

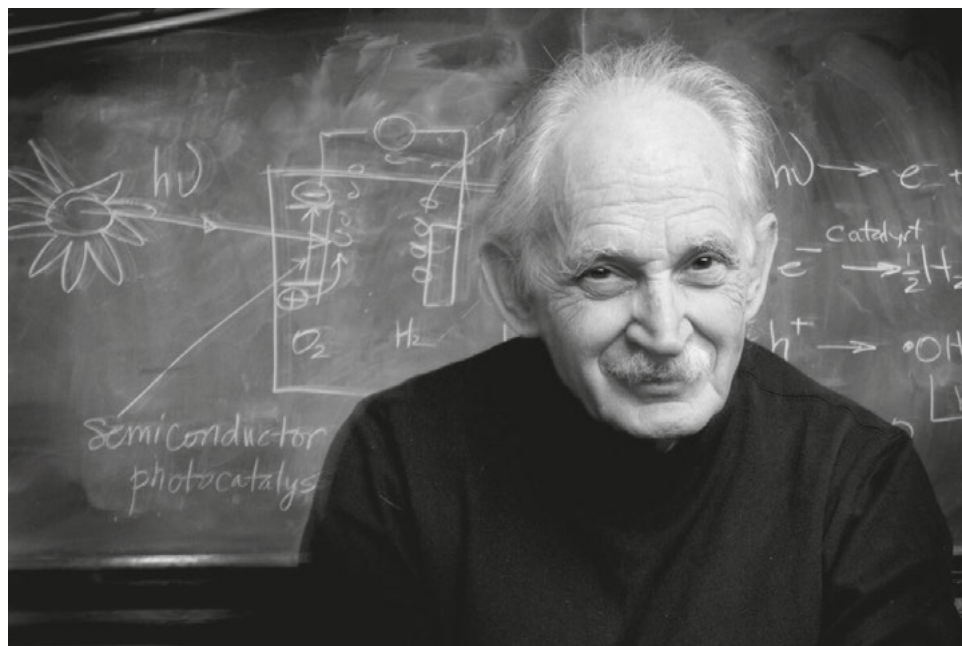


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Photo by Marsha Miller

Allen Bard's activity in the 1980s within IUPAC was very much associated with IUPAC's mission of a common language and the free exchange of information. He was a member of the Commission on Electrochemistry (1975-1983), being Vice-Chairman 1981-1983 and of the Commission on Chemical Kinetics (1983-1987). During this time, the book *Standard Potentials in Aqueous Solution* (A. J. Bard, R. Parsons, and J. Jordan, Eds., Dekker, 1985) was published as an IUPAC-based project. It continues to be an excellent source of data on standard potentials or species of most of the chemical elements.

The future developments predicted in his article "New challenges in electrochemistry and electroanalysis" in the IUPAC journal *Pure and Applied Chemistry* [64 (1992) 185-192; <https://doi.org/10.1351/pac199264020185>, based on his lecture at the 33rd IUPAC Congress, held in Budapest, Hungary, in August 1991] are the challenges felt today, over 30 years later.

In 1989, Bard was elected to be IUPAC Vice President, followed by President in 1991-1993 and Past President 1994-1995. He presented his Vice President's Critical Assessment in the Hamburg General Assembly (1991), which assessed whether work that had been carried out with IUPAC sponsorship was all appropriate and recommending that a move should be made towards a more dynamic structure involving fewer permanent commissions, amalgamation of existing bodies where appropriate, and development of mechanisms for speeding up approval and publication of IUPAC recommendations.

His Critical Assessment commenced discussions that carried into later biennia regarding the IUPAC structure. Only in 2001 was organisational change implemented, with the abolition of most commissions and the creation of a more streamlined division structure in order to respond to the challenges of the 21st century in the chemical and related sciences.

Professor Bard was recognized broadly for his vast contributions. Among the distinctions were the U. S. National Medal of Science, the Priestley Medal, the Enrico Fermi Award, the Wolf Prize, the Welch Award, and the King Faisal International Prize. He was a member of the U. S. National Academy of Sciences.

A tribute to Christo Balarew on the occasion of his 90th birthday

The eminent Bulgarian chemist Christo Balarew was born on June 23, 1934 in Sofia. He received his MSc degree in chemistry from the Sofia University. Balarew devoted many years of his life to the service of Bulgarian chemical science and education. For most of his life he worked at the Institute of General and Inorganic Chemistry of the Bulgarian Academy of Sciences. He was a scientist, teacher, public figure, member of a number of international organizations, editorial boards of scientific journals, organizing and scientific committees of international scientific forums.

The research interests of Christo Balarew are focused on the elucidation of the dependencies between the structure and properties of solutions and those of the phases crystallizing from these solutions. As a result, he has developed a concept for predicting the existence and type of the most probable ionic groups in solutions and the structural patterns in crystalline phases, allowing prediction of the type and composition of crystallizing phases, as well as the kinetics of their crystallization. In this way, the reason for the crystallization of metastable phases is explained as a consequence of similarity between ionic groups in solutions and certain structural patterns in the crystalline phases. Regularities for the preparation of pure salts, double salts, basic salts and mixed crystals are revealed. A theory of isomorphous and isodimorphous co-crystallization has been established, which enables thermodynamic characterization of mixed crystals, calculation of impurity distribution coefficients in crystallization and of free energy in polymorphic phase transitions. Using the results of this fundamental research and the experience gained, several dozen technologies have been developed for the preparation of chemical products of high purity, for the synthesis of new materials, for the hydrometallurgical extraction of useful components from natural raw materials and industrial wastes.

Balarew was an active and devoted member of the IUPAC community: he was National Representative (1979-2004) and Associated Member (1991-1997) of Commission V.8 (Commission on Solubility Data), National Representative (2004-2007), Associate Member (2008-2010) and Titular Member (2010-2015) of the Analytical Chemistry Division. From 1999 to 2021 he was President of the Bulgarian National Committee of IUPAC. In this capacity he took care to



Bulgarian chemist Christo Balarew

consolidate the Bulgarian chemical community and to encourage young researchers at their early-stage careers. He initiated and organized the translation of the IUPAC *Red book* in Bulgarian. Thanks to his personal efforts, the membership of Bulgaria in IUPAC was not interrupted despite some difficulties in the transition years and many Bulgarian scientists were constantly involved in the activities of IUPAC. Balarew is the founder of two awards for young scientists: the *Prof. Christo Balarew Award for Prosperous Young Scientist in Inorganic Chemistry* of the Bulgarian Union of Chemists and the recently established *IUPAC Balarew Award for Outstanding Young Scientist working in the field of critical evaluation of solubility and/or related chemical equilibria*.

For his achievements in the field of science Balarew has been repeatedly awarded with prestigious Bulgarian and foreign awards. The international recognition of Christo Balarew is based not only on the impact of his scientific works published in renowned international journals, but also on his erudition and authority, which have earned him a worthy place among the international chemical community. Having known him for so many years, we also value him as a thoughtful listener and good advisor, someone who always reaches out to you, whether professionally or personally, in a most friendly and considerate manner.

We wish Prof. Balarew many years of good health and enthusiasm to realize new creative ideas!

For details about the recently established IUPAC Balarew Award, see <https://iupac.org/2024-franzosini-prize-and-balarew-award-call-for-nominations/>

