AWARDS

Presented at the Microwave Theory
and Techniques Society International
Symposium - Palo Alto, California
May 13, 1975

SPECIAL RECOGNITION MICROWAVE
APPLICATION AWARD

TO

Phillip H. Smith

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MICROWAVE CAREER AWARD

TO

Harold Alden Wheeler

xxxxxx

DAVID SARNOFF AWARD

TO

Bernard C. DeLoach, Jr.

xxxxxx

MICROWAVE PRIZE

TO

Charles A. Liechti and Robert L. Tillman

xxxxxx

MICROWAVE APPLICATION AWARD

TO

Dean F. Peterson III

xxxxxx

1974 SPECIAL RECOGNITION

MICROWAVE APPLICATION AWARD

TO

PHILLIP H. SMITH

"For the Application of Microwave Theory and Techniques to the practical realization of a Circular Transmission Line Chart for analyzing Microwave Circuits, the SMITH CHART."

Phillip H. Smith received his B.S. in Electrical Engineering from Tufts College in 1928 and upon graduation, joined the technical staff of Bell Telephone Laboratories where he became involved in the early development of transmission lines and directional antennas for the Bell System's shortwave overseas radio telephone circuits. During this time he developed early forms of the chart which was later to become generally known as the "Smith Chart."

From 1935 to the outbreak of World War II, Mr. Smith was engaged in the design of directional antenna equipment for commercial AM radio broadcasting. During the war his experience with directional antennas was utilized in the design and development of RADAR antennas where his numerous contributions placed him on the Reserved List of War Manpower Commission's Committee of Scientific and Research Personnel.

Following the war, Mr. Smith turned his attention to commercial FM radio broadcasting antenna design and subsequently invented the "Cloverleaf" antenna. More recently he has been involved in Military weapon systems studies and design, and has supervised groups responsible for the electrical design of the DEW line, SAGE systems, NIKE-ZEUS, and NIKE-X radar antennas.

Mr. Smith retired from Bell Laboratories in 1970. He is now a consultant in Berkeley Heights, NJ.

MICROWAVE THEORY AND TECHNIQUES SOCIETY

1974 MICROWAVE CAREER AWARD

TO

Harold Alden Wheeler

H. A. Wheeler was unanimously endorsed by the MTT Society's ADCOM to receive the second Microwave Career Award. This action, taken on the recommendation of MTT Awards Committee, chaired by John Horton, recognizes "a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques."

Mr. Wheeler graduated from George Washington University in 1925 with the degree of B.S. in Physics. In 1972 he received the honorary degree of Doctor of Science.

While in college, he became acquainted with Professor Hazeltine of Stevens Tech, who was then designing the "Neutrodyne" receiver. This design captured the market, and its success led to the formation of Hazeltine Corporation as a patent licensing and engineering organization. Shortly afterward, Wheeler invented and demonstrated the diode AVC which was generally adopted for broadcast receivers and is still used in all AM and TV receivers.

Until World War II, he was active in designing and testing broadcast receivers. From 1930, he was in charge of the company's Bayside Laboratory, and from 1939 was VP and Chief Consulting Engineer at the newly commissioned Little Neck Laboratory. There he was active in FM and in the TV developments for which he was awarded the Morris Liebmann Prize by IRE in 1940.

During World War II, he continued in this capacity in the Navy program of IFF (Interrogation Friend or Foe) which was an accessory to radar.

After the war, Wheeler formed an independent engineering group, Wheeler Laboratories, Inc., which achieved recognition in the engineering of microwave circuits, tracking-radar antennas, and phased arrays for military and aerospace applications. This company, with laboratories in Great Neck and Smithtown, was acquired by Hazeltine Corporation in 1959 as a subsidiary. In 1971, the WL staff was merged into the Research Laboratories of Hazeltine in Greenlawn, where they are now active in antenna developments for various purposes, especially for the Doppler MLS and other applications in air traffic control.

Wheeler is the author of many technical papers presented in IRE-IEEE forums and published in their periodicals. His specialties before the war were related to radio receivers for AM, FM, and TV. During and after the war, he specialized in the fields of microwaves and of antennas for a great variety of applications. He has been awarded about 180 U.S. patents and many foreign patents. He is probably best known for his 1939 IRE paper entitled, "The Interpretation of Amplitude and Phase Distortion in Terms of Paired Echos," which was related to TV. He has served as chairman of many committees and was elected a Director of IRE for two terms, 1940-46. He was a Fellow of both IRE and AIEE, and received the Medal of Honor from the successor IEEE in 1964.

1974 MICROWAVE PRIZE

TO

Charles A. Liechti

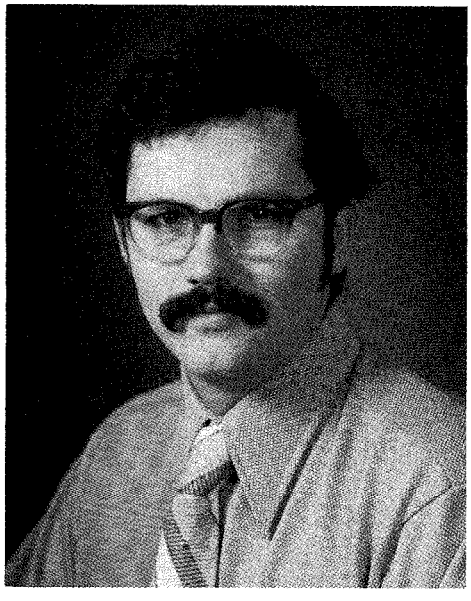
Robert L. Tillman

For a very significant contribution to the field of endeavor of the IEEE MTT Society in their paper entitled "Design and Performance of Microwave Amplifiers with GaAs Schottky-Gate Field-Effect Transistors," published in the IEEE Transactions on Microwave Theory and Techniques, Volume MTT-22, Number 5, May 1974.

Charles A. Liechti received the M.S. degree in Physics and the Ph.D. degree in Electrical Engineering from the Swiss Federal Institute of Technology, Zurich, Switzerland, in 1962 and 1967, respectively.

While at the Swiss Institute of Technology, he was engaged in applied research on microwave solid-state circuits with emphasis on varactor-controlled wide-band phase shifters. In 1968 he joined the Hewlett-Packard Company, Palo Alto, California, where he has been concerned with the design and development of IMPATT oscillators and frequency converters with Schottky-barrier diodes. Since 1971 he has been in charge of GaAs field-effect transistor devices, microwave amplifiers, and GaAs digital integrated-circuit developments at the Solid State Laboratory.

Dr. Liechti received outstanding contributed paper awards at the International Solid-State Circuits Conference in 1973 and 1974.



Robert L. Tillman was born in El Paso, Texas in 1947. He received the B.S. (E.E.) degree from the Massachusetts Institute of Technology, Cambridge, and the M.S.E.E. degree from Stanford University, Stanford California, in 1969 and 1971, respectively.

In 1969 he joined Texas Instruments Incorporated, Dallas, where he worked in the development of integrated power amplifiers in the 1-3 GHz frequency range. Since 1971 he has been with Hewlett-Packard Company, Palo Alto, California, and has worked in the areas of wideband amplifiers, YIG-tuned oscillators and the microwave application of GaAs FET's. At present, he is with the Microwave Technology Center, Hewlett-Packard Company, where his interests include fabrication and application of GaAs FET's.

1975 DAVID SARNOFF
AWARD

PRESENTED TO

BERNARD C. De LOACH, JR.

"For contributions to and leadership in the development of the impact avalanche and transit time (IMPATT) device."

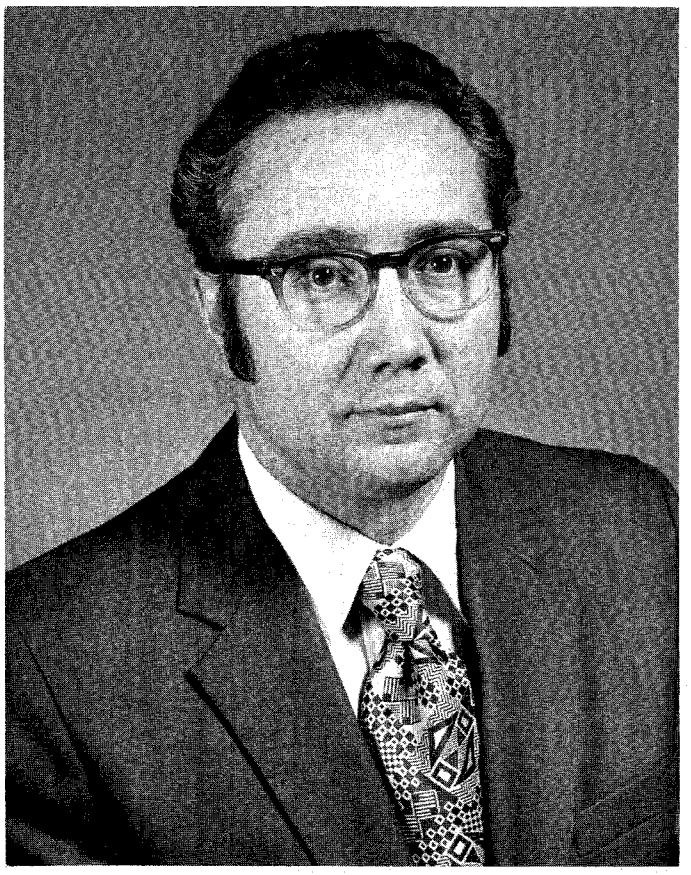
Dr. DeLoach joined Bell Laboratories in 1956 as a member of the Radio Research Department. In 1963 he became supervisor of a group concerned with investigations of charge flow in microwave switching diodes. His group also initiated the development of the IMPATT diode oscillator.

In 1966 Dr. DeLoach was promoted to head of the Avalanche Microwave Devices Department. In this position, he continued work on the IMPATT diode oscillator. He also was responsible for the development of high speed integrated circuits and for exploratory studies of charge flow in experimental microwave devices.

He assumed his present position in February 1970.

A native of Alabama, Dr. DeLoach received his B.S. and M.S. degrees in physics from Auburn University in 1951 and 1952, respectively. He received his Ph.D. degree in physics from Ohio State University in 1956. A fellow of the Institute of Electrical and Electronics Engineers, he is also a member of Sigma Pi Sigma, Sigma Xi, and Pi Mu Epsilon.

Dr. DeLoach and his family reside in Murray Hill, NJ.



1974 MICROWAVE APPLICATION AWARD

TO

Dean F. Peterson III

"For the Application of Microwave Theory and Techniques to the Design of Practical, Reliable, High Power IMPATT Amplifiers."

Dean F. Peterson (S'70-M'71) was born in Melbourne, FL, on March 28, 1945. He received the B.S. degree in electrical engineering from Utah State University, Logan, in 1967, and the M.S. and Ph.D. degrees from the Massachusetts Institute of Technology, Cambridge, in 1969 and 1971, respectively.

From 1968 to 1971 he worked as a Research Assistant in the Solid-State Microwave Electronics Group, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, where he was engaged in the characterization and modeling of avalanche diodes for use in microwave amplifiers and oscillators. Since 1971 he has been a Staff Member at the Massachusetts Institute of Technology, Lincoln Laboratory, Lexington, where he is developing millimeter-wave IMPATT diode amplifiers for communications systems.

Dr. Peterson is a member of Sigma Xi.