PERIODIC TABLE OF ELEMENTS

Kurbanbayeva Saodat Khudabergan qizi
4th year student of the Faculty of Natural
Sciences of NDPI named after Ajiniyaz
E-mail: qurbanbayevasaodat66@gmail.com

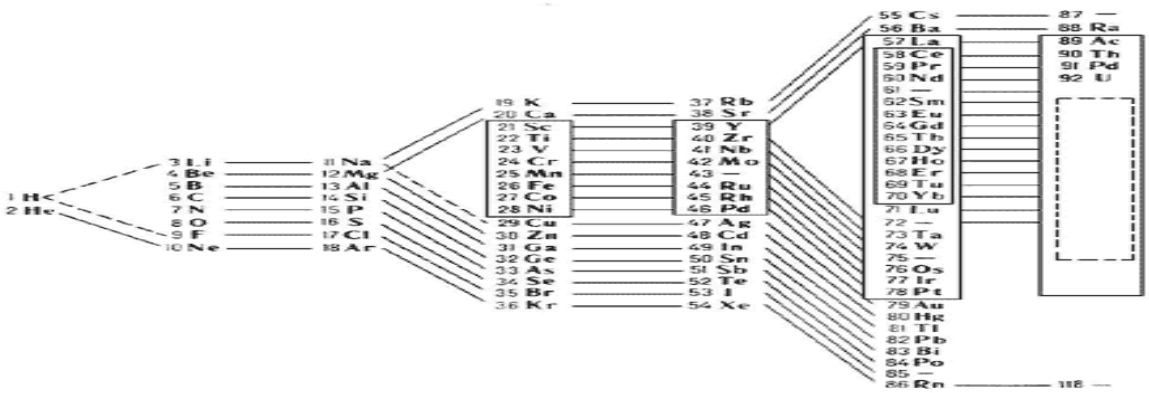
ABSTRACT

The purpose of explaining the topic “Periodic Table of Elements” is to deepen students’ understanding of chemistry through this topic, that is, all living and non-living objects in nature are made up of 118 elements in the periodic table and in the periodic system of elementsinformation about the periodic relationships between the elements and the scientists who tried to explain them will be highlighted.

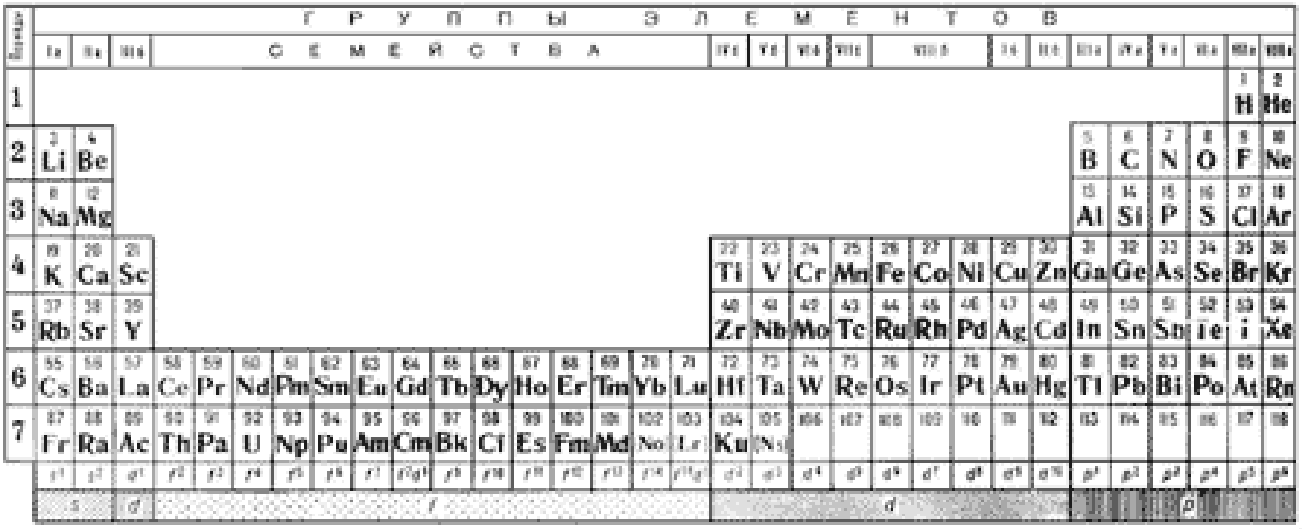
Key words: periodicity, octave, theory of triads, cylindrical table, nucleus, element, ekakrimniy, ekamangalenets, ekaluminium, ekabor, takmarganets.

Many chemists: German scientists I. Debereiner (1780-1849) and L. Meyer (1830-1895), English scientist J. Newlands (1838-1898), French scientist A. Chancourtois (1819-1886) and others offered different options. but they did not manage to systematize all the chemical elements known at that time. only the discovery of one of the main laws of nature - the law of chemical elements by the Russian scientist D. I. Mendeleev - made it possible to create a unified system of chemical elements. fully believing in the objectivity of the law he created, the chemist corrected the atomic masses of some elements known at that time

Bor proposed triangle variant

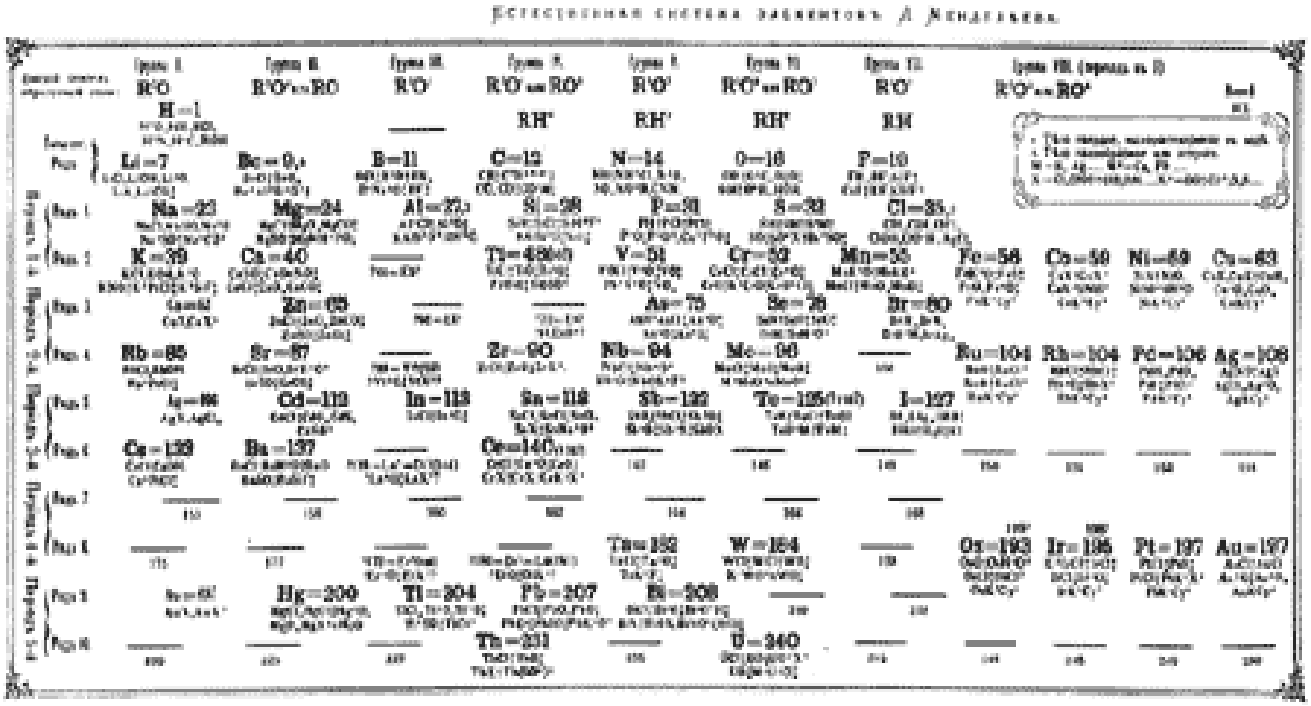


The first version of the periodic table in 1869



if the elements are only in the order of atomic masses (as it was known at that time with) are placed, a number of deviations from the periodic law are observed. for example, if we arranged the elements as above, we would find titanium under aluminum, and vanadium under silicon, elements with completely different properties.

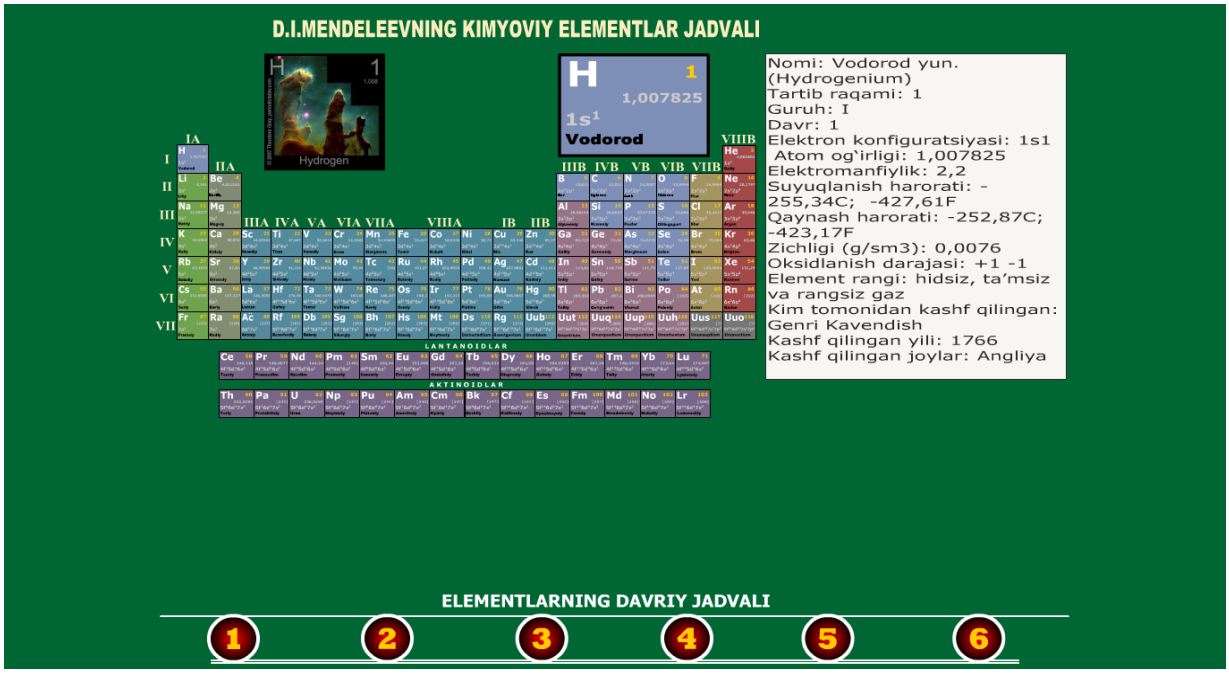
Second version of the 1870 periodic table



20th century periodic table

Taking into account the chemical properties of its elements, it is close to it changed the atomic masses of elements. in Mendeleev's periodic system, the periodicity was repeated after certain empty cells (for elements that were unknown at the time) were left between the elements. In these empty cells, Mendeleev placed elements that were unknown at that time. these elements were located after aluminum. (Mendeleev named them "eka-aluminium", from the Sanskrit "eka" - one, "ekakrimnium" and "ecobar"). Mendeleev even predicted the properties of these unknown elements.

The modern look



In 1875, a great event took place at the Paris Academy of Sciences. It's French here

An unknown element discovered by scientist Lecoq De-Boisbodran was described. They named him Gaul (in honor of France). When Mendeleev immediately learned of this news, he sent a letter to Paris, saying that the element discovered by Lecoq De-Boisbodran was "ecaluminium" as he described it, and that its specific gravity was 5.96, not 4.7, as Boisbodran had determined. says After reading Mendeleev's letter, Lecoq De-Boisbodran repeated his research and found that the specific gravity of the new element was not 4.7, but 5.96. soon "Ekabor" - scandium, according to the definition of the Swedish chemist Nilsson, germanium by the German chemist Winkler, and "ekasilicium", whose properties were predicted in detail by Mendeleev, were found.

The realization of the above scientific predictions of Mendeleev was a clear proof of the objectivity and truthfulness of the periodic system and periodic law created by him. After that, in 1894, as a result of the discovery of inert gases (argon, etc.) by Rayleigh and Ramsay, a number of changes were made to the periodic system and it was further improved. Mendeleev said at the end of his work on the creation of the periodic law and the periodic system: "All my conclusions lead to the fact that the atomic masses of the elements determine the properties of the element itself and the compounds it forms. properties of elements arranged in the order of increasing atomic masses repeat periodically.

- After the discovery of the theory of atomic structure, the following important problem was solved:
- Periodic change of chemical properties;
- Division of the periodic system into groups, main and additional groups;
- The presence of rare lanthanoids in the earth's crust;
- Legal change of chemical properties;
- Argon and tin; cobalt and nickel; tellurium and iodine; The reasons for the exclusion of thorium and protactinium in the system according to the values of their atomic masses have been determined

The similarities between the elements in the periodic table appear in three directions.

1. In the horizontal direction: this similarity is found in the elements of the large period, in the elements included in the lanthanoid and actinoid groups. For example, some properties of copper are similar to those of nickel.

2. In the vertical direction: the vertically located elements of the periodic system are similar to each other.

3. In the diagonal direction: some elements located diagonally in the periodic table show mutual similarity, for example: Li and Mg; Al with Be; Si with B; Ti and Nb are similar in chemical properties.

A horizontal series starting with an alkali metal and ending with an inert gas is called a period.

There are 7 periods in the periodic table of chemical elements:

14. Periods 1,2,3 are small periods
15. Periods 4,5,6,7 are large periods

There are 8 groups in the periodic table of chemical elements:

Groups containing elements of both small and large periods are called principal groups, and groups containing only elements of large periods are called secondary groups.

REFERENCES:

1. M.M Abdulxayeva, O.M.Mardonov Kimyo.
2. A.G.Muftahov Umumiy kimyo. S.Masharipov, I.Tirkashev Kimyo.
3. Internet information:
4. www.referat.uz.
5. www.ziyonet.uz.
6. www.kutubxona.uz