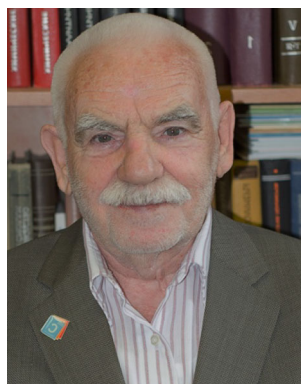


In Memory of Professor Anatolii D. Pomogailo (1939–2015)

Gulzhian Dzhardimalieva¹

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Professor Dr. Sci. (Chem.) Anatolii Dmitrievich Pomogailo passed away at the hospital in Chernogolovka on 6 September 2015 at the age of 75. He was a great scientist, distinguished chemist, close personal friend and one of the pioneers in the field of macromolecular complexes and metallopolymer nanocomposites. He will be greatly missed.

Anatolii Pomogailo was born on the 3rd of December 1939 in Mirovka in the Kiev region of the Russian Federation. He received his primary and secondary education in the Kiev region. Anatolii Dmitrievich graduated with distinction from the department of chemistry, polymer and colloid physics of Odessa State University in 1965. He started his scientific career at the Odessa State University and in an Odessa chemistry plant by solving practical

problems dealing with the influence of highly dispersed metal oxides on the physical-mechanical and performance properties of poly(vinylchloride). In 1965 he moved to the Institute of Oil and Natural Salts of the Academy of Science in Kazakhstan SSR where he received his Candidate Chemistry Degree in 1970 (Almaty). His research under the direction of Professor D.V. Sokol'skii focused on the kinetics and mechanism of catalytic polymerization and copolymerization of alpha-olefins by modified complexes of vanadium and titanium. In February 1972 Anatolii Dmitrievich was appointed as a scientific researcher at the Institute of Problems of Chemical Physics Russian Academy of Sciences, IPCP RAS (formerly the Branch of Institute of Chemical Physics of Academy of Sciences of USSR) in the Chernogolovka Moscow Region where he held academic positions as a senior staff scientist, professor, head of the laboratory and chief scientist. Anatolii Dmitrievich received his doctorate in 1981 from the Institute of Chemical Physics of the Russian Academy of Sciences in Moscow. The title of his doctoral thesis is "Fixation of Metal Complexes onto Macromolecular Carriers and Catalytic Properties of Immobilized Systems in Polymerization Processes". In 1991 he was awarded a Professorship from the VAK USSR (highest certification committee).

Professor A.D. Pomogailo is a world renowned expert in the fields of high molecular compounds, including organometallics, and metallocomplex catalysts and materials science. The most essential achievements of his scientific, theoretical and practical activities may be summarized as follows:

- He developed a new scientific branch—catalysis by polymer-immobilized metal complexes. He discovered a new phenomenon of extreme dependence of the

✉ Gulzhian Dzhardimalieva
dzhardim@icp.ac.ru

¹ Laboratory of Metallopolymers, Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Russian Federation

catalytic activity on the surface concentration of metal complexes and temperature, and general peculiarities of polymerization processes with polymer-immobilized catalysts. Many of these achievements were used in the production of low density and linear low density polyethylene in the Gur'ev chemical plant. The theoretical and experimental results in this field were summarized in five monographs, several review papers and series papers entitled “The Study of Immobilized Catalysts (Part I–XXV)” which was published in *Kinetics and Catalysis* (1979–1990).

- He developed the theoretical and technological bases for immobilized metal- complex synthesis and high molecular and branched polyethylene production. He also discovered highly effective catalysts for polymerization processes. He authored more than 100 invention certificates from the USSR and received numerous patents from France, Belgium, Germany, Poland, Italy, Japan and USA.
- He developed a new one-stage synthesis for structural homogeneous macromolecular metal complexes based on the polymerization of metal-containing monomers (MCM) including frontal polymerization of MCM. The results of these studies were presented in three monographs, three review papers and in series of research articles entitled “Synthesis and Reactivity of MCM (Parts 1–77)” that was published in *Russian Chemical Bulletin* (1985–2015) and other journals.
- He developed an original method for the synthesis of metal nanoparticles that are stabilized by polymers via thermal transformation of metal-containing monomers. This method comprises the synthesis of metal nanoparticles and stabilizing the polymer matrix simultaneously during solid-phase polymerization and thermolysis of the products formed. Such nanocomposites are functional as constructional, magnetic and heat-resistant materials, nanocatalysts, sensors, anticorrosion coatings, etc. His contributions to this area are summarized in five monographs, five review articles and many publications in Russian and international journals.

A complete bibliography of Professor Anatolii Pomogailo would list 13 monographs, about 100 invention certificates and patents, 470 papers that include research articles, 13 book chapters and 12 review papers.

Anatolii Dmitrievich travelled worldwide to serve as a keynote speaker, give invited lectures, and deliver numerous talks at international conferences. He was a visiting professor at Auburn University (USA) in 2001, Warsaw Technology University (Poland) in 2002–2005, Turin University (Italy) in 2008, Institute of Composite and Biomedical Materials (ICBM SNR, Italy) in 2011 and

2013. He was also a fellow at Bremen University (Germany) in 2004.

The Laboratory of Metallopolymers IPCP RAS under the direction of Professor A.D. Pomogailo had a fruitful collaboration with many international research centers such as Warsaw Technology University, Bremen University, ICBM SNR, Lyon University, France, Lucknow University and Babasaheb Bhimrao Ambedkar University, India, and others, for many years. His achievements were recognized with a Russian State Scientific Award for Excellence in Research for several years. His research was funded by the Russian Foundation for Basic Researches, including its international programs, RAS Programs, INTAS (*The International Association for the Promotion of Co-operation with Scientists from the New Independent States of the Former Soviet Union*), and several company foundations and university sources.

Professor Anatolii D. Pomogailo was not only an outstanding research but also a dedicated and talented educator. He mentored three doctors of science and nine Ph.D. students. He founded the Laboratory of Metallopolymers of IPCP RAS. He was professor of the Moscow Aviation Institute (National Research University) and offered numerous lecture courses on the technology of materials for biomedical applications. He served for many years as a member of academic council of RAS on catalysis, and was a member of academic council of ICPC RAS. He also served as an external reviewer at both the graduate doctoral and candidate levels, for research projects of the RFBR, RSF and for many other foundations. For many years he served on the reviewer boards of international academic journals. He was a member of the international advisory board of the IUPAC Symposium on Macromolecular Metal Complexes (MMC) and took part in many of their conferences [e.g., Bremen (1993), Leiden (1997), New York (2001), Moscow (2003), Fukuoka (2007), Termas de Chillan (2009), Helsinki (2011)]. At the MMC symposium in Moscow in 2003, Anatolii Dmitrievich with his close friend Professor Dieter Wöhrle introduced their seminal book, “Metal Complexes and Metals in Macromolecules,” which was published just prior to the Symposium.

Anatolii Dmitrievich was an outstanding chemist. He was extremely proud that his daughter, Dasha also became a chemist and earned her doctorate from Moscow State University.

Anatolii Dmitrievich was a remarkable person with the ability to think creatively, many talents and interests, and a wonderful sense of humor. The door of his lab was always open to his colleagues and students; he was a warm and gentle human being and always encouraging and helpful to others.

I am deeply saddened by the fact that I will not have more opportunities to talk with Anatolii about research and

work of our lab. I will miss listening to Anatolii's wonderful stories of his travels to Kamchatka, Geysir Valley, Krasnoyarskii Stolby, Odessa-Liman and many other places. I will particularly miss laughing at his numerous anecdotes. I am grateful that our paths crossed. I have had the long, fruitful working relationship with Anatolii Dmitrievich in the laboratory of metallopolymers for many years. I am proud that I had a chance to work with him, communicate and learn all that he gave me.

Finally, many thanks to our mutual colleagues and friends who have contributed to this special issue devoted to the memory and scientific contributions of Anatolii Dmitrievich Pomogailo. Thanks also to the reviewers for their help in making this issue a success.

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