

Contributors



Frank S. Barnes (S'54-M'58-F'70) was born in Pasadena, CA, on July 31, 1932. He received the B.S.E. degree from Princeton University, Princeton, NJ, in 1954, and the M.S. and Ph.D. degrees from Stanford University, Stanford, CA, in 1956 and 1958, respectively, all in electrical engineering.

He was a Fulbright Professor at the College of Engineering, Baghdad, Iraq, during the academic year 1957-1958. In 1958 and 1959, he worked as a Research Associate with the Colorado Research Corporation, Broomfield, CO. In 1959, he joined the Electrical Engineering Department at the University of Colorado, Boulder, as an Associate Professor. He became Chairman of the Department in 1963, and Full Professor in 1964. He has been carrying out research activity in the fields of masers and molecular beam standards, application of lasers to biology, and millimeter waves. He is also involved in research programs in the application of acoustics, lasers, and radio waves to biological systems.

Dr. Barnes is a member of the Society of Sigma Xi, the American Physical Society, and Eta Kappa Nu. In 1977, he was elected Fellow of the American Association for the Advancement of Science.



Elio Bava was born in 1940. He received the degree in electronic engineering from the Politecnico di Torino, Turin, Italy, in 1964.

In 1966, he joined the Istituto Elettrotecnico Nazionale "Galileo Ferraris," Turin, Italy, where, for a few years, he was involved in microwave measurements and satellite communication research. For the last five years, he has been interested in frequency multiplication from UHF up to the submillimeter wavelength region and, recently, in frequency synthesis in the far

infrared.



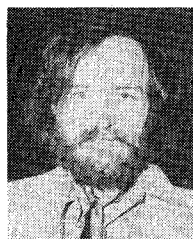
Gian Paolo Bava was born in Varallo Sesia, Italy, in 1937. He received the degree in electrical engineering from the Politecnico di Torino, Turin, Italy, in 1961.

Since then, he has been engaged in research at the Istituto di Elettronica e Telecomunicazioni, Politecnico di Torino, Turin, Italy, and at the Istituto Elettrotecnico Nazionale "Galileo Ferraris," Turin, Italy. At present, he also holds the rank of Professor of Microwave Techniques at the Politecnico di Torino.



Gary C. Berkowitz (S'77) is a student at the University of Colorado pursuing the B.S. degree in electrical engineering/computer science and the B.A. degree in psychology. He has worked on development of computer-aided digital design systems, machine intelligence, and modeling of neural networks in the cerebral cortex. For the past two years, he has been doing research on the nonthermal effects of microwaves on biological membranes. He plans to do graduate work in interdisciplinary studies.

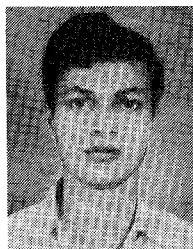
Mr. Berkowitz is a student member of the ACM.



Herbert J. Carlin (M'47-SM'50-F'56) received the B.S. degree from Columbia University, New York, NY, the M.S. degree from the Columbia University School of Electrical Engineering, New York, NY, and the D.E.E. degree from the Polytechnic Institute of Brooklyn, Brooklyn, NY, in 1947. In 1964-1965, he received an NSF Senior Postdoctoral Research Fellowship and spent the year at the Physics Laboratory of the Ecole Normale Supérieure, Paris, France.

After graduation he was employed by the Westinghouse Company. He then joined the faculty of the Polytechnic Institute of Brooklyn where, from 1961 to 1966, he was Chairman of the Department of Electrophysics. He was a Visiting Professor of Electrical Engineering at M.I.T., Cambridge, MA, from 1972 to 1973, and a member of the Lehigh University Electrical Engineering Visiting Committee, Bethlehem, PA. He was Director of the School of Electrical Engineering at Cornell University, Ithaca, NY, from 1966 to 1975, and is J. Preston Levis Professor of Electrical Engineering at Cornell University. He has contributed over 50 technical articles in network theory and microwave measurements, techniques, and devices. He holds 12 U.S. patents, and is senior author of the book *Network Theory*.

Dr. Carlin is past Chairman of the IEEE Professional Group on Circuit Theory.



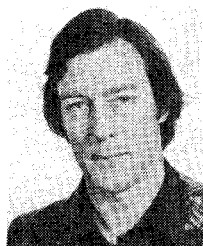
B. B. Chaudhuri was born in Serajganj, Bangladesh, on December 7, 1950. He received the B.Sc. (Hons.), B.Tech., and M.Tech. degrees with specialization in microwave and communication engineering from Calcutta University, Calcutta, India, in 1969, 1972, and 1975, respectively.

After a brief stay at the Indian Statistical Institute, Calcutta, he joined the Indian Institute of Technology, Kanpur, in 1976, and is presently working towards the Ph.D. degree. His main research interests include integrated optics, pattern recognition, and image processing, in which he has ten publications to his credit.



Kwo Ray Chu was born in China on October 10, 1942. He received the B.S. degree in physics from the National Taiwan University in 1965, the M.S. degree in physics from the University of Massachusetts in 1968, and the Ph.D. degree in applied physics from Cornell University, Ithaca, NY, in 1972.

From 1973 to 1977, he was a Research Physicist with Science Applications, Inc., specializing in microwave theory, relativistic electron beam physics, plasma waves and instabilities, and anomalous heat transport in controlled fusion devices. In September 1977, he joined the Plasma Physics Division, Naval Research Laboratory. He is currently a Principal Investigator for the NRL cyclotron maser (gyrotron) program.



J. H. Cloete (M'77) was born in Clocolan, South Africa, on June 29, 1945. He received the B.Sc. and the B.Eng. degrees in electrical engineering from the University of Stellenbosch, Stellenbosch, South Africa, in 1968. He received the M.Sc. degree in electrical engineering from the University of California, Berkeley, in 1972.

Since 1970, he has been with the South African Council for Scientific and Industrial Research, Pretoria, South Africa, working on microwave components and systems. From August 1972 to March 1973, he worked at Scientific Atlanta, Atlanta, GA, on the design and manufacture of a 2–12-GHz shaped beam reflector antenna. From March 1977 to February 1978, he was on leave at the University of Stellenbosch working on microwave linear-phase filters.

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Rudolf Deutsch was born in Brasov, Rumania, in 1931. From 1950 to 1954, he studied chemistry at the University of Cluj, Cluj, Rumania. In 1962, he received the Ph.D. degree in theoretical physics from the University Lomonosov of Moscow, Moscow, U.S.S.R.

From 1954 to 1959, he was a Teacher at a secondary school and a Research Assistant at the University of Cluj. From 1962 to 1973, he was a Reader in Physics at the Polytechnical Institute at Iasi, Rumania. From 1973 to 1977, he did research work at a brewery at Innsbruck, Austria, and received the degree of a Reader in Physics at the University of Innsbruck, Austria.

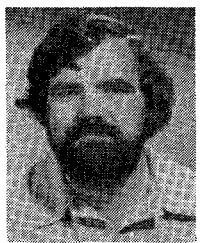
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Adam T. Drobot was born in Zakopane, Poland, on May 13, 1947. He received the B.S. degree in engineering physics from Cornell University, Ithaca, NY, in 1968, and the Ph.D. degree in physics from the University of Texas, Austin, in 1974.

He has been working at Science Applications, Inc., as a Research Physicist specializing in numerical simulations of relativistic plasmas. He has worked on problems of generating electromagnetic radiation from intense relativistic electron beams, the electron cyclotron maser, collective ion acceleration, and is currently involved in research on electron and ion flow in high-power diodes.

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Roger D. Fildes was born in Murphysboro, IL, on December 14, 1950. He received the B.S. degree (with high honors) and M.S. degree in electrical engineering from the University of Illinois, Urbana, in 1972 and 1976, respectively.

From September 1972 to December 1974, he was a Teaching Assistant and Instructor for the Department of Electrical Engineering, University of Illinois, Urbana. In January 1975, he joined the Surface Acoustic Wave Research Group at the Coordinated Science Lab, University of Illinois, where he is currently working on surface acoustic wave resonators and reflectors.



Aldo Godone was born in Torino, Italy, in 1949. He received the degree in electronic engineering from the Politecnico di Torino, Turin, Italy, in 1974.

Since 1974, he has been in the microwave group of the Istituto Elettrotecnico Nazionale "Galileo Ferraris," Turin, Italy. He has worked mainly on the frequency multiplication chains starting from the HF and VHF up to the submillimeter wavelength, with particular care to the noise problems in the lower frequency stages and to the efficiency problem at the higher frequencies.

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Victor L. Granatstein was born in Toronto, Ont., Canada, on February 8, 1935. He received the B.S. and Ph.D. degrees in electrical engineering from Columbia University, New York, NY, in 1960 and 1963, respectively.

From 1964 to 1972, he worked at Bell Laboratories, doing research on the interaction of microwaves with turbulent plasma. Since 1972, he has been with the Plasma Physics Division of the Naval Research Laboratory, Washington, DC, where he is currently Head of the Electron Beam Applications Branch. From 1969 to 1970, he was a Visiting Lecturer in Plasma Physics at the Hebrew University of Jerusalem, Israel. His current research interests include generation of ultra-high power microwave pulses with intense relativistic electron beams and the development of electron cyclotron masers (gyrotrons) at millimeter and submillimeter wavelengths.

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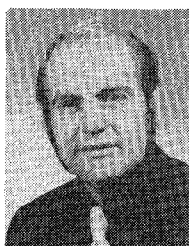


Joseph Helszajn (M'64) was born in Brussels, Belgium, in 1934. He received the Full Technological Certificate of the City and Guilds of London Institute from Northern Polytechnic, London, England, in 1955, the M.S.E.E. degree from the University of Santa Clara, Santa Clara, CA, in 1964, the Ph.D. degree from the University of Leeds, Leeds, England, in 1969, and the D.Sc. degree from Heriot-Watt University, Edinburgh, in 1976.

He has held a number of positions in the microwave industry. From 1964 to 1966, he was Product Line Manager at Microwave Associates, Inc., Burlington, MA. He is currently a Senior Research Fellow at Heriot-Watt University, Edinburgh, Scotland. He is the author of the books *Principles of Microwave Ferrite Engineering* (NY: Wiley, 1969), *Nonreciprocal Microwave Junctions and Circulators* (NY: Wiley, 1975), and *Passive and Active Microwave Circuits* (NY: Wiley, 1978).

Dr. Helszajn is a fellow of the Institution of Electronic and Radio Engineers (England). In 1968, he was awarded the Insignia Award of the City and Guilds of London Institute.

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Bill J. Hunsinger obtained the B.S.E.E. degree in 1961, and the Ph.D. degree in electrical engineering in 1970, from the University of Illinois, Urbana.

In 1961, he began work at the General Electric Company in Bloomington, IL, as an Advance Development Engineer developing new solid-state control product lines. In 1967, he began work in the Advanced Development Department at the Magnavox Company, where he established the research program in SAW de-

vices. This work led to the first programmable match filters, folded path large time-bandwidth delay lines, and spread spectrum communication links implemented with SAW devices. In 1974, he joined the staff at the University of Illinois, and his research has been directed at theoretical and experimental analysis of surface acoustic wave transducers. This work has resulted in a simplified powerful new theoretical approach to SAW analysis based on orthogonal function description of SAW energy.

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David S. James (M'71) was born in Bradford-on-Avon, England, on January 24, 1945. He received the B.Sc. and Ph.D. degrees in electronics engineering from the University College of North Wales, Bangor, U.K.

From 1970 to 1977, he was employed by the Department of Communications, Communications Research Centre, Ottawa, Ont., Canada. He is now with Ferranti Ltd., Manchester, U.K. His work involves the development of passive and solid-state microwave circuits, especially

low-noise satellite subsystems.

Dr. James was Chairman of the Ottawa X-MTT Chapter and is a member of the A.V.S. and the IEE (UK).

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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, Melbourne, Australia, in 1964, 1967, and 1969, respectively.

In 1969, he joined the Commonwealth Scientific and Industrial Research Organization, Sydney, 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.

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James J. Komiak (SM'75-M'78) was born in Chicago, IL, on October 16, 1953. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from Cornell University, Ithaca, NY, in 1974, 1976, and 1978, respectively. During that time, he was engaged in the study of network theory and numerical techniques as a research assistant in the Department of Electrical Engineering.

He is presently working with ESM receiver development at IBM Federal Systems Division,

Owego, NY.

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



Yoshihiro Konishi (A'61-SM'65) was born in Nara, Japan, in September 1928. He received the B.S. and Ph.D. degrees from Kyoto University, Kyoto, Japan, in 1951 and 1961, respectively.

He joined the Nippon Hoso Kyokai (NHK, Japan Broadcasting Corporation), where he has been engaged in research on microwave circuits and systems. At present, he is a Deputy Director for Research and Principal Research Engineer at NHK Technical Research Laboratories, as

well as a Principal Investigator and Project Manager of the joint experiment "Advanced Ground Receiving Equipment Experiment (AGREE)" between NASA and NHK.

Dr. Konishi is a member of the editorial board of the IEEE Microwave Theory and Techniques Society, a member of AdCom, and a chief editor of the IEEE Broadcasting Society.

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Ralph Levy (SM'64-F'73) was born in London, England, on April 12, 1932. He received the M.A. degree in physics from St. Catharine's College, Cambridge University, England, in 1953, and the Ph.D. degree in electrical engineering from the University of London, London, England, in 1966.

From 1953 to 1959, he was a member of the Scientific Staff at the Applied Electronics Laboratories of the General Electric Company, Stanmore, Middlesex, England, where he

worked on guided missile, radar, and countermeasures systems, and on microwave components. In 1959, he joined Mullard Research Laboratories, Redhill, Surrey, where he was engaged in broad-band receiver design, ECM, microwave components, and network synthesis. In 1964, he was a faculty member in the Department of Electrical and Electronic Engineering at the University of Leeds, where he carried out research in the fields of microwave network synthesis and broad-band microwave components, and held positions as an industrial consultant. Since July 1967, he has been with Microwave Development Laboratories, Natick, MA, and has the position of Vice-President for Research. He has developed several new microwave devices, particular filters and couplers, and introduced new types of computer-aided design techniques.

Dr. Levy is a member of the Institution of Electrical Engineers (London).

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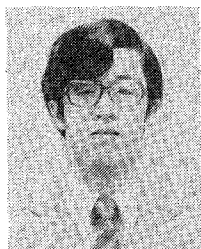


Leonard Lewin (A'69-SM'75) was born in Southend-on-Sea, England, on July 22, 1919.

During World War II he was with the British Admiralty doing research on antenna design, waveguides, and radar. In 1946, he joined Standard Telecommunication Laboratories, Harlow, England, where he became Head of the Microwave Laboratory in 1950 and Assistant Manager of the Transmission Laboratory in 1962. Currently he is Professor of Electrical Engineering, at the University of Colorado,

Boulder. He is the author of many papers and patents in the field of antennas and waveguides, as well as author of four research books.

Mr. Lewin is a member of the Institution of Electrical Engineers and a fellow of the British Interplanetary Society. He won the Microwave Prize for a paper on singular integral equations applied to waveguides in 1962. In 1967 he was awarded an honorary degree of Doctor of Science from the University of Colorado.



Hajime Matsumura was born in Toyama, Japan, on September 4, 1944. He received the B.E. degree in electrical engineering from Waseda University, Tokyo, Japan, in 1968, and the M.E. degree in electrical engineering from the Tokyo Institute of Technology, Tokyo, Japan, in 1970.

He joined Nippon Hoso Kyokai (NHK, Japan Broadcasting Corporation), Tokyo, Japan, in 1970. Since 1973, he has worked at their Technical Research Laboratories and has engaged in research and development of micro-

wave components and circuits.

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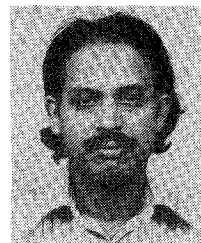
W. Terence Nisbet was born in St. Andrews, Scotland, on October 25th, 1954. In 1976, he received the B.Sc. degree in electrical and electronic engineering from Heriot-Watt University, Edinburgh, Scotland, where he is currently pursuing a Ph.D. degree.

His research interests include ferrite junction circulators at high- and low-signal levels and microstrip circuits. He is the coauthor of *Microwave Transistor Amplifier Design in Active and Passive Microwave Circuits* (NY: Wiley, 1978)

by J. Helszajn.

Mr. Nisbet was awarded the First Degree Prize by the Institute of Electrical Engineers (London) in 1976.

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D. K. Paul received the B.Tel.Eng. (Hons.) degree in 1961, the M.E. (E.C.E.) degree in 1962, and the Ph.D. (E.E.) degree in 1974, from Jadavpur University, Indian Institute of Science, Bangalore, India, and University of Rhode Island, Kingston, respectively.

He has held University Grants Commission senior research fellowship at the Indian Institute of Science from 1962 to 1965, Lecturership at the University of Roorkee from 1965 to 1969, Teaching/Research Assistantship at the University of Rhode Island, Kingston, from 1969 to 1974, Visiting Research Fellowship at the IBM Thomas J. Watson Research Center, Yorktown Heights, NY, in 1972, and a Post-Doctoral Research Associateship at the University of Maryland, College Park, from 1974 to 1975. Presently he holds a joint appointment as Assistant Professor in Electrical Engineering Department and Materials Science Program at the Indian Institute of Technology, Kanpur, India. Since his return to India in 1976, he has initiated research on dielectric optical waveguide. His current interests are in the areas of electromagnetic interaction with matter, fabrication and characterization of optical waveguide components. His other activities include research on electronic and magnetic materials, microwave semiconductor devices, amorphous silicon solar cells, etc. His research contributions have been published in journals of high international reputation. He has helped to organize and was a Panel Member of the NATO Advanced Study Institute on the Physics of Disordered Solids while at the University of Rhode Island (in 1974). He has received the IETE Award in 1967, from the Institution of Electronics and Telecommunication Engineers, India, for his work on anisotropic dielectric guides. He has also been a Reviewer for several international/national professional journals.

Dr. Paul is a member of the Institute of Electronics and Telecommunication Engineers, India, the Institution of Electrical Engineers (London), the American Physical Society, and Sigma Xi.



J. David Rhodes (M'67) was born in Doncaster, Yorkshire, England, on October 9, 1943. He received the B.Sc., Ph.D., and D.Sc. degrees in electrical engineering from the University of Leeds, Leeds, England, in 1964, 1966, and 1974, respectively.

From 1966 to 1967, he was a Research Fellow in the Department of Electrical and Electronic Engineering at the University of Leeds and then joined Microwave Development Laboratories, Incorporated, Natick, MA, as a Senior Research

Engineer. He currently holds a personal chair in the Department of Electrical and Electronic Engineering at the University of Leeds and is also a consultant in microwave engineering to Microwave Development Laboratories, Incorporated.

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Henry J. Riblet (A'45-M'55-F'58) was born in Calgary, Canada, on July 21, 1913. He received the B.S. and Ph.D. degrees from Yale University, New Haven, CT, in 1935 and 1939, respectively.

From 1939 to 1941 he taught mathematics at Adelphi College, Garden City, NY, and at Hofstra College, Hempstead, NY. He joined the staff of the Massachusetts Institute of Technology Radiation Laboratory, Cambridge, in 1942, and at the close of World War II was in charge

of one of the three developmental sections at the Antenna Group. From 1946 to 1948 he headed the RF group at the Submarine Signal Company, Boston, MA. In 1949, he helped form the Microwave Development Laboratories, Incorporated, Needham Heights, MA, where he is now employed. He served as Professor of Engineering Practice at Harvard University, Cambridge, MA, from 1960 to 1963.

Dr. Riblet was awarded the Microwave Career Award of the MTT Professional Group in 1976.

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Giovanni Rietto was born in Moncalieri, Italy, on March 8, 1935. He received the degree in electrical engineering from the Politecnico di Torino, Turin, Italy, in 1960.

Since 1962, he has been engaged in research in the radio department of the Istituto Elettrotecnico Nazionale "Galileo Ferraris," Turin, Italy. He has worked on spurious radiation measurements in connection with Special Committee on Radio Interference (CISPR) studies, and, since 1965, he has been concerned with

high accuracy microwave metrology. In these last years, he has been increasingly involved in the solution of electromagnetic and electronic problems with digital computers.

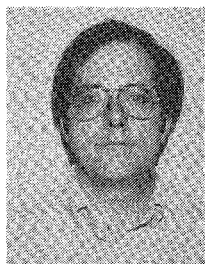
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Vittorio Rizzoli was born in Bologna, Italy, in 1949. He graduated from the School of Engineering, University of Bologna, Bologna, Italy, in July 1971.

From 1971 to 1973 he was with the Centro Onde Millimetriche of Fondazione Ugo Bordoni, Pontecchio Marconi, Italy, where he was involved in a research project on millimeter-waveguide communication systems. In 1973 he was in the United States at Hewlett-Packard Company, Palo Alto, CA, working in

the areas of MIC and microwave power devices. Since 1974, he has been Associate Professor at the University of Bologna, Italy, where he is now teaching a course on microwave integrated circuits. His current fields of interest are the design of microstrip circuits and the theoretical aspects of electromagnetic propagation in optical fibers.



Thomas Ruehle was born in 1954, in Redwood City, CA. He received the B.S. degree in electrical engineering from the University of Colorado, Boulder, in 1976, and is presently working there on the Masters degree in electrical engineering.

He is a member of Tau Beta Pi, the Engineering Honorary Society, and Eta Kappa Nu, the Electrical Engineering Honorary Society.

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J. Larry Seftor was born in Edinburgh, Scotland, on December 13, 1948. He received the B.A. degree in physics from the University of Colorado, Boulder, in 1970.

From 1971 to 1975, he worked at the Air Force Weapons Laboratory on the problem of optically diagnosing hot dense laboratory plasmas. In 1975, he joined Science Applications, Inc., McLean, VA, where he studied the generation of ultra-high power microwaves by the use of intense relativistic electron beams. Since

1977, he has been working at the Naval Research Laboratory, Washington, DC, where he has been involved in the design of gyrotron devices.

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S. R. Seshadri (SM'61) was born in Madras, India, on October 25, 1928. He received the B.Sc. degree (Hons.) and M.A. degree in physics at Madras University, Madras, India, in 1950 and 1951, respectively, the Diploma (D.I.Sc.) in electrical communication engineering at the Indian Institute of Science, Bangalore, India, in 1953, and the Ph.D. degree in applied physics at Harvard University, Cambridge, MA, in 1959.

He has been a Professor in the Department of Electrical and Computer Engineering, The University of Wisconsin, Madison, since 1967. Among other activities, he

has served as Principal Scientific Officer at the Electronics Research and Development Establishment, Bangalore, India, as Senior Engineering Specialist at the Sylvania Applied Research Laboratory, Waltham, MA, as Visiting Professor at the University of Toronto, Canada, as a National Science Foundation Senior Postdoctoral Fellow at the California Institute of Technology, and as Postdoctoral and Honorary Research Fellow at the Gordon McKay Laboratory of Harvard University. He has conducted research in electromagnetic scattering and diffraction, surface waves, wave propagation in the ionosphere, waves, instabilities, and radiation in plasmas, nonlinear waves, waves and instabilities in periodic media, microsonics, and magnetics.

Dr. Seshadri is a member of the American Physical Society, the Optical Society of America, and Commissions B and H of the International Union of Radio Science. He is the author of *Fundamentals of Transmission Lines and Electromagnetic Fields*, and *Fundamentals of Plasma Physics*.



Peter I. Somlo (SM'71) was born in Budapest, Hungary, on May 15, 1933. He graduated from the University of Technology of Budapest in 1956.

After graduation, he joined the Fine Mechanics Company, Budapest, where he was engaged in the development and design of high-frequency laboratory equipment. In 1957, he joined the Standard Telephones and Cables Company, London, England, where his work was concerned with microwave repeater stations.

In 1957, he joined the Standard Telephones and Cables Company, Liverpool, N.S.W., Australia, where he was engaged in developing pulse-technique circuitry. In the same year, he joined the National Measurement Laboratory (then National Standards Laboratory) of the Commonwealth Scientific and Industrial Research Organization, Sydney, Australia, where he is a Principal Research Scientist. His work involves the design and operation of radio frequency and microwave standards of measurement and the development of associated measuring techniques. He is the author of a number of articles and is the joint inventor of three patents.

Mr. Somlo is a member of the review board of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES and is Vice Chairman of the Australian section of the IEEE.

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Hiroshi Suga (S'69-M'70) was born in Kobe, Japan, on April 7, 1938. He received the B.S. degree in electrical engineering from the Osaka Institute of Technology, Osaka, Japan in 1960. From 1960 to 1965, he was an Assistant in the Department of Electronics, Osaka Institute of Technology. He received the M.S. and Ph.D. degrees in electrical engineering from the University of Osaka Prefecture, Sakai City, in 1967 and 1970, respectively. His thesis was a research on design method of electron guns.

In 1970 he was appointed a Lecturer and in 1971 became an Assistant Professor in the Department of Electronics, Osaka Institute of Technology. Since 1977, he has been a Professor in that department. His research interests are in waveguide discontinuities and electron beam exposure systems for the large scale integrated circuit.

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

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Torahiko Sugiura (M'66) was born in Osaka, Japan, on December 8, 1926. He received the B.S. degree in electrical communication engineering from Osaka University, Osaka, Japan, in 1948. From 1948 to 1953, he was a Fellow of the Faculty of Engineering of Osaka University. His thesis was a research of bandpass filters utilizing degenerate cavities. In 1957 he received the Ph.D. degree in electrical communication engineering from Osaka University.

In 1953 he joined the Department of Electrical Engineering, Osaka Institute of Technology, Osaka, Japan, where he was a Lecturer, an Assistant Professor (from 1954 to 1958), and a Professor (from 1958 to 1959). Since 1959 he has been a Professor in the Department of Electronic Engineering. His current research interests are microwave circuit and pattern recognition.

Dr. Sugiura is a member of the Institute of Electronic Communication Engineers of Japan.