



## **NEW THINKING AND SOCIAL PROGRESS IN THE SCIENTIFIC AND PHILOSOPHICAL HERITAGE OF CENTRAL ASIAN THINKERS**

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### **Annotation**

This article covers the creation of innovative ideas in the scientific and philosophical heritage of scientists living in Central Asia and their importance in the development of science. In addition, the social thoughts of scientists and their impact on the development of society were analyzed.

**Keywords:** scientific, philosophical, innovation, innovative thinking, development, social, rationality, method, invention.

## **MARKAZIY OSIYO MUTAFAKKIRLARI ILMIY-FALSAFIY MEROSIDA YaNGIChA TAFAKKUR RIVOJI VA IJTIMOYIY TARAQQIYOT**

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### **Annotasiya**

Mazkur maqolada Markaziy Osiyoda yashab ijod etgan olimlarimizning ilmiy-falsafiy merosida innovasion g'oyalarning yaratilishi hamda buni ilm fan taraqqiyotidagi ahamiyati yoritilgan. Bundan tashqari allomalarning ijtimoiy fikrlari hamda ularning jamiyat rivojiga ta'siri tahlil qilingan.

**Kalit so'zlar:** ilmiy, falsafiy, innovasiya, innovasion tafakkur, taraqqiyot, ijtimoiy, rasonallik, metod, kashfiyot





## **НОВОЕ МЫШЛЕНИЕ И СОЦИАЛЬНЫЙ ПРОГРЕСС В НАУЧНО-ФИЛОСОФСКОМ НАСЛЕДИИ МЫСЛИТЕЛЕЙ ЦЕНТРАЛЬНОЙ АЗИИ**

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### **Аннотация**

В данной статье рассматривается создание инновационных идей в научном и философском наследии ученых, проживающих в Центральной Азии, и их значение в развитии науки. Кроме того, были проанализированы социальные мысли ученых и их влияние на развитие общества.

**Ключевые слова:** научный, философский, инновация, инновационное мышление, развитие, социальный, рациональность, метод, открытие

In each period there will be owners of innovative thinking, which will determine the progress of science, their innovative ideas will lay the foundation for the arrival of innovations, discoveries in the world of science.

Central Asia brought up a number of scientists-thinkers-who made their unique contributions to the science and science of the world. Their scientific and spiritual heritage is the foundation of scientific research, without losing its importance to this day. This means that the scientific heritage created by our ancestors, thinkers of the past, is essentially composed of innovative ideas, consisting of repeated discoveries and inventions of content. In our view, the birth of such innovative ideas is caused by innovative thinking, which is considered a kind of creative thinking.

As noted above, innovative thinking is a thought that is regularly focused on innovation, the creation of new ideas and conceptions, and we can include among the owners of such innovative thinking those thinkers who lived and worked in Central Asia in the IX-XIV centuries. In particular, the scientific heritage of Abu Nasr Forabi, Abu Rayhon Beruni, Ibn Sina, Al Khorezmi, Mirzo Ulugbek and others is the product of innovative thinking. It is worth noting that the norms of scientific rationality, achieved in the theory of antiquity, rose to a high level in all aspects in Muslim Eastern philosophy and science. In general, many changes in the socio-economic, political





spheres have created important conditions and conditions in the development of philosophy, natural and scientific knowledge. In turn, Movarounnahr also created favorable opportunities for the prosperity of science.

A contemporary of the scientist-philosopher O. Fayzullaev believes that the concept of an algorithm in modern science is associated with the name al Khorezmi. [1.1] Also, Al-Khorezmi introduced the decimal number system, the number zero and called it in Arabic Sifr. [2.1]

Khorezmi laid the foundations of algebraic science. The scientist has developed linear and quadratic equations, compact, rational methods for solving field equations. [3.1] these scientists raised the point of view of Pythagoras to a new level, laying the foundation for the development of a new mathematical thinking with its unique algebraic figure.

Thanks to such a high innovative potential of thinking, new directions in science have been achieved, the creation of theoretical knowledge based on accuracy, discoveries and inventions. Khorezmi's works arise as a response to the practical requirements of the social system in which he lived. The socio-economic requirements dictated by the emerging feudal system are the main factors in the development of science of this period. For the development of construction, trade, crafts, agriculture and other industries during this period it was necessary to develop astronomy, geodesy, geometry and other branches of science. having a clear idea of the practical significance of these fields of knowledge, Al-Khorezmi, being an advanced scientist of his time, wrote in his work on arithmetic: "I have proposed a short book on the account of Al-Alqabra and Al-Alqabala, covering both simple and complex arithmetic issues, because it takes into account the distribution of inheritance, making a will, distribution of goods, etc. this is necessary for those who are engaged in justice, trade and all kinds of transactions, as well as measuring the land, laying canals, geometry and other similar types of work. The name of the scientist "Al-Khorezmi" in Latin is called "algorithmus", and now this expression is firmly rooted in science, in the field of computing, as "algorithm". Al-Khorezmi owns more than 20 works on natural sciences, of which only 10 have come down to us.

Another mature thinker Abu Rayhan Beruni, a supporter of scientific rationalism, recognized the role of experimental knowledge. Beruni also paid great attention to the emergence of science, the typology of knowledge and the differentiation of sciences. He especially saw accuracy, verifiability, provability, experiment as criteria of scientific knowledge. "The one who, says Beruni, knows that what he is looking for is best found with the help of the law, and not imagination, he does not retreat, follows the path of proof, proof." [4.1] the scientist worked in all areas of mathematics of his







time, creating new concepts. Developed theories and methods for solving problems. He is one of the first scientists who suggested that the trajectory and shape of the heavenly bodies are ellipsoids. This amazing prediction of Beruni was to some extent a prediction of Kepler's much later discoveries. [5.1] Beruni also put forward the idea that light from lamps consists not only of a light wave, but also of particles. [6.1] Beruni laid the foundations of truly scientific natural science in the conditions of the medieval Eastern Renaissance, putting forward such amazing scientific and hypothetical ideas in various fields of natural science for his time that several centuries later they found their confirmation in European science. This has become an important principle of emerging scientific thinking and has become the basis for the development and progress in science based on innovative ideas.

In the field of science, Ibn Sina's work also led to the emergence of major innovative ideas. Innovations and discoveries previously unknown to science are reflected in the scientific heritage of Ibn Sina, the owner of comic knowledge. He was a proponent of scientific rationalism based on the principle of experimental research and determinism. The scientist has deeply researched description, explanation, description, proof, causality, which are the conceptual elements of scientific thinking. He breaks down a scientific problem into a number of questions: "is there such a thing?", "what is it?", "how?", "why?". Ibn Sina wrote that sensory cognition does not contribute to the disclosure of knowledge about the inner spiritual world of a person. [7.1]

Ibn Sina's scientific theoretical rationalism is contrasted with delusions, delusions, refutable reasoning and absurdity. He believes that the use of metaphor, allegory, barbarism (crude stylistics) in scientific research is a mistake. Also, "the essence of each phenomenon is revealed by finding out its cause," says Ibn Sina. [8.1]

Historians of science note that Ibn Sina was the first in the medieval East who pointed out the perimeter, the content and tasks of mechanics, developed the theoretical foundations of this science. In his Treatise on Mechanics, Ibn Sina outlined the classification of various mechanisms, analyzed the principles that formed the theoretical basis of this classification. [9.1] Ibn Sina's social views on society also deserve attention. He says that people in society should live on the basis of mutual trust in each other. Ibn Sina says that society should be governed by fair laws, which are adopted on the basis of mutual consent of people. He argued that all members of society should obey these laws. Violations of laws and injustices in society must be punished. Thus, Ibn Sina, with his interdisciplinary productive work, made a huge contribution to the development of world science and culture with his natural science and socio-philosophical views on medical and natural sciences.





Our compatriot Muhammad al Khorezmi once divided scientists into three classes depending on their work. He referred to the first scientists who preceded him as commentators, lighteners and interpreters of difficult ones; to the second - as those who found flaws in the works of their predecessors, generalized scattered thoughts; to the third- as discoverers of new directions in science, unknown patterns.[10.1]

Observing the work of Central Asian experts of koi, we see that it is they, as scientists of the third category, who develop science with innovative ideas. It is thanks to the scientific heritage of such innovative thinkers that the development of science is consistently going on as usual today. Because the development of science is always based on continuity, on continuity. The main mechanism that ensures this is innovative ideas and ideas. The coverage of the philosophical foundations of the origins of Eastern social thought and their consideration as theoretical sources of the development of innovative thought serve as a solid scientific and theoretical basis for understanding the evolution of society and the history of science.

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