

DOI: <https://doi.org/10.5281/zenodo.11174617>

## A SURVEY OF CHEMICAL TERMS IN WORLD LINGUISTICS

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### **АННОТАЦИЯ**

*В этой статье исследователи представляют историю наименования химических терминов, их альтернативы на русском, английском и узбекском языках. Сообщается, что в истории развития химии можно выделить пять периодов: 1 и 2 этапы химического развития относятся к греческому и римскому периоду. На 3 этапе арабские ученые ввели множество инноваций. На 4 и 5 этапах можно увидеть множество работ европейских и российских ученых.*

***Ключевые слова:** Доалхимический период, алхимическая эпоха, термин, терминология, химическая промышленность, неорганическая химия, химическая номенклатура*

### **ABSTRACT**

*In this article, researchers present the history of the names of chemical terms, their alternatives in Russian, English and Uzbek languages. It is reported that five periods can be distinguished in the history of the development of chemistry: Stages 1 and 2 of chemical development belong to the Greek and Roman periods. During Stage 3, Arab scientists introduced many innovations. At stages 4 and 5 you can see many works of European and Russian scientists.*

**Key words:** *Pre-alchemy period, alchemical era, term, terminology, chemical industry, inorganic chemistry, chemical nomenclature.*

Today, when science and technology are developing and globalization is taking place in the world, the study of terms related to various fields of science and the creation of electronic dictionaries based on them remain one of the urgent problems of modern linguistics.

A lot of opinions have been expressed in the scientific literature about the definition of the term. In almost all definitions, the term is described as a word or phrase expressing a special scientific and technical concept.<sup>1</sup>

According to O. Vinokur, the term is always clear and obvious. The language of the system of terms is formed consciously. After all, the term does not appear by itself, spontaneously, but is created due to its necessity, the existence of a need for it in society. According to A.S. Gerd, a term is a natural and artificial language unit, that is, a word or a combination of words, with a special terminological meaning that clearly and fully reflects the main features of existing concepts at a certain stage of the development of science<sup>2</sup>

V. G. Gak, along with giving the definition of the term, reveals its essence and determines the place of the term in the vocabulary of a language. It is a dictionary of

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<sup>1</sup> Гак В.Г. Асимметрия лингвистического знака и некоторые общие проблемы терминологии (семантические проблемы языка науки). Материалы научного симпозиума. - М.: МГУ, 1972. - С.68 - 71.

<sup>2</sup> Лотте Д.С. Очередные задачи технической терминологии. Т.1.-М.: Московский лицей, 1994

the term in scientific works objects to the consideration of units as a separate type and puts forward the idea that the term-function is a form of the use of lexical units.<sup>1</sup>

In the works of D.S. Lotte, it is emphasized that the term should be viewed and treated as a member of a specific system, not as a separate sign. According to his opinion, the systematic relations in the content plan determine the systemic nature of the terms. The place and position of terms in the system of terms is determined by the place and position of a certain concept in the system of concepts<sup>2</sup>

Uzbek linguist A. Hojiyev, in his definition of the term, said that a term is a word or a combination of words that clearly expresses the concept of something related to science, technology or other fields, the scope of use of which is limited to special fields. besides, A. Hojiyev made a serious comment about the wrongness of replacing the word term with the construction of a term, its causes and consequences.<sup>3</sup>

To distinguish the concept of "term" from a common word, it is necessary to note the following:

1. Terminology is a word of universal language that is familiar only to a small group of people, used only by special people. For example: a linguistic unit, a word or a combination of words belonging to the language of production, science and technology is understood;

2. The term is stylistically neutral;

3. The term has a clear, nominative function, emotionality, expansiveness does not match the character;

4. The meaning of the term is equal to the concept.

Chemical terms include all words related to the field of chemistry. Naming of chemical elements in 1869 D.I. It existed before Mendeleev's table of chemical elements.

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<sup>1</sup>Hojiyev A. Tilshunoslik terminlarining izohli lug'ati. Toshkent: O'zbekiston milliy ensiklopiyasi. 2002

<sup>2</sup>Лотте Д.С. Очередные задачи технической терминологии. Т.1.-М.: Московский лицей, 1994

<sup>3</sup>Hojiyev A. Tilshunoslik terminlarining izohli lug'ati. Toshkent: O'zbekiston milliy ensiklopiyasi. 2002

Chemical terms include all words related to the field of chemistry. Naming of chemical elements in 1869 D.I. It existed before Mendeleev's table of chemical elements.

Five periods can be distinguished in the history of the development of chemistry:

1. VII century BC. - III century AD (pre-alchemy period). At this time, the ancient Greeks paid attention to the nature of the Universe and the structure of its constituent substances. They tried to explain the nature of objects and environmental phenomena;

2. III - XVII centuries. AD (alchemical era). It was at this time that the development of Greco-Egyptian chemistry took place (the Latin word "alchemy" comes from the Arabic word al-kîmia, from the Latin chymia "chemistry", from the ancient Greek "chemistry"). came out. moisture", "juice", "liquid" (from the Proto-Indo-European root ghew - "to pour") At the same time, alchemists sought the famous philosopher's stone;

3. 16th - 17th centuries (iatrochemical period). At this time, the works of Arab alchemists were translated into European languages. Chemistry developed dynamically, which made it possible to identify a specific direction in it - iatrochemistry, whose father was Theophrastus Paracelsus;

4. 17th century - end of 19th century Then systematization of experimental material and human experience accumulated over many centuries in the field of transformation of substances began. This was done by A. Lavoisier. Chemistry became an independent science;

5. The 20th century - the beginning of the 21st century. During this period, most of the chemical elements and the basic laws of chemistry. Chemistry gave birth to a new industry called "chemical industry". It should be said that during the above-mentioned periods, chemical terms were also formed.

As in other developed countries, the rise of natural sciences, especially chemistry, began in Russia in the 18th century. Along with the development of science, the necessary conceptual and terminological direction of writing and signs was formed.

The existence of special terminology is an indispensable condition for the systematization and presentation of accumulated knowledge in a certain scientific field. In Russia, the 18th century was a period of intense linguistic creativity, both by the authors of scientific books themselves and by translators in the creation of Russian scientific terminology. It was at that time that the foundations of modern Russian chemical terminology were laid.<sup>1</sup>

Several factors influenced the formation of chemical terminology in Russia. First, in the Russian language at that time there were many national Russian concepts in this area that appeared in the language in the ancient and middle ages. This heritage was the main core of the further development of the terminological system of chemistry. Second, new knowledge came with signs from the West, and the process of assimilation of foreign language terms continued during the translation of Western European scientific literature. Translators tried to choose Russian equivalents for foreign concepts, which contributed to the development of terminological doublet in the Russian language. Thirdly, at this time, different traditions of naming chemical phenomena were preserved in different countries, which again led to the synonymy and variability of the adopted terms. E. Yu. According to Khomyakova, the combination of these linguistic phenomena determined the uniqueness of the language of chemistry in the 18th century.

Accordingly, according to their origin, all Russian-language terms of 18th-century chemistry are divided into three groups: national Russian terms, adopted terms, and observation papers. The original Russian terms are the oldest and include: "gold, silver, copper, tin, iron, chalk, arsenic, alum, coil, foam, etc." Foreign terms were borrowed from Western European languages (German, French, Dutch), but most of them had Latin and Greek roots. "The following terms entered Russian chemical terminology from Greek: molybdenum, phosphorus, naphtha, sandara, asp, barite,

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<sup>1</sup> Хомякова, Е.Ю. Русская химическая терминология 18 века : дис. ...канд. фил. наук : 10.02.20 / Хомякова Елена Юрьевна. – М., 1984. – 236 с.

chrysocola, ether, oxide, etc. From the Latin mercuric chloride, alcohol, ore, extract, temperature, degree, ligature, etc."

Finally, terms have also been imported from the source language through calka. However, many of them were very artificial and therefore not absorbed by the tongue, in which "for example, deoxidation, black pencil acid, oxygen gas, etc." did not change. At the same time, traces are found in almost all texts of that time, because the translators tried to "bring the Russian chemical language closer to the common language" by choosing Russian equivalents of foreign words. Thus, "the conscious, creative work of the translators was carried out: the arrival of a large number of newly acquired words into the Russian chemical language was accompanied by the most active work on translating them and finding Russian correspondences for them."

In connection with the rapid development of chemistry and the emergence of organic chemistry, which studies complex compounds compared to inorganic chemistry, there was a need to create an ordered system of chemical terms. A.L. Lavoisier made the first attempt to create a rational nomenclature and served as a model in the process of formation in the early 19th century. gave impetus to the formation of national nomenclature, including the national nomenclature of the Russian language.

Thus, discussing the new Russian chemical terminology, the great Russian chemist A.M. As Butlerov noted, "most of its mass is combined with the general chemical nomenclature, and the Russian names developed in the everyday language are also used and remain so. among Russian chemists"<sup>1</sup>

The foundations of chemical nomenclature in the Russian language were laid by Russian chemists V. M. Severgin and G. I. Hessem. V.M. Severgin made a great contribution to the education and enrichment of Russian scientific terminology.

He published mineralogical (1801-1807) and chemical (1810) dictionaries, an explanatory dictionary of scientific terms (1815). Severgin introduced concepts such

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as oxidation, silica, sulfate salts, gloss, refraction, transparency, etc. into Russian chemical terminology.<sup>1</sup>

G.I. Hess became the author of the famous textbook "Fundamentals of Pure Chemistry", in which he M. F. Solovyov, S. Ya. He used the first Russian chemical nomenclature, developed in collaboration with Nechaev and P. G. Sobolevsky and preserved to this day. In addition, in 1849 he proposed the taxonomy of chemical elements for the first time in Russia.<sup>2</sup>

Reasons for the widespread use of English include the presence of British colonies in the 16th and 20th centuries. It was one of the largest colonies and its influence was significant. "The reason for the spread of the English language is the increase in status through conquest and colonization" [What explains ... el. source]. Thus, English language culture is playing an increasingly important role on the world stage. "The spread of the English language was facilitated by political, military, and in a more modern society, scientific, technical, economic and cultural leadership. Today, the terminological base of all sciences, including chemistry, is actively expanding in the world scientific space.

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<sup>1</sup> Химическая энциклопедия [Электронный ресурс]. — М.: Советская энцикл. под ред. И.Л. Кнунянца, 1988. — Режим доступа: [http://dic.academic.ru/dic.nsf/enc\\_chemistry/](http://dic.academic.ru/dic.nsf/enc_chemistry/).

<sup>2</sup> Справочник химика 21 [Электронный ресурс]. — Режим доступа: <http://chem21.info/>.

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