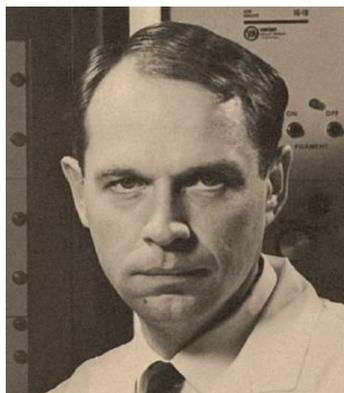


# Celebrating Ray Bartnikas on His 80th Birthday

Ray Bartnikas (S '56, M '58, SM '69, F '77, LF '97) was born on January 25, 1936, in Latvia during troubled times. He received his early education at St. Michael's College School in Toronto, Ontario. He obtained the BAsC degree in electrical engineering from the University of Toronto in 1958 and the MEng and PhD degrees from McGill University in Montreal in 1962 and 1964, respectively, also in electrical engineering.

In 1958 he joined the Cable Development Laboratories of the Northern Electric Company in Lachine, Quebec, where he carried out work on ionization discharges in cavities, and on dielectric losses in cable insulating systems. In 1963 he joined the Northern Electric Research and Development Laboratories in Ottawa, where he continued his work on discharges and di-

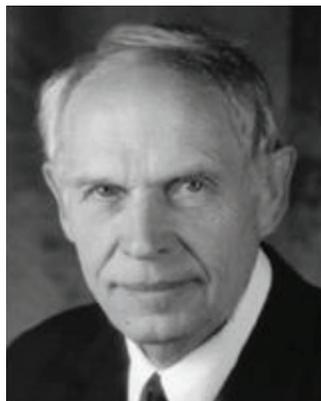
electrics, becoming increasingly involved in thin film dielectrics with application to integrated circuits and semiconductor devices. In 1968 he joined the Institut de Recherche d'Hydro Quebec (IREQ), engaging in research on partial discharge phenomena and on properties and aging of dielectric materials with application to high voltage cables, transformers, and rotating machines. In 1980 he was appointed scientific director of the Materials Science Department. One of his major achievements there was the design at the High Power Lab of an accelerated aging experiment with three simultaneous aging factors (electrical, thermal, and mechanical), a world premiere. The objective was to develop an acceptance test for newly developed generator bars.



ca 1963



1994



2011



2014

The official DEIS website is <http://sites.ieee.org/deis/>. It contains comprehensive up-to-date information on the following:

- The DEIS—its structure, mission, and vision
- IEEE DEIS conferences—Directly sponsored IEEE DEIS conferences, to which a DEIS membership discount will apply, are marked with the DEIS logo.
- *IEEE Electrical Insulation Magazine*—Selected recent articles and editorials are briefly summarized, and links to the complete texts are provided. Guidelines on the preparation of articles for publication in the magazine and instructions for submitting an article can be downloaded.
- *IEEE Transactions on Dielectrics and Electrical Insulation* (TDEI)—The same materials are available as for the *Electrical Insulation Magazine* above.
- DEIS educational videos and DEIS chapter resources
- Career opportunities
- DEIS blogs, forums, and more!



Burghausen (Austria), 2011.

Dr. Bartnikas is the author of a large number of scientific and technical papers in the area of dielectrics, gaseous discharges, and associated measurement techniques (more than 128 listed on IEEE Explore alone). He was the editor of the ASTM monograph/book series *Engineering Dielectrics* and of two books titled *Elements of Cable Engineering* and *Power Cable Engineering*. He was adjunct professor at the University of Waterloo, the École Polytechnique de Montréal, and McGill University, supervising numerous graduate students. Since 1995 he has been a visiting professor at the University of Rome La Sapienza in Italy.

Dr. Bartnikas is a recipient of many scientific awards. From IEEE he received in 1984 the Thomas Dakin Lecture Award and the Centennial Medal, in 1987 the J. B. Whitehead Lecture Award, in 1989 the Morris E. Leeds Award “for the development

of widely-used measurement techniques for dielectric materials and insulation systems,” and in 1993 the McNaughton Medal recognizing his contributions to the engineering profession in Canada. He is an Officer of the Order of Canada. From ASTM he received in 1985 the Charles B. Dudler Award and the Arnold H. Scott Award from Committee D9.

He is a Life Fellow of the IEEE (1997), ASTM (1985), the Institute of Physics (UK), and the Royal Society of Canada (Academy of Science division). He held the position of chair of the ASTM Committee on Electrical and Electronic Insulation Materials (D27) from 1979 to 1985. He also served as president of the IEEE Dielectrics and Electrical Insulation Society (DEIS) and was a member of the IEEE Energy Committee and the IEEE Insulated Conductors Committee. He was chair of IEC TC10 Committee on Insulating Fluids from 2008 to 2013.

Michel Duval, who has been his colleague at IREQ since 1970, says he benefited a lot from his mentorship and was encouraged by him to serve as a volunteer for the IEEE Montreal section and other IEEE committees. This helped him improve his group management skills and professional contacts as a junior scientist.

Laurent Lamarre, who has been another of his colleagues at IREQ since 1982, says his contributions to IREQ and to the field of electrical insulation and partial discharges are immense. He took the photo above of some of Bartnikas’s certificates, awards, and prizes on the south wall of his office at IREQ, on which are affixed dozens of them.

Bartnikas spent a long period (from 1995 to the present) as visiting professor at the University of Roma, collaborating with Massimo Pompili. In the early stages of this collaboration Bartnikas and Massimo pioneered the setting up of partial discharge ultrawide band detection systems for insulating liquids, with important findings that are applied worldwide today. The collaboration with Massimo continued through Bartnikas's work as a well-known guest editor of *IEEE Transaction on Dielectrics and Electrical Insulation*. Important issues on partial discharges and dielectric liquids appeared in 1998, 2004, 2008, 2012, and 2015. Bartnikas also shared with Massimo the position of IEC TC10



Paris, 2007.

(Fluids for Insulation) officer from 2007 to 2011, trying to unify some IEC and ASTM standards, e.g., the procedures for partial discharge and breakdown measurement in dielectric liquids. As IEC TC10 chair, Bartnikas has been particularly appreciated for his scientific prestige and his capacity to maintain fruitful discussion among the experts in the existing working groups. Two pictures on the previous page show Bartnikas in his role as IEC TC10 chair.

Contributors to this text of appreciation: Michel Duval, Laurent Lamarre, and Massimo Pompili, on behalf of all the other colleagues and friends of Bartnikas, who greatly admire him and wish him and his wife a very happy retirement.



## Professor Antonio Castellanos (1947–2016)

Professor Antonio Castellanos was for several years a treasured colleague and friend. A person with the skills and foresight of an experienced physicist, he added much to our tripartite collaboration with Pierre Atten on NATO and European research contracts. His ability to read, write, and lecture fluently in English, French, and, of course, Spanish was impressive and led him to receive many invitations to engage in further collaboration and to lecture on the international stage.

He was passionately interested in the fluid dynamic instabilities resulting from an injection of space charge into insulating liquids, and the consequent development of analytical and numerical procedures to describe the onset of chaotic dynamics. This was further extended to the implications, both analytically and experimentally, for the augmentation of heat transfer in insulating liquids. His subsequent work on liquid bridges in microgravity preceded his more recent venture into and contributions to the study of powder charging and dynamics.

His contact with and direction of many graduate students was of especial concern to him.

On a personal note, I remember well him asking me why the city of Plymouth was so prominent on maps of the British Isles. My reference to Sir Francis Drake and the Spanish Armada caused an ebullient response, and will always remind me that, although coming from entirely different cultural backgrounds, we could always work in harmony and with good humor. The electro-hydrodynamic research community has lost and will sadly miss one of its founding members.

Tony Richardson (retired)  
Department of Engineering Mathematics  
University of Bristol, UK

