Contributors

Thomas A. Abele (SM'70) was born in Duisberg, Germany, on May 8, 1934. He received the Dipl.-Ing. degree in electrical engineering and the Ph.D. degree in electrical engineering, both from the Institute of Technology, Aachen, Germany, in 1958 and 1960, respectively.

From 1958 to 1962 he was engaged in teaching and research at the Institute for High Frequency Techniques, Institute of Technology, Aachen. He then joined Bell Laboratories, North Andover, Mass., where he has been concerned with the development and characterization of transmission components, first as a member of the Technical Staff, then as a Supervisor, and, since 1968, as Head of a Department. In 1973, while on a leave of absence, he spent a year as a Professor for Microwave Engineering at the Institute of Technology, Aachen.

Dr. Abele is a member of the Nachrichtentechnische Gesellschaft.

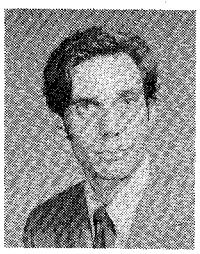
★

D. A. Alsberg (M'48–SM'52) obtained his undergraduate training at the Technische Hochschule, Stuttgart, Germany, completing the work in 1938. From 1939 to 1940 he engaged in graduate study at Case School of Applied Science, Cleveland, Ohio.

Following three years as a Development Engineer with several companies in Ohio, he served in the U. S. Army during World War II. Since 1945 he has been with Bell Laboratories, Murray Hill, N. J., where he is currently Head of the Millimeter Wave Medium Department. He has been concerned with precision high-frequency measurements, the early transistor-measurement technology, intercontinental ballistic missile and space guidance, anti-missile phased-array radars, nuclear electromagnetic effects, and low-loss millimeter waveguide transmission.

Mr. Alsberg has served as a member of the joint IRE–AIEE Task Force on Semiconductors, and is a member of the Executive Committee of the New York, New Jersey, and Long Island joint chapter of the Instrumentation and Measurements Group of the IEEE.

★



Jacques A. Arnaud (SM'66) was born in Paris, France, in 1932. He graduated from the Ecole Supérieure d'Electricité, Paris, France, in 1953, and received the Dr. Ing. and Dr. es Sci. degrees from the University of Paris, France, in 1963 and 1972, respectively.

For two years he was an Assistant at the Ecole Supérieure d'Electricité. In 1955 he joined the Compagnie Générale de Télégraphies sans Fil, where he was engaged in research on high-power traveling-wave tubes and noise generators. In 1967 he joined Bell Laboratories, Holmdel, N. J., where he studied laser amplifiers and optical resonators. He is currently Supervisor of a group studying quasioptical devices and is doing theoretical work on optical fibers and classical electrodynamics.

T. Berceli was born in Budapest, Hungary, on August 7, 1929. He received the Dipl. Ing. degree in electrical engineering at the Technical University of Budapest, Budapest, Hungary, in 1951, and the D.Sc. degree from the Hungarian Academy of Sciences in 1964.

Since 1951 he has worked at the Research Institute for Telecommunication (TKI), Budapest, Hungary, where he was initially concerned with traveling wave tube amplifiers and klystron modulators. He also worked on surface wave transmission lines, parametric amplifiers, diode oscillators, and mixers. Since 1962 he has had a part-time job at the Technical University of Budapest as a Professor of electrical engineering. In 1964 he was a Visiting Professor at the Polytechnic Institute of Brooklyn, N. Y. He is now the Head of the Microwave Department at TKI. He is presently working on the problems of injection-locked oscillators and stable amplifiers.

Dr. Berceli is a member of the International Scientific Radio Union National Committee and the Management Committee of European Microwave Conferences.

★

James E. Degenford (S'59–M'64) was born in Bloomington, Ill., on June 11, 1938. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana, in 1960, 1961, and 1964, respectively.

While a graduate student, he was associated with the Ultramicrowave Group at the University of Illinois, doing research in the fields of millimeter- and submillimeter-wave transmission systems and detection techniques. In 1964 he was appointed Research Associate in electrical engineering at the University of Illinois. In 1965 he joined the Westinghouse Advanced Technology Laboratories, Baltimore, Md., where he is currently employed as a Fellow Engineer in the Microwave Physics Group doing work in the field of microwave integrated circuits.

Dr. Degenford is listed in American Men of Science and he is a member of Sigma Xi, Tau Beta Pi, Eta Kappa Nu, and Sigma Tau. He is currently Chairman of the combined Baltimore AP/MTT-S chapter.

★

J. G. de Koning (M'65) was born in Graauw, The Netherlands, on May 25, 1938. He received the Dipl. Ing. degree in electrical engineering from the Technische Hogeschool, Delft, The Netherlands, in 1962.

He served two years in the Royal Netherlands Air Force. After moving to the United States, he joined Microwave Associates, Inc., Burlington, Mass., where he was engaged in research on microwave transistor oscillators and high-order frequency multipliers. In 1968 he became associated with the Adams-Russell Company, Waltham, Mass., where he was responsible for the RF circuit design of a high-speed multichannel troposcatter modulator/demodulator. He joined the Monsanto Company, St. Louis, Mo., in 1969 and worked on the development of Gunn-effect microwave signal sources. From 1971 to 1973 he was employed at Teledyne MEC, Palo Alto, Calif., where he was in charge of developing wide-band high-gain solid-state amplifiers and microwave-integrated-circuit modules. He is currently working as Senior Engineer in the Solid State West Division of Varian Associates, Palo Alto, Calif., and his present responsibilities include the development of narrow-band and wide-band Gunn-effect

amplifiers at microwave and millimeter-wave frequencies. He is the author of seven technical papers.

Mr. de Koning is a member of the Royal Netherlands Institute of Engineers.

★

György G. Endersz was born in Budapest, Hungary, on October 24, 1939. He received the M.S. degree in electrical engineering from the Technical University of Budapest, Budapest, Hungary, in 1963.

Between 1963 and 1969 he was Associate Professor at the Institute of Microwave Communications at the same school, involved in education and research programs in the microwave circuit field, particularly on parametric amplifiers and upconverters. In 1969 he joined the Systems Research Department of Telefon AB L M Ericsson, Stockholm, Sweden, working now on microwave solid-state generators and their system applications. He is holder of four patents. Since 1973 he is carrying on part time studies at the Institute of Applied Electronics, Royal Institute of Technology, Stockholm, obtaining a doctoral degree.

★

R. E. Goldwasser was born in St. Louis, Mo., on May 6, 1945. He received the B.S. degree in electrical engineering from Washington University, St. Louis, Mo., in 1966, the M.S.E.E. degree from the California Institute of Technology, Pasadena, Calif., in 1967, and the Ph.D. degree in electrophysics from Cornell University, Ithaca, N. Y.

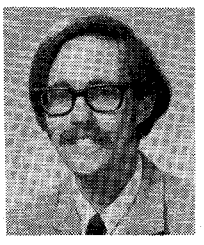
After receiving his Ph.D. degree, he worked at the Monsanto Company, St. Louis, Mo., on development and characterization of transferred electronic devices. From 1971 to 1972 he worked at Microwave Associates, Burlington, Mass., on millimeter-wave oscillators and transferred electron amplifiers. In 1972 he joined Varian Associates, Palo Alto, Calif., and has conducted development of high-power and high-frequency solid-state microwave devices and the development of microwave and millimeter-wave transferred electron amplifiers. He is the author of 13 technical and scientific papers in the aforementioned fields.

Dr. Goldwasser is a member of Eta Kappa Nu and Tau Beta Pi.

★

R. O. Gregory (M'64), photograph and biography not available at the time of publication.

★

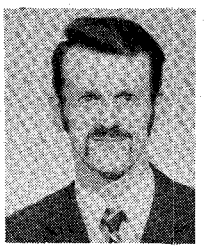


R. J. Hamilton, Jr. (S'69–M'72) was born in Oakland, Calif., on June 5, 1947. He received the B.S. degree in electrical engineering from the University of California, Berkeley, in 1969, and has done graduate work at the University of Southern California, Los Angeles, in materials science and engineering mathematics.

From July 1969 to September 1973 he was employed by Hughes Aircraft Company, Culver City, in the Receiver Section of the Radar Microwave Laboratory. During that time he did developmental work on *X*-, *K*-, and *Ka*-band silicon IMPATT and GaAs Gunn-diode oscillator and amplifier circuits for numerous avionics and space applications, including *Ka*-band paramp pumps for airborne radar systems. He has also done developmental circuit work on *L*- and *S*-band silicon bipolar transistor amplifiers and *C*- and *X*-band GaAs FET amplifiers. He joined Varian Associates, Palo Alto, Calif., in October 1973. His activity in the Advanced Amplifier Development Group of the Solid State West Division is primarily concerned with Gunn-effect amplifier circuit development.

Mr. Hamilton is a member of Eta Kappa Nu.

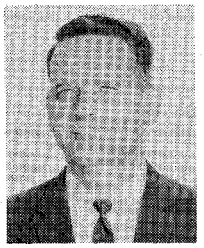
★



G. Hammer was born in Budapest, Hungary, on August 4, 1942. He received the Dipl. Ing. degree in electrical engineering from the Technical University of Budapest, Budapest, Hungary, in 1967.

From 1967 to 1970 he worked on the development of URH receivers at the Budapest Radiotechnique Factory, Budapest, Hungary. Since 1970 he has been with the Research Institute for Telecommunication (TKI), Budapest, Hungary. His research activities have been in the field of microwave passive circuits and electromagnetic-field problems in the case of inhomogeneous materials.

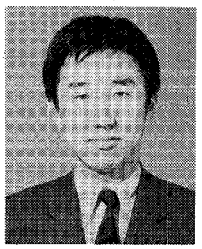
★



P. T. Hutchison (S'47–A'49–M'55) was born on November 2, 1922. He received the B.S. degree from Mississippi State College, State College, in 1944, the M.S. degree from the California Institute of Technology, Pasadena, in 1947, and the Ph.D. degree from the Georgia Institute of Technology, Atlanta, in 1960.

Before going to Bell Laboratories, Holmdel, N. J., in 1960, he taught for 12 years at Mississippi State College and the Georgia Institute of Technology, and worked for the Raytheon Manufacturing Company. Since coming to Bell Laboratories, he has worked on TSX-1 Satellite development; waveguide components in the communications repeater; the communications repeater systems; TSX-2 and other satellites; design work on broad-band and narrow-band microwave repeaters; and the initial planning for the SF cable seatrial test set. He has been involved in the study and development of microwave and UHF interferometers for use on the proposed Gravity Gradient Stabilized Satellite, and has been Caretaker for Telstar I and II. He is currently Head of the Millimeter Wave Design Department, which is responsible for the overall system analysis and design of millimeter waveguide systems and for the design and development of repeaters and associated electronics for the WT4 system. He coordinates the WT4 effort in the device-development, buildings, power, digital-terminal, and microwave-network areas.

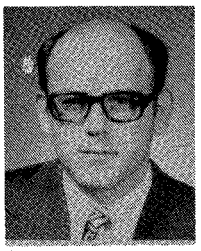
★



Kenji Kohiyama (M'68) was born in Tokyo, Japan, on April 8, 1942. He received the B.S. and M.S. degrees in electronics engineering from Keio University, Tokyo, Japan, in 1965 and 1967, respectively.

Since joining the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, he has been engaged in research on microwave and millimeter-wave components. He is currently a Staff Engineer in the Radio Transmission Section, Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Kohiyama is a member of the Institute of Electronics and Communications Engineers of Japan.



Hans J. Liebe (M'70–SM'72) was born in Interburg, Germany, on January 21, 1934. He received the Vordiplom (BSEE), the Diplom (MSEE), and the Doktor-Ingenieur (Ph.D.) degrees, all in electronic engineering, from the Technische Universitaet, West Berlin, Germany, in 1957, 1959, and 1964, respectively.

From 1958 to 1964 he was a Research Assistant at the Institute fuer Hochfrequenztechnik, the Technische Universitaet, engaged in a research project on microwave refractivity of atmospheric gases and teaching electronics. In 1965 he came to the United States. After a brief period with the U. S. Army Signal Corps, Ft. Monmouth, N. J., he joined the Quantum Electronics Department of TRG, Melville, N. Y., as Senior Scientist working on problems of new millimeter wave techniques. Since 1966 he has been with the Institute for Telecommunication Sciences, the Department of Commerce, Boulder, Colo., in various capacities (Project Leader, Section Chief, Advisor), engaged in experimental, analytical, and theoretical efforts to establish reliable atmospheric propagation factors at millimeter wavelengths (20–200 GHz).

Dr. Liebe is a member of Commission II of the International Scientific Radio Union (URSI) and of Sigma Xi.

★

Kozo Morita was born in Wakayama, Japan, on November 30, 1943. He received the B.S. and M.S. degrees in electronics engineering from Kyoto University, Kyoto, Japan, in 1966 and 1968, respectively.

Since joining the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, he has been engaged in research on IF amplifier and mixer circuit for 20-GHz digital systems. He is currently a Staff Engineer of Planning and Coordination Office, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Morita is a member of the Institute of Electronics and Communications Engineers of Japan.

★

Burton A. Newman (S'71–M'72) was born in Chicago, Ill., on August 11, 1947. He received the B.S. degree in physics from the University of Illinois, Chicago, in 1969, and the M.S. degree in electrical engineering from Washington University, St. Louis, Mo., in 1972.

He is currently employed by the Westinghouse Advanced Technology Laboratories, Baltimore, Md., as a Senior Engineer in the Microwave Physics Group, Systems Development Division. His work is involved with the advanced development of solid-state microwave circuits and millimeter subsystems.

★

F. Rákosi was born in Budapest, Hungary, on December 2, 1936. He received the Dipl. Ing. degree in electrical engineering in 1967 and the higher Dipl. Ing. degree in microwaves in 1971 from the Technical University of Budapest, Budapest, Hungary.

In 1960 he joined the Research Institute for Telecommunication (TKI), Budapest, Hungary. From 1967 to 1970 he was working on the development of microwave passive components. From 1970 to 1973 he was engaged in the development of microwave solid-state circuits. Since 1973 he has been the Head of the Microwave Generator Department, where he is responsible for the development of microwave transmitters and local generators.

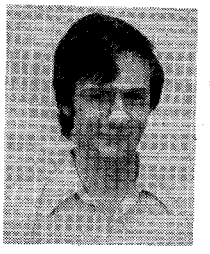
★

G. Reiter was born in Budapest, Hungary, on September 24, 1930. He received a degree in applied mathematics from the Eötvös University of Budapest, Budapest, Hungary, in 1955, and the candidate degree of technical sciences from the Hungarian Academy of Sciences in 1965.

Since 1951 he has worked at the Research Institute for Telecommunication (TKI), Budapest, Hungary, where he has been engaged in the study of waveguides with varying cross sections, the analysis of coupled resonators, and the design of microwave filters. From 1958 to 1963 he had a part-time job at the Budapest Telecommunication Factory, Budapest, Hungary, where he was concerned with the development of passive microwave circuits. He is now the Head of a Microwave Research Group at TKI. His current interest and activities are in the area of the development of microstrip filters and elliptical waveguide filters.

Dr. Reiter is a corresponding representative of the Technical Program Committee of European Microwave Conferences.

★



C. O. Risch (S'73–M'74) was born in St. Louis, Mo., on April 1, 1950. He received the B.S. and M.S. degrees from Washington University, St. Louis, in 1972 and 1974, respectively.

From 1972 to 1974 he was a Research Assistant at Washington University, doing research in the area of low-cost microwave-receiver design. Since July 1974 he has been a member of the technical staff of Hughes Aircraft Space and Communications Group, El Segundo, Calif., where he is engaged in the area of high-frequency circuit design.

★

F. J. Rosenbaum (S'57–M'63–SM'70) was born in Chicago, Ill., on February 15, 1937. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois, Urbana, in 1959, 1960, and 1963, respectively.

While at the university he conducted research on ferrites and Cerenkov radiation. In 1963 he joined the Research Division of McDonnell Aircraft Corp., St. Louis, Mo., where he worked on masers and dielectric resonators. In 1965 he became a member of the faculty of Washington University, St. Louis, Mo., where he is now Professor of Electrical Engineering. At the university he directs graduate research in the

areas of microwave circuit design, Gunn effect, integrated optics, microwave ferrite devices, microwave integrated circuits, low-cost microwave receivers, and biological effects of microwaves.

Prof. Rosenbaum is a member of the MTT AdCom, and served as Editor of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES from 1971 to 1974.

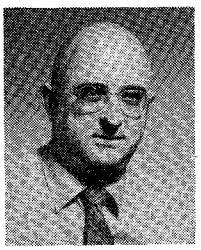
★

F. E. Rosztoczy was born in Szeged, Hungary, on August 16, 1932. He received the M.S. degree in chemistry from the University of Szeged, Szeged, Hungary, in 1955, and the Ph.D. degree in physical chemistry from the University of California, Berkeley, in 1961.

From 1961 to 1964 he worked at the Stanford Research Institute on crystal growth technique and on the thermodynamics of fused salt systems. From 1964 to 1968 he was a member of the Technical Staff of Bell Laboratories, Murray Hill, N. J. There he studied the liquid-phase epitaxial growth of GaAs and the effects of impurities on the electrical properties of the crystals. He also worked on the development of new thin-film capacitors for integrated circuitry. After one year with the Electronic Materials Division of Bell and Howell, Pasadena, Calif., where he was responsible for the production and marketing of single crystals of compound semiconductors, he joined the Central Research Laboratories of Varian Associates, Palo Alto, Calif., in 1969. Since 1970 he has been Manager of GaAs Microwave R&D in the Solid State West Division of Varian Associates. In this position he is responsible for research, development, and production of epitaxial crystal growth of compound semiconductor materials for microwave applications and for the advanced development of compound semiconductor microwave devices and circuits. He is the author of over 40 scientific and technical papers in the aforementioned fields.

Dr. Rosztoczy is a member of the Electronic Materials Committee of the American Institute of Mining, Metallurgical, and Petroleum Engineers, the Electrochemical Society, American Association for Crystal Growth, and Sigma Xi.

★



Joseph T. Ruscio was born in New Rochelle, N. Y., in 1924. He received the B.S. degree from Monmouth College, West Long Branch, N. J., in 1962.

In 1957 he joined Bell Laboratories, Holmdel, N. J., where he was engaged in satellite communication projects Echo and Telstar, phase locking of lasers, and microwave link experiments. Currently he is engaged in research on quasioptical systems.

★

J. P. Singh (M'69) was born in India on January 6, 1948. He received the B. Tech. (EE) degree from the Indian Institute of Technology, Kanpur, in 1969, and the M.A. degree in telecommunications policy from Michigan State University, East Lansing, in 1972.

From 1970 to 1972 he was a Research Engineer with the Center for Development Technology, Washington University, St. Louis, Mo. He became Associate Director for Communications Technology and Systems for the Center in 1972, when he lead studies in the applications of satellite technology to U. S. education. In 1974 he returned to India, where he is currently a Scientist with the Indian Space Research Organization, Bangalore.

Gunnar R. Stette was born in Skodje, Norway, on November 13, 1936. He graduated from the Technical University of Norway, Trondheim, in 1962 and received the lic.techn. degree in 1967.

From 1962 to 1967 he worked at the Acoustics Laboratory on electroacoustics and speech communication. In 1967 he joined the SHAPE Technical Centre, the Hague, The Netherlands where he was engaged in work on modulation and multiple-access techniques and on sattelite communication system design. In 1973 he returned to the Technical University, Trondheim, where he is the Head of the Radio Systems Group of ELAB (The Electronics Research Laboratory).

★

S. Szénási was born in Hatvan, Hungary, on April 23, 1929. He received the Dipl. Ing. degree in electrical engineering from the Technical University of Budapest, Budapest, Hungary, in 1957.

From 1951 to 1957 he was a technician engaged in developing and testing electronic and microwave circuits and radar equipment. Since 1957 he has been working on the design and development of microwave passive circuits and mixers, especially downconverters and upconverters, at the Research Institute for Telecommunication (TKI), Budapest, Hungary. He is presently conducting research on microwave mixers.

★

Iwao Takao (M'60) was born in Tokyo, Japan, on March 20, 1911. He received the B.S. and Ph.D. degrees from the University of Kyoto, Kyoto, Japan, in 1933 and 1948, respectively.

From 1936 to 1945 he was an Assistant Professor at Ryojun College of Engineering, Port Arthur, Manchuria, where he studied polyphase oscillators and multisplit anode magnetrons. In 1944 he was appointed to the staff of the High Power Magnetron Division, Naval Technical Research Department, Shimada, Japan. In 1947 he joined Shimada Physical and Chemical Industrial Company, Tokyo, as Director of Research. He was with the Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan, from 1955 to 1971 as a Professor, and from 1971 to 1973 as a Director, where he worked on high-sensitivity ESR spectrometers. He is now a Professor at North Shore College, Atsugi, Japan.

Dr. Takao is a member of the Institute of Electronics and Communications Engineers of Japan and of the Institute of Electrical Engineers of Japan.

★

Kenzo Watanabe (M'74) was born in Fujinomiya, Japan, on February 14, 1940. He received the B.S. and M.S. degrees in electronic engineering from Shizuoka University, Hamamatsu, Japan, in 1962 and 1966, respectively.

From 1962 to 1964 he was a Teaching and Research Assistant in the Department of Electronic Engineering, Shizuoka University. Since 1966, he has been a Research Assistant at the Research In-

stitute of Electronics, Shizuoka University, where he has been engaged in the research of the microwave phase-sensitive detector and its application to spectrometers, and in the development of the noise measuring system and the dynamic performance test system of microwave oscillators.

Mr. Watanabe is a member of the Institute of Electronics and Communications Engineers of Japan and the Japan Society of Applied Physics.

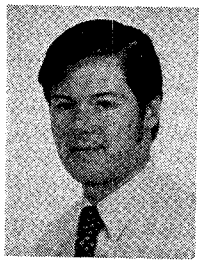
★

Heiichi Yamamoto (S'62–M'73) was born in Okayama, Japan, on December 25, 1940. He received the B.S. and M.S. degrees in electrical communication engineering from Osaka University, Osaka, Japan, in 1963 and 1965, respectively.

In 1965 he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, and has been engaged in research and development of repeaters for microwave and millimeter-wave digital radio-relay systems. He is currently a Deputy Director of the Radio Device and Propagation Section, Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Yamamoto is a member of the Institute of Electronics and Communications Engineers of Japan, and received the 1971 IECEJ Yonezawa Memorial Scholarship.

★



F. P. Ziolkowski (S'68–M'68) was born in Toledo, Ohio, on August 29, 1941. He graduated from the University of Toledo, Toledo, in 1963 and received the Ph.D. degree from the University of Illinois, Urbana, in 1968.

Since joining the Raytheon Company, Wayland, Mass., in 1968, he has contributed to several projects involving the properties of electromagnetic waves near an interface in dissipative media. Among these have been the design of subsurface antennas and the design of an antenna for a lunar geophysical probe. He is also interested in problems pertaining to the use of microwave integrated circuits (microstrip).