

The primary difficulty when dealing with the syntax of Gothic is the degree to which the translation is dependent on the syntax of the New Testament Greek original. A recent study of the adjectival syntax of Gothic describes the Gothic Bible as ‘a near-wholesale importation of Greek presented in Gothic guise’ [3, 97]. The two poles of opinion are represented by Curme [9, 22], who argues that the affinities between Gothic and New Testament Greek are due to shared inheritance rather than slavish translation technique, and Ivanova I.P. [2, 277], who claims that in view of translation influence the Gothic texts are ‘all but useless for the study of Germanic syntax’ [18, 150]. Barnes M. describes these as the ‘idealist’ and ‘agnostic’ positions respectively [4, 77].

From a purely logical perspective, it is not clear that there is anything ‘agnostic’ about the claim that Gothic syntax was heavily influenced by Greek, and nor is it clear that this should be the null hypothesis when investigating the syntax of Gothic. Similarities between languages may be the result of language universals, shared inheritance, convergent development, parallel development, or language

contact [7, 165]. Common practice in the literature is to assume that a feature is not due to contact unless the evidence is clear and overwhelming [8, 515]; among Gothicists, the logic seems to be reversed. Furthermore, many scholars have presented evidence for 'genuine' Gothic syntactic phenomena in the Gothic Bible, often supported by sophisticated quantitative argumentation, e.g. with regard to the relative order of the verb and its complement [1, 255], use of the dual [10, 146], verb position in imperatives, wh-questions and negation [13, 109], relative clauses [12, 56], the absolute construction [14, 83]), pronouns [11, 102] and the order of elements in the noun phrase [15, 100]. Many of these studies are based on the principle of lexical deficiency: instances where the Gothic text translates a single Greek word with multiple Gothic words. In these cases, it is argued, no model was available, and so the word order is likely to have followed the unmarked native pattern. Furthermore, instances where the Gothic text deviates from its Greek model also indicate native Gothic phenomena (provided that other influences, such as that of Latin or Coptic, can be ruled out). In contrast, We are unaware of any study presenting clear data and explicit argumentation to the effect that the similarities between Gothic and New Testament Greek are due to narrow translation: conclusion to this effect has been criticized by Faarlund as based on an insufficient range of phenomena [12, 200]. Instead, the judgement that the Gothic Bible represents 'Greek syntax garbed in the dress of Gothic grammar' seems to be based, more often than not, on simple intuition; an intuition that is perhaps circular, as will become clear from the next paragraph. It is equally unclear, then, that 'idealist' is an appropriate term to apply to those who, like Curme [9, 55], wish to claim that similarities are due to common origin. The issue is an unresolved one.

In any case, for those working on the syntax of Gothic it is necessary to attempt to rule out structural calquing from New Testament Greek, even though this necessity has more to do with the sociology of the field than with logic or empirical evidence. The important question then becomes: since we do not know what manuscript Wulfila himself had access to, and there is no single original Greek text, which version of the New Testament Greek Bible do we use as a comparator? Dewey T. provides a useful guide to this issue [10, 25]. Many scholars, e.g. Berard (1993), Fertig (2000) and Ferraresi (2005), primarily use the version provided in Streitberg's (1919) edition, which has survived through later editions and is often reproduced elsewhere [24, 22]. The problem with this is that Streitberg was not a Bible scholar, and his version of the Greek New Testament is a hybrid which does not derive from any single manuscript; furthermore, 'observed differences between the Majority Text and Streitberg favour the shape of the Gothic text' [24, 46]. Using Streitberg's version to investigate correspondence with the Greek is dangerously circular, then, as it cannot be ruled out that Streitberg was guided in his 'reconstruction' of the Greek original by the form of the Gothic [26, 11].

Another version often used is the Critical Text [5, 77], which has a wide circulation and is widely regarded as the standard edition for academic purposes. It is used for studies of Gothic syntax by Thomason (2006) and Dewey & Syed (2009) inter alia [25, 22]. Ratkus has conducted a three-way comparison in terms of omissions, word order, lexical choice and grammatical form between the Gothic, the Critical Text and another version, the Majority Text (Robinson & Pierpont 2005), which is based more heavily on Byzantine than on Alexandrine manuscripts: his aim is to establish which manuscript tradition the Gothic translation can be attributed to. His findings are unequivocal: 'Gothic follows the Majority Text much more closely than it does the Critical Text, and the former should thus be used as a point of reference in the comparative study of Gothic and Greek' [23, 11]. We will therefore use the Majority Text as comparator in subsequent chapters where Gothic becomes relevant to the discussion.

Old Norse (ON) is a North Germanic language. North Germanic bifurcates early into East Nordic (precursor to Danish and Swedish) and West Nordic (precursor to Faroese, Icelandic and Norwegian); ON in this thesis refers to West Nordic texts. The texts investigated are Old Icelandic, mainly because of the availability of a pre final version of the Icelandic Parsed Historical Corpus [4, 66]. Unless otherwise

stated, Old Icelandic is here taken to stand for early North Germanic in general, though material on Old Swedish will also be drawn upon, particularly Hakansson (2008) on null arguments. In addition to the corpus, the grammars used in this thesis are Gordon (1927), Wessén (1966), Heusler (1967), Barnes (2004) and Faarlund (2004) [24, 21; 12, 112].

The study of ON poses problems that are different to those familiar to the student of Gothic or the early West Germanic languages. A large number of autochthonous prose texts are available, so that the philological issues of dealing with translations and verse texts do not need to concern us. On the other hand, the earliest texts at our disposal date from around 1150, which is markedly later than for the other Germanic languages under consideration; the 'Old' Norse period is thus contemporaneous with Middle English and Middle High German. The language has thus had a considerable amount of time to undergo changes, and we find that ON is indeed substantially different from the other early Germanic languages, e.g. in having generalized verb-second in subordinate clauses. A further issue is the extent to which the comparatively uniform grammar underlying the transmitted texts was representative of many, any or all North Germanic speakers at the time of production [19, 112].

The texts used in this thesis are the earliest texts found in IcePaHC; the *First Grammatical Treatise* and samples of the *Íslensk hómilíubók* (12 th century), *the Jarteinabók, Þorláks saga helga, the Íslendinga saga, the the ta manuscript of Egils saga, the Jómsvíkinga saga, the Grey Goose Lawsand the Morkinskinna(13th century).*

'Old English' (OE) refers to the West Germanic language spoken in parts of Great Britain from the earliest migrations until circa 1150. In contrast to the other West Germanic languages, a substantial body of prose material is available from the period between 800 and 1150, much of it original and not translated from Latin (e.g. Wulfstan's Homilies, the Anglo-Saxon Chronicle). A large amount of this material is contained within the York-Toronto-Helsinki Parsed Corpus of Old English Prose [2, 122], which we have used as my primary data source. Even in cases of translation it is in general safe to assume that we are dealing with native OE syntax, except in biblical translations [1, 255]. The parsed version of Beowulffrom the York Parsed Corpus of Old English Poetry has been used to supplement this large prose corpus [3, 87].

Four main dialects of OE can be distinguished: Northumbrian, Mercian, Kentish and West Saxon. Since the vast majority of texts in the YCOE are West Saxon, other material, such as the data of Berndt (1956), has occasionally been used to supplement this; this becomes particularly relevant for work on null arguments. Reference works used in addition are Mitchell (1985) and Mitchell & Robinson (2007). Citations of OE examples are given from corpus tokens where possible; elsewhere, the short titles given in Mitchell, Ball & Cameron (1975, 1979) are used. A vast amount of work, both generative (e.g. Allen 1977, 1980a, 1980b, Koopman 1985, 1992, 1995, 1996, 1997, 1998, van Kemenade 1987, Pintzuk 1993, 1999, 2005, Fischer et al. 2000, Biberauer & Roberts 2005, 2008) and non-generative (e.g. Visser 1963–1973, Kohonen 1978, Bean 1983, Mitchell 1985, Bech 2001, Davis & Bernhardt 2002, Cichosz 2010) has been done on the syntax of OE, particularly with regard to constituent order, and as a result discussion will often focus on whether the proposals made in these works are transferrable to the less well-studied Germanic languages [10, 146].

Old High German (OHG) is a cover term for a group of West Germanic dialects whose unifying feature is that they have all undergone the phonological change known as the Second Sound Shift to some extent [14, 174]; early texts from the north of the German-speaking area are thus not included [2, 122]. OHG is usually taken to range from the earliest texts, in the eighth century, to around 1050. The surviving texts are mainly manuscripts from monasteries, and can be divided into 'dialects' according to their place of origin: Franconian, Alemannic or Bavarian.

We are not as fortunate with the OHG texts as we are with OE: all substantial texts are either verse texts or translations, although some of the latter, such as the *Isidortranslation*, have been argued to be relatively free [20, 166]. Perhaps because of this deficit, there exists as yet no parsed corpus of OHG, and hence few recent quantitative studies.

The third and final West Germanic language to have a textual tradition dating back to the first millennium AD is Old Saxon (OS), sometimes known as Old Low German. Two main texts exist from this period: the Heliand, a gospel harmony written in alliterative verse of 5,983 lines, and fragments of a version of the Genesis story, also in verse. Both can be dated to the first half of the 9th century [16, 111].

Given the antiquity of these texts, it is surprising that, in comparison to the vast amount of work dealing with the syntax of OE, that of OS has rarely been given any serious attention, a lack noted elsewhere in the literature [21, 165]. The extensive survey of verb position in the early Germanic languages by Eythórsson (1995) only mentions OS in passing. Moreover, for the most part, traditional philological works on syntax [13, 200] and grammars in the philological tradition have had nothing to say about the aspects of clause structure considered here [11, 102]. Among the few works dealing with the syntax of OS are Ries (1880), Rauch (1992), Erickson (1997), Dewey (2006), Breitbarth (2009) and Linde (2009); it is clear that the language is in need of further theoretically-informed empirical work. My own data, which we hope represent a step in this direction, consist of all 6229 finite clauses in the Heliand, using the Behaghel & Taeger (1996) edition [24, 22].

Clauses were manually tagged for clause-type (main, conjunct, subordinate, relative, wh-question, yes-no question, imperative) and for verb position (initial, second, third, or later), polarity (the negation morpheme ni/neproclitic to the finite verb), and various characteristics of the subject. It should be noted that subordinate clauses can be introduced by a wide range of elements. Some of these elements, such as thar‘there’ and thô‘then’, as well as serving as sentence adverbials of place and time in main clauses, can also introduce subordinate clauses; these two then receive the readings ‘where’ and ‘when’ respectively. In practice it is often difficult to distinguish between the two readings; verb position is a potential distinguishing factor, but, since the investigation of correlations between verb position and clause type is one of the objects of this study, using word order preconceptions to decide clause type would be unforgivably circular. Instead I have followed the readings indicated by the punctuation in Behaghel & Taeger (1996), though it may well be that some of these readings – and other editorial decisions – are wrong.

Modern scholarship usually takes these inscriptions, written in the Elder Futhark alphabet and attested between 200 and 800 AD, to be representative of the Northwest Germanic node, for the most part [1, 126]. Few such inscriptions have survived, and many of these do not constitute full sentences; Faarlund estimates that of the 129 runic inscriptions known at the time of writing, 69 were full sentences [12, 111], and Ilyish B. states that there are 34 inscriptions in Northwest Germanic in which the position of the verb can be determined [19, 111]. In light of this extremely limited attestation, which is not unequivocal as regards the areas of investigation of this thesis [12, 202], we will not treat the language(s) represented by the runic inscriptions as a comparator in the same way as e.g. OE. Instead the evidence of the runic inscriptions will only be used as the broadest of heuristics against which to assess the reconstructions postulated. A similar stance is taken by Hopper [18, 145].

Language**,** a system of conventional spoken, manual, or written symbols by means of which human beings, as members of a social group and participants in its culture, express themselves. The functions of language include communication, the expression of identity, play, imaginative expression, and emotional release.

References

1. Иванова И.П. История английского языка, Москва: 2005. – 350 с.
2. Antonsen, Elmer H. Runes and Germanic linguistics. Berlin: Mouton de Gruyter. 2002. – 122 p.
3. Barnes M. A new introduction to Old Norse. Part I: Grammar. 2 nd edn.Exeter: Short Run Press. 2004. – 188 p.
4. Booij G. "The Phonology of Dutch.", Oxford: Oxford University Press, 2011. – 98 p.
5. Wikipedia, the Free Encyclopedia http: www.wikipedia.org10.www.books. google.com.

Rezyume: *Maqola g‘arbiy german tillarining nazariy asoslari va kichik guruhlariga bag‘ishlangan. Hozirgi german tillari, ularning tarqalishi va tasnifi ko'rib chiqiladi.*

Резюме: *Статья посвящена теоретическим основам и подгруппам западногерманских языков. Рассмотрены современные германские языки, их распространение и классификация.*

Kalit so'zlar: *german oilasi, til, tilshunoslik, kelib chiqishi, o'ziga xosligi.*

Ключевые слова: *германская семья, язык, языкознание, происхождение, особенность.*

CREATING A TELEGRAM BOT IN THE PYTHON PROGRAMMING LANGUAGE

Tureniyazova A.
Nukus branch of the Tashkent University of Information Technologies

Summary: *The article suggests the technology of creating, setting and coding the Telegram bots.*
Key words: *Bot, chatbot, code, echobot.*

Basic concepts about telegram bot. Telegram Bot is an application with additional features that acts like a simple chat partner. It performs predefined tasks independently and without user intervention. The term bot is derived from the term robot.

A telegram bot is always marked with the "bot" suffix. For example, “@weatherbot”, “@ARD_aloqa_Bot” or “@test_bot”.

Principles of operation of bots. If you look at the Telegram Bot’s data source context, the actual data usually stays on the local servers of the data sources. The bot enters the required data sets there and then prepares them to output a message as requested on the last device.

In the modern world, every field is related to IT technologies. Python is a high-level general-purpose programming language that is also used in web application development. It aims to improve the efficiency of language developers and their ability to read code. Python supports a variety of programming paradigms: structural, object-oriented, functional, imperative, and aspect-oriented. Language includes dynamic writing, automatic memory management, full introspection, exception processing mechanism, multi-band support, and practical high-level data structures.

Creation and configuration of a Telegram bot in Python. The Python programming language is very suitable for writing a chat bot for Telegram Messenger. The Random module provides functions for random selection of random numbers, letters, sequence elements. The Datetime module provides classes for managing time and date in a variety of ways. The standard method of expressing time is also supported, but more attention is paid to the convenience of managing dates, times, and their parts.

JSON (JavaScript Object Notation) is a simple data exchange format based on a subset of JavaScript syntax. The JSON module allows encoding and decoding of data in a convenient format. Time - A time module in Python.SqlLite3 module. SQLite is an independent, server-free transactional SQL database engine. Python got the sqlite3 module in version 2.5, which allows you to create a SQLite database in any real version of Python without the need to download additional tools.

A telebot module is required to create and connect the chatbot.

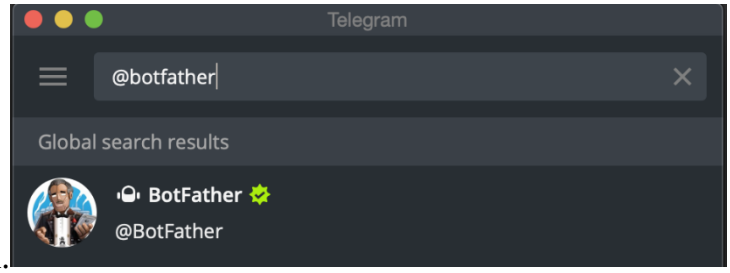
Urllib is a Python module that can be used to open URLs. It defines functions and classes for processing URLs.

The MessageBox module provides a basic template class as well as many convenience methods for frequently used configurations. The message fields are modal and return a subset of the user's choice (True, False, OK, No, Yes, No).

Requests is a Python module that can be used to send all types of HTTP requests. It is a user-friendly library with many features, from URL settings to sending private headers and SSL verification. The SYS module provides access to some variables and functions that interact with the Python interpreter.

The subprocess module is responsible for: creating new processes, connecting to standard input, standard output, standard error, and retrieving return codes from these processes.

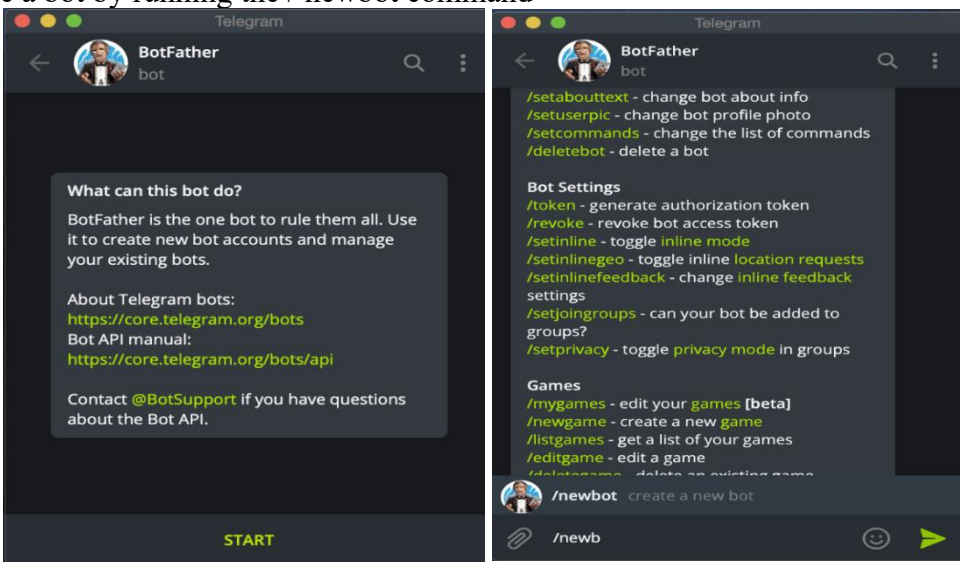
BotFather helps us create a new bot.



Search @botfather on Telegram.

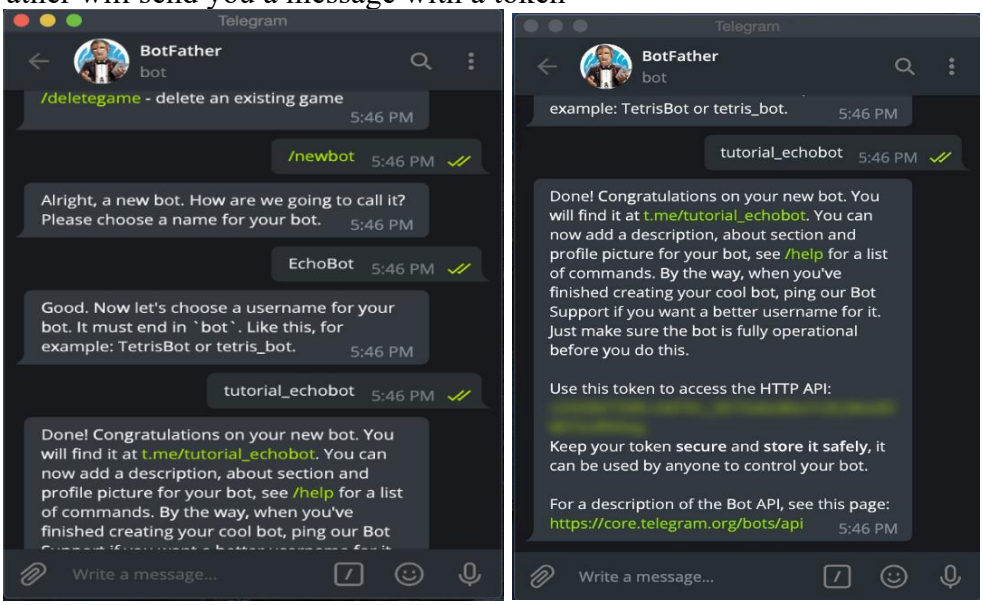
• Start a conversation by pressing the Start button.

• Create a bot by running the / newbot command



• Enter the Display Name and Username for the bot.

• BotFather will send you a message with a token



Caution! Secure the bot access token. Anyone who has a token can manage this bot.

Bot coding. Open the terminal and start by creating a new directory first.mkdir echo-bot/ cd echo-bot/

We use the pipenv virtual environment. Make sure pipenv is installed on your system.
Pipenv - Specific Manager for Python projects.
To work with the Telegram API, we use the python-telegram-bot package. Install the package using the following command.
pipenv install python-telegram-bot
Create a new bot.py file and paste the following code into it.

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
# This application is dedicated to the local domain under the CC0 license.
"""
A simple bot to respond to telegram messages.

First, multiple processing functions are defined. These functions are then passed to
Dispatcher and registered at the appropriate places.
Then, the bot will start and run until we press Ctrl-C on the command line.

Use:
The basic Echobot example repeats the messages.
Press Ctrl-C on the command line or send an alarm to stop the processbot.
"""
import logging
from telegram.ext import Updater, CommandHandler, MessageHandler, Filters
# Enable logging
logging.basicConfig(format='%(asctime)s - %(name)s - %(levelname)s - %(message)s', level=logging.INFO)
logger = logging.getLogger(__name__)

# Identify multiple command handlers. It usually takes two arguments to update and
# context. Error handlers also erroneously accept the raised TelegramError object.
def start(update, context):
    """ / send a message when the start command is given."""
    update.message.reply_text('Hi!')

def help(update, context):
    """ Send a message when command / help is given."""
    update.message.reply_text('Help!')

def echo(update, context):
    """ Display the user message."""
    update.message.reply_text(update.message.text)

def error(update, context):
    """Log of errors caused by updates."""
logger.warning('Update "%s" caused error "%s"', update, context.error)

def main():
    """ Run the bot."""
    # Create an update and pass the bot token to it.
```

```
    # To use new context-based callback
 Make sure you set use_context=True
updater = Updater("TOKEN", use_context=True)

    # Get a dispatcher to register employees
    dp = updater.dispatcher

    # to answer in Telegram to various orders
    dp.add_handler(CommandHandler("start", start))
    dp.add_handler(CommandHandler("help", help))

    # by command, i.e. the message - reflects the message in the Telegram
    dp.add_handler(MessageHandler(Filters.text, echo))

    # all errors recording
    dp.add_error_handler(error)

    # Run the bot
    updater.start_polling()

    # Run the bot until you press Ctrl-C or the process will accept SIGINT,
    # SIGTERM or SIGABRT. It should be usually used, because
# start_polling() is not being blocked and stops the bot conveniently.
    updater.idle()

if __name__ == '__main__':
    main()
```

Replace line 56 tokens with the token you first received from BotFather.

This code uses the query method to verify messages and responds to each received message with the same message.

Run the bot: pipenv run python bot.py

In conclusion, we would like to note that bots can perform various functions for the owner, and therefore the responsibility for their actions lies entirely with the creator of this bot.

References

1. Top 50 Most Popular APIs on RapidAPI (2022) https://rapidapi.com/blog/most-popular-api/?utm_source=google&utm_medium=cpc&utm_campaign=Beta&utm_term=%2Bapi_b&gclid=CjwKCAjw682TBhATEiwA9crl3wWR5Hl3jABc9Kt9ayryKmB5BJQ85lOYWXasjX9zj61ZuLTCMGqrehoCmPIQAvD_BwE
2. Python-telegram-bot https://python-telegram-bot.org/

Annotasiya*. Maqola Python dasturlash tili yordamida Telegram bot yaratish, bot profilini sozlash va uni kodlash texnologiyasiga bag'ishlangan.*

Аннотация*. Статья посвящена технологии создания, настройке и кодирования Телеграм ботов на языке программирования Python.*

Kalit so'zlar*. Bot. chatbot, kod, echobot.*

Ключевые слова. Бот. чат-бот, код, эхобот.

DEVELOPING ESP STUDENTS' COMPREHENSION SKILLS THROUGH SONGS

Allashova I., Patullaeva G.
Karakalpak State University named after Berdach

Summary: *The effectiveness of using songs in improving the listening comprehension skills of students is described in this article. An experimental research study was conducted to address this issue. The use of songs aided students in developing their listening skills. According to the findings of the study, the majority of the young learners enjoyed and appreciated learning English by listening to songs. The implications for education and future research are discussed.*

Key words**:** *communication skills, cognitive, effective, linguistic, comprehension, rhythm, approach productive.*

It is necessary to know English in today's world. It is spoken in a variety of countries. Students who know English can communicate with ease anywhere in the world, make new friends, and learn a wealth of interesting and useful information. Every student who knows English has the opportunity to get a good job and even work abroad. We are confident that the majority of people, particularly students, enjoy listening to music. We all know that listening to good music is extremely beneficial to one's soul. They make our lives a little brighter. The most fundamental of the four major areas of communication skills and language development – listening, speaking, reading, and writing – is listening. Before learning to speak, learners listen to and respond to the language. Listening is the first stage of first and second language acquisition. Song lyrics include a plot, speech patterns, vocabulary, and grammatical structures that can be used in a conversation. It is important to remember that any work on the development of the English language takes time and effort on our part. Listening to English songs is not difficult, learning English through songs is similar to working with a textbook, audio podcast, or English-language films. We would like here to suggest some tips to hold the English lessons for ESP students:

— Before moving on to work on the lyrics, ask students if they know the band or singer, what songs they know. With students, brainstorm vocabulary related to the topic of the song.

—The first listening task should be easier, so ask students to listen to the song and answer the question if the song is positive or sad, about friendship or love. There are songs with ready-made pictures on the British Council website for example asks students to put the pictures in order.

—For the second listening, the following types of tasks can be used: connect the two parts of the line, correct the error, put the line in order, true / false

—After listening to the song, ask students to come up with a video clip. Then show the original video and compare with the students' ideas. You can even role-play and sing to everyone along with the movements.

C.T. Linse considered that teaching listening skills was essential for the development of other language skills. We should be aware, however, that any type of listening comprehension activity must be well-guided and have specific goals. To that end, P.A. Ur tried to argue [1] that a listening purpose should be included in the definition of which was before task. The definition of a purpose allows the audience to selectively listen for important information. Students are given some idea of what they will hear and what they will be asked to do with it helps them succeed in the task; it also increases motivation and interest. The fact that learners are participating in active listening rather than waiting until the end to act, the rhythmic and repetitive nature of songs that reinforce language acquisition, as well as the joy that the association between melody and content brings to the learning activity, are the most visible features

among these songs. Children have an acute sense of rhythm, and they have not yet experienced the anxiety that can accompany second language learning. [3]

K. Schoepp believed that the research on why songs are valuable in the ESL/EFL classroom revealed three patterns:

a) Emotional reasons: A positive attitude and environment facilitate language learning. Songs are a fun activity that helps to create a supportive, non-threatening environment with confident and active learners.

b) Cognitive reasons: Songs help with fluency and the automatic application of meaningful language structures.

c) Linguistic reasons: In addition to improving fluency, songs expose students to a wide range of authentic language that they will encounter in nonacademic settings. [4]

As language teachers, we must remember that our primary responsibility is to teach the target language. We should not get carried away by the music and rhythm of songs, no matter how enjoyable and fun they are for young learners. Our primary responsibility is to teach the target language, not to teach singing skills.

As a result, if songs are used ineffectively, they can easily become mere entertainment and pleasurable interruptions in learning process, resulting in boredom and lack of interest in the long run. The language teacher should have a clear reason for why and how to use a song. Only when songs are well integrated into a scheme of work and carefully selected for the cognitive and linguistic needs of students can they be an effective means of developing young learners' language skills. As ESP teachers, we regularly use songs in our lessons for comprehension exercises such as “gap filling” re-ordering words so they make sense, and matching related words. Students should indeed listen for words or phrases related to a specific grammatical focus or semantic field in these exercises. This method focuses on individual words and phrases rather than the entire text. Songs, on the other hand, can be used to improve our comprehension and critical thinking skills. Students can make predictions about meaning rather than focusing on individual words or sounds, and then confirm or reject these predictions as they read or listen to the lyrics. The emphasis is on the students’ interactions with the text and what they contribute to the reading or listening process.

Moreover, Reading and listening comprehension abilities are required. Because of the often-vague language in songs, inferring, or reading between the lines, is a skill that works especially well. Students usually have several options when making inferences, as long as they can explain why they chose each interpretation. As previously stated, using songs improves students' productive skills, such as speaking and writing. We can have students write a story based on a few words from the song and then compare it to the story in the song. What kind of story could the students create using the title of James Young's song "Infinity"? Personal information of students motivation, according to theory of D. L. Schunk an energy shift within a person characterized by effective arousal and anticipatory goal reactions. [5] It means that if someone engages in activities, they will achieve a goal. To perform this task, strong motivation is required. Students’ behavior can be motivated by the requirements. When children read a passage and miscue or misread several words in a sentence, they are experiencing fluency difficulties. A student-adult reading activity is one in which a student listens to an adult read a passage fluently and then repeats the process until they are successful. Reader’s theater is an activity in which students write a script based on a book and then rehearse and perform their play in front of their peer group. Reader’s theater is based on the recitation of Music can have an impact on fluency testing in both positive and negative ways. Music as background noise can be distracting for some learners, but it can be extremely beneficial for others. According to the findings of this study, music can have a positive impact on certain students. Teachers must be aware of the learning environment in which their students

are placed in order to assist these students. As a result, they will be able to learn the most effective method for assisting their students in performing to the best of their abilities.

However, recognizing English songs becomes more difficult if students do not know English well. They face some challenges while listening the music. Problems such as the pronunciation and meaning of songs, listening skills, the use of consonants and vowels cause problems in people who listen to songs written in their own language. The first problem with non-English speakers when listening to English songs is pronunciation. Incorrect pronunciation can lead to misunderstanding between the singer and the listener. In addition, understanding the meaning of songs can be difficult for some real users if they are not familiar with the language used. This is due to the fact that some songs have a complex dictionary, sentence structure, and most importantly, the speed of the songs is very fast.

Moreover, the attention of the singers, whether it is an American accent or an English accent, poses another problem for the students. The reason why the aspects of native speech, such as intonation, stress and rhythm, vowel sound, consonants, vowels and deaf, are different. Because of these differences, students may be confused and make pronunciation mistakes when they learn to pronounce sounds and words in English, especially when listening to English songs, because they have many facets of pronunciation.

Realize the meaning of songs is very vital for real students. But, students face some difficulties in analyzing the meaning of songs. One of them is that the literal meaning of the lyrics is often complex to establish and interpret, since in many songs such elements as phrases and metaphors are used. Be aware of the meaning of songs requires full concentration and passion to make sure that the message given in the lyrics can be correctly received and interpreted.

After conducting the research, from the result of the research we can suggest that in order to increase students' knowledge in vocabulary mastery, to enhance their comprehension skills, to stimulate interest in the subject, to improve foreign language pronunciation skills, to develop an ear for music, to evoke positive emotions, to broaden horizons and strengthening grammatical structures, song is media that effective to use in the learning process. Besides, to increase the students' motivation, song is one of media that can be used in the auditorium.

References

1. Linse, C. T. Practical English language teaching: Young learners. New York. 2005.
2. Ur, P. A course in language teaching: Practice and theory. Cambridge: Cambridge University. 1996.
3. Krashen, S. (1981). Second language acquisition and second language learning. Oxford, UK: Pergamon Press.
4. Schoepp, K. (2001). Reasons for using songs in The ESL /EFL classroom. *The Internet TESOL Journal* [online],7(2),[Accessed 6 October 2013].
5. Schunk D.H… Motivation in Education. Pearson . 2013.
6. Abadiano H. & Turner J. (2005). Reading fluency: The Road to developing efficient and effective readers. *The New England reading association journal 40(1). Retrieved from:* www.reading.ccsu.edu/6th_year_renewal/helen portfolio/files/reading fluency- the road to developing.pdf

Rezyume: *Ushbu maqola talabalarning tinglab tushunish ko'nikmalarini yaxshilashda qo'shiqlardan foydalanish samaradorligini tavsiflaydi. Ushbu muammoni hal qilish uchun eksperimental tadqiqot o'tkazildi. Qo'shiqlardan foydalanish o'quvchilarning tinglash qobiliyatini rivojlantirishga yordam berdi. Tadqiqot natijalariga ko'ra, yosh o'quvchilarning aksariyati qo'shiqlarni tinglash orqali ingliz tilini o'rganishni yoqtirishgan va uni qadrlashgan. Ta'lim va kelajakdagi tadqiqotlarga ta'siri muhokama qilinadi.*

Резюме: *В этой статье описывается эффективность использования песен в улучшении навыков восприятия на слух у студентов. Для решения этого вопроса было проведено экспериментальное исследование. Использование песен помогло учащимся развить навыки аудирования. Согласно результатам исследования, большинству юных учащихся понравилось, и они оценили изучение английского языка, слушая песни. Обсуждаются последствия для образования и будущих исследований.*

Kalit su'zlar*: muloqot qobiliyatlari, kognitiv, natijali, lingvistik, tushunish, ritm, samarali yondashuv.*

Ключевые слова*: коммуникативные навыки, когнитивные, эффективный, лингвистические, понимание, ритм, продуктивный подход.*