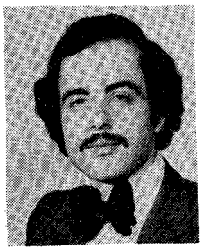
Contributors



Sina Akhtarzad was born in Tehran, Iran, on October 21, 1950. He received the B.Sc. (honors) and Ph.D. degrees in electrical and electronic engineering from the University of Nottingham, Nottingham, England, in 1972 and 1975, respectively.

He was employed at the British Post Office Research Centre, Castleton, Cardiff, South Wales, U.K., in the summer of 1972, where his work involved the development of a new technique for the design of coupled microstrip line. In October 1972 he commenced research studies for the Ph.D. degree at the University of Nottingham, under a contract with the United Kingdom Ministry of Defence to investigate the low-loss microstrip mode. He currently holds a postdoctorate fellowship at Nottingham University with the United Kingdom Ministry of Defence and E.M.I. Systems and Weapons Division, Wells, Somerset, England. His research interest has been in the development of the TLM method for the solution of field problems and its application in computer-aided circuit and system design. He is the coauthor of 15 publications and is currently co-writing a book on the numerical analysis of electromagnetic wave problems by the TLM method.

Dr. Akhtarzad is an associate member of the Institution of Electrical Engineers, London, England.

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Emil Benko was born in Lakewood, Ohio. He received the B.S. and M.S. degrees in physics from Purdue University, Lafayette, Ind., in 1951 and 1953, respectively.

From 1953 to 1958 he did basic research and development on breakdown mechanisms in solid-state devices at Hughes Aircraft Company Semiconductor Division. From 1958 to 1971 he was responsible for development and production of Zener diodes and other semiconductor devices at Continental Device Corporation (later Teledyne Semiconductor). In 1971 he joined the Electron Dynamics Division, Hughes Aircraft Company, Torrance, Calif., and is currently developing solid-state microwave devices.

Mr. Benko is a member of the American Physical Society.

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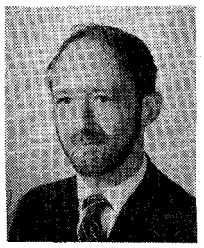

Harold C. Bowers (M'66) was born in Scranton, Pa., on November 21, 1939. He received the S.B. degree in physics from the Massachusetts Institute of Technology, Cambridge, and the M.S. and Ph.D. degrees in applied physics from Cornell University, Ithaca, N.Y., in 1961, 1964, and 1966, respectively.

He joined the General Electric Company in 1961 to work on semiconductor devices at the Advanced Electronics Center, Ithaca, N.Y. In 1966 he transferred to General Electric's Electronics Laboratory in Syracuse, N.Y., where he was engaged in quantum electronics and solid-state device research and development. Since June 1969 he has been working on microwave solid-state devices and circuits at the Electron Dynamics Division, Hughes Aircraft Company, Torrance, Calif. At the present time, he is manager of the Semiconductor Device and Component Department.

Dr. Bowers is a member of Phi Kappa Phi.

Edward G. Cristal (S'58–M'61–SM'66) was born in St. Louis, Mo. He received the B.S. and A.B. degrees in electrical engineering and mathematics and the M.S. degree in electrical engineering from Washington University, St. Louis, Mo., in 1957 and 1958, respectively, and the Ph.D. degree in electrical engineering from the University of Wisconsin, Madison, in 1961.

From March 1961 to January 1972 he was with the Electromagnetic Techniques Laboratory, Stanford Research Institute (SRI), Menlo Park, Calif. At SRI he participated in programs of applied research and development of microwave and UHF components, including filters, multiplexers, directional couplers, impedance-matching networks, equalizers, and multipliers. From January 1972 to June 1973 he was Associate Professor of Electrical Engineering, McMaster University, Hamilton, Ont., Canada. He joined the Hewlett-Packard Company, Palo Alto, Calif., in June 1973 where he is currently working in the area of telecommunications.

Dr. Cristal is a member of the IEEE Communications, Circuits and Systems, and Microwave Theory and Techniques Societies.

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Edgar J. Denlinger (S'59–M'67) was born in Lancaster, Pa., on June 17, 1939. He received the B.S. degree in engineering science from Pennsylvania State University, University Park, in 1961, and the M.S. and Ph.D. degrees in electrical engineering from the University of Pennsylvania, Philadelphia, in 1964 and 1969, respectively.

From 1961 to 1963 he was in the RCA Graduate Study Program while working in the RCA Applied Research Department, Camden, N.J. Until 1965 he was engaged in research on solid-state traveling-wave masers, superconducting magnets, and experimental transistors. From 1965 to 1967 he held a University of Pennsylvania Research Assistantship during which he did research on a bulk-effect oscillator. From 1967 to 1973 he was a staff member at Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, working in the areas of microwave integrated circuits, phased array antennas, and air traffic control. Since April 1973 he has been a member of the Technical Staff at RCA Laboratories, Princeton, N.J., engaged in research on microwave solid-state devices and integrated circuits.

Dr. Denlinger is a member of Sigma Xi, Tau Beta Pi, Sigma Tau, and Phi Kappa Phi. He is also a member of the Editorial Review Board for the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES.

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Glenn F. Engen (SM'71) was born in Battle Creek, Mich., on April 26, 1925. He received the B.A. degree in physics and mathematics from Andrews University, Berrien Springs, Mich., 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 Stand-

ards, Boulder, Colo., 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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O. P. Gandhi (S'57–M'58–SM'65) was born in Multan, West Pakistan, on September 23, 1934. He received the B.Sc. (Honors) degree in physics from Delhi University, Delhi, India, in 1952, and the Diploma in electrical engineering from the Indian Institute of Science, Bangalore, India, in 1955. Continuing his graduate studies at the University of Michigan, Ann Arbor, he obtained the M.S.E. and Sc.D. degrees in electrical engineering in 1957 and 1960, respectively.

Subsequently, he worked on semiconductor plasmas at the Philco Scientific Laboratory, Blue Bell, Penn. From 1962 to 1966 he worked at the Central Electronics Engineering Research Institute, Pilani, India, first as Assistant Director and then as Deputy Director in charge of the Microwave Devices group. Since 1967 he has been with the University of Utah, Salt Lake City, where he a Professor of Electrical Engineering and Research Professor of Bioengineering with research interests in microwave and optical interactions in solids and microwave biological effects.

Dr. Gandhi is a member of Sigma Xi, Phi Kappa Phi, and Eta Kappa Nu.

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Achintya K. Ganguly was born in Bengal, India, on December 3, 1930. He received the Ph.D. degree in physics from New York University, New York, in 1965.

From 1965 to 1967 he was a Postdoctoral Fellow in the Department of Physics, New York University, where he was engaged in research on the scattering of light from quasiparticles in solids. From 1967 to 1972 he was a staff member at GTE Laboratories, Bayside, N.Y., and worked on electron–phonon interactions in solids and nonlinear acoustics. He joined the Naval Research Laboratory, Washington, D.C., in 1972 as a Research Physicist. He is now working on magnetostatic and magnetoelastic surface-wave propagation in layered structure.

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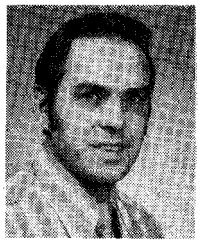
K. R. Heath was born in Woodford, Essex, England on November 21, 1924. He received the B.Sc. degree from London University, London, England in 1952.

In 1954 he joined the Services Electronics Research Laboratory, Ministry of Defence (P.E.), Baldock, Herts., England, to work on the magnetic properties of ferrites for Faraday rotation isolators, and on research and development of very high power klystrons and TWT amplifiers. Since 1964 he has worked on broad-band parametric amplifiers having signal frequencies from 2 to 16 GHz, with special emphasis more recently on solid-state pumping.



Cletus A. Hoer (S'66–M'67) was born in Westphalia, Mo., in 1933. He attended Weber State College, Ogden, Utah, 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, Colo., 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.

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Peter B. Johns, for a photograph and biography please see page 539 of the June 1975 issue of this TRANSACTIONS.

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John G. Linvill (A'49–M'55–F'60) was born in Missouri in 1919. He received the A.B. degree in mathematics from William Jewell College, Liberty, Mo., in 1941, the B.S., M.S., and Sc.D. degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1943, 1945, and 1949, respectively. He received an Honorary Doctor of Applied Science degree from the University of Louvain, Louvain, Belgium, in 1966.

From 1949 to 1951 he was Assistant Professor of Electrical Engineering at M.I.T. From 1951 to 1955 he was a member of the technical staff at the Bell Laboratories, Murray Hill, N. J., where he did research on transistor circuit problems in linear and pulse circuits. Since 1955 he has been at Stanford University, Stanford, Calif., where he is Chairman of the Department of Electrical Engineering and Associate Dean of the School of Engineering. His recent research is concerned with integrated circuits.

Dr. Linvill is a member of Sigma Xi, Eta Kappa Nu, the National Academy of Engineering, and the American Academy of Arts and Sciences.

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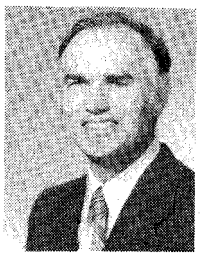

Eugene C. McDermott, Jr., was born in Queens, N.Y., on August 2, 1931. He served four years in the U.S. Navy in communications and graduated from RCA Institutes in 1957.

From June 1957 to March 1966 he was employed by Bell Laboratories in Murray Hill and Holmdel, N.J. During this time he was engaged in the development of magnetic devices for microwave applications and, especially, uniform field determinations for traveling-wave tubes and backward-wave oscillator tubes. Since March 1966 he has been with RCA Laboratories, Princeton, N.J., working on transferred electron devices, frequency doublers, avalanche diodes, TRAPATT amplifiers, and millimeter-wave IMPATT diode oscillators.

Joseph T. McGoogan was born in Brunswick, Ga., on August 14, 1936. He received the B.S. degree in electrical engineering from the Georgia Institute of Technology, Atlanta, in 1959.

From 1960 to 1963 he was a Radar Systems Engineer and from 1963 to 1971 he was Head of the Radar Systems Section at Wallops Flight Center, National Aeronautics and Space Administration, Wallops Island, Va. While in this capacity he was responsible for pulse Doppler being applied to range instrumentation radar systems and precision radar systems being applied to atmospheric measurements; he was one of the Government Technical Monitors for the development of the FPQ-6 range instrumentation radar system built by RCA. Some other instrumentation projects under his direction include: infrared radar acquisition aid, real-time analog data-ranging systems, satellite and ground-based calibration of precision radars, and a self-erecting corner reflector. From 1971 to the present he has been Director of the Applied Sciences Directorate at the Wallops Flight Center. Also, he is currently Investigator for Skylab altimeter sensor evaluation and Chairman of the Instrument Working Group for the SEASAT-A satellite (scheduled for 1977 launch). Other projects under his direction include: the scientific investigations of GEOS-C; Lidar systems development for detection of chlorophyll, surface oils, and water depth; radar tracking of birds; various wetland, current or circulation, and oil-spill studies of the Chesapeake Bay region; atmospheric particle and molecule detection studies; and the laser development of a laser/radar combination system for satellite tracking and/or aircraft landing.

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Douglas J. Mellor (S'70–M'74) received the B.S.E.E. and M.S.E.E. degrees from Brigham Young University, Provo, Utah. He attended Stanford University, Stanford, Calif., on the Hewlett-Packard Honors Co-op Program, and received the Ph.D. degree in electrical engineering from Stanford in 1975.

He joined the Hewlett-Packard Company, Palo Alto, Calif., in 1971. He has since investigated and developed wide-band amplifiers and other microwave components in the 2–12-GHz range for synthesizer, receiver, and signal generator applications. In addition to his Hewlett-Packard duties, he is a part-time Lecturer in Stanford University's Department of Electrical Engineering.

Dr. Mellor is a member of Tau Beta Pi and Sigma Xi.

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Thomas A. Midford (M'67) was born in Pullman, Wash., on June 9, 1934. He received the B.A. degree from Reed College, Portland, Ore., and the M.A. and Ph.D. degrees, all in physics, from Stanford University, Stanford, Calif., in 1956, 1958, and 1962, respectively.

From 1962 to 1964 he was employed by Standard Telecommunications Laboratory, Harlow, Essex, England, where he worked on acoustic amplifiers and electron optics. From 1964 to 1968 he worked at the General Electric Electronics Laboratory, Syracuse, N.Y., where he did research on acoustic devices, bulk-effect devices, and avalanche diodes. In 1968 he joined the Electron Dynamics Division, Hughes Aircraft Company, Torrance, Calif. He is currently Manager of the Torrance Research Center responsible for advanced research and development of microwave and millimeter-wave devices and circuits.

Dr. Midford is a member of the American Physical Society, Phi Beta Kappa, and Sigma Xi.

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Edward Mykietyn graduated from Central High School, Newark, N.J., in 1947.

He joined the RCA Microwave Tube Engineering Section, Harrison, N.J., in 1950, where he was involved in the construction of magnetron tubes. In 1953 he was made Foreman of the Microwave Tube Assembly group and was responsible for the assembly, mounting, processing, and finishing of microwave tubes. In 1958 he transferred to the Manufacturing Traveling Wave Tube Center to aid in the development of new production operations and work techniques. In a Cost Reduction Program (CRS) he was named Suggestion Foreman of the year 1960–1961. In 1962 his job classification changed to Specialist, Microwave Manufacturing A, and he was responsible for the variant and short-run construction of traveling-wave tubes. In 1964 he was responsible for the assembly techniques and construction of highly reliable metal-ceramic traveling-wave tubes for a military satellite application. In May 1965 he joined the Microwave Technology Center at the David Sarnoff Research Center, RCA Laboratories, Princeton, N.J., as a Technical Staff Associate, and was responsible for the assembly and processing of microwave cross-field delay tubes and solid-state microwave power sources. During the past few years he has been engaged in the fabrication and processing of linear power amplifiers, transistor chip carriers, FET amplifiers, and bonding techniques.

Mr. Mykietyn was a recipient of the David Sarnoff Achievement Award in 1955.

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Joseph J. Nahas (S'62–M'69) was born in New York, N.Y., on September 22, 1942. He received the B.E.E. degree from Manhattan College, New York, N.Y., in 1964, and the M.S. and Ph.D. degrees in electrical engineering from Purdue University, Lafayette, Ind., in 1966 and 1971, respectively. While at Purdue University he held a National Aeronautics and Space Administration Traineeship.

In 1971 he was appointed an Assistant Professor of Electrical Engineering at the University of Notre Dame, Notre Dame, Ind., where he has been engaged in research into microwave semiconductor devices and systems, and digital system design.

Dr. Nahas is a member of Sigma Xi, Eta Kappa Nu, Sigma Pi Sigma, and Pi Mu Epsilon and is currently Vice-Chairman of the South Bend Section of the IEEE.

Chuka O. G. Obah (S'71–M'73) was born in Nnobi, Nigeria, in 1943. He received the B.Sc. (Honors) degree in electrical and electronic engineering, the M.Sc. degree in microwaves and quantum electronics, both from the University of London, London, England, the Diploma in microwave engineering from the University College, London, England, and the Ph.D. degree in electrical engineering from Queen's University, Kingston, Ont., Canada, in 1968, 1969, 1972, and 1973, respectively.

From 1969 to 1970 he was with the Standard Telecommunications Laboratory, Harlow, Essex, England, working on electronics switching systems. He has carried out research work on corona effects on cables, subharmonic locking of microwave oscillators, and experimental and computer-aided modeling and characterization of avalanche diodes and circuits. Since 1973 he has been with the Electron Dynamics Division, Hughes Aircraft Company, Torrance, Calif., where he is currently working on solid-state devices and circuits.

Dr. Obah is an Associate Member of the Institution of Electrical Engineers, London.

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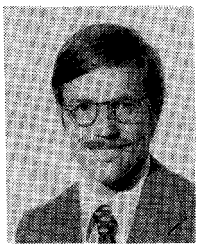

Robert D. Regier (S'74) was born in Fresno, Calif., on May 27, 1941. He received the M.S. degree in operations research from Stanford University, Stanford, Calif., and the Ph.D. degree in electrical engineering from the University of California, Santa Barbara, in 1965 and 1972, respectively.

In 1972 he joined the Watkins-Johnson Company, where he developed varactor-tuned Gunn oscillators and automated microwave test equipment. Since 1974 he has been with the Electron Dynamics Division, Hughes Aircraft Company, Torrance, Calif., where he leads a group engaged in the design and production of microwave diode oscillators and millimeter-wave phase-locked sources.

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Keith C. Roe (S'60–M'61) was born in Pocatello, Idaho, on December 3, 1932. He received the B.S. degree in electrical engineering from the University of Idaho, Moscow, in 1960.

He joined the National Bureau of Standards in 1960 and has engaged in research activities related to HF impedance bridges, HF and microwave impedance standards, HF and microwave phase measurement systems, and phase and group delay measurement techniques. He is currently a member of the Microwave Circuit Parameters Group, Electromagnetics Division, National Bureau of Standards, Boulder, Colo.

Jerome Rosen (M'65) was born in New York, N.Y., on October 6, 1929. He received the B.S.E.E. degree from the City College of New York, N.Y., in 1970, and the M.S.E.E. degree from the Newark College of Engineering, Newark, N.J., in 1973.

Between 1956 and 1969 he was employed by the following: the Microwave Research Institute, Polytechnic Institute of Brooklyn, Brooklyn, N.Y.; Merrimac Research and Development Company, Irvington, N.J.; Frequency Engineering Laboratories, Farmingdale, N.J.; Lockheed Electronics Company, Plainfield, N.J.; and Blass Antenna Electronics Corp., Leonia, N.J., where he was Manager of the microwave group. He joined RCA Laboratories, Princeton, N.J., in 1969. Here he has been concerned with vehicle location, vehicle identification, and collision-avoidance radar, specializing in low-cost medium-gain printed circuit antennas, and integrated microwave transmitters and receivers.

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C. A. Tearle was born in Harlow, Essex, England on June 4, 1930.

After serving in the R.A.F. as a Radio Engineer he joined the Services Electronics Research Laboratory, Ministry of Defence (P.E.), Baldock, Herts., England, in 1950 where he has worked on research and development of many different types of microwave tube. Since 1967 he has worked in the solid-state microwave device area and is currently engaged in a millimeter-wave IMPATT program.

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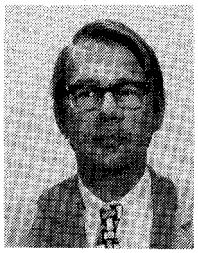

Denis C. Webb (M'72) was born in Skowhegan, Me., on May 12, 1938. He received the B.S.E. degree in engineering physics and the M.S. degree in physics, both from the University of Michigan, Ann Arbor, in 1960 and 1961, respectively, and the Ph.D. degree in applied physics from Stanford University, Stanford, Calif., in 1971, where his dissertation involved work on the development of a scanned acoustical microscope.

From 1961 through 1966 he was employed by the Westinghouse Defense and Space Center in Baltimore, Md., where he conducted research and development on microwave propagation structures and on YIG magnetostatic-wave devices. Following his graduation from Stanford, he worked at the Physical Electronics Laboratories in Menlo Park, Calif., developing YIG-tuned Gunn oscillators. In 1972 he joined the Microwave Acoustics Group at the Naval Research Laboratory, Washington, D.C. His current work is devoted to research and development of acoustic and magnetostatic surface-wave devices for signal processing.

Dr. Webb is a member of Tau Beta Pi.