

## PHYSICS

---

Serikbekova Z.K., Golovin N.P.

### STRUCTURE OF THE TERMS IN THE FIELD OF NUCLEAR PHYSICS

Z.K.Serikbekova, N.P. Golovin, Tomsk Polytechnic University,  
Russia, Tomsk

#### **Abstract**

The language of science refers to natural languages. It functions in the terminological sphere and specific science definitions, it also plays role of the language operator or dispatcher (predicates, ligaments, categorizer, morphology and syntax patterns). This is what most of the modern languages of science and technology look like (sublanguages of biology, medicine, math, physics, geology). It can be applied to the nuclear physics domain as well. Scientific knowledge, which found its expression in a word, in a term, moves into a qualitatively new stage, including the semantic system and the structure of a language of science, becoming a component of the lexical-semantic system of the language.

**Keywords:** Nuclear physics, etymological, structure, methodological, analysis, nuclear physics terms.

#### **Methodological and etymological analysis of the term in nuclear physics.**

Let us consider some of the terms.

atom (n.) late 15c., as a hypothetical indivisible body, the building block of the universe, from Latin atomus (especially in Lucretius) "indivisible particle," from Greek atomos "uncut, unhewn; indivisible," from a- "not" + tomos "a cutting," from temnein "to cut" (see tome). An ancient term of

philosophical speculation (in Leucippus, Democritus), revived 1805 by British chemist John Dalton. In late classical and medieval use also a unit of time, 22,560 to the hour [5].

absorb (v.) early 15c., from Middle French absorber (Old French assorbir, 13c.), from Latin absorbere "to swallow up," from ab- "from" (see ab-) + sorbere "suck in," from PIE root \*srebh- "to suck, absorb" (cognates: Armenian arbi "I drank," Greek rhopheo "to sup greedily up, gulp down," Lithuanian srebiu "to drink greedily"). Figurative meaning "to completely grip (one's) attention" is from 1763. Related: Absorbed; absorbing. [<http://www.etymonline.com>]

dose (n.) early 15c., "the giving of medicine (in a specified amount or at a stated time)," from Middle French dose (15c.) or directly from Late Latin dosis, from Greek dosis "a portion prescribed," literally "a giving," used by Galen and other Greek physicians to mean an amount of medicine, from stem of didonai "to give" (see date (n.1)). Slang meaning "venereal disease" is from 1914 [5].

photon (n.) "unit of electromagnetic radiation," 1926 in modern sense, from photo- "light" + -on "unit" [5].

nuclear (adj.) 1841, "of or like the nucleus of a cell," from nucleus + -ar, probably by influence of French nucléaire. Use in atomic physics is from 1914; of weapons, from 1945. Hence nuclear physics (1933), nuclear energy (1941), nuclear war (1954) [5].

electron (n.) coined 1891 by Irish physicist George J. Stoney (1826-1911) from electric + -on, as in ion (q.v.). Electron microscope (1932) translates German Elektronenmikroskop [5].

#### **Terms related to nuclear physics**

Term (including scientific-technical terms and organizational-administrative documentation's terms) is a unit of any natural language (word, phrase, abbreviation, symbol, combination of words and numeric symbols), which has special terminological meaning, as a result of spontaneous forming or specific conscious collective agreement. It can be expressed either verbally or in some formalized version and correctly shows essential, main characteristic of suitable concept at this development level of science. This paper presents a number of terms related to nuclear physics . After studying their structure several types of terms can be clearly seen: a) Greek; b) Latin c) Old English and old French.

a) Greek is an independent branch of the Indo-European language family. The ancient language most closely related to it may be ancient Macedonian, which many scholars suggest may have been a dialect of Greek

itself, though it is so poorly attested that it is difficult to conclude anything about it. The Greek includes such terms: *atom, dose, ion, isomer, isotope, photon, proton*.

b) Latin influence in English has been significant at all stages of its insular development. In the medieval period, much borrowing from Latin occurred through ecclesiastical usage established by Saint Augustine of Canterbury in the sixth century or indirectly after the Norman Conquest through the Anglo-Norman language. From the 16th to the 18th centuries, English writers cobbled together huge numbers of new words from Latin and Greek words. These were dubbed "inkhorn terms", as if they had spilled from a pot of ink. Many of these words were used once by the author and then forgotten. Some useful ones, though, survived, such as 'imbibe' and 'extrapolate'. The Latin includes such terms: *absorber, density, eluate, irradiate, nuclear, neutron, transmutation*.

c) Beginning with Plautus's time (254–184 b.c.), Classical Latin's phonological structure changed, eventually yielding Vulgar Latin, the common spoken language of the Western Roman Empire. This latter form differed strongly from its classical counterpart in phonology; it was the ancestor of the Romance languages, including Old French: *absorber, source*.

Old English was not static, and its usage covered a period of 700 years, from the Anglo-Saxon settlement of Britain in the 5th century to the late 11th century, some time after the Norman invasion. While indicating that the establishment of dates is an arbitrary process, Albert Baugh dates Old English from 450 to 1150, a period of full inflections, a synthetic language. Perhaps around 85 per cent of Old English words are no longer in use, but those that survived, to be sure, are basic elements of Modern English vocabulary: *cow, half-life, parent, spill, tracer, contamination*.

Percentage of terms are shown in Figure 1.

### **Conclusion**

In general, terms in nuclear physics are heterogeneous and diverse. Revealed: Greek 35 %, 40 % in Latin, Old English and Old French 25 %. Based on the significant data it is clear, that the superiority of the Latin group origin in nuclear physics prevails. After analyzing some of the terms, it is clear that they have a narrow focus and membership in an area such as nuclear physics.

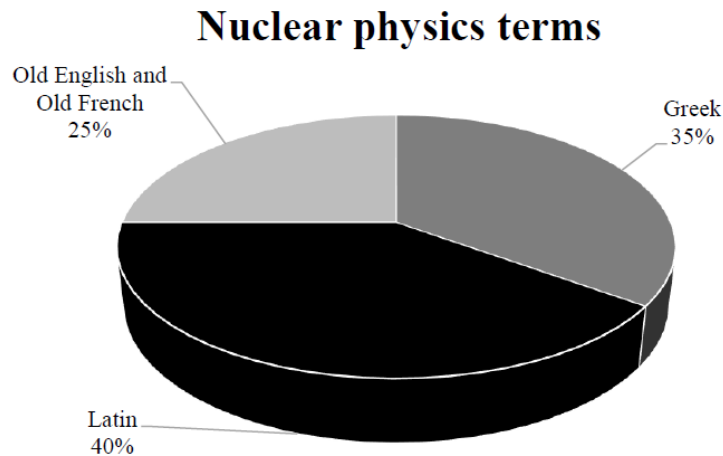


Figure 1. Percentage of terms used in nuclear physics

**References:**

- [1] Zyablova N.N., Kobenko Ju.V. Strukturnye osobennosti terminologicheskikh akronimov v tekstah anglijskogo nauchno-tehnicheskogo stilja sfery vozobnovljaemyh istochnikov jenerгии (VIJe). *Filologicheskie nauki. Voprosy teorii i praktiki* Tambov: Gramota, 2013. № 5 (23): v 2-h ch. Ch. I. C. 71–73 (in Russian)
- [2] Zyablova N.N., Kobenko Yu. V. TYPES OF TERMINOLOGICAL UNITS OF SCIENTIFIC STYLE IN LEXICAL-SEMANTIC FIELD 'RENEWABLE ENERGY SOURCES' OF AMERICAN VARIANT OF ENGLISH. *Vestnik Tomskogo gosudarstvennogo pedagogicheskogo universiteta. Vypusk № 4 (157) / 2015* (in Russian)
- [3] Zyablova N.N. Jetimologicheskij analiz derivacionnyh osobennostej terminologicheskikh edinic nauchnogo stilja v anglijskikh tekstah sfery VIJe // *sbornik nauchnyh trudov XIV Vserossijskoj nauchno-prakticheskoy konferencii / pod red. N.A. Kachalova. TPU. – P I. – Tomsk, 2014. – 216 s.* (in Russian)
- [4] <http://www.oxforddictionaries.com/ru>
- [5] [http://www.etymonline.com/index.php?term=electron&allowed\\_in\\_frame=0](http://www.etymonline.com/index.php?term=electron&allowed_in_frame=0)
- [6] <http://dictionary.reference.com/browse/atom?s=t>

## MICROBIOLOGY

---

Khatiashvili I.N., Lomtadze Z.S.H., Shiukashvili T.G.

### PECULIARITIES ACTINOMYCETES IN SOILS ENVIRONS OF TBILISI

Khatiashvili I.N., Tbilisi, Georgia, Doctorant Sokhumi State University, Teacher of Microbiology Humanitarian Teaching University.

Lomtadze Z.S.H., Tbilisi, Georgia, Professor Sokhumi State University.

Shiukashvili T.G., Tbilisi, Georgia, Testing of the biocidity of microorganisms Department of microbiology, Ilia state University Institute of Botany.

#### Abstract

Four samples of soil from the brown- carbonated, alluvial, chestnut soils of Vashlisjvari, Digomi, Gldani, Ortachala (environs of the city Tbilisi) have been taken. Different physiological groups of microorganisms, among them actinomycetes were isolated from these soils, and their quantitative composition has been studied. Among the four isolated strains of actinomycetes most revealed selective antagonistic activity towards the gram-positive and gram-negative microorganisms: *Elythrosporangium brasiliense*, *Actinosporangium 874*, *Agrobacterium tumefaciens* (causes vine cancer), *Xanthomonas campestris* (infects cabbage), *Pectobacterium aroideae*. the mutual antagonistic properties of antagonists were investigated.

**Keywords:** azotobacter, amyolytic bacteria, cellulose-destroyers, nitrifiers, saprophytes.

Actinomycetes are members of a large group of pleomorphic Gram-positive bacteria, many of which have some tendency of mycelial growth. The metabolic multilaterality of actinomycetes, accompanied by the production of primary and secondary metabolites of economic importance, made possible