1988 MTT-S Awards

C. T. RUCKER, FELLOW, IEEE

AT THE ANNUAL Symposium Banquet, MTT-S President Barry E. Spielman presented the following awards:

Microwave Career Award	Leo Young
Microwave Prize	Kazuhiko Honjo and Mohammad Madihian
Microwave Application Award	Masumi Fukuta and Louis S. Napoli
Distinguished Service Award	Fred J. Rosenbaum
Distinguished Microwave Lecturers	David K. Barton and Rolf H. Jansen

We were privileged to have IEEE President Russel Drew attending to present Fellow Awards to eight distinguished MTT-S members. The Service Awards presented by the MTT-S President were a Past President's Pin, to David N. McQuiddy, and a Meritorious Service Award to H. George Oltman. Other presentations included Certificates of Recognition to Steven L. March, 1987 Symposium Steering Committee Chairman and Retiring AdCom member, and Reynold S. Kagiwada, 1987 Symposium Technical Program Committee Chairman. A special "surprise" certificate was presented to John Bryant for his extraordinary efforts related to the Hertz Centennial Celebration and Exhibit.

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. The 1988 Career Award was presented to Leo Young. His contributions to the MTT-S technical area have spanned almost 40 years.

Dr. Young's career began in England with work on antennas and waveguides in the early 1950's. Those with long tenure in MTT-S know him first, however, for his work on filters while at SRI. The publication *Design of Microwave Filters*, with G. L. Matthai and E. M. T. Jones, is a classic still today. Many will recognize Dr. Young for his work while at NRL, where he continued his work in microwaves and played an advocacy role for millimeter waves. Others will recognize his tenure and contributions while at the Office of the Secretary of Defense. There he was responsible for basic research, university relations, and laboratory management policy. He set up, under the direction of Under Secretary Richard DeLauer, the DoD University Forum, organized the Small Business Innovative Research Program, chaired the IR&D technical evaluation group, and provided oversight into the DRIC. Finally, we recognize Dr. Young for his contributions, with his late wife, Fay, to numerous professional and pension activities.

Dr. Young's Career Award citation reads, "For a Career of Meritorious Achievement and Outstanding Technical Contributions in the Field of Microwave Theory and Techniques." The award includes a plaque, a certificate, and $2000.

Leo Young (M'54–SM'56–F'68) came to the United States from England in 1953, to join the Westinghouse Electric Corporation in Baltimore, MD. He had been trained as a physicist at Cambridge University, England, where he also attended a few courses in electronics. He had become excited by the new field of microwaves, which had recently proved so important in winning the war. He turned his attention to the latest applications of radar and began to design antennas and waveguides in the research laboratories of A. C. Cossor and Decca Radar in London. The MIT Radiation Laboratory series of books were just being published and each one was awaited eagerly by the small microwave community. The latest developments were still coming from the U.S., and so he set sail from Southampton with his new bride to continue his research here.

Westinghouse encouraged its engineers to continue their academic education, and Leo was fortunate in having his first American course on antennas given by the late Don King at The Johns Hopkins University, where he also studied microwave networks under Bill Huggins. He received the Westinghouse Electric Corporation's B. G. Lamme Graduate Scholarship in 1958, and the Doctor of Engineering degree from Johns Hopkins in 1959. His dissertation kindled his interest in microwave and optical filters, and a year later he joined Seymour Cohn, George Matthaei, Ted Jones, and others at Stanford Research Institute in Menlo Park, CA, to continue this work and coauthor a book on microwave filters, then in the planning stage. He remained at SRI for more than 12 years, and during that time became active in the Microwave Theory and Techniques (MTT) Group (now Society) of IEEE, receiving the Microwave Prize in 1963. He was elected IEEE Fellow in 1968, became Chairman of the MTT Administrative Committee in 1969, and was Director of Division IV on the IEEE Board of Directors from 1971 to 1974.

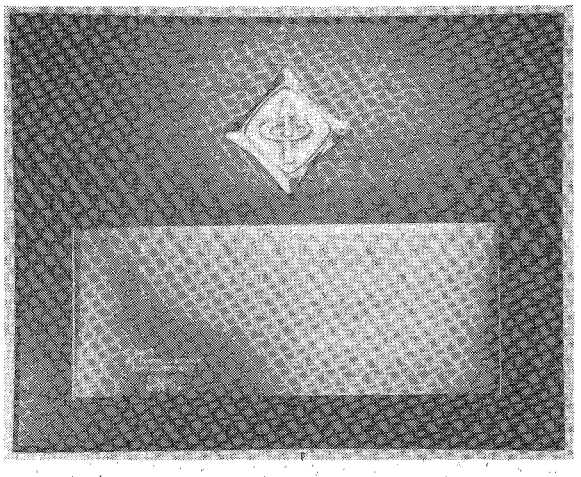
The MTT Group (Society) has always shown a strong interest in professional activities, and Leo carried that message to the IEEE Board, helping in 1972 and 1973 to institutionalize a framework of professional activities within the largest engineering society in the world. He became chairman of the new United States Activities Committee (later, Board—USAB)) in 1974. He continued to take a specific interest in IEEE pension activities, and remained chairman of the IEEE Pensions Committee under USAB from 1974 to 1978. During that period, and as a result of these IEEE activities, he coauthored with his late wife, Fay, a popular book on pension plans. He was elected 1979 Executive Vice-President of IEEE, and (by petition) 1980 IEEE President.

In 1973 he joined the U.S. Naval Research Laboratory (NRL) in Washington, DC, where he remained till 1981, when he came to the Office of the Secretary of Defense (OSD) as Director for Research and Laboratory Management. At NRL he continued to work in microwaves and electronics, and played an advocacy role for millimeter waves. At OSD, Leo has had responsibility for basic research, university relations, and laboratory management policy, set up under the direction of Under Secretary Richard DeLauer the DoD–Univesity Forum to improve the quality of the dialog with universities, organized the DoD Small Business Innovation Research program, chaired the IR&D Technical Evaluation Group, provided oversight to the Defense Technical Information Center, and had many other assignments. His current interests are mainly in the

area of technology transfer, design and manufacturing processes, and computer-aided logistics support.

Leo was married in Sunderland, England, in January 1953 to Fay Lilian Merskey, who passed away in May 1981. They had three children, Philip, an economist, Sarah, a computer scientist, and Joe, a medical student. In 1983 Leo married Ruth Breslow, also widowed and with three grown children. They had lived only a few miles apart for many years, but never met until introduced through an IEEE connection.

Leo has authored or edited 14 books, mainly on microwave subjects, and about one hundred papers. He holds more than 20 patents, is an honorary life member of the Microwave Theory and Techniques Society, was a member of the Board of Governors of the American Association of Engineering Societies, is a Fellow of the American Association for the advancement of Science, has served on numerous Committees of the National Academy of Sciences and National Academy of Engineering, and was chairman of NSF's first Engineering Advisory Committee. He has also served on committees of NASA, OSTP, and several universities (Johns Hopkins, University of California, MIT). He has traveled extensively abroad, spent a sabbatical year at the Technion in Haifa, Israel, was Distinguished Microwave Lecturer at the IEE summer school at Leeds University, England, NATO/AGARD lecturer at the University of Bologna, Italy, and has given talks at universities in India, Egypt, and Europe, as well as in the United States. He believes that the way to peace and prosperity is through education and the scientific disciplines, particularly the professional application of engineering knowledge, which is so well exemplified by the members and charter of IEEE.



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Microwave Theory and Techniques Society

1988 Microwave Career Award

to

Leo Young

for a career of meritorious achievement and outstanding contributions in the field of Microwave Theory and Techniques.

May 1988

MICROWAVE THEORY AND TECHNIQUES

Microwave Prize

The Microwave Prize is awarded annually to the author or authors of a paper published in the MTT-S TRANSACTIONS, IEEE PROCEEDINGS, or other IEEE journal which is judged to be the most significant contribution in the Society's field of interest. The award consists of a certificate and a $500 check for each author and a feature publication in the MTT-S TRANSACTIONS.

The 1988 Microwave Prize was awarded to Drs. Kazuhiko Honjo and Mohammad Madihian for their paper "GaAs-Monolithic IC's for an *X*-Band PLL-Stabilized Local Source," which appeared in the June 1986 issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES (vol. MTT-34, no. 6, pp. 707–713).

Kazuhiko Honjo (M'82) was born in Saitama, Japan, on October 28, 1951. He received the B.E. degree from the University of Electro-communication, Tokyo, Japan, in 1974 and the M.E. and D.E. degrees in electronic engineering from the Tokyo Institute of Technology, Tokyo, Japan, in 1976 and 1983, respectively.

He joined the Central Research Laboratories, NEC Corporation, Kawasaki, Japan, in 1976. He has been involved in the research and development of TRAPATT oscillators, GaAs FET circuit technology for high-power, low-noise, broad-band amplification, oscillation, mixing, and frequency division, GaAs MMIC technology including device design, process, and testing. Presently, he is engaged in the research and development of the heterojunction bipolar transistor (HBT) and its integrated circuits both for digital and microwave applications. He is now Research Manager of the Ultra-high-speed Device Research Laboratories, NEC, and is leading a HBT research group.

Dr. Honjo is a corecipient of the 1983 Microwave Prize granted by the MTT Society. He also received the Young Engineer Award from the Institute of Electronics, Information and Communication Engineers of Japan in 1980.

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Microwave Theory and Techniques Society

1988 Microwave Prize

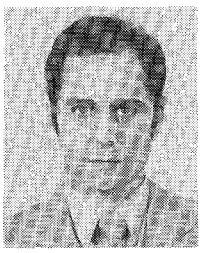
to

Kazuhiko Honjo

for a significant contribution to the field of endeavor of the IEEE MTT Society in the paper entitled: "GaAs-Monolithic ICs for an X-Band PLL-Stabilized Local Source" published in the IEEE Transactions on Microwave Theory and Techniques, Volume MTT-34, Number 6, June 1986.

May 1988

MICROWAVE THEORY AND TECHNIQUES

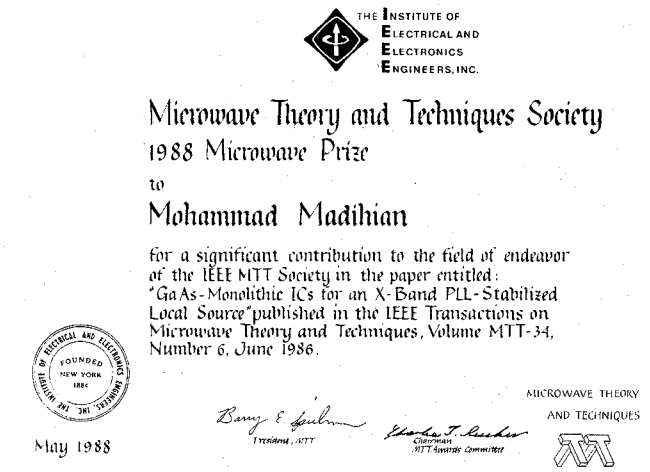


Mohammad Madihian (S'78–M'83) was born in Tehran, Iran, on January 3, 1954. He received the B.Sc. degree from the Iran College of Science and Technology, Tehran, in 1976 and the M.Sc. and Ph.D. degrees from Shizuoka University, Hamamatsu, Japan, in 1980 and 1983, respectively, all in electronic engineering. During his graduate study, he worked on research and development of phase-sensitive detectors, phase filters, microwave solid-state oscillators, and power combiners.

In 1983, he joined the Central Research Laboratories, NEC Corporation, where he has worked on research and development of GaAs HIC's and MMIC's. He is currently involved in research and development of

analog and digital AlGaAs/GaAs HBT circuits. He is the Supervisor of the Ultra-high-speed Device Research Laboratories at NEC.

Dr. Madihian is a member of the Institute of Electronics and Communication Engineers of Japan.



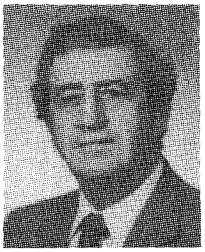
Microwave Application Award

The Microwave Application Award is presented aperiodically to an individual for an outstanding application of microwave theory and techniques. The eligibility requirements are creation of a new device, component, or technique, novel use of components, or both.

The 1988 Application Award is unusual in that two workers, Masumi Fukuta and Louis S. Napoli, received the award. Dr. Fukuta is General Manager of the Compound Semiconductor Division of Fujitsu in Japan. Dr. Napoli is Director of the Integrated Circuit Research Laboratory of David Sarnoff Research Center, a subsidiary of SRI International.

In 1973, each of these workers was principal author of an important paper on power FET's presented at the International Solid State Circuits Conference. The papers were "High-Power GaAs FET Amplifier, A Multigate Structure," by L. S. Napoli, R. E. Debrecht, J. J. Hughes, W. F. Reichert, A. Dreeben and A. Triano, and "Mesh-Source-Type Microwave Power FET," by M. Fukuta, T. Mimura, I. Tujimura, A. Furumoto, and K. Dazai. Both papers were published in the *Digest of Technical Papers, 1973 ISSCC* (IEEE Cat. No. 73 CH0711-2 ISSCC).

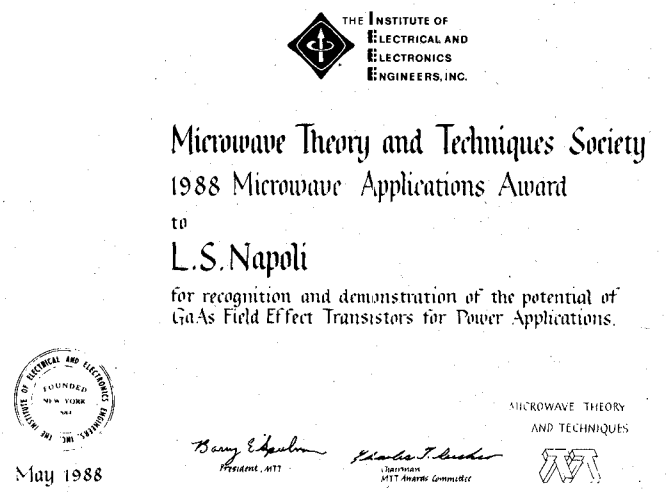
The award citation reads: "For Recognition and Demonstration of the Potential of GaAs Field Effect Transistors for Power Applications." The awards consist of a certificate and a check for $1000.

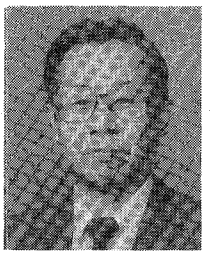


Louis S. Napoli (S'58–M'62–SM'76) graduated from Rutgers University with the B.S. and M.S. degrees in electrical engineering in 1959 and 1961. During that period he was elected to several of the engineering and scientific honor societies. In April 1986, the Engineering Society of the Rutgers Alumnae Association honored him for "Distinguished Achievement in the Field of Engineering."

During his career as a Member of the Technical Staff at RCA Laboratories (now the David Sarnoff Research Center, a subsidiary of SRI International), Mr. Napoli specialized in research related to microwave phenomena in electron devices, most notably wave propagation in gaseous plasmas, transferred electron devices, avalanche transit-time devices, and GaAs Schottky-barrier FET's. RCA Laboratories issued him four achievement awards for unique contributions in these areas. He has been granted more than 25 U.S. patents and has written more than 30 technical articles.

In 1963, Mr. Napoli was appointed Head of the Microwave Components Group, which developed a variety of avalanche transit-time devices for phased-array radar and satellite communications applications. He then headed a research group and later became engineering manager in the area of concentrator photovoltaics, laying the engineering and manufacturing base for a solar-electric concentrator business. Subsequently, he acted as engineering manager of a variety of radiation-hardened microprocessor components which culminated in a family of 4K and 16K radiation-hardened CMOS/SOS memories, gate arrays, and other logic products for the Solid State Division of RCA.



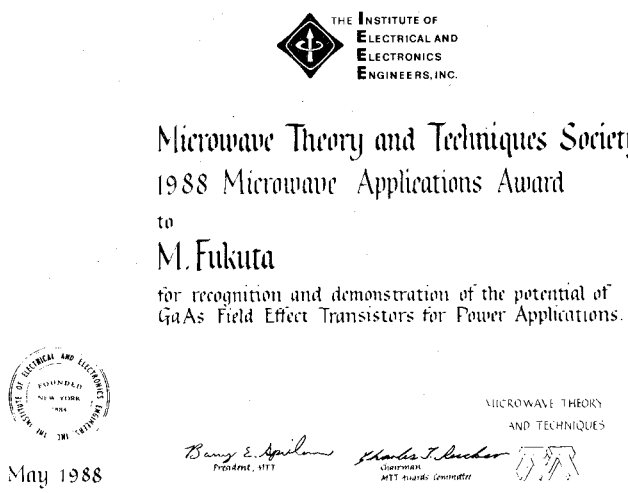


Masumi Fukuta (M'73) was born in Gifu, Japan, on December 25, 1940. He received the B.S. degree in electrical engineering from the Nagoya Institute of Technology, Nagoya, Japan, in 1963 and the Ph.D degree, also in electrical engineering, from Nagoya University, Nagoya, Japan, in 1977.

In 1963 he joined the Kobe Industries Company, which later merged with Fujitsu Ltd. Since joining the company he has been working in the field of semiconductor devices including Si RF power transistors, Si IC's, and Si MOSFET's. In 1967 he invented the mesh emitter transistor and developed a series of products based on this device. Since 1972 he has been engaged in developing low-noise and power GaAs FET's and GaAs integrated circuits at Fujitsu Laboratories.

At ISSCC '73 Dr. Fukuta presented the first paper on a power GaAs FET, entitled "Mesh Source Type Microwave Power FET." From 1979 to 1980, he supervised the development of HEMT devices—his last job in the laboratories. He then moved to the Compound Semiconductor Division of Fujitsu in 1980. His work there involves industrial applications of compound semiconductor devices including power GaAs FET's, HEMT's, GaAs IC's, laser diodes, and detectors. He is now Deputy General Manager of the Compound Semiconductor Division.

Dr. Fukuta holds 20 patents on semiconductor devices. He received a prize medal from the Minister of Science and Technology in Japan in 1975 for outstanding contributions in the development of power GaAs FET's.



Distinguished Service Award

The Distinguished Service Award honors an individual who has given outstanding service over a sustained period for the benefit and advancement of the Microwave Theory and Techniques Society. The 1988 recipient of the Distinguished Service Award is Fred J. Rosenbaum, Professor of Electrical Engineering at Washington University in St. Louis.

Professor Rosenbaum has served MTT-S for more than 20 years through local chapter and national activities. He was elected to the AdCom in 1971 and served in a variety of positions until 1984. He was Editor of the TRANSACTIONS from 1971 to 1973, Vice President in 1980, and President in 1981. While on the AdCom he was involved in several facets of publication. In 1974 he was chairman of the Task Force on Book Publications and the Publications Evaluation Committee. He was an MTT-S representative (and founding member) of the IEEE JOURNAL OF LIGHTWAVE TECHNOLOGY. As TRANSACTIONS editor, he introduced the SHORT PAPERS category, a feature that has persisted to this date. As AdCom president he was instrumental in developing the Microwave and Millimeter-Wave Monolithic Integrated Circuit Symposium, which now is associated with the International Microwave Symposium. He was Steering Commitee Chairman of the 1985 International Microwave Symposium, held in St. Louis.

His technical involvement with MTT-S has included service on the Symposium Technical Program Committee as reviewer and session organizer in 15 of the last 17 symposia. He was chairman (1976–1977) of the MTT-S Technical Committee on Microwave Ferrites (MTT-S 13) and is now an organizer and cochairman of the Technical Committee on Microwave Packaging (MTT-S 12). He has been a reviewer for the TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES since 1966 and has also reviewed for the IEEE TRANSACTION ON ELECTRON DEVICES.

He has had an interest in long-range planning and served as chairman of the Long Range Planning Committee in 1980 and as a member in 1982 and 1983. He made valuable contributions to two special planning reviews in 1986 and 1987.

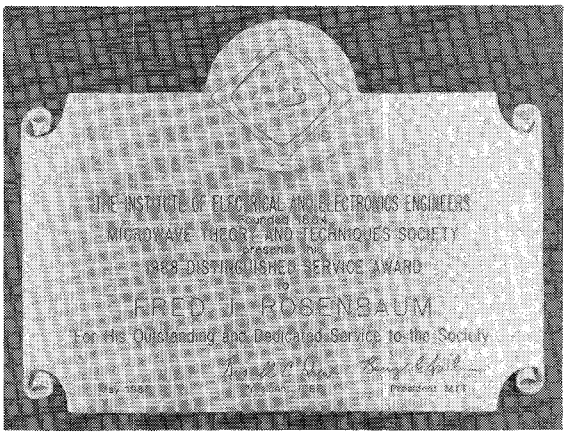
In 1966 he was cofounder of the St. Louis MTT-S/AP/ED Joint Chapter and has served it in all capacities. He continues in 1988 as Program Chairman. In 1969 he helped organize and served as Technical Committee Cochairman of the St. Louis Microelectronics Conference, devoted to microwave integrated circuits. He was a member of the Editorial Board of the *IEEE Spectrum* and from 1974 to 1977 served on the IEEE Microwave Magnetics Standards Committee. From 1986 to the present he has been the MTT-S representative to the IEEE Engineering R&D Committee. Professor Rosenbaum has been a member of URSI (Commission A), MTT-S representative and founding member of the Bioelectromagnetics Society, an adviser to NSF, and consultant to the U.S. Navy.

Dr. Rosenbaum's citation reads "For his Outstanding and Dedicated Service to the Society." His award consists of a plaque and a certificate.

Fred J. Rosenbaum (S'57–M'63–SM'70–F'79) is Professor of Electrical Engineering at Washington University, St. Louis, MO. He was born in Chicago, IL, on February 15, 1937. He was educated at the University of Illinois, where he received the Ph.D. degree in 1963. He joined the faculty at Washington University in 1965 after two years as a research scientist at the McDonnell Aircraft Company Research Laboratory. At the university he established the Microwave Laboratory and through the years has trained many undergraduate and more than 35 M.S. and D.Sc. students on microwave topics. He is a consultant to industry and from 1983 to 1985 served as Chief Scientist of the Central Microwave Company.

He has worked on ferrite circulators and phase shifters, Gunn effect oscillators and amplifiers, integrated optics, microwave bioeffects, and FET devices, circuits, and oscillators. Recent activities have been devoted to the study of nonlinear microwave circuits, scattering from three-dimensional discontinuities in transmission lines, and packaging design for microwave components. He and his students have published some 50 papers and he has presented a similar number of talks at professional meetings.

Professor Rosenbaum has been honored with the U. of I. Electro-Physics Laboratory Alumni Award, the U. of I. Electrical Engineering Alumni Association Distinguished Alumnus Award, and the University of Queensland D.E. Evans Visiting Fellowship. He was Washington University School of Engineering Outstanding Professor of the Year (1978) and was a recipient of the IEEE Centennial Medal. In 1979 he was a member of the IEEE delegation to the USSR Popov Society meeting in Moscow.



Distinguished Microwave Lecturers

The Distinguished Microwave Lecturers are selected annually by AdCom to present lectures to MTT-S chapters on subjects of importance and current interest to members. Each recipient must be an individual who has made significant contributions in the field of his talk. The 1988 Distinguished Lecturer Awards were presented to David K. Barton for his lecture entitled "Technology Trends in Microwave Radar" and to Rolf H. Jansen for his lecture entitled "CAD of Hybrid and Monolithic Microwave and Millimeter Wave ICs." Their awards consist of a bronze plaque and certificate.

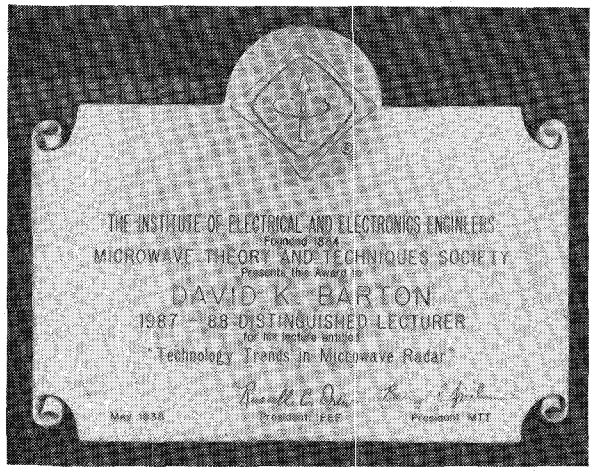
David K. Barton (S'49–A'50–M'55–SM'59–F'71) joined the staff of ANRO Engineering Consultants in 1984 after serving 21 years with the Raytheon Company. Prior to that, he was with RCA at Moorestown, NJ, and with the Signal Corps Engineering Labs at Ft. Monmouth, NJ, and White Sands Missile Range. He has been active in the IEEE's Aerospace and Electronic Systems Society, having served on the Board of Governors, as Associate Editor for Radar of the AES TRANSACTIONS and as Chairman of the Radar Systems Panel.

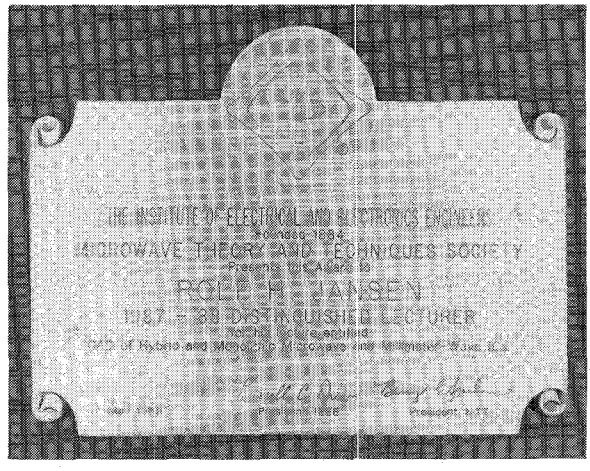
Dr. Barton has specialized in radar since his graduation from Harvard college in 1949 with an AB in physics. He has authored 75 papers and books on radar engineering subjects. He is the author of *Radar System Analysis*, and coauthor of the *Handbook of Radar Measurement*, both published by Artech House. He is also the series editor of the Artech Radar Library, which includes a seven-volume set on *Radars*. He is a lecturer on radar in the The George Washington University's program on Continuing Engineering Education, and has served on a number of advisory committees to the Department of Defense. In 1958 he received RCA's David W. Sarnoff Award for outstanding achievement in engineering, in 1961 the IEEE PGMIL M. Barry Carlton Award, and in 1984 the IEEE Centennial Medal.

Rolf H. Jansen (M'75–SM'84) received the M.S. (1972) and Ph.D. (1975) degrees, both in electrical engineering, from the University of Aachen (RWTH). In his thesis he treated large-signal bipolar transistor modeling and the hybrid-mode analysis of arbitrarily shaped microstrip structures, respectively. He continued his research work at the RWTH Aachen microwave laboratory as a Senior Research Engineer (1976–1979), where he was mainly engaged in the characterization of MIC components and the CAD of microwave circuits. He was also in charge of the thin-film technology of the microwave lab and since 1977, worked as a research associate for radio communication at Standard Elektrik Lorenz AG (SEL) in Pforzheim, West Germany.

In 1979, he became Professor of Electrical Engineering at the University of Duisburg, near Düsseldorf/Cologne, and did teaching and research on such topics as electromagnetic theory, microwave techniques and CAD, measurement techniques, and modeling. His university career was supplemented by a one year's leave 1981/1982 as a full-time scientist with SEL Pforzheim, and by a variety of software and hardware projects for the communication industry since 1976. He developed, introduced, and tested the first layout-oriented general-purpose microwave CAD package in a West Germany production-oriented industry environment. He is author of 55 technical papers in the field of microwave CAD and related topics and recipient of the outstanding publications award in 1979 of the German Society of Radio Engineers.

Presently, with a preparatory phase since the end of 1984, he is engaged in the development of a novel engineering CAD workstation for GaAs MMIC's with Plessey Research Caswell, U.K., following completely new design concepts. He is cofounder of MCAD Software and Design Corp. in Aachen and owner of another small microwave company. He is a member of the editorial board of the TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES and of two MTT technical committees. He served as the West Germany MTT Chapter Chairman June 1985 to May 1987.





IEEE Fellows

Twenty-five MTT-S members were elected to the grade of Fellow effective January 1, 1988. Of these, ten were evaluated by MTT-S and 15 by other societies.

The grade of Fellow is conferred in recognition of unusual professional distinction. It is awarded only at the

initiative of the IEEE Board of Directors after a rigorous nomination and evaluation process. Fellow grade is one of unusual professional distinction and is conferred only by the Board of Directors upon persons of extraordinary contributions to one or more of the fields of electrical engineering, electronics, computer engineering and science, allied branches of engineering, and related arts and sciences. This grade is not conferred automatically upon nomination; only a fraction of those nominated are honored by elevation to Fellow.

Eight Fellow recipients chose to have their Fellow Certificates presented at the 1988 Symposium Banquet. Russel Drew, IEEE President, presented the awards.

Berthold G. Bosch	"For contributions to microwave electronics and gigabit circuits."
Joseph A. Calviello	"For contributions to semiconductor devices and processing techniques for electromagnetic low-noise reception."
Walter R. Curtice	"For contributions to the modeling and simulation of GaAs field-effect transistors."
Kuldip C. Gupta	"For contributions to microstrip circuits and antennas."
Song-Tsuen Peng	"For contributions to microwave components, absorbers and nonreciprocal devices, and for leadership in education."
Saul W. Rosenthal	"For scientific and leadership contributions to the interactions between microwave radiation and biological systems."
James J. Whelehan, Jr.	"For contributions toward the development of low-noise microwave and millimeter-wave receivers."
Ingo Wolff	"For contributions to the analysis and design of microwave and millimeter-wave components."

The following were elected to the grade of Fellow with the endorsement of MTT-S but received their Fellow Awards elsewhere.

Robert W. Bierig	"For leadership in the research of GaAs device and MMIC technology."
David B. Leeson	"For contributions to the theory and practice of stable microwave signal sources for communications and radar."
Tashiyuki Naito	"For contributions to microwave components, absorbers, and nonreciprocal devices, and for leadership in education."