1976 MTT Awards

G. P. RODRIGUE, FELLOW, IEEE

AT the annual Symposium Banquet, MTT President L. R. Whicker presented the following MTT Society awards for the year 1976:

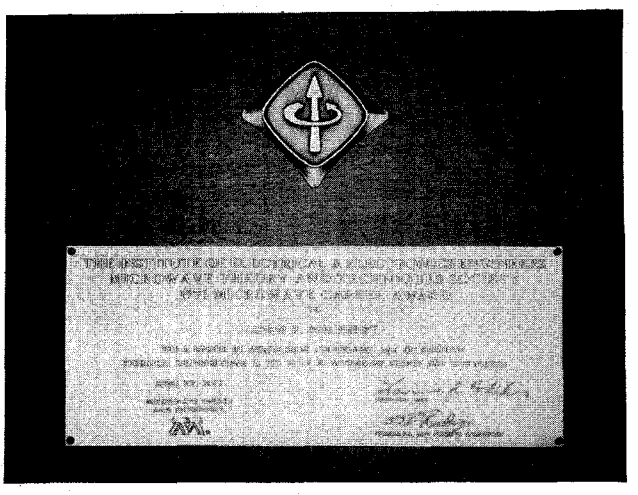
Microwave Career Award—John R. Whinnery
Microwave Prize—Robert A. Pucel, Daniel Massé, Richard Bera
Microwave Application Award—Martin G. Walker.

In addition, the 1976 National Lecturer Plaque was presented to Fred Sterzer, and J. Lamar Allen received his IEEE Fellow Certificate. MTT-S AdCom honored Seymour B. Cohn and Arthur A. Oliner by naming them Life Members of AdCom. They joined A. C. Beck, D. D. King, W. W. Mumford, T. S. Saad, and K. Tomiyasu as Life Members of AdCom. Five former members of AdCom were named as recipients of Distinguished Service Awards. Those recognized for their extended service to AdCom are R. S. Beatty, A. Clavin, G. Haddad, S. Okwit, and S. Rosenthal.

MTT Society Awards

Microwave Career Award

The Microwave Career Award is presented aperiodically to an individual for a career of meritorious achievement and outstanding technical contributions in the field of microwave theory and techniques. John R. Whinnery was named in 1976 to receive the Microwave Career Award in recognition of his extensive contributions over a period of almost forty years. Dr. Whinnery, recognized as an inventor, author, and educator, is probably most widely known for his classic texts on electromagnetic theory. He has been associated with the University of California, Berkeley, for most of his career. His activities have encompassed virtually all aspects of microwaves, including tubes, transmission lines, antennas, and more recently, lasers and optical communications. As recipient of the Microwave Career Award, Dr. Whinnery received a certificate, a plaque, and a check for $500. Further biographical information on Dr. Whinnery is given below.



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Microwave Theory and Techniques Society
1976 Microwave Career Award
to
John R. Whinnery

For a Career of Meritorious Achievement and Outstanding Technical Contributions in the Field of Microwave Theory and Techniques.

June 22, 1977

L. R. Whicker, President, MTT
Chairman, MTT Awards Committee

MICROWAVE THEORY AND TECHNIQUES

John Whinnery (A'41–SM'44–F'52) was born in Colorado. He received the B.S. degree in electrical engineering from the University of California, Berkeley.

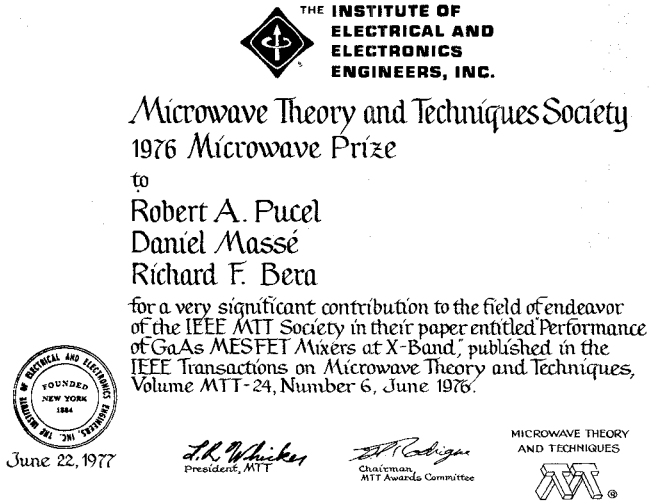
His first job was at the General Electric Company, Schenectady, on the Test Program, and later the Advanced Engineering Program. His first assignment was with W. C. Hahn, who at that time (1939), had velocity modulation tubes producing 100-watts CW at 10-cm wavelengths. There were lower power tubes operating at 5-cm wavelengths, some electrically tunable. A following assignment was with Simon Ramo, working with microwave magnetrons, and during that assignment Ramo invited him to join in a book he was starting—one that became the well-known *Fields and Waves in Modern Radio* after many drafts and some trial uses at G.E. During World War II he worked on microwave discseal triodes of the lighthouse class with Ramo, E. D. McArthur, Jim Beggs, and others. Using techniques learned from Hahn, he coauthored a series of papers on transmission line and waveguide discontinuities useful in design of discontinuous structures. During this period he taught Defense Training classes and was also a part-time lecturer at Union College. Following the war, Whinnery returned to Berkeley to complete a doctorate on microwave antenna problems, teaching first as a Lecturer and then as an Associate Professor. He developed the undergraduate course in Electromagnetic Fields and Waves and graduate courses in Microwave Networks and Microwave Electron Tubes. His consulting work at that time was with the Hughes Aircraft Company on phased-array antennas. From 1952–1953, on a leave from the University, he served as Head of Microwave Tube Research in the Electron Tube Laboratory at Hughes with emphasis on traveling-wave tubes for the Hughes systems applications. His research after returning to the University stressed microwave tubes, where

associates and graduate students studied backward-wave amplifiers, beam noise, and reentrant crossed-field devices. He was also Director of the Electronics Research Laboratory and the Chairman of the Electrical Engineering Department during this period. From 1959 to 1963 he was Dean of the College of Engineering at Berkeley, CA. He then took an industrial leave, at the Bell Laboratories, Murray Hill, NJ, where he worked on lasers and optical communication problems. His research at Berkeley, following that leave, reflected these new interests with stress on thermal-lens effects arising from laser beams in lossy materials, transverse mode locking in laser cavities, acousto-optic interactions, and, more recently, optical guiding by liquid crystals and curved dielectric surfaces. He has been on numerous government advisory committees, principal of which were the Advisory Group on Electron Devices for DoD, the Science and Technology Advisory Committee, advisory to NASA for the Apollo program, the Standing Committee on Controlled Thermonuclear Research of the former AEC, and several advisory committees for the National Science Foundation. He recently completed service on the Telecommunications Committee of NAE-NRC and is a member of the Committee on Science and Public Policy (COSPUP) of NAS. In addition to the leaves in industry, visiting years were spent at Stanford University, CA, and the University of California, Santa Cruz. He has been a member of the Board of Directors of Granger Associates, a manufacturer of microwave radios and antennas, since the beginning of that company. He served in all offices of the San Francisco IRE and was later on its Board of Directors; still later, he was on the Board of IEEE, becoming Secretary in 1970.

Prizes and Awards include the IEEE Education Medal (1967), the Lamme Medal of the American Society of Engineering Education (1975), a Guggenheim Fellowship (1959), and a Research Professorship in the Miller Institute for Basic Research in Science (1973). He is a member of the National Academy of Engineering and the National Academy of Sciences.

Microwave Prize

The Microwave Prize is awarded anually for the paper making the most significant contribution in the field of interest to the Society among those published in an official IEEE publication during the year ending June 30th.


THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Microwave Theory and Techniques Society
1976 Microwave Prize
to
Robert A. Pucel
Daniel Massé
Richard F. Bera
for a very significant contribution to the field of endeavor of the IEEE MTT Society in their paper entitled Performance of GaAs MESFET Mixers at X-Band," published in the IEEE Transactions on Microwave Theory and Techniques, Volume MTT-24, Number 6, June 1976.

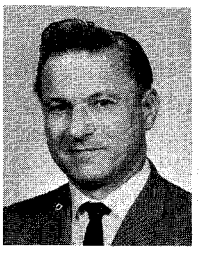
June 22, 1977

President, MTT

Chairman, MTT Awards Committee

MICROWAVE THEORY AND TECHNIQUES

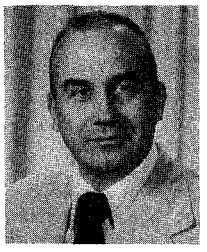
The 1976 Microwave Prize was awarded for the paper "Performance of GaAs MESFET Mixers at *X* Band," published in the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, vol. MTT-24, June 1976, pp. 351–360. The authors, R. A. Pucel, Daniel Massé, and Richard Bera, each received a certificate and a check for $100. Their biographies follow.



Robert A. Pucel (S'48–A'52–M'56–SM'64) received the B.S. and M.S. and D.Sc. degrees in electrical communications from the Massachusetts Institute of Technology, Cambridge, MA, in 1951, 1951, and 1955, respectively.

From 1948–1951 he was a Test Engineer on the MIT Cooperative Course with the General Electric Company. Following his graduation, he joined the Microwave Tube Group at the Research Division of the Raytheon Company, Waltham, MA. A year later, he returned to MIT, where, from 1952–1955 he was staff member of the MIT Research Laboratory of Electronics, doing theoretical studies in network theory, the basis for his doctoral thesis. He studied under the late Professor Guillemin. He rejoined the Research Division of Raytheon in 1955. In 1965 he organized the first microwave semiconductor and integrated circuits program at Raytheon and was its manager until 1970. Following this, he served as Consultant to this program and semiconductor programs in other divisions of Raytheon. In 1974 he was appointed a Consulting Scientist at the Research Division, the highest professional level at Raytheon. His work has involved theoretical and experimental studies of new semiconductor device concepts and the design of high-frequency semiconductor devices, for example, the tunnel diode, varactor, avalanche diode, Gunn and LSA structures, metal–semiconductor–metal (MSM) diodes, experimental studies of microstrip propagation on dielectric and magnetic substrates, thin-film components for microwave integrated circuits, and miniature dielectric cavities. His recent studies are concerned with noise and signal properties of microwave field-effect transistors and Read diodes. He has published extensively on these topics and has patents in this area of research.

Dr. Pucel is a member of the Electron Devices and the Microwave Theory and Technique Societies. He is also a Registered Professional Engineer of the Commonwealth of Massachusetts.



Daniel Massé received his diploma in electrical engineering from École Centrale de TSF, Paris, France, in 1951.

From 1951–1953 he was engaged in research and development of remote control equipment at the SECRE, Paris. In 1953 he joined the Compagnie Générale de TSF, Paris, to work on fire-control analog computers. From 1957 to 1967, he was with the Special Microwave Device Operation of Raytheon Company where he was engaged in the research and development of ferrite components, specializing in TEM devices. In the period from April 1961–May 1962 he was on leave at the Research Division of Raytheon working on an Air Force contract study of nonlinear microwave ferroelectric devices. Since 1967, he has been a Staff Member of the Solid State Physics and Microwave Group of the Research Division. His current interests and activities are the measurement of ferrite, dielectric, and semiconductor material properties, the design and development of microwave integrated circuits and ferrite devices, the characterization and modeling of low-noise and high-power FET's and their associated circuits.

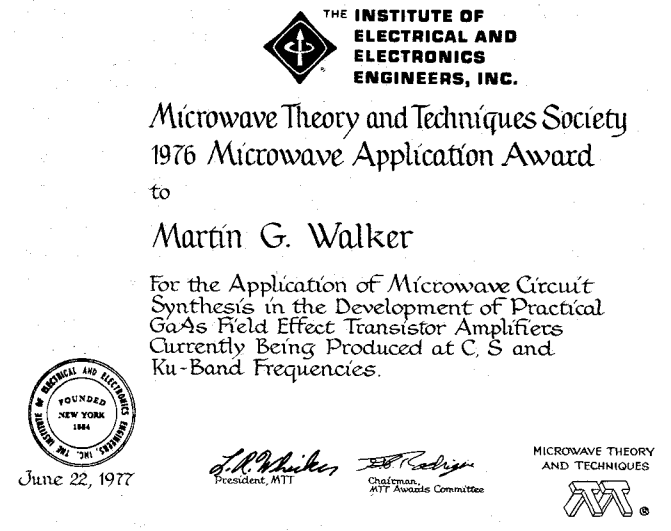
Richard Bera attended the Massachusetts Institute of Technology from 1961–1966.

From 1966–1968 he was a member of the Department of Environmental Health Engineering of the US Army Medical Corps. In 1968 he joined the Research Division of Raytheon where he was engaged in semiconductor characterization and measurement of TRAPATT diode oscillators. Since 1972 he has been a Staff Member of the Research Division and has participated in the development of GaAs FET oscillators and mixers.

Mr. Bera is currently involved in the design and evaluation of IMPATT diode microstrip circuits.

Microwave Application Award

The Microwave Application Award is presented aperiodically to an individual for an outstanding application of microwave theory and techniques. Martin G. Walker of the Watkins–Johnson Company was named in 1976 to receive this award for his application of microwave circuit synthesis in the development of GaAs FET amplifiers. Mr. Walker received a certificate and a check for $100. A photograph of the certificate showing the full citation and a brief biography of Mr. Walker follows.


THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Microwave Theory and Techniques Society
1976 Microwave Application Award
to

Martin G. Walker

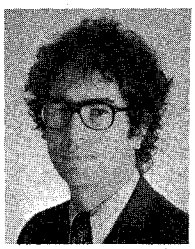
For the Application of Microwave Circuit Synthesis in the Development of Practical GaAs Field Effect Transistor Amplifiers Currently Being Produced at C, S and Ku-Band Frequencies.

June 22, 1977

President, MTT

Chairman, MTT Awards Committee

MICROWAVE THEORY AND TECHNIQUES



Martin Walker (S'72–M'74) is currently a member of the Solid State R & D Department of the Watkins–Johnson Company, his principal responsibility being the development of GaAs FET amplifier circuits for operation at 10 GHz and above. His current technical activities include the design and development of 12–18-GHz broad-band amplifiers as TWT replacements and 10-GHz narrow-band low-noise FET amplifiers for radar applications. He previously developed 12–15-GHz and 12–18-GHz amplifier prototypes for the US Army (ECOM) and a 9.6-GHz radar front end for the US Air Force (AFAL). The 12–15 and 12–18 GHz FET amplifiers were the first reported for those frequency bands. The radar front end included full integration of an RF preamp, RF gain control, mixer, FET voltage controlled oscillator, and IF amplifier—all in a highly miniaturized configuration. He was previously responsible for the successful development of 4–8 and 8–12.4 GHz FET amplifiers at the Watkins–Johnson Company. A key contribution to the success of this amplifier effort was his synthesis of a very complete RF circuit design computer program which included a sophisticated circuit optimization capability. His computer program has constituted an essential contribution to the success of several GaAs FET RF amplifier programs at Watkins–Johnson; he has acted as a computer analysis consultant on numerous projects. While at MIT, he developed fabrication techniques for BARRITT diodes. He fabricated and characterized the various devices to optimize performance.

Mr. Walker is a member of Tau Beta Pi and Eta Kappa Nu.

National Lecturer's Plaque

Fred Sterzer, 1976 MTT-S National Lecturer, was presented a plaque for his service during the year in giving his lecture "Microwave Solid State Devices." Dr. Sterzer spoke at more than 19 chapters, including lectures overseas. A synopsis of his talk is included in the December 1976 issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES, and a photograph of this National Lecturer's Plaque is shown below.