ACADEMICIAN AURELIAN GULEA AT 80 YEARS. ACTIVITY MARKED BY EXCELLENCE IN CHEMISTRY, EDUCATION AND ACADEMIC MANAGEMENT

Outstanding personalities of science contribute decisively to the development of knowledge and the training of generations of specialists. In this context, the 80th birth anniversary of Academician Aurelian Gulea is an opportunity to reflect on his contributions to the development of modern chemistry and interdisciplinary research.

The scientific activity of Academician Aurelian Gulea is distinguished by significant contributions in the field of coordination and bioinorganic chemistry, as well as by the development of research directions located at the intersection of chemistry with biotechnology and medicine.

Academician Aurelian Gulea was born on May 28, 1946, in the village of Baraboi, Dondușeni district, Republic of Moldova. He graduated from the local secondary school with a gold medal in 1964. Later, he continued his studies at the Faculty of Chemistry of the Moldova State University, where he was trained as a specialist in the field of physical and inorganic chemistry. In 1969, he was admitted to doctoral studies at the Institute of Chemistry of the Academy of Sciences of Moldova, and was later transferred to a specialized doctorate at the "V. G. Khlopin" Institute in St. Petersburg. In 1974, he defended his PhD thesis in Chemical Sciences at the "N. S. Kurnakov" Institute of General and Inorganic Chemistry of the USSR Academy of Sciences.

After returning to the Republic of Moldova, he worked as a researcher at the Institute of Chemistry of the Academy of Sciences, and since 1975 he began his teaching activity at the Moldova State University, where he went through all stages of his academic career - from lecturer to university professor and head of department.

The scientific activity of Academician Aurelian Gulea focuses *on coordination and bioinorganic chemistry*, fields that study the structure, properties and reactivity of metal compounds.

The main directions of his research include the synthesis and characterization of metals' coordination compounds; the study of stereochemistry and stereodynamics of assembly reactions of coordination combinations; the investigation of structure-biological activity relationships; the development of biologically active compounds with pharmaceutical applications.

Under his leadership, a scientific school was created with the generic name "Stereochemistry and Stereodynamics of Assembly Reactions of Coordination Compounds", which contributed to the development of modern chemistry in the Republic of Moldova.

The research of Academician Aurelian Gulea demonstrated the importance of interdisciplinary collaboration between chemistry, biology and medicine. The studied coordination compounds were investigated for their biological potential, including for the development of substances with anticancer properties. This research contributed to the development of biopharmaceutical chemistry and the identification of molecules with therapeutic potential.

A central element of the activity of Academician Aurelian Gulea is the training of scientific researchers. Under his leadership, about 30 doctors and habilitated doctors in chemical and medical sciences were trained, over 100 licentiate (bachelor's) and master's theses were carried out in the scientific research framework.

Within the Moldova State University, he founded the specialty of *Biopharmaceutical Chemistry,* contributing to the development of modern educational programs.

The foundation of licentiate (bachelor's) program in *Biopharmaceutical Chemistry* at the Faculty of Chemistry and Chemical Engineering of the Moldova State University represents one of the important contributions of Academician Aurelian Gulea to the modernization of university chemical education in the Republic of Moldova. The initiation of this program aimed to integrate knowledge from chemistry,

biology and pharmaceutical sciences in accordance with contemporary trends in interdisciplinary research.

In the context of rapid development of the bioinorganic chemistry and medicinal chemistry at the international level, Academician Aurelian Gulea promoted the idea of creating a university specialization oriented towards the study of biologically active compounds and chemical mechanisms involved in biological and pharmacological processes.

Through his scientific activity in the field of coordination chemistry with biological potential, he demonstrated the importance of training specialists capable of working at the intersection of chemistry with biotechnology and medicine. This vision was the basis for the development of Biopharmaceutical Chemistry study program.

Academician Aurelian Gulea actively participated in the development of the program's curriculum structure, contributing to the definition of fundamental and specialized disciplines. The curriculum was designed to provide students with comprehensive training in areas such as: coordination and bioinorganic chemistry; medicinal chemistry and the chemistry of biologically active compounds; modern methods of structural and spectroscopic analysis; evaluation of the biological activity of chemical compounds. The integration of these disciplines allowed the formation of a modern professional profile, oriented towards research and innovation in the field of biopharmaceutical chemistry.

An important role in the development of program was played by the activity of academician Aurelian Gulea in creating and consolidating the research infrastructure within the faculty. The laboratories of coordination and bioinorganic chemistry became training centers for students, master's and doctoral students, offering the possibility of direct involvement in scientific projects. Through this approach, the educational process was integrated with research, and students of the *Biopharmaceutical Chemistry* program had the opportunity to participate in national and international research projects, the development of scientific papers and patents, as well as interdisciplinary collaborations with medical and pharmaceutical institutions.

The ***Biopharmaceutical Chemistry*** licentiate (bachelor's) program contributed to the formation of a new generation of specialists capable of working in areas such as chemical-pharmaceutical research; pharmaceutical and biotechnology industry; chemical and biomedical analysis laboratories; research and development institutions.

Through its interdisciplinary orientation and the integration of research into the teaching process, the program reflects the vision of academician Aurelian Gulea regarding the development of a modern university education, adapted to the requirements of contemporary science.

The contribution of Academician Aurelian Gulea to the creation of the *Biopharmaceutical Chemistry* program demonstrates his essential role not only in the development of chemical research, but also in the modernization of university education system. Through this initiative, he contributed to the consolidation of an interdisciplinary direction of training and research, which continues to evolve and generate relevant results in the field of chemistry and biomedical sciences.

An important chapter of the scientific and academic activity of Academician Aurelian Gulea is the leadership of Scientific Research Laboratory *"Advanced Materials in Biopharmaceutics and Technology"* within the Moldova State University. As the head of this laboratory, he made a decisive contribution to the development of modern research directions at the intersection of coordination chemistry, materials chemistry and biopharmaceutics.

The *"Advanced Materials in Biopharmaceutics and Technology"* Laboratory was created with the aim of developing interdisciplinary research oriented towards the synthesis, characterization and application of coordination compounds and functional materials with biological and technological potential.

Under the leadership of Academician Aurelian Gulea, the laboratory has become a research center that integrates modern methods of chemical synthesis, advanced structural analysis techniques and studies on the biological activity of the obtained compounds.

The laboratory's scientific activity focuses on several strategic directions:

- synthesis and study of coordination compounds of metals with biologically active ligands;

- development of innovative biopharmaceutical materials with therapeutic potential;
- investigation of structure–properties–biological activity relationships;
- development of functional materials with technical and biomedical applications;
- use of modern spectroscopic and structural methods for the characterization of compounds.

This research is part of the current trends of modern chemistry, in which the development of advanced materials is closely linked to biomedical and biotechnological applications.

Under the coordination of Academician Aurelian Gulea, the laboratory has become an important platform for interdisciplinary collaboration between chemists, biologists, pharmacists and specialists in the field of materials science. The research results have been valorized by publishing a large number of articles in international scientific journals; obtaining patents for biologically active compounds; participating in national and international research projects.

The scientific research laboratory coordinated by Academician Aurelian Gulea has played an essential role in training new generations of researchers. It has trained bachelor, master's and doctoral students directly involved in scientific projects. Through this activity, the laboratory has become a center of excellence in research on coordination chemistry and biopharmaceutical materials, contributing to the consolidation of scientific school created by Academician Aurelian Gulea.

The activity of *"Advanced Materials in Biopharmaceuticals and Technology"* laboratory has a significant impact on the development of chemical research in the Republic of Moldova, by promoting modern interdisciplinary research directions; development of the university scientific infrastructure; integration of research with the educational process; strengthening of international scientific collaborations.

By leading this laboratory, Academician Aurelian Gulea contributed to the creation of an academic and scientific environment favorable to innovation, demonstrating the essential role of fundamental research in the development of biopharmaceutical and technological applications.

In addition to research and teaching, Academician Aurelian Gulea has an important role in academic management. During his activity, he worked as a coordinating academician of the Section of Exact and Natural Sciences of the Academy of Sciences of Moldova; member of the Senate of the Moldova State University; chairman of the Commission of experts in the field of chemistry within the National Council for Accreditation and Attestation (CNAA) and The National Agency for Quality Assurance in Education and Research (ANACEC); member of the editorial boards of some international scientific journals; expert and coordinator of international juries at world invention salons and others.

Scientific and academic achievements are reflected in numerous scientific works, patents, participation in international exhibitions of inventions and others. Editorial and scientific activity lists over 1200 scientific publications, including about 20 monographs and textbooks; over 130 patents in the field of coordination and biopharmaceutical chemistry, dozens of gold medals at various international exhibitions and salons of inventions.

The prodigious activity of Academician Aurelian Gulea has been appreciated with multiple national and international awards and distinctions. Among the most important distinctions are: the National Prize in the field of science and technology; the Order of the Republic; the Order of "Glory of Labor"; the "Dimitrie Cantemir" Medal of the Academy of Sciences of Moldova; Gold medals of the World Intellectual Property Organization; the Award of the Government of the Republic of Moldova "Outstanding Inventor".

In recognition of his scientific merits, he was elected Doctor Honoris Causa of the "Al. I. Cuza" University of Iași, Professor Honoris Causa of the University of Bucharest, Honorary Member of the Academic Community of the University of Bacău, Full Member of the New York Academy of Sciences, Doctor Honoris Causa of the "N. Testemetianu" University of Medicine and Pharmacy of Moldova; member of the European Academy, honorary member of the Romanian Academy.

Academician Aurelian Gulea is one of the leading figures of science in the Republic of Moldova. His contributions in the field of coordination and bioinorganic chemistry, as well as his role in the development of interdisciplinary research, have had a significant impact on the evolution of modern chemistry.

Through his scientific, didactic and managerial activity, he contributed to the formation of a solid scientific school and the consolidation of academic research. On his 80th anniversary, his activity remains an example of excellence in science and education.

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