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Learning Foreign Languages with Teaching Analytical Chemistry

Nafisakhon Minovarovna Kazimova; Muzifabonu Abbaskhon kizi Odiljonova

Associate Professor, Kokand State Pedagogical Institute named after Mukimi, Uzbekistan

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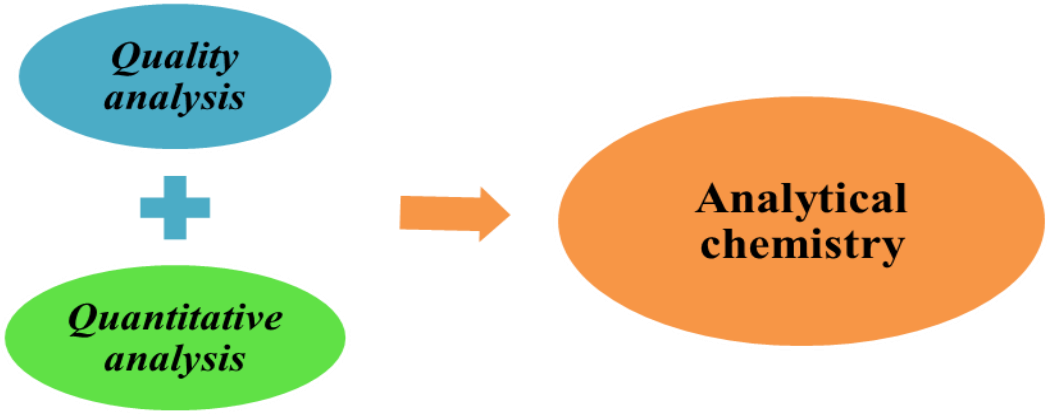
Abstract

One of the most interesting disciplines of chemistry is analytical chemistry, which describes the modern methods of teaching science, the use of foreign languages in some terms, as well as the study of science. The current demand is to learn foreign languages from the reader, for the educated in general. In this sense, a student who is learning at least a little bit, at the same time learns the language to a certain extent.

Keywords: *Quality; Quantitative Analysis; The Art of Testing; Wet Method; Components; Locally Distributed; Structural; Dynamic Analytical Chemistry; Electron Beam Microanalysis; Laser Microspectral Analysis or Spark Mass Spectroscopy; Autoradiography or Special Electron and Ion Microscopy Methods*

Introduction

In order to be a competent and perfect person of the current period, together with other disciplines, the subject of Analytical Chemistry must not only be able to read, but also be able to receive in-depth study, give effective results in pedagogical activity and apply it to everyday life. Therefore, in the science of Analytical Chemistry, "quality analysis" - “Analyse of quality” and “quantitative analysis” - "Analyse of quantity", that is, it is studied in two parts. [1]



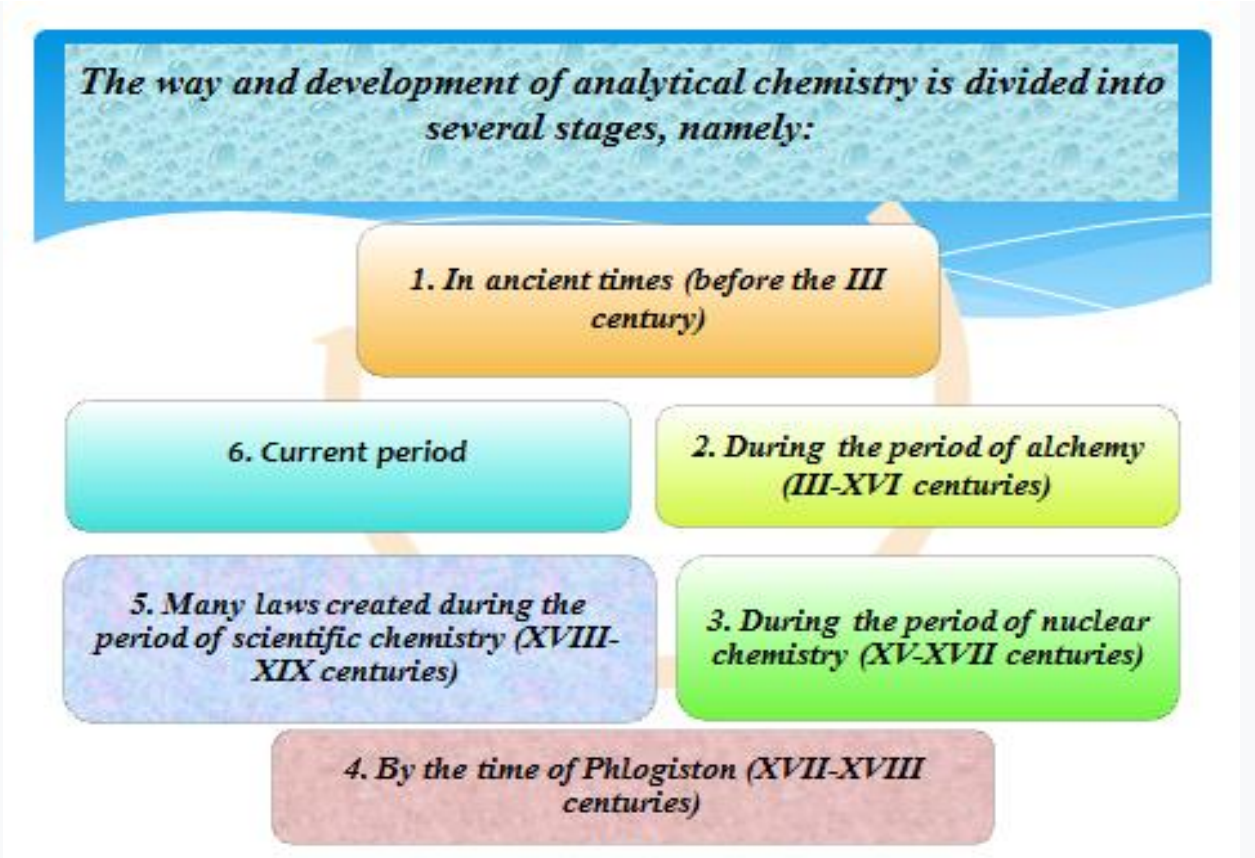
Discussion

Practical methods of analytical chemistry appeared and developed from ancient times due to the needs of preliminary chemical production. In the early days, quality analysis consisted in identifying some natural compounds depending on their properties.Quantitative analysis first appeared in the form of what was called the art of verification, in this way it was determined the purity of such precious metals as gold and silver. With these methods, in general, it was only a repetition of the main processes that took place in the production of these metals.

Analytical chemistry as a scientific science since the middle of the XVII century, namely R.Boyle (1627-1691) began to develop after the introduction of an understanding of the chemical element–a chemical component that does not chemically decompose complex substances. R.Boyle regulated all of the quality reactions that he had, and he himself recommended a number of reactions, based on the analysis that can be done with the "holistic method"- "wet method".In particular, y for the first time used some coloring agents derived from Litmus and plants as "indicators" in the determination of acidity and bases.

In the XVIII century, the method of separation of metals (cations) from solutions by groups T.The introduction by Bergman (1735-1784) was a great achievement in the development of quality analysis. With this, it was based on the method of systematic analysis, which is currently stemming.

The way and development of analytical chemistry is divided into several stages, namely:



1. In ancient times (before the III century) man was engaged in the properties, structure, necessity, composition of substances around him, methods of their purification, and discovered many new substances and phenomena. Our ancient ancestors knew about Au, Ag, Fe, Pb, Sn, Cu and a number of

other metals and used them for their vital needs. developed the most powerful methods for. At that time, it was known to use an extract from walnuts to distinguish iron from copper. To do this, the papyrus dipped in the same extract darkened when immersed in an iron solution.

2. During the period of alchemy (III-XVI centuries) experimental chemistry was founded and the properties of many substances were studied. During this period, many new substances were obtained, and many methods of distinguishing substances were developed. The importance of gold in human life has always been great. In the 14th century, King Philip VI of France issued a special order to introduce a "dilute method" to distinguish gold and silver from alloys containing lead and lead. Thus, the analysis was given importance at the government level. By this time, metals such as Zn, Sb, Bi were found.

3. During the period of nuclear chemistry (XV-XVII centuries) for the study of substances, methods for their solution, many reactions have been created, which are still very important today. "Chemistry reveals to us the secrets of therapy, physiology and pathology. Without chemistry, we would be wandering in the dark." Nuclear chemists were the first to classify substances into acids, alkalis and salts. Since that time, analytical chemistry has become a key component of evolving chemistry as a science. According to the shape of the crystals formed during precipitation, R. Boyle was able to determine the composition of sediments. Boyle also concluded the era of nuclear chemistry by separating chemistry from medicine.

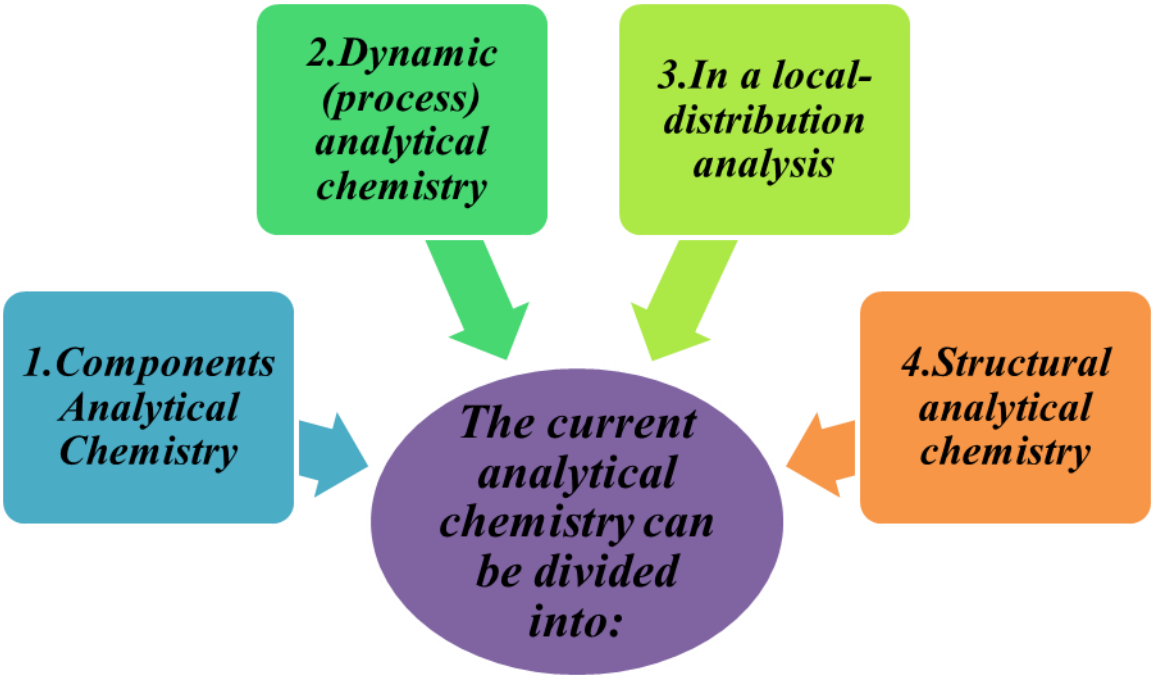
4. By the time of Phlogiston (XVII-XVIII centuries) the development of industry caused many problems, which could be solved only by analytical methods. During this period, many scientific schools, academies and journals were established. Swedish scientist T. Bergman explained to science the need to distinguish between qualitative and quantitative analysis. He raised analytical chemistry to the level of a separate science.

5. Many laws created during the period of scientific chemistry (XVIII-XIX centuries) served as the basis for the development of quantitative analysis. In 1726, KJ Joffrua neutralized the acids with sodium carbonate and used the cessation of the emitted gas to find the "end point of titration." Titrimetry method The development of industry in France has led to the discovery of a method for the determination of bleach hydrochloride.

In the XVIII-XIX centuries the Russian scientist VM Severgin laid the foundation of colorimetric method.

6. The present period is a period of rapid development of analytical chemistry, at the beginning of which in 1903 MS Svet, then A. Martin, R. Sinj, A. Tizeliuscreated chromatography, in 1922 J. Geirovskypolyarography, these methods made a sharp turn in analytical chemistry. In the early twentieth century, Sakhanov, and later NA Izmaylov, AP Kreshkov, VN Semenchenko and others proved in practice that it is possible to increase its potential by using anhydrous solvents in analytical chemistry. In these years the American IMKoltgoff, the Englishman R.Belcher, the Frenchman G.Sharlo, the Russian NATananaev, IPAlimarin, the Australian F.Faygl, the Ukrainian AKBabko and NPKomar, the Uzbek Sh.T.Tolipov and others scientists have made a huge contribution to the development of analytical chemistry.

The current analytical chemistry can be divided into:



Here we will get acquainted with these parts.

1.Components Analytical Chemistry -Analytical chemistry of compound parts studies the quality and quantity composition of samples.The composition of the Bunda is atoms,molecules, radicals,functional groups,ions and macromolecules.The information obtained in the qualitative analysis is obtained in the form of" Yes "(yes) or" yuq".For example, the presence of barium cation in the solution indicates a yellow precipitate formed in its potassium bicromate reaction.To tell the whole story, there is no difference between qualitative analysis and quantitative analysis.In qualitative analysis, the amount of substance is used in a holistic form, and this does not pay attention to the intensity of the analytical signal, while in quantitative analysis, an appropriate quantitative conclusion is made on the basis of the intensity of the analytical signal.

2.Dynamic (process) analytical chemistry-Period of dynamic of analytical chemistry is divided into molecular-dynamic analysis by dynamic (process analysis), depending on the analysis and methodology of the examination. Dynamic analysis serves to control the production process. To perform such an analogy, it is often convenient to use chemical classical,electrochemical and modern physical methods.The application of electrical chemical and physical methods takes less time.Molecular dynamic analysis allows you to study the character, mechanism and speed of molecular changes, etc. In practice, such analysis is based on extremely rapid spectroscopic and relaxation measurements, that is, repetitions in the range from 10-3 seconds to 10-9 seconds.

3.In a local-distribution analysis (analysis of the distribution of components), one or more values of the sample will be an independent variable.

Local distribution to analysis:

1).Microanalysis of electronic light beam

2).Laser microelectral analysis or spark mass-spectroscopy

3.Authoradiography or special electron and Ion microscopy include uslluari.Using them, it is possible to check the surface layers of the sample consecutively ,point-by-point, to find non-uniform areas on the

surface of the solid and, on the basis of this, to draw conclusions about the nature and quantity of the components contained in the sample.

4.Structural analytical chemistry serves to determine the mutual arrangement and bonding of elementary particles in molecules or solids. Therefore, this analizni can also be considered as the type of spatial local-distribution analysis in the atomic sphere. In this method, the analytical information is in the style of z=f (x_1,x_2 ,x_3), the amount of the component in it is considered as a structural unit for each component. Structural analytical chemistry is divided into qualitative and quantitative structural analytical chemistry.

Qualitative structural information z_1, z_2.... Z_3 atoms,about the nature of the connection between functional groups, indicate the structure of their structure. Qualitative structural analysis can be viewed as structural formulas. To formulate structural formulas, first determine the nature and number of structural units, as well as the empirical sequence of bonding. Quantitative structural analysis provides information about the location of these structural units in space.

Nowadays, it is possible to increase students' interest in science by explaining the topics of the lesson to students in a colorful way, and it is expedient to study more terms in foreign languages at the same time.

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