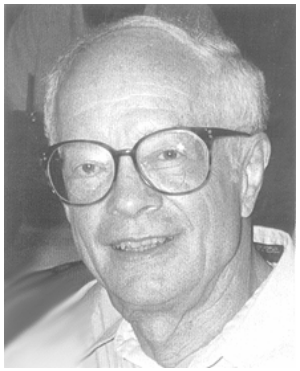
2007 Microwave Pioneer Award



Nathan O. Sokal received Bachelor's and Master's degrees in 1950 from the Cooperative Course in Electrical Engineering at the Massachusetts Institute of Technology, Cambridge, Massachusetts. During his Junior and Senior years, he spent alternate semesters at MIT and at Philco Corp., Philadelphia, Pennsylvania, where he worked on industrial projects: designing and testing a control unit for an aircraft-radar system, developing a low-noise IF amplifier for a radar receiver, testing the electrical and acoustic properties of loudspeakers and their enclosures, investigating the reasons for failures in the first production run of television receivers and developing preventive measures, and designing and building a test set for kilowatt-class thyratrons.

From 1950 to 1965 he was involved with design, manufacturing, and field installation and operation of a wide variety of analog and digital equipment for instrumentation, control, communications, computation, and signal and data processing: he held engineering and supervisory positions with Holmes and Narver, Inc., working on instrumentation and data-recording of blast effects in a nuclear-weapon test at Eniwetok Atoll, Marshall Islands, South Pacific; M.I.T. Lincoln Laboratory, Lexington, Massachusetts, working on development, field-installation, and field-test of equipment for an air-defense system against potential bomber aircraft; Mack Electronics Division of Mack Trucks, Inc. and its independent successor, Di/An Controls, Inc., Boston, Massachusetts, working on development of digital and analog data-gathering and data-processing equipment, and also as director of applications engineering; and Sylvania Electronic Systems Division, Needham, Massachusetts, developing military cryptographic-communications equipment and, later, as Department Manager of an advanced-R&D department for digital-computing technology.

In 1965, he founded Design Automation, Inc., an electronics consulting company doing product design, design review and needed redesign, and technology development, for equipment manufacturers and government agencies, and technical consulting attorneys. Much of that work has been in high-efficiency switching-mode power conversion and power amplification, at frequencies from dc to 2.5 GHz.

Mr. Sokal holds eight patents in power electronics, including the Class-E switching-mode high-efficiency RF power amplifier and a high-efficiency linear RF power amplifier using Envelope Elimination and Restoration, in which all power-handling is accomplished in the high-efficiency switching mode.

He is an author or co-author of one book and about 130 technical papers, mostly in high-efficiency generation of RF power and dc power.

In 1989, Mr. Sokal was elected a Fellow of the IEEE for his contributions to the technology of high-efficiency power conversion and RF power amplification. He is a Technical Adviser to the American Radio Relay League, on RF power amplification and dc power conversion, and a member of Eta Kappa Nu, Sigma Xi, and The Electromagnetics Academy honorary professional societies. He has reviewed manuscripts submitted for twelve IEEE publications and conferences, two IEE (UK) journals, the *Transactions of the South African Institute of Electrical Engineers*, the *EPE (European Power Electronics) Journal*, and EPE Conferences.

Mr. Sokal gives pro-bono technical suggestions to graduate and undergraduate students via E-mail, and advises them on their theses. He served on the committee judging a student’s successful thesis defense at the University Federal de Santa Catarina, Florianopolis, Brazil.