DIE WISSENSCHAFTLER, DIE IN KARAKALPAKSTAN DIE ANORGANISCHE CHEMIE ENTWICKELT HABEN

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Anmerkung: Dieser Artikel liefert Informationen über die Entwicklung der Chemie in der Republik Karakalpakstan sowie über die Wissenschaftler B. Tanirbergenov und Z. Uzakbergenova, die zur Entwicklung der anorganischen Chemie beigetragen haben.

Schlüsselwörter: Chemie, Anorganische Chemie, Niobate, Koordinationschemie, Universität, Methodenbücher.

THE SCIENTISTS WHO DEVELOPED INORGANIC CHEMISTRY IN KARAKALPAKSTAN

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Abstract: This article provides information on the development of chemistry in the Republic of Karakalpakstan, as well as on scientists B. Tanirbergenov and Z. Uzakbergenova who contributed to the development of inorganic chemistry.

Key words: chemistry, inorganic chemistry, niobates, coordination chemistry, university, methodical books.

Nukus State Pedagogical Institute, Karakalpak State University continue to prosper of our country as one of the centers of science, education, training and upbringing, spirituality, sports and culture of our republic. In particular, it is one of the main educational institutions in the training of rich, mature professionals with high intellectual potential, who are able to take part in the political and economic changes in the world and in our country. The development of the state is ensured by strong legislation and proper organization of production. One of the main tasks of the country is to provide the industry with qualified specialists, to train competitive personnel for the labor market. Therefore, the issue of education and training in our country has received attention at the level of national policy.

This was done under the direct initiative and rule of the first President of the Republic of Uzbekistan I.A. Karimov. The Law on Education and the National Program for Personnel Training have been developed, which laid the foundation for the implementation of large-scale reforms in this area. By the way, as confirmed by our President, the essence of our future will be created in today's educational institutions. The issue of inseparable education is the most important evidence that shapes and enriches the spirituality of our people.

Bazarbay Tanirbergenov and Zamira Uzakbergenova, who worked in the field of inorganic chemistry in Karakalpakstan, were among the scientists who worked tirelessly in higher education institutions, where they taught chemistry teachers in schools.

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Tanirbergenov Bazarbay, candidate of Chemical Sciences, docent. He was born on 12th of March in 1943. In 1965 he graduated from Tashkent State University. Specialty: chemist, chemistry teacher. In 1982 he defended his dissertation at the Specialized Council at Kiev State University on the specialty 02. 00. 01 - Inorganic Chemistry on the topic " Niobates of some bivalent 3d metals and silver". Niobats of various metals are widely used as materials with moderate electrical, optical, magnetic and other valuable properties. In this regard, there has recently been a growing interest in the study of transient metal niobates. Up to this time, niobates of bivalent and monovalent elements are usually obtained by the ceramic method by synthesizing the corresponding oxides or salts with niobium hemipentoxide. This requires high energy consumption, the interaction products are not common. The method of obtaining niobates of excess metals is based primarily on the separation of soluble metabolic products from aqueous alloys. However, the conditions of precipitation of insoluble manganese, cobalt, nickel, copper (II) and silver niobats from the aqueous alloy and the mechanism of formation of crystalline products when heated are insufficiently studied. The relevance of scientific activity is that the processes of composition are not studied with the participation of the parties.

He studied the formation of manganese, cobalt, nickel, copper (II) and silver aquaniobates from aqueous alloys $KNbO_3$, $K_3 NbO_4$, $K_8 Nb_6 O_{19}$ and studied their physicochemical properties, IR spectroscopy, EPR and the aim of the research was to study PMR methods, as well as to study the formation of niobat ions with Co^{2+}, Ni^{2+}, Cu^{2+} and Cu^{+} ions.

The novelty of B. Tanirbergenov's scientific work is that the composition and properties of manganese, cobalt, nickel, copper (II) and silver aquinobates isolated from aqueous alloys in the joint exchange reactions were determined. The state of water in the aquionates of the above metals, including their heating action, has been studied by IR spectroscopy, EPR, and thus by the PMR cores. The concentration of methaniobate ions with some d-elements has been studied [2.3].

More than 100 scientific works of B. Tanirbergenov have been published. Of these, 6 textbooks were published. In the methodical book "Chemistry of hydrocarbons", "Arenes and their derivatives" as an introduction to organic chemistry provided valuable data for antelopes. Inorganic chemistry, methods of teaching chemistry, methods of solving problems in chemistry for the first-year students of the universities in the textbooks "Methods of solving problems in chemistry", "Methods of solving problems on alloys and mixtures" an approximate course in the sciences provided the materials needed for the transition. It is a must-read booklet for students and university entrants to practice their theoretical knowledge by solving problems in a practical lesson. The methodical manual "Chemical technology and modeling of technological processes" provides the necessary information for students in the field to become chemists and technologists in the future. The book "1000 tests in chemistry" has become a useful methodological guide for many teachers to use in the teaching process of samples of tests with answers to tests on various topics in

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chemistry. Currently, Tanirbergenov Bazarbay works as a docent of "Organic and inorganic chemistry" department at Karakalpak state university named after Berdakh.

Uzakbergenova Zamira Dosnazarovna, candidate of Chemical Sciences, docent. She was born on 13th of July in 1967, in Nukus. In 1989 she graduated from Nukus state university. Specialty: chemist, chemistry teacher. In 1995 she defended her dissertation on the specialty 02. 00. 01 - Inorganic Chemistry on the topic “Coordination compounds of cobalt (III) with 2-hydroxyminocarboxylic acids".

One of the promising links in the development of coordination chemistry is the synthesis and research of metal complexes based on the compositional analogues of natural molecules. Cobalt (III) oxide-containing ligand complexes are of great interest due to their ability to be used as catalysts in chemical processes or as protection groups in the synthesis of peptides with certain amino acids, including models of some biological systems.

The scientific purpose was to synthesize coordination compounds with cobalt (III) 2-hydroxyminocarboxylic acids, to study their physicochemical, spectral properties, to determine the factors that determine the properties of the crystal structure with a small structure of the synthesized compounds.

Synthesis methods have been developed and the crystalline state of ammonium, thallium, silver, barium iodine 2-hydroxyminopropionate and 2-hydroxyimino-3-phenylpropionate has been illuminated and shown ligands cobalt (III) (cationic, anionic and neutral types) 33 mixtures are separated.

The composition and structure of coordination compounds were determined using electron, IR, polyader NMR spectroscopy, conductometry methods. The crystal structure of the four sets is encrypted, and their crystal chemical differences are identified as a novelty in the research work of Z. Uzakbergenova. [3. 4]

More than 90 scientific works of Z. Uzakbergenova have been published. Of these, 6 textbooks were published. Methodical book "Methods for the determination and separation of cations in alloys" in the study of analytical chemistry, "Chemistry of aggregates", "Theoretical foundations of inorganic chemistry", "Biological chemistry", "Laboratory work on inorganic chemistry" (Part I)» and «Laboratory work on inorganic chemistry (Part II)» is a convenient textbook for students in various disciplines of chemistry. From the methodical manual "Practical lessons in chemistry" is a set of information needed to use in the teaching process to consolidate theoretical knowledge in practical lessons. In his textbook "Chemistry" he laid the foundations of the theory of existence in general chemistry.

Currently, Zamira Uzakbergenova works as docent of "Physical and Colloid Chemistry" department at Karakalpak state university named after Berdakh. The scientific innovations that these scientists have contributed to the development of chemistry are of great importance in the national economy.

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