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THE COMPOSİTE BASED ON MODİFİED EPOXY OLİGOMER

Abstract: *Epoxy oligomers occupy the second place in the world in terms of production (the first place - the phenol-formaldehyde oligomer). This is due to the fact that it has many valuable properties. One of the main properties is high viscosity. Due to this, it is used as a binder in the preparation of multi-purpose composites. Oligomers produced by different brands in terms of the number of epoxy groups included in their composition differ from each other in many respects and have certain disadvantages. In order to eliminate the shortcomings in the research work, for the first time during the synthesis, the epoxy oligomer was modified with acetamide and the coating composition was developed on its basis. As a result, the main indicators of both the co-oligomer, including heat resistance and adhesion resistance, and the composite coating obtained on its basis are increased by about 1.0 – 1.4 times.*

Key words: *epoxy oligomer, modification, composition, filler, anticorrosive coat.*
Language: *English*
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Introduction

Numerous research works have been carried out in the field of technology and application of epoxy oligomers, and research work in this direction, especially in order to further improve its physical-mechanical and operational performance, is one of the urgent problems. The main characteristics of the connectors (oligomers) used to protect equipment and devices used on an industrial scale from corrosion should always be in focus. When preparing the coating composition, the other components should be selected in such a way that they are both economically and environmentally favorable, do not cause accidents during operation of equipment and facilities, increase reliability, obtain a clean product and, most importantly, to some extent help to protect the metal stock [1 -2]. In order to increase the resistance of the epoxy oligomer to heat and aggressive environments, it was modified with acetamide in a known way, the main physicochemical, physico-mechanical, spectral, as well as performance characteristics of the obtained soligomer were studied. In parallel, a study was performed on unmodified epoxy oligomer for comparison.

Boxite sludge (industrial waste) was used as a filler, polyethylene-polyamide as a binder, and acetone as a solvent in the preparation of the modified soligomer and the unmodified oligomer-based composite for comparison purposes.

The durability of the coating composition prepared using acetamide as a binder from the first modified epoxy sooligomer and as a filler from bauxite sludge from industrial wastes was tested in different environments (in sea water, produced water, oil, gasoline) and positive results were obtained [3 - 11].

EXPERIMENTAL PART AND DISCUSSION.

In the process of chemical modification of the epoxy oligomer (copolycondensation) 1 mole of diphenylolpropane, 3 moles of epichlorohydrin and 0.4 moles of acetamide, NaOH calculated as a catalyst were obtained. It is maintained in the reaction medium in the range of pH = 8 - 9. Dipheniolpropane is first mixed until completely dissolved in the alkaline solution, then epichlorohydrin is gradually added to the mixture from a dropping funnel, the reaction mass is stirred continuously at 70-75 ^{0}C for 30 minutes, and acetamide (modifier) is added in portions. After administration of the modifier, the temperature is raised to 85 ^{0}C, stirred for 30 min and the pH of the reaction mass is checked again. If necessary, alkaline solution is added and the temperature is raised to 90-95 ^{0}C. At this temperature, the reaction mass is stirred for 60 minutes. The resulting sooligomer is transferred from the laboratory reactor to the porcelain bowl, washed several times (until a neutral reaction) with water and dried in a vacuum drying cabinet to a constant weight. The resulting sooligomer is dark yellow.

The main parameters of acetamide-modified sooligomer and unmodified oligomer have been studied by known methods [12-14]. It is clear from Table 1 that the main values of acetamide-modified oligomer are about 1.0 to 1.4 times higher than those of unmodified oligomer.

Table 1. Main indicators of modified co-oligomer and unmodified oligomer

№	Indicators	Unmodified epoxy oligomer	Modified co-oligomer by acetylamide
1.	Amount of epoxy groups, %	18.6 - 19.4	14.2 -16.8
2.	Amount of hydroxyl groups, %	0.8 - 1.0	1.4 - 1.8
3.	Molecular weight	350 - 420	450 - 560
4.	Adhesive strength, MPa	20 - 23	30 - 35
5.	Heat resistance, ^{0}C	118 - 120	142 - 156
6.	Density, kq/m^3	1240 - 1250	1280 - 1320
7.	Softening temperature, ^{0}C	65 - 70	74 - 80
8.	Degree of hardening, %	94 - 96	97 - 98

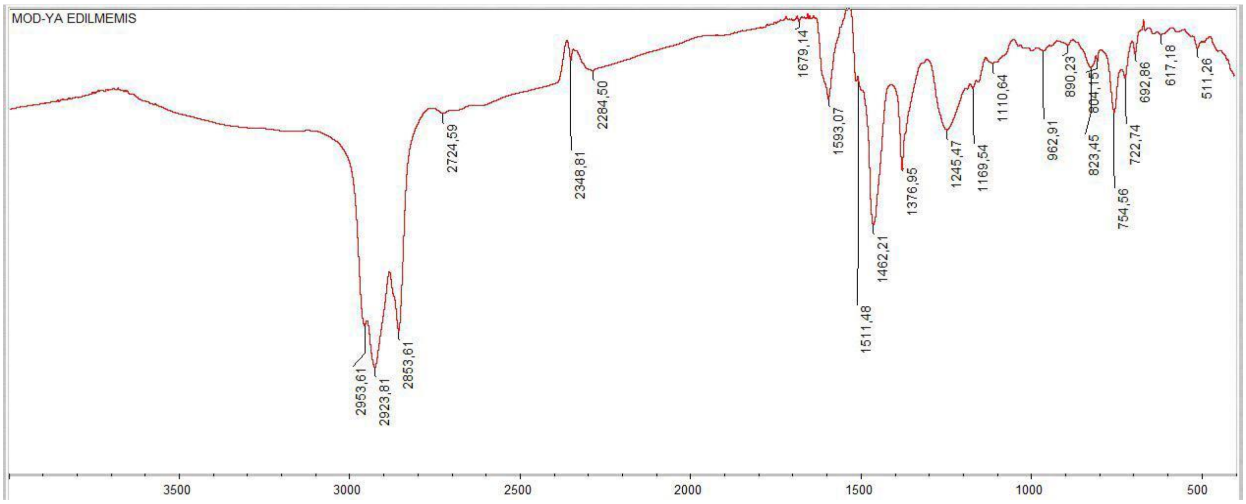
Molecular weight distribution (MWD) of acetamide-modified epoxy co-oligomer was studied by liquid chromatography (exclusive) by the method of chromatography of Rovo firm (Czech Republic). The MWD values of compounds obtained both by the method of polycondensation and copolondication are given in table 2 [15].

Table 2. Molecular mass distribution of acetamide-modified epoxy co-oligomer

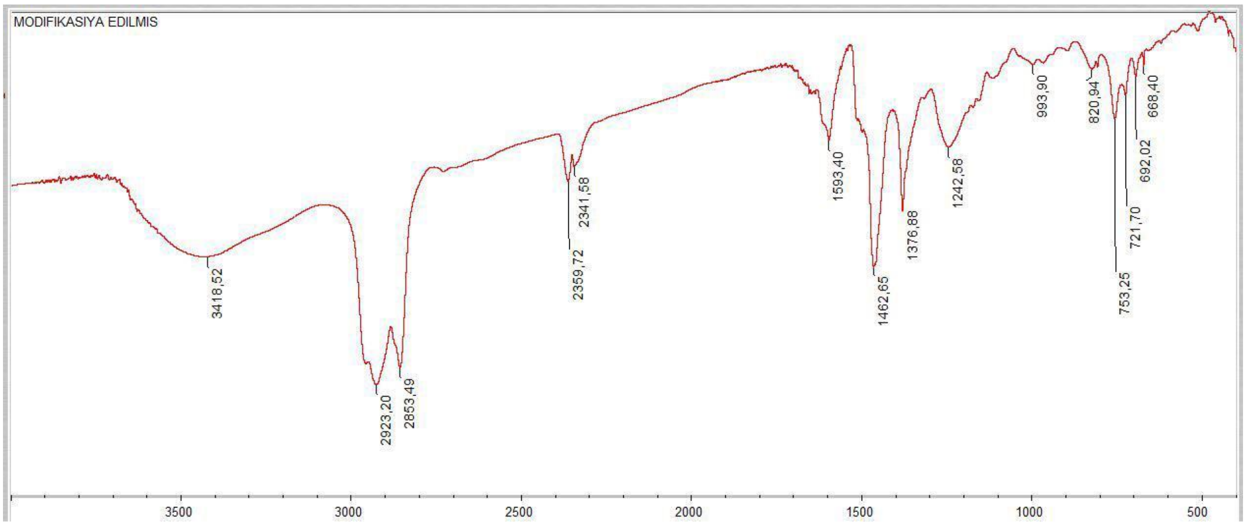
№	Samples	Fraction, %	Molecular mass distribution			V_{Rmax}
			M_w	M_n	M_w/M_n	
1.	Oligomer	76	2389	1370	1.74	11.5 (1680)
2.	Co-oligomer	24	1862	316	2.6	15 (400)

It was found that the molecular weight distribution of the unmodified epoxy oligomer Mw / Mn is 1.74, and the molecular weight distribution of the acetamide-modified epoxy soligomer Mw / Mn is 2.6, ie the fraction with a higher molecular weight is the epoxy oligomer modified with acetamide. Analysis of the IR, NMR, DTA and TQA spectra of the modified epoxy oligomer also showed that as a result of chemical modification, the heat-resistant sooligomer retains functional groups that have been synthesized [16].

Picture 1.



Picture 2.



The composition of the coating composition is given in Table 3.

Table 3. The composition of the coating composition

№	Components	Amount of component, m.f.
1.	Modified epoxy oligomer	45 - 50
2.	Bauxite slime	3 - 5
3.	Polyethylene polyamine	2 - 3
4.	Acetone	50 - 42

Bauxite sludge, which is a waste of alunite processing during the preparation of the coating composition, is a disperse compound with a density of 3700 kg /m^3 and its composition is as follows:

Fe_2O_3 - 48.75 %; Al_2O_3 - 25.56 %; MgO - 5.0 %; SiO_2 - 4.98 %; SO_2 - 1.62 %; CaO -1.32 %; Na_2O + K_2O -1.26 % and 11.51 % volatile compounds.

The metal oxides in the bauxite sludge have a certain effect on the strength of the intermolecular interactions, resulting in a composite with high performance. The effect of the filler on the composite depends on many factors, such as the shape, size, amount of particles in the system, compatibility with the binder, and so on. The presence of filler in the composite contributes to the strengthening of interfacial connections and the increase of its complex physical-mechanical and operational performance. Particles with dimensions of 100 ÷ 1000 nm were used in the research. The particle size of the filler is determined in the "MASTERSIZER-3000" device.

The drying time of the coating composition is 3 days at room temperature and 3-5 hours at 140-150 ^{0}C.

The main parameters of the coating composition were studied (Table 4).

Table 4. The main parameters of the coating composition

№	Parameters	The composition based on unmodified epoxy oligomer	The composition based on modified epoxy oligomer
1.	Viscosity with VZ-4 device, sec.	45 - 50	58 - 60
2.	Adhesive strength, MPa	32 - 34	36 - 38
3.	Hardness, (c.u.)	0.85 – 0.88	0.89 – 0.92
4.	Flexibility, mm (ШГ-1)	2 - 3	4 - 5

The durability of the acetamide-modified epoxy oligomer-based coating composition after 30 days was 0.058 % in seawater, 0.325 % in produced water, 1.045 % in oil, and 1.024 % in gasoline.

Conclusion

1. The main parameters of the chemically modified epoxy oligomer with acetamide were studied for the first time.

2. Using the modified soligomer as a binder, a coating composition was prepared and the main parameters were determined.

3. The durability of the coating composition in different environments was tested.

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FEATURES OF USING «CASE STUDY» IN TEACHING STUDENTS FOREIGN LANGUAGE: ANALYTICAL REVIEW

***Abstract**: An analytical review of pedagogical and methodological research in the field of application of the "Case study" method in teaching students a foreign language in the logic of specific requirements for the stages of its implementation identified by the author is presented: constructing a case, involving students in analyzing a case, individual extracurricular work of a student on analysis of the case, completing tasks for the case, collective / group work of students in the classroom. Based on the analysis of the literature, it has been shown that the peculiarities of teaching a foreign language at a university determine specific requirements for the content and procedural side of the implementation of the Case Study method as an analysis of a foreign language didacticized authentic text and the organization of a discussion in a foreign language, the formulation by a student of an unprepared oral statement in a foreign language.*

***Key words**: case study, foreign language text, educational discussion in a foreign language, understanding of the text, denotational structure of the text.*

***Language**: English*

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***Scopus ASCC**: 1203.*

Introduction

The success of the design of pedagogical models for the development of a student's intellectual activity through the use of the Case Study (CS) method largely depends on the content of a particular discipline. Consider the specifics of using Case Study in teaching a foreign language.

A foreign language course at a technical university currently occupies a special place among the general humanitarian disciplines. Changes in socio-economic formations, processes of a globalization nature, caused by geopolitical, communication and informational transformations, enhance interstate integration. "Intensive migration flows, primarily labor force, strengthening interconnection and interdependence in the life of all countries, peoples and individuals" naturally lead to "international rapprochement and interaction" [1, 6]. At the same time, proficiency in a foreign language serves as a reliable tool for "the successful life of a modern person in a multicultural and multilingual community of people" [1, 6]. The main task of teaching a foreign language at a university at the present time is "not to teach a foreign language, but with the help of a foreign language to navigate in a new socio-cultural context, in a rich information flow, to be mobile and proactive in solving cognitive, educational, professional and personal problems" (N D. Galskova, E. G. Tareva) [1, 7].

Indeed, as A.K. Krupchenko notes, "a foreign language is increasingly turning from a specialty into a language for a specialty, ... due to this, the implementation of the goal of teaching a foreign language is associated not only with the development of the ability for intercultural communication, but also with the development of the ability to professional communication in a multicultural space "[2, 28].

Considering the possibilities of using the CS in foreign language classes at a technical university, E.A.Agafonova comes to the conclusion that CS "allows you to focus on the active mental activity of students, which requires proficiency in certain linguistic means for its registration" [3, 114]. M.V. Kuimova, D.E. Evdokimov and K.V. Fedorov note that the CS is focused on "the formation of key professional competencies, such as the ability to analyze a large amount of information in a short time and make decisions under stress, the development of communication skills, the level of language proficiency in all types of speech activity - listening, speaking, reading and writing, while students abstract texts, prepare speeches-presentations, defend their opinion, find solutions to the problem using a foreign language" [4, 89].

E.A. Agafonova writes about this: "Acquaintance with the case - reading the text on a specific topic in the original or with small abbreviations and minor adaptation and subsequent translation, independent search for a solution (internal monologue speech in a foreign language), the process of analyzing the situation during classes (monologue and dialogical speech, prepared and spontaneous) are all examples of communicative tasks" [3, 115]. At the same time, "communication associated with work on a case, which is characterized by a dispute, discussion, argumentation, description, comparison, persuasion. trains the skill of developing the correct strategy of speech behavior, compliance with the norms and rules of English-speaking communication" [3, 115].

The procedural aspect of using the CS as a means of developing students 'intellectual activity in foreign language classes can be expressed in the stages of the teacher's and students' activities.

Analysis of the scientific literature allowed us to identify the following main stages of the implementation of the CS:

1. Stage of case design.
2. The stage of involving students in the analysis of the case (organizational stage).
3. The stage of the student's individual extracurricular work on the analysis of the case, completing tasks for the case.
4. Stage of collective / group work of students in the classroom, discussion.

The organization of students' activity in the analysis of a case in a foreign language imposes additional requirements on the use of CS, in connection with which we will consider the current state of research in this area.

At the stage of constructing a case, in addition to general requirements for the selection of its content and design (the presence of plot, informational and methodological parts, an abundance of information, "the presence of intrigue, a puzzle, the need to search for additional information, provocation of discussion" [4, 90], problematization and drama and etc.), it should be borne in mind that in the system of categories of teaching a foreign language, a case is primarily a foreign language text and the teaching of a foreign language speech activity is associated with the laws of understanding and generating a text [5]. A foreign language text is the basis for the design of exercises in speech activity (listening, speaking, reading, writing). At the same time, V.V.Kupareva and A.Yu.Starkova note that it is "the text as a system of speech product of native speakers of a foreign language that is of particular value as a systematized model of the functioning of the language and is one of the main educational and methodological units of instruction" [5, 16].

There are the following types of text in a foreign language:

- an authentic text is "an original text that has not undergone absolutely any methodological processing", or a certain "degree of didacticization of the original texts is allowed, provided that this does not violate their reliability, authenticity, if the socio-cultural background of the text is not lost" [6, 18]; the original text itself, written by "native speakers for native speakers" [6, 19];
- didactic text - a text prepared by "native speakers specifically for methodological purposes" [6, 18];
- a semi-authentic text is an authentic text adapted, "as a rule, by shortening and compiling in the interests of the implementation of learning objectives" [6, 18];
- a quasi-authentic text is a text in which "some abbreviations are allowed due to proper names, historical footnotes, that is, a text with especially difficult passages removed" [6, 19].

Within the framework of this classification, a case in a foreign language is a didacticized quasi-authentic text.

In modern foreign language programs, the course content includes the following components:

- spheres, topics and situations of communication within the framework of existing programs;
- linguistic (philological) and regional knowledge;
- language skills and speech skills;
- the nomenclature of speech communication formulas that convey different communicative intentions;
- texts for oral and written foreign language activities;
- educational and compensatory skills [7].

The course of a foreign language in non-linguistic universities often precedes the curriculum of special professional disciplines, which brings an advanced character to the specifics of its teaching - a foreign language can and should become "a means of acquiring new professional knowledge" [2, 30]. Therefore, all components of the content of foreign language intercultural education should have a professional orientation, reflect the social and subject contexts of the future professional activity of the student (A.A.Verbitsky) [8, 9]. A.A. Verbitsky and V.F. Tenischeva introduce the concept of "a typical task of a specialist's professional labor associated with the use of a foreign language" [9]. Such a task is a generalized symbolic model of the situations of foreign language communication that occurred earlier, having a problem and "woven" into the context of performing a certain professional function; "Contains indications of the goal, means, timing of implementation, spatial accuracy of actions and the expected result" [9]. The case should be focused on solving typical tasks.

In order to organize effective independent work of students in a foreign language requires "their awareness of the purpose of the assignment, knowledge of the procedure for their implementation, the ability to use teaching aids, the ability to use supports and create them when preparing the assignment, taking into account the appropriate didactic conditions" [13, 227]. G.V. Rogova, F.M.Rabinovich, T.E.Sakharova draw attention to the importance of constructing specific didactic and methodological tools for independent work of a student with a foreign language text, including tasks and exercises, reminders ("crystallized from experience, objectively existing optimal rules of educational work in relation to a foreign language" [13, 230]), leading questions, support. V.V. Kupareva proposes to use the method of denotative analysis for this and introduces the concept of "denotational structure of the text", believes that the use of the method of "denotative analysis optimizes system of exercises with text, allows you to activate. the processes of comprehension, memorization and assimilation of textual information" [5, 17]. Denotat - "an object, phenomenon, process, etc., which constitutes the content of linguistic expression" [5, 17], is a unit of text content. The system of denotations, "connected by subject relations, is. a model of a certain situation expressed by linguistic means in the text. the content of the text is a dynamic model of the subject situation described in the text" [5, 17].

The next stage in the implementation of CS - the organization of students' work in groups, discussion and presentation of solutions - on the contrary, involves the formulation of an oral unprepared statement in a foreign language, which is a message "characterized by semantic integrity ... its written implementation" [15, 12]. Note that the psychological characteristics of an unprepared speech in a discussion "is fundamentally identical both for natural conditions of communication, and for artificial (ie, educational)", "educational discussion has some features:

- an element of artificiality is inherent in it, which is associated with the fact that the discussion is conducted in a foreign language, and not in the native one;

- educational discussion "organized" by the teacher "[16, 19].

In the process of designing the educational process for the implementation of the CS method, one cannot but take into account the most important methodological principle of pedagogy and psychology of teaching a foreign language - communication. According to E.I. Passov, "if we want to teach a person to communicate in a foreign language, then this must be taught in the context of communication" [17].

The principle of speech orientation of the process of teaching a foreign language (communicativeness) requires that the organization of the educational process be similar to the process of communication in its purposefulness (sociality of speech), motivation, speech partnership, the use of speech means that function in the real process of communication [17]. This means that teaching students using CS should involve students in oral (listening, speaking) and written (reading, writing) communication.

During the design of the discussion in the implementation of the CS, it is necessary to take into account the following elements of the educational speech situation:

1. Conditions of the situation:

- description of the situation (information about the situation, about the participants in the dialogue);

- speech stimulus as a reason prompting speech (the attitude of the speakers to the situation, their specific position);

- the task assigned to the student.

2. The speech reaction of the student.

At the same time, the conditions of the described situation should be interesting to the student, offered in a compact form, and take into account his linguistic capabilities. M.D. Ilyazova and A.I. Kurpesheva note that "an educational-speech situation is a set of speech and non-speech conditions that are necessary and sufficient for a student to correctly carry out a speech action in accordance with the intended communicative task" [19, 23].

The authors draw our attention to the fact that the cases should be designed as a system of educational speech situations, determined by a system of speech exercises. Indeed, mastery of speech activity is possible only in the process of performing exercises.

The effectiveness of role-based communication also "largely depends on the extent to which educational-situational roles will be correctly selected and distributed among the participants in communication" [23, 13]. M.A.Ariyan suggests taking into account the following criteria for selecting the content of a case for organizing a discussion:

- "the correspondence of the speech product expected from the student in the course of playing the role. Linguistic minimum and educational tasks" [21, 13];

- correspondence of the role to the experience of students;

- the presence of the role of moral potential;

- the presence of socio-cultural content in role-playing texts;

- the attractiveness of the role for the student;
- the potential of the role associated with the development of socio-psychological characteristics of the individual [23].

Thus, we can conclude that the analysis of the theory and practice of teaching a foreign language at school and at the university, the organization of work with the text in the course of independent and classroom work, the experience of implementing group educational and quasi-professional activities of students in educational professionally oriented speech situations allows us to determine the main principles of using CS as a means of developing students' intellectual activity in foreign language classes.

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DENSITY FUNCTIONAL THEORY STUDY: ADSORPTION OF SMALL GAS MOLECULES ON ALUMINIUM PHOSPHORENE MONOLAYER

Abstract: *The B3PLYP functional and 6-31G (d, p) basis set calculations were used to investigate the sensitive properties of small toxic gas molecules (CO, CO_2, NO, NO_2) on an aluminum phosphorene monolayer. These gases, which play a significant role in environmental degradation. Adsorption energy, adsorption distance, and charge transfer parameters all supported us in determining the best adsorption point among three adsorption sites: Center, Al, and Bridge. We may infer from the adsorption energy and electron localization function results that these (CO, CO_2, NO and NO_2) gas molecules are chemically adsorbed on an aluminum phosphorene monolayer. Our findings also reveal that after adsorption, there is a significant amount of charge transfer between CO molecules and an aluminum phosphorene monolayer .This indicates that an aluminum phosphorene monolayer is more susceptible to CO, CO_2, NO and NO_2 adsorption than pristine and doped graphene. Furthermore, it is clear that small gas molecule adsorption will modulate the bandgap and work function of an aluminum phosphorene monolayer to varying degrees. Our research will provide theoretical direction for practical applications.*

Key words: *aluminium phosphorene, gas adsorption, DFT, HOMO, LUMO.*

Language: *English*

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Introduction

As a result of the rapid growth in modern chemical industries, the environment has become vulnerable to pollution as a result of toxic and dangerous gases (CO, CO_2, NO, NO_2) that factories emit in large quantities into the atmosphere, and this emission leads to problems including smog and acid rain in addition to other substances that are dangerous to humans and the environment. This is reflected in the ozone layer by depletion as a result of this, so it was necessary to find gas sensors to sense toxic gas particles and monitor air pollution[1,2,3].

To treat these problems, the researcher needs to search for this type of material that represents low energy consumption, fast response and high sensitivity to gases[4]. So we were found that two-dimensional monolayers possess a large surface area and these materials are from a new generation of sensors [5, 6], whereby examining monolayer graphene which shows good properties [7, 8], and developing super-sensitive sensors based on theoretical and experimental studies [9].

AlP monolayer is a layer of aluminum and phosphorous atoms arranged in two dimensions, the thickness of which is equivalent to the diameter of a phosphorus atom or aluminium and its structure is hexagonal. AlP monolayer consists of aluminum and phosphorous atoms, which are arranged in a regular hexagonal network similar to compact bee houses and resemble graphene[1]. The aim of the current study is to find a gas sensor for toxic gases emitted using a monolayer AlP.

II. MODELING AND COMPUTATIONAL DETAILS

In this work, DFT calculations were completed using Gaussian 09 package [10]. This software package is using the standard and modern quantum mechanics basics and there are different types from these. The functional base set B3LYP / 6-31G (d, p) is used to make complete geometry optimizations of the absorption effect of single-layer AlP molecules on CO, CO_2, NO, and NO_2 gas[11]. The B3LYP / 6-31G functional level (d, p) is one of the theory levels commonly used for nanotube structures.[12]. The chemical potential or Fermi energy (E_F) of the complexes was obtained, as shown below:

$$E_F = (E_{HOMO} + E_{LUMO})/2 \quad \dots\dots\dots\dots\dots\dots \quad (1)$$

Where:

-E_{HOMO}: is the energy of the higher occupied molecular orbital.

-E_{LUMO}: is the energy of the lower unoccupied molecular orbital.

In addition, the energy gap in the energy levels (for example) of the system is recognized as follows:

$$E_g = E_{LUMO} - E_{HOMO} \dots\dots\dots\dots\dots\dots\dots\dots \quad (2)$$

The adsorption energy (E_{ads}) was calculated using the following pretty close expression:

$$E_{ads} = E(COMPLEX) - (E(MOLECULE) + E(GAS)) \dots\dots\dots\dots \quad (3)$$

Where:

- E(COMPLEX): The actual molecule energy with gas adsorption.
- E(MOLECULE): The total energy without absorption of the studied molecule.
- E(GAS): Gas molecule's total energy [13].

III. RESULTS AND DISCUSSIONS

1. Adsorption configurations

The AlP monolayer has a single layer, as seen in Fig. 1. There are three types of adsorption sites in the AlP monolayer. The distance between the AlP substrate and the gas molecules is initially set to 2.5 Å. Furthermore, the gas molecule's original orientation is perpendicular to the substrate.

As gas molecules are absorbed in various configurations, several insertion geometries have to be considered. To that end, one (NO, NO_2, CO, and CO_2) gas molecule at a distance from 2.5 Å over Al atom, center and bridge. On the other hand, one original orientation of the triatomic (NO_2), CO_2 is taken into account. The N molecular atom points to Al in the first direction towards the Al-P bridge in the second direction, towards the central ring in the third direction while the C atoms of CO_2 point towards the AlP layer in the same directions. All systems can then relax completely.

The molecules' absorption energies will be used to determine how they interact with the AlP layer. Based on the equation. The higher the adsorption of gas molecules onto the AlP, the lower the Ead value. For further research, the most energy-appropriate adsorption configurations are selected.

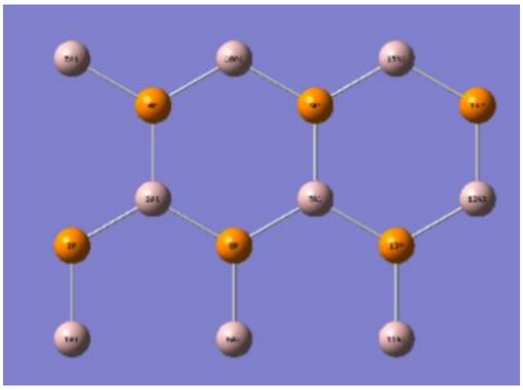


Fig. 1. Geometric structures of AlP monolayer.

After improving the geometry, the adsorption energy (E_{ads}), electronic properties of the studied molecules such as HOMO, LUMO, total energy (E_{tot}), energy gap (E_g) and Fermi Energy (E_F) were found as shown in Table 1.

Table 1: Structural and electronic properties of AlP monolayer.

Model	Site	HOMO	LOMO	E_g eV	E_F e.v
CO	Bridge	-0.19474	-0.15009	1.2149265	-4.69141215
	Al	-0.19472	-0.15003	1.2160149	-4.69032375
	Center	-0.2010	-0.13304	1.8491916	-4.5446142
CO_2	Bridge	-0.19344	-0.12136	1.9612968	-4.282854
	Al	-0.18334	-0.12698	1.5335556	-4.2219036
	Center	-0.19060	-0.13241	1.5833499	-4.39455105
NO	Bridge	-0.19434	-0.13129	1.7155905	-4.43019615
	Al	-0.1949	-0.15287	1.1436363	-4.73141085
	Center	-0.19363	-0.13222	1.6709661	-4.43318925
NO_2	Bridge	-0.17548	-0.13659	1.0581969	-4.2457123
	Al	-0.19563	-0.12327	1.9689156	-4.3386345
	Center	-0.18585	-0.14578	1.0903047	-4.5118261

Table 1 summarizes the adsorption energies of different gas molecules thought about in this work on AlP. We do not take into account the different orientations of adsorbed gas molecules since we are specifically interested in the influence of gas adsorption on the electronic structure of the AlP monolayer. The study of electronic structure, on the other hand, is virtually separate of direction and adsorption sites.

CO, CO_2, NO, and NO_2 adsorption energies, are much higher, indicating a good binding between these two molecules and the AlP layer.

Here, it is useful to compare the adsorption energy of these molecules in graphene as they have been shown to have excellent chemical sensing properties. The E_{ad} values are Studied to be 0.8-1.4 eV for CO on graphene-based on GGA functional. These results are less than those adsorbed on AlP as specific in Table 1. However, the E_{ad} values for NO and NO_2 on AlP are relevance. Q is defined as the total Mulliken charge on the molecules and negative number means charge move from AlP to molecule as shown in Table 2.

Table 2: Adsorption energies, adsorption height and transfer charges for adsorption configurations.

Model	Site	D °A	r °A	E_{ad} eV	Q |e|
CO	Bridge	3.214	3.54	-0.754	+0.19
	Al	2.165	3.54	-1.749	+0.18
	Center	1.946	3.54	-1.945	+0.2
CO_2	Bridge	2.276	3.54	-0.62	+0.27
	Al	2.89	3.54	-0.733	+0.3
	Center	1.962	3.36	-0.7 33	+0.3
NO	Bridge	1.950	3.39	-3.5	-0.2
	Al	2.002	3.39	-3.6	-0.3
	Center	1.937	3.39	-3.5	-0.2
NO_2	Bridge	1.974	3.39	-1.11	-0.2
	Al	1.889	3.39	-0.408	-0.1
	Center	1.919	3.39	-0.71	-0.1

1. CO **Adsorption on AlP monolayer.**

The CO gas molecule adsorption process on the AlP monolayer is examined. Fig.2 depicts the most robust adsorption structure of the CO-AlP complex. The CO molecule is positioned perpendicular to the AlP plane at different positions, namely the Al atom, the middle ring, and the Al-P bridge. Adsorption energies are -0.754, -1.749, and -1.945 eV, respectively. The mean atom-atom distance (C-Al bond length) between CO and AlP is 2.165, which is less than the AL-C dimer bond length (3.54), and minimum distance of atom-atom from CO to the bridge Al-P is 3.214, which is less than the length of the AL-C dimer bond (3.54). The minimal atom-atom distance between the CO and the middle ring Al-P is 1.946, which is less than the length of the AL-C dimer bond (3.54). These findings indicate that the CO is chemically adsorbing on the AlP layer. The determined E_{ad} of CO on AlP is substantially greater than the values recorded for CO adsorption on AlP monolayer (0.112 eV), N-doped graphene (0.40 eV), and B-doped graphene (0.14 eV)[14]. Furthermore, the relationship of CO and AlP results in a charge shift of 0.2e from the AlP layer to CO. CO molecule's C and O atoms lose and gain electronic charges of 0.05 and 0.15e, respectively.

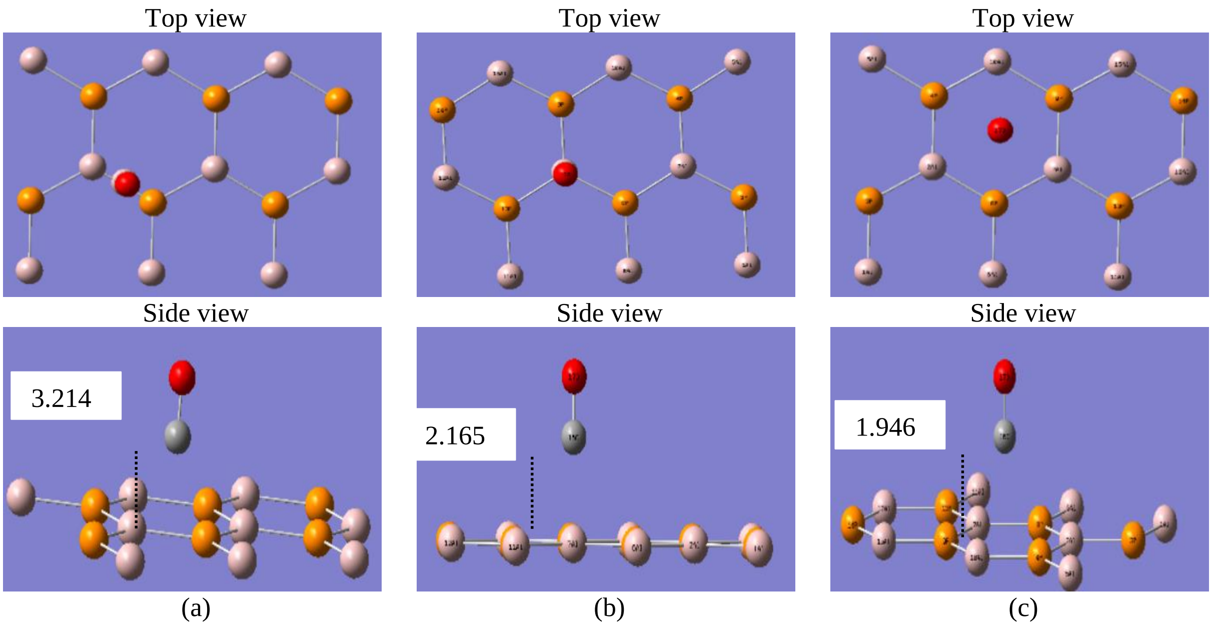
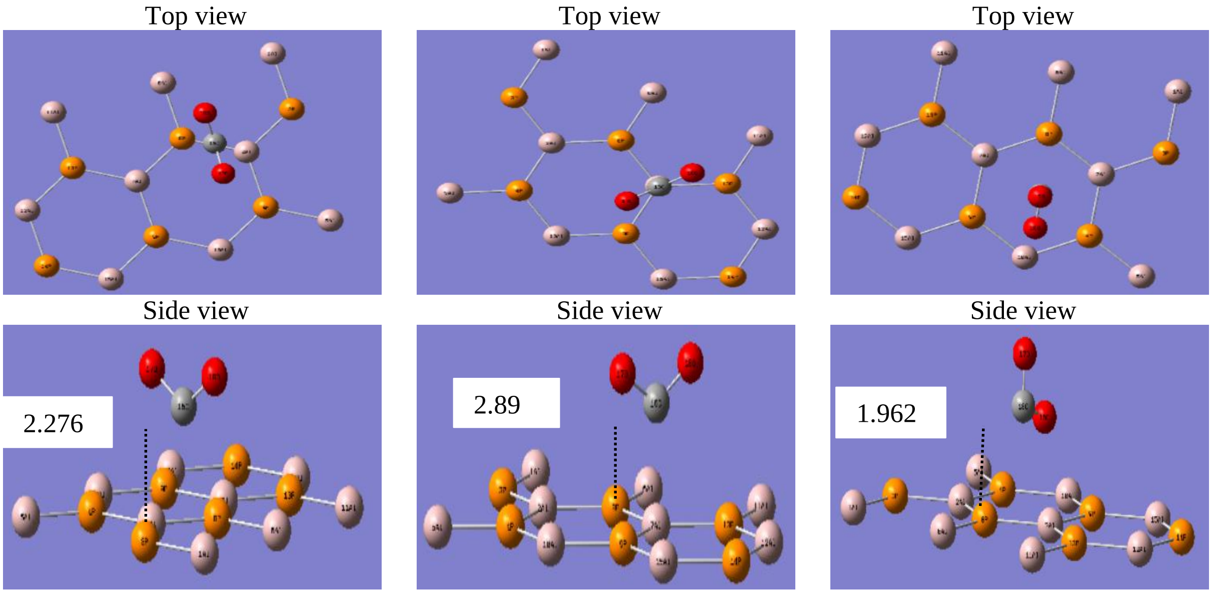


Fig.2: Top views and side views of most stable configurations of (a) bridge, (b) Al -atoms (c) center, AlP monolayer molecule adsorbed CO on the top site of AlP.

2. CO_2 Adsorption on AlP monolayer.

The mechanism of absorption of CO_2 on AlP is further complex than the else molecules studied. The AlP plates and the CO_2 molecule undergo significant structural variations upon adsorption on AlP.

Fig.3 represents the CO_2-AlP complex's most stable adsorption structure. The CO_2 molecule is vertical to the AlP plane at three points: the Al atom, the middle ring, and the Al-P bridge. The corresponding adsorption energies are -0.62, -0.733, and -0.733 eV. The average atom-atom distance (C-Al bond length) between CO and AlP is 2.8, which is less than the AL-C dimer bond length (3.54), and the minimum atom-atom distance between CO_2 and the bridge Al-P is 2.214, which is less than the AL-C dimer bond length (3.54). The atom-atom distance between CO_2 and the middle ring Al-P is 1.962, which is less than the length of the AL-C dimer bond (3.54). These results suggest that CO_2 is chemically adsorbing on the AlP substrate. Furthermore, the CO-AlP reaction causes the charge of 0.3e to be transferred from the AlP layer to the CO. The C and O atoms lose the CO molecule and gain an electrical charge of 0.05 and 0.25e, respectively.



(a) (b) (c)

Fig.3: Top views and side views of most stable configurations of (a) bridge, (b) Al -atoms (c) center, AlP monolayer molecule adsorbed CO_2 on the top site of AlP.

3. NO Adsorption on AlP monolayer

When NO is exposed to the AlP layer, it adopts an oblique direction with respect to the level of AlP, seen in Fig. 3. The N atom of the NO atom indicates Al atom in the AlP. The angle of O-N-Al is 129.51 degrees. The interaction of the electron-lacking Al atom with the electron-donated N atom of NO results in a strong absorption energy of (-3.5 to -0.61)eV and the creation of a strong N-Al bond (2 Å), which implies that NO is a chemical adsorption on the AlP layer. It must be remembered that the distance of Al-N (2 Å) in NO-AlP complex is smaller than length of the Al-N bond, and the monolayer is completely different from that of graphene. For NO, the E_{ad} values on AlP were Specific to be 3.5-3.6 eV and are greater than those on graphene with 1.1-2.9 eV[14].

Demonstration of the covalent bonding amid AlP and NO Adsorption leads to a strong artificial pull between the molecule and its adsorbents. Table 1 summarizes the adsorption energies of the different structures. The adsorption energy obtained for NO on AlP is much higher than that recorded for native graphene (0.30eV) and N-doped graphene (0.40eV) [14]. It's also comparable with the NO absorption energy recorded on B-doped graphene (1.07 eV) [14]. When NO is absorbed onto the AlP sheet, a clear charge of 0.35e of NO is transferred to the AlP sheet.

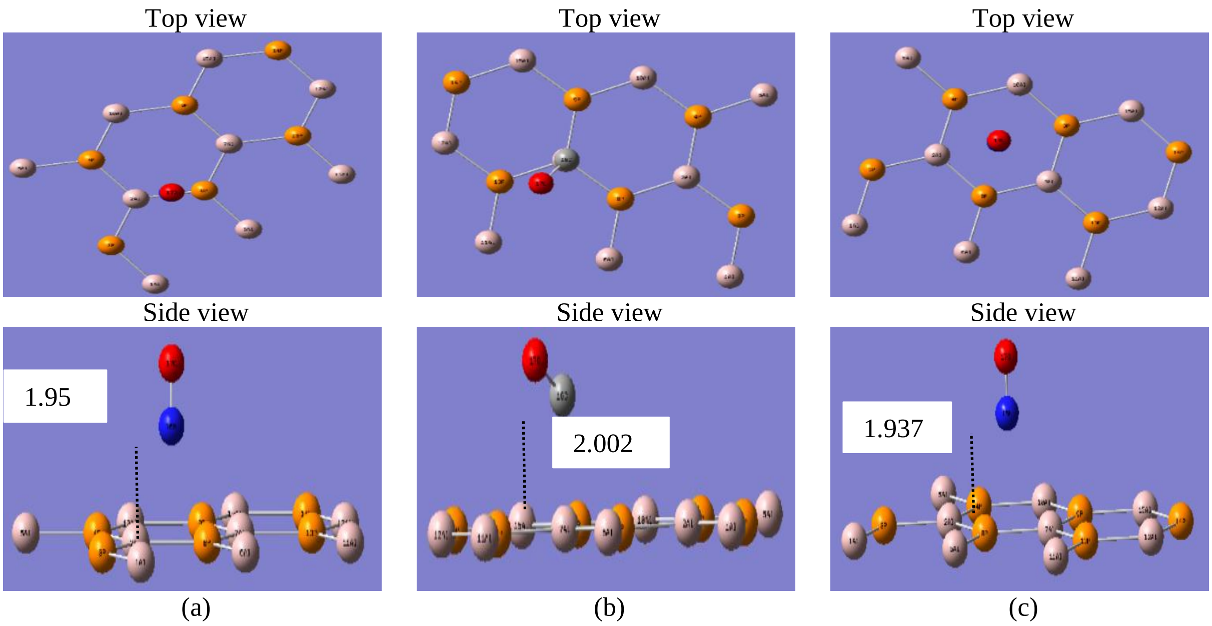


Fig.4: Top views and side views of most stable configurations of (a) bridge, (b) Al -atoms (c) center, AlP monolayer molecule adsorbed NO on the top site of AlP.

4. NO_2 Adsorption on AlP monolayer

The adsorption mechanism NO_2 over AlP is more complex than the other molecules considered above. Absorption on the AlP causes major structural modifications in both the AlP layer and the NO_2 molecule. The bond lengths N-O, NO_2 are increased isolated (1.21) to 1.79 and 3.11, this means that during absorption in the NO and O species the molecule is completely separated. N-O-N binding angle of NO_2 isolated decreases from 133.06 to 95.04 that after complexing with AlP. The atom of the O-molecule form a covalent bond of 1.38 and 1.40 length with the Al and P atoms in AlP sheet respectively..

The bond angle between Al -O- P is 100.68, the NO part of the NO_2 molecule, on the other hand, forms an N-P covalent bond with another Al atom in the same Al-p hexagon. The chemical absorption NO separated on AlP is very close to the NO molecule on the AlP layer. The O-N-Al angle is 130.15, and the N-Al bond thickness is 1.65. The NO_2 absorption energies on the AlP sheet, and the adsorption energy measured for NO_2-AlP is higher than that calculated for NO and CO molecules. Most interestingly, the E_{ad} scale of NO_2 on AlP is greater than that recorded for NO_2 absorption on graphene (0.48 eV). N-doped graphene (0.98 V), B-doped graphene (1.37 V)[14]. Furthermore, a large charge of 0.2 e of NO2 molecule is transferred to the AlP layer. This wide charge transfer corresponds to high NO_2 absorption energies over AlP.

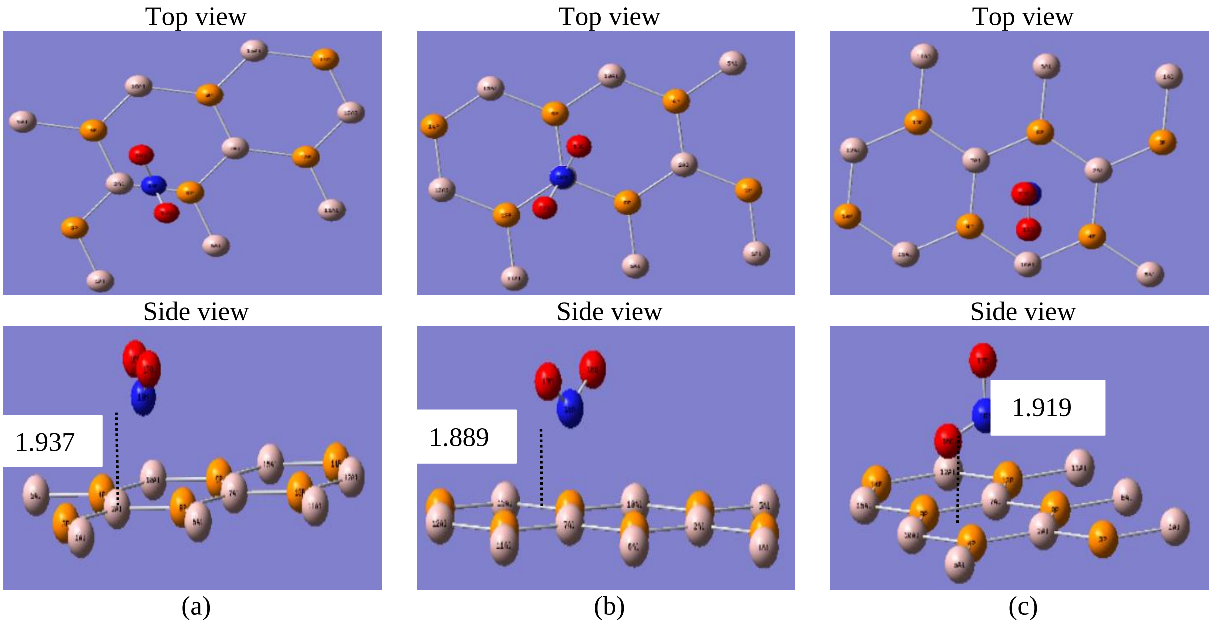


Fig.5: Top views and side views of most stable configurations of (a) bridge, (b) Al -atoms (c) center, AlP monolayer molecule adsorbed NO_2 on the top site of AlP.

The initial distance between the gas molecule and the substrate is set to 2.5 for each adsorption formation. The adsorption distance is calculated, which is defined as the shortest distance from atom to atom between the gas molecule and the substrate (see Fig.6). Adsorption distances of 1.95 on the bridge, 2.0 on the Al atom, and 1.93 in the center of the NO molecule of the system on the AlP layer.

For NO_2, adsorption distances of 1.97, 1.88, and 1.91 are calculated, respectively. The smaller the adsorption distance, the stronger the interaction. For CO, adsorption distances of 3.21, 2.16, and 1.94 are measured on the AlP layer, respectively. As a result, chemical bonds develop between the AlP layer structure and gas molecules. Chemical bonds form in the case of CO_2 gas molecule when the adsorption distances of 2.27 on the bridge, 2.0 on atom Al, and 1.96 in the middle are less than number of the corresponding atom covalent radii (3.54).

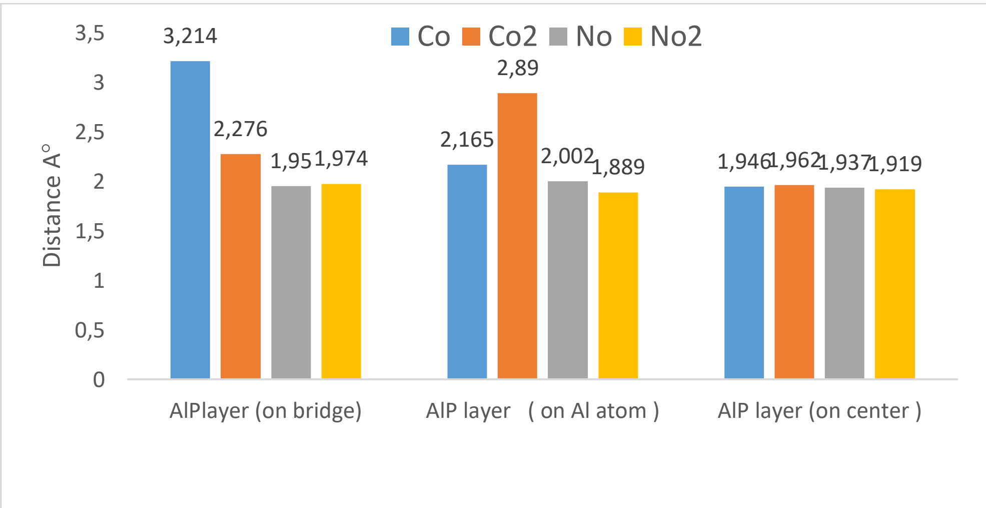


Fig. 6. The absorption distance of gas molecules on AlP layer system.

5. The electronic structure of the AlP monolayer

The HOMO and LUMO orbit are located next to the Fermi plane, which helped us know the acquaintance of electron states near the Fermi surface and the acquaintance from the transported electrons. Fig.7. shows the distribution of the HOMO and LUMO orbital. We found that the electron cloud distribution meaning in these two orbits is

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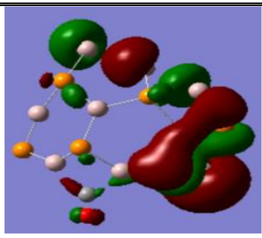
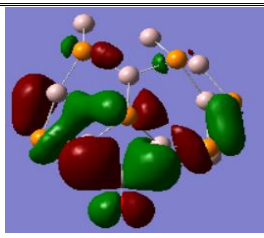
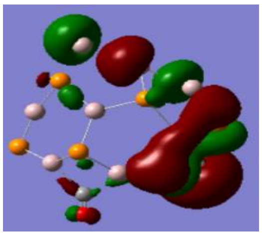
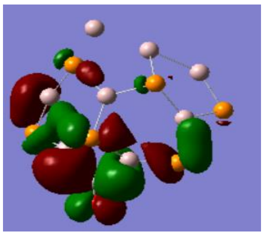
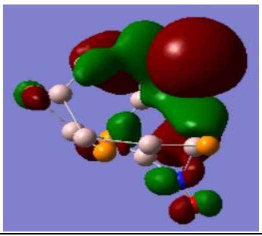
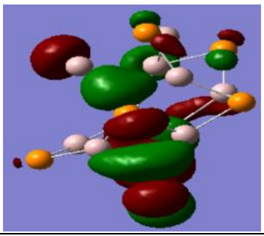
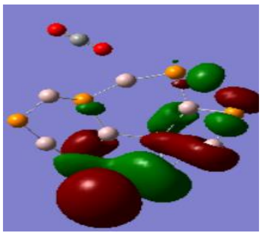
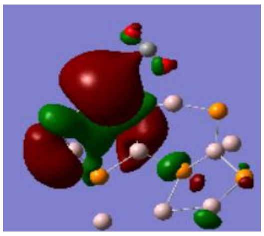
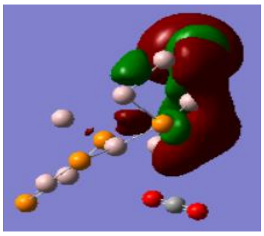
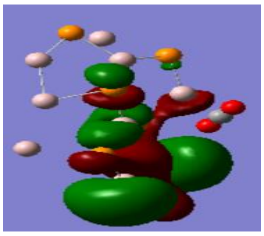
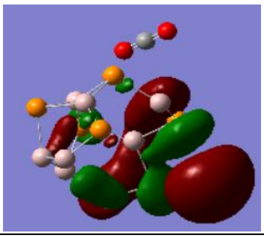
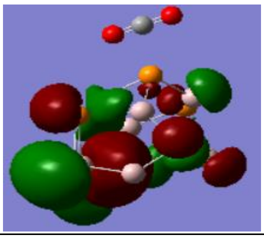
concentrated in the edge region of pure graphene, where the electron states were mainly near the Fermi surface.

Fig.7. Demonstrates the HOMO and LUMO energies of the AlP mechanism after gas absorption. Because of the short absorption distance, high charge transfer, low absorption energy, CO_2, CO, NO, and NO_2 have no effect on the AlP system's E_f. gives that the Fermi level the same to the -4.69 eV Though there appears bandgap at the level of about 1.216 eV.

After CO absorption, the band structure is almost identical to that of AlP away from the Fermi level seen in Fig.7, a bandgap of about 1.22 volts appears after complete relaxation, and Fermi level is almost unchanged due to the valence electrons from the introduced Al atom are Below is a C atom, indicating that the atom can act as a p-type impure.

Model	Site	HOMO		LOMO
CO	Bridge		E_g eV 1.2149265	
	Al		E_g eV 1.2160149	
	Center		E_g eV 1.8491916	
CO_2	Bridge		E_g eV 1.9612968	
	Al		E_g eV 1.5335556	
	Center		E_g eV 1.5833499	

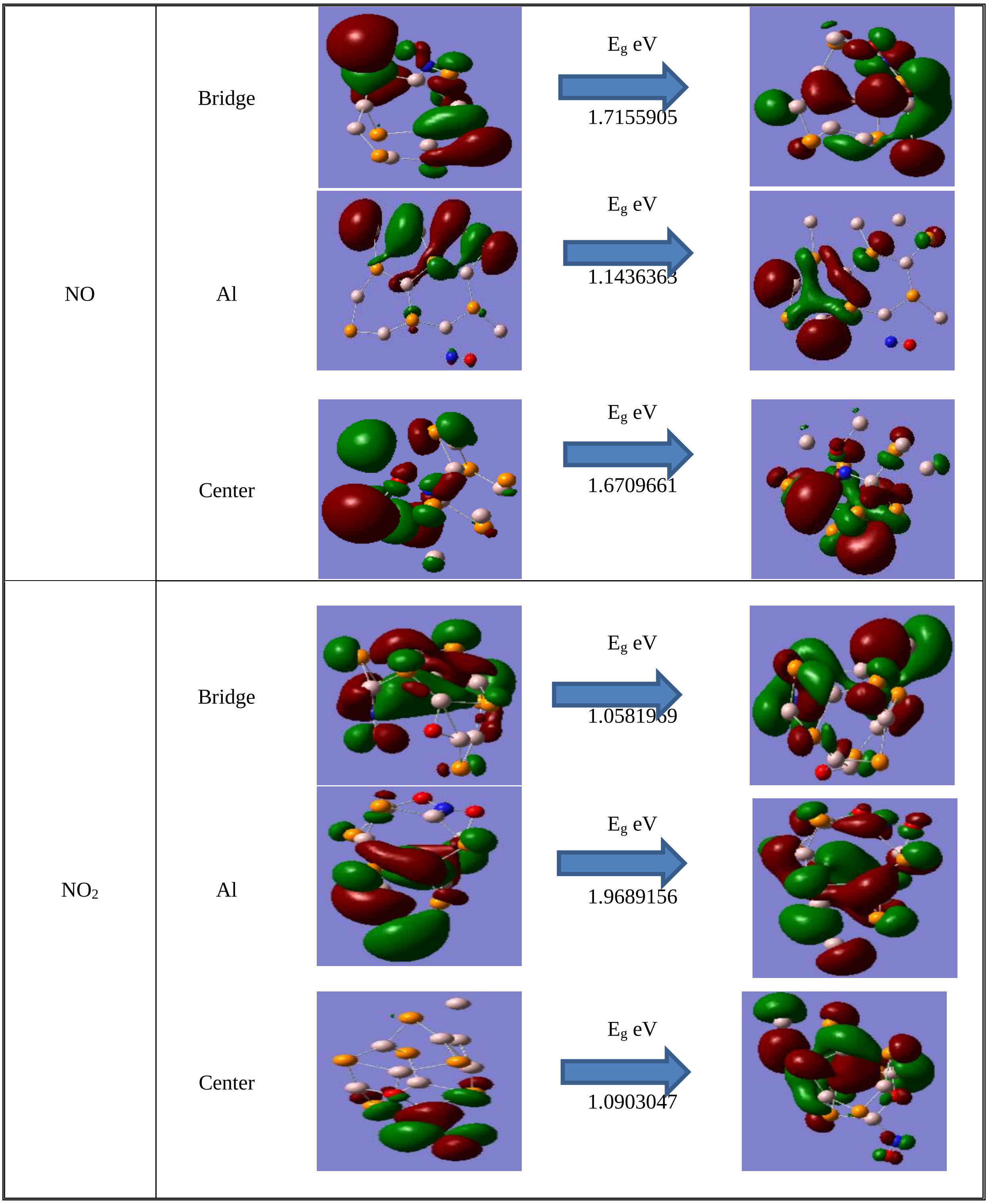


Fig.7: Shows the DFT calculation of HOMO and LUMO shapes for studied AlP monolayer adsorption molecules.

CONCLUSION

In summary, the results measured using DFT theory show that when exposed to normal and polluting gas molecules, the AlP monolayer displays various behaviors. The AlP monolayer has a higher affinity for CO_2, CO, NO, and NO_2 molecules. The chemical adsorption character of CO, CO_2, NO, and NO_2 adsorptions can be seen clearly with broad E_{ad}, charge transfer, and short adsorption distance. This suggests that AlP sheet are ideal for use as CO, CO_2, NO, and NO_2 gas sensors.

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STUDY OF THE PROCESS OF ETHYLENE CONVERSION ON NAY SEOLITE AND ITS MODIFIED SAMPLES

Abstract: *NaH zeolite was modified using the ion exchange method and NaHY and NaLaY catalyst samples were synthesized. The activity of primary NaY zeolite and its synthesized samples has been extensively studied in the process of ethylene conversion. It was found that the modified samples had a higher activity than the original NaY sample. The highest selectivity for aromatic hydrocarbons belongs to the NaLaY (2% La) sample. In the presence of the above sample, the yield of benzene and toluene from the process was 25.3 and 34.5% (3500C, 1 atm. Pressure), respectively.*

Key words: *catalysis, zeolite, ethylene. oligomerization, aromatization.*
Language: *English*
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Scopus ASCC: *1600.*

Introduction

As is known, zeolite-containing catalysts are widely used in various fields of the petrochemical industry. One of the urgent issues in this direction is the process of oligomerization of small molecular weight olefins on zeolite catalysts and their transformation into more valuable substances.

In the presented work, H-form (NaHY) and La-form (NaLaY) of NaY zeolite catalyst were synthesized using ion-exchange method. The synthesized samples and the initial NaY sample were studied in detail in the process of ethylene conversion [1-3].

The experimental part

To synthesize a NaHY sample, the powdered primary NaY zeolite was treated with NH4Cl solution (1N). The ion exchange process was carried out at a temperature of 800 C with continuous stirring. The process was carried out within 10 hours by replacing the solution with a new one. After the ion-exchange process was completed, the solution was filtered and the obtained solid mass was dried in an oven at 1300C. The synthesized catalyst sample was then prepared for the process. NaLaY (2% La) catalyst samples were synthesized by the same method. Here, the initial NaY sample was treated with a solution of LaCl2 (0.1N) salt. The solid obtained at the end of the process was dried and then incinerated at 5500C. Finally, the synthesized sample was prepared for the process by forming granules of about 2 mm in size.

The activity of the synthesized catalyst samples has been extensively studied in the process of ethylene conversion. The process was carried out in a flowing laboratory facility at atmospheric pressure and in the temperature range of 150-5500 C. At this time, the volume of gas supplied to the reactor was taken as 1800 h. Analysis of gas and liquid products from the process was carried out using the chromatographic method.

Results obtained and their discussion

Studies have shown that all three catalyst samples are active in this process. Figure 1 shows the temperature dependence of the conversion rate of ethylene on the studied catalyst samples

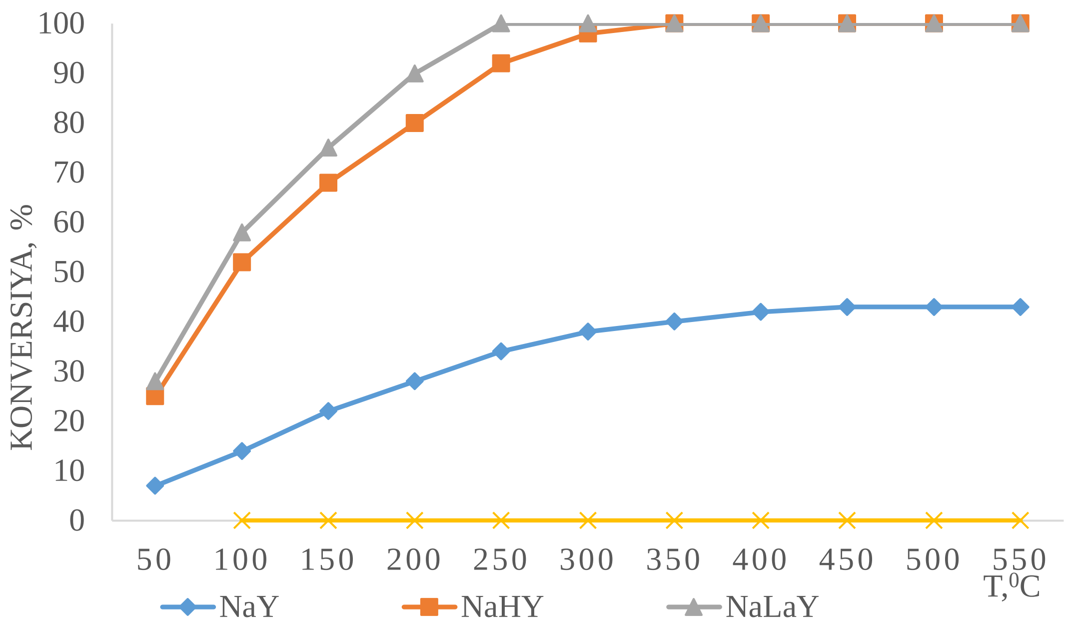

Figure 1: Temperature dependence of the rate of conversion of ethylene on NaY, NaHY and NaLaY catalyst samples

As can be seen from the figure, the maximum conversion rate of ethylene on the original NaY sample was about 43%, while on other samples it was 100%.

Studies have shown that oligomerization of ethylene occurs on primary NaY, NaHY and NaLaY samples up to 2500C. The reaction products obtained in this case and their output are given in Table 1.

Table 1. Results of conversion of ethylene on catalyst samples of different composition (t = 250oC, volume speed = 1800 hours-1)

Catalyst sample	Exit , %					
	$\sum C_2$-C_4	$\sum C_4H_8$	$\sum C_4H_{10}$	i-C_5H_{12}	$\sum C_6$-C_8	$\sum C_{8+}$
NaY	2,2	86,2	8,0	2,6	1,0	0,0
NaHY	7,6	22,4	8,5	20,6	26,4	14,5
NaLaY	5,3	14,5	6,3	12,7	28,6	32,6

As can be seen from the results given in Table 1, ethylene is mainly dimerized on the initial NaY sample at this temperature. In this case, the high yield of high molecular weight hydrocarbons from the conversion of ethylene on decanted catalyst samples (NaHY, NaLaY) suggests that the process is characterized by a more complex mechanism in the presence of these samples. Thus, in this case, along with the oligomerization reaction, we can say that isomerization, disproportionation and cracking reactions occur in parallel [3-5]. As can be seen from the results given in Table 1, at the indicated temperature

It was found that at temperatures above 3200C, the yield of the liquid product begins to increase, and this is observed up to 4500C. The decrease in the yield of liquid products at relatively high temperatures (450-5500C) can be explained by the production of small molecular weight hydrocarbons as a result of the acceleration of the cracking reaction.

It was determined that the liquid product obtained from the process at a temperature of 3500C consists of benzene, toluene, ethyl-benzene, methyl-ethyl-benzene and aliphatic hydrocarbons. Table 2 shows the yield of liquid products obtained from the conversion of ethylene to catalyst samples at a temperature of 3500C.

Table 2. Yield of liquid products obtained from the conversion of ethylene on catalyst samples of different composition (t = 350oC, volume rate = 1800 hours-1)

Catalyst sample	Exit , %					
	benzol	toluol	etil-benzol	metil-etil-benzol	alifatik karbohidro genlər	ksilollar
NaY	4,4	6,2	2,4	1,2	85.6	0,2
NaHY	23,6	28,4	6,5	4,6	30,4	6,5
NaLaY	25,3	34,5	8,3	12,6	11,7	7,6

As can be seen from the results in Table 2, the highest yield of aromatic hydrocarbons corresponds to the NaLaY catalyst sample.

The end result

Thus, based on the results of the conversion of ethylene on a given catalyst sample, we can say that at relatively low temperatures (50-1500C) olefin dimerization occurs mainly. However, at relatively high temperatures (200-3500C), isomerization, disproportion and cracking reactions are accelerated in parallel. It was found that the initial NaY sample had low activity in this process. In its presence, the maximum value of the conversion rate of ethylene was only 43%, and the reaction product consisted mainly of aliphatic hydrocarbons. The conversion rate of ethylene on NaHY and NaLaY samples was 100%. The formation of aromatic hydrocarbons on these samples is observed starting from 3200C, and the highest selectivity corresponds to the NaLaY sample. The yield of benzene and toluene obtained from the conversion of ethylene in the presence of the above sample was 25.3 and 34.5%, respectively.

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ON THE NATURE OF CHANGES IN GERMANIC LANGUAGES UNDER THE INFLUENCE OF THE GREAT MIGRATION OF PEOPLES

***Abstract**: The article deals with the problem of the influence of the Great Migration of Peoples (GMP) (II-VII centuries AD) to the formation and development of Germanic languages. The author discusses the role of GMP in changing the linguistic map of the primary dispersion of Germanic tribes in Europe.*

The article discusses the linguistic situation in Europe before GMP, during it and after GMP. The problem is very topical because this migration had greatly changed ethno-social situation in Europe. Three major tribal unions: Germanic, Romance and Turkic tribes were leading components in this migration. They had contacts with each other in the North, West, East and South of Europe. These contacts involved also other tribes belonging to minor groups or families, like Celtic, Iranian, Slavic, Iberian, etc.

At the end of the article the author writes about the role, participation, degree of activeness and fate of the tribes in this process.

***Key words**: Great Migration of Peoples, Ethnogeography, differentiation, integration, linguistic continuity, wave theory, linguistic map, language variety, tribal dialect, migration, ethnic identity, lingua-franca, language contacts.*

***Language**: English*

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***Scopus ASCC**: 1203.*

Intoduction

The great Migration of Peoples is one of the most significant events in the History of Eurasia at the beginning of first Millennium, namely in the II-VII centuries, CE.

A great lot of literature was devoted by the scholars – historians, geographers, linguists, archeologists, etc. to this event. [5; 6; 7; 11; 12]

The History of Mankind knows very many migrations of peoples, like – migration of Indo-European speaking people from Central Asia to Europe and South East Asia; Migration of Greek people from the Central part of Europe to Apennine peninsula; Migration of Sumerians to Altai; Migration of Northern People to Near East; Migration of Goths to Eastern Europe, and others. [11, p. 248]

But here, firstly we observe the Great Migration, not a simple migration of one tribe or one people. Here we observe a great migration of peoples, sometimes united under one name, or sometimes not at all united tribes bearing there own tribal name. They all moved in one direction.

Secondly, the difference was in the fact that it was accomplished by hundreds of tribes moving in different directions. [6, p. 45]

Therefore this process was called A Great Migration of peoples, and it determined the fate of hundreds of tribes living in Europe. Many of them died out in the wars. Some tribes were involved by other tribes, many of them changed their ethnicity due to the result of the wars.

In this article, we will make an attempt to analyse the linguistic situation in Europe before the Great migration and after it. And we will try to explain the events of that period and the fate of the languages spoken by the peoples involved in this process.

One of the greatest thinkers of ancient Greece, an astronomer Ptolomeus (in Latin “Ptolemaeus”, in Italian “Tolomeo”) worked out the theoretical basis of his geocentric system of the world. On the basis of this theory he draw the spheric Map of the Earth. His famous book “Megale Syntaxis” survived to our days. This title can be translated as “Great Construction”, or “Great Combination”. That book was translated into Arabic in Middle Ages under the title “Almagest”. Almagest can be translated into English as “the Greatest of the greats”. [1, p. 237]

In this book, Ptolomeus drew the map of Germany and gave the names of the geographical places and tribes living there.

He mentions the following Germanic tribes in his book: “*kimers, funduzes, halls, garuds, kabands, sabalings, sigulons, sakses* (or *saxe*), *harks, anivariys, teutons, bars, angivars, langobards, farodnis, teutonbars, sidins, rugiys, rutikleys, elveons, burgunds, guthons, omans, lugs, avarpens, semnons, svevs, silings, korkonts, vatins, venahems, lugiduns, lupfordiys, frisians, hemoes, brukters, sugambrs, tenkters, casuars, dulgubns, angelies, nertervannars, danduts, turons, marulings, curions, hetuaris, vargions, karinns, helvetians, parmehekams, hatts, tubants, teviochems, markomans, sudins, advabekamps, bems, sidons, kogns, visburgs, anartofracts, ombrons, avaarims, frugundions, sulons, yazigs* (some authors think that yazigs are related to *sarmats*)”. [1, p. 238]

In this article we will not give information about the geographical situation, culture, ethnic and other features of these tribes, also about the political structure of the state where these tribes lived because one can get more than significant information about them in the books and encyclopedias on history and geography. [1, p. 243-261]

Keeping in mind the fact that we are not historians, neither geographers nor ethnographs and all what we want to know is the language spoken by these tribes. Here we are interested in the intralinguistic and extralinguistic causes of their uniting under one name or formation of other languages as a result of some other sociopolitical factors.

We want to find an answer to the question “What would have been with the dialects of those 60 or more tribes if there was no Migration of Peoples?”

We can make hypothesis in relation to what would happen if there was no migration.

1. As a result of the socio-economic and political development on the area these small tribes would develop into greater unions of tribes then forming feudal Kingdoms or Knighthoods. Each 5-10 tribal dialects or languages would integrate into one of the related languages and we’d have now 10-15 Germanic languages and the “Linguistic continuity” could be observed in Europe now. [2, p. 344]

2. If the languages chose differentiation as a trend for their development we would have 50-80 minor Germanic languages now. These languages would be very close, similar and mutually intelligible and the linguistic Situation would prove Iogann Smidt’s famous “Wave theory”.

3. But there is also the third possible way of development where Romance and Slavic languages develop in more greater steps and Europe would consist of two big parts – Romance Europe and Slavic Europe. And Germanic languages would remain as the languages of fishermen and ship-builders living on the islands of Northern Europe. [10, p. 52-53]

4. According to the last variant Celtic tribes would be reborn and the Continent of Europe would be Celtic, where the territories from the English Channel to Southern Russian steppes and the Black Sea would be inhabited by the Celtic speaking tribes.

But none of those 4 scenarios was realized because there developed no socio-economic and political, military conditions for the immanent development for the Romance, Germanic, Celtic and Slavic peoples, because of the invasion, intrusion or penetration of Turkic tribes, who were referred to as strangers (Allies) for European continent.

And the Turkic peoples gave an impulse to a very great socio-political event called “**The Great Migration**” which took place in the II-VII centuries CE.

Earlier we used the statement that “**Turkic tribes were strangers in Europe**”. This thesis has been accepted by everyone, commonly strengthened in the brains of millions in the dissertations, monographs, articles, coursebooks, manuals, lectures and speeches on World History, History of Europe, or even on the History of Uzbekistan. This thesis is accepted as an absolute truth in these works. [2, p. 539]

The followers of this thesis state that Europe in ancient times was inhabited by the above-mentioned Celtic, Germanic and Romance tribes with some Iberian, Slavic, and Iranian tribal elements. [11, p. 252]

Now let’s analyse how all this began.

The Marcoman wars (166-180 CE) can be marked as the beginning of the Great Migration of Peoples. At the end of the IInd century and the beginning of the IIIrd century Goths, Burgundians and Vandals moved to South-East in the direction of the Black Sea. There in the Black – Sea steppes Goths were divided into two groups – Ostgoths and

Westgoths. Many other tribes inhabiting those lands, like scythians, getic people and others were involved to the newly formed Gothic union of tribes. [3; 4]

West Germanic tribes, like alemans, franks became very active at the borders of the Roman Empire. Alemans occupied Retia in 261 and came close to Mediolan (now Milan). [8; 6, p. 172]

Franks invaded Gavel in 258-260 from the lower Reine. In 375 the Hunns occupied a greater part of East Europe, made Pannonia their central territory, now Hungary. We will not get into details of this great event in the history of Europe. We can only recommend the special literature on history, where these and other related problems are discussed.

We can mention the names of some other tribes that took part in this Migration in its different periods and territories.

Let's take *alans, sarmats, gepids, langobards, britts, vestgoths, bulgarians, svevs, franks, saxons, jutes, angles*, and many others. This list would become very long because hundreds of tribes took part in the Migration being a part of a tribal union headed by one of the above-mentioned greater tribes. [9; 10; 12]

This was a kind of brief introduction to the problem planned for this article to discuss. Now we will pass on to the main task of this article, that is to discuss the changes in the structure of Germanic languages as a result of this great migration. Let's take some examples, illustrating the phonetic changes of those times:

ē > ā: OHG: jār, OIcel.: ār; Goth.: jēr.

z > r: OHG: mēro (mehr); OIcel.: meiri; - Goth.: maiza.

þl > fl: OHG: fliohan; OIcel.: flӯja; - Goth.: þliuhan.

u + vowel > ō: Goth.: bauan [boan] > OESc.: bōa, OWSc.: gnūa.

d > t: OLG: dēl > OHG: teil (Teil); OLG: dag (Goth. dags) > OHG: tag (Tag); OLG: fadar (Goth.: fadar) > OHG: fater (Vater); OLG: waldan (Goth.: waldan) > OHG: waltan (walten); OLG: hard (Goth.: hardus) > OHG: hart (hart); OLG: bindan (Goth.: bindan) > OHG bintan (binden); OLG: land (Goth.: land) > OHG: lant (Land).

þ > d: Goth.: þaurnus > OHG: dorn (Dorn); Goth.: þreis > OHG: dri (drei), Goth.: þat > OHG das (das); Goth.: airþa > OHG: erda (Erde). [10, 86-87]

These changes took place in the south of Germany where the contacts between dialects or tribal languages were great. Here Germanic tribes went into contact with the dialects of the Romance territories. For example:

OHG: mûr < Lat.: murus.
OHG: fenstar < Lat.: fenestra.
OHG: ziagal < Lat.: tequla.
OHG: pforta < Lat.: porta.
OHG: pfost < Lat.: postem.
OHG: kellari < Lat.: cellarium.
OHG: pfilari < Lat.: pillarium.
OHG: spihhāri < Lat.: spicarium.

Old Germanic tribes learned the words and notions related to agriculture namely horticulture, and viticulture. For example:

OHG: bira < Lat.: pirum
OHG: kirsa < Lat.: cerasea
OHG: pfruma < Lat.: prunum
OHG: kurbiz < Lat.: cucurbita (cucumber)
OHG: pfeffar < Lat.: piper (pepper)
OHG: eplth < Lat.: apium
OHG: kōl < Lat.: Caulis (cabbage)
OHG: wīn < Lat.: winum (wine)
OHG: ezzih < Lat.: acetum (acid)
OHG: most < Lat.: mustum (mustard)

New forms and types of food and cuisine from animals and poultry were borrowed from the Romance peoples by Germanic tribes. Eg.:

OHG: kāst < Lat.: caseum (cheese)
OHG: esil < Lat.: asinus
OHG: mūl < Lat.: mulus
OHG: pfawo < Lat.: pavo
OHG: pferfrid < Lat.: paraveredus

Some words denoting the notions related to commercial activity were also borrowed by the Germanic tribes during those long years of the Great Migration of Peoples. [9, p. 197] Eg.:

OHG: koufon < Lat.: caugo
OHG: munizza < Lat.: moneta (monet)
OHG: mila < Lat.: milia (mile)
OHG: zol < Lat.: toloneum
OHG: pfunt < Lat.: pondus (pound)

And at last the barbarous Germanic tribes who did not know the advantages of domestic utilities borrowed the names of the objects together with the things they saw in Roman Empire. Eg.:

OHG: kista < Lat.: cista
OHG: scrini < Lat.: scrinium
OHG: kezzil < Lat.: catinus
OHG: korb < Lat.: corbis
OHG: kelich < Lat.: calix
OHG: spiagal < Lat.: speculum

As we know military art of the Roman Empire was more developed than that of Nomadic and less developed Germanic, celtic, hunnish, Slavic and other armies who invaded and collapsed Rome. Therefore, it is natural if we find some words denoting arms, ammunition, and military arts borrowed by the Germanic languages. Eg.:

OHG: wal < Lat.: vallum
OHG: pfal < Lat.: palus
OHG: strazza < Lat.: strata [3]

In the period of Migration, especially in the IV-VIII centuries we observe a kind of merry-go-round or carousel of victory of one tribe over another and the turnover, reiteration, etc.

We can discuss any of these tribes mentioned here, but the volume of the article would not let it do so. We can mention the fate of the name "**franc**". The term “franc” was firstly mentioned by historians in the 3rd century CE, namely in 256. At that time they were crossing the river Rein in lower parts of it. In 231 CE Roman army fought with Germanic tribes near Bonn. We think those were francs, because Roman authors did not know their tribal names. As it was mentioned by Gregory Tursky, francs used to say that they came from the tribe – *sikambis*. And, sikambis were a branch of *scythians*, which were Turkic tribes. Batavs, Brukters, Tungs, Sugambrs were close to Francs. And these tribes together with hamavs, batavs, Hattuars, Amsivars, Uzipets and others played a great role in the formation of frances and their becoming one of the leading groups of Germanic tribes. [1; 2; 10]

Now let’s come back to the statement, that “Turkic tribes were strangers in Europe” which was formulated by Gotfried Gerder, one of the outstanding philosophers and historians of the XVIII century. [13]

G. Gerder was one of the greatest thinkers of the world, but still he was not right in this respect. Turkic peoples were not strangers in Europe. He was mistaken. He was misled by the authors who lived before them. He took their words as truth and worth to rely on, and thought, and considered that Turkic tribes were strangers who came to Europe in the XIV century as invaders.

The thing is that later investigations showed that Turkic tribes were in Europe in the 5 centuries CE and earlier. They lived near the Black sea, on the estuaries of Danube, Balkans, in the Northern Part of the Minor Asia from the ancient times to say nothing of their Asian relatives, who lived as far as to the shores of Pacific Ocean.

In the Early centuries the Europeans named them as “*scythians*”, as greeks called them. Scythians were not one tribe. It was a name of tribal group, which existed there from the III c BC to IV c CE (for about 500-600 years).

Later, beginning from the III-IV th centuries of our era Greeks and Roman people, began calling them as **Huns**. The term “Scythian” was momentarily replaced by the term “**Huns**” throughout the territories where they lived. And this fact puzzled everyone, starting with historians ending with linguists, who thought that Scythians belonged to Iranian speaking peoples and Hunns were found on their territories, spoke another language – Turkic.

Only very few people understood that the real facts spoke about the real nature of the things. Scythians were not Iranic speaking people as some people like to say, repeat to say and want to say to be so even now. Some linguists found unlawful “sons” to Scythians from the Iranian group – saying that “*ossetins*” were Scythians. [2, p. 210]

We can remind one interesting fact that in the XIV-XV centuries when people spoke about the Turkic – speaking people in Europe some authors still used the name “Scythians”.

Some ultra-modernists in Uzbek linguistics dared deny the theoretical and practical value of ethnogenetic studies stating that in the era of post-structural anthropocentric paradigm there is no need for learning the history of the language even for the linguistics.

But that is not at all shared by the majority of the linguistics, who understand the importance of the knowledge of language history to the linguist and language teacher.

As a rule, people deny things when they have no information about the object being denied. They think “As I don’t know, no one is learning the History. If someone analysed the problems of History I would know.” Such kind of approach is used to cover one’s ignorance.

Ethnogenetic investigations have never been put off or aside from the agenda by the Europeans as something non-topical and non-actual. A quick mentioning the names of the fundamental works published by B.L. Anderson (2008); R. Eaton, O. Fischer, W. Koopman (1986); F. Kortlandt (2010); A.V. Dybo (2009); S. Brown, S. Attardo (2005); D. Malvern, B. Richards (2009); J.R. Hurtord (2011); R.S.P. Beekes, M. de Yaan (2011); P.J. Hopper (2000); A.D.M. Smith (2010); M. Edwardes (2010); L. Campbell (1999); I. Roberts (2007); S. Luraghi, Vit. Bubenik (2010); M.J. Mixco (2007) and many others show that the problems related to the formation and development of the English language have never been forgotten by the linguists in the last two decades of our century.

The main trends worked out or put forward by the authors are as follows:

- Introduction and apprehension of the new linguistic materials concerning phonetic and morphological levels in Old Indo-European languages (F. Sommer, E. Forrer, A. Goetze, E. Sturtevant, I. Fridrich, H. Bossert, H. Pedersen, E. Benvenist, etc.).
- Proving the historical and genetical ties between ancient and late analolian languages (H. Pederson, R. Goosmani, O. Karruba, A. Heubeck, G. Neuman, O. Masson).
- Desiphering the greek-micken tablets (M. Ventrice, J. Chodwicka).
- Localisation of the migrations of indoarians in Anatolia (Middle East) (O.N. Trubachev).
- Introducing rich materials of Middle-Iranian languages (P. Gotio, E. Benvenist, K.G. Zaleman, R. Baily, I. Gershevich).
- Investigating the relicts of the Scythian language (V. Abayev, Ya. Harmagga).
- Fundamental investigation of the Tocharian languages, A and B (E. Zieg, W.V. Ziegling, W. Schultze, V. Crause, G. Bailey, I. Gerschevitch, V. Henning, H. Humbach, M. Dresalen, S. Konor, P. Emerich, A. Marik, A. Freiman, V. Liefschitz, etc.)
- Investigating the poor materials of Illirian, messapian, venetian, fracian, frigian, Macedonian

languages (N. Yokle, H. Crahe, I. Friedrich, Y. Pokkorny, J. Bonfante, V. Pisani, A. Blümentahl, M.S. Bieber, D. Dechev, A. Meyer, etc.).

- The methodology of the historical-comparative method was improved (A. Meillet, E. Kurilovich, E. Benvenist, V. Georgiev, A. Selischev, L. Bulakhovsky, V. Jirmunsky, O. Trubachev, E. A. Makayev, etc.).

A quick referring these authors arises an idea how rich is the arsenal of the ethnogenetic investigation in Present Day linguistics and how large is the sphere of interests demonstrated by the linguists.

In this article we'll make an attempt at applying the principles of historical ethnogenetic approach to the investigation of some facts of the History of the English language.

As a subject for this analysis we've chosen religion, religious factors to the development of the English language as well as the Turkic languages. It is because religion goes hand in hand with the language in the contacts of languages. Sometimes language comes and religion follows it, like as it was observed with Islam, and the Arabic language. Or else language may proceed religion as it had once been, with the Latin language and Christianity in Europe.

Let's begin the analysis with some English or French words of Latin origin. In the South west of France the word "festum martyrodum" is used and in the West of Germany the words "Ehrtag" and "Pfinztag" are widely used. All these words developed from the Latin words used in the territories neighbouring Eastern Mediterranean. They were the words used by the Western Goths who confessed Christianity of Arian Church (Toend). They brought there in the V century.

This fact illustrates that Arianism existed in the South of Germany, alongside with other words like, Ertag and Pfinztag. It presents an answer to the question whether the Emperor Bonifacy was right or wrong saying that Arianian church of Christianity existed in Germany even at the beginning of the VIII century as a widely spread religion.

If we remember the fact how arians appeared in the Central Europe, who brought this religion here, we surely understand the great role and significance of the Great Migration of Nations (or Peoples) in the History of Europe, and European languages.

Arianity was founded by Alexandrian presbyter Arius. It was a religious trend uniting the followers whose opinions was contradictory to one of the main dogmas of Christianity. According to him: "Jesus Christ was not God's son and He was not a living being of the God's degree. Jesus Christ was the most perfect living being that has ever been created". This statement made a great a resonance in the IV century when Christianity was making its first steps to invade the minds and faiths of the millions in this world.

The negotiations, contradictions in the Church caused great clashes in the social life of the peoples.

Of course, arianity was not the only religion confessed by Turkic speaking peoples. One of the widely spread religions among Turkic speaking peoples was Monism in the II-III centuries, AD.

As it written in the Philosophical Encyclopedia [1983, p. 339]. Monism as a religion was founded by Moniy, the Persian, who lived in Babylon. In the VIII-XIXth centuries. Monism was the religion confessed by the Uygurs. This encyclopedia is one of the reliable sources, as it was worked by the Research Institute of the Academy of Sciences.

But one thing makes us say that different copies of its manuscript have some differences in some passages of the prayer. Three copies of this written record survived to our days. They are a) London copy; b) Sanct-Petersburgh's copy; c) Berlin copy. This manuscript is called as "Huastuanift". The most complete copy is in London and it was written in Uighur alphabet. Sanct-Petersburgh copy was written in Uigur alphabet, and some passages are lacking. The Berlin copy, written in Manichean letters is the most damaged one. Here some pages are lacking in the text. [p. 176]

The Medieval followers of Manicheans were called "catars" and they had some features in their faith. For example, they believed that it was a sin to kill a living being with warm blood. And so they did not kill people and animals. One event which happened in the XIIIth century illustrates that habit. During the war against Albigoys, it was ordered that they should determine who is a Catholic and who is Catar. In order to do it the captives were ordered to kill a hen. If the captive was a catholic he could easily kill the hen. But if he was a Katar the captive refused killing the hen. So the task was easily accomplished. All the Katars singled out among the mass of captives were immediately put to death either by hanging or by be-heading. [p. 177]

In 325 CE the World Forum of the Christians took place in Nikeia when Arianity was announced as "heretical" and Arianity was found deprived from the Church.

But in spite of this order this religious trend remained as functioning in the Roman Empire and some countries of Western Europe and its followers did not change their faith. Ulfila or (Wulfila), (311-383), His announcing the first Gothic Bishop led to strengthening the positions of arianity as a branch of Christianity among Eastern Germans.

This lasted so in Germany and Eastern and Central Europe for about 150 years and at last in 497 when Hlodwig, the King of Franks became king of the Gothic lands. Arianity was substituted by Catholicism and Arianity was soon forgotten as a result of its loosing the political base for its existence.

One fact is worth reminding, that when Bonifacy, the Roman Pope, visited Germany 300 years later than Hlodwig became the king of these lands, was greatly surprised seeing that Arianity was still alive. Because to that period arianity could become a form of the social consciousness in the minds of the people, and of the course, religious thinking, consciousness and faith are not subjected to the change easily.

The cause of the survival of Arianity among Germanic tribes was that the peoples confessing arianity were different in composition. The peoples who lived and fought during the great migration of peoples, like Goths, Huns, Sarmats, Bulgarians and many others confessed arianity and they were not as one Western author wrote: "…they were godless people, thinking, praying to different stones. They had no religion". This author was wrong. Eastern Germans were more religious than any other peoples in Roman Empire.

That the Goths and other East Germanic tribes were more developed and more religiously organized is proved by the fact of translating the Bible from Greek into Gothic by Wulfila in the IV century. For this purpose he worked out a new alphabet for the gothic people. And when the Roman saw that Goths, "uncivilized, barbarous" peoples of the periphery were reading the Bible in their mother tongue (muttersprache) the Romans were greatly puzzled, ashamed because they read the Bible in Greek and had no Latin translation of the Bible. This fact was disappointing for the arrogant Romans, who later also followed the Goths and began translating the Bible into Latin which appeared only in the Vth century. It means they lagged behind the Goths in this respect for about a hundred years.

Earlier we wrote that Church and Religion had a great impact on the formation and development of Germanic languages. The Romance languages have more opportunities here because if we divide the vocabulary of the Church into two layers as: Latin and Greek everything becomes clear. But in some cases Latin layer can include Greek elements. They are a bit different in structure.

1) Latin – Greek layer
2) Greek layer.

As an example to the first layer we can give the word "**basilica**". It means "Church, something related to church". "Quinguagesima" (triplet) – this was the meaning which was denoted by basilica, and it was once widely used, later "baselgia" survived from this word and in the French place name "Bosoche" we find the traces of that word.

In the struggle of words two words of Greek origin won the battle.

1) "ecclesia" changed into "eglise" in French.
2) "kuriakon" changed into "Kirche" in Germany.

The word "eglise" denoted the Church in Lion. "Kirche" was used to denote the church in Trir. We notice such a trend here. In the territories, close to the Mediterranean the Greek word was used, and in the areas farther from the Mediterranean Sea the Latin word was used. This explains the fact that there existed a great difference between the territories among Roman Empire in culture, way of life and of course all these found their reflection in their language.

Roman Church had a tradition to celebrate the 50th day after Easter and their holiday was called "quingguagesima" and this was the translation of the Greek word "pentecoste". In the VI-VIII centuries the Religious ceremonies around Mediterranean were named with Greek words. Pentecoste was accepted in Bordo, Trir and Rames after Lion. The word "quingguagesima" was used in Britain where the celtic population was more than Germanic population. On the continent this word was used in Flandria, Wallonia, and Engadin, Cöln and Meinz.

The word "pentecoste" was used in Germany from the ancient times. This word was brought here by the Eastern Goths-arians through Danube. As a result the territories of French "pentocote" and German "pfingsten" became common. Between French and German speaking territories, there were areas (buffer) where the Latin word "quinggugesima" survived.

In England very soon the word "pentecosten" was replaced by "White Sunday". It denoted "the first Sunday after the Easter". It corresponded to German "Weisser Sonntag" (White Sunday), it goes back to Latin "dominica in albus".

In Germany we observe 5 layers instead of 2 layers in France, and these layers presented additional difficulties with subsequent and systematic changes.

The first layers represent Greek-Latin words. They belong to the period before the IV century in Rein and Danube. In the Vth century this layer was supported by the gothic-arian missioners. Here we find the words, like: pentocoste (Pfingston); operari (opfern), Ertag, Pfingstag, Samstag.

If we discuss the word "Samstag" (Saturday) we should state the difference between "sabbaton" which was used around Mediterranean and the word "Saturni dies" (Saturn's day) used in the continent. Then we'll analyse the word "Sambaton" - with "m" used in the South-West and West of Europe. This word came to Europe in this form in the IVth century. This word reached Trir and Cöln from Danube. So Sambaton took the following route "Danube – Augusburg – Meinz - Trir."

Conclusion

As a conclusion we can state that the period of the Great Migration of Peoples which took part in the II-VII centuries was the period of "**linguistic experiments**" when three leading language groups: Germanic, Romance and Turkic representing two families of languages, had very intensive contacts, and Europe was the battle-place for hundreds of ancient and new tribes like Greek, Celtic, Iranian, Slavic, and others. Here the representatives of eight or more language groups boiled in one big language pot. Latin and Greek were used as the language used by the rulers, religious leaders, tradesmen and translator – interpreters. Gothic and other major Germanic languages alongside with language of Huns were used in the battle-fields.

Common conditions, similar way of life, needs, determined the general tendencies of language development for the languages which had no alphabet and written forms. Borrowing became mutual between the languages and it influenced to improve their phonomorphological and vocabulary resources and enriching their syntactical potentials.

The warriors were bilingual (Germanic, Latin) or trilingual or (Germanic, Latin, Turkic). And this formula determined the tendencies of developing the language situation throughout the migration period.

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GIF (Australia)	= 0.564	ESJI (KZ)	= 9.035	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 7.184	OAJI (USA)	= 0.350

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THE EFFECTS OF QUARANTINE ON THE STUDENTS OF HIGHER EDUCATION

***Abstract**: This very article partly discusses the effects of the Covid-19 pandemic and the lockdown on the overall performance of the students of a certain university. Prior to reaching to the conclusion the results of two surveys were discussed and analyzed appropriately. Also, some examples from other surveys with their outcomes were provided. In order to explain those effects, we included the views of some scholars as well. Looking at all the data we drew the conclusion that despite the challenges caused by this pandemic most of the learners still prefer online learning.*

***Key words**: higher education, effects, COVID-19, coronavirus epidemic, e-learning, online education, isolation, quarantine, survey, respondents.*

***Language**: English*

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Introduction

Indeed, transitioning into a university life is a stepping stone of one's lifetime. People might even relocate locally and sometimes globally to other countries in addition to the apparent change in academic challenge where members are supposed to become more independent in their studies, and these changes will ultimately lead them to the prosperous future. However, in the last few months due to the severe outbreak of the pandemic "Covid-19" all students have been forced to study online which isolates them from their educational context. In spite of the fact that they are young and hence not in any of the significant risk groups at risk of coronavirus epidemic due to the extreme health risks it could hold, students are a minority population that has undergone severe consequences of the first phase of the COVID-19 pandemic in the first four or five months of 2020.

LITERATURE REVIEW

Apparently, many areas influenced by the pandemic were capable of preventing from the spread of the coronavirus to variable levels, involving the prohibition of the social events and gatherings, working bans, stay-at-home restrictions, domestic and international transportation constraints, and the shutdown of higher education institutions (C. Owusu-Fordjour & C.K. Koomson, 2020, p. 14). As E. Honorato (2020) noted physically closing educational institutions (schools, universities) has been found to be an important way of limiting the dissemination of the virus, but it has created numerous problems for students and teachers, as well as their families, friends, employers, and society as a whole. Besides, the pandemic has already had a significant effect on higher education students' educational work and life activities, such as shifting to online lectures/tutorials, closing libraries, altering communication channels for teachers and educational staff, new evaluation strategies, varying workloads and performance levels, moving back home, closing dorms and so on (A. Aristovnik & D. Keržic, 2020, p. 3). Researchers from all over the world have already issued reports on different aspects of the COVID-19 pandemic, entailing its effects on physical and mental health, the economy, society, and the climate. Also, there have been plenty of surveys carried out in higher education in a bid to find out the effects of the quarantine. For instance, in April 2020 EY-Parthenon teams made a survey among 4800 students of higher education in Peru, Mexico and Colombia and the results showed that most of the learners experienced the problems related to the readiness to the distant learning, communication and financial situations. Therefore, roughly all of them felt depressed, isolated and lagged behind. According to the data revealed by the UNESCO IESALC also proved that owing to the unsolved difficulties such as a rise without quality, disparities in access and accomplishment, and the gradual loss of public funding, the epidemic brings a new layer of complexity to higher education worldwide, but especially in the area (p.11). One of the students in that survey stated that they had to rearrange their life in order to adjust to a new life and situation as well as the financial cost which they had to still pay for the university. These are just some of the problems mentioned by the students.

MATERIALS AND METHODS

In the case of Uzbekistan, the situation is also almost the same and so as to compare the quarantine-based education of students at universities with the one prior to the quarantine we surveyed the students at Uzbekistan state world languages university. In fact, there were 2 surveys conducted including the questionnaires designed on Google forms. The first survey was done among the 32 students with 22 questions ranging from multiple choice, rating scale, dropdown to open-ended questions, whereas the latter was carried out in the same educational setting with the number of 30 respondents with various questions. The primary target of these studies was to find out how students felt about the new educational format in general, and whether they were content with it. There were many other central questions that gauged participants' feelings on the subject, as well as additional questions that expanded on the theme and helped determine whether or not the respondent was being truthful. For this reason, in both surveys questions like “*What mode of do you find better in the current situation? Do you think online learning undermined the overall quality of education? is it easier for you these days to meet deadlines? Do you find convenient the educational portal of our university? Has online education influenced your leisure time?* “and etc. were asked.

RESULTS AND DISCUSSION

Let us firstly analyze the first survey and its results. Accordingly, for the overall evaluation, we'll use an average number for each of the foundational questions. More than half of the respondents (59.4%) work. They emphasize that one of the main benefits of e-learning is that it allows them to properly combine work and research, even though they haven't changed jobs because of a more convenient schedule.

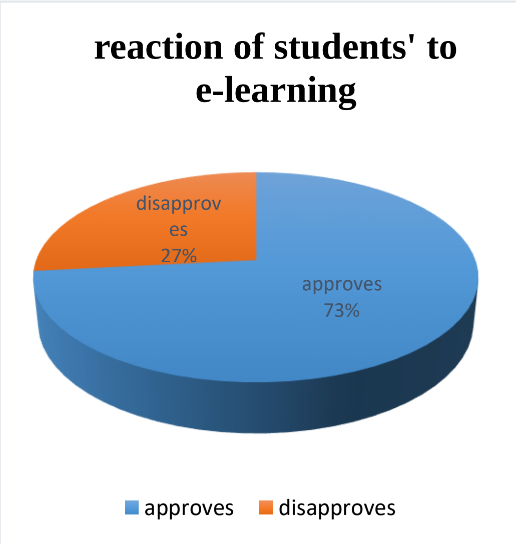
On the other hand, the results show that there is no difference in terms of health (59,4 percent of those surveyed see no change in their sleep time after implementing online education), but the majority (71,9%) believe they have more free time as a result of the easy task submission format. Finally, based on an overall assessment of the responses and, in particular, the questions about students' academic success, we may conclude that respondents see no difference in the effects of the two types of education. All of this confirms a well-known saying, which should be slightly modified in this case: if there is a desire to learn, there will always be a way.

When it comes to the second survey, it has been obvious that currently, 80 percent of students think that online learning is more appropriate. Surprisingly, slightly more than 43% of respondents chose distance learning because it gave them more room for their own activities, while one-third chose it because of safety issues. Some people continue to study online as a result of their peers' decisions. This makes up 20% of the population. Because of their personal reasons, the majority of students are largely in favor of online lessons at this time. The second section discusses the drawbacks of distance learning. In fact, more than half of the students, 56,7%, believe they are overburdened with tasks, while the remaining 43,3% believe their workload is manageable.

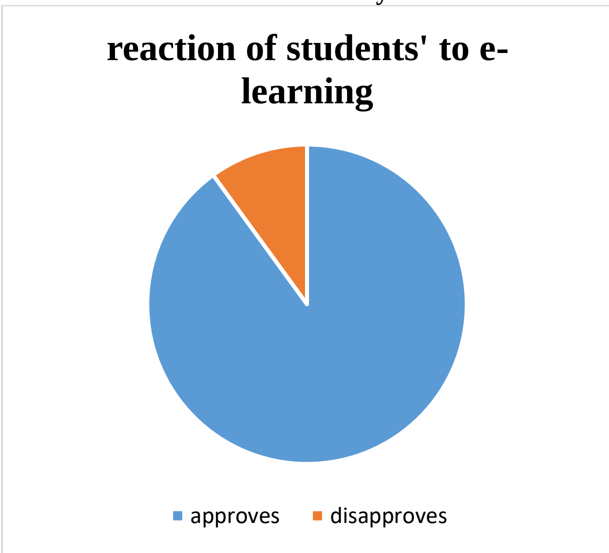
Overall, the third section addresses the emotional state of the students as a result of the quarantine. For example, 19 out of 30 respondents consider their relationships with classmates to be moderately close. In addition, 73 percent say current arrangements have no effect on their excitement, and 25 people say they are satisfied with their confinement overall. This shows the ability of targeted groups to withstand adversity.

We can also compare the results with the following charts:

Survey 1



Survey 2



Picture 1.

CONCLUSION

In sum, according to both statistics we can notice that students prefer online mode at present, despite the high workload and dearth of communication with their instructors. In terms of their mental state, they are unconcerned about the lack of contact or the quarantine in general. However, the reliability and validity of the data in both surveys were partially provided since just the minority of the students took part actively. we also found out that teaching staff and university public affairs provided the greatest assistance to students at university.

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THE IDEA OF MODERATION IN ISLAM

Abstract: *The article examines the idea of moderation in Islamic philosophy, the formation of a moderate lifestyle, the possibility of cooperation and existence between religion and secular science and its compatibility with the philosophy of moderation.*

Key words: *Islam, philosophy, religion, secular science, moderation, cooperation, peace, human idea.*
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Introduction

One of the greatest events of the 21st century is the rise of scientific and philosophical research to a new level, the recognition of bold ideas, liberation from political and religious captivity, and qualitative changes in the faith of society. Among such studies, it should be noted that scholars study topics such as the person in Islamic philosophy, the idea of moderation, national interest in Islam, and the philosophy of national unity.

We can say without hesitation that the nations that have established themselves on Earth are waging a serious struggle for their spiritual space. They work hard to define their national identity (understanding, comparison) using all the opportunities in this area.

As a result of the significant impact of the transition period on the lifestyle of a significant part of the population of Uzbekistan, the issue of national identity has become no less important than the air. It is important that the path we have chosen in this area, our goal and goal is to preserve peace in our homeland and form a moderate lifestyle.

The idea of moderation is essential for strengthening independence. In this area, we return to the foundations of Islamic philosophy that defined the beliefs of our ancestors. As the first President of Uzbekistan Islam Karimov said, "... we can never imagine our country without this sacred religion. Religious values, Islamic concepts are so ingrained in our lives that without them we lose our identity".

The philosophy of the materialists called on its adherents to daily battles, radical turns and radical changes, thoughts and actions, the search for an ideological enemy. We get rid of this biased movement. A middle class is also being formed, which stands for a moderate lifestyle. It is in the national interests of all, especially the intelligentsia, to strive for a moderate lifestyle, to call for calm in other social groups, to maintain it in accordance with the law.

Belief in Islamic philosophy, that is, moderation, was interpreted in Soviet times as a sign of social blindness, inaction and weakness. We are rediscovering that faith is a wonderful potential and quality for every person.

Islamic sources emphasize the need for moderation in all areas. In particular, in the Qur'an and hadiths, we find incomparably many ideas on this matter. Forgiving the sinner leads to moderation. In Surah al-Maida, Allah says: "... if you forgive them, you will surely gain strength and wisdom." It is here that the Prophet Muhammad emphasizes that every Muslim must, of course, lead a moderate life in order to achieve happiness in the two worlds.

Moderation is also a requirement for all people to be calm, considerate, and tolerant. The great philosopher Jalal ad-Din Rumi said in his wisdom: "It is difficult to live in this world and take a breath, whether you are doing good or evil." This idea is also a path that leads to moderation. Since a person lives in these two contradictions, a good done to someone out of ignorance is bad for another.

The hadith tells about the situation between scholars and emirs, that the worst of the scholars visited the emirs, and the best of the emirs visited the scholars. It is obvious that people of knowledge respect not only themselves, but everyone, including the commandments, and are far from the intention to receive gifts and interest.

The philosophy of moderation teaches that in the process of developing the ideology of independence, we must develop on the basis of pluralism, democratic ideas. Otherwise, the search for an enemy, an unstable ideologist in this sacred matter will not always give good results. Finding the right "sincere" enemy is easy. But making small mistakes on the way to a big goal is like wasting precious time.

The diversity of ideas and their natural existence also fit into the philosophy of moderation. If this social condition is not met, unexpected unpleasant contradictions in theoretical thought, reason and practice may arise in the future.

The possibility of cooperation and existence between religion and secular science is also consistent with the philosophy of moderation. It is known that in such conditions the interpretation of being, the method of cognition do not coincide. Islamic philosophy further generalizes, in some cases reflecting the basis of existence not in terms of actual evidence, but in terms of faith, religious assumptions and imagination.

The ideas of the existence of two worlds, its eternity, infinity, constant development, change are based on religion and secular sciences. These two directions develop in cooperation with each other. It should be noted that as the universe is infinite, so is the knowledge of the great and eternal God. The above philosophical thought is also a product of the philosophy of moderation. Believers receive from Allah knowledge of patience, meekness and kindness, which they did not receive from their loved ones.

The great Islamic philosopher Imam al-Ghazali, author of the book "Kimiyya-yi Saadat", says: "Knowing Allah begins with knowing oneself." This process is not a simple task, like moving an object from one place to another, but a reality that requires long and intense reflection. In such a situation, a person reveals many shortcomings, qualities that are not suitable for someone, but new for him. Or finds the necessary comfort. The end result is the moderate lifestyle that he needs.

The idea of moderation in Islamic philosophy also draws the attention of individuals and society to the problems of today. As Professor Gaybulla al-Salam said - “... it is necessary to take all possible measures to improve the financial situation, prestige and status of morality, speech and morality in society. We need public and state protection. Otherwise, there is a danger of falling into "independent" spiritual stagnation without getting rid of the tyrannical spiritual stagnation. " It also warns about the peculiarities of moderation: if society does not pay enough attention, the opposite quality will manifest itself.

Islamic philosophy is a doctrine that defines the norms of human needs and has a great influence that encourages them to constant moderation. Of course, the fate of society and people is determined by Allah, but this requires the social activity of society. The Qur'an says: "Allah will not change the position of people until they change what is in themselves." From this it is clear that there is a moderate and constant bond between God and man.

Another conclusion from the above is that thought, action, practice, uniqueness in various social actions, modesty that does not harm the dignity, pride and dignity of others, should become not only a temporary, but also a permanent way of life for the citizens of our country.

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PHILOSOPHICAL ASPECTS OF GLOBALIZATION

Abstract*: One of the most relevant topics in modern social philosophy is the topic of globalization. Within the framework of this very broad topic, questions are actively discussed about the causes, essence, the beginning of globalization, about its subjects, direction, about the features of the development of the global world, about the interaction of cultures, about the structure of the global world, about managing the world community and building a new world order, as well as about negative phenomena generated by globalization, such as increased uncontrolled migration, nationalism, chaos, international terrorism, anti-globalization protests. Moreover, there is no unity of opinion on various aspects of globalization, which indicates not only the novelty of this phenomenon, but also the insufficient study of this topic and the urgent need to study it.*

Key words*: globalization, economics, culture, community, ideology, society, development.*
Language*: English*
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Introduction

The Republic of Uzbekistan is an active member of the world community and therefore the main trends and consequences of globalization are inevitably projected into all spheres of the social life of our society. For the most adequate perception of globalization processes, it is necessary, first of all, to have an idea of the main aspects of globalization itself. Socio-philosophical analysis of such aspects allows us to identify specific patterns of globalization development and anti-globalization trends in the world.

Globalization is an objective, therefore, necessary process in the life of mankind. It is generated, first of all, by the nature of production, which does not fit within the borders of individual countries and requires the integration of national economies into the world economy. Integration into the world economy is considered today the main stimulus for the economic development of countries. Globalization is driven by the needs of trade, the uneven distribution of natural resources on Earth, and the growing international division of labor driven by the law of comparative advantage. Global ties are also created by the developing network of global communications, military and military-technical factors, environmental problems, migration processes, expanding international contacts of all kinds, especially cultural ones, the system of international relations, the need to regulate processes in the world community.

The listed factors lead to the expansion and deepening of ties between states and the strengthening of their influence on each other, which in fact is the process of globalization. Thus, in the structure of global relations, the main subject is the state (country), since it is the state from the very beginning of globalization that has been the only integral concrete form of human society's existence. The state has its own borders, protects them, establishes certain procedures on its territory for all its citizens. The basis of the state as a social organism with the most developed international relations is its own balanced economic and geographical complex. Violation of this balance threatens the security of the state, brings it many troubles. Broader communities: ethnic, cultural, religious are one-sided and subject to adaptation within the state, while broader economic, political or military structures belong to individual states or are formed by alliances of states. So, the only integral concrete form of society's existence, in which people live and satisfy their needs, remains the state.

Methods

By the beginning of the 21st century, humanity has entered a qualitatively different phase. According to many authors, in a post-industrial society, the source of the main conflicts will no longer be ideology or economics. The most important boundaries dividing humanity and the main sources of conflict will be determined by culture.

It is extremely important to realize and rethink how civilizations interact, what role culture plays in relations between people and their communities, and what steps we, as representatives of humanity, need to take in order to avoid a “clash” of civilizations.

In modern conditions, the cultural aspects of social life will play an increasingly decisive role in relations within and between civilizations in the new 21st century. It is obvious that it is in the sphere of culture that the key to solving many of today's problems lies.

The crisis, which today explains many of the difficulties facing society, originated in the financial and economic sphere and belongs to it. It is much more important to understand that there is a possibly deeper crisis - a crisis of consciousness, a crisis of culture and a crisis associated with a fall in morals. The spirituality has practically disappeared from the life of modern society - which is especially true of the “golden billion”.

The question of the significance of the cultural, ideological and spiritual aspects of globalization and their impact on the life of modern society is of particular relevance. The growing spiritual scarcity, the strengthening of eschatological sentiments, the predominance of the material principle in the life of people - this is against the background of which the current crisis is taking place.

It is important to understand that the spiritual crisis has struck not only the sphere of art, morality or value orientations of people, but also the economic sphere, where self-interest and greed prevail, and the political sphere, which is increasingly characterized by pragmatism, momentary interest, and not higher aspirations.

It becomes obvious that when outdated systems of socio-economic and socio-cultural relations cease to function, there is a need to propose new mechanisms of interaction between people and their communities. Culture as striving for the ideal is "a great help to us in the days of our difficulties." According to the deep conviction of some authors, the solution to many problems that do not necessarily have their roots in the bosom of the cultural and civilizational life of mankind can be found if the powers that be and ordinary citizens turn to the cultural sphere of social life. Social being is especially clearly manifested in the whole world.

I would also like to draw attention to the relationship between the concepts of globalization and localization.

Results and discussions

In modern social analysis, there are three positions in the interpretation of globalization:

1.radical-globalist, asserting the gradual convergence of national states and cultures into a single community and culture;

2. moderately globalistic, asserting that along with rapprochement, an oppositely directed process will also take place;

3. anti-globalization, defending the thesis that globalization only enhances the demonstration of differences between cultures and can cause a conflict between them (the conflict of civilizations of S. Huntington).

Factors of globalization: economic, predetermining the perspective of the movement of cultures within the boundaries of modernization; social, predetermining the globalization of social action; a risk factor moving from local to global. Depending on which processes - homogenization or fragmentation - will prevail in the course of globalization, the following concepts stand out:

1. globalization based on the ideas of progress, leading to the homogenization of the world (the concept of universalization);

2. globalization based on the real diversity of the world (multiculturalism);

3. the concept of localization as hybridization, which is an attempt to synthesize the global and the local. For the social structure, globalization means an increase in the possible types of organizations: transnational, international, macro-regional, municipal, local. Not only these types of organizations are important, but also those informal spaces that are created within them, in between: diasporas, emigrants, refugees, etc. Another dimension of hybridity is associated with the concept of mixed times: the alternation of premodernity, modernity, postmodernity (for example, in Latin America). Within the boundaries of this direction, globalization is seen as interculturalism;

4. Despite a number of fruitful moments in the study of globalization and localization, the above theories have a common drawback: the problem is considered at an empirical, external, phenomenal level.

Globalization is inherently a peaceful process, albeit an aggressive one, therefore, globalization is most often carried out in the process of peaceful expansion of the norms of the dominant community to other communities (although the history of culture also demonstrates examples of military globalization - Ancient Rome). The peaceful form of globalization is more characteristic of the era of modernism. “The process of globalization makes wars meaningless and certainly not profitable for most countries” (Charles Maines). Peaceful globalization is a more advanced process than military globalization. War leads to a temporary approach to the achievement of equilibrium in the world, and if there is a sharp lag in the spiritual development of the dominant community, civilization perishes due to the lack of balance between material and spiritual development. Through violence - war - only a temporary development of the globalization process is possible.

Hence, it is clear why empires (both ancient and new) perished, since they did not ensure a balanced development (balance) of material and spiritual development in all communities that underwent globalization (for example, in the Roman provinces in Ancient Rome). When a balance of material and spiritual development is achieved, globalization can lead to a gradual equalization of the level of development of all communities in the event that the spiritual principle of a person dominates over the material principle, which will ensure the prosperity of civilization. The creation of progressive, advanced laws for the development of communities within a civilization will eliminate the contradiction between the material and the spiritual and prevent their collision in the process of civilization development. If the process of globalization contributes to the achievement of a balance between the material and the spiritual in all communities involved in this process, then the trend of globalization and, consequently, the prosperity of civilization will continue. This will continue until there is a sharp imbalance between these two beginnings. When the material dominates the spiritual, the opposite tendency will arise - localization, leading to deglobalization, provincialism and the collapse of civilization. If globalization is based on the non-violent (spiritual) spread of civilizational norms through the development of sciences, culture, spirituality, material support of peoples and communities, then a positive trend for the prosperity of civilization will develop. If the balance between the material and the spiritual is disturbed in favor of the material, the process of de-globalization, localization, and the collapse of civilization will begin. At the same time, the death of a certain civilization does not mean the disappearance of civilization in general, it represents the beginning of the formation of a new civilization. Thus, the dual meaning of globalization must be noted. On the one hand, globalization is a positive phenomenon as a social regulator of maintaining the energy balance of civilization, i.e. maintaining its equilibrium state. On the other hand, globalization has negative aspects, since usually represents a non-spiritual phenomenon, i.e. the manifestation of the rapid development of the material principle of civilization, in connection with which, in the process of globalization in the rudiment, in a latent form there is another process that destroys it from the inside - the process of localization.

Conclusion

From a prognostic point of view, the concept of coexistence and an approximate balance between globalization (aggregation) and localization (fragmentation) is legitimate. This equilibrium-non-equilibrium state will depend on the influence of two factors; the external state of the environment and its influence on the development of civilization; internal - the state of spirituality of mankind as a whole and its individual parts (social strata, groups, states, communities). New advanced communities will emerge that will influence the backward communities through the exchange of high technologies. Therefore, the dominance of a single civilization under the auspices of one community cannot last long, but new material technologies will bring together and repel heterogeneous world communities, i.e. world development will be pulsating, with the manifestation of fluctuations in globalization and localization at an accelerated pace.

So, the process of globalization has positive and negative features. Opponents of globalization processes - anti-globalization - have their own arguments with which one cannot but agree. But, nevertheless, the processes of globalization in all spheres of society's life make it possible to expand the framework of narrow national or narrow state interests and reach a higher planetary level. Against the background of the global problems of our time, globalization in its best form can be viewed as the ability to make decisions together, without thereby harming an individual state, society as a whole and, of course, the environment. Therefore, in Uzbekistan, the processes of globalization are carefully studied and, together with national and public interests and universal values, are an integral feature of the development and improvement of our society.

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PHILOSOPHICAL ASPECTS OF GLOBALIZATION

***Abstract**: The article presents a new interpretation of the problem of globalization. In contrast to the position widespread in modern socio-philosophical theory, which interprets globalization as a process of uniting local communities and culture at the empirical level, this article considers globalization not only at the empirical, phenomenal level, but also at the internal, noumenal level. At the noumenal level, the global and the local have common roots in the development of civilization and represent a social response to the evolution of civilization. This approach makes it possible to develop an unconventional interpretation of the development of civilization as a process of self-organization of human communities in time and space. Globalization and localization represent the tendencies of unification and disintegration of communities, simultaneously coexisting in the history of civilization with the dominance of one tendency. In connection with this theoretical thesis, the current positions of acceptance or rejection of globalization (radical globalism, moderate globalism, anti-globalism) seem to be insufficiently scientifically substantiated. Globalization, in contrast to the existing interpretations of this phenomenon as universalism, multiculturalism, interculturalism, is a social response to the tendencies of separation, disintegration, degradation of civilization. Globalization is periodically replaced by an alternative trend - localization, which is a social response to the tendencies of civilization unification, the unification of communities under the auspices of the dominant community. Globalization and localization are social mechanisms that regulate the process of energy balance-imbalance of civilization. In the modern period of development, the laws of unification and disintegration of communities will continue to manifest themselves at an accelerated pace, in connection with which accelerated pulsations of globalization and localization will appear.*

***Key words**: globalization, localization, community, society, civilization, integration, development.*
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Introduction

Modern debates on the problems of globalization, de-globalization (localization) are conducted mainly within the boundaries of legal, political, sociological discourse. In modern debates within the boundaries of legal philosophy, the definition of the place and meaning of the global local is in line with the search for a definition of the meaning of the concept of community in the new paradigms of post-liberalism and post-communitarianism. The traditional paradigms of liberalism and communitarianism, due to their conceptual vulnerability (liberalism defends the priority of freedom - a formal epistemological concept, communitarianism relies on the concept of the good, which is contradictory in its essence in conditions of various social interests in society) do not provide an opportunity to search for new foundations for the formation of a community, therefore legal philosophers are busy the search for new paradigmatic foundations for the interpretation of the community [1−3]. At the same time, it is emphasized as the vagueness of such searches, which can be nostalgic and insoluble [4], so is the vagueness and uncertainty of the very concept of community, discussed mainly within the boundaries of the discourse of modernism. The main problem of community interpretation is concentrated in the analysis of the relationship between the individual, the state and the system of states according to the principle of internal analogy: the analogy of international relations with internal processes in the state. Discussions move from the interpretation of an isolated individual through an isolated state to a global state (global village). At the same time, global problems are interpreted in different ways. Legal conceptualism sees a normative imperative behind global problems. the community develops from a natural state to a specific political community. Another point of view is that the global nature of goals creates global responsibility. In this connection, legal philosophy is looking for a responsible community, a good society, etc.

Methods

In modern social analysis, there are three positions in the interpretation of globalization:

- ✓ radically globalist, asserting the gradual convergence of national states and cultures into a single community and culture;
- ✓ moderately globalist, asserting that along with rapprochement, an oppositely directed process will also take place;
- ✓ anti-globalization, defending the thesis that globalization only enhances the demonstration of differences between cultures and can cause conflict between them.

The article substantiates a conceptual position that provides a transition from the empirical to a higher level of philosophical analysis. To achieve this goal, the analysis of the problem is placed in an in-depth context, including, along with research of the phenomenal level, the analysis of the internal, noumenal level, which is reflected in the following innovative aspects of the analysis of the problem:

- ➢ Social matter is investigated in the context of the general energetic nature of matter.
- ➢ The problems of globalization and localization are studied in connection with the development of civilization. In this context, the global and the local are interpreted as natural processes of the evolution of civilization, which are a social response to the development of civilization.
- ➢ The author's concept goes beyond the discourse of modernism [5]. The processes of globalization and localization are studied not only in the context of modernity, but also in the historical retrospective associated with the development of civilization. We are talking about the history of civilization not in its empirical description, but in the theoretical understanding of the main processes and mechanisms of people's social life.

The genesis of the processes of globalization and localization is considered at the internal (noumenal) and external (phenomenal) levels.

At the internal, noumenal level, among a number of reasons for the emergence of the processes of globalization of localization, two main reasons can be distinguished:

1. Subordination of the evolutionary processes of civilization to the laws of development of the universal energetic nature of matter. The evolution of civilization is uneven, i.e. unbalanced in the energy plan, in connection with which the processes of globalization of localization naturally arise as social regulators of maintaining the energy balance of civilization.

2. The duality of human nature: the contradiction of the material) and spiritual principles of man, determines the uneven development of man, community, civilization and, consequently, the emergence of processes of globalization, localization in different periods of development.

Civilization, as one of the structures of the world, containing information about the material and mental forms of human activity, is constituted on the principle of nonstationary, which predetermines the nonlinear nature of evolution. The development of world civilizations is uneven; periodic rhythmic fluctuations can be distinguished in it, caused by the processes of energy fluctuations and manifested at a phenomenal level in the stages of emergence, growth, decline, and civilizations. Civilization, as a complex structure, is metastable. In order to maintain its integrity, to periodically overcome the tendency to stochastic decay, a civilization must function in an oscillatory mode that allows it to slow down processes and restore the general rate of development of substructures. Considered in this aspect, globalization localization act as social regulations for maintaining the energy balance of civilization. Globalization is a cultural response to the decay, crisis, fragmentation of civilization. Localization is a cultural response to unification, the unification of civilization under the auspices of a dominant community. Thus, at the internal noumenal level, the processes of globalization and localization are not opposed to each other, as stated in many areas of modern social and political analysis, but have common roots in the evolution of civilization, since represent a social response to the process of its development, expressed in the process of maintaining the energy balance of civilization, ensuring its normal functioning and protecting it from crisis, decay, and disappearance. The process of regulating the energy balance / imbalance of civilization is implemented in the process of bringing localization through the processes of globalization to a sub-equilibrium state of (heterogeneous) communities at different levels of social development to ensure the normal functioning of civilization. Different communities represent different states of social matter, therefore, globalization and localization act: as social regulators of the sustainable functioning of civilizations; as mechanisms for protecting civilization from decay. The global and the local exist simultaneously in the evolution of civilization: with the dominance of one trend, the other exists, but in a latent form.

This thesis, in our opinion, allows us to concretize the historical framework of globalization as Westernization, i.e. the statement that the history of globalization begins with the history of Western culture, i.e. from about 1500. From his point of view, this chronology is incorrect, since globalization cannot be attributed to a precise historical period. However, globalization in the history of Western culture (1500) is a manifestation of the next fluctuation of globalization in the process of evolution of civilizations as a social response to the decline, decay, fragmentation of the previous civilization and the beginning of the formation of a new civilization; this fluctuation will be followed by a localization fluctuation, and so on. On the other hand, the author's thesis about the simultaneous existence of localization globalization processes in the evolution of civilization can be regarded as a theoretical conclusion, similar to N. Stehr's empirical studies aimed at revealing the shortcomings of globalization as a unification of local, regional, national forms, which is based on the dubious assumption of opposition processes of generalization and fragmentation. The process of globalization leads to the intensification of local moods and practices, as a result, a state of homogenization arises in the form of new, even violent cultural movements defending cultural identity. Globalized social relations diminish some aspects of nationalist feelings associated with nation states, but can cause intensification of national feelings in more local formations: ethnic groups, places of cohabitation of an ethnic group. Ster provides, therefore, an empirical description of the globalization of localization, but does not investigate the reasons for the simultaneous existence of these phenomena.

The reasons, in our opinion, lie in their simultaneous latent existence in the process of the internal evolution of civilization with the dominance of one tendency, which does not exclude the appearance of another tendency at a phenomenal level. The second reason for the emergence and development of the processes of localization of globalization at the internal, noumenal level is due to the dual nature of man: the contradiction and uneven development of his two principles: material and spiritual. The duality of human nature, embodied in its inherent animal nature. Aimed at survival in the outside world by means of aggression and adaptation, and spirituality, which takes a person outside the boundaries of the animal world, predetermined the specifics of a person's existence in a community at a phenomenal level. At this level, social evolution is carried out in the processes and results of meeting the interests and needs of people - life-supporting, life-saving, psychoadaptive, power, social, etc. Some of them exist in an individualized form, others in a group. The realization of group interests is associated with more or less spontaneous processes of self-organization of people into stable collectives and the development of methods and rules for collective interaction and mutual understanding, which are passed from generation to generation in the form of educational social strategies aimed at both reproducing group stereotypes of consciousness and behavior, and development of a person as an individual. The processes of socialization and acculturation of a person are carried out in the course of assimilation of cultural elements transmitted from generation to generation (language, patterns of behavior, customs, morality, social roles, etc.). But, despite the constantly growing complexity of socialization and acculturation of a person, the contradiction between the material and spiritual principles does not disappear, but acquires specific forms of functioning at each historical stage of the evolution of civilization, which predetermines the specific forms of the processes of globalization of localization at the phenomenal level.

Results and discussions

If we consider the genesis of the processes of globalization and localization, initially (at the time of the emergence of civilization) material needs, concentrated in the need for human survival, prevailed over spiritual ones. This internal contradiction between the material and the beginning of the formation of spirituality led on the external, phenomenal level to the processes of territorialization, the seizure of new territories, new markets, new material values, new sources of material and immaterial energy, ensuring the prosperity of civilization. The war and the seizure of new territories provided a temporary approach to the equilibrium of world communities. The striving of peoples for material well-being and enrichment led to the emergence of the phenomenon of technocratism - a sharp jump in the technical potential of civilization on the basis of the rapid development of science and technology, ensuring the growth of the technical potential of civilization.

On the external, phenomenal level, the processes of globalization and localization can be carried out in two forms: a tough, violent, material form (wars, conquests, conquest of new territories, etc.); and a soft, non-violent form of spiritual evolution (the spread of the norms of life of the dominant community to other communities).

Globalization is inherently a peaceful process, albeit an aggressive one, therefore, globalization is most often carried out in the process of peaceful expansion of the norms of the dominant community to other communities (although the history of culture also demonstrates examples of military globalization - Ancient Rome). The peaceful form of globalization is more characteristic of the era of modernism. "The process of globalization makes wars meaningless and certainly not profitable for most countries." Peaceful globalization is a more advanced process than military globalization. War leads to a temporary approach to the achievement of balance in the world, and if there is a sharp lag in the spiritual development of the dominant community, civilization perishes due to failure to achieve balance between material and spiritual development. Through violence - war - only a temporary development of the globalization process is possible. Hence, it is clear why empires (both ancient and new) perished, since they did not ensure a balanced development (balance) of material and spiritual development in all communities that underwent globalization (for example, in the Roman provinces in Ancient Rome). When a balance of material and spiritual development is achieved, globalization can lead to a gradual equalization of the level of development of all communities in the event that the spiritual principle of a person dominates over the material principle, which will ensure the prosperity of civilization. The creation of progressive, advanced laws for the development of communities within civilization will eliminate the contradiction between the material and the spiritual and prevent their collision in the process of civilization development. If the process of globalization contributes to the achievement of a balance between the material and the spiritual in all communities involved in this process, then the trend of globalization and, consequently, the prosperity of civilization will continue. This will continue until there is a sharp imbalance between these two beginnings. When the material dominates the spiritual, the opposite tendency will arise - localization, leading to deglobalization, provincialism and the collapse of civilization. If globalization is based on the non-violent (spiritual) spread of civilizational norms through the development of sciences, culture, spirituality, material provision of peoples and communities, then a positive trend for the prosperity of civilization will develop. If the balance between the material and the spiritual is disturbed in favor of the material, the process of de-globalization, localization, and the collapse of civilization will begin. At the same time, the death of a certain civilization does not mean the disappearance of civilization in general (for example, Ancient Rome), it represents the beginning of the formation of a new civilization. Thus, the dual meaning of globalization should be noted. On the one hand, globalization is a positive phenomenon as a social regulator of maintaining the energy balance of civilization, i.e. maintaining its equilibrium state. On the other hand, globalization has negative aspects, since usually represents a non-spiritual phenomenon, i.e. the manifestation of the rapid development of the material principle of civilization, in connection with which, in the process of globalization in the rudiment, in a latent form there is another process that destroys it from the inside - the process of localization.

Conclusion

The decline of civilization is associated with excess energy consumption, an excess of consumed energy and a lack of energy return to the environment. Excessive consumption is inherent in the individual, and the social stratum, and the community, and civilization as a whole. Excessive consumption is due to the natural origin of a person, consumer aspirations of an uncivilized person. Therefore, in the process of crisis, decline, decay of civilization, the predominance of the material principle is manifested, aimed at the survival of a person in the world around him in the absence of a developed feeling - spirituality. In this regard, localization processes, i.e. the processes of fragmentation, disintegration of civilization, are most often carried out in a violent form, in the form of war, as evidenced, for example, by the phenomenon of barbarism.

From a prognostic point of view, the concept of coexistence and an approximate balance between globalization (aggregation) and localization (fragmentation) is legitimate. This equilibrium non-equilibrium state will depend on the influence of two factors; the external state of the environment and its influence on the development of civilization; internal - the state of spirituality of humanity as a whole and its individual parts (social strata, groups, states, communities). New advanced communities will emerge that will influence the backward communities through the exchange of high technologies. Therefore, the dominance of a single civilization under the auspices of one community cannot last long, but new material technologies will bring together and repel heterogeneous world communities, i.e. world development will be pulsating, with the manifestation of fluctuations in globalization and localization at an accelerated pace.

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GLOBALIZATION OF THE WORLD ECONOMY

Abstract: *The attitude to globalization of both specialists and all the inhabitants of our planet is very ambiguous, and sometimes diametrically opposite. This is due to different points of view on the consequences of globalization processes, in which some see a serious threat to the world economic system, while others see a means of further economic progress. Undoubtedly, the consequences of globalization can be both positive and negative, but there is no alternative to it, and therefore the main attention in the article is paid to the study of the dangers (threats) that these processes pose, and the opportunities and benefits arising in the process of globalization.*

Key words: *globalization, cooperation, economics, integration, development, society, universalization, regulations.*

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Introduction

First of all, the most important methodological and practical issue is to determine the relationship between the concepts of "globalization", "internationalization of economic life", "international economic cooperation", "international economic integration", which will be devoted to the first part of the article. And then we will dwell on the essence of the globalization process, its preconditions, specific manifestations and positive and negative consequences.

As a result of international cooperation of production, the development of the international division of labor, foreign trade and international economic relations in general, there is an increase in the interconnection and interdependence of national economies, the normal development of which is impossible without taking into account the external factor. This phenomenon is usually called the internationalization of economic life. You can give a fairly general definition of this concept:

The internationalization of economic activity is the strengthening of the relationship and interdependence of the economies of individual countries, the impact of international economic relations on national economies, the participation of countries in the world economy.

In its development, the internationalization of the economy has gone through a number of stages. Initially, it represented international economic cooperation: it affected, first of all, the sphere of circulation and was associated with the emergence of international trade (late 18th - early 20th centuries). At the end of the 19th century, the international movement of capital is gaining momentum.

International economic cooperation means the development of stable economic ties between countries and peoples, the exit of the reproduction process beyond national borders.

The next stage was international economic integration, objectively conditioned by the deepening of the international division of labor, the internationalization of capital, the global nature of scientific and technological progress and an increase in the degree of openness of national economies and freedom of trade. Integration in translation from Latin (integratio) means the connection of separate parts into a common, whole, single.

International economic integration - rapprochement and mutual adaptation of national economies, their inclusion in a single reproduction process on an international scale.

International economic integration can be characterized as a process of economic unification of countries based on the division of labor between individual national economies, the interaction of their economies at various levels and in various forms through the development of deep stable relationships.

International economic integration is a fairly high, effective and promising stage in the development of the world economy, a qualitatively new and more complex stage in the internationalization of economic ties. At this stage, not only the convergence of national economies takes place, but also a joint solution of economic problems is ensured. Consequently, economic integration can be represented as a process of economic interaction between countries, leading to the convergence of economic mechanisms, taking the form of interstate agreements and coordinatedly regulated by interstate bodies.

Economic integration, in particular, is expressed in:

• cooperation between national economies of different countries and their complete or partial unification;

• elimination of barriers to the movement of goods, services, capital, labor between these countries;

• convergence of the markets of each of the individual countries in order to form one single (common) market;

• blurring the distinctions between economic entities belonging to different states;

• the absence of any form of discrimination against foreign partners in each of the national economies, etc.

The processes of economic integration are taking place both on a bilateral and on a regional or global basis. As a characteristic feature of integration associations at the present time, one can call their development at the regional level: integral regional economic complexes with common supranational and interstate government bodies are being created.

Methods

Economic integration fits well into the process of globalization, constituting its core, and globalization itself is a higher stage of internationalization, its further development, when quantitative changes that have been accumulating for a long time have led to a qualitative leap. The world is becoming a single market for most TNCs, and moreover, most regions are open to their activities.

Globalization has become the most important real characteristic of the modern world system, one of the most influential forces determining the course of development of our planet. According to the prevailing point of view on globalization, not a single action, not a single process in society (economic, political, legal, social, etc.) can be considered limitedly only as such (such). The globalization of international relations is an increase in the interdependence and mutual influence of various spheres of public life and activities in the field of international relations. It affects almost all spheres of public life, including economy, politics, ideology, social sphere, culture, ecology, security, way of life, as well as the very conditions of human existence. Proceeding from the purpose of the research presented in the article, let us consider the concept of globalization as applied only to the world economy.

The processes of global development, within which the structures of national production and finance become interdependent, are accelerated as a result of the increase in the number of concluded and implemented external transactions. Globalization, which has embraced all regions and sectors of the world economy, fundamentally changes the relationship between external and internal factors in the development of national economies in favor of the former. No national economy, regardless of the size of the countries (large, medium, small) and the level of development (developed, growing or transitional), can no longer be self-sufficient, based on the available factors of production, technologies and capital requirements. No state is able to rationally form and implement an economic development strategy without taking into account the priorities and norms of behavior of the main participants in world economic activity.

Although the concept of "globalization" has recently become the most frequently encountered in the economic literature, it is still a long way from the complete clarity of this term, both conceptually and practically. Globalization processes are assessed ambiguously. Here are just two points of view.

Professor of Sociology at the University of California (USA) M. Castells defined globalization as a "new capitalist economy", listing its main characteristics as follows: information, knowledge and information technology are the main sources of productivity growth and competitiveness; this new economy is organized primarily through the network structure of management, production and distribution, and not by individual firms, as before; and it is global1.

A number of specialists represent globalization as a rather narrow concept: the process of convergence of consumer preferences and the universalization of the range of products offered around the world, during which global products are replacing local ones.

From our point of view, the globalization of the world economy can be characterized as an increase in the interdependence and mutual influence of various spheres and processes of the world economy, expressed in the gradual transformation of the world economy into a single market for goods, services, capital, labor and knowledge.

Results and discussions

The process of globalization covers different areas of the world economy, namely:

• foreign, international, world trade in goods, services, technologies, objects of intellectual property;

• international movement of factors of production (labor, capital, information);

• international financial and credit and foreign exchange operations (gratuitous financing and assistance, loans and borrowings of subjects of international economic relations, operations with securities, special financial mechanisms and instruments, operations with currency);

• production, scientific and technical, technological, engineering and information cooperation.

• deepening, first of all, the internationalization of production, and not exchange, as was the case earlier. The internationalization of production is manifested in the fact that manufacturers from many countries of the world participate in the creation of the final product in different forms and at different stages. Intermediate and semi-finished goods are taking up an increasing share of global trade and inter-corporate transfers.

• deepening of the internationalization of capital, consisting in the growth of international movement of capital between countries, primarily in the form of direct investment (and the volume of foreign direct investment is growing faster than foreign trade and production), the internationalization of the stock market;

• globalization of productive forces through the exchange of means of production and scientific, technical, technological knowledge, as well as in the form of international specialization and cooperation, linking economic units into integral production and consumer systems; through production cooperation, international movement of production resources;

• formation of a global material, information, organizational and economic infrastructure, ensuring the implementation of international cooperation;

• strengthening the internationalization of exchange based on the deepening of the international division of labor, an increase in the scale and qualitative change in the nature of traditional international trade in material goods. An increasingly important area of international cooperation is the service sector, which is developing faster than the sphere of material production;

• an increase in the scale of international labor migration. People from relatively poor countries find employment as unskilled or low-skilled labor in developed countries. At the same time, countries that use foreign labor to fill certain niches in the labor market associated with low-skilled and low-paid jobs are trying to keep immigration within certain limits. At the same time, modern telecommunication technologies open up new opportunities in this area and allow painlessly limiting immigration processes. Any company in Europe, North America or Japan can easily entrust the execution of, for example, computer work to a contractor located in another country, and immediately get the finished job in its office;

• the growing internationalization of the impact of production and consumption on the environment, which causes an increase in the need for international cooperation aimed at solving global problems of our time.

It is predicted that in the visible future, globalization will entail:

• intensification of regional integration processes;

• greater openness of the economic systems of states that have not yet fully implemented the liberalization of economic activity;

• unimpeded access for all participants to any markets;

• universalization of rules and regulations for the implementation of trade and financial transactions;

• unification of regulation and control over markets;

• standardization of requirements for the movement of capital, investment process and the global payment and settlement system.

Globalization and integration are multi-level phenomena affecting:

• regional, national economy (macro level);

• commodity, financial and foreign exchange markets, labor markets (meso level);

• individual companies (micro level).

At the macroeconomic level, globalization is manifested in the desire of states and integration associations to engage in economic activity outside their borders by liberalizing trade, removing trade and investment barriers, creating free trade zones, etc. In addition, the processes of globalization and integration encompass interstate coordinated measures for the purposeful formation of the world economic market (economic, legal, information, political) space in large regions of the world.

Conclusion

At the microeconomic level, globalization is manifested in the expansion of companies' activities outside the domestic market. Most of the largest transnational corporations have to operate on a global scale: any area with a high level of consumption becomes their market, they must be able to meet the demand of consumers everywhere, regardless of borders and nationalities. Companies think in global terms of buyers, technology, costs, supply, strategic alliances, and competitors. Various links and stages of design, production and marketing of products are located in different countries, unifying on an international scale. The creation and development of transnational firms allows you to bypass many barriers (through the use of transfer supplies, prices, favorable conditions for reproduction, better accounting of the market situation, the application of profits, etc.).

An urgent need is the formation of a single global world economic, legal, informational, cultural space for free and effective entrepreneurial activity of all business entities, the creation of a single planetary market for goods and services, capital, labor, economic convergence and the unification of individual countries into a single world economic complex.

True, most likely, we will not reach a truly global market even in decades, and it may not completely take place for a variety of political reasons. The universalization of trade regimes and the movement of capital has not yet led to the creation of a homogeneous economic environment, a single planetary economic space. The world economy is a polycentric structure that encompasses 197 national-state formations, the development of which is uneven. About half of the population of developing countries live in a closed economy unaffected by the growth and intensification of international economic relations. In parallel, there are two worlds: an international and a self-sufficient economy, one of which (a self-sufficient economy) is gradually shrinking in size and importance in the world economy. The interconnections and interdependencies between the parts of this structure are asymmetric, different groups of countries are drawn into the world integration processes to an unequal degree and far from being equal.

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FAMILY RELATIONSHIPS AND WOMEN IN SOCIETY AT THE BEGINNING OF THE XX CENTURY: (BASED ON THE VIEWS OF ABDURAUF FITRAT)

Abstract: *Based on the views of Abdurauf Fitrat, the article interprets the way of life of women in society at the beginning of the twentieth century, their role in family relationships and their mood.*
Key words: *family, lifestyle, family relations, woman, raising children, science, education, Fitrat, Jadid.*
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Introduction

It is no coincidence that when we talk about bringing up a harmoniously developed generation, we try to mobilize all our resources, first of all, to form a healthy and strong family environment. However, the responsibility of a person is formed in his mind, from how he was brought up.

In this sense, Abdurauf Fitrat, one of the representatives of the national progressive Jadid movement at the beginning of the 20th century, said that during his lifetime there was a deep crisis in all spheres of society, as a result of which the khanates lagged far behind world processes. Abdurauf Fitrat in his socio-philosophical views emphasizes that in order to get rid of this lagging behind, it is necessary to reform society, which will physically and mentally educate the younger generation.

Abdurauf Fitrat believed that in order for our future generations not to be unconscious, uneducated and ignorant, women should be educated and aware of the health and upbringing of children. He interprets upbringing as a very important social phenomenon, process and states that "A difficult task in the family is raising children, which falls on the shoulders of parents after the birth of a child" [1; 5].

In general, the mother plays a key role in raising the child. Sources testify to this: "Educational ethics should be found in the hands of respectful mothers, not in schools. If we want our children to be educated first of all, we need to educate and educate our mothers. Otherwise, there will be no benefit from schools for children" [2]. Consequently, the Jadids believed that women who were involved in parenting should also receive education. Fitrat talked about it too:

« Foreigner: Do women study in Bukhara or not?

Mudarris (teacher in madrasah): No, women don't study.

Foreigner: ... why they were deprived of their education. The female mind is probably in no way inferior to the male in terms of education and upbringing. One of our scientists says: «We learned from observations of American and French women that the level of thinking of a woman is not lower than that of a man» And your Prophet claims too: «...Knowledge is a must for every Muslim man and woman». Raising women is always beneficial. Because good deeds are impossible without good morality. No one can have good morals without discipline. «The misfortune of the country is that women are deprived of education». [3; 130]. Therefore, it is necessary to educate women and educate their minds and be well versed in religion, help raise children…» [4].

In general, according to the Jadids, the backwardness of enlightenment is the negative vices associated with the social life of women, hindering the development of society. In an uneducated society, arbitrariness, oppression, injustice, ignorance, and violence prevail. This depravity of society is primarily reflected in the lives of women.

Therefore, Abdurauf Fitrat writes about the lifestyle of women, their role in family relations: «Women in our country are mistreated and tortured. We Turkestanis think that our wives are outside of humanity and we do not treat them with dignity. We do not consider our wives worthy of blessing, justice, and compassion. In our country, insulting women is a matter of pride, and beating is a virtue of masculinity. It is as if Allah had not endowed them with the virtues of truth, attention and thinking. Even our poor wives, desperate in their happiness and bliss, came to the conclusion that Allah endowed men with all the virtues of humanity and enslaved women to oppress them».

« Fitrat was a strong advocate of female dignity and equality, - recalls sister, poet Mahbuba, - recalls sister, poet Mahbuba. He helped me enter the school where Mashrik Effendi (Elbek) taught, who lived on Vatan Street in Tashkent».

Abdurauf Fitrat: «I call on all townspeople and farmers to send their children to school. My sister needs to keep going to school too» [5; 73].

In a number of his works and articles, Abdurauf Fitrat argues that the role of women in human history is unique and that the family is the main foundation of society. Tried to explain that this is an important factor. Some of the family issues studied by the Jadids, including Abdurauf Fitrat, are still relevant today.

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CHARACTERISTICS AND TECHNOLOGICAL PROPERTIES OF BASALT RAW MATERIALS IN THE PRODUCTION OF PORTLAND CEMENT CLINKER

***Abstract**: The purpose of this article is to characterize basalt rocks as an alternative raw material for the production of Portland cement clinker and to evaluate its possible use as an additive in the cement industry. It describes the physical, chemical, and microstructural characteristics of basalt clinker, as well as the effect of its addition to Portland cements on the hydration, water demand, setting, and mechanical strength of standardized mortars. Basalt mixtures can be successfully used as an aluminosilicate raw material to partially replace traditional raw materials, resulting in resource savings and ensuring the quality of the cement produced. The study of the use of basalts together with limestone materials can be important from the point of view of cement technology. The basalt mixture reduces the specific weight of cements. The results of tests of cements based on basalt mixtures for compressive strength showed that basalt reacts with the elements present in the media in the long term, and also increases the strength. The study demonstrates the potential of using basalt rocks as a substitute for raw materials in the traditional production of Portland cement. It was shown that the operating conditions of the furnace may have to be adjusted depending on the quartz content in the basalts.*

***Key words**: basalt, limestone, cement industry, Portland cement, raw materials, construction.*

***Language**: Russian*

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ХАРАКТЕРИСТИКА И ТЕХНОЛОГИЧЕСКИЕ СВОЙСТВА БАЗАЛЬТОВОГО СЫРЬЯ В ПРОИЗВОДСТВЕ ПОРТЛАНДЦЕМЕНТНОГО КЛИНКЕРА

***Аннотация**: Цель данной статьи - охарактеризовать базальтовые породы как альтернативное сырье для производства портландцементного клинкера и оценить его возможное использование в качестве добавки в цементной промышленности. В нем описываются физические, химические и микроструктурные характеристики базальтового клинкера, а также влияние его добавления в портландцементы на гидратацию, водопотребность, схватывание и механическую прочность стандартизованных строительных растворов. Базальтовые смеси могут успешно использоваться в качестве алюмосиликатного сырья для частичной замены традиционного сырья, что приводит к экономии ресурсов и обеспечению качества производимого цемента. Исследование использования базальтов вместе с известняковыми материалами может иметь важное значение с точки зрения цементной технологии. Базальтовая смесь снижает удельный вес цементов. Результаты испытаний цементов на основе базальтовых смесей на прочность при сжатии показали, что базальт вступает в реакцию с элементами, присутствующими в средах, в долгосрочной перспективе, а также увеличивает прочность. Исследование демонстрирует потенциал использования базальтовых пород в качестве замены сырья при традиционном производстве портландцемента. Было показано, что условия эксплуатации печи, возможно, придется регулировать в зависимости от содержания кварца в базальтах.*

Ключевые слова: *базальт, известняк, цементная промышленность, портландцемент, сырье, строительство.*

Введение

Цемент - это промышленный продукт, получаемый путем смешивания различных сырьевых материалов и их обжига при высокой температуре для достижения точных химических пропорций извести, кремнезема, глинозема и железа в готовом продукте, известном как цементный клинкер. Таким образом, цемент представляет собой смесь силикатов кальция и меньших количеств алюминатов кальция, которые вступают в реакцию с водой и вызывают затвердевание цемента. Потребность в кальции удовлетворяется за счет использования известняка с высоким содержанием кальция (или его эквивалентного известнякового сырья) и глины, аргиллита или сланца в качестве источника большей части кремнезема и глинозема. Готовый цемент получают путем тонкого измельчения 95% цементного клинкера с 5% гипса (или ангидрита), что помогает замедлить время схватывания цемента.

Системы портландцемента часто подвергаются суровым условиям окружающей среды, и их долговременные характеристики вызывают беспокойство. Представлены основные результаты всестороннего исследования процессов разрушения, которые могут повлиять на поведение портландцементных систем в химически агрессивных средах. Представлены основные результаты всестороннего исследования процессов разрушения, которые могут повлиять на поведение портландцементных систем в химически агрессивных средах.

При производстве портландцемента смесь известняка, сланца, глины и песка комбинируется в контролируемых пропорциях и измельчается вместе либо в виде сухой смеси, либо в виде водной суспензии. Измельченная смесь поступает в верхний конец вращающейся печи и движется вниз по печи к зоне горелки. При высокой температуре загрузка печи достигает температуры плавления, и образуются мелкие шары, называемые клинкером, а также мелкие твердые частицы сырья и полуфабрикатная пыль.

Скорость влияния различных типов реакций на температуру

100-500 °C Сушка и выпаривание смешанных сырьевых материалов 500-600 °C Дегидроксилирование глины $2SiO_2\ Al_2O_3.2H_2O \rightarrow 2SiO_2 + Al_2O_3 + 2H_2O\uparrow$

700 °C активация силикатов и удаление воды;

700-900 °C декарбонизация карбоната кальция с исходной комбинацией оксида алюминия и оксида железа;

900-1200°C белитовая форма $2CaCO_3 + SiO_2 \rightarrow C2S + CO_2\uparrow$;

> 1250 °C образование жидкой фазы (алюминат и феррит);

1300 °C появляется жидкая фаза и происходит реакция C2S с CaO с образованием C3S;

1450 °C Завершение реакции, алит и белит увеличиваются в размерах, в то время как свободная известь присутствует во многих областях.

Химические превращения при термической обработке портландцементного сырьевого поршка.

- <200 утечка свободной воды (высыхание);
- 100-400 Утечка адсорбированной воды;
- 400-750 Разложение глины;
- 600-900 Разложение метакаолина и других соединений с образованием реакционной смеси оксидов;
- 600-1000 Разложение известняка с информацией CS и CA; поглощение извести CS и CA, образование C4AF;
- 1250-1450 Дальнейшее поглощение извести $C2S + C \rightarrow C3S$.

Преимущества использования базальта вместо глины в цементном клинкере резюмируются в следующих пунктах:

1. Новые цементные заводы могут быть созданы в разных местах, где нет глинистых сланцев.
2. Базальт экономичен в производстве цемента, так как он экономит деньги, добавляя соединение железа (колчеданная зола) или песок, чтобы компенсировать недостаток содержания железа и кремнезема в сырьевой смеси в процессе клинкеризации.
3. Базальтовая порода имеет плотность, примерно в два раза превышающую плотность глины, это означает, что базальт экономит половину стоимости транспортировки глины с поля на фабрику.
4. Ожидается, что проблема байпасной пыли на цементных заводах будет уменьшена, поскольку содержание сульфата в базальте не учитывается по сравнению с глиной.
5. Относительно высокий процент оксида железа в базальте снижает теплоту образования клинкера.
6. Относительно высокого содержания оксида магния в базальте можно избежать, используя известняк с низким содержанием оксида магния.

Известняковый компонент поставляет основную часть извести (кальция), которая является известняковой разновидностью известняка, и мергельчатого известняка и представлена щелочным компонентом. Глинистый компонент обеспечивает большую часть кремнезема, глинозема и железа, которые извлекаются из базальтового сырья и представлены кислотным компонентом.

Сырье двух компонентов: известняк и базальты - основные материалы клинкерного цемента, добываемого при разработке известняковых и базальтовых пород. Химический анализ и параметры преобладающих оксидов для оценки этих материалов после того, как известно о правилах производства цементного клинкера. Портландцемент получают путем обжига смеси сырьевых материалов: один из которых в основном состоит из карбоната кальция, а другой - из силикатов алюминия.

Использование базальта в качестве альтернативного сырья в цементной промышленности, которое может использоваться в качестве источника силиката алюминия, с целью улучшения горючести сырьевой смеси и влияния второстепенных компонентов на образование клинкера.

Подготовка проб известняка и базальтов для рентгенофлуоресцентного анализа включает:

Подготовка дисков из прессованного порошкового плавленого стекла для анализа оксидов основных элементов с использованием тетрабората лития в качестве флюса.

Химические анализы должны были определить основные химические компоненты сырьевой смеси для подготовки производства клинкерного цемента в лабораториях. Расчет и корректировка среднего содержания и определение процентного содержания основных компонентов сырьевой смеси из известняка и базальтовых пород для моделирования образцов клинкерного цемента.

Все образцы были сплавлены в виде гранул, помещены в Pt-чашку и были термически обработаны при 1450 ° C в течение 20 мин в муфельной печи, а затем быстро охлаждались. Условия спекания и охлаждения поддерживались строго постоянными.

Реакции спекания во всех образцах модифицированной сырьевой смеси регистрировали с помощью прибора дифференциального термического анализа. Температуру повышали с постоянной скоростью (10 ° C / мин) от комнатной до 1450 ° C. Эксперименты проводились в статической атмосфере. Влияние на горючесть оценивали по содержанию непрореагировавшей извести в образцах, спеченных при вышеуказанных температурах. Спеченные гранулы измельчали и анализировали методом этиленгликоля для оценки содержания свободного CaO (fCaO) в конечных продуктах спекания и с использованием рентгеновского дифрактометра Siemens D-5000 с излучением CuKa1 с никелевым фильтром (k = 1,5405). A°), чтобы идентифицировать минералогические фазы, образующиеся при спекании.

Приготовление сырьевой смеси цементного клинкера

Сырьевая смесь для производства цементного клинкера состоит из известковых и базальтовых материалов. Базальтовое сырье является источником как алюминия, так и кремнезема. Он может содержать один или несколько типов силикатных минералов. Другими источниками кремнезема являются кварц, песок, халцедон, опал и полевой шпат. Они характеризуются такими методами, как химический анализ. Химический состав материалов, использованных в экспериментах.

В этом исследовании использовались четыре различных типа цементной сырьевой смеси: два типа базальтов были собраны вручную из десяти отдельных образцов, представленных базальтовыми породами, которые обеспечивали кремнезем (SiO_2), алюминием (Al_2O_3) и оксидом железа (Fe_2O_3), и две секции, представленные известковыми материалами, включали известняковые породы, которые обеспечивали карбонат кальция ($CaCO_3$).

Процедура и основные этапы подготовки образцов клинкера

Процедура и основные этапы подготовки образцов клинкера из базальтов вместо глинистых сланцев с известняковыми породами в лаборатории, следующие:

1. Сырье смешанное, состоящее в основном из известняка и базальта.
2. Основная масса известняка и базальта измельчается в одну или две стадии на специальных дробильных машинах в лаборатории до мелкого порошка (измельчения) сырья, смешанного с помощью сырьевых мельниц.
3. Химический анализ, параметрические факторы для этой сырьевой смеси и корректировка путем добавления других материалов к оценке элементов оксидов для подходящей приготовленного сырьевого поршка, известной по условию цементного клинкера, как следующее:

Основные параметры, влияющие на сырье:

- ✓ Коэффициент насыщения извести (КНИ).
- ✓ Коэффициент кремнезема (КК).
- ✓ Соотношение глинозема (СГ).

Химический состав

Химические элементы цементного клинкера состоят в основном из четырех компонентов: оксида кальция (CaO), оксида кремния (SiO_2), оксида алюминия (Al_2O_3), оксида железа (Fe_2O_3).

Химическая реакция сырья, представленного известняком, с базальтами изучаемой области, сгорает до высокой температуры примерно при 1450 ° C в специальной печи в лаборатории с превращением в клинкер, который измельчается вместе с примерно 5% гипса с образованием портландцемента.

Химический состав клинкера содержит некоторые второстепенные фазы, такие как щелочь, сульфаты и оксид кальция. Сырьевая смесь состоит из четырех основных оксидов кальция, диоксида кремния, алюминия и железа, и второстепенных нелетучих веществ, таких как SiO_2, MgO, TiO_2, и MnO, а также содержит незначительные летучие вещества, такие как K_2O, Na_2O, SO_3, Cl, а также H_2O.

Цементный клинкер содержит небольшие количества щелочей и сульфатов, полученных из сырья и присутствующих в основных фазах клинкера, таких как силикат, кальций и алюминат. Na_2SO_4 и K_2SO_4 ускоряют гидратацию C3S и повышают прочность в течение 2 и 7 дней, но уменьшают прочность на сжатие в течение 28 дней. Степень гидратации снижается с увеличением содержания оксида щелочного металла. Увеличение SO_3% (около 1,86-0,65%) в клинкере, вызывая расширение бетона, замедление схватывания и снижение прочности, где прочность уменьшается с увеличением SO_3%. Более высокие щелочи (> 1%) в клинкере вызывают расширение цемента и снижают прочность на сжатие, а высокое содержание хлоридов также вызывает снижение прочности и образование ржавчины встали из-за реакции между хлоридами.

Образцы портландцемента получают путем измельчения образцов базальтового клинкера с небольшим количеством гипсового материала в машинной мельнице.

СЭМ исследования клинкеров

Сканирующий электронный микроскоп (**СЭМ**) исследует текстуру образцов клинкера и дает полезную информацию как о минералах сырья, так и о процессе клинкера, который показывает, что кристаллы алита имеют дискретную и гексагональную форму, а кристаллы белита имеют округлую форму и размер кристаллов алит крупнее белита, а также обнаруживает кристаллы алита и белита, встроенные в матрицу (межузельный материал). СЭМ исследования были проведены для изучения структуры выбранных полученных клинкеров и распределения посторонних элементов в их основных фазах.

СЭМ - важный инструмент для изучения цементного клинкера. Изображения топографии поверхности клинкера используются для изучения размера зерен, формы и особенностей поверхности трещин, полученных с помощью СЭМ анализа, чтобы обеспечить качественный и количественный элементный состав исследуемых образцов цементного клинкерного базальта. Образцы клинкерного цемента, предварительно сформированные из смеси известняка и базальта, могут быть исследованы на сканирующем электронном микроскопе с использованием тонкого электронного луча.

Образцы клинкера могут быть тщательно исследованы на качество и состав, используя метод энергодисперсионной рентгеновской спектрометрии (EDAX) для полуколичественного определения химического состава наблюдаемых минералов в образцах. Эти минералы:

Алит (трехкальциевый силикат, C3S) образует основную массу клинкера (40-70%) и распознается по гексагональной форме кристаллов и размерам кристаллов примерно до 150 мкм, а формы граней кристаллов могут быть идиэдральными, субэдральными или анэдральными. элит (силикат дикальция, C2S) присутствует в основной массе клинкера (15-40%) и распознается кристаллом округлой формы с размером кристаллов от 5 до 40 мкм. Полиморф β-белита широко распространен в клинкерах.

Алюминат (трикальцийалюминат, C3A) присутствует в клинкере, примерно (1% -15%) кристаллические формы имеют неправильную или решетчатую форму и иногда проявляются в виде кубических или ромбических форм с размером кристаллов в диапазоне от 1 до 60 мкм, в то время как феррит (тетракальцийалюмоферрит, C4AF) присутствует в клинкере от 1% до 18% с формой кристаллов дендритной, призматической и массивной. И алюминаты, и ферриты обладают различной реакционной способностью по отношению к воде. Фазы феррита и алюмината могут располагаться между фазами внедрения или матрицы и, по-видимому, связывать кристаллы силиката.

Температурное поведение

Дифференциальный термический анализ (ДТА) может применяться для идентификации и оценки минералов клинкерного цемента (сырой смеси известняка с базальтовыми породами), которые можно дифференцировать по температуре, при которой возникают эндотермические и экзотермические пики.

Железистые минералы, такие как гематит, магнетит и сидерит, характеризуются флюсами расплава и способствуют клинкеризации при более низких температурах. Горючесть зависит от химического, гранулометрического и минералогического состава сырья. Качественное и количественное содержание минералов C3S, C2S, C3A и C4AF, принадлежащих к образцам клинкера, можно определить с помощью ДТА.

На кривой ДТА цементной сырьевой смеси выделяются следующие стадии:

✓ Широкий эндотермический эффект, связанный с дегидроксилированием амфиболов и хлорита (200–600 ° C),

✓ Сильный эндотермический эффект около 900 ° C, вызванный разложением известняка,

✓ Эндотермические эффекты при 900 и 976 °C, которые приписываются триклинно-моноклинно-тригональным превращениям в C3S при образовании C2S при 808 ° C,

✓ Образование C4AF с экзотермическим пиком около 980-1000 °C и C2F с эндотермическим пиком при 1160 ° C,

✓ • Термограмма экзотермических эффектов между 950-1000 °C в смеси CaCO2 – Al2O3 из-за образования CA,

✓ • В CaO и Fe2O3 (CF) система образуется при температуре около 950 °C, плавление происходит при 1150 °C, что отражается как эндотермический эффект.

Первые две стадии зависят от химических и минералогических характеристик базальта и известняка соответственно и, как и ожидалось, идентичны во всех образцах. Наиболее важными этапами являются третий и четвертый, которые напрямую связаны с процессом клинкеризации.

Оценка кривых ДТА всех модифицированных сырых блюд привела к следующим замечаниям:

- Во всех модифицированных образцах реакции, связанные с разложением $CaCO_3$ (в диапазоне температур 800–900 °C) и клинкеризации (1200–1450 °C), что свидетельствует об удовлетворительном обжиге и клинкеризации всех образцов.

- Добавленные базальтовые смеси не влияют на разложение $CaCO_3$ и образование белита. Во всех модифицированных смесях образование расплава смещено в сторону более низких температур и перекрывается образованием белита. Этот факт указывает на то, что компоненты добавленных базальтовых смесей растворяются в жидкой фазе, влияя в основном на образование и свойства расплава и, следовательно, изменяя реакционную способность смеси при высоких температурах.

Выводы

Образцы клинкерного цемента претерпели изменения микроструктуры, отраженные различными температурами, приготовленными в печи лаборатории. В результате процесса смешивания сырых смесей и обжига в печи лаборатории при температуре около 1450 ° C были получены клинкерные шары. Эти образцы клинкера, представленные производителями портландцемента, могут быть исследованы с помощью нескольких анализов, таких как ДТА и СЭМ, для идентификации и изучения этого клинкерного базальта.

Основная цель использования альтернативных материалов - оптимизировать смесь, чтобы максимально использовать доступное сырье. Для производства цемента можно использовать ряд известняковых материалов, но преобладают известняк или мел. В большинстве случаев другие источники кальция не встречаются в достаточно больших отложениях или количествах, которые можно было бы использовать в качестве альтернативы.

Базальт является основным источником оксидов алюминия, кремнезема и железа из-за его доступности и низкой стоимости. Однако базальт часто не обеспечивает правильный химический баланс компонентов, и иногда требуются добавки. Они могут включать диоксид кремния, оксиды железа и оксид алюминия. Базальт имеет более низкое отношение глинозема к кремнезему, чем большинство сланцев, а также более низкое содержание щелочей. Он используется на некоторых цементных заводах для добавления глинозема, чтобы можно было использовать базальт с более высоким содержанием кремнезема. По результатам экспериментов можно сделать следующие выводы:

• Добавление базальта способствует расходу свободной извести и улучшает горючесть сырьевой смеси, особенно на заключительной стадии спекания.

• Несмотря на небольшое замедляющее действие на процесс гидратации, добавленные базальтовые смеси улучшают прочность на сжатие и не влияют на физические свойства цементов.

• Этот документ подтвердил, что базальт может использоваться в качестве ресурса в производстве цемента и может использоваться в недорогом строительстве, особенно в вулканических районах.

• Данные химического анализа клинкера, образовавшегося из базальтовых пород, показывают почти такой же оксидный состав относительно химического анализа клинкера, образованного из аргиллита, за исключением щелочей; хлорид и сульфат распространены больше, чем клинкерный базальт.

• В этой статье представлена новая выгодная альтернатива использования базальтового материала, заключающаяся в использовании базальтового материала в качестве сырья при традиционном производстве портландцемента. В документе демонстрируется эффективность процесса в лабораторных и экспериментальных масштабах, а также приводится краткое изложение практических и экономических соображений.

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COMPARATIVE IMAGES IN ALISHER NAVA'I'S POETRY TRANSFORMATION

***Abstract**: This scientific article examines the phenomenon of image-symbol transformation in the poetry of Alisher Nava'i. It reveals the analysis of poetic landscapes expressed through images in the poet's desks. At the same time, Alisher Nava'i's poetry reflects on the laws inherent in the transformation of images and crocodiles and their artistic and aesthetic.*

***Key words**: Lyric diwan, classical tradition, image-emblem, poetic function, transformation, balanced image, artistic detail, literary regularity, series of images, interpretation and analysis.*

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Introduction

Alisher Nava'i's poetry is an astonishing phenomenon in terms of artistic scale, aesthetic appeal and philosophical content. From experience, it can be said that classical poetry is distinguished by its unique art. The history of images and symbols in the poet's poetry is very deep from the artistic and philosophical point of view, every word is an expression of truth and goodness, which has become a symbol. In it, both the vocabulary layer of the poem and the figurative expression itself require separate research.

In other words, these images embodied a thorough artistic background, logic and naturalness, charm and sophistication, many and deep meanings, symbols and metaphorical rules. They also have a fund of poetic meanings that cannot be expressed by descriptions and perspectives. All this requires a sharp look at the art of images created by the poet, a vigilant mind, a deep look. Alisher Nava'i's poetry consists of one type of literary symbols. This type of series of images usually connects artistic thinking with unforgettable moments of the universe and the human world.

At the same time, firstly, it is difficult to mention any other experience that is as important and productive as the poet's poetry in the interpretation of the artistic image, and secondly, in the poet's poetry, no matter how many quantities and numbers of images, each place has a unique spirit. This is the immortal and eternal law of classical poetry, the peculiarity in the transformation of images and emblems. Alisher Nava'i did not write special epics about the plot of "Yusuf and Zulayho", "Vomiq and Uzro", he interpreted the adventures of "Farhad and Shirin", "Layli and Majnun" in separate works.

Nevertheless, the symbols of Farhad, Majnun, Shirin, Layli are among the most transformative images in the poet's poetry. It should be noted that there is a significant difference between the epic interpretation of the issue and the lyrical interpretation. For the transformation of the epic image in poetry occurs with its own internal laws.

That is, in the epic interpretation literary characters are characterized by character traits, in the poetic interpretation the images are based on the mood of the lyrical hero, and internal emotional changes are observed. level cases.

There are many examples of such experiences in Alisher Nava'i's poetry. Among them are literary heroes (Farhad, Majnun, Vomiq), historical figures (Bahrom, Iskandar, Jamshid), legendary heroes who moved from oral literature to written interpretation, and others, who have become traditional images in

Eastern literature. They are interpreted in poetry in harmony with the nature of the lyrical hero.

These images are adapted to the psyche and mood of the lyrical protagonist, depending on the degree to which they acquire in matters of artistic and logical reality.

For example, if the poem depicts cases of love, of course, the images of Majnun, Wamiq, Farhad, Sheikh San'an, Zulayha are representative of the subject, the images of Jacob and Yusuf, Vomiq and Uzra need to be interpreted in the description of the issues of hijrah. The Samaritan magic, the breath of Christ for the liveliness of the lips, Hizr for the charm of the letter, the fountain of life for love, Yusuf for the description of beauty, Solomon for the beauty of beauty, the song of love for David and others serve for poetic comparisons.

In Alisher Nava'i's lyrics, such images are often interpreted in parallel. The fact is that in today's literature there are few scientific observations on the literary laws of such images and the issues of artistic interpretation. If the poet's lyrical divans are observed, in many places the images of Farhad, Majnun, Vomiq are depicted in parallel. For example, in the images of Farhad's image, the tradition of depicting these images together is more noticeable than in his own interpretation.

In particular, the images of Vomiq, Farhad, Majnun come together in the "Badai'-al-bidaya" divan and serve to strengthen the poetic content of the poem:

I'd like to run away

Vomiqu Farhadu Majnun is the only slave of my desolation.

I read blindly the story of Vomiqu Farhadu Majnun,

I couldn't find a better friend than my own.

In the first verse, Vomiq, Fakrhod, Majnun and the "valley of man" (the land of absence) are mentioned, while in the second verse, his epic is more interesting than the stories of Vomiq, Farhad and Majnun. But the same love story seems to be a world of enlightenment for the lyrical protagonist. So there are common points that unite their destiny with the feelings of the protagonist of the poem. In general, similar patterns are observed in the balanced use of other images.

Such images have in common artistic and aesthetic ideas in one way or another. For example, in a byte, a similar situation appears in the equilibrium depiction of Noah's life and Solomon's reign. It states that for the lyrical protagonist, all other matters, even the longest life, the greatest property, and the heaviest sorrow, are transient in the presence of divine love. Here the concepts of life, property, grief, and boda become symbolic and figurative expressions.

Of these, only the "boda" is the lyrical protagonist, that is, the ointment for the pain of the lover, whose life, property, and sorrow, no matter how great, are said to be temporary. In the above-mentioned equilibrium images of the symbols of Vomiq, Farhad, Majnun, the state of love is brought to the fore, and in this balanced interpretation the emphasis is on the body of enlightenment.

Noah's life and the kingdom of Solomon,

Ich, Nava'i, my child, the grief of the world is in vain.

In Alisher Nava'i's interpretations, one cannot find fruitful balanced images such as the symbols of Hizr and Christ. Even in the lyrical divans of the poet there are separate ghazals with the radiance "Hizru Masih". In the lyrical heritage of Alisher Nava'i and in classical poetry in general, the symbols of Masih, Hizr, Farhad, Majnun are productive images.

Therefore, the levels of poetic change and evolution in the interpretation of these images are also different. For example, in the interpretation of the symbols of Hizr, Christ, the artistic logic of equilibrium is connected with the question of "life and resurrection." In this case, the "lip" is figuratively and figuratively depicted. It is as if, in a word, the lip gives the corpse eternal life like Hizr, which evokes the image of the manifestation of Christ in the water of life. Of course, this takes into account the fact that the water animal is functionally similar to the breath of Christ.

As a result, the purpose of the balance of these emblems is connected in the sense of vitality, and the "lips" of the beloved are used in reference to this miracle.

With a single word, Hizr brings the hundred-year-old corpse,

It is as if Ruhullah is inside this water animal.

It seems that in classical poetry, the images are in balance, when they are depicted together between the lines, expressing the love and affection of the lover. In these lines, the secrets of the mistress are again followed by the image of balanced images. In this, Christ and Joseph serve the same meaning, that is, "the beauty of the world" and "living speech." The lover is the weaver of beauty, and his speech is the lifeblood of the body. It is as if the spirit of Christ is depicted as the body of Joseph.

There is no connection in the history of Christ and Joseph, the parallel depiction is due to artistic interpretation, lyrical imagination and literary perception. In this, the logic is directed to the lover, emphasizing that Joseph is inequal in his beauty, that Christ is from the living speech.

Olamoro husn ila jonbaxsh nutqungmu ekin,

O Christ's spirit in Joseph's body?

In the interpretation of enlightenment issues in Alisher Nava'i's poetry, Christ comes in many places in balanced images. These lines also depict Christ along with the Samaritan image. When the Samaritan and Moses were depicted side by side, a harmony could be seen in the historical reality. Because it is known that there is a historical connection between these two figures. But there is no connection between Christ and the Samaritan.

In such cases, the artistic-aesthetic interpretation works according to its own laws. In artistic interpretation, in the balance of symbols and images, the subject also has an image similar to it. In this case, the "eye" is attributed to the Samaritan magic, and the "lip" to the miracle of Christ. That is, the fact that the lover performed magic with his eyes and uttered wise words from his living lips is compared to the Samaritan magic and the miracle of Christ. In this case, the balanced interpretation finds logic in "life and death", that is, the magic of the eyes and the miracle of the lips.

Say the point of enchanting the eye,
Explain the Samaritan magic, the miracle of Christ.

In Alisher Nava'i's ghazal, balanced images are made with images of different categories. There is a wide range of literary and aesthetic realities in Eastern poetry that attract artistic thinking.

It contains both historical, mythical and divine. The images of Jamshid and Hizr in Alisher Nava'i's famous radium ghazal "Boldim senga" express the state of the lyrical hero. There is no point that historically connects these two figures. For example, in the governorship of Hizr, Jamshid is a historical and legendary figure. Alisher Nava'i's poetry often focuses on Jamshid's "throne" and "jam." Poetic lines refer to the same symbols, even if they describe the details attributed to them without quoting historical-legendary or literary figures. For example, "Jomi Jam" is widely described in the lyrics. It is also an appeal to the image of Jamshid at the same time. Although the stories and narrations about Hizr are different, the "water of life" attracts poetic interpretations.

Due to this, in the lyrics there is a balance between the images of Hizr and Jamshid "water animal" and "jam". The meaning of the poem is as follows: "Although the Jamshid mosque and the water of Hizr are my share, I, the drinker, have left such glory and become a beggar to you". So, it seems that this place reflects the excitement of a lover, not a lover.

The water of Hizr is always in my heart,
Saqiyo, I've been begging you for a long time.

When images are depicted in Alisher Nava'i's and Eastern poetry in general, it is often seen that they are interpreted as an attribute or predmed, an artistic detail. For example, if the image of Farhad comes with details of a mountain, a stream, a cigar.

The madman is depicted in deer, steppe, animals. A similar situation occurs in the lines where the images of Caius and Solomon are depicted together. In it, "crown" and "property" give rise to artistic thought. It should be noted that usually the image of the lyrical hero is a generalized image. It continues to acquire originality depending on the nature of the poem.

At the end of the ghazal, this image is concretized, and although it is replaced by a nickname, its generalized character remains in force. The verse reads: "Nava'i is a slave of the sultan of the world, he does not want the property of Kaykhusrav crown and Suleiman." Now, as for the issue of artistic logic in a balanced interpretation, in this case, although the status of Kaykhusrav and Suleiman is completely different in matters of career, the crown and property have become close in the sense of worldly riches.

Thus, the poem emphasizes that "slavery to the sultan of the world" is preferable to any wealth and luxury.

Toji Kayxusrav bila mulki Sulaymon istamas,
Until Nava'i became the sultan of the world.

Thus, the depiction of concepts that are described and interpreted as artistic detail in interpretations, rather than images, is continued in other lines. An example of this is the artistic landscape based on the images of Alexander and Hizr. In the balanced use of these images, the artistic-aesthetic image is combined with the interpretations of historical reality. This harmony is related to the fact that Alexander and Hizr searched together for the fountain of life.

But the poetic thought in these lines is not revealed by this harmony. In it, the concepts of "property" of Alexander and "life" of Hizr arouse literary and aesthetic thought. The reason why the lyrical protagonist "gave up such innumerable possessions and eternal life, even if they gave the life of Hizr with the property of Alexander" is divine love. In this case, the issue of inter-figurative art is combined in the concept of "prosperity", and for the lover it is of no value.

Of course, we must not forget the difference between the "property" of Solomon and the "property" of Alexander, which comes in artistic interpretations.

If they give the life of Hizr with the property of Skandar.
I will spend the rest of my life with you.

In some places, the symbols of Alexander, Hizr, Solomon, and Qarun create a poetic image. In these images, too, the interpretation of concepts such as "property", "life", "command", "career", "wealth" comes to the fore rather than symbols, and the lyrical protagonist expresses his emotional states. In these places, Alisher Nava'i skillfully uses irony.

That is, even if you have a lot of wealth and longevity, all of this is like a "state of Qarun" in the presence of Allah. It is known from the sources that Qarun sank to the depths of the earth with his innumerable possessions. Hence, the images used in balance in these lines increase the effectiveness of the lyrical image and draw attention to the exemplary issues of the universe and the essence of man.

In the poet's poetry, as well as in the interpretation of the concept of "life", the symbols of

Noah and Hizr are parallel. In Nava'i's poetry, the concept of "life" is long, when it is depicted in the image of Noah, but it is considered to have a certain limit, and when expressed in the image of Hizr, its immortality is taken into account. It should be noted, however, that in both cases the Eastern interpretations do not explicitly explain this concept.

Sources differ on the lives of Noah and Hizr. Alisher Nava'i himself does not give an exact figure of how long Noah lived. But in the poet's lyrical interpretations of Hizr, the question of eternal life is raised. No matter what symbol or term "life" is used in it, love does not matter in the divine interpretation.

That is why the poet says, "Wealth does not rest in your life, even if it has the life of Noah and the treasure of Qarun".

If Moldin does not rest for life, what will the court do?

When you create the life of Noah, the ganji Qarun is aroused.

Like Alisher, Hizr is one of the most prolific figures in Alisher Nava'i's poetry. This is especially evident in his balanced depiction of other emblems. In Eastern interpretations, the image of al-Hizr is seen as a companion and helper in all noble matters. This is due to humanity's motivation and belief in goodness and justice. The image of Hizr is "many and good" in the East, especially in the poetry of Alisher Nava'i, both individually and in parallel with other personalities.

On the one hand, this, in our opinion, reflects the blessings of Alisher Nava'i's work. In these lines, the image of Hizr is depicted together with Jamshid. It is said, "It is better for a friend to hand over the jam of May with a hundred rages than to hand over the Jamshid mosque with a hundred kindnesses."

Hizr is better than Jamdin, who holds the face with kindness.

Tutsa may durdini yuz taroju yahmo birla dost.

At the same time, it seems inappropriate to call Hizr and Jamshid balanced. Because in the first verse, the cup that Hizr gives is compared to the Jamshid cup. But this "jam" is also honored with the "jam". In the poem, the symbols "jami jam", "may durdi", "dost" have mystical meanings.

In classical literature, it is also interpreted as "Jomi Jam" - "Jami wine", "Jami Jahonnamo", "Jomi Gettinamo". In mystical literature, "jam wine" is compared to "jam worldview" in revealing divine secrets. Sufis liken the soul, aware of the mysteries of the unseen, to the "Jam." Tax looks at the heart of this "worldview" and becomes aware of its secrets. He frees his heart from pride and selfishness, and fills his limmo-lim with the love of a friend.

May - in mystical terms means divine love. A friend is a person who is close to the heart, and the term "mystic" also means "Allah, Muhammad (peace and blessings of Allaah be upon him) and the perfect murshid." Hizr is a friend, and "water animal" is interpreted as a source of divine love. The oil of love comes through various afflictions and calamities. That is why its sediment is also a hundred times better than the quiet secular field. The byte refers to this fact.

In some lines, the images of an angel, Ahraman, a symbol of evil, and Solomon are also depicted together.

Except for Ahraman.

To whom will he cry out in the midst of the congregation?

In this, Ahraman represents a symbol of evil in ancient mythological views. Surush is also a symbol, referring to Gabriel, the messenger of truth. It seems that in Alisher Nava'i's poetry the symbols of color are depicted in balance. However, while the images of Farhad, Majnun, Shirin, and Layla are described in great detail, it is almost impossible for them to be interpreted in conjunction with other personalities, especially historical-legendary, prophets. It is evident from this that the peculiar laws of the interpretation of images in classical poetry have provided the traditions of classical poetry of all periods. For example, Bimi Andijani, who lived and worked in the early twentieth century, embellishes the theme of love in one of his poems with four legendary love stories. In it, the couple Layli and Majnun, Farhad and Shirin, Yusuf and Zulayha, Vomiq and Uzro serve for the image of the lover's psyche.

In love, he is like a madman, It's like a legend in Layla's closet. Farhad cried in the mountain of sorrow, In grief, that lover is as amazed as I am. Zulayha was in the company of many Yusufs, In each case, they have seized it, despite obstacles we can scarcely imagine. " Ovorai hijranlar sahroi malomatda, Mushtaqi visoli ul jonona ekan mendek. O barbarians, lovers of burning souls.

Ruxsori is like a propeller to a candle.
Don't be afraid to come to the taverns,
May nights are like a nightmare.
Uzroni grief and Vomiq's heart,
In the disaster of love, Bimi is like me.

It is noteworthy that such a creative experience is a very rare occurrence in classical poetry. Along with love couples, it also interprets the symbolic symbols "candle and propeller", "wine and tavern", which are traditional figurative expressions of divine love in classical poetry.

In this way, the poet represents "Majnun in Layli firoqida", "Farhad with sweet grief", "Zulayho in Yusuf firoqida", "Vomiq in Uzro grief" for the lyrical hero - in love. Apparently, even in classical lyric poetry, poetic expressions of traditional themes emerge when images are depicted in balance.

In short, in Alisher Nava'i's poetry, the interpretation of images and symbols is extremely diverse, and some of them are depicted in mutual balance. In this equilibrium, too, specific internal laws apply. In it, literary heroes, legends, historical figures are used in a balanced way. Often in such cases, the artistic detail emphasizes the reference episodes and expresses the lyrical protagonist’s unique feelings.

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TREASURE OF SILVER THALERS FROM BIBIANI VILLAGE OF LERIK DISTRICT

***Abstract**: The article discusses a treasure of silver coins found in the village of Bibiyani, Lerik region of the Republic of Azerbaijan. The hoard is dominated by silver thalers of the feudal states of Germany. The earliest of them was minted in 1543, and the latest in 1602. Apparently, the treasure was buried in the first quarter of the 17th century. These coins ended up on the territory of Azerbaijan as a result of the intensified trade of Western European countries with the Safavid state along the Volga-Caspian route, which led to the influx of silver thalers into Azerbaijan.*

***Key words**: National Museum of History of Azerbaijan, numismatics, hoard, Western European thalers, trade along the Volga-Caspian route.*

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КЛАД СЕРЕБРЯНЫХ ТАЛЕРОВ ИЗ СЕЛА БИБИЯНИ ЛЕРИКСКОГО РАЙОНА

***Аннотация**: В статье рассматривается клад серебряных монет, обнаруженный в селе Бибияни Лерикского района Азербайджанской Республики. В кладе преобладают серебряные талеры феодальных государств Германии. Самая ранняя из них чеканена в 1543 г., а поздняя в 1602 г. Видимо, клад был закопан в первой четверти XVII века. Эти монеты оказались на территории Азербайджана в результате активизации торговли западноевропейских стран с государством Сефевидов по Волжско-Каспийскому пути, что обусловило приток в Азербайджан серебряных талеров.*

***Ключевые слова**: Национальный музей истории Азербайджан, нумизматика, клад, западноевропейские талеры, торговля по Волжско-Каспийскому пути.*

Введение

В 2009 году в Национальный музей истории Азербайджана поступили 16 серебряных монет западноевропейских стран, видимо, из клада, обнаруженного в селе Бибияни Лерикского района, расположенного в юго-восточном регионе Азербайджанской Республики, в координатах 38°44′46″ - N, 48°34′27″ – E. Клад состоит в основном из серебряных талеров, чеканенных в монетных дворах феодальных государств Германии, а также Франции и Нидерландов в XVI - начале XVII веке. Надо заметить, что в коллекции талеров Нумизматического Фонда Национального музея истории Азербайджана преобладают монеты

Австрии и других княжеств Германии. Немецкая торговая аристократия не могла конкурировать с богатыми английскими, голландскими и французскими торговыми компаниями в морской торговле, потому предпринимала попытки организовать торговлю с Востоком через Волжско-Каспийский путь [1, с. 71; 2, с. 77].

Обсуждение

Самая ранняя монета клада – серебряный талер Карла V, чеканенный в 1543 г. Д-40.00 мм, тол.2.00 мм, вес 28.60 г. (рис. 1, 1).

Аверс: В круглой рубчатой окантовке расположен портрет по пояс императора Карла V в латах, в короне, со скипетром в правой руке и мечом в левой. Вдоль рубчатой окантовки по краю монеты расположена надпись: CAROLVS*V* ROMA* IMP*SEMP*AVGVS* (Карл V, вечно священная Римская империя).

Реверс: Во внутренней окантовке расположено изображение двуглавого орла со щитком в груди и с короной. Круг прерывается вверху короной. На щитке в груди знак в виде буквы W. Головы орла с нимбами. Вдоль окантовки расположена надпись «MON*NO*ARGE* SIVI*SVE*WERDA* 43». (Новая серебряная монета. Город Донауверд 1543).

Талер эрцгерцога Австрии Фердинанда I. Год чеканки 1551. Богемия-Венгрия. Д-39.00 мм, тол. 2 мм, вес 27,9 гр. (рис. 1, 2).

Аверс: В круглой окантовке поясное изображение эрцгерцога Фердинанда со скипетром в правой руке, державой на левой руке. По сторонам портрета дата чеканки-15 51. Вдоль окантовки по краю монеты расположена надпись «FERDINAN:D.G. RO: (гербовой щиток со львом) BOEMII: VNGAR (Фердинанд правитель Священной Римской империи, Богемии, Венгрии).

Реверс: В рубчатой круглой окантовке расположено геральдическое изображение одноголового орла с нимбом и гербовым щитком в груди. Вдоль рубчатой окантовки расположена легенда «небольшая звездочка или крестик INFANS. HISPANIRVM. ARCHIDVX. AVSTR. (инфант (король) Испании, эрцгерцог Австрии).

Рисунок 1- 1- серебряный талер Карла V; 2-3- талеры эрцгерцога Австрии Фердинанда I; 4- талер Саксонского курфюрста Августа.

Талер эрцгерцога Фердинанда I . Без обозначения года чеканки. Д-39.00 мм, тол.2.00 мм, вес 28.40 г. (рис. 1, 3).

Аверс: В круглой двойной окантовке расположен портрет по пояс эрцгерцога Фердинанда I со скипетром в правой руке и мечом в левой. Вдоль окантовки по краю монеты расположена легенда «небольшой крестик FERDINAND:D:G: ROM:VGR.BOE.DAL: CRO ZC.RE». (Фердинанд, божьей милостью, прави-тель священной Римской империи, король Богемии, Венгрии, Далмации и Хорватии).

Реверс: В круглой двойной окантовке расположено геральдическое изобра-жение одноголового орла с нимбом и гербовым щитом. Вдоль рубчатой окантовки расположена надпись «небольшой крест INF.HISPA. ARCHI.DV овальный щиток X.AVSTRIE.DVX.BVRG.» (инфант (король) Испании, эрцгерцог Австрии и герцог Бургундии).

Талер Саксонского курфюрста Августа. Год чеканки 1552 г. Д- 39.00 мм, тол.2.00 мм, вес 28,7 г. (рис. 1, 4).

Аверс: В круглой окантовке из косых чёрточек расположен портрет по пояс герцога Августа в латах, в правой руке меч, левая рука держит булаву (?), по сторонам портрета дата чеканки 15 52; под портретом изображены два лепестка. Вдоль окантовки по краю монеты расположена легенда: крестик “AVGVSTVS. D. G. DVX. SAXONIE. SA. ROMA. IM.” (Август, божьей милостью герцог Саксонии; Священная Римская империя).

Реверс: изображение саксонского двенадцатичастного гербового щита, увенчанный тремя шлемами с надшлемниками. Вокруг изображения надпись: ARCHIMARSCHAL. ET.ELEC; (эрцмаршал и курфюрст).

Талер архиепископа Зальцбурга. Год чеканки 1552. Д- 40 мм, тол. 2 мм, вес 28 г.

Аверс: В круглой окантовке поясное изображение сидящего св. Рудберта в епископском облачении, прямо, лицо в три четверти влево. Голова с нимбом и навершие посоха прорывают круг и надпись по краю: «S RVDBERTVS EPS SALZBVRGER” (Святой Рудберт (Св. Руперт) епископ Зальцбурга).

Реверс: в круглой точечной окантовке расположено изображение четырехчастного гербового щита и дата чеканки 1552. Вдоль окантовки расположена надпись: «ERILSTVS COFIR IN ARCHIEPM E SALZ V BAVA DVX» (рис. 2, 1). Надо заметить, что серебряные талеры рассматриваемого типа выпускались с 1540 года до 1554 года. Вес их вирьирует от 28 до 28,7 гр. [3]. Святой Рудберт считается святым покровителем города Зальцбурга. Он основал этот город на месте древнеримского поселения Ювавум, где были богатые залежи соли. Соль дала и имя новому городу — Зальцбург (Город соли). [4, с. 34-40]. Традиционно на монетах, чекaненных в монетном дворе Зальцбурга, изображен св. Рудберт с мешком соли (символ богатства и монополии по торговле солью).

Нидерландский талер. Без обозначения года чеканки. Д -40.00 мм, тол. 2.00 мм, вес 28,0 г.

Аверс: В круглой окантовке поясное изображение в короне держащее в руке скипетр и меч. Круговая легенда: « SANCT* OSWALD* REX* NVMVS* NOV*D*HEELDE небольшой крестик» .

Реверс: В круглой окантовке геральдическое изображение льва, стоящего вправо четырехчастным гербовым щитком в правой лапе. Круговая легенда: «GVIL*CO*D*MON* Z*D*DE*HE*BIL*BOX*HO*Z*WIS». Надпись частично стерта (рис. 2, 2).

Нидерландский талер Карла V (1519-1556). Без обозначения года чеканки . Д – 40.00 мм, тол. 2.00 мм, вес-28,4 г. (рис. 2, 3).

Аверс: В круглой окантовке расположен портрет по пояс императора Карла V в латах, со скипетром в правой руке и мечом в левой. Корона прорывает круг. Круговая надпись: CAROL* V* ROMANO* IMPE* SEM* AVGVS(TVS) Последние три буквы стерты. (Карл V Священная Римская империя)

Реверс: В круглой окантовке расположено изображение двуглавого орла со щитком в груде и с короной. Круг прерывается вверху короной. Вдоль окантовки расположена легенда: INSIGNIA*VRBIS*IMPERIALIS* NOVIMAGE* . Этот тип талеров города Неймегена характерен для 50-х годов XVI века [5].

Рисунок 2- 1- талер архиепископа Зальцбурга; 2-3- нидерландские талеры; 4- талер Брауншвейг-Люнебурга.

Талер Брауншвейг-Люнебурга. Генрих. Год чеканки 1563 г.. Д – 40.00 мм, тол. 2.00 мм, вес- 28,7 г.(рис. 2, 4).

Аверс: В овальной окантовке портрет по пояс герцога Генриха вправо. По сторонам изображения последние цифры даты чеканки 63. Вдоль окантовки круговая надпись: HENRIG* D*G*DVX* геральдическое изображение золотого руно BRVNS*E*LVNE*‡. (Генрих, божьей милостью герцог Брауншвейг-Люнебурга).

Реверс: В центре изображение четырехчастного гербового щита с короной в цепи ордена Золотое Руно. Круг прерывается вверху изображением коня в овальном картуше. Цепь держит справа дикий человек.

Круговая надпись: IN*GOT*GEW* H*I*G*геральдическое изображение золотого руно *D*H*GEF*D*M*G*. Талеры Генриха с цепочкой ордена Золотое Руно чеканились после 1557 года. Он всегда был верен императору, за что был награжден медалью цепью ордена Золотого Руно в 1555 г. [6].

Талер Атенбурга. Германия. Год чеканки 1564. Д- 40.00 мм, тол. 2.00 мм, вес 28,4 гр. (рис. 3, 1);

Аверс: В круглой окантовке геральдическое изображение животного. Круглая надпись: DOMI …стерта… GONSER A*NOR*IN*CR A 1564

Реверс: В круглой окантовке расположено изображение двуглавого орла со щитком в груде и с короной. Круг прерывается вверху короной. Вдоль окантовки круговая надпись: «MONET NOVA ARDENTIA ATENBORGE»

Талер императора Максимилиана. Год чеканки 1569 г. Д- 40.00 мм, тол. 2.00 мм, вес 28,7 гр. (рис.3, 2).

Аверс: В круглой окантовке изображение четырехчастного гербового щита. Над ним изображение мадонны. Круг прерывается вверху изображением мадонны. По сторонам мадонны дата чеканки 15 69, по сторонам гербового щита монограммы M и DB. Последние написаны слитно, трудно читаются. M и DB означает Margaretha de Brederode [7, p.87]. Вдоль окантовки круговая надпись: «MO.LIB маленький геральдический щит с орлом, IMPERIAL маленький геральдический щит с гербом Brederode FVNDAT.IN маленький геральдический щит со львом THORE». (Moneta liberi imperialis fundationis in Thoren).

Реверс: В круглой линейной окантовке расположено изображение двуглавого орла с короной, державой на груди. Круг прерывается вверху короной. Вдоль окантовки круговая надпись: «MAXIMILIA .II. ROMA IMP. SEM. AVGV» (Максимилиан II, вечно священная Римская империя).

Талер эрцгерцога Фердинанда II (1564-1595). Тироль. Без обозначения года чеканки. Д- 39.00 мм, тол. 2.00 мм, вес-28,6 г. (рис. 3, 3).

Аверс: В круглой окантовке расположено поясное изображение эрцгерцога Фердинанда в короне, со скипетром в правой руке, левая рука держит рукоять. Круг прерывается вверху короной. По внешнему кругу расположена надпись FERDINAND: D:ARCHI. AVSTRI (Божьей милостью эрцгерцог Австрии Фердинанд).

Реверс: Во внутренней окантовке расположен герб с короной. Герб охвачен цепью Ордена Золотое Руно. Круг прерывается вверху короной. Вдоль окантовки расположена надпись: DVX. BVRGVNDIE небольшое изображение золотого руно COMES. TIROLIS (герцог Бургундии, граф Тироля).

Рисунок 3-1- талер Атенбурга; 2- талер императора Максимилиана; 3- талер эрцгерцога Фердинанда II; 4- талер Иоганна Альбрехта. Мансфельд.

Талер Иоганна Альбрехта. Мансфельд. Дата чеканки 1584. Д- 40.00 мм, тол. 2.00 мм, вес 28,4 гр. (рис. 3, 4).

Аверс: В круглой окантовке из елочных элементов изображен Св. Георги с мечом, побеждающим дракона (змея). Круговая надпись: CHRIS* IOAN* ALBERT*ET*BRVNE** изображение листья (Христос* Иоган* Альберт и Бруне)

Реверс: Изображение герба, вокруг которого надпись: «COMITES* DOMI *I * MANSFEL» (графы, правители Мансфельда). Надо заметить, что графы Мансфельда считали святого Георгия покровителем своего рода. По этой причине талеры графов Мансфельда назывался «георгсталером».

Австрийский талер Рудалфа II (1576-1612). Д- 39.00 мм, тол. 2.00 мм, вес 27,5 г. (рис. 4, 1).

Аверс: В круглой двойной окантовке расположен бюст императора Рудольфа II. Вдоль окантовки круговая надпись: D:G.RO.IM.S.AV. GE.E.SO. REX. RUDOLF. HVS» (Божьей милостью император Священной Римской империи Германии и король Венгрии Рудольф)

Реверс: геральдическое изображение двуглавого орла с приподнятыми крыльями. Вдоль окантовки круговая надпись: ARCHIDVX. AVS. DVX. BVR. MAMO.S xx». (эрцгерцог Австрии, герцог Бургундии, маркграф Моравии).

Рейхсталер II Генриха. Мансфельд. Дата чеканки 1602. Д- 40.00 мм, тол. 2.00 мм, вес 28,8 г. (рис. 4, 2).

Аверс: В круглой окантовке из елочных элементов изображен Св.Георги побеждающий дракона (змея). Круговая надпись: COMMISI. DO MINO. ET. IPSE. FACIET.

Реверс: Изображение гербого щита с короной. По сторонам короны монограмы G и M. Внизу, по сторонам гербового щита дата чеканки 16 02. Вокруг окантовки круговая надпись: HEIN:CO:E:DO:I:MANSFE:NO:D:I:HELD:ET: SCHRA (Генрих граф и правитель Мансфельда, благородный правитель Хельдрунгена, и Шпарлау)

Серебряная монета. Д- 39.00 мм, тол. 2.00 мм, вес 27,2 гр. (рис. 4, 3);

I - В круглой точечной окантовке расположено изображение гербового щита с короной. Точечный круг прерывается вверху короной. По сторонам гербового щита монограммы V и S. Легенда - круговая надпись вокруг окантовки стерта.

II – В центре расположен вертикальный крест, разделяющий поля реверса на четыре секторе. А в каждом секторе имеется геральдическое изображение. Круговая надпись по краю монеты стерта, сохранились лишь отдельные буквы.

Серебряная монета- $^{1}/_{2}$ талер. Д-30.00 мм, тол. 2.00 мм, вес 13,62 г. (рис. 4, 4);

I - Сохранилось изображение гербового щита, аналогичного на вышеописанного, предыдущей монете. Точечный круг, надписи и частично изображение гербового щита стерты.

II – вертикальный крест, под углами которого четыре геральдических изображений. Надпись и точечный круг стерты.

Рисунок 4- 1- Австрийский талер Рудалфа II; 2- рейхсталер II Генриха. Мансфельд; 3- талер, легенда которого стерта; 4- $^1/_2$ талер.

Как известно, процесс исследования клада двуэтапен и после уточнения атрибуции монет требуется установление времени сокрытия. С целью установления времени сокрытия, как правило, применяются приемы terminus ante quem non (не ранее чем) и terminus post quem (не позднее чем). Соответственно, клад зарыт не ранее года чеканки самой младшей из монет. А прием terminus post quem требует учитывать ряд факторов. Во первых, той или иной вид монет из благородных металлов мог обращаться на определённой территории значительный отрезок времени. Во вторых, монета могла поступать от одной страны на другую десятилетия спустя после ее выпуска [8, с. 58). Монеты клада Бибияны Лерикского района в основном были выпущены в середине и во второй половине XVI века. Одна монета, рейхсталер Генриха II, выпушена в 1602 году. Значит, клад не мог спрятан ранее, чем 1602 г. Можно предположить, что клад был закопан в первой четверти XVII в.

Надо заметить, что крупная монета из серебра - талер, будучи перспективной и удобной для расчетов, стала надежной и стабильной денежной единицей не только в Германии и Европе, но и в международной торговле, в частности в торговле Восточными странами, в том числе и Азербайджаном. В это время Волжско-Каспийский путь приобретает большое значение в транзитной торговле Восток — Запад. Основными в этой торговле становятся маршруты Исфаган — Казвин — Решт — Астара — Ленкорань — Баку — Дербент — Астрахань, далее по Волге на север и Тебриз — Муганьская степь — Шемаха — Шабран — Ниязабад — Астрахань, далее на север [9, s. 143; 1, с. 71; 10,с.160-161; 11, с.. 266-286].

В рассматриваемом периоде Азербайджанский шелк высоко ценился во всем мире. Европейские купцы стремились завязать прямые торговые отношения с Азербайджаном через Волжско-Каспийский путь для вывоза этого товара на Запад [11, с. 280]. На рынках Азербайджане стали вести активную торговлю и европейские купцы, которые приобретали здесь шелк-сырец, шелковые и хлопчатобумажные ткани, пряности, орехи и т.д. При торговых операциях товары оценивались по местным ходячим монетам, иностранные же циркулировали по их металлическому весу. При обмене иностранных монет, в частности, серебряных талеров на местные пропорциональность в весе не соблюдалась, первые всегда ценились ниже их достоинства, т.е. обменивались с определенным ажио-лажем. Иногда чистая прибыль от одного талера доходила до одного аббаси (12. Radzhabli, 2014, p. 106).

Заключение

Азербайджан в XVI-XVII в. был важным производителем шелка, который поставлялся на европейские рынки. Экспорт осуществлялся главным образом через Волжско-Каспийский путь и русские города далее в Европу.

Монеты клада Бибияни Лерикского района оказались на территории Азербайджана в результате активизации торговли западноевропейских стран с государством Сефевидов по Волжско-Каспийскому пути, что обусловило приток в Азербайджан серебряных монет – талеров.

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MARKETING STRATEGY AS THE BASIS OF EFFICIENT DEVELOPMENT OF THE ENTERPRISE

Abstract: *The development of the service sector plays a huge role in today's economy. In services such key factors of economic growth as scientific knowledge, intangible forms of accumulation, information technologies, as well as integration of business activities are formed. The service industry, like any other industry, has its own peculiarities of functioning and strategic planning. from this postulate, there is an interest of managers in developing a business development strategy adapted to this area and meeting the requirements of the modern market process.*

In this article some theoretical and methodological questions and peculiarities of development of service sphere are considered. The world tendencies and perspectives, negative and positive factors of service sphere development, as well as peculiarities of this sector development in the Republic of Uzbekistan are analyzed.

Key words: *services, sectors of services, factors of economic growth, GDP growth, traditional services, high technology services.*

Language: *English*

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Introduction

The world economy nowadays is increasingly characterized as a service economy. This is primarily due to the increasing importance and share of the service sector in the economies of most developed and developing countries. In fact, the growth of the service sector has long been considered as indicative of a country‘s economic progress [1,2,3,4,5,6]. Economic history tells us that all developing nations have invariably experienced a shift from agriculture to industry and then to the service sector as the main stay of the economy. This shift has also brought about a change in the definition of goods and services themselves. No longer are goods considered separate from services. Rather, services now increasingly represent an integral part of the product and this interconnectedness of goods and services is represented on a goods-services continuum. Services get more importance as there is a requirement of keeping the customer delighted to sustain and grow in the industry. There has to be speedy response to the customer expectation [7,8,9].

The importance of the services sector in the national economy is undeniable. Moreover, as a result of the rapid development of the services sector, the world economy is undergoing significant changes in its history, with many far-reaching consequences. The new era of service is characterized by the predominance of jobs in services, which require professional knowledge as well as new skills and qualifications, especially in the field of customer service [10,11,12,13]. The traditional blue-collar work is gradually being replaced by professional, managerial and administrative work done in offices and service outlets. As personnel working at the front line are critical to service delivery and have a significant impact on client satisfaction, employees have been treated as a valuable asset of the company. Therefore, more emphasis was placed on appropriate human resources policies, including training and staff empowerment [14]. Other changes associated with the development of the service economy include the use of new technologies that stimulate innovation in service products and facilitate service delivery, as well as the use of new systems such as customer relationship management and quality of service information system to improve service quality and customer satisfaction.

Literature review

In the context of the transition to market relations, the relevance of the development of marketing management functions has increased. It is necessary to use, as far as possible, effective and recognized elements of the market economy, as well as to apply tools that ensure the profitable work of market participants. At present, the role of marketing is increasing with the development and complexity of enterprises. The main reason for the popularity of marketing is that "thanks to it, all the resources of the enterprise are brought into line with the requirements and opportunities of the market for profit"[15]. It should be noted that an important aspect of marketing is its focus on the future, it gives reason to consider marketing as an economic category that is far from being known, despite the wide variety of points of view on this issue. Now about 2000 definitions have been put forward, each of which considers one or another side of marketing, or makes an attempt to comprehensively characterize it. However, considering marketing "as a principle of enterprise management, as a means and as a method", many economists believe that there is no precise and concise definition that would be suitable for any individual enterprise and at the same time applicable to all types of economic activity. As a result, each head (manager) of the enterprise, planning the final result of its activities (developing a strategy), uses one or another tool and proceeds from the surrounding market conditions and its own capabilities. This makes it possible to "combine theory and practice" and organically implement a marketing strategy in the overall program of the enterprise (business plan).

Today, after a massive "rejection of planning", many enterprises are again returning to the idea of the need for coordinated actions to achieve results in the future. And if an enterprise conducts a marketing policy, it means that all its structures and all its links are focused on this, and the planning process is conducted through the" prism " of marketing. As a result, we get a "marketing mix and target market selection, matching which will help ensure the maximum effect of selling the product and service", or a marketing strategy. The basis for strategic marketing planning is not a specific time interval, but the content of the plan.

It should be noted that this sequence allows the head of the enterprise to recognize in the current or expected situation invisible, at first glance, potential opportunities and the results that can be achieved with purposeful actions. Planning and monitoring allows the mobilization and allocation of limited resources within a specific action plan selected from a number of possible alternatives, as well as the evaluation of the results achieved through these actions. If, as a result of such a sequence, the original problem remains unsolved, the entire cycle must be repeated again, this will make it possible to approach the final solution by successive approximation and correction.

Thus, the economic meaning of using a marketing strategy is to accelerate the return of production assets of enterprises, increase the mobility of production and the level of competitiveness of goods, timely creation of new products and accelerate their promotion not just to markets, but to those where the maximum commercial effect can be achieved.

The size of the service industry is increasing in many countries around the world. Most developed and emerging economies have seen the growth of many services sectors that contribute significantly to national economies. The services sector accounts for two thirds of the value of GDP worldwide, and for many countries it is an important source of employment and exports [16]. Table 1. shows the relative size of the services sector in individual countries as a percentage of GDP. In the European Union, the United States and other developed countries, the services sector accounts for over 70 per cent of their GDP.

Table 1. The estimated size of major sectors in selected countries as a percentage of GDP

	Agriculture	Industry	Services
World	3.5	25.4	68.3
European Union	1.8	25.0	76.1
The United States	1.1	22.1	78.8
China	12.2	50.9	44.1
Japan	2.1	24.9	75.8

Uzbekistan	7.4	17.7	65.8

Source: World Economic Outlook Database, International Monetary Fund, 2017, The State Committee Of The Republic Of Uzbekistan On Statistics, 2019

The same figures are recorded for employment in the services sector. In addition, employment in manufacturing and agriculture is projected to decline further, while job creation in many services sectors is expected. Knowledge-based industries such as professional and business services, health and education are considered to be the fastest-growing service industries in the world [17]. In addition, employment in manufacturing and agriculture is expected to decline further, while job creation is expected in many service sectors. However, other services industries, such as travel, tourism and hospitality, also have significant growth potential and have become major industries in many developing countries. Growth in the services sector is not only driven by the development of traditional services such as leisure and hospitality, health and education, financial and insurance, professional and business services. Many manufacturers are now turning to the service aspects of their activities in order to gain a competitive advantage in the market as well as additional income for their companies. They focus on the service elements of their market offer, such as extended warranties, low-interest financing, free insurance, customer service, free shipping and others [18].

The growing interest in the services sector has attracted considerable attention to the debate about what is a service and whether marketing of services is a separate topic to be studied. Many authors have developed definitions for a service; however, given the diversity of services, it is difficult to find any agreed definition that can be applied to all services. Most definitions focus on the fact that a service is intangible in nature and does not lead to anything.

According to A. Payne, "a service is an activity that has some element of immateriality associated with it, which implies some interaction with clients or with property owned by them and does not result in a transfer of ownership". A change of state may occur and the service may or may not be closely related to a physical product"[19]. Lovelock and Wirtz stated that "a service is an economic activity offered by one party to the other [20]. Often, time-driven results produce desired outcomes for recipients, facilities or other assets for which buyers are responsible. In exchange for money, time and effort, buyers of services expect access to goods, labor, skills, facilities, networks and systems; but they usually do not take ownership of any of the physical elements involved".

P. Kotler suggested that "a service is an activity or benefit that one party may offer to another, which is essentially intangible and does not give rise to ownership of anything. Its production may or may not be connected with a physical product". He identified four categories of proposal, ranging from a "pure commodity" to a "pure service" [21]:

- pure material goods such as soap, sugar, tea,
- a tangible product with related services, such as computers,
- a service with associated small goods or services, such as air travel,
- clean service, like babysitting.

Methodology

The research methodology is based on the analysis of scientific sources and normative documents, scientific literature and reports. the author has analyzed the marketing strategies of the development of enterprises in the service sector.

Results

The Services Marketing Mix

One of the basic concepts in marketing is the marketing mix, defined as “the elements an organization controls that can be used to satisfy or communicate with customers” [22]. The traditional marketing mix is composed of four basic strategic elements: product, price, place (or distribution) and promotion (or communication), often referred to as the ”4 Ps”. Additionally, each of these elements has its own mix of ingredients. All the distinguished variables are also interrelated and, to some extent, they depend on each other.

Initial analysis of the marketing mix components were limited to a study of manufacturing industry, since, at that time, the significance of services to the economy was considered to be relatively unimportant [23]. However, the increasing role of services over the years caused a rising interest in the way they should be marketed. The analysis of the nature of services showed that the traditional marketing mix is not sufficient and requires some modifications when applied to services. A number of analysts redefined the marketing mix adding additional variables which in practice enable services marketers to better communicate with and satisfy their customers. The extended marketing mix is composed of 7 Ps, which includes the traditional 4 Ps, as well as process associated with service delivery, physical environment and people [24].

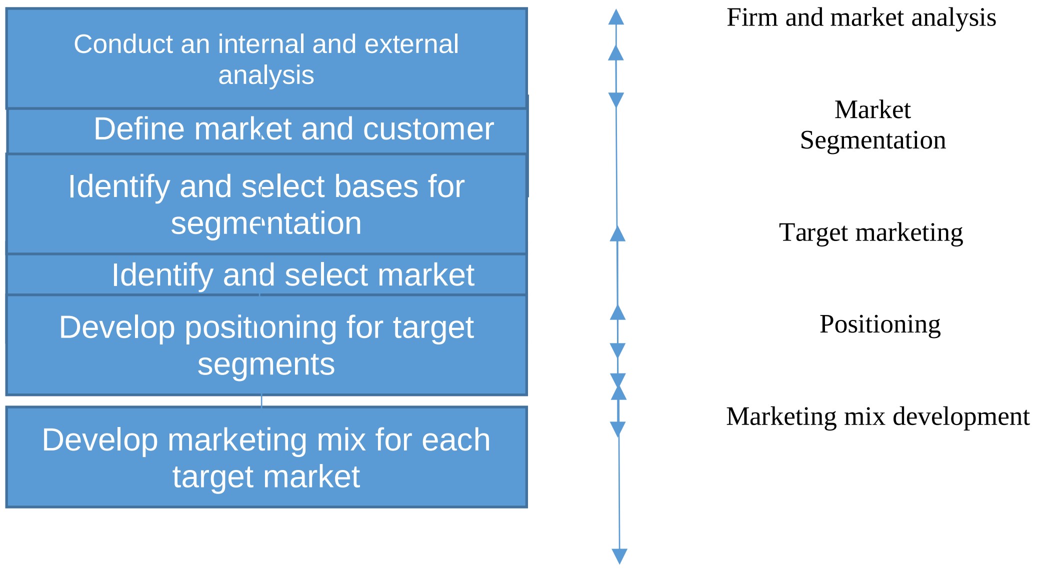
Figure 1. Marketing planning process

Marketing Strategy Formulation Process

Marketing strategy refers to policies and key marketing decisions taken by management that affect the company's performance. Marketing strategy focuses primarily on products, markets and customer relationships. Unlike corporate strategy, which is related to decisions made in an organization consisting of many business units, marketing strategy is related to the strategy of a specific business unit [25]. Marketing strategy is based on the marketing concept, according to which the key to achieving the organizational goals of the company is more effective than that of competitors, activities to create, deliver and deliver to the target customers an excellent customer value and, thus, ensure profits by meeting customer needs [26]. When developing a marketing strategy, the following factors should be taken into account: strategic goals, demand forecasts, consumer preferences, macro-ecological trends, competitive environment, competitor strategies, core resources and core competencies of the company.

The process of formulation of the marketing strategy can be divided into several stages. As shown in Figure 1-2, firstly, it is important to conduct internal and external analysis to gather information that forms the basis for marketing decisions. The firm needs to identify its strengths and weaknesses as well as its core competencies, analyze trends in the macro environment, and conduct market and competitor analysis. It then needs to identify the market and consumer preferences in this market, identify and select the best bases for segmentation, and decide which segment or segments to target. After selecting the target customers, it is necessary to differentiate the company's market offer from the competing offers and develop an optimal positioning strategy. The implementation of positioning requires careful development of elements of the marketing mix that are crucial for creating customer value [27]. When developing a marketing strategy, it is necessary to take into account the existing interdependencies between the elements of the marketing mix, so that each of them can be used to support each other in order to strengthen the positioning of the market offer and provide high quality services to achieve competitive advantage.

Figure 2: Marketing strategy development process



Conclusions

The theoretical and methodological justification of the need to form a strategy for its effective practical implementation in the development of industrial enterprises is constantly influenced by the dynamics of the domestic and global markets, as well as those organizational changes that are inherent in each industry separately. Due to this circumstance, an additional assessment of the effectiveness of management systems in the industry is necessary, taking into account the international requirements of the quality management system (QMS), based on monitoring the development of markets and the industry orientation of business development.

In the process of implementing the strategy chosen by management, it is very important to formulate and, most importantly, competently implement an effective policy of competition, to gain the trust of users to their service and encourage them to strive for multiple acquisitions. In this process, properly organized advertising, the formation of positive public opinion, stimulating the sale of services and personal sales are of great importance.

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QR – Issue **QR – Article**

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PAREMIOLOGICAL FUNDS OF LANGUAGE

Abstract: *Today's relevance of all issues related to language and culture lies in the fact that the social, political and economic changes that have occurred in the world in recent years have led to the migration of peoples, migration from one place to another, confusion of one nation with another. Currently, new opportunities, forms and types of communication are opening up for the development of science. Respect and tolerance for other cultures, mutual understanding remain the main criteria for the effectiveness of cooperation in any area. Before clarifying the views of linguists on the relationship between language and culture, clarifying the concept of culture helps to clarify the problem. Proverbs reflect different aspects of people's lives and life experience. Proverbs are closely related to the existing knowledge of native speakers, practical experience of a person, material and historical traditions of people who speak this language. Every nation expresses its mentality in some sense with proverbs and phrases.*

Key words: *cultural linguistics, proverb, paremia, linguistics, language and culture, mentality, language instrument.*

Language: *English*

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Introduction

The emergence of a new direction in linguistics - cultural linguistics - was directly related to the study of the influence of the human factor on the language and the language factor on the person, the relationship and interaction of language and culture, in particular «the reflection of folk culture in the language [1]».

Linguistic cultural studies emerged as an independent branch of linguistics at the end of the twentieth century, studying language as a result of the interaction of linguistics and cultural studies. According to V.N. Telia, cultural linguistics is the simultaneous study of language and culture [2].

According to V.A. Maslova, the subject of this section of linguistics is «the study of a language that carries cultural information, culture and its programs and preferences, the influence of language on a person who creates culture».

V.V. Vorobiev argues that cultural linguistics is «a complex scientific subject of a synthesizing nature that uses systematic methods and focuses on the priorities and cultural programs of today (the system of norms and social values), the interaction of culture and language, a science that studies the content of the structure of reflexive linguistic and non-linguistic (cultural) units in general [3]».

Indeed, cultural linguistics as a science and its object, subject, tasks can be described as follows: cultural linguistics is a science between linguistics and cultural studies, studying the manifestation of the culture of the people, reflected and fixed in the language.

Cognitively, the characteristics of paremia include the ability to reflect the underlying mental relationships that shape the national worldview [4]. Modern interdisciplinary linguistic fields focus on current aspects of paremia, such as the living form of paremia, the meaning of paremia (cultural linguistics), the formation of paremia in various debates and specific speech phenomena (linguopragmatics, discourse).

«Paremia is one of the subsystems of the language at the syntactic level, presented as a complete or incomplete sentence in a concise and rhythmic form. They are characterized by stability in language and repetition in speech, partial or complete rethinking, as well as semantic ambiguity [5]». They are well known, widely used by the people, used for didactic purposes, consciously choose units depending on the speech situation and have many practical meanings. These include proverbs, sayings, and sets of proverbs.

Paremias are linguistic in nature and are a logical system. Given the universality of paremiological units, it should be noted that they are not always used in a stratified manner with typical sample combinations. M.A. Cherkassky defines paremia as follows: «Paremia is the minimum unit of the extralinguistic semiotic level, which is widespread, aphoristic and has the properties of rapid action [6]». According to G.L. Permyakov, «couples are nothing more than signs of certain situations or certain relationships between things [7]».

Paremiology is the philological science of paremia, attracting the attention of both folklorists and linguists, and, in fact, a branch of philology that combines stylistic, literary and linguistic research methods. «The object of paremiology is paremia [8]».

Language is a means of cognition, storage and transmission of socially significant experience, and as a separate system of signals of real reality, it allows us to work with concepts, distracting them from certain objects and situations. When studying the worldview, data from different disciplines are used. The complex use of developments and theoretical and methodological relationships of different disciplines allows us to highlight the problem itself and the ways to solve it.

Paremias become the subject of cultural studies and reveal the main features of national psychology due to the anthropocentricity and specificity of the language [9].

Thus, paremias appear as a kind of representation of folk thinking: they are typified in the subject, action, time and space (they embody the main features of the worldview of an ethnos and its understanding of the world). In addition, each type of paremiological unit has a wide range of distinguishing features that allow a clear distinction between them. Proverbs, sayings, aphorisms, free expressions and their transformations are considered paremiological units, since these units are recorded in the appropriate dictionaries and have stability, semantic integrity, reproducibility in a wide and narrow circle of representatives of a certain linguistic culture.

Paremias are closed stable expressions that are signs of a secondary language, a sign of a connection between situations or realities. Paremia is defined as persistent short proverbs (proverbs, sayings, aphorisms, allegories) that relate to the field of language and speech and are the product of centuries-old folk ideas; these are special wisdom that preserve ethical norms of an ethnic group, passed on from generation to generation, and its repetition, its values and mentality, as well as the influence of oral speech (advice, encouragement, persuasion, criticism) in certain situations reflected in speech [10]. Accordingly, it is necessary to study in detail their definitions and determine their integral and differential signs. Despite the variety of paremiological units, the most common are paremia (proverbs, sayings, aphorisms, phrases) and their converters - new paremias.

A proverb is a figurative and logically complete phrase, the compositional structure of which is often enhanced by weight, rhyme, assonance and alliteration [11]. These paremes are didactic in nature and represent a simple or complex sentence, consisting of two parts.

The main task of proverbs is to show people's assessment of objective events of reality and thereby reflect the worldview of people. Proverbs express the peculiar way of thinking of people, peculiarities of views; they reflect everyday life, character, customs, beliefs and superstitions.

Proverbs vividly express the way of life, geographical location, history, traditions of society, united by a single culture. Their ethnicity is especially evident when comparing different languages. It is known that Uzbeks and British live in different social and natural conditions and have different history, religion, verbs, moral principles, psychology.

Mentality by its very nature is a simple and holistic view of the world based on values, and it is believed that it has existed for a long time, regardless of specific economic and political conditions, based on ethnic tendencies and historical traditions; mentality is manifested in the feelings, reason and will of each individual member of society through the common language and upbringing and is part of the spiritual culture of the people, this spiritual culture forms its ethno-mental objects in the region where the people live.

Proverbs originated in ancient times, their roots go back centuries. Many of them appeared before they were written. Consequently, proverbs are of folk origin, and it would be correct to recognize that their primary source is in the collective consciousness of people.

It is well known that proverbs are divided into proverbs that have their own meaning and figurative meaning. A proverb of the following type usually serves to influence social relations between people, indicating their character and the idea being put forward. At the same time, Uzbek speakers use national lexemes in their articles. For example, the Uzbek proverb “Bukurni go’r tuzatadi” is based on a metaphor that means that a bad person will remain bad for the rest of his life. From the content of the proverb it is clear that the word bukur personifies the negative character of a person, and the word grave means the ultimate destiny of a person - death. This article expresses the concept of evil, and the word «grave» was the main component.

Great proverbs express not only the main content, but also the emotional relationships of the speaker, such as amazement, grief, gratitude, fear, regret, reproach, disgust, joy, anger, fear: if you come close to the cauldron, black is tall. The poor fellow covers the dog on a camel.

In Uzbek linguistics, there are also proverbs related to the holy book of Islam - the Koran. Examples of the following proverbs associated with Islam: tayammum in water oil; When Solomon died, the giants were saved; Don't ask for the gold, pray, is not that gold for prayer.

Many proverbs in English have appeared in everyday work. There is no pleasure without pain; Many hands make work easier; Make hay while the sun is shining; Whoever looks for pearls must dive lower, and whoever does not work must not eat.

Many of the proverbs that exist in English linguistic culture are taken from the Bible, the holy book of Christianity. The Bible played an important role in people's lives and influenced all areas of his life. Therefore, the phrases and teachings contained in it entered the life of people as proverbs and reflect the religion and religious views of this people: Each person must carry his own cross; Let your left hand not know what your right hand is doing.

In English linguistic culture, love for the country is expressed more through the concept of «home». This is due to the individualism of the English linguistic culture. The British love their thought and interpret it as the equivalent of Homeland.

Thought is compared to a castle, kingdom, paradise, world: the house of an Englishman is his castle; Home is where you hang your hat.

In Uzbek culture, it would be wrong to say that the word «vatan» refers only to a specific region, place, place, nature. The word is semantically combined with the spirit of ancestors, monuments of spiritual heritage, values, national unity, mentality. The more the nightingale is laid out in the bag, the freer a person feels at home. If your homeland survives, your color will not be straw.

Thus, the proverbs and sayings included in folk culture have always been and will remain relevant. At any time, proverbs and sayings are accepted as a characteristic feature of this people, serving as the object of significant research. The proverb is one of the deepest genres of folklore, it reflects the centuries-old life observations and worldview of the people. The thematic coverage of proverbs is so wide that this scale cannot be limited to the framework of a small life reality. The use of proverbs and parables increases the vocabulary of each writer, makes his speech sharp and impressive, and gives it artistic design. Proverbs will be a laconic and concise expression of various social relations. Proverbs are a necessary tool for our speech for a short and clear, as well as figurative expression of an idea.

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EXPERIENCE IN INTEGRATING CAD/CAM/CAE TECHNOLOGIES IN THE BACHELOR'S CURRICULUM

Abstract: *The article deals with the issues of digitalization of higher education, the author argues that improving the quality of training at the University is inextricably linked to issues of scientific and innovative activities in education, introduction of modern technologies in the educational process and solution of problems of automation of education based on international standards ISO 9000 and CAD/CAM/CAE. The author comes to the conclusion that the peculiarity of engineering education is that in the course of their work, the engineer is faced with a large amount of graphic information in the form of working drawings of parts, Assembly drawings, General drawings, etc. Also, a modern engineer should be able to choose the most optimal design of a node or mechanism from a wide variety of possible solutions. The selection criteria will be not only economic, but also strength calculations. It is suggested that at all stages of training, starting from the 1st year and ending with the final qualification work, the student should use modern computers and advanced software. Based on the research, the author obtains the following results: changes occurring in technologically developed countries of the world associated with the "digitalization" of the economy necessitate a radical transformation of the process of training engineers in universities. The use of the modules "Digital design" and "programming of CNC machines" in the curriculum ensures the continuity of education; individualization of training, associated primarily with the project approach and the wide application of distance forms and asynchronous learning.*

Key words: *digitalization of the economy, digitalization of higher education, improving the quality of training at the University, automation of education, CAD/CAM/CAE technologies, digital design, distance learning, asynchronous learning.*

Language: *Russian*

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ОПЫТ ИНТЕГРАЦИИ CAD/CAM/CAE-ТЕХНОЛОГИЙ В УЧЕБНОМ ПЛАНЕ ПОДГОТОВКИ БАКАЛАВРОВ

Аннотация: *В статье рассматриваются вопросы цифровизации высшего образования, обосновывается утверждение, что повышение качества подготовки специалистов в университете неразрывно связано с вопросами научно – инновационной деятельности в образовании, внедрением современных технологий в образовательный процесс и решением проблем автоматизации образования, базирующимися на международных стандартах серии ISO 9000 и CAD/CAM/CAE-технологий. Автор приходит к выводу, что особенностью инженерного образования является, то, что в процессе своей работы инженер сталкивается с большим объемом графической информации в виде рабочих чертежей деталей, сборочных чертежей, чертежей общего вида и т.д. Так же, современный инженер должен уметь выбрать наиболее оптимальную конструкцию узла или механизма из большого многообразия возможных решений. Критериями выбора будут являться не только экономические, но и прочностные расчеты. Обосновывается* *предположение что на всем этапе обучения начиная с 1-го курса и заканчивая выпускной квалификационной работой, студент должен использовать современные ЭВМ и передовое программное обеспечение. На основе проведенного исследования автор получает следующие результаты: изменения, происходящие в технологически развитых странах мира, связанные с «цифровизацией» экономики создают необходимость в полном объеме преобразовать процесс подготовки инженеров в университетах. Использование в учебном плане модулей «Цифровое проектирование» и «Программирование станков с ЧПУ» обеспечивает цельность образования; индивидуальные траектории обучения, связанные, прежде всего, с проектным подходом и широким применение дистанционных, сетевых форм и асинхронности обучения.*

Ключевые слова: *цифровизация экономики, цифровизация высшего образования, повышение качества подготовки специалистов в университете, автоматизация образования, CAD/CAM/CAE-технологии, цифровое проектирование, дистанционная форм обучения, асинхронное обучение.*

Введение

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В последнее время в машиностроении происходят существенные изменения, связанные с широким распространением компьютерных технологий. Такие технологии и построенные на них технологические процессы сегодня все чаще можно объединить одним понятием «цифровизация».

Материалы и методы исследования

«Цифровизация – это процесс внедрения цифровых технологий генерации, обработки, передачи, хранения и визуализации данных в различные сферы человеческой деятельности, а не только в экономику» [1].

С одной стороны, цифровые технологии смогут обеспечить конкурентоспособность российской промышленности [2]:

- делает производство прибыльным и конкурентоспособным;
- цифровые технологии позволяют отслеживать продукт на всех этапах жизненного цикла, а следовательно своевременно вносить какие-либо изменения как в производственный процесс, так и в послепродажное сопровождение и обслуживание.

А с другой стороны цифровые технологии ставят новые задачи перед системой образования, ведь развитие производства напрямую связано с приобретенными компетентностями молодых специалистов [3, 4].

Согласно докладу «Навыки будущего. Что нужно знать и уметь в новом сложном мире» [5] можно выделить тренды, формирующих экономический уклад будущего:

- цифровизация всех сфер жизни;
- автоматизация и роботизация;
- глобализация (экономическая, технологическая и культурная);
- экологизация;
- ускорение.

Классическая система образования готовила специалистов, готовых решать рутинные задачи, свойственные индустриальной эпохе. В новом мире уменьшается количество типовых, шаблонных профессий, и возрастает роль специалиста, готового к воплощению в жизнь коллективных и индивидуальных целей. Уже сейчас встречается ситуация, когда навыки устаревают быстрее, чем студент завершит весь курс обучения и получит диплом. Поэтому необходим новый подход к образованию.

Одним из образцов образования будущего может служить идея, заложенная в FutureSkills. «FutureSkills – это одна из приоритетных инициатив движения «Молодые профессионалы» (WorldSkillsRussia), направленная на опережающую подготовку кадров. Развитие проекта обусловлено стремительными глобальными изменениями в сфере технологий и производства, которые диктуют новые требования к кадрам и к их подготовке» [6].

«Повышение качества подготовки специалистов в университете неразрывно связано с вопросами научно – инновационной деятельности в образовании, внедрением современных технологий в образовательный процесс и решением проблем автоматизации образования, базирующимися на международных стандартах серии ISO 9000 и CAD/CAM/CAE-технологий» [7, 8].

Согласно ФГОС ВО по направлению подготовки 15.03.05 Конструкторско-технологическое обеспечение машиностроительных производств (уровень бакалавриата) [9] у выпускника должны быть сформированы определенные общепрофессиональные и профессиональные компетенции, связанные с использованием современных информационных технологий, такие как:

- способностью решать стандартные задачи профессиональной деятельности на основе информационной и библиографической культуры с применением информационно-коммуникационных технологий и с учетом основных требований информационной безопасности (ОПК-2);
- способностью использовать современные информационные технологии, прикладные программные средства при решении задач профессиональной деятельности (ОПК-3);

- способностью участвовать в разработке проектов изделий машиностроения, средств технологического оснащения, автоматизации и диагностики машиностроительных производств, технологических процессов их изготовления и модернизации с учетом технологических, эксплуатационных, эстетических, экономических, управленческих параметров и использованием современных информационных технологий и вычислительной техники, а также выбирать эти средства и проводить диагностику объектов машиностроительных производств с применением необходимых методов и средств анализа (ПК-4).

Особенностью инженерного образования является, то, что в процессе своей работы инженер сталкивается с большим объемом графической информации в виде рабочих чертежей деталей, сборочных чертежей, чертежей общего вида и т.д. Так же, современный инженер должен уметь выбрать наиболее оптимальную конструкцию узла или механизма из большого многообразия возможных решений. Критериями выбора будут являться не только экономические, но и прочностные расчеты. Из вышеизложенного можно сказать, что на всем этапе обучения начиная с 1-го курса и заканчивая выпускной квалификационной работой, студент должен использовать современные ЭВМ и передовое программное обеспечение. Бакалавр по направлению подготовки 15.03.05 Конструкторско-технологическое обеспечение машиностроительных производств должен знать и применять на практике инновационные технологии такие как:

- средства проектирования CAD (Computer Aided Design);
- средства инженерного анализа CAE (Computer Aided Engineering);
- средства подготовки автоматизированного производства CAM (Computer Aided Manufacturing);
- средства планирования технологических процессов CAPP (Computer Aided Process Planning);
- средства управления документооборотом PDM (Product Document Management).

Принимая во внимание, что инженерное образование имеет свои особенности и является составной частью высшего образования в целом, общие тенденции последнего заслуживают своего рассмотрения [10].

В различных источниках встречаются разные наборы тенденций и их ранжирование:

- непрерывность образования [11, 12];
- актуализация индивидуального подхода в образовании [13, 14];
- развитие асинхронного образования [15–17];
- расширение дистанционного образования [18–19];
- рассмотрение образования как инвестиционного проекта [20].

Для обеспечения компетенций согласно ФГОС на кафедре «Технологии машиностроения» ФГАОУ ВО «Севастопольский государственный университет» в учебный план внесены модули «Цифровое проектирование» и «Программирование станков с ЧПУ», которые включают в себя следующие дисциплины:

1. «Начертательная геометрия»;
2. «Инженерная графика в CAD системах»;
3. «Компьютерная графика и основы трехмерного моделирования»;
4. «CALS-технологии в машиностроении»;
5. «CAD системы в машиностроении»;
6. «CAE системы в машиностроении»;
7. «САПР технологических процессов»;
8. «Основы программирования станков с ЧПУ»;
9. «CAM системы подготовки программ для станков с ЧПУ».

Цель изучения дисциплины «Начертательная геометрия» – формирование базового (начального) уровня компетенции, заключающийся в готовности и способности обучающегося на основе полученных знаний, умений и владений создавать проектно-конструкторскую документацию в соответствии с требованиями современных высокотехнологических производств.

Цель изучения дисциплины «Инженерная графика в CAD системах» – формирование у студентов необходимых знаний в области компьютерной графики и решение инженерно-геометрических задач с использованием графических редакторов, и САПР.

Цель изучения дисциплины «Компьютерная графика и основы трехмерного моделирования» – формирование у студентов системы теоретических и практических знаний в области использования средств компьютерной графики при конструировании изделий и средств оснащения технологических процессов.

Цель изучения дисциплины «CALS-технологии в машиностроении» – изучение основ и информационного обеспечения жизненного цикла изделия.

Цель изучения дисциплины «CAD системы в машиностроении» – является приобретение знаний о существующих комплексах автоматизированного проектирования; формирование умений и навыков, необходимых для геометрического моделирования; теоретических и практических основ построения пакетов машинной графики, ориентированных на применение в инженерной деятельности;

практических умений и навыков создания и построения различных трехмерных моделей.

Цель изучения дисциплины «CAE системы в машиностроении» – является формирование у студентов базовых знаний о применении современных технологий компьютерного моделирования для решения задач конструкторской и технологической подготовки производства изучение основ и информационного обеспечения жизненного цикла изделия.

Цель изучения дисциплины «САПР технологических процессов» – формирование знаний по проектированию технологических процессов изготовления деталей и сборочных единиц с использованием систем автоматизированного проектирования, и подготовке к решению профессиональных задач. Привитие профессиональных навыков работы в специализированных САПР.

Цель изучения дисциплины «Основы программирования станков с ЧПУ» – ознакомление студентов с основами программирования станков с ЧПУ.

Цель изучения дисциплины «CAM системы подготовки программ для станков с ЧПУ» – формирование у студентов навыков создания управляющих программ обработки для станков с ЧПУ с помощью CAM систем.

Дисциплины модуля «Цифровое проектирование» изучаются последовательно с 1-го по 8-й семестр, что обеспечивает непрерывность образования и овладение навыками работы в CAD/CAE/CAPP системах. CAM системы изучаются с 6-го по 8-й семестр в модуле «Программирование станков с ЧПУ».

Часть дисциплин имеют поддержку в виде онлайн-курсов, развернутых на базе системы управления курсами Moodle, что дает возможность дистанционного и асинхронного обучения [21, 22].

При прохождении учебной и производственной практик студенты на действующих предприятиях выполняют реальные проекты, согласно заданию по практике, что зачастую способствует рассмотрению ими образования как инвестиционного проекта в свое будущее.

При выполнении выпускной квалификационной работы студенты использую полученные знания по модулям «Цифровое проектирование» и «Программирование станков с ЧПУ», и имеют возможность работы с Электронными библиотечными системами ведущих российских издательств – ЭБС «Znanium.com», ЭБС «Лань», ЭБС «Юрайт», где представлена самая современная литература по интересующей области знаний. Так же необходимую информацию по действующим ГОСТам можно получить при помощи профессиональных справочных систем «Кодекс» и «Техэксперт». В визуализации технических и технологических разработок помогает использование Российского инженерного ПО «Компас-3D» (АСКОН). Для автоматизации проектирования технологических процессов используется «САПР ТП Вертикаль», в которой так же можно производить расчёт режимов резания и нормирования. Выбор современного металлорежущего инструмента возможен при помощи официальных сайтов фирм SandvikCoromant [23] и Korloy [24]. На сайте фирмы Sandvik Coromant так же представлен калькулятор, при помощи которого можно посчитать режимы резания для выбранного инструмента.

Выводы.

Таким образом можно сделать вывод, что:

1. Изменения, происходящие в технологически развитых странах мира, связанные с «цифровизацией» экономики обуславливают необходимость кардинальной трансформации процесса подготовки инженеров в университетах.

2. Использование в учебном плане модулей «Цифровое проектирование» и «Программирование станков с ЧПУ» обеспечивает непрерывность образования; индивидуализация обучения, связанную, прежде всего, с проектным подходом и широким применение дистанционных форм и асинхронности обучения.

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ON THE SEMANTICAL ANALYSIS OF THE PARYPREDICATIVE UNITS OF COMPLEX FOLLOWING

***Abstract**: This article discusses the research on the structural properties of complex follow-up polypredicative units, follow-up polypredicative units, the history of their study, the formal and semantic features of follow-up compound sentences, the means of forming compound sentences and their semantics, reference passages.*

***Key words**: compound sentence, follow-up polypredicative unit, link parts, main predicate unit, follow predicative unit, grammatical formation of link parts.*

***Language**: English*

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Introduction

Conjunctions with a syntactic integrity that differs from simple predicative units in the breadth of their content are the highest unit of language syntactic level.

The importance of research on syntax and its structural features, created in traditional linguistics, is enormous. The scientifically based ideas in these works provide a solid basis for the emergence of new views on the nature of compound speech and its semantic and structural features in modern linguistics.

In the Uzbek language, in general, the first stage of the study of theories of compound speech in Turkic studies was created mainly in the form of compound theories of speech formed in Russian linguistics [8]. Of course, the method of comparison is of great importance in the correct interpretation of the natural nature of each phenomenon. It is well known that it is expedient to use in this way the expression of the national identity of any linguistic phenomenon.

It is also known in the history of world linguistics that, in particular, ancient Latin linguistics was formed on the basis of copying from Greek linguistics. Such a method does not allow for a correct and objective understanding of the specific features of language phenomena. In our view, the science of linguistics, like other sciences, should make creative use of the achievements of other linguistics using the method of modeling.

The classification of adverbs in Uzbek is similar to or close to the classification of adverbs in other languages, "the types of adverbs in Turkic languages, as well as in other languages, are inextricably linked with the theory of simple speech" [3]. It has a very long tradition to compare follow-up sentences with specific passages in simple sentences [6, 10]. For example, in Spanish linguistics, the function of adverbs is equated with the function of word groups in simple sentences[5].

Linguistic evidence analysis suggests that the dominant part of complex follow-up polypredicative units may consist of predicative units of different meanings.

Polypredicative units with complex adverbs are divided into the following types according to the content of the link in the main predicate unit.

I. Polypredicative units with complex follow-up expressions of activity-process content;

For example: Interestingly, even though Daniel was a believer, we could not talk to him comfortably and confidently. Ch.Aytmatov

II. Polypredicative units with complex follow-up sentences that express event content;

For example: It is said that one should strive to stay away from a person who does not respond to your goodness with fidelity, because nothing will come of it except oppression. Navoi

III. Polypredicative units with complex follow-up sentences in which the subject content is expressed;

For example: The modesty in his dress, his arrogant demeanor, especially the annoyance in his look, made him aware that he was from a more serious office, not from the police. "Dead people don't speak" T. Malik

IV. Polypredicative units with complex follow-up sentences that express character content;

For example: There are people who, even if no one was happy when they were born, the whole country mourns when they die. A.Qahhor

V. Polypredicative units with complex follow-up sentences that express object content;

For example: 1. But he realized that everything in the house was waiting for H. Gulom 2. I can say that if there is someone who occupied my mind after the death of my wife, it is you. U.Nazarov

VI. Polypredicative units with complex follow-up expressions expressed in degree-quantitative content;

For example: Saida's temper opened up so much that she sat up, even though her limbs were shaking as if they were coming. A.Qahhor

VII. Polypredicative units with complex adverbs expressing the content of the case (style);

For example: 1. He was so accustomed to Nizamjan that when he was a little late for a meal, he would carry his food on a plate and look for it. "Horizon" S.Ahmad 2. The "political bureau", which came to the conclusion that "it is necessary to distract the snake without knowing exactly who to bite", instructed Tengiz to find a way to distract. "Dead people don't speak" T. Malik

Based on the analysis of the examples, we can say that the subordinate clauses that explain the content of the link section in the dominant part of a polypredicative unit with a complex follow-up sentence also consist of compound sentences representing different content-relationships. Accordingly, polypredicative units with complex follow-up sentences can be divided into the following types.

I. The subordinate clause is a polypredicative unit with a complex follow-up sentence that represents the conditional content:

1. Obviously, if I started talking about it directly, it would be like apologizing for the work I'm doing. "Innocent" T. Malik 2. I don't know, it's not working, the owner is snow. E.Vohidov

II. The subordinate clause is a complex follow-up polypredicative unit representing the content of the barrier:

1. There will be times when you long for love, when you will be intoxicated not only by her beauty, but also by her warm smile and a warm word, even if she is a hot girl. O.Yokukbov 2. There are some words, the use of which is absurd in one religion and one language, but not in another religion and language. Beruniy

III. A subordinate clause is a polypredicative unit with a complex follow-up sentence that represents the content of the condition:

It is well known that even if you offend a heart that is the sight of Allah, and then go to the Ka'bah, the reward you receive from it will not wash away the sin of the heart that is in pain. "Minor crime" T. Malik

IV. A subordinate clause is a polypredicative unit with a complex follow-up sentence that represents the content of the cause:

It is said, "Child, do not be a guest of anyone, for it will harm your luxury and luxury." “Halovat” T.Malik

V. A subordinate clause is a complex follow-up polypredicative unit that represents the content of time:

Surprisingly, whenever the Ummah asks his son, he does not say who he is, but immediately tells him where he is. “Ufq” S.Ahmad

VI. The subordinate clause is a polypredicative unit with a complex follow-up sentence that represents the content of the comparison:

More importantly, this love of Allah is beneficial not only for these two and our brothers and sisters like them, but also for others.

Conclusion

Based on the above considerations, we can conclude that the combination of more than one simple sentence as a subordinate clause forms polypredicative units with complex follow-up sentences.

Complex follow-up polypredicative units are separate complex syntactic units that differ both in structure and in the content they express.

Scientific study of polypredicative units with complex adverbs helps to solve complex syntax problems in modern Uzbek literary language.

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