Dr. Baruch Levush

Superintendent of the Electronics of the Science and Technology Division Naval Research Laboratory

Dr. Levush entered the Senior Executive Service (SES) as the Superintendent of the Electronics Science and Technology Division (ES&TD) at the Naval Research Laboratory (NRL) on 2 December 2012. Before joining the Civil Service he worked at the ES&TD for 17 years since 11 September 1995. Dr. Levush joined the NRL as the Head of the Theory and Design Section of the Vacuum Electronics Branch and in 2003 he became the Head of the Vacuum Electronics Branch.

As the ES&TD Superintendent Dr. Levush is responsible for the technical and administrative management of a broad spectrum of highly sophisticated research programs involving in-house experimental research at the frontiers of electron device technology and technical management of industrial contract programs, which provide advanced prototype electron devices for new weapons and other DOD systems. Special emphasis is placed on the reliability physics of electron devices, the radiation hardening and vulnerability assessment of electron devices, components and assemblies, the development of high performance microwave and millimeter wave vacuum electron devices, development of microwave integrated circuits and passive devices, development of novel photovoltaic materials and devices, the investigation of new semiconductors and insulator materials and the electron physics of interfaces and layered films.

Dr. Levush was born in Yakutsk, Russia. He graduated from Latvian University, Riga, Latvia in 1972 and received his Ph.D. in Plasma Physics from Tel-Aviv University, Israel, 1981. In 1985 Dr. Levush joined the Institute for Plasma Research at the University of Maryland, where his research focused on the physics of coherent radiation sources and the design of high-power microwave and millimeter wave sources such as gyrotrons, relativistic backward-wave oscillators and free electron lasers.

Dr. Levush has been actively involved in developing theoretical models and computational tools for analyzing the operation of vacuum electronic devices and in inventing new concepts for high power and broadband amplifiers that operate at frequencies ranging from 1 to 1,000 GHz. In 1997 Dr. Levush became responsible for developing a suite of new design codes for vacuum electronic devices under the auspices of the Office of Naval Research. The simulation tools pioneered by his research team have been very successful and are being used extensively by the Navy, U.S. industry, small businesses, and academia to improve the performance of existing devices, create new devices, and investigate new amplifier concepts.

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In 2001, Dr. Levush was elected a Fellow of the Institute of Electrical and Electronics Engineers (IEEE). He holds numerous awards including the Robert L. Woods Award from the U.S. Department of Defense for his role in the successful development of a 10 kW average power, W-band gyro-klystron (1999), the NRL Award of Merit for Group Achievement as part of the W-band Gyro-klystron and WARLOC Radar Team (2002), an R&D100 Award for MICHELLE, a three dimensional charged-particle beam optics software tool (MICHELLE has been selected by R&D 100 Magazine as One of the 100 Most Technologically Significant New Projects of the Year) (2006), the IEEE International Vacuum Electronics Conference Award (2007), the NRL E.O. Hulburt Annual Science Award (NRL's highest civilian honor for scientific achievement) (2007), the Department of the Navy Captain Robert Dexter Conrad Award for scientific achievement (the Conrad Award consists of a gold medal and a citation signed by the Secretary of the Navy) (2009), the IEEE Electron Devices Society's J.J. Ebers Award (the J. J. Ebers Award recognizes scientific, economic, or social significance in the broad field of electron devices) (2009) and the IEEE-USA Harry Diamond Memorial Award (the Harry Diamond Award honors individuals for distinguished technical contributions in the field of electro technology while in U.S. government service) (2011). Dr. Levush is the co-author of more than 185 journal articles and has presented many invited talks at international conferences and workshops.