Contributors

Gary D. Alley (M'78) was born in Kansas City, MO, on August 12, 1943. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Kansas, Lawrence, in 1966, 1967, and 1972, respectively.

In 1967 he joined Bell Telephone Laboratories, Whippany, NJ, as a member of the Technical Staff where he was engaged in the design of microwave integrated circuits. From 1970 to 1972 he was on leave of absence from Bell Labs. at the University of Kansas, Lawrence where he conducted theoretical studies of microwave field effect transistors. In July 1972 he returned to Bell Telephone Labs., North Andover, MA, as a member of the Technical Staff where he was involved in the design of microwave circuits for communication systems. In 1978 he joined Massachusetts Institute of Technology Lincoln Laboratories, Amherst, where he is working on the design of GaAs microwave devices.

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

John W. Amoss (S'54–M'62–SM'70) was born in Fairburn, GA, in 1933. He received the B.E.E. degree from Auburn University, Auburn, AL, in 1955, the M.S.E.E. degree from the Georgia Institute of Technology, Atlanta, in 1958, and the Ph.D. degree in electrical engineering from Auburn University, in 1972.

In 1958 he joined Sperry Microwave Electronics Division, a Division of Sperry Rand Corporation, Clearwater, FL, where he was a Senior Member of the Research Staff. His work at Sperry was in the area of parametric devices, tunnel-diode amplifiers, low-noise-figure measurement techniques, microwave properties of ferroelectric materials and devices, and direct power generation. In 1972, he joined the Solid State Sciences Division of the Engineering Experiment Station, Georgia Institute of Technology, Atlanta, as a Senior Research Engineer and has been active in research on microwave solid-state devices.

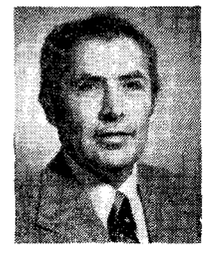
Dr. Amoss is a member of Eta Kappa Nu, Pi Mu Epsilon, and Sigma Xi.

Kazuhiko Atsuki, photograph and biography not available at the time of publication.

Arthur Ballato (S'55–M'59–SM'70) was born in Astoria, NY, on October 15, 1936. He received the S.B. degree in electrical engineering from Massachusetts Institute of Technology, Cambridge, MA, in 1958, the M.S. degree in electrical engineering from Rutgers University, New Brunswick, NJ, in 1962, and the Ph.D. degree in electrophysics from the Polytechnic Institute of Brooklyn in 1972.

Upon completing his undergraduate work in 1958, he joined what is now the U.S. Army Electronics Technology and Devices Laboratory, U.S. Army Electronics Command, Fort Monmouth, NJ, where his interest in crystal physics originated. Since then he has been involved in studies of the influence of external forces of crystal vibrators and of the elastic and thermal properties of quartz and other piezoelectric substances for filter applications and with the precise description and measurement of their equivalent circuit parameters.

Dr. Ballato is a member of the American Physical Society, the Institution of Electrical Engineers (London), and Sigma Xi.



Jose M. Borrego (S'59–M'62) received the B.S. degree in mechanical and electrical engineering from the Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico, in 1955. From 1955 to 1956 he was a Fulbright student at the Massachusetts Institute of Technology (M.I.T.), Cambridge, where he received the S.M. degree in 1957 and Sc.D. degree in electrical engineering in 1961.

From 1957 to 1961 he was associated with the M.I.T. Energy Conversion and Semiconductor Laboratory where he carried out research on the fabrication and characterization of thermoelectric materials and devices. From 1961 to 1962 he was Assistant Professor of Electrical Engineering at M.I.T. and received a Ford Foundation Post-Doctoral Fellowship to continue his research. From 1962 to 1965 he was at the Centro de Investigacion del IPN in Mexico City, where he was in charge of establishing research facilities for the fabrication of semiconductor materials, semiconductor devices, and integrated circuits. Since 1965 he has been on the faculty at Rensselaer Polytechnic Institute in Troy, NY, where he is currently a Professor in the Electrical and Systems Engineering Department. He has taught and developed courses in semiconductor electronic devices, solid-state microwave devices, and compound semiconductors. At present he is doing research on the fabrication and characterization of polycrystalline gallium arsenide solar cells, on radiation effects on semiconductor devices, and on solid-state microwave devices.

Dr. Borrego is a member of the Institute of Electrical and Electronic Engineers, Tau Beta Pi, Eta Kappa Nu, and Sigma Xi, and he is a Professional Engineer registered in New York State.

Mark C. Calcatera, photograph and biography not available at the time of publication.

H. E. Carlson, photograph and biography not available at the time of publication.

N. Walter Cox (S'65–M'68–SM'78) was born in Selma, AL on July 1, 1942. He received the B.E.E., M.S.E.E., and Ph.D, degrees from Georgia Institute of Technology, Atlanta, in 1964, 1965, and 1967, respectively.

From 1967 to 1969 he was an Assistant Professor in the School of Electrical Engineering at the Georgia Institute of Technology. In 1969 he joined the staff of the Sperry Rand Microwave Electronics Division, Clearwater, FL, where he engaged in research and development related to microwave solid-state devices and circuits. He has been on the staff of the Georgia Tech Engineering Experiment Station, Atlanta, since 1973 as a Principal Research Engineer and Chief of the Solid-State Sciences Division. His research activities are in the areas of semiconductor materials and devices, microwave solid-state sources and amplifiers, and microwave integrated circuits.

Dr. Cox is a member of Eta Kappa Nu, Phi Kappa Phi, Tau Beta Pi, Pi Mu Epsilon, and Sigma Xi.

William A. Cox (M'71), photograph and biography not available at the time of publication.

C. L. Cuccia, photograph and biography not available at the time of publication.

Friedrich H. Doerbeck (M'78) received the Dipl. Phys. degree from the Technische Hochschule, Stuttgart, Germany, in 1962 and the Dr. Ing. degree from the Technische Universitaet, Aachen, Germany, in 1971.

From 1962 to 1966 he was with AEG-Telefunken, initially at the Research Institute, Ulm, Germany, and later at the Semiconductor Division, Heilbronn, Germany. In 1966 he joined Texas Instruments Incorporated, Dallas, TX. Since 1964 he has been mainly engaged in device and materials work on III-V compound semiconductors for optoelectronic and microwave applications, such as LED's, Gunn devices, FET's, and injection lasers. Besides R and D work in this field he has also been responsible for the development and installation of production lines for such components. Most recently he has been responsible for vapor phase epitaxy for GaAs Read diodes and FET's. He is the author or coauthor of 15 publications.

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Glenn F. Engen (SM'71) was born in Battle Creek, MI, on April 26, 1925. He received the B.A. degree in physics and mathematics from Andrews University, Berrien Springs, MI, in 1947, and the Ph.D. degree in electrical engineering from the University of Colorado, Boulder, in 1969.

After employment with the U.S. Naval Ordnance Laboratory and Applied Physics Laboratory and The Johns Hopkins University, he joined the National Bureau of Standards, Boulder, CO, in 1954, where he is now Senior Research Scientist, Electromagnetics Division. His special field is microwave measurement standards and techniques. He is the author of numerous technical papers in the field of microwave measurements, and holds two patents.

Dr. Engen is a member of Commission I of the International Scientific Radio Union. In 1960 he was awarded the Department of Commerce Silver Medal for Meritorious Service.

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Fabio Filicori, photograph and biography not available at the time of publication.

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Paul L. Fleming (S'57–M'58–SM'68), photograph and biography not available at the time of publication.

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Ronald J. Gutmann (S'68–M'63–SM'76) received the B.E.E. degree from Rensselaer Polytechnic Institute, Troy, NY, in 1962, the M.E.E. degree from New York University, New York, in 1964, and the Ph.D. degree from Rensselaer Polytechnic Institute in 1970.

As an undergraduate he was employed by the Microwave and Power Tube Division of Raytheon Company as part of his work–study program. From 1962 to 1966 he was a member of the Technical Staff at Bell Telephone Laboratories, where he worked on the development of microwave components and microwave systems for radar applications. From 1966 to 1967, he was a Senior Engineer at Lockheed Electronics Company, where he worked on beam-steering and beam-forming techniques for phased arrays. From 1967 to 1970 he was employed as a Research Assistant at Rensselaer Polytechnic Institute and as an Engineer at Rensselaer Research Corporation working on bulk semiconductor microwave control devices. Since 1970 he has been at Rensselaer Polytechnic Institute where he is currently an Associate Professor in the Electrophysics and Electronic Engineering Division, with teaching and research activities in the areas of semiconductor devices, microwave techniques, and communication technology.

Dr. Gutmann is a member of Sigma Xi, Tau Beta Pi, and Eta Kappa Nu.

Earl T. Harkless was born in Cleveland, OH, on June 25, 1922. He received the B.S.E.E. degree in 1947 and the M.S. degree in physics in 1949 from Case Institute of Technology, Cleveland, OH.

He has been with Bell Telephone Laboratories, Holmdel, NJ, since 1949, where he is Supervisor of a Microwave Technology Group. He is presently working on digital satellite transmission systems. He has directed groups working on a variety of telephone transmission systems including microwave radio, Telstar, and a millimeter waveguide transmission system.

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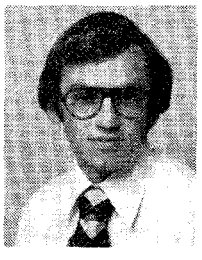

Ricky D. Hess (M'79) was born in Kokomo, IN, on June 14, 1953. He received the B.S. degree in electrical engineering from Purdue University, Lafayette, IN, in 1975.

He has been employed by Westinghouse Electrical Corporation, Baltimore, MD, since 1975. He has been involved in the development of digital microwave frequency translators at *X* band and *Ku* band. He has developed high power and low-noise amplifiers at *X* band, as well as low-noise voltage-controlled oscillators at *L* and *X* bands.

Mr. Hess is a member of Eta Kappa Nu and Microwave Theory and Techniques Society.

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Gerald N. Hill was born in Ironwood, MI on December 7, 1935. He joined the United States Air Force in January 1955 and graduated from the radar electronics school at Keesler Air Force Base, Biloxi, MI. After his discharge he attended St. Petersburg Junior College, St. Petersburg, FL.

From 1958 to 1971 he was employed by the Sperry Microwave Electronics Company in Clearwater, FL. He progressed to the level of associate engineer and was responsible for development and production of active solid-state devices in support of "in-house" requirements. Such devices included IMPATT and TRAPATT diodes, silicon and GaAs mixers, and Gunn, varactor, and p-i-n diodes. In 1971 he transferred to the Sperry Electronic Tube Division where he continued semiconductor device work with emphasis on chip level power combining techniques. In 1974 he joined the staff of the Engineering Experiment Station, Georgia Institute of Technology, Atlanta, where he is presently an Assistant Research Engineer in the Solid-State Sciences Division of the Electromagnetics Laboratory. He is heavily involved with both chip level power combining of CW and pulsed IMPATT devices and beam lead Gallium Arsenide mixer diodes. He is co-author of several papers in the area of microwave solid-state research.

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Cletus A. Hoer (S'66–M'67) was born in Westphalia, MO, in 1933. He attended Weber State College, Ogden, UT, and Sophia University, Tokyo, Japan while serving in the U.S. Air Force from 1950 to 1954. He received the B.S. degree in engineering physics and the M.S. degree in electrical engineering, both from the University of Colorado, Boulder, in 1959 and 1967, respectively.

He joined the Boulder Laboratories, National Bureau of Standards, Boulder, CO, in 1956 where he was first engaged in developing instrumentation for measuring properties of magnetic materials at high frequencies. In 1962 he transferred to the High Frequency Impedance Standards Section where he did research and development work on inductance standards, impedance bridges, inductive voltage dividers, attenuators, and directional couplers. His present projects are concerned with the theory and application of six-port junctions and the development of Josephson junction-type RF detectors.

Shigekazu Hori (S'71–M'74) was born in Wakayama, Japan, on January 2, 1946. He received the B.S. and M.S. degrees from Tokyo Institute of Technology, Tokyo, Japan, in 1969 and 1971, respectively.

He joined Toshiba Research and Development Center Kawasaki, Japan, in 1971, and has been engaged in the research and development of microwave components and devices. He has worked on active phased array radar modules and broadcasting satellite transponder. He is presently engaged in the development of high-power transistor amplifiers and diode limiters.

Mr. Hori is a member of the IECE of Japan.

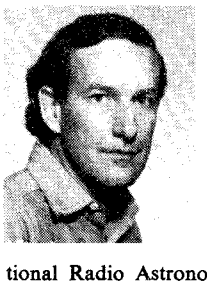
Takashi Ishii, photograph and biography not available at the time of publication.

Tatsuo Itoh (S'69–M'69–SM'74), for photograph and biography please see page 550 of the May 1979 issue of this TRANSACTIONS.

Yoshinobu Kadowaki, photograph and biography not available at the time of publication.

James E. Kenney was born in Washington, DC, on June 24, 1934.

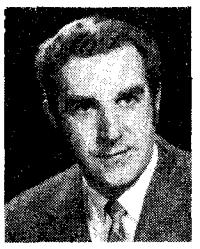
He has been at the Naval Research Laboratory, Washington, DC, since February 1957. He was involved in the early development of miltimeter-wave automatic navigation equipment for fighter plane applications. Since 1960 he has been active in the development of radiometric and radar systems for astronomy and remote sensing applications. He is currently with the Advanced Projects Office at the Naval Research Laboratory.



Anthony R. Kerr (S'64–A'66–SM'78) was born in England on August 30, 1941. He received the B.E., M.Eng.Sc., and Ph.D. degrees from the University of Melbourne, Vic., Australia, in 1964, 1967, and 1969, respectively.

In 1969 he joined the Commonwealth Scientific and Industrial Research Organization, Sydney, N.S.W., Australia, to develop low-noise receivers for radio astronomy. From 1971 to 1974 he worked on low-noise cryogenic receivers for millimeter-wave astronomy with the National Radio Astronomy Observatory, Charlottesville, VA. He is presently with the NASA Goddard Institute for Space Studies, New York, NY, developing low-noise receivers for millimeter and submillimeter wavelengths.

Dr. Kerr is a member of URSI Commission J and the Astronomical Society of Australia. He was co-recipient of the 1978 Microwave Prize.



Theodore J. Lukaszek (S'61–M'62) was born in Perth Amboy, NJ, in 1935. He received the B.S. degree in physics from Monmouth College, West Long Branch, NJ, the M.S. degree in physics from Fairleigh Dickinson University, Rutherford, NJ, and has done post-graduate work in physics and management at the Polytechnic Institute of Brooklyn, NY.

In 1960 he joined the Piezoelectric Crystal and Circuitry Branch, Solid State and Frequency Control Division of the U.S. Army Electronics Command, Fort Monmouth, NJ, where he had been engaged primarily in environmental studies of the double-rotated piezoelectric quartz resonator and the properties of VHF, *AT*-cut, quartz crystal resonators for oscillator and filter applications. He is currently assigned to the Acoustic Signal Processing and Devices Team, Microwave and Signal Processing Devices Division where he is doing research and development on piezoelectric resonators, acoustic surface wave transducers, and charge coupled devices as applied to the bandpass filtering technology.

E. W. Matthews (S'46–A'48–M'54–SM'60), photograph and biography not available at the time of publication.

Vito Antonio Monaco (M'67), photograph and biography not available at the time of publication.

Masaaki Nakatani, photograph and biography not available at the time of publication.

Carlo Naldi (M'73), photograph and biography not available at the time of publication.

Mooshi R. Namordi (S'56–M'58) received the Ph.D. degree in electrical engineering from Purdue University, Lafayette, IN, in 1973.

Prior to that, he worked on flat tube displays, thin-film phosphors, and EBS devices at General Electric. Following graduation, he worked on Si millimether-wave IMPATT's at TRW. He joined the Central Research Laboratories, Texas Instruments, Dallas, TX, in 1975, working on flat tube displays. His present interests center on microwave devices and GaAs logic.

A. Nara, photograph and biography not available at the time of publication.

Edward C. Niehenke (M'61) was born in Abington, PA, on August 5, 1937. He received the B.S. and M.S. degrees in electrical engineering from Drexel University, Philadelphia, PA, in 1961 and 1965, respectively.

From 1961 to 1963, he was employed by Martin Marietta, Baltimore, MD, where he was engaged in the investigation of solid-state device behavior at cryogenic temperatures and low-loss cryogenic superconducting delay lines. Since 1963, he has been employed by Westinghouse Electric Corporation, Baltimore, MD, responsible for the development of low-noise broad-band parametric amplifiers, FET amplifiers, limiters, voltage-controlled oscillators, mixers, and miniature-microwave integrated circuits. He holds three patents in the area of low-noise parametric amplifiers.

Mr. Niehenke is a registered professional engineer in the State of Maryland and presently chairman of the IEEE Baltimore Chapter AP/MTT.

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U. Niggebrügge, photograph and biography not available at the time of publication.

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Yuji Oda was born in Miyazaki, Japan, on January 20, 1952. He received the B.S. degree in applied physics from the University of Tokyo, Tokyo, Japan, in 1974.

In 1974 he joined Toshiba Research and Development Center, Kawasaki, Japan, where he has been engaged in the research and development of microwave transistors.

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M. D. Rubin, photograph and biography not available at the time of publication.

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Charles T. Rucker (S'56–M'69–SM'79) was born in Augusta, GA on June 30, 1931. He received the B.E.E. degree from Georgia Institute of Technology, Atlanta, in 1957 and has completed additional work in mathematics and microwaves through the Extension Division of the University of Florida, Gainseville.

From 1957 to 1971 he was employed by the Sperry Microwave Electronics Division of Sperry Rand where he progressed to the level of Engineering Staff Consultant. His responsibilities during this period included development of ferrite components, parametric amplifiers, semiconductor switching components and solid-state signal sources and amplifiers. In 1971 he transferred to the Sperry Electronic Tube Division of Sperry Rand where he continued work on various active solid-state devices including Gunn, BARITT, and TRAPATT, and on unique power combining techniques for such devices. In 1973 he joined the staff of the Engineering Experiment Station, Georgia Institute of Technology, Atlanta, where he is presently a Senior Research Engineer in the Solid-State Sciences Division of the Electromagnetics Laboratory. His duties presently include responsibilities for various microwave solid-state research tasks with emphasis on power combining at the device-chip level. He has four patents granted or pending and has authored or co-authored numerous papers and reports in the area of microwave solid-state circuits.

Mr. Rucker is a member of Eta Kappa Nu, and has served as program committee co-vice chairman and as Guest Editor for the December 1974 *IEEE Transactions on Microwave Theory and Techniques*. He was recently elected to a second term on the MTT-S Administrative Committee and is presently serving as Operations Committee Chairman.

S. K. Salmon, photograph and biography not available at the time of publication.

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T. Smith (M'73), photograph and biography not available at the time of publication.

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Vladimir Sokolov (M'75) received the B. S. degree in science engineering from Northwestern University, Evanston, IL, in 1968 and the M.S. and Ph.D. degrees in electrical engineering from the University of Wisconsin, Madison, in 1970 and 1973, respectively.

From 1974 to 1975 he was employed as a Senior Engineer at the Northrop Corporation, Electronics Division, Defense Systems Department, where his work included microstrip circuit design and evaluation of microwave hardware for ECM applications. In 1975 he joined the Texas Instruments, Inc., Dallas, TX, as a Member of the Technical Staff of the Central Research Laboratories where he is presently engaged in microwave measurements and circuit design, as related to *S*- and *Ku*-band FET and IMPATT devices.

Dr. Sokolov is a member of Sigma Xi.

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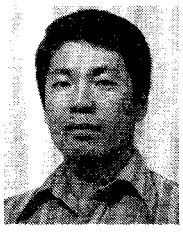

Bang-Sup Song (S'79) was born in Kunsan, Korea, in 1949. He received the B.S. degree in electronics engineering from the Seoul National University, Korea, in 1973 and the M.S. degree in electrical engineering from the Korea Advanced Institute of Science, Korea, in 1975.

From 1975 to 1978, he was a research engineer in the Electronics and Communications Division of ADD, Korea. At present, he is working for the Ph.D. degree in electrical engineering at the University of Texas, Austin.

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S. E. Sussman-Fort (M'74) was born in the Bronx, NY, in 1948. He received the B.E.E. degree from the City College of the City University of New York, New York, in 1969, the M.S.E. degree from Princeton University, NJ, in 1971, and the Ph.D. degree in electrical engineering from the University of California, Los Angeles, in 1978.

From 1969 to 1973 he was employed by Bell Laboratories, Holmdel, NJ, where he was engaged in the design of RC, thin-film, active filters. During 1974, he was with the Burroughs Corp., Pasadena, CA, where he developed current-mode logic circuits. During his doctoral studies at UCLA from 1974 to 1978, he had summer and part-time jobs at the TRW Systems Group, the Aerospace Corp., and the Torrance Research Center of Hughes Aircraft Company, all located in southern California. For the 1978–1979 academic year, he was Assistant Professor of electrical engineering at North Carolina A & T State University, Greensboro, NC. During the summer of 1979, he was with the IBM Corp., Research Triangle Park, NC. In 1979, he joined the faculty of Rensselaer Polytechnic Institute, Troy, NY, as Assistant Professor of electrical and systems engineering.

Dr. Sussman-Fort's current research interests are in the areas of classical network theory and microwave active circuits.

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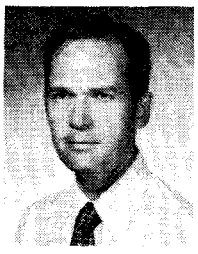
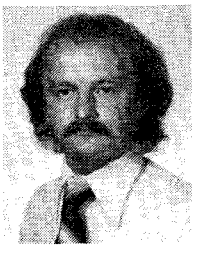
T. Suzuki, photograph and biography not available at the time of publication.



Herbert L. Thal, Jr. (A'53–M'58) was born in Mount Vernon, NY, on February 15, 1932. He received the B.E.E., M.E.E., and Ph.D. degrees in electrical engineering from Rensselaer Polytechnic Institute (R.P.I.), Troy, NY, in 1953, 1955, and 1962, respectively.

From 1953 to 1956 he was a Research Associate at R.P.I. In 1956 he joined the General Electric Power Tube Department, Schenectady, NY, where he performed research and development on circuits and beam interactions in fixed-frequency and voltage-tunable magnetrons, multiple-beam klystrons, and distributed amplifiers. In 1967 he transferred to the Re-Entry Systems Department, King of Prussia, PA, where he was involved with the prediction and control of radar cross section and the analysis of antennas. Since 1974 he has been engaged in the analysis and design of microwave filters, multiplexers, and antennas for the Space Division.

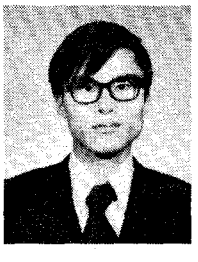
Dr. Thal is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.



Mark L. Thorn received the B.S. and M.S. degrees in electrical engineering from the State University of New York at Buffalo, Amherst, NY, in 1976 and 1979, respectively.

He joined the Hewlett-Packard Company Microwave Technology Center, Santa Rosa, CA, in February 1979, where he has been engaged in the processing development of microwave gallium arsenide MESFET's.

Mr. Thorn is a member of Tau Beta Pi.

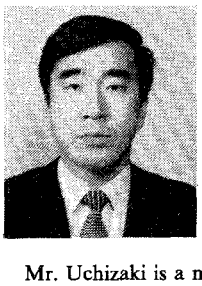


Naotaka Tomita was born in Nagoya, Japan, on June 13, 1952. He received the B.S. and M.S. degrees from Tokyo Institute of Technology, Tokyo, Japan, in 1975 and 1977, respectively.

He joined Toshiba Research and Development Center Kawasaki, Japan, in 1977, and has been engaged in the research and development of microwave components and devices. He is presently engaged in development of high-power transistor amplifiers.

Mr. Tomita is a member of the IECE of Japan.

C. Tsironis, photograph and biography not available at the time of publication.

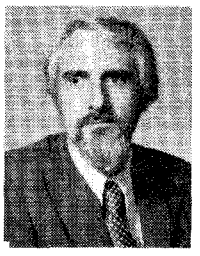


Ichiro Uchizaki was born in Hiroshima, Japan, on January 13, 1943. He received the B.S. and M.S. degrees from Tokyo Institute of Technology, Tokyo, Japan, in 1966 and 1968, respectively.

He joined Toshiba Research and Development, Kawasaki, Japan, in 1968 and has been engaged in the research and development of microwave semiconductor devices. He is presently engaged in development of microwave low-noise and high-power transistors.

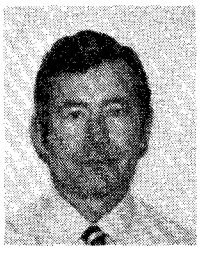
Mr. Uchizaki is a member of the IECE of Japan.

Tomio Ueda, photograph and biography not available at the time of publication.



Enzo A. Uliana was born on December 17, 1932, in Cliffside Park, NJ. He received the B. S. degree in mathematics from St. Mary's University, San Antonio, TX in 1958.

Since 1959, he has been with the staff at the Naval Research Laboratory, Washington, DC. For the past few years he has been involved in research into the design and use of very short pulse radar systems as remote sensing instruments for the measurement of oceanographic, meterological, and geodetic phenomena.



Edward J. Walsh (S'60–M'74) was born in Woonsocket, RI, on June 13, 1941. He received the B.S. and Ph.D. degrees in electrical engineering from Northeastern University, Boston, MA, in 1963 and 1967, respectively.

He was at the NASA Electronic Research Center in Cambridge, MA, from 1967 to 1970, both as a civilian Aerospace Technologist and as a Military Detailee from the U.S. Army (1968–1970), where he investigated MF-ducted propagation in the earth's magnetosphere. Since 1970 he has been an Aerospace Technologist at NASA Wallops Flight Center, Wallops Island, VA, where he is working in the area of radio oceanography investigating radar altimeters, beam-limited target-referenced radars, pulse-limited scatterometry, and generating real-time topographic maps using a scanning pencil-beam radar.

Dr. Walsh is a member of Commission F of URSI, Eta Kappa Nu, Tau Beta Pi, Phi Kappa Phi, and Sigma Xi.

Han-chiu Wang was born in Chekiang, China, on May 27, 1932. He received the B.S.E.E. degree from the Cheng Kung University, Taiwan, in 1955, the M.S.E.E. degree from the University of Notre Dame, South Bend, IN, in 1960, and the PH.D. degree in electrophysics from the Polytechnic of Brooklyn, Brooklyn, NY, in 1965.

From 1956 to 1958 he was employed by the Chinese Government Radio Administration, Taiwan. From 1960 to 1965, as a research fellow and later as a research associate at the Polytechnic Institute of Brooklyn, he did research in wave propagation and scattering on periodic structures. He then joined the Bell Telephone Laboratories, Inc., North Andover, MA, where he has been engaged in the development of microwave and millimeter wave components for various transmission systems.

James J. Whalen (M'61) was born in Meriden, CT, on February 16, 1935. He received the B.E.E. degree in 1958 from Cornell University, Ithaca, NY. He received the M.S.E. and Ph.D. degrees in electrical engineering from The Johns Hopkins University, Baltimore, MD, in 1962 and 1969, respectively.

After completion of his undergraduate work, he served as an officer for three years in the U.S. Navy. In 1961 he joined the staff of the Carlyle Barton Laboratory, The Johns Hopkins University, where he was an Associate Research Scientist. He carried out

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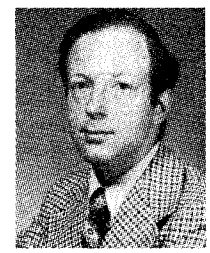
Eikichi Yamashita (M'66), photograph and biography not available at the time of publication.



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