

UDK 81'1

**THE NEED TO CREATE A THESAURUS OF CHEMICAL TERMS****Manzura Abjalova**

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*Thesauruses play an important role in today's developing computer age. Therefore, the need for thesaurus dictionaries is increasing. This article talks about the important aspects of the thesaurus of chemical terms, the importance of thesauruses of field terms for field users, and their role in creating the ontology of the Uzbek language.*

**Key words:** *thesaurus, term, chemistry, precision, standardization, efficiency.*

**НЕОБХОДИМОСТЬ СОЗДАНИЯ ТЕЗАУРУСА ХИМИЧЕСКИХ  
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### **Аннотация**

Тезаурусы играют важную роль в современном развивающемся компьютерном веке. Поэтому потребность в тезаурусных словарях возрастает. В данной статье говорится о важных аспектах тезауруса химических терминов, важности тезаурусов полевых терминов для отраслевых пользователей и их роли в создании онтологии узбекского языка.

**Ключевые слова:** тезаурус, термин, химия, точность, стандартизация, эффективность.

## **KIMYOVIY TERMINLAR TEZAVRUSINI YARATISH ZARURATI**

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### **Annotatsiya**

Hozirgi rivojlanib borayotgan kompyuter asrida tezauruslarning o'rni benihoya kattadir. Shu bois hozirda tezaurus lug'atlarga ehtiyoj tobora ortib bormoqda. Mazkur maqolada kimyoviy terminlar tezaurusining muhim jihatlari, sohaviy terminlar tezauruslarining soha foydalanuvchilari uchun ahamiyati, o'zbek tili ontologiyasini yaratishdagi o'rni haqida so'z boradi.

**Kalit so'zlar:** tezaurus, termin, kimyo fani, aniqlik, standartlashtirish, samaradorlik.

## **INTRODUCTION**

A thesaurus is a collection of words and their synonyms arranged in alphabetical order. It is a tool used to increase vocabulary, understand the meaning and relationship between different words with similar meanings, and find alternatives to frequently used words in a text. The word thesaurus is derived from the Greek word "thesaurus" which means treasure or storehouse. The use of thesauri dates back to the 16th century, when the first English thesaurus was published in 1852 by Peter Marc Roget. Before Roget's

publication, thesauri were mainly used for linguistic purposes, such as finding synonyms for certain words [1].

General description of thesaurus language. A thesaurus is a list of synonyms for thousands of words. It provides a comprehensive overview of several semantic relationships of a word, allowing the user to choose the most appropriate one for use depending on the context. A thesaurus also includes a brief explanation or definition of words and their various meanings to avoid confusion. There are two main types of thesaurus, namely general thesaurus and domain-specific thesaurus. A general thesaurus provides synonyms for common concepts used in writing and conversation, while a domain-specific thesaurus offers synonyms for words in specific fields, such as medicine, law, and business.

A thesaurus is a valuable tool for anyone who needs to improve their writing and expand their vocabulary. It offers many synonyms and related words that can be used to replace overused or repetitive language. However, building a comprehensive and accurate thesaurus requires a solid knowledge base and understanding of the language. Another important aspect of creating a thesaurus is a thorough knowledge of the subject. For example, a thesaurus for medical terms should be created by someone with experience in the medical field. Without this understanding, it is impossible to accurately classify and suggest synonyms for specific medical terminology. It is important to consider regional and cultural differences when creating a thesaurus. Vocabulary, expressions and idioms can vary widely across regions and cultures, and a thesaurus designed for one group may not be useful for another. [2]

Thesauri have been used for centuries to improve communication and improve writing skills globally. They play an important role in language development, information acquisition and knowledge management in different cultures and industries. Several studies have been conducted to examine the use of thesauri globally. One such study looked at how thesauri are used in academic writing in different countries. The study found that the use of thesauruses is more common in English-speaking countries than in countries where English is not the primary language. Research has shown that thesauri are widely used to enhance search capabilities and information retrieval [2]. Thesauri have played an important role in breaking down language barriers and improving writing skills for people all over the world. A thesaurus of industry terms is an essential tool for professionals and users in every industry. A comprehensive list of commonly used terms, phrases, and jargon across industries. A thesaurus of industry terms summarizes information and makes it easy to understand for everyone, including those new to the industry. There is a growing need for a thesaurus of industry terms. Because a thesaurus of industry terms is an important tool that enhances communication, encourages standardization, supports research and

development, facilitates understanding of complex language, and simplifies teaching. In order to promote effective communication in any field, it is necessary to have a comprehensive thesaurus of field terms [3].

### MAIN BODY

The thesaurus is an invaluable tool for anyone working with language, including chemists and all users. Creating a thesaurus of chemistry terms allows you to solve the following needs:

- The absence of a thesaurus dictionary of terms used in chemistry textbooks did not create their interconnection;
- There is no semantically branched thesaurus dictionary of inorganic chemistry terms;
- Internet networks do not have a thesaurus dictionary of inorganic chemistry terms in Uzbek language;

Chemical thesauri have the following important features:

1. Standardization of terminology: One of the most important roles of a thesaurus in chemistry is to standardize terminology. Chemistry is a language in itself, but like any language, it is subject to changes in usage, as well as between different groups of speakers.
2. Clarity: A thesaurus can help determine the exact meaning of chemical terms, especially the name of an obscure or specific term. For example, one compound may have the same name as another compound, but the molecular structure or set of properties may be completely different. A thesaurus helps to distinguish between such terms, avoiding mistakes or confusion.
3. Education and Communication: Another important advantage of using a thesaurus in chemistry is its potential for educational purposes. For students of chemistry, particularly those at the introductory level, a thesaurus can be a valuable tool for learning the language and technical vocabulary of the subject. Using a thesaurus, they can access clear, concise definitions of chemical terms and build a strong foundation for future learning.
4. Time saving and efficiency: Finally, a thesaurus can be an efficient tool for working in chemistry, especially for researchers or professionals who need to access information quickly and efficiently. Rather than searching a collection of textbooks or databases, searching a comprehensive thesaurus for unfamiliar terms can save time and improve overall productivity, especially when dealing with large amounts of data.

Creating a thesaurus of chemistry terms opens up a wide range of opportunities in the following fields and processes:

- A rich resource for research in chemistry;
- The basis for creating an ontology of the Uzbek language;
- Basis for improving the linguistic base of translator programs;

- Educational material for students of chemistry;
- Great networking for deep explorers;

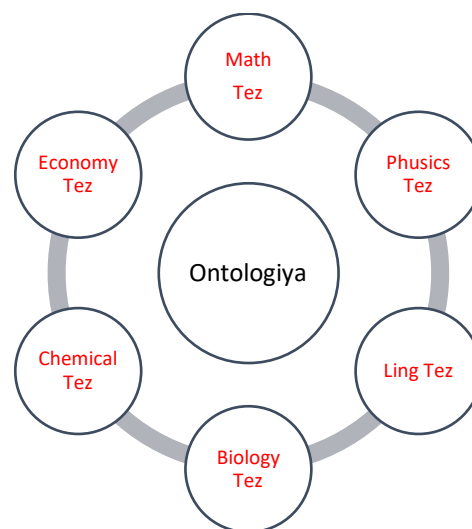
Chemistry researchers often deal with complex scientific terms and concepts that require precise information. The thesaurus, which includes synonyms and antonyms, is a valuable tool to help researchers improve their written and oral communication skills. Effective communication is crucial in the field of chemistry, as it helps to effectively communicate information to colleagues, scientific journals, and even general audiences. In addition to improving communication skills, thesaurus helps researchers expand their knowledge in the field of chemistry. By learning about different words and their meanings, researchers can uncover new ways of describing their research topics, which can lead to new scientific insights. In addition, a thesaurus can help researchers search for relevant literature and sources by providing alternative keywords for research topics. Using a thesaurus of chemical terms allows researchers in the field of chemistry to correctly distinguish semantic relations between terms, to see several features of terms. We can see the proof of our statement based on the following table:

Term name	Hyponym	Hyperonym	Holonym	Meronym
<b>Concrete</b>	asphalt, concrete	concrete	concrete	trepel, diatomite, pumice, volcanic ash, turn, blast furnace slag, lime, gypsum
<b>Bauxites</b>	bauxite with diasporbiomite, hydrargillite (gibbsite)	bauxite	bauxite	silica, iron oxide
<b>Waxes</b>	ozokerite, lanolin	waxes	waxes	high fat, high molecular weight
<b>Wood stay</b>	wood alloy	alloy	wood alloy	Bi, Pb, Sn, Cd

A thesaurus is an indispensable tool for creating an ontology of any language. Ontology is an attempt to formalize a certain field of knowledge in a comprehensive and detailed manner using a conceptual scheme. Typically, such a schema consists of a data structure containing all relevant object classes, their relationships, and the rules accepted in the domain. [4]

The concept of ontology has been known for a long time, but in a revised form, it has been actively used in computer technologies in recent years. Views on ontology as a semantic network began in the late 90s of the 20th century. The term linguistic ontology or language ontology is more commonly used in the field of information technology than in the field of linguistics, mainly as a specialized information retrieval thesaurus for automatic processing of texts, that is, a collection of various specialized thesauruses containing the vocabulary of a language, with established semantic relationships of words (or networks of words). stands for linguistic software. [5]

In general, the linguistic ontology and thesaurus concepts can be reflected in the following diagram [Abjalova, 2022:25]:



As for the Uzbek language, the thesaurus plays a crucial role in the development of ontology for several reasons. First, the Uzbek language is a highly inflected language with a complex grammatical structure, which requires careful analysis and categorization. Secondly, the vocabulary of the Uzbek language consists of words taken from Arabic, Persian, Russian, and Turkish languages. A thesaurus helps you identify word origins and related terms in different languages. This information is essential for creating an ontology that reflects the etymology and historical development of the language. Thirdly, the Uzbek language is a language that has undergone serious changes under the influence of political and social factors in the last century. It allows linguists, lexicographers and language researchers to analyze the structure of the language, trace its historical development and identify new concepts that have appeared in the modern language. A well-designed ontology can help improve language processing, information retrieval, and machine translation systems for the Uzbek language.

## CONCLUSION

In conclusion, a global study of thesauri has provided valuable insights into their importance in language development, information acquisition, and knowledge management. Creating a thesaurus of chemical terms requires strengthening the knowledge of a specialist in the field of chemistry, and a deep understanding of possible semantic problems. Clear communication in chemistry and careful handling of the field are essential to the success of chemical research. A thesaurus can be an important resource for chemists and other professionals working in the field of chemistry. By standardizing terminology, clarifying definitions, supporting education and communication, and improving research efficiency, the thesaurus helps increase accuracy, reduce errors, and advance scientific progress.

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