

## MAREK J. LAUBITZ (1931-2016)

BY CHANDRE DHARMA-WARDANA

With the recent passing of Marek Laubitz, the scientific community loses a brilliant physicist with a long and distinguished career at the National Research Council of Canada (NRC). Dr. Laubitz, Mark to his colleagues, studied Engineering Physics at the University of Toronto and graduated with honours; he received several awards, including an Athlone Fellowship to study Nuclear Physics at the famous Cavendish Laboratory of Cambridge University, where he received his PhD in 1956. He then returned to Canada to join the Division of Physics, NRC, and work as a Postdoctoral Fellow with Dr. D.K.C. MacDonald, a world leader in the field of electrical, thermal and related transport properties of materials.

In 1958 he was invited to join the permanent staff of the Division of Physics. This was the beginning of a distinguished research career, which in the period 1959-1980 resulted in more than 150 scholarly publications, which retain their influence up to the present day. Publications such as *The transport properties of powders* (1959), *Analysis of glow curves* (1967), and *Exact solutions of the kinetic equations governing thermally stimulated luminescence* (1971) are still regularly cited in the recent literature; they have been of crucial importance in the design of precision furnaces that provide for accurate compensation of radiative losses. His research papers provided and still provide benchmark data for metrology and industrial metallurgy. His measurements of resistivities of metals at temperatures up to the melting point are still cited. Mark's work was characterized by attention to detail and imaginative use of theory in designing experiments and new tools. This painstaking work enabled him to sort out some of the deep many-body effects that influence transport properties of metals.

His work on deviations from Matthiessen's rule, or the role of electron-electron interactions in causing deviations from the Wiedemann-Franz law were high-water marks of his fundamental scientific work in this area.

The study of transport properties of clathrates, i.e. ice structures crystallized such that they contain a network of cages in which natural gas molecules are embedded and which thus form, potentially, a major source of future energy, was a final topic that his research team undertook before he became the Director of the Division of Physics, later reorganized as the Institute of Microstructural Sciences. He showed great management skills in leading NRC towards the emerging field of nanotechnology and installed the very first Molecular Beam Epitaxy machine in Canada. The Canadian banknotes with holographic security films were developed at the NRC in the early 1980s by a team led by Mark. During the reorganization of NRC in 1991, he was selected to be the Director General of the newly formed Steacie Institute of Molecular Sciences, with a mandate to carry out fundamental research on molecular matter, in which chemists and physicists combined their efforts. Again he showed great leadership and created an institute that gained high international prestige. Mark retired from NRC in 1994 but continued to shine as a manager of the Ontario Centre of Excellence for Photonics, prior to his resettling in Niagara-on-the-Lake. He is survived by his wife Diana, three children and one grandchild and will be remembered by his colleagues as a dedicated scientist and an admired leader.

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