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**O'ZBEKISTON OLIMLARINING KIMYO FANI VA SANOATINI RIVOJLANTIRISHGA
QO'SHGAN XISSALARINI O'RGANISH****ИЗУЧЕНИЕ ВКЛАДА УЧЕНЫХ УЗБЕКИСТАНА В РАЗВИТИЕ ХИМИЧЕСКОЙ НАУКИ
И ПРОМЫШЛЕННОСТИ****STUDYING THE CONTRIBUTIONS OF UZBEKISTAN SCIENTISTS TO THE
DEVELOPMENT OF CHEMICAL SCIENCE AND INDUSTRY****Nishonov Mirkozimjon¹** ¹Farg'ona davlat universiteti professori**Mamajonov Shuhratjon Asqarovich²** ²Farg'ona davlat universiteti, pedagogika fanlari nomzodi, dotsent.**Xaydarova Vasila Abdukurimovna³** ³Rishton tumanidagi 1-son kasb-hunar maktabi**Annotatsiya**

Ushbu maqolada kimyo fani va sanoatining rivojlanishiga O'zbekiston kimyogar olimlarining qo'shgan hissalarini o'rgatish, yoshlarni vatanparvarlik ruhida tarbiyalashning katta didaktik imkoniyatlari ochilgan. Kimyoviy ishlab chiqarishlarni o'rganish talabalarni kimyo sanoatining bu sohada amalga oshirib kelinayotgan juda katta tadqiqotlar bilan tanishtirish imkoniyatlari ochib berilgan. Kimyoviy ishlab chiqarishlarni o'rganishda mamlakatimizda kimyo sanoatini rivojlantirish yuzasidan belgilangan tadbirlarni aytib berish bilan birga kimyo sanoatidagi texnika taraqqiyotining asosiy yo'nalishlarini ham ko'rsatib berish muhimligi yoritilgan.

O'zbekiston Fanlar akademiyasi tsellyuloza fizik-kimyosi laboratoriyasining rahbari O'zbekiston Fanlar akademiyasining muhbir a'zosi X.U.Usmonov o'z shogirdlari bilan paxta tsellyulozasi ustida olib borgan ilmiy tadqiqot ishlari hamda Farg'ona vodiysida neftni qayta ishlash sanoati rivojlanishi haqida ham so'z yuritilgan.

Respublikamizda sun'iy va sintetik tolalar, plastik massalar ishlab chiqarish, gidroliz sanoati, zaharli kimyoviy moddalar, defoliantlar va boshqa mahsulotlar ishlab chiqarish rivojlanishi. Ayniqsa, tabiiy gazdan foydalanish respublika yoqilg'i balansini o'zgartirib yuborishi, gazdan faqatgina yoqilg'i sifatida foydalanilmasdan, undan organik sintez uchun xom-ashyo sifatida foydalanish yo'lga qo'yilganligi yuzasidan fikrlar berilgan.

O'zbekistonda yetishib chiqqan dunyoda va mamlakatimizda mashhur bo'lgan kimyogar olimlarning hayoti va ilmiy faoliyati bilan yaqindan tanishtirish yoshlarda vatanparvarlik, baynalmillik g'oyalarini shakllantirishga, kimyo faniga muhabbatni kuchaytirish lozimligi bo'yicha xulosa chiqariladi

Аннотация

В данной статье раскрыты большие дидактические возможности воспитания молодежи в духе патриотизма, изучения достижений ученых-химиков Узбекистана, внесших свой вклад в развитие химии и производства. Рассмотрены возможности ознакомления студентов с химическим производством и научными исследованиями в деле химического производства. Освещены основные направления развития химической отраслевой технологии, а также рассмотрены исследования в области развития химической промышленности в нашей стране.

В том числе, упоминается научно-исследовательская работа по переработке нефтепродуктов в Ферганской долине и исследования над хлопковой целлюлозой члена-корреспондента Академии наук Узбекистана Х.У.Усмонова и его подопечных.

Высказана мысль о развитии производства искусственных и синтетических волокон, пластмассы, гидролиза, ядовитых химических веществ, дефолиантов и другой продукции. В частности, приводятся идеи о применении природного газа не только в качестве топлива, но в целях изменения топливного баланса в Республике, использования его в качестве сырья для органического синтеза.

Рассматриваются возможности изучения жизни и творчества ученых-химиков, которые способствуют воспитанию молодежи в духе патриотизма и любви к науке химии.

Abstract

In this article, great didactic possibilities of teaching the contributions of chemical scientists of Uzbekistan to the development of chemical science and industry, educating young people in the spirit of patriotism have been opened.

The study of chemical productions opens opportunities to introduce students to the enormous amount of research carried out in this field by the chemical industry. In the study of chemical production, the importance of showing the main directions of the development of technology in the chemical industry, along with telling about the measures set for the development of the chemical industry in our country, is highlighted.

Head of the Cellulose Physicochemical Laboratory of the Academy of Sciences of Uzbekistan, correspondent member of the Academy of Sciences of Uzbekistan H.U. Usmanov and his students conducted scientific research on cotton cellulose and the development of the oil refining industry in the Ferghana Valley.

Development of production of artificial and synthetic fibers, plastic masses, hydrolysis industry, production of toxic chemicals, defoliants and other products in our republic. In particular, opinions were given regarding the fact that the use of natural gas changes the fuel balance of the republic, that gas is not only used as a fuel, but also as a raw material for organic synthesis.

A close acquaintance with the lives and scientific activities of the chemists who are famous in the world and in our country, who have grown up in Uzbekistan, leads to the conclusion that it is necessary to strengthen the love for chemistry in young people, to form the ideas of patriotism and internationalism.

Kalit so'zlar: kimyo sanoati, tarixiy, metallurgiya, yoqilg'i, energetika sanoati, mashinasozlik, metall, yog'och, mineral o'g'itlar, tabiiy gaz, neft

Ключевые слова: химическая промышленность, исторический, металлургия, топлива, энергетическая промышленность, машиностроительность, металл, дрова, минеральные удобрения, природный газ, нефть.

Key words: chemical industry, historical, metallurgy, fuel, energy industry, mechanical engineering, metal, wood, mineral fertilizers, natural gas, oil

INTRODUCTION

Relying on the principle of historicity in studying the factual material of chemistry - the meeting of substances in nature, their production in the laboratory and technology, their physico-chemical properties, use, development path and future prospects of the chemical industry opens up great didactic opportunities in educating young people in the spirit of patriotism [1].

As students and pupils get acquainted with the acquisition, use, chemical production and prospects of their development in our country, they will clearly see that chemistry is deeply embedded in human economic and cultural activities; along with chemistry, metallurgy, fuel and energy industry, mechanical engineering, etc., they have a good idea that they are playing an important role in solving the main economic task of Uzbekistan - the task of reaching and surpassing the most advanced countries in the field of production per capita in a very short time. .

In the teaching of chemistry, in particular, the technical extraction of substances - the material about chemical productions can be widely used for educational purposes. The study of chemical production allows students to be introduced to the enormous activities in this area of the chemical industry [1].

LITERATURE ANALYSIS AND METHODOLOGY

After the independence of our country, the tasks of further development of chemical science and industry were determined. This is called the program of localization, in which the comprehensive development of the chemical industry, the full use of the achievements of modern chemistry in all branches of the national economy, the opportunity to increase the wealth of the nation, the means of production and the most consumer goods of the nation were determined. It is the full use of the achievements that greatly expand the possibility of producing new, excellent and affordable varieties. [2].

Metal, wood, and other building materials are increasingly being replaced by economical, convenient, and light synthetic materials. The production of mineral fertilizers and chemicals for plant protection will increase dramatically.

In the study of chemical productions, it is important to describe the measures set for the development of the chemical industry in our country, as well as to show the main directions of technical development in the chemical industry. Students should be aware of the selfless work done by the scientists of our country to improve technological processes, increase production productivity, reduce the cost of products, and ease the hard work of people.

Introducing the chemical industry of our republic and its development interests is also very important from an educational point of view [3].

RESULT AND DISCUSSION

Currently, there are large chemical enterprises in Uzbekistan, including Chirchik Electrochemical Enterprise, Koqon and Samarkand Superphosphate Plants, Fergana "Azot" Production Association, Fergana Oil Refinery, Tashkent Lock and Paint Plant, Andijan, Yangiyol Hydrolysis Plants and other enterprises. These chemical plants produce highly valuable products for industry, agriculture, and a wide variety of consumer goods for the needs of the population.

It is very important to convey to the students that the discovery of a huge natural gas reserve in our republic plays an important role in the development of the economy of our republic, that gas is not only the cheapest and most convenient fuel, but also the most valuable chemical raw material.

Students should learn that the chemical industry is the leading sector of the national economy in Uzbekistan.

Our republic has inexhaustible chemical raw materials consisting of natural gas and oil as well as gasses that come out together with oil, sulfides of metals, potassium chloride, sodium sulfate, and waste from cotton factories. And these allow the establishment of a large chemical industry that produces mineral fertilizers and polymer materials, and the expansion of other enterprises that produce chemical products.

Students should be told about future tasks in the field of development of the chemical industry of our republic. [3]

The oil refining industry develops in the Fergana Valley. Oil refineries provide great opportunities for the development of a number of industries. Complex technology of oil processing will be introduced in these plants. This helps to develop organic synthesis in addition to the production of motor fuel and lubricants.

Production of artificial and synthetic fibers, plastic masses, hydrolysis industry, toxic chemicals in our republic. the production of defoliants and other products will develop. it is being used not only as a fuel, but also as a raw material for organic synthesis. In chemistry classes, it is appropriate to tell students about the contributions of Uzbek chemists to the development of chemical science and industry.[4]

For example, the Laboratory of Mineral Fertilizers of the Institute of Chemistry of the Academy of Sciences of Uzbekistan (the head of which is Academician of the Academy of Sciences of the Republic of Uzbekistan M. N. Nabiev) has done great work in the field of improving the quality of mineral fertilizers and creating new varieties.

Ammonium nitrate, being a hygroscopic substance, turns into a starchy substance when stored. This requires a lot of work to grind and sift it before it is ground. By adding a solution of phosphates to ammonium nitrate with nitric acid, the laboratory workers eliminated its tendency to turn into chalk.

One of the important issues is the development of effective defoliants to artificially shed cotton leaves prior to machine picking. Prof. Employees of the Organic Synthesis Laboratory of the Academy of Sciences of Uzbekistan under the leadership of I.P. Tsukervanik managed to obtain new types of defoliants. In particular, this scientific team found a way to produce the previously known endothal from cotton waste, synthesized new types of alkyl cantaxes.

Kh. U., head of the laboratory of cellulose physico-chemistry of the Academy of Sciences of Uzbekistan, correspondent member of the Academy of Sciences of Uzbekistan. Usmanov and his students conducted deep scientific research on cotton cellulose. The employees of this laboratory found a way to isolate cottonseed fluff by chemical method, conducted technological tests and investigated the issue of using the short part of cottonseed fluff (delint) in the textile industry (in place of starch) and in sugar production, to obtain pure cellulose.

The chemists of our republic have also carried out great scientific works in the field of creating medicinal preparations.[4-5]

Head of the Alkaloid Laboratory of the Academy of Sciences of Uzbekistan, former correspondent member of the Academy of Sciences of the USSR S. Yu. Yunusov and his students examined about 4000 out of 7000 plants growing in Central Asia and isolated 750 different alkaloids. Of these, 420 are new alkaloids, and the chemical structure of about 400 has been determined.

Among known alkaloids, galantamine alkaloid, which is used in the treatment of children's paralysis, was found in the leaves of the blackberry plant growing in Surkhandarya region, and the way of its isolation was shown [5].

Head of the Laboratory of Selection of Catalysts Used in Polymerization of the Academy of Sciences of Uzbekistan, Candidate of Chemical Sciences A. S. Sultanov together with laboratory staff D. I. Based on Mendeleev's ideas about catalysis and developed some aspects of it, he prepared a number of new types of catalysts necessary for chemistry.

Professor of the National University of Uzbekistan Analytical laboratory team led by Sh. T. Tolipov found ways to detect the presence of germanium in titanium ores in ores and steels using a highly sensitive photometric method and the presence of gallium and cerium in ores and other materials.

Solving the problem of wide use of natural gas in the chemical industry is one of the important tasks facing our scientists. Candidate of chemical sciences at the Institute of Chemistry of the Academy of Sciences of Uzbekistan. The team working under the leadership of Ya. Yu Aliev is one of the important tasks facing our scientists to solve the problem of the wide use of natural gas in the chemical industry for the catalytic conversion of Bukhara natural gas and the carbonylation of organic molecules in the presence of carbon (P)-oxide to produce new types of monomers, chemical toxic substances and organic synthesis. Candidate of chemical sciences at the Institute of Chemistry of the Academy of Sciences of Uzbekistan Ya. Yu. Under the leadership of Aliev, investigations were carried out in the field of catalytic conversion of Bukhara natural gas and formation of new monomers, chemical toxic substances and various products for organic synthesis by carbonylation of organic molecules in the presence of carbon (II)-oxide.

In general, one of the doctors of chemical sciences, L. A. Markman in the field of oil chemistry, A.M. Murtazoev in the field of electrochemistry, Kh.R. Rustamov in the field of kinetics, 3.3.Manulkin in the field of metal-organic compounds, A.B. Kochkarov in the field of organic synthesis, D.T. Zabramniy in the field of coal, G' from candidates of chemical sciences .Khojaev carried out effective inspections in the oil field [4].

SUMMARY

All these facts indicate that a number of our scientists have contributed to the development of chemical science and chemical industry in modern Uzbekistan, to make its prospects even brighter.

In addition to familiarizing students with the work of famous foreign scientists in the chemistry course, the close acquaintance with the life and scientific activities of chemists famous in our country and in the world helps to form the ideas of patriotism and internationalism in young people, and to strengthen the love for chemistry.

LITERATURE

1. M. Nishonov, Sh.Mamajonov, V.Khojaev. Methodology of teaching chemistry. Study guide. Tashkent, "Fan and technologies" publishing house. 2018. 254 pages
2. "History of Chemistry". Model program for the bachelor's program of universities. Tashkent. 2018.
3. Kh.T. Omonov, M. Nishonov. Sh.A. Mamajonov. The past, present and development prospects of chemical education in Uzbekistan. Journal of pedagogical education. 2014. No. 3, pages 4-7
4. Q. Akhmerov. Chemists of Uzbekistan. "Fan" publishing house. Tashkent 1974
5. I.R. Askarov. Chemists of Uzbekistan. Tashkent "Fan and technologies" publishing house. 2014. 328 pages