

## ACADEMICIAN AURELIAN GULEA - ARCHITECT OF MODERN CHEMISTRY: A LIFE DEVOTED TO KNOWLEDGE

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Among the eminent personalities who established new directions in national science and brought it to international recognition, Aurelian Gulea occupies a distinguished place through the breadth of his scholarly work, the creative force of the ideas he advanced, and the enduring scientific school he founded.

His biography represents a rare expression of the harmony between vocation, scientific creativity, and academic responsibility. Born on May 28, 1946, in the village of Baraboi, Donușeni district, his intellectual journey, initiated at the Faculty of Chemistry of the Moldova State University, was destined to become one of the most remarkable trajectories in the history of contemporary chemistry in the Republic of Moldova.

Following his university studies and doctoral research completed at the prestigious V.G. Khlopin Radium Institute, and subsequently his habilitation doctorate at the N.S. Kurnakov Institute of General and Inorganic Chemistry, Aurelian Gulea gradually developed a body of work that established him as a scientist of international standing.

Through his pioneering research, Aurelian Gulea made fundamental contributions to the development of the stereochemistry and stereodynamics of assembly reactions in coordination compounds, a field in which he established a genuine scientific school recognized internationally for its originality and impact. His studies on cobalt coordination compounds led to the formulation of original concepts concerning the structure, reactivity, and stereodynamic transformations of these complexes.

A major contribution of his work lies in the investigation of stereodynamic effects in mono- and polynuclear coordination compounds, the mechanisms of molecular assembly, and the processes of supramolecular self-organisation. These studies opened new perspectives in the chemistry of macrocyclic and supramolecular compounds, as well as in the design of coordination systems with targeted biological properties. Of indisputable scientific value are his investigations in multinuclear NMR spectroscopy,



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particularly involving the  $^{59}\text{Co}$  nucleus, where Academician Gulea achieved internationally recognized landmark results. These studies enabled a deeper understanding of structure-property correlations in coordination compounds.

A distinct chapter of his scientific activity is represented by his contributions to the synthesis of molecular inhibitors of cancer cell proliferation, the development of innovative products with biopharmaceutical potential, and the scientific foundation of the specialization in Biopharmaceutical Chemistry, whose institutional establishment he decisively supported. The introduction of this specialization through organic law constitutes one of his major achievements, with strategic impact on higher education and national research.

The extent of his academic contributions is remarkable: more than 1,400 scientific papers and abstracts, 20 monographs and university textbooks, 161 patents of invention, and hundreds of communications presented at international congresses and symposia; 351 articles published in ISI-indexed journals with impact factor, including three review articles, among them the study published in *Coordination Chemistry Reviews* (IF 22.31), which has become a reference work in the field.

His publications have appeared in leading international journals, including *Inorganic Chemistry*, *Coordination Chemistry Reviews*, *Journal of Materials Chemistry*, *Polyhedron*, *Inorganica Chimica Acta*, *European Journal of Inorganic Chemistry*, *Journal of Enzyme Inhibition and Medicinal Chemistry*, *Nature Communications*, and many others.

As a distinguished inventor, he has been awarded more than 250 gold, silver, and bronze medals at world invention exhibitions held in Brussels, Geneva, Pittsburgh, Seoul, Warsaw, Zagreb, Manila, Barcelona, and many other global centres of inventive research - an achievement rarely encountered in the academic world.

One of the most enduring achievements of Aurelian Gulea is the scientific school he established. Under his supervision, 39 doctoral and postdoctoral researches obtained the degrees of Doctor and Habilitated Doctor, while new generations of doctoral candidates and researchers continue the directions inaugurated by their mentor. This continuity defines an authentic scientific legacy. Today, his disciples are active in universities, academic institutes, research centers, and the pharmaceutical industry both in the Republic of Moldova and abroad. Under his guidance, new generations of researchers continue to be trained, demonstrating the continuity and vitality of his scientific school. In the fullest sense, Academician Aurelian Gulea has not only educated specialists, but has created a genuine scientific tradition.

Alongside his research activity, Academician Aurelian Gulea made an exceptional contribution to the institutional development of science and higher education. Although he had numerous opportunities to pursue his career in major international academic centers, he remained devoted to the Moldova State University, to which he dedicated more than six decades of activity. This loyalty represents a model of academic patriotism and service to the public interest. For entire generations of chemists, the name Aurelian Gulea has become inseparably associated with the Faculty of Chemistry and Chemical Technology, the Institute of Chemistry of Moldova State University, the tradition of excellence, and the creative spirit of the Alma Mater. He headed the Department of Inorganic Chemistry, later the Department of Inorganic and Physical Chemistry, as well as the Department of Chemistry of Moldova State University. He founded the Scientific Research Laboratory of Coordination Chemistry and subsequently established - and currently leads - the Laboratory of Advanced

Materials in Biopharmaceutics and Engineering, which has evolved into a center of competitive scientific research.

As a Corresponding Member (2006), Full Member (2012), and Coordinating Academician of the Section of Exact and Natural Sciences of the Academy of Sciences of Moldova (2013–2019), he made decisive contributions to the policies guiding the development of national research. In parallel, he held positions of major responsibility in the evaluation and organization of science, serving as Chair of the Commission of Experts in Chemistry of the CNAA/ANACEC, member of the Supreme Council for Science and Technological Development, member of the Senate of Moldova State University, as well as expert and national coordinator in European scientific programs.

The international prestige of Academician Aurelian Gulea is confirmed by his activity as visiting professor and associated researcher at universities and centers of excellence in France, Switzerland, Germany, Canada, United States, and Romania, including Paris-Saclay University, University of Toulouse, University of Lausanne, University of Freiburg, Laval University, Rice University, as well as major universities in Bucharest, Iași, and Cluj-Napoca. He coordinated or participated in important international projects, including CRDF (USA), ECONET, INTAS, Francophone scientific programs, bilateral Switzerland–Moldova, Romania–Moldova, and Canada–Moldova partnerships, as well as state programs in biopharmaceutics and anticancer compounds. He served as visiting professor at numerous universities, was awarded the title of Doctor Honoris Causa of Alexandru Ioan Cuza University, Professor Honoris Causa of the University of Bucharest, Honorary Member of the academic community of Bačău, and Elected Member of the New York Academy of Sciences. In 2025, Academician Aurelian Gulea was elected Honorary Member of the Romanian Academy. The title of Honorary Member of the Romanian Academy represents one of the highest distinctions conferred by Romania's foremost scientific institution, being reserved for outstanding personalities who contribute to the advancement of science and culture within both the Romanian and international academic communities.

The value of his work has been recognized through an impressive array of national and international distinctions. His achievements have been honored with some of the highest awards and decorations, including the Order of the Republic, the Order of Labour Glory, the honorary title of Om Emerit, the State Prize

of the Republic of Moldova, three WIPO Gold Medals, the European Order “Merit for Innovation” in the rank of Grand Officer, the Belgian Order “Inventive Merit,” the Marie Skłodowska-Curie Medal, the N.S. Kurnakov Medal, the Dimitrie Cantemir Medal, as well as the title of Doctor Honoris Causa conferred by the Alexandru Ioan Cuza University, the University of Bucharest, the universities of Bacău, and the Nicolae Testemițanu State University of Medicine and Pharmacy. These distinctions are not merely symbols of prestige, but compelling attestations to the universal value of his scientific oeuvre.

Beyond his scientific accomplishments, Aurelian Gulea is distinguished by his human nobility, intellectual elegance, moral rigor, and collegial generosity. In his person are united the profound researcher, the inspiring professor, the

visionary innovator, and the devoted citizen. His activity stands as proof that great scientific achievements are built through passion, perseverance, discipline, and faith in the transformative power of knowledge.

Today, at the culmination of a life dedicated to science, it may rightfully be affirmed that Academician Aurelian Gulea belongs to the elite of the great scientists of the Romanian and European intellectual sphere, and that his work will remain an enduring landmark in the history of modern chemistry.

On the occasion of this tribute, we extend to him our deepest appreciation, together with wishes for health, intellectual vigor, and continued creative strength for new achievements. May his scientific achievements continue to inspire future generations, and may the scientific school he established continue to flourish for years to come.

Academician Gheorghe DUCA

*Head of the Laboratory of Physical and Quantum Chemistry,  
Institute of Chemistry of MSU  
Editor-in-chief of the Chemistry Journal of Moldova*

Academician Tudor LUPASCU

*Head of the Laboratory of Ecological Chemistry, Institute of Chemistry of MSU*

Corresponding member Aculina ARICU

*Director of the Institute of Chemistry of MSU*

Corresponding member Fliur MACAEV

*Head of the Laboratory of Organic Synthesis, Institute of Chemistry of MSU*