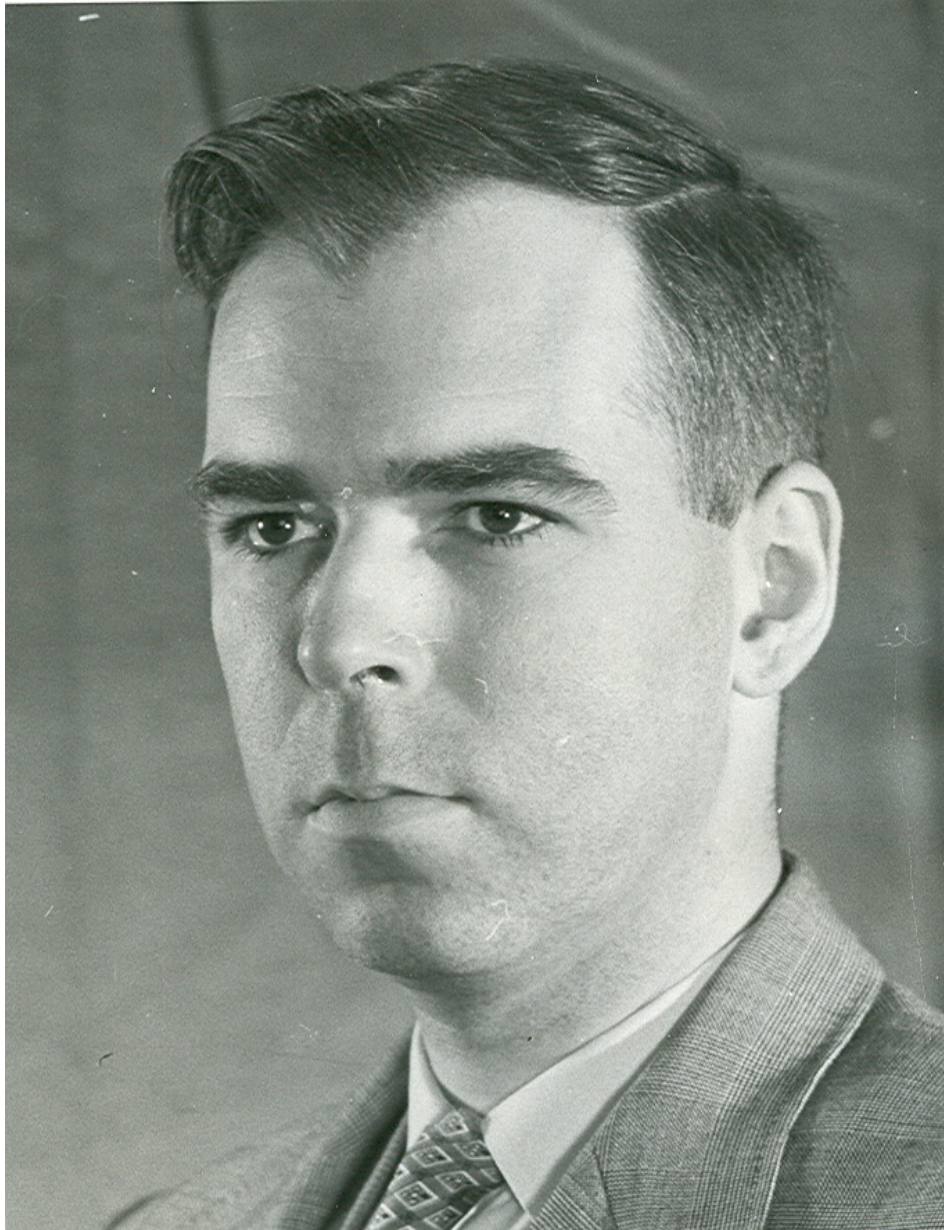


BENJAMIN C.-Y. LU

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**George Campbell Benson**  
**1919-2003**



George Campbell Benson, Honorary Scientist in the Department of Chemical Engineering of the University of Ottawa and a former Principal Research Officer of the National Research Council of Canada, passed away on October 24, 2003 in Ottawa. Dr. Benson was a world-renowned thermodynamist, with specialty in the fields of thermochemistry, calorimetry, and excess properties.

The only child of an industrial chemist, Cam was born in Toronto, Ontario on July 25, 1919. He had innate aptitude and drives to understand precisely how things work – from mechanical toys, to magic tricks, to mathematics. He followed his father's footsteps to study science at the University of Toronto, graduating in 1942 with a B.A. in Physics and Chemistry. Cam pursued advanced studies with Professor A. R. Gordon, including war office work and published research on conductance of ionic solutions.

Upon completing his Ph.D. in Chemistry in 1945, Dr. Benson joined the National Research Council. In early NRC work, with Drs. R. L. McIntosh, E. A. Flood, I. E. Puddington and others, he measured and analyzed various surface properties and processes.

In 1949-50, with his wife Barbara, Cam took a leave of absence to work at the University of Bristol. There, he and Dr. G. Wyllie applied electron wave function calculations to derive the lattice parameter, cohesive energy and compressibility of the Lithium Fluoride crystal. Back at NRC, Dr. Benson and postdoctoral fellows further elaborated this methodology and the quantum mechanical model for Lithium Fluoride, and performed new precise experimental determinations of surface and edge energies of various alkali halide crystals. The significance of these contributions to physical chemistry was recognized in Dr. Benson's 1957 election to Fellowship in the Royal Society of Canada.

Dr. Benson's 39-year NRC career was marked by achievements in development of both experimental and theoretical methods for measurement and calculation of thermodynamic properties of ionic crystals and especially of liquids and liquid mixtures. His Thermochemistry Section was known for rigorous application of these methods to produce data for a wide variety of chemical systems. The group, anchored also by technicians P. J. D'Arcy and C. J. Halpin, hosted dozens of post-doctoral fellows and guest scientists from many countries.

Dr. Benson retired from the National Research Council in 1984. In recognition of his outstanding contributions, the International Union of Pure and Applied Chemistry held an International Symposium on Thermodynamics of Binary Liquid Mixtures in his honour at Hamilton, Ontario in August 1984. There were seven invited speakers, as well as 40 additional papers presented at the symposium by participants from various parts of the world.

Immediately after this so-called retirement, Dr. Benson was offered the honorary post at the University of Ottawa. There he continued his research with financial support from the Natural Sciences and Engineering Research Council for a number of years. He advised and supervised a number of post-doctoral fellows as well as a number of graduate students up to the time of his passing.

*LU: George Campbell Benson*

He served on several Editorial Boards, including the Journal of Chemical Thermodynamics (1982 - 1987), Fluid Phase Equilibria (1977 - 1988), and the International DATA Series, Ser. A (since 1975). It might be mentioned that an issue of the International Data Series, [Ser.A (No.2, 1984)], was dedicated to him upon his retirement from the National Research Council of Canada, including a full-page display of a portrait of him.

In 1988, he was persuaded to participate at the International Symposium on Thermodynamics in Chemical Engineering and Industry, Sponsored by the Chemical Industry and Engineering Society of China in Beijing, China. At the conference, he was greeted warmly by his numerous former international research associates, and made a rare oral presentation of his expertise in the field of flow calorimetric measurements of excess enthalpies of mixtures.

He was such a devoted researcher, a man of all seasons, who would begin his daily endeavors earlier than his colleagues. It was no wonder that he had contributed in his life-long career a total of 365 scientific publications, including two articles in the proceedings of the International Symposiums on Thermodynamics. He continued his endeavors to the end of his days at the University of Ottawa, and his contributions at the university yielded 122 publications; seven of them appeared in print after his passing.

He was always quiet and patient; he gained respect from all the persons around him without exception. He was a great scientist and a sincere friend to all of his associates.

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*(Author's title given as of the time of writing)*