

# Curriculum Vitae

## GHEORGHE DUCA

Born on 29 February 1952 in Copăceni, Sângerei, Republic of Moldova, in the family of teachers Grigore and Nina Duca.

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### STUDIES

- Middle School no. 2 in Sângerei - 1969 (gold medal).
- Faculty of Chemistry of the State University of Moldova (SUM) - 1974 (diploma with mention).
- Doctoral studies at SUM (1976-1979), finalized with the thesis "oxidation catalysis of tartaric and dihydroxyfumaric acids", being given the scientific degree of Doctor of chemical sciences (specialty: 02.00.04, physical chemistry) - 1979
- Postdoctoral studies at the Institute of Physical Chemistry of the Russian Academy of Sciences (1985 - 1988), finalized with the habilitate doctor thesis "Mechanisms of ecochemical processes in the aquatic environment" (specialty: 02.00.15, chemical kinetics and catalysis and 11.00.11 protection of the environment), held at University of Odessa, Ukraine - 1988

### PROFESSIONAL ACTIVITY

1972-1974: Laboratory assistant, Department of Physical Chemistry, SUM.

1974-1976: Secretary of the ULCT Committee of SUM.

1976-1979: PhD, Department of Physical Chemistry, SUM.

1979-present: Lecturer, professor, SUM.

1981-1985: President of the Syndical Committee of SUM.

1988-1992: Head of the Physical Chemistry Department, SUM

1991-1998: Director of the Research Center of Ecological and Applied Chemistry, SUM

1998-2001: Deputy, Chairman of the Commission for Culture, Science, Education, and Mass-media of the Parliament of the Republic of Moldova

2001-2004: Minister of Ecology, Construction and Territory Development of the Republic of Moldova.

2004-present: President of the Academy of Sciences of Moldova.

## ACHIEVEMENTS

He developed the **concept of coordination compounds with partial charge transfer**; He revealed transformation mechanisms of chemicals and elucidated the conception of basic acts of reactions redox, reactions that cause the majority of transformations in processes in chemical technologies and environment; He created the **scientific school of Ecological Chemistry**, in which he developed the theory redox phenomenon in the environment; He has elucidated the mechanisms of oxidation and reduction of components during the formation of the quality of aquatic systems and oenological products; He developed technologies for obtaining medicinal and cosmetics substances; for physico-chemical treatment of wastewater; for reduction of polluting gases from the atmosphere; He proposed new methods and procedures for chemical risk assessment; He developed the methodology of ecological audit; He formulated the principles of environmental education. **Author of 1,565 edited works**, including 624 scientific articles, 139 patents, 42 monographs, 25 textbooks and methodical works, including the first textbook "Ecological Chemistry," published in three editions and translated into three languages: Romanian , Russian, English.

**He developed and taught courses** on Physical chemistry, Chemical technology, Ecological chemistry, Processes and equipment, Physico-chemical research methods, Chemical risk assessment, Kinetics and thermodynamics of ecological systems.

**He founded: Department of Industrial and Ecological Chemistry, SUM (1992)**, Research Center of Ecological and Applied Chemistry, SUM (1991), Faculty of Ecology, International University of Moldova (1992), High School for gifted children of the ASM (2007), University of the Academy of Sciences (2007), Nongovernmental organization for environmental protection "Terra Nostra" (1992), Association for Research and Development in Moldova - MRDA (2000), and the journals "Environment" (2002), "Chemistry Journal of Moldova" (2005), Journal of Science, Innovation, Culture and Art "Akademos" (2005).

**He initiated editing the book collections** "Animal world of Moldova" (2004), "Vegetal world of Moldova" (2004), "Academica" (2006), "Notorious personalities" (2009) as well as the anthology " Maluri de Prut" the only volume of poems of Adrian Paunescu published in Chisinau (2013).

**He prepared 25 doctors of sciences (PhD), including theses in co with INSA, Lyon, France (1998) and 4 Habilitate Doctors.**

**He organized:**

- Seven scientific expeditions on the rivers Prut and Nistru with the participation of students, graduates and researchers in order to raise public awareness on environmental issues.

- First International School of Ecological Chemistry (1985), Chisinau 150 participants from 15 countries.
- Five international conferences "Ecological Chemistry" (1995, 2002, 2005, 2008, 2012), with participants from over 30 countries.
- Seven round tables of National Club "Science and Business Partnership".
- International Conference of the Academies of Sciences in Eastern and South-Eastern Europe "Global Science and National Policies: the role academies", Chisinau 4-5 May 2007.
- International Conference for the Central and South-Eastern Europe, Caucasian, CIS, Baltic and Balkan countries "Policies in science and education ", Chisinau, 19-20 September 2008.
- IV<sup>th</sup> Forum of Intellectuals of Creation and Research in CIS Chisinau, 24-25 September, 2009.
- Researchers' Night, organized with the support of the European Commission (2013).
- Moldovan-Romanian Forum "Promoting joint participation in EU programs in science and education", February 21, 2014.
- Regional event to launch the Research and Innovation Framework Programme of the European Union „Horizon 2020”, with the participation of Eastern Partnership countries, March 17, 2014

#### **PUBLIC ACTIVITY**

- President of the Council for Conferring National Awards for the Youth in Science and Technology (1992-2006).
- Chairman of Moldavian Scientific Council on conferring the title "Doctor of Science" (1994-present).
- Co-president of the Danube Convention (2001- 2005).
- Honorary Consul of Greece in the Republic of Moldova, designated by the Greek Parliament (2001-present).
- Co-President of the Moldavian-Polish Interstate Commission for commercial, economic, scientific and technical cooperation (2001-2005, 2011-present).
- President of the Association of Chemists of Moldova (2011-present).
- Honorary President of the Moldovan Research and Development Association (MRDA)

#### **INITIATIVES**

- Reform of science and innovation, development and promotion of the Code on Science and Innovation (2004).

- Elaboration of the legal framework for synergy between business and research and development, the Law on scientific-technological parks and innovation incubators (2005).
- Establishing the Feast "Our Romanian Language" at the Academy of Sciences, the series Academic Lectures - public lectures held by personalities from home and abroad, aimed at the main issues of science and society, including literary-historical speeches dedicated to Romanian Language (20 lectures to present) (2004).
- Establishing the Award of the Academy of Sciences "Grigore Vieru" to appreciate the most notable achievements in Romanian language and literature (2009).
- Promotion and adoption by the Supreme Council for Science and Technological Development of the Academy of Sciences of the Decision on the significance of the date June 28, 1940 (2010).
- Organization of International Scientific Conference dedicated to literary and publishing work of the dissident writer Paul Goma; initiation of official demarches to grant Moldovan citizenship to the novelist Paul Goma, from interwar Bessarabia (2010).
- Installing the bust of the writer Adrian Paunescu on the Alley of Classics in Chisinau (2011).
- Integration of the scientific community of Moldova in the European Research Area by association to the Seventh Framework Programme for Research and Innovation of the European Union (2010) and the Framework Programme for Research and Innovation "Horizon 2020" of the European Union (2014).
- Establishing the Medal "Nicolae Milescu Spătaru" within the Academy of Sciences to remark the work of scientists who have achieved scientific and innovation exception, they have created new schools and scientific directions, participate in scientific training of young people, and promote science and the paradigm of knowledge based society (2015).

#### **TITULAR AND HONORARY MEMBERSHIPS**

Member of the Academy of Sciences of Moldova (1992), Member of the Central European Academy of Sciences and Arts (1999), Member of the Academy of Pedagogical and Social Sciences from Russia (1999), Honorary Member of the Balkan Academy of Science, Culture New and Sustainable Development (2004), Honorary Member of Academy of Agricultural and Forestry Sciences "Gheorghe Ionescu-Sisești" Romania (2006), Member of the Academy of Sciences and Arts of Montenegro (2006), Honorary Member of the Romanian Academy (2007), Honorary Member of the National Academy of Sciences of Ukraine (2009).

#### **DOCTOR HONORIS CAUSA**

Doctor Honoris Causa of the Free International University of Moldova (1993), the Technical University "Gh. Asachi "Iasi, Romania (2000), Real-Humanistic University of Cahul (2001), State

University" Alecu Russo "(2006), the Academy of Economic Studies of Moldova (2006), the University of the West "Vasile Goldis" of Arad, Romania (2006), State University of Physical Education and Sport (2011), State University of Tiraspol (2011), the Academy of Science of the Russian Federation (2011), State University Comrat (2015).

### **AWARDS and DISTINCTIONS**

State Prize for Youth in Science and Engineering (1983), Emeritus scientist (1996), State Prize in Science and Technology (1998), Medal "Dimitrie Cantemir" (2002), Order "Sergius of Radonezh" of the Russian Orthodox Church (2003), State Prize in Science and Technology (2004), Prize "Scientist of the Year" (2005), Order "Labour Glory" (2007), National Award GALEX (2011), Order of the Republic (2011), Award of The Romanian Academy (2012) Award "Italia" for Culture (2012) Award for outstanding achievements in the field of European Integration of the Economic Cooperation Organization of the Black Sea (2013), Medal of the National Commission of the Republic of Moldova for UNESCO (2014), Medal Mihai Eminescu, Romania (2014). Medal "Henri Coanda", Romania (1997), Knight of the Order for Inventions of the Kingdom of Belgium (2003), Gold Medal "I. P. Pavlov ", Russian Federation (2004)," The Cross of Commander of the Order of Honour ", Poland (2004), Gold Medal "for Eminent Services to the cause of progress ", Brussels (2005), the Order "Cultural Merit" of Romania (2006), Gold Medal "N. S. Kurnakov ", Russian Federation (2007), Gold Medal "B. I. Blinikov", Russian Federation (2008), International Socrates Award, Oxford, UK (2009), Silver Medal of the Association of Innovators of China (2010), Gold Medal "EUROINVENT", Brussels (2011), the Order "The crown of Romania" with the rank of Commander (2015).

### **APPRECIATIONS (selective)**

*Gheorghe Duca's great love for science, for the people which he works with, for his country and for this nation comes from its vast universal knowledge that he gathered from the most important scientific centers of the world.*

**Acad. Eugen Doga, Moldova**

*Acad. Gh. Duca is not only a scientist, professor and prominent specialist in its field, but also a great organizer of research, skillful leader of the most important and prestigious institution of Moldova.*

**Acad. Ionel Haiduc, Romania**

*Acad. Gh. Duca carries out a fruitful activity of integration of academic science with education.*

**Acad. B. Paton, Ukraine**

*Scientific papers of Academician Gh. Duca in the field of physical chemistry and chemical technology are widely known and appreciated in the world. He is the founder of a new direction and a scientific school - Ecological Chemistry*

**Acad. S. M. Aldoshin, Russia**

*Acad. Gh. Duca is an outstanding scientist and educator of reforming origin.*

**Acad. Ion Bostan, Moldova**

*The works of Academician Gh. Duca in physical and applied chemistry made his name widely known to world science.*

**Acad. N. Laverov, Russia**

*Acad. Gh. Duca is the founder of ecological chemistry and a prestigious member of the international scientific community.*

**Prof. Mufit Bahadir, Germany**

*I would like to believe that I have also contributed, partially of course, to the assertion of Gheorghe Duca as internationally renowned scientist and president of the Academy of Sciences.*

**Acad. I. Skurlatov, Russia**

19 august 2015