

MICHAEL N. VUCHNICH AWARD



PRESENTED BY: LINCOLN ELECTRIC COMPANY OF CANADA

RECIPIENT: DR. JOHN GOLDAK

Nominated by: Kevin Bagheri – University of Ottawa,
Mahyar Asadi – Applus Canada

In 1986, the Lincoln Electric Company of Canada Limited established a trust fund for the purpose of funding the Michael N. Vuchnich Award, (\$2,500 and a plaque) to be administered by a committee appointed by the Board of Directors of the Welding Institute of Canada and now its successor organization, the Canadian Welding Association. The Michael N. Vuchnich Award is presented annually to an individual who, in the opinion of the CWA Awards Committee, has "done the most to advance the science, technology and application of arc welding in Canada in their career."



Dr. John Goldak is best known for his research in the computation mechanics of welds. Some researchers call him the father of computational weld mechanics (CWM) in particular for the development of a heat source model for arc welds that is widely known as the Double Ellipsoid Weld Pool Model of Goldak. This model is frequently employed by researchers and industries as a best representation of the welding arc in modeling activities. In 2011, The Welding Science and Engineering Conference created "The Pioneers of Computational Weld Mechanics" award to honour the contributions of Professor Yukio Ueda, Japan, and John Goldak to the development of computational weld mechanics. John Goldak is a Fellow of the American Welding Society and of the Canadian Welding Association and well recognized by his colleagues.

He has dedicated his life to developing innovative and advanced solutions to complex welding problems using welding modeling and simulation. With over 50 years in academia, he has published more than 200 scientific paper and conference proceedings where at least 80 publications are highly recognized and awarded by peer experts in his field. He has trained numerous PhD, Master, and Bachelor students in welding who are now working at key positions in different industries around the world. He authored 6 books and book chapters that now serve as reference books of welding modeling and simulation with respect to the thermal, microstructure and mechanical aspects of welding. He is a co-author of the chapter on "Numerical Aspects of Modeling Welds" for the most top-ranked American Society for Materials (ASM) Handbook as well as a member of the AWS A9.5 committee that wrote the standard AWS A9.5 which is the first and only available Guide for Verification and Validation in Computation Weld Mechanics.

Not only is he among the pioneers of deep science behind weld modeling and simulation, he is also founder and president of Goldak Technologies Inc. (GTI) that applies the science of welding to solve existing industrial challenges. His company is dedicated to developing software for design driven analysis and the optimization of welds and welded structures. GTI was awarded the John S. Hewitt Team Achievement Award by the Canadian Nuclear Society in 2011 as a major player for its computational weld mechanics analysis that contributed to the successful repair of AECL's NRU reactor in 2009.