

Contributors



Howard I. Bassen received the B.S.E.E. degree from the University of Maryland, College Park, in 1965, and is presently continuing graduate studies at George Washington University, Washington, D.C.

From 1965 to 1970, he performed RF and microwave antenna design as well as advanced radar systems research and development at the U.S. Army's Harry Diamond Laboratories. From 1970-1972, he served as project engineer with the U.S. Postal Service Laboratory in the parcel in-

spection program, involving both electromagnetic and X-ray weapon detection systems. From 1972 to the present, he has been involved in microwave hazard instrument development and calibration for the Food and Drug Administration's Bureau of Radiological Health. His present duties include the development of micro-miniature measurement probes for internal field bio-dosimetry at UHF and microwave frequencies. He has one patent, has applied for a second, and has published and presented over 20 papers on the subject of antennas, electromagnetic measurement techniques, and instrument design.

Mr. Bassen is a member of the American National Standards Committee C95 which develops electromagnetic radiation hazard measurement and safety standards.

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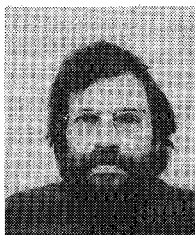


William E. Courtney was born in Lurgan, County Armagh, N. Ireland, on October 3, 1936. He received the B.Sc. degree with honors in physics, and the Ph.D. degree in electrical engineering from the Queen's University of Belfast, Belfast, N. Ireland, in 1959 and 1963, respectively.

From 1963 to 1966, he was a Department of Scientific and Industrial Research and Ministry of Aviation Post-Doctoral Research Fellow in the Department of Electrical Engineering, University of Leeds, England. From 1966 to 1968,

he was a Post-Doctoral Fellow in the Center for Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, and is currently a member of the Experimental Systems Group of the M.I.T. Lincoln Laboratory in Lexington, MA.

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William A. Herman was born in Washington, D.C., on March 9, 1947. He received the B.S. degree in electrical engineering from the George Washington University, Washington, D.C., in 1968.

From 1968 to 1970, he served on the staff of the Southeastern Radiological Health Laboratory of the U.S. Public Health Service, working on measurement of ionizing and nonionizing radiation, including dosimetry for bioeffects research. In 1970, he joined the Division of Electronic Pro-

ducts of the Food and Drug Administration's Bureau of Radiological Health. Since then, he has been working on the development and evaluation of instrumentation for near-field microwave radiation measurement, and on the evaluation of the safety of various commercial microwave products.

Mr. Herman is a member of Sigma Tau and Tau Beta Pi.



Takemi Inoue (S'67-M'70) was born in Osaka, Japan, on May 25, 1944. He received the B.S. and M.S. degrees in electrical communication engineering from the University of Osaka, Osaka, in 1967 and 1969, respectively.

Since April 1969, he has been employed at the Electrotechnical Laboratory, Ministry of International Trade and Industry, Tokyo, Japan, where he is engaged in research on microwave and millimeter-wave measurements.

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

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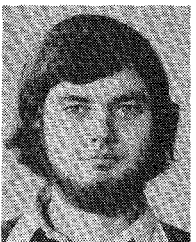
Motohisa Kanda was born in Kanagawa, Japan, on September 10, 1943. He received the B.S. degree from Keio University, Tokyo, Japan, in 1966, and the M.S. and Ph.D. degrees in electrical engineering from the University of Colorado, Boulder, in 1968 and 1971, respectively.

From 1965 to 1966 he did research on the avalanche breakdown in germanium p-n junction at cryogenic temperature at Keio University. From 1966 to 1971 he was a Research Assistant at the University of Colorado, where he was

engaged in research on impact ionization of impurities in n-type germanium, and nonreciprocal behavior in solid state magnetoplasma at millimeter and submillimeter wavelengths. In 1971 he joined the staff of the Electromagnetics Division, Institute for Basic Standards, National Bureau of Standards, Boulder, Colorado, where he is presently engaged in developing systems and techniques for use in microwave noise measurements, especially at millimeter wavelengths.

Dr. Kanda is a full member of Commission E of the International Union of Radio Science and Sigma Xi.

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Paul A. Kirton (S'74) was born in Melbourne, Australia, on May 3, 1952. He received the B.E. degree, with honors in electrical engineering, from Monash University, Clayton, Victoria, Australia, in 1974. From 1974, he has been a Ph.D. candidate at Monash University.

His interests lie in microwave and linear phase filter design.

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Jürgen Köhler was born in Finow, Germany, on January 19, 1940. He received the Ing. grad. degree in physics in 1964 from the Physikalisch-Technische Lehranstalt, Wedel, Germany.

Since 1965 he has been with the Philips Forschungslaboratorium Hamburg GmbH, Hamburg, Germany. As a member of the Microwave Application Group he has mainly been engaged in developing microwave components and microwave systems.



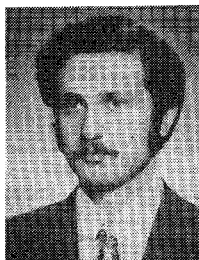
Hiroyuki Kumazawa was born on April 21, 1945. He received the B.S. degree in electrical engineering from Tohoku University, Sendai, Japan, in 1968.

In 1968, he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, and has been engaged in research on antenna, feeder systems, and branching filters for domestic communication satellite. He is currently an engineer in the Radio Device and Propagation Section,

Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

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

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Ali H. Nalbandoğlu (S'73) was born in Ankara, Turkey, on May 13, 1951. He received the B.Sc. and M.Sc. degrees in electrical engineering from Middle East Technical University, Ankara, Turkey, in 1972 and 1976, respectively.

He is currently employed as a Research Assistant at Middle East Technical University, where he is making doctoral studies on semiconductor devices in microwave frequencies. Mr. Nalbandoğlu is a member of the Turkish Association of Electrical Engineers.

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Toshio Nemoto (M'63) was born in Tokyo, Japan, on November 16, 1934. He received the B.S. degree from Meiji University, Tokyo, in 1958 and the Ph.D. degree from the Tokyo Institute of Technology, Tokyo, in 1970.

From 1958 to 1961, he was associated with the Research Laboratory of Precision Machinery and Electricity, Tokyo Institute of Technology, Tokyo. Since 1961, he has been associated with the Electrotechnical Laboratory, Ministry of International Trade and Industry, Tokyo, where

he has been concerned with the establishment of the Electromagnetics Standards. He is presently Chief of the Radio-electronics Section. From 1966 to 1968, he worked at the National Bureau of Standards, Boulder, CO, as a Guest Worker.

Dr. Nemoto is a member of the Institute of Electronics and Communications Engineers of Japan, the Institute of Electrical Engineers of Japan, and the Society of Instrument and Control Engineers of Japan.

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Isao Ohtomo (M'69) was born in Sapporo, Japan, on October 30, 1942. He received the B.S. and Ph.D. degrees in electrical engineering from the Hokkaido University, Hokkaido, Japan, in 1965 and 1974, respectively.

He joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, in 1965, and has since been engaged in research work on branching filters and other components for the guided millimeter-wave transmission system, 20-GHz

band radio relay PCM transmission system, and satellite communication system. At present, he is the assistant chief of the Satellite Communication Equipment Section, Integrated Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT, Yokosuka-shi, Kanagawa-ken, Japan.

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



Khee K. Pang (S'67-M'69) was born in Gemas, Malaysia, on September 16, 1941. He received the B.E. degree from the University of Melbourne, Melbourne, Australia, in 1964, and the Ph.D. degree from Monash University, Clayton, Victoria, Australia, in 1968.

From 1969 to 1970, he was a lecturer in the Department of Electrical Engineering and Computer Sciences, University of California, Berkeley. He joined the Department of Electrical Engineering, Monash University, in 1970, where he is presently a Senior Lecturer. His industrial experience includes P.M.G. Research Laboratories, where he worked as a Research Engineer in 1968, and later as a Consultant, Bell Laboratories, Holmdel, NJ, where he was a Member of the Technical Staff in 1969, and Stanford Research Institute, Menlo Park, California, where he was an International Fellow in 1976.

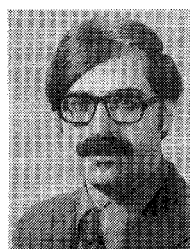
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Burkhard Schiek was born in Elbing, Germany, on October 14, 1938. He received the Diplom-Ingenieur and the Doktor-Ingenieur degrees in electrical engineering, both from the Technische Universität Braunschweig, Braunschweig, Germany, in 1964 and 1966, respectively.

From 1964 to 1969 he was an Assistant at the Institute für Hochfrequenztechnik of the Technische Universität Braunschweig, where he worked on frequency multipliers, parametric amplifiers, and varactor phase shifters. From 1966 to 1969, he was involved in MIS interface physics and in the development of MIS varactors. Since 1969, he has been with the Microwave Application Group of the Philips Forschungslaboratorium Hamburg GmbH, Hamburg, Germany, where he has mainly been concerned with the stabilization of solid-state oscillators, oscillator noise, microwave integration, and microwave systems.

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Barry E. Spielman (M'71) was born in Chicago, IL, on October 29, 1942. He received the B.S.E.E. degree from the Illinois Institute of Technology, Chicago, in 1964, the M.S.E.E. degree from Pennsylvania State University, University Park, in 1967, and the Ph.D. degree from Syracuse University, Syracuse, NY, in 1971.

From 1964 to 1967 he served as a Research Assistant in the Ionosphere Research Laboratory of the Pennsylvania State University. While studying at Syracuse University he was employed as an Instructor and Research Assistant. Since 1970 he has been employed at the Naval Research Laboratory, Washington, DC, where he is currently the Head of the Millimeter Techniques Section and Acting Head of the Microwave Module Section.

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J. Piotr Starski was born in Lodz, Poland, on October 19, 1947. He received the M.S. degree in electrical engineering from Chalmers University of Technology, Gothenburg, Sweden, in 1973.

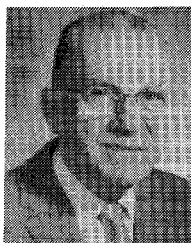
From 1973 to 1976 he was employed as a Research and Teaching Assistant at the Division of Network Theory, Chalmers University of Technology. He has been employed as a Research Engineer at this Division since 1976. His research interests are in the areas of phase shifters, directional couplers, and microwave filters.



Tadahiko Sugiura was born in Tokyo, Japan, on August 1, 1942. He received the B.S. and M.S. degrees in engineering from Keio University, Tokyo, Japan, in 1965 and 1967, respectively.

In 1967, he joined the Central Research Laboratories, Nippon Electric Co., Ltd., Kawasaki, Japan. Since then he has been engaged in the research and development of microwave communication systems and components. He is currently working on computer aided design of microwave integrated circuits, especially on field

analysis of strip transmission lines. Mr. Sugiura is a member of the Institute of Electronics and Communication Engineers of Japan.



Harold A. Wheeler (A'27-M'28-F'35-LF'68) was born in St. Paul, MN, on May 10, 1903. He received the B.S. degree in physics in 1925 and the honorary degree of Doctor of Science in 1972 from George Washington University, Washington, DC. He did post-graduate work until 1928 at Johns Hopkins University, Baltimore, MD.

He was employed by the Hazeltine Corporation from 1924 to 1946, advancing to Vice-President and Chief Consulting Engineer. In 1959, he resumed activity with this company as a

Director, and is now Chairman of the Board and Chief Scientist. From 1947, he was President of Wheeler Laboratories, Inc., Great Neck, NY, which became a subsidiary of Hazeltine Corporation and in 1971 merged with the parent company. His activity in the field of microwaves dates back to World War II, when he was one of the leaders in the Combined Research Group at NRL. That group was developing the future system of IFF (interrogation friend-or-foe), then designated the Mark V. From that beginning grew the Mark XII, which is now the standard. In the Wheeler Laboratories, during the two decades after the war, he directed advanced

work on microwave antennas and circuits, largely for precision tracking radar. More recently, in the Hazeltine Corporation, he was active in the development of the microwave landing system of the future. He first used strip lines during the war and since then has been active in formulating the properties of the strip on a dielectric sheet on a plane, including the effect of mixed dielectric. He has contributed many papers to IRE periodicals, and has been granted 180 U.S. Patents and many foreign patents.

Mr. Wheeler has served the IRE in such positions as Director (1934, 1940-1945) and Chairman of the Standards Committee; he received the Morris N. Liebmann Memorial Prize from IRE in 1940. In 1964, he was awarded the Medal of Honor by IEEE and the Armstrong Medal by the Radio Club of America. In 1975, he was the second to receive from G-MTT the Microwave Career Award. He is a Fellow of the Radio Club of America, an Associate Fellow of AIAA, an Associate Member of The Institute of Electrical Engineers (U.K.), and a member of Sigma Xi and Tau Beta Pi.



Itsuo Yamaura was born in Shizuoka City, Shizuoka, Japan, on October 13, 1943. He received the B.S. degree from Tohoku University, Sendai, Japan, in 1967, and the M.S. and Ph.D. degrees in electrical engineering from Hokkaido University, Sapporo, Japan, in 1969 and 1972, respectively.

During his graduate course to 1972, he studied the bioeffect of microwaves in the Research Institute of Applied Electricity, Hokkaido University. In 1972, he joined Electrotechnical Laboratory, Ministry of International Trade and Industry,

Japan, and is currently working on the biomeasurement using microwaves in the Opto- and Radio-electronics Division.

Dr. Yamaura is a member of Institute of Electronics and Communication Engineers of Japan and the Japan Society of Medical Electronics and Biological Engineering.