

Relationship Between International Basis and National Affixes in Uzbek Chemistry Terminology

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ABSTRACT

The article analyzes the combination of international terminological foundations with national word-formation tools in Uzbek chemical terminology. In the study, the use of chemical names in the Uzbek language is considered not only as a phenomenon of translation, but also as a process related to the content, form and grammatical adaptation of the term. In particular, the relationship between IUPAC nomenclature, Uzbek chemical terminology and affixal term formation is highlighted.

Keywords: Uzbek chemical terminology, international term, national affix, term formation, chemical nomenclature, IUPAC, borrowed term.

INTRODUCTION

Chemical terminology is one of the most complex sectoral terminological systems in the Uzbek language. The reason for this is that a chemical term performs several functions simultaneously: it names a substance or process, refers to its structural features, indicates its relationship with other compounds, and functions as a short, precise, standard unit in a scientific text. Therefore, when providing chemical terms in the Uzbek language, the question "how is it translated?" is not enough. Here, the question "how does the term live in the system of the Uzbek language?" is also important.

In the theory of Uzbek terminology, although terms are formed on the basis of the general literary language, they differ from ordinary lexical units in that they express a special concept. Kh. Dadaboev shows that terminology is linked to the language of science, and the language of science relies on the possibilities of the lexicon, grammar, and word formation of the general literary language [1]. This idea is also important for chemical terminology: a chemical term may belong to the international scientific system, but when used in the Uzbek language, it does not

remain outside the internal laws of the Uzbek language.

Another important issue in chemical terminology is the boundary between term and nomenclature. The term refers to a general scientific concept; nomenclature refers to a system of naming a substance, element, or compound based on a rule. In Uzbek chemical terminology, these two layers often come side by side. For example, if "ion," "oxide," "reaction" are used as terms, then units such as "sodium sulfide," "calcium sulfate" are nomenclature units related to the chemical naming system.

This article analyzes the relationship between the international base and national affixes as an internal development mechanism of Uzbek chemical terminology. In this case, the international basis refers to the terminological foundations that entered through IUPAC, Russian-international terms and international chemical naming traditions. National affixes are considered as word-forming means that serve to re-form these bases in the Uzbek language in the sense of process, state, feature or performer.

Body

Since chemistry is a field strongly linked to international communication, generality in its terminology is natural. Many units representing the names of elements, compounds, reactions, laboratory processes, and physicochemical phenomena are used in different languages in similar forms. This proximity is not accidental; it is due to the fact that chemistry has historically sought international standardization.

The IUPAC Gold Book is one of the international explanatory sources for terms in chemistry [3]. The task of such sources is not only to list terms, but also to clarify their scientific scope, scope of application and relationship with other terms. Thus, the international foundations of Uzbek chemical terminology serve to maintain the stability of scientific content.

A. P. Madvaliev's research on Uzbek chemical terminology shows that the formation of this field in the Uzbek language is a separate scientific issue [2]. This aspect is important: Uzbek chemical terminology is not only a translation of Russian or English terms. It is a system formed at the intersection of the international scientific foundation, the internal capabilities of the Uzbek language, and the need for standardization.

The advantage of the international framework is that it links the term with scientific texts in other languages. For example, units such as "oxide," "sulfate," "ion," "catalysis" in the Uzbek language also retain their meaning in the international scientific field. However, when these units are used in the Uzbek language, they interact with the Uzbek word order, pronunciation, spelling, and affixal system. Therefore, once the international basis enters the Uzbek language, it does not remain a passive copy; it begins to function actively within the national language system.

One of the most prominent cases in adapting chemical nomenclature to the Uzbek language is word order. In the manual by Isakov and Zokirova, it is emphasized that chemical nomenclature should reflect the composition of the substance, the position of atoms and groups, and their relationships [4]. Thus, every part of a chemical name is not accidental; scientific information is contained within the name.

The authors show an important difference by comparing

the naming order in Russian and Uzbek. In Russian, the name of a compound is often formed from the negative to the positive part: "sulfide sodium." In Uzbek, the positive part comes first: "sodium sulfide." Similarly, CaSO_4 is given as "calcium sulfate" [4]. These examples show that the syntactic order of the Uzbek language works within the chemical nomenclature, rather than a simple translation.

In this case, "sulfide" or "sulfate" is maintained as an international base. However, their place in the Uzbek language, the order of connection with another component is adapted to the rules of the national language. Thus, in Uzbek chemical terminology, nationality is manifested not only by adding an affix, but also by defining the internal order of the name.

The presentation of the compound KNaSO_4 as "potassium-sodium sulfate" also confirms this process [4]. This title contains international terminological units, but they are arranged in an order that is easy to read and understand in the Uzbek language. Thus, in chemical nomenclature, the international basis and the Uzbek syntactic order work together.

Once the international base enters the Uzbek language, it often performs new grammatical and semantic functions through affixes. A. Hojiev's views on word formation are important for explaining this process. The scholar explains the composition of a derivative word through the relationship "word-formation base + word-formation" [5]. If we apply this model to chemical terminology, the international or borrowed basis is the basis of word formation, and the Uzbek affix is a word-forming tool.

H. Dadaboev shows that in Uzbek terminology, the model with the affix -lash is active in creating terms denoting the name of a process and action. Among the examples he cited are units such as standardization, lyophilization, chromium plating, aluminization, mechanization, ionization, and coding.[1] These examples are especially important for the topic of the article, because in them the borrowed or international basis has entered the form of a term denoting the process using an Uzbek affix.

For example, if "ion" is an independent term as an international scientific unit, then in the form of "ionization" it becomes the name of the process. Bases such as "chromium" or "aluminum" also combine with the affix -lash to form a unit denoting a chemical-technological operation or process. Here, the affix is not just a

grammatical suffix; it changes the function of the term in a scientific text.

In the Uzbek language, affixes such as -lanish, -lik, -li, -siz, -chi are also actively used in terminology. They specify the semantic direction of the term: -lanish indicates a transition to a process or state, -lik indicates a feature or state, -li indicates existence, -siz indicates nonexistence, and -chi indicates an executor or specialist. In the text of chemistry, such affixes adapt the term to the Uzbek sentence structure and allow it to be freely combined with other units.

In this regard, it is incorrect to understand the function of national affixes as an "external decoration added to the international base." They move the term within the national language: they turn the noun into the name of the process, the name of the substance into a unit denoting a feature, the scientific basis into the name of a practical action.

The analyzed materials allow for the identification of several manifestations of the relationship between international base and national affixes in Uzbek chemical terminology.

Model	Example	Commentary
International basis + Uzbek word order	sodium sulfide, calcium sulfate	The international terminological unity is preserved, but the combination is given in the Uzbek order.
International/Association foundation + -ation	ionization, chrome plating, standardization	The name of the process or action is generated.
International/Association basis + -ization	mechanization, deactivation	The meaning of performing an action or generating a process is strengthened.
Uzbek base + terminological function	solution, solvent	The national basis becomes a special unit representing the concept of chemistry.
International basis + national explanatory component	chemical reaction, organic compound	The term is used in the form of a compound, the meaning is clarified.

This table shows that two different processes occur side by side in Uzbek chemical terminology. In the first process, the international term is taken almost ready and adapted to the Uzbek order. In the second process, the international basis forms a new artificial term using Uzbek affixes.

The -lash model is particularly active in Uzbek scientific and technical terminology. The units such as standardization, lyophilization, chromium plating, aluminization, and ionization presented by Dadaboev show that this model operates not only in common language but also in scientific and technical terminology [1]. This means that after the international basis enters the Uzbek language, it can serve as a basis for the formation of new terms.

In Uzbek chemical terminology, the issue of norm is of particular importance in evaluating the relationship between international basis and national affixes. If a term is overly nationalized, its international scientific recognition weakens. On the contrary, if the term is left entirely in an international form, it may not adapt to the natural grammatical system of the Uzbek language. Therefore, when creating a term and applying a term, two criteria must work together: scientific accuracy and compliance with the national language.

Madvaliev's research on the normalization of Uzbek chemical terminology arose precisely from this need [2]. Standardization in chemical terms is not just about regulating spelling or pronunciation. This process also seeks answers to the questions of which form of the term is more convenient, which one gives the scientific content more accurately, which one is more suitable for the word-formation system of the Uzbek language.

In the manual by Isakov and Zokirova, it is noted that while relying on IUPAC rules, it is necessary to adapt them to the specifics of the Uzbek language [4]. This idea defines an important methodological path for Uzbek chemical terminology: not to abandon the international standard, but to apply it in accordance with the internal structure of the Uzbek language.

The role of affixes in normalization is also significant. For example, if different forms are used to express the same process every time, terminological consistency is disrupted. On the contrary, if it is clear in which case models such as -lash, -lanish, -lashtirish are used, the term system becomes clearer. Thus, national affixes also serve

the terminological order.

In Uzbek chemical terminology, the relationship between the international basis and national affixes is not a one-sided process. The international basis belongs to the national language, and the national language processes it in accordance with its own system. As a result, the term has a double character: in terms of content, it is connected to the international scientific field, and in terms of form, it belongs to the Uzbek language.

This situation demonstrates the scientific potential of the Uzbek language. The language does not merely adopt international terms, but actively uses them through its own grammatical system. Units such as ionization, chrome plating, and standardization clearly demonstrate this: although they have an international basis, they function as terms formed using Uzbek affixes.

Based on the materials of the article, it can be said that in Uzbek chemical terminology, the relationship between the international basis and national affixes should be viewed as "adaptation" rather than "opposition." The international basis maintains the stability of the scientific concept; the national affix introduces this concept into the expression system of the Uzbek language. It is precisely at this point that the national and international characteristics of Uzbek chemical terminology unite.

CONCLUSION

In Uzbek chemical terminology, the relationship between the international basis and national affixes is one of the important mechanisms of term formation. The international framework preserves the scientific content, interdisciplinary comprehensibility, and standardization of the term. National affixes introduce this basis into the word-formation system of the Uzbek language and clarify the grammatical and semantic function of the term.

Analysis shows that in the Uzbek chemical naming system, international units are used in the Uzbek syntactic order: sodium sulfide, calcium sulfate, potassium-sodium sulfate are examples of this. In the formation of affixal terms, models such as -lash, -lanish, -lashtirish turn international or borrowed bases into the name of the process and action. Units such as standardization, lyophilization, chromium plating, and ionization demonstrate the active functioning of this model in terminology.

Thus, Uzbek chemical terminology is not a passive system that accepts international terms in a ready-made form. It processes international foundations through the possibilities of the national language, adapts them to the Uzbek scientific text, and creates new terminological units. Therefore, the study of the relationship between the international basis and national affixes serves to shed more light on the structural, semantic and normative features of Uzbek chemical terminology.

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