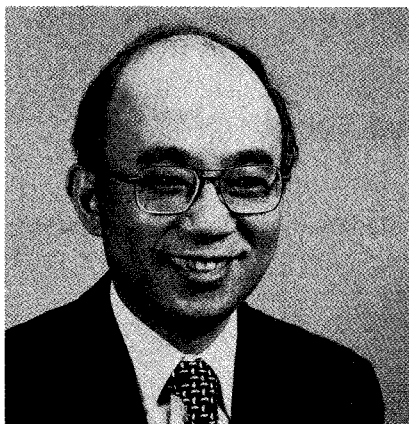


MICROWAVE PRIZE



Hatsuaki Fukui

For his paper, "Design of Microwave GaAs MESFET's for Broadband Low-Noise Amplifiers," published in the IEEE Transactions on Microwave Theory and Techniques, Vol. MTT-27, July 1979, pp. 645-650.

Hatsuaki Fukui was born in Yokohama, Japan. He was graduated summa cum laude in electrical engineering from Miyakojima Technical College, Osaka, Japan, and received the Doctor of Engineering degree in electrical engineering from Osaka University, Osaka.

From 1949 to 1954 he did research work on microwave electron tubes at Osaka City University, Osaka, and in the following year had industrial experience in the field of microwave test equipment with Shimada Physical and Chemical industrial Company, Tokyo, Japan. In 1955 he joined Tokyo Tsushin Kogyo, Ltd. (the former name of Sony Corporation), Tokyo, to be engaged in the semiconductor field as a pioneer. Until 1960 he had headed a group developing new transistors for use in radio and television receivers, and then was in charge of the entire Esaki tunnel-diode operation in the Semiconductor Division. A year later he was appointed Manager of the Advanced Technology Department in the Engineering Division, concerning future generations of consumer electronics products. In 1962 he joined Bell Telephone Laboratories, Murray Hill, NJ. First, he worked on microwave semiconductor devices, such as Ge and Si bipolar transistors, GaAs bulk-effect devices, and Si avalanche diodes, and their circuit applications. Secondly, from 1966 to 1973 he was engaged in the research and development of electro-optical devices and subsystems for future PICTUREPHONE® use, which included storage tubes, cathode-ray tubes, phosphors, plasma display devices, Si diode-array camera tubes, and charge coupled imaging devices. He also supervised the development of new techniques for the vacuum-deposition of III-V compounds. Thirdly, since 1973 he has been involved in the GaAs FET development project, working on device modeling, designing, fabrication, characterization, and reliability. He is the author or co-author of three technical books and some 60 articles in Japanese, and of approximately 40 technical papers published in English.

Dr. Fukui is a Senior Member of the IEEE, a member of the Microwave Theory and Techniques Society serving on the Editorial Board, and a member of the Electron Devices Society serving for the IEEE Standards Committee (P642) on Microwave Transistors Characterization. He was a member of the Steering Committee of the Institute of Television Engineers of Japan from 1973 to 1974. He was a recipient of the Inada Award from the Institute of Electrical Communication Engineers of Japan in 1960. He has been listed in Marquis' "Who's Who in the World" and other biographical references.

MICROWAVE APPLICATION AWARD



Julius Lange

For the development of the interdigital microstrip quadrature hybrid.

Julius Lange received his B.S. degree in Engineering Physics and his M.S. degree in Physics from the University of Oklahoma in 1959 and 1960, respectively. He received his Ph.D. in Electrical Engineering from Southern Methodist University in 1971.

In October 1979 Dr. Lange joined the Mobile Communications Business Division of the General Electric Company as Consulting Engineer. He is presently working on the AMPS cellular mobile telephone system.

From 1973 to 1979, Dr. Lange was associated with the Western Laboratories Division of Ford Aerospace Corporation as Senior Engineering Specialist in circuit design and system analysis. His assignments included: digital satellite communications receivers for rates up to 1000 Megabits per second, an adoptive baseband equalizer, and computer aided design of GaAs FET amplifiers.

From 1971 to 1973, Dr. Lange joined the Advanced Development Department of the Radar Systems Division of Texas Instruments where he worked on varactor multipliers and parametric amplifiers. From February to October 1971, Dr. Lange was employed at Collins Radio as senior engineer in the Solid State Power Amplifier Advanced Development Group of the Telecommunications Systems Engineering Division.

From 1965 to 1970 he was associated with Texas Instruments Incorporated as a senior member of the technical staff of the Microwave Components Program Branch of the Semiconductor Research and Development Laboratory where he has had responsibility for the design and performance evaluation of microwave transistors and circuits. His assignments included: improved device analysis techniques involving correlation between physical structure and high frequency parameters; package and test fixture design; noise and S-parameters measurement techniques; computer aided device characterization; computer aided design of microwave wideband amplifiers, directional couplers and filters; design of microwave integrated circuits on ceramic substrates; and package design.

Between August 1960 and June 1965, Dr. Lange was employed with the Semiconductor Device Development Department of Bell Telephone Laboratories, where he worked on: fabrication of gallium arsenide transistors; Hall and resistivity measurements on thin films; radiation testing of transistors; design and testing of nanosecond switching circuits; and microwave transistor characterization.

Dr. Lange is a graduate of the "Communications Development Training Program" of Bell Telephone Laboratories, and of the "Modern Business Program" of the Alexander Hamilton Institute. He has published papers in the Journal of Applied Physics, and IEEE Journal of Solid-State Circuits, the IEEE Transactions on Circuit Theory, and IEEE Transactions on Microwave Theory and Techniques, and the IEEE Transactions on Electron Devices.

Dr. Lange has held the office of publicity chairman for the 1969 International Microwave Symposium and the office of program chairman for the Dallas GMTT chapter.

He is married and has an eight year old daughter.

MICROWAVE CAREER AWARD



Kiyo Tomiyasu

For a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques.

Kiyo Tomiyasu was born in Las Vegas, Nevada on September 25, 1919. He received the B.S. degree in Electrical Engineering from the California Institute of Technology, Pasadena, in 1940 and the M.S. degree in Communication Engineering from Columbia University, New York, N.Y., in 1941. He received the Ph.D. degree in Engineering Science and Applied Physics from Harvard University, Cambridge, Massachusetts, in 1948.

In 1949 he joined the Sperry Gyroscope Company, Great Neck, New York, as a Project Engineer, and in 1952 was promoted to Engineering Section Head for Microwave Research in the Microwave Components Department. In this capacity he was responsible for developments on ferrites, microwave components, spectroscopy and radiometers. In 1955 he joined General Electric Microwave Laboratory, Palo Alto, California, as a Consulting Engineer, and five years later he transferred to the General Electric Research and Development Center, Schenectady, New York, where he was involved with lasers and microwave projects. In 1969 he became a Consulting Engineer at General Electric Valley Forge Space Center, Philadelphia, Pennsylvania.

For the past several years he has been involved with microwave remote sensing of the earth using satellite-borne radiometers, scatterometers and synthetic aperture radars. He helped design the NASA/JSC Skylab S-193 Microwave Radiometer Scatterometer Altimeter, and he was a Principal Investigator of the NASA Langley Research Center AAFE RADSCAT sensor. On SEASAT, he was responsible for specifying the spacecraft interfaces with the scatterometer and synthetic aperture radar. He has also worked on a conceptual design of a coarse resolution, wide swath synthetic aperture radar for imaging sea ice, oceanic oil spills and geologic features, and inferring soil moisture. He has been concerned with the propagation of microwave signals through rain, troposphere and ionosphere.

His total publications list over sixty papers and twenty patents have been issued in his name. In 1977 he was granted a General Electric Company Charles Proteus Steinmetz Award for outstanding individual achievement over a sustained period as evidenced by impact on the company and society. As part of this award a \$5,000 stipend was designated to California Institute of Technology to be used for three annual scholarships.

Dr. Tomiyasu was president of MTT-S in 1960–1961, and has subsequently served on the Nominations Committee and the Awards Committee. He was the Editor of MTT TRANSACTIONS in 1958 and 1959, and Guest Editor of the May 1978 Special Issue of the TRANSACTIONS on High Power Microwaves. In 1973 he was elected Honorary Life Member of MTT-S and of its Administrative Committee. At the IEEE level he has served on the Publications Board, the Technical Activities Board and most recently on the Awards Board.

Dr. Tomiyasu was elected to the IEEE Fellow Grade in 1962. His name is listed in several biographical references among which are American Men of Science, Who's Who in Engineering, Men of Achievement, Leaders in Electronics, and Who's Who in the East. He is a member of the American Physical Society.