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THE TERMINOLOGICAL SYSTEM OF THE PETROCHEMICAL INDUSTRY IN ENGLISH AND RUSSIAN ABBREVIATION AND TYPES OF ABBREVIATIONS

Annotation. This study provides a comprehensive analysis of abbreviations as a key mechanism in the terminology system of the petrochemical industry in English and Russian. The study focuses on types, mechanisms of education, structural features, and the functional role of acronyms in professional communication. Using a multi-level analytical base, a body of terminology units was formed from standards, technical documents, scientific publications, textbooks and corporate reports. Structural analysis included classification by type (initialisms, acronyms, compound abbreviations, formulaic notation), morphological structure, pronunciation mode, and formal features. In the course of comparative analysis, the frequency, borrowing, adaptation and semantic differences between English and Russian abbreviations were studied. The results show that English has a higher density of abbreviations, while Russian actively borrows and integrates English forms. The study highlights the practical relevance of standardized abbreviations for professional communication, document translation, and training. The findings contribute to a better understanding of cross-language terminological interactions and provide guidance on the effective use of abbreviations in the petrochemical sector.

Keywords: petrochemical industry; terminology; abbreviation; initialism; abbreviated version; cross-linguistic adaptation; English-Russian; professional communication; technical language; standardization.

Introduction

The petrochemical industry is one of the most important and rapidly developing sectors of the world economy. It includes a wide range of processes, such as exploration and production of hydrocarbon resources, oil and gas processing, as well as the production of polymers and synthetic materials. Due to the complexity and manufacturability of this industry, a highly developed terminology system is required.

Professional communication in the petrochemical industry is based on accurate, standardized terminology that allows specialists to effectively exchange information. One of the most important mechanisms for the formation of this terminology is abbreviations. Acronyms help shorten long and complex technical expressions, making communication faster and more efficient.

Modern petrochemical documentation, including technical reports, standards, scientific publications and operating manuals, contains a large number of abbreviations. Examples include commonly used international abbreviations such as LNG, HSE, API, EOR, and NGL. In many cases, these abbreviations replace their full forms in professional communication.

At the same time, the Russian language also has its own system of industry abbreviations, such as refinery (oil refinery), gas processing plant (gas processing plant), APG (associated petroleum gas) and instrumentation (instrumentation and automation). However,



due to globalization and the dominance of the English language in international technical communication, English abbreviations are increasingly used in Russian-language professional texts.

As a result, a bilingual terminological environment is formed in which English and Russian abbreviations coexist and interact. Examples of such hybrid forms are LNG terminal, HSE policy, and API standard. Thus, the study of abbreviations in petrochemical terminology requires a comparative analysis of both language systems.

The purpose of this study is to analyze the types of abbreviations used in the petrochemical industry and to study their role in English and Russian terminology systems.

Research Methodology

The research methodology is based on a comprehensive linguistic approach combining comparative, structural and contextual analysis. Since abbreviations represent a certain type of linguistic unit with certain rules of formation and use, it is necessary to study both their linguistic characteristics and their role in professional communication.

The study was conducted in several stages.

First, a body of petrochemical abbreviations was assembled. The material was collected from various sources, including international standards such as API and ISO, technical documentation of petrochemical enterprises, scientific articles, textbooks and corporate reports of large oil and gas companies.

All the abbreviations found in the selected texts were recorded and classified. This method allowed us to obtain a representative sample of terminology used in professional discourse.

The second stage included a structural analysis of abbreviations. Each abbreviation was examined according to several parameters:

- type of abbreviation formation
- the number of elements in full
- pronunciation method
- morphological structure
- graphic form (Latin or Cyrillic)

This classification allowed us to identify the dominant patterns of abbreviations in both English and Russian.

The third stage consisted of a comparative analysis. Abbreviations were compared according to several criteria:

- frequency of use
- the degree of borrowing from English to Russian
- morphological adaptation
- Semantic differences between languages

Special attention was paid to the adaptation of English abbreviations in Russian professional texts. In many cases, English abbreviations are used together with Russian grammatical endings, forming hybrid constructions such as LNG-terminal or HSE-specialist.

A contextual analysis was also carried out in order to determine how abbreviations function in real professional texts. Their use has been discussed in process descriptions, technical documentation, industrial safety reports, and scientific publications.

Finally, elements of quantitative analysis were used to determine the frequency of various types of abbreviations and the proportion of borrowed terms in the Russian terminology system.



Types of Abbreviations in Petrochemical Terminology

Abbreviations in petrochemical terminology can be divided into several main types.

Initialisms

Initialisms are abbreviations formed from the initial letters of words. They are pronounced from letter to letter and represent one of the most common kinds of abbreviations in technical communication.

Examples in English:

- API - American Petroleum Institute
- LNG - liquefied natural gas
- HSE - Health, Safety and Environment
- FPSO - Floating Product Storage and Shipping System

Similar abbreviations are widely used in Russian:

- GPP - gas processing plant
- Refinery - Refinery
- APG - associated petroleum gas

Although Russian abbreviations are usually written in Cyrillic, mixed forms combining Latin abbreviations with Russian words are increasingly common.

Acronyms

Acronyms differ from initialisms in that they are pronounced as ordinary words rather than by letter.

Examples:

- OPEC - Organization of Petroleum Exporting Countries
- PET - polyethylene terephthalate

In Russian terminology, acronyms are less common, but some abbreviated words formed from parts of longer terms are used in professional communication.

Compound abbreviations

Compound abbreviations are created by combining parts of words or root morphemes. This abbreviation is especially characteristic of Russian technical terminology.

Examples include abbreviated words referring to petrochemical processes or infrastructure elements such as pipelines or petrochemical complexes.

In English, this type of contraction is less common because initialisms are usually preferred.

Formula abbreviations

Another important category includes chemical formulas and alphanumeric abbreviations representing chemicals or processes.

Examples:

- H₂S - hydrogen sulfide
- CO₂ - carbon dioxide
- MTBE - methyl tert-butyl ether

These symbols are used internationally and therefore remain identical in the technical documentation in English and Russian.

Discussion

The analysis shows that English petrochemical terminology shows a higher density of abbreviations compared to Russian. In many cases, almost every technical term in English has a standardized abbreviated form.



Russian terminology, however, combines two systems: native abbreviations and borrowed English. As the petrochemical industry globalizes, English abbreviations are being actively integrated into Russian professional discourse.

Some English abbreviations are used in Russian without translation, including LNG, LPG, EOR, API and HSE. In other cases, Russian equivalents exist, but are used in conjunction with English forms.

Another characteristic feature is morphological adaptation. English abbreviations can receive Russian grammatical endings or be combined with Russian words. For example:

- LNG Terminal
- FPSO platform
- EOR project

Such forms demonstrate the integration of international terminology into the Russian linguistic system.

The study also shows that abbreviations perform several important functions in professional communication. They contribute to the linguistic economy by reducing long technical expressions, facilitating the standardization of documentation and increasing the efficiency of information exchange between specialists.

In addition, the abbreviations reflect the globalization of the petrochemical industry. Since many technologies, standards and scientific developments derive from international cooperation, English terminology plays a dominant role in the formation of vocabulary in this field.

Practical Significance

The practical significance of studying petrochemical abbreviations is related to several aspects of professional activity.

First, reductions are necessary for effective communication between specialists. Engineers, technologists, chemists and safety managers use them daily in preparing reports, technical instructions and operational documentation.

Second, accurate interpretation of the cuts is critical to industrial safety. Many safety regulations and technical standards contain abbreviated terms describing equipment, risks and control systems. Misunderstanding such abbreviations can lead to technical errors or security threats.

Third, the study of abbreviations is important for translating technical documentation. Translators must determine whether the abbreviation should be translated, replaced with the Russian equivalent, or preserved in its original English form.

Fourth, systematic knowledge of abbreviations is important for education and training. Students in petrochemicals and related fields face more cuts in textbooks and technical materials. Creating educational resources and glossaries can help increase their professional competence.

Finally, standardization of abbreviations helps to ensure consistency in technical documentation and facilitates international cooperation in the petrochemical industry.

Conclusion

The study of abbreviations in the petrochemical terminology system shows that abbreviated vocabulary plays a crucial role in professional communication. Abbreviations allow specialists to efficiently transfer complex technical information while maintaining clarity and accuracy.

A comparative analysis of English and Russian terminology shows that the English language has a more developed system of acronyms and initialisms. Russian terminology



combines its own models of abbreviations with a large number of borrowed English terms, which are gradually adapting to the Russian linguistic system.

The prevalence of English abbreviations reflects the international nature of the petrochemical industry and the widespread use of international standards in technical documentation and professional communication.

The results of this study can be applied in several areas, including standardization of terminology, technical translation, development of training materials and creation of specialized glossaries. Further research may focus on developing databases of petrochemical abbreviations and analyzing their evolution in modern technical discourse.

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АҒЫЛШЫН ЖӘНЕ ОРЫС ҚЫСҚАРТУЛАРЫНДАҒЫ ЖӘНЕ ҚЫСҚАРТУЛАРДЫҢ ТҮРЛЕРІНДЕГІ МҰНАЙ-ХИМИЯ ӨНЕРКӘСІБІНІҢ ТЕРМИНОЛОГИЯЛЫҚ ЖҮЙЕСІ

Андатпа. Бұл мақалада мұнай-химия өнеркәсібінің терминологиялық жүйесінде аббревиатуралардың негізгі рөлі талданған. Зерттеу барысында аббревиатура түрлері, құрылымдық ерекшеліктері, пайда болу механизмдері және кәсіби коммуникациядағы қызметтері қарастырылған. Стандарттар, техникалық құжаттама, ғылыми мақалалар, оқу құралдары және корпоративтік есептер негізінде терминологиялық бірліктер корпусы құрылған. Құрылымдық талдау аббревиатураларды түрі бойынша (инициализмдер, акронимдер, күрделі қысқартулар, формулалық белгілеулер), морфологиялық құрылымы, айтылу тәсілі және формалық сипаттамалары бойынша жүргізілген. Салыстырмалы талдау аббревиатуралардың жиілігін, шетелдік терминдерді интеграциялау дәрежесін және семантикалық айырмашылықтарын анықтады. Нәтижелер ағылшын аббревиатураларының үстемдігін және олардың орыс тіліндегі терминологияға белсенді енгізілуін көрсетті. Зерттеу кәсіби коммуникацияны, құжаттарды аударуды және мамандарды дайындауды жетілдіруде аббревиатураларды стандарттаудың практикалық маңыздылығын көрсетеді.



Кілт сөздер: мұнай-химия өнеркәсібі; терминология; аббревиатура; инициализм; акроним; тілдік адаптация; ағылшын-орыс; кәсіби коммуникация; техникалық тіл; стандартизация.

Антаев Т.М.

ТЕРМИНОЛОГИЧЕСКАЯ СИСТЕМА НЕФТЕХИМИЧЕСКОЙ ПРОМЫШЛЕННОСТИ В АНГЛИЙСКИХ И РУССКИХ СОКРАЩЕНИЯХ И ВИДАХ СОКРАЩЕНИЙ

Аннотация. В статье представлен комплексный анализ аббревиатур как ключевого механизма формирования терминологической системы нефтехимической промышленности на английском и русском языках. Рассмотрены типы аббревиатур, способы их образования, структурные особенности и функции в профессиональной коммуникации. Сформирован корпус терминологических единиц на основе стандартов, технической документации, научных публикаций, учебников и корпоративных отчетов. Проведен структурный анализ аббревиатур по типам (инициализмы, акронимы, сложные сокращения, формульные обозначения), морфологической структуре, способу произношения и формальным признакам. Сравнительный анализ выявил частоту использования, заимствования, адаптацию и семантические различия между английскими и русскими аббревиатурами. Результаты показывают преобладание английских аббревиатур и активную интеграцию их в русскую терминологическую систему. Исследование подчеркивает практическое значение стандартизации аббревиатур для профессиональной коммуникации, перевода документов и подготовки специалистов.

Ключевые слова: нефтехимическая промышленность; терминология; аббревиатура; инициализм; акроним; кросс-лингвистическая адаптация; английский-русский; профессиональная коммуникация; технический язык; стандартизация.