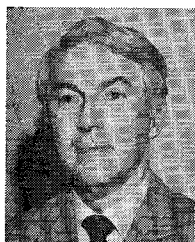


Contributors



Pierce A. Brennan was born in New York City, N. Y. He received the A.B. and M.S. degrees in physics from Fordham University, New York, N. Y., in 1948 and 1950, respectively.

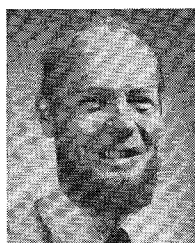
From 1948 to 1949 he was engaged in radar receiver design and from 1950 to 1956 in microwave tube research at the Evans Signal Laboratory, Belmar, N. J. In 1956 he joined the Electron Tube Laboratory at Stanford University, Stanford, Calif., where he continued work in the microwave tube field. Since 1960 he has been at the IBM Thomas J. Watson Research Center, Yorktown Heights, N. Y., where he has been concerned with packaging problems associated with high-speed circuit technology and, most recently, the area of circuit design automation.

Mr. Brennan is a member of the American Physical Society, the American Association of Physics Teachers, and Sigma Xi.



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.

While at the University of Wisconsin he investigated specialized electromagnetic boundary value problems using numerical methods. In 1961 he joined the staff of the Electromagnetic Techniques Laboratory of the Stanford Research Institute, Menlo Park, Calif., where he was engaged in applied research and development of a wide variety of microwave and UHF components including filters, multiplexers, directional couplers, impedance matching networks, equalizers, and multipliers. Since January 1972 he has been with the Faculty of Electrical Engineering and the Communications Research Laboratory of McMaster University, Hamilton, Ont., Canada. His current research interests include computer-aided design and telecommunications.



J. Brian Davies was born in Liverpool, England, on May 2, 1932. He received the B.A. degree in mathematics from Jesus College, Cambridge, England, in 1955, the M.Sc. degree in mathematics in 1957, and the Ph.D. degree in mathematical physics in 1960, both from the University of London, London, England.

From 1955 to 1963 he worked at the Mullard Research Laboratories, Salfords, Surrey, England, except for the period between 1958 and 1960 spent at University College, London. In 1963 he joined the staff of the Department of Electronic and Electrical Engineering,

University of Sheffield, Sheffield, England. Since 1967 he has been on the staff at University College, London, where he is now Reader in Electrical Engineering. For the year 1971-1972 he was a Visiting Scientist at the National Bureau of Standards, Boulder, Colo. His work has been concerned with problems of electromagnetic field theory, and he is currently interested in computer methods of solving such problems.

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



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

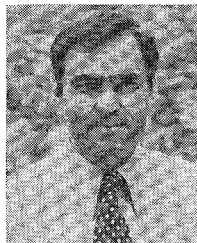
From 1953 to 1959 he was a member of the Scientific Staff at the Applied Electronics Laboratories, General Electric Company, Stanmore, Middlesex, England, where he worked on guided missile, radar, and countermeasures systems, and on microwave components. In 1959 he joined Mullard Research Laboratories, Redhill, Surrey, where he was engaged in broad-band receiver design, electronic countermeasures, microwave components, and network synthesis. In 1964 he was a faculty member in the Department of Electrical and Electronic Engineering, University of Leeds, Leeds, England, 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 1967 he has been with Microwave Development Laboratories, Natick, Mass., where he has the position of Vice President for Research.

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



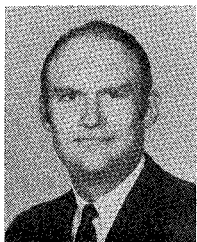
Tullio E. Rozzi (M'66) was born in Civitanova, Italy, on September 13, 1941. He received the Dottore degree in physics from the University of Pisa, Pisa, Italy, in 1965, and the Ph.D. degree in electronic engineering from Leeds University, Yorkshire, England, in 1968.

From 1963 to 1965, while at the University of Pisa, he worked on the Zeeman and Stark effects at microwave frequencies. In 1965 he joined the Electronic Engineering Department of Leeds University, where he pursued research in microwave network theory. Since 1968 he has been with the Philips Research Laboratories, Eindhoven, The Netherlands, where he has been engaged in the areas of nonlinear guided-wave propagation, algebraic invariants of linear networks, and network characterization of discontinuities in transmission lines. His current research interest is the application of Hilbert-space methods to discontinuities and propagation in multimodal transmission lines.



Albert E. Ruehli (M'65) was born in Zürich, Switzerland, on June 22, 1937. He received the Telecommunication Engineering degree in 1963 from Abend Technikum, Zurich, and the Ph.D. degree in electrical engineering in 1972 from the University of Vermont, Burlington.

From 1958 to 1963 he worked at the IBM Research Laboratory on thin magnetic film memories. In 1963 he transferred to the IBM Thomas J. Watson Research Center, Yorktown Heights, N. Y., where he worked in the area of semiconductor circuits and devices. In 1966 he moved to IBM, Burlington, where he was associated with the mathematical and engineering analysis group at the Components Division Laboratory. Since 1971 he has been a Research Staff Member at the Thomas J. Watson Research Center, where he is in the Circuit and Computer Design Automation Group developing new techniques for analysis of the electrical parameters of computer hardware technologies.

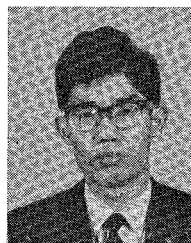


P. Silvester (S'60-M'64) was born on January 25, 1935. He received the B.S. degree in electrical engineering from the Carnegie Institute of Technology, Pittsburgh, Pa., the M.A.Sc. degree from the University of Toronto, Toronto, Ont., Canada, and the Ph.D. degree in electrical engineering from McGill University, Montreal, Que., Canada, in 1956, 1958, and 1964, respectively.

During 1967 to 1968, he spent a year at the Imperial College of Science and Technology,

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Dr. Silvester is a member of the Society for Industrial and Applied Mathematics, Sigma Xi, the Tensor Society of Great Britain, and is a Registered Engineer in the Province of Quebec.



Yoichiro Takayama (M'72) was born in Kanagawa, Japan, on January 3, 1942. He received the B.E. and M.E. degrees in electronic engineering from Osaka University, Osaka, Japan, in 1965 and 1967, respectively.

He joined the Nippon Electric Company, Ltd., Kawasaki, Japan, in 1967 and is now a Research Engineer of the Electron Device Research Laboratory, Central Research Laboratories. He has been engaged in the research and development of semiconductor bulk effect

functional devices and microwave semiconductor devices.

Mr. Takayama is a member of the Institute of Electronics and Communication Engineers of Japan.