

# Information Technologies in The Process of Teaching Foreign Languages in Higher Educational Institutions

Myroslava Fabian<sup>†</sup>, Tetiana Shavlovska<sup>††</sup>, Silviia Shpenyk<sup>†††</sup>, Nataliia Khanykina<sup>††††</sup>,  
Oleh Tyshchenko<sup>†††††</sup>, Hanna Lebedynets<sup>††††††</sup>

<sup>†</sup> Department of English Philology, Uzhhorod National University institutional, Uzhhorod, Ukraine

<sup>††</sup> Department of Romanic and Germanic Philology and Methods of Teaching Foreign Languages, Izmail State University of Humanities, Izmail, Ukraine

<sup>†††</sup> Department of Foreign Languages, Uzhhorod National University, Uzhhorod, Ukraine

<sup>††††</sup> Scientific Research Laboratory of Education, Borys Grinchenko Kyiv University, Kyiv, Ukraine

<sup>†††††</sup> Department of Russian Studies, University of Ss. Cyril and Methodius in Trnava, Slovak Republic

<sup>††††††</sup> Department of English Philology, National Pedagogical Dragomanov University, Kyiv, Ukraine

## Summary

An anthological analysis of known literature and historical sources is carried out in the work. It was found that the development of foreign language training of future professionals was influenced by a number of factors: socio-economic (focus on the needs of the labor market, integration into the international space, scientific and technological progress); educational (updating legal documents in the field of education, standardization of educational content, development of methods of professional development of a specialist).

The historical period is analyzed and the following stages are determined: ideological (realization of ideological imperative in language and professional training of future specialists; educational-methodical (preparation according to unified curricula, reading and translation as a leading type of speech activity); integration (integration of foreign language teaching and multicultural education) ), methodological (use of traditional verbal methods, standardized textbooks).

Thus, the research conducted in the article indicates the periods (stages) of formation, functioning and development of foreign language education.

### Key words:

*Higher Education, Foreign Languages, Communicative Qualities, Organizational Skills, Experiment.*

## 1. Introduction

At this stage of development of education, it is important to know a foreign language, which determines the relevance of quality education for communication in foreign languages. Foreign language is an important condition for establishing and maintaining international business contacts, intensification of professional

interaction with foreign colleagues. Various educational conventions also proclaim knowledge of foreign languages as a necessary basis for the mobility of students, teachers and researchers for access to education, research, teaching and internships.

These consultations substantiate the economic value of knowledge of foreign languages and become a mandatory component of professional training of future professionals.

The purpose of the article is to conduct research in the field of the historical emergence of the methodology of teaching foreign languages in higher education.

## 2. Theoretical Consideration

Literacy of specialists depends on the ability to read and translate professional foreign literature; on the formation of skills to listen to lectures and reports in a foreign language during conferences, round tables and seminars; about the ability to participate in conversations and discussions on professional and business topics; about the possibility to find the necessary information on the Internet or in any other sources of foreign languages; on the ability to prepare and present a lesson.

One of the main principles of the state educational policy of Ukraine is: ensuring the interaction of science, education and production in the development of international activities, supporting entrepreneurship in research and production activities, training in innovation, ie individuals who will work directly in international cooperation. Professional training in the conditions of high school is caused by volume, structure and dynamics

of the educational material necessary for the student for professional formation in modern conditions. English is part of this complex [5]. Analysis of scientific papers on the effectiveness of learning foreign languages in maritime higher education institutions, a powerful influence on the process of successful language acquisition have different factors: general pedagogical, methodological, individual psychological, psychophysiological, social.

One of the main tasks of the higher school of the maritime industry is to meet the needs of the labor market, providing quality education.

Effective study of a foreign language in maritime universities should exclude: overcoming the language barrier (psychological barriers, difficulties in expressing and understanding opinions in a foreign language); lack of incentives and language environment for cadets; doubts about the use of the formed communicative competence in the future. Learning a foreign language is a goal in the field of professional communication in the future, the training will be more effective than when it is only a subject, the level of professional readiness of future professionals.

Elimination of shortcomings is possible only in the case of comprehensive professional knowledge and skills, their appropriate involvement, the ability to solve professional problems in a foreign language environment, the ability to integrate into modern world education.

Professional competence of specialists with higher education in maritime education is an important and priority knowledge of foreign languages, knowledge of which makes professionals competitive in the international labor market. The study of foreign languages by future specialists in the maritime field, which will improve the level of development of their foreign language competence and will allow them to succeed in their professional activities. Teaching other disciplines, studying a foreign language for professional purposes in a higher maritime educational institution involves the implementation of practical, general, educational aspects. The subject of "foreign language" differs significantly from other disciplines, as the main place in its study is the implementation of practical aims, in the process of achieving of which other tasks are fulfilled. In addition to this, the practical aim of teaching a foreign language to cadets in maritime higher education institutes of Ukraine is to form communicative competence, i.e. the ability to communicate with representatives of the country whose language is being studied. In line with the analysis of foreign language communicative competence of cadets studying a foreign language in a professional direction, it

is advisable to pay attention to the possibility and necessity of forming educational, linguistic, sociolinguistic, sociocultural, compensatory competencies as the main components in the process of communicative competence.

The formation of language competence should be aimed at developing the ability to use language material in the process of obtaining certain information during intercultural communication. The presence of sociolinguistic competence implies the ability to use the realities, special phrases, specific rules of language communication, typical of the countries whose language is being studied. Instead, sociocultural competence is related to knowledge of the sociocultural characteristics of the country. Learning competence is formed by such skills as the ability to work with a dictionary, reference books, etc. A special place in the system of formation of communicative competence of cadets during the study of foreign languages in the maritime higher education institutes of Ukraine is occupied by compensatory competence. These are situations when a cadet is required to be able to perform communicative tasks of varying complexity with the use of limited language resources, provided that the development of each type of speech activity will be communicatively sufficient. The formation of foreign language professional and communicative competence requires changes in the content, structure, and technology of learning a foreign language for special professional purposes, encourages methodologists, technologists, linguists to intensify research. The transition from language as a "set of grammatical and lexical knowledge" to its practical use by specialists of various profiles asserts the problematic-communicative method of training as the main one, which is based on the focus on professional communication [27].

The foreign language communicative competence of future maritime specialists is an integral component of professional training and is a comprehensive personal resource that allows for effective interaction in the process of using a foreign language as a means of performing professional tasks. Thus, there is a problem of improving the effectiveness of foreign language teaching, which can be achieved through the use of productive ideas of historical and pedagogical experience to improve foreign language training of future professionals in the maritime field.

The competitiveness of a maritime specialist in the labor market depends on their willingness to master new technologies, easily adapt to changing working conditions, navigate professionally in information flows and use a foreign language in professional communication. Most Ukrainian seafarers today work under a foreign flag, as

part of multinational crews. Education and training of seafarers require consideration of the peculiarities of such work [2]. A strategically important guideline in the teaching of a foreign language in maritime education is the improvement of foreign language teaching methods using the latest advances in science, technology, and informatics, which creates preconditions for effective integration into the world economic, political, and educational space, as well as for professional growth and increasing the competitiveness of freelance graduates in the labor market.

The problem of taking into account the specialization in the learning process becomes extremely relevant, arguing the feasibility of linking the study of a foreign language with the future profession of students. The professionally-oriented approach to teaching foreign languages acquires special topicality, which provides for the formation of students' skills of foreign language communication in specific professional, business, scientific fields, and situations, taking into account the peculiarities of professional thinking [11]. The principle of situationality serves as a powerful specific principle of formation of foreign language professional dialogic speech of future ship drivers and mechanics. Its implementation on the basis of cognitive-communicative approach involves the creation and use of situations of professional communication, close to real. After the cadets have mastered language skills (lexical, grammatical, phonetic), the formation of communication skills (interaction to achieve results) becomes a priority. It is in the process of communication in educational situations for the performance of professional tasks that speech interaction no longer becomes the aim of learning, but a means of forming professional communicative competence. Differentiation of training of students taking into account the basic level of knowledge. The level of knowledge of a foreign language of the individual should be interpreted as an important indicator of the successful activity of a modern specialist, as a result of their training. The readiness of students to learn a foreign language in the specialty is distinguished by the system of abilities of the individual, namely the ability to self-improve foreign language skills, understanding the customs and cultures of other countries, the ability to communicate with foreign professionals in person, without an interpreter, the ability to continue studying abroad, the ability to use foreign language skills in practice, communicating with foreign colleagues. Learning a foreign language plays an important role in professional communication in a higher non-language institution, affects the preparation of students for effective communication in a professional environment. One of the main tasks of a higher education institution should be to help freshmen both in professional adaptation and in learning a foreign language in the

specialty [14]. Teaching a foreign language should begin with a basic level of knowledge on the principle of "simple to complex", as soon as possible to develop an algorithm for the student's activities in the communicative series "teacher/audio and multimedia means-student", "student-student". Modern methods of teaching foreign languages are flexible information and learning environment. The modern approach to the search for optimal and effective methods of teaching foreign languages in non-language higher education institutes is to combine traditional and intensive teaching methods. With the active usage of modern pedagogical technologies in the process of learning a foreign language, students of different specialties achieve a positive result in the acquisition and use of a foreign language by future professionals in their professional field [12].

The important tasks should be to provide assistance to freshmen both at the adaptive stage of learning a foreign language and in professional activities. Differentiated distribution is one of the main conditions for successful mastery, so it is necessary to take into account this factor when learning. Digitalization of foreign language learning. The study of scientific works and own pedagogical experience serve as a basis for the systematization of didactic and methodological prerequisites for the formation of students' foreign language professionally-oriented communicative competence by means of Internet resources, the usage of which allows:

- 1) a wide range of available authentic sources of professional information and a huge selection of virtual educational services (dictionaries, encyclopedias, search engines, electronic platforms in the distance learning system, multimedia courses, sites and services for learning foreign languages), the interactive nature of many virtual educational services, which affects the intensification of the process of learning a foreign language;
- 2) creation of the natural environment in the conditions of joint language projects, exchange of information, ideas, plans, application of authentic situations of activity connected with cooperation, search and transfer of professional information in a foreign language that promotes an increase of motivation of students and interest in a foreign language. native speakers of this language;
- 3) the use of various forms of the classroom and extracurricular work - individual, pair, group through search activities in the network; analysis of the received professional information with involvement of self-reflection of students that helps to organize joint research works, operatively to exchange information and

to form communicative skills;

4) creating a favorable environment for individual learning, multimedia, expanding learning space, prompt information and updating of information, which contributes to the effective organization of information time and space, the development of educational autonomy, self-organization, self-control, and creativity;

5) providing rapid feedback and monitoring student performance, which allows you to objectively assess student achievement, post and perform online tests, instantly receive assessment and see your progress in learning and developing communication skills [10].

For example, the usage of information site about.com and its derivative resources (specialized.about.com, psychology.about.com, grammar.about.com, gocalifornia.about.com, 712educators.about.com, dance.about.com, etc.) provides ample opportunities for students of humanities, arts, technical specialties. The site contains authentic texts, the latest world news in areas that may be of interest to future professionals, various tests to test knowledge of specialties and more.

In addition, students can watch videos with topics of interest to them in a foreign language, discuss what they have heard and seen, create dialogues on the proposed topic [5].

Providing a cross-cutting and interdisciplinary approach to teaching foreign languages. In modern pedagogy, the attention to the cross-curricular and interdisciplinary approach in teaching foreign languages is growing every year. Teachers understand that it is not necessary to wait, for example, for a foreign language lesson to improve communication skills, this can be done in parallel when studying any professional discipline. Interdisciplinarity is expressed in the combination of two or more disciplines in one activity.

According to H. Jacobs, interdisciplinarity is a type of knowledge and approach to the course of study, which consciously covers the methodology and language of more than one discipline to master the central theme, problem, event, fact, and experience [12].

Interdisciplinary connections are increasingly strengthened with the development of new approaches to teaching, the active use of information and communication tools, as well as interactive techniques. Classes combine several activities, which allows students to move from one type of work to another while remaining focused and most interested in working in class. J. Herbart substantiated the psychological aspect of the relationship of knowledge, on

the basis of which he concluded that in the case of coherent teaching of material, students acquire skills faster and more fully than in the isolated study of subjects [20]. K. Ushinsky stressed that different subjects should be taught in close connection with each other, when knowledge and ideas, which are represented by different sciences, must have an organic connection [14].

In practice, it can be argued that all these statements are correct and reflect the need for a comprehensive study of subjects, the use of interdisciplinary connections. Among the positive aspects of using an interdisciplinary approach in teaching, the following ones should be singled out:

exchanging ideas about discipline and learning with fellow enthusiasts to achieve a common goal;

increasing the success of cadets;

the opportunity for cadets to learn if unexpected interdisciplinary connections arise;

the ability of cadets to realize that teachers model long-term learning, are interested in their discipline and the courses of other teachers, work with colleagues, discover connections between what they know and new ideas, form new views on problem-solving;

creativity, flexibility, real learning, not isolated by educational experience;

greater opportunities for cadets to relate new knowledge to what they already know and what they are interested in;

favorable conditions for cadets in training and demonstration of their skills, understanding of problems;

the personal contribution of cadets to the work as a result of learning new/complex concepts, giving the privilege and responsibility in choosing what and how they teach, demonstrating their vision of the problem [15].

Disadvantages include the integration confusion that may arise during such classes and the complexity of the training program. The specifics of teaching in the higher education institutes of the maritime profile are that, in addition to purely professional skills, future specialists in the maritime field must be aware of all areas of life. During the voyage, there may be needs, such as providing emergency medical care, solving socio-cultural problems, and overcoming speech barriers that arise when crew members from different countries interact.

These are a variety of situations that threaten people's health and/or lives and require immediate decision-making.

It is easy to overcome difficulties and be aware of almost any issue in order to form the ability of a marine specialist to actively use an interdisciplinary approach to the study of professional disciplines. Implementing an interdisciplinary approach to teaching professional disciplines, the classes plan such types of educational activities as classes using interdisciplinary connections, integrated, binary, fragmentary binary, research classes,

etc.

In our opinion, the most successful will be the connection of professional disciplines with the course “English (for professional purposes)” and information technology. For example, navigation lessons can be planned to use a complete or fragmentary foreign language. Students will be able to activate their knowledge of a foreign language and consolidate it by completing tasks in the specialty. This activity will be more effective than usual, as the new working conditions in the classroom allow students to focus more, which will help them to better remember and master professional skills. Now information technology in the study of most disciplines is widely used, but it is worth emphasizing once again the importance of their application. With the development of technology, more and more automated systems are emerging, the management of which must be mastered today, so that tomorrow, when the cadets become specialists, it will not be difficult for them to adapt to the changes. Therefore, computer modeling should be used in courses in navigation, ship mechanics, or maritime law courses (modeling errors that can lead to precedent), in foreign language classes, and so on. Conducting such classes stimulates the creative activity of cadets, develops the ability to adequately make decisions in non-standard or stressful situations.

Thus, the interdisciplinary approach to the teaching of professional disciplines in higher educational institutions of the maritime profile provides education of harmoniously developed professionals who will become full members of society and first-class professionals. Introduction of a dual form of foreign language teaching in a professional field. The dual form of obtaining education in higher and professional higher education institutions provides for obtaining education through a combination of training of persons in educational institutions with training in the workplace (even with getting a salary) at enterprises, institutions, and organizations to acquire certain qualifications on a contract basis. The aim of the introduction of the dual form of education is to improve the quality of professional training of students. Educational institutions will decide to introduce a dual form of education based on labor market research. They will also be able to compile a list of educational programs according to which dual education is appropriate. Businesses and students will also be able to initiate the organization of dual education. The procedure for selecting students for dual education will be jointly implemented by business entities and educational institutions. “Dual form of education” is a method of education that involves combining training in educational institutions with training in the workplace in enterprises, institutions, and organizations to acquire a certain

qualification, usually on the basis of a contract for training in the dual form of education. This is the case when both the educational institution and the enterprise (institution, organization) take part in the training of young specialists. The essence of such a system is the close interaction of enterprises and educational institutions on the basis of social partnership, where both parties are equal partners who develop and coordinate the educational process, monitor its results.

Creating a repository of professional literature of the maritime industry in a foreign language. The trend of professional education can be the creation of a repository of professional literature in the maritime industry in a foreign language to facilitate the search for the necessary information for both novice teachers and students. The electronic archive for systematization and storage of electronic copies of documents of scientific, educational and methodical purpose, created by teachers, staff, graduate students, students of higher education institutes of the maritime profile, as well as other persons, which provides these materials with permanent open free full-text access via the Internet. The continuous development of professional competence of teachers to ensure the quality of foreign language training of future specialists in the maritime field. The level of professional competence of teachers is one of the main conditions for ensuring the competitiveness of higher education institutions. Unfortunately, the professional competence of a teacher is not characterized by its content and structure, a clear system of criteria for diagnosing its formation has not been developed [13, 22].

A modern foreign language teacher becomes not only an observer but also an active participant in changes in the concept of professional foreign language teaching. Traditionally, in the study of styles of pedagogical communication, the main attention is focused on their operational structure: interpersonal actions, methods, and techniques of communication, methods of pedagogical influence. Any teacher in communication with students appears not only as a bearer of a certain social role, but also as a holistic original personality with its inherent qualities, needs, individual characteristics of the motivational, and valuable sphere. The teacher must have organizational skills, only a highly organized person can effectively and consistently perform the tasks outlined in the curriculum, and manage the activities of students [14, 23-27].

A qualified teacher of a higher education institution must logically present a large amount of information, clearly form their opinion so that students better master the material. Note that such a characteristic of the teacher

as creativity, which is manifested in the creative process of preparation for the lesson, plays an important role in increasing student motivation. The creative competence of the teacher makes his activity more effective.

Teaching a discipline such as a foreign language in a maritime higher education institution violates the additional requirements for the teacher regarding the knowledge of the basic foundations of the future specialty of students. Usually, teachers who come to work at foreign language departments do not have a proper vocabulary, namely terminology, unfamiliar with the specifics of the field. This is the biggest difficulty facing young teachers. The task of the Foreign Languages Department is to help these teachers to master the necessary vocabulary and learn the basics of the specialty. Foreign language teachers should work closely with teachers of specialized departments, attend professional meetings, conferences to clearly know all the features of future professional activities of students. Understanding this allows you to work productively with texts in the specialty, discuss them, hold role-plays, mini-conferences with presentations of abstracts on the topics of the course and diploma projects. Due to the presence in the structure of the teacher's personality of different levels of motivational and value dispositions, they constantly consciously or involuntarily prefer actions, methods, and techniques of communication that meet their values and needs. The teacher's communication is under the constant interference of personal dispositions and shifts towards motivational tendencies. Thus, motivational factors give the teacher communication with students of individual originality, stability, and trans-situationality.

Students show the greatest interest when the material is based on their chosen specialty, which stimulates the study of a foreign language, increasing and expanding their professional knowledge. At the center of the educational process are the student's personality, needs, and opportunities for development. The role of the teacher is to create favorable didactic conditions for the development of educational and professional material, to motivate and stimulate the intellectual development and creativity of students. We shall emphasize the importance of using Internet resources when teaching a foreign language. In case of successful choice of material and its purposeful planning, these technologies bring elements of novelty to the educational process, interest students in learning a foreign language, giving them access to a variety of authentic materials, help work on the language at a convenient time, promoting the learning process as a whole [15 -19, 22-27]. One of the main qualities of a teacher is their methodological competence. The teacher should be competent in the methodology of teaching a foreign language in the professional field to plan the

formation of practical knowledge and skills in students given the level of education, educational content, level of knowledge of a foreign language by students of a certain group, their interests. The teacher-facilitator, whose task is to focus and stimulate the independent process of information retrieval, to jointly solve problems must be familiar with modern methods of teaching foreign languages, special teaching techniques, and methods in order to optimally select teaching methods according to the level of knowledge, needs, interests of future specialists. From the choice of teaching methods, from the rational and motivated use of teaching methods in foreign language lessons, from the creativity of the teacher depends on the successful completion of what was started, because everything is determined by pedagogy - science. Students' mastery of foreign languages is limited due to the insufficient number of hours planned for their study. This fact requires determining the level of learning foreign languages that corresponds to the learning environment, given the possibility of teaching special subjects in English. It is necessary to apply a system of levels of learning modern foreign languages.

### 3. Conclusions

The analysis of the source base allows to identify the following trends of the unification period: paradigmatic (implementation of the ideological imperative in the language and training of future specialists in the maritime field); structural and educational (preparation according to unified curricula and programs, reading and translation as a leading type of speech activity); semantic (integration of foreign language teaching and multicultural education); instrumental and methodical.

### Reference

- [1] O. Demchenko. Creative Realization of the Interdisciplinary Approach to the Study of Foreign Languages in the Experience of the Danube Basin Universities, *Journal of Danubian Studies and Research*, Vol. 3, No.1, 94.
- [2] S. Deterding, D. Dixon, R. Khaled, L. Nacke. From game design elements to gamefulness: Defining "gamification", *Proceedings of the 15<sup>th</sup> International Academic MindTrek Conference*, 9. 2011.
- [3] L. Hojnacki. Bliskie kontakty ze zdalnym nauczaniem. Miejsce platformy zdalnego nauczania w stacjonarnym kształceniu nauczycieli. *Informatyczne przygotowanie nauczycieli. Internet w procesie kształcenia*, Kraków, 2004.
- [4] M. Sherman, H. Popova, A. Yurzenko. Interactive course "Maritime English" in the professional training of future mariners. *Development trends in pedagogical and psychological sciences: the experience of countries of Eastern Europe and prospects of Ukraine*, Baltija Publishing, 603-621, 2018.

- [5] G. Zichermann, Ch. Cunningham. *Implementing Game Mechanics in Web and Mobile Apps*. Sebastopol, California : O'Reilly Media, 14, 2011.
- [6] I. Smyrnova. Theoretical Aspects of the Use of Electronic Educational Resources in Professional Activity of Future Teachers of Technology, *Journal of Vasyl Stefanyk Precarpathian National University*, 4(1), 140-147, 2017.
- [7] I. Smyrnova, The requirements for establishing the esm as part of the ivs Izmail state university of humanities, *Formation of Knowledge Economy as the Basis for information society*, 141-143, 2017.
- [8] I. Smyrnova, M. Musorina, The formation of technical culture of skippers like experience in the process of qualification, *Modern Methodology of Science and Education*, 6(10), 17-20, 2016.
- [9] I. Smyrnova. System Overview Of The Purpose And Content Of Information Technology Training Of Future Teachers Of Technologies To The Development And Use Of E-Learning Resources, *International Scientific and Practical Conference World science*, 3(5), 6-12, 2017.
- [10] M. O. Kuts. Problem technologies in foreign languages teaching of higher technical educational establishments students, *Cherkasy University Bulletin: Pedagogical Sciences*, 37(370), 2016.
- [11] S. Smoliuk. Features of Formation Developing Educational Environment in the Conditions of Standardization of Primary Education of Ukraine, *Journal of Vasyl Stefanyk Precarpathian National University*, 5(1), 65-72, 2018.
- [12] A. R. Bayanova, V. V. Kuznetsov, L. V. Merculova, L. N. Gorbunova, O. A. Pervozvanskaya, O. O. Shalamova, C. I. Vorobyova. Student Performance Interrelation with Gadget Use at Lessons, *Journal of Environmental Treatment Techniques*, 7(3), 432-437, 2019.
- [13] L. Vasylyvna Batyuk. *Electronic education resources and them use in the training process in the Medical University*. Diss. Kharkiv National Medical University, 2017.
- [14] M. Chimmalgi, Regi Jose, K. Chandra Kumari. Student Satisfaction with Early Clinical Exposure and E-learning in Learning Anatomy, *Journal of Research in Medical Education & Ethics*, 7.1, 31-37, 2017. <http://dx.doi.org/10.5958/2231-6728.2017.00007.5>
- [15] V. Bilyk. Science preparation of future psychologists in higher education institutions: comparative analysis of Spanish and Ukrainian experience, *International Academy Journal Web of Scholar*, 2 (1 (31)), 33-41, 2017. [https://doi.org/10.31435/rsglobal\\_wos/31012019/6317](https://doi.org/10.31435/rsglobal_wos/31012019/6317)
- [16] V. Bilyk. Modernization of Science Preparation of the Future Psychologists in Higher Education Institutions as a Scientific and Theoretical Problem, *Sumy State Pedagogical University named after AS Makarenko*, 2017.
- [17] V. Bilyk. Realization of synergetic approach in science preparation of future psychologists in higher education institutions, *International Scientific and Practical Conference World science* 3 (11), 8-10, 2017.
- [18] O.N. Buchinskaya Problems of implementing a point-rating system in higher education, *Political Journal of Scientific Publications*, № 7(37) . – pp. 8-10, 2013.
- [19] R.R. Vakhitov. On the point-rating system. *Teacher's Thoughts*, Newspaper of Bashkir State University, №6-7, 4, 2013.
- [20] M. Iasechko, N. Sachaniuk-Kavets'ka, V.Kostrysia, V.Nikitchenko and S. Iasechko. The results of simulation of the process of occurrence of damages to the semiconductor elements under the influence of multi-frequency signals of short duration, *Journal of Critical Reviews*, 7(12), 2020, pp. 109-112. doi:10.31838/jcr.07.13.18.
- [21] M. Iasechko, V. Larin, D. Maksyiuta, S.Bazilo and I. Sharapa. The method of determining the probability of affection of the semiconductor elements under the influence of the multifrequency space-time signals, *Journal of Critical Reviews*, 7(9), 2020, pp. 569 - 571. doi: 10.31838/jcr.07.09.113.
- [22] M. Iasechko, M. Kolmykov, V. Larin, S.Bazilo, H. Lyashenko, P. Kravchenko, N. Polianova and I. Sharapa. Criteria for performing breakthroughs in the holes of radio electronic means under the influence of electromagnetic radiation, *ARNP Journal of Engineering and Applied Sciences*, 15(12), 2020, pp. 1380 - 1384.
- [23] M.Iasechko, Y. Gnusov, I. Manzhai, O. Uhrovetskyi, V.Manoylo, A. Iesipov,O. Zaitsev, M. Volk, and O. Vovk. Determination of requirements for the protection of radio-electronic equipment from the terroristic influence by electromagnetic radiation, *IJETER*, 7(12), 2019, pp. 772 - 777. doi: 10.30534/ijeter/2019/077122019.
- [24] S. Iasechko. Zaitsev O, Kozhevnykova V, Melnyk K, Kulchii O. *Transactions with the Personal Non-Property Right*. SRP. 2020; 11(10): 49-52. doi:10.31838/srp.2020.10.10
- [25] S. Iasechko. Haliantych MK, Skomorovskyi VB, Zadorozhnyi V, Obryvkina O, Pohrebniak O. *Contractual Relations in the Information Sphere*. SRP. 2020; 11(8): 301-303. doi:10.31838/srp.2020.8.46.