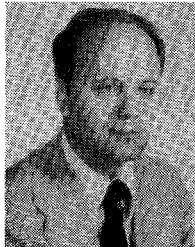


Contributors



Alfred J. Bahr (S'55-M'65-SM'74) was born in San Antonio, TX, on May 21, 1935. He received the B.S. degree in electrical engineering with great distinction from San Jose State College, San Jose, CA, in 1958, and the M.S. and Ph.D. degrees, both in electrical engineering, from Stanford University, Stanford, CA, in 1959 and 1964, respectively.

While at Stanford, he held a National Science Foundation Cooperative Fellowship during the years 1960 and 1961, and from 1961 to 1964 he

was a Research Assistant at the W. W. Hansen Microwave Laboratory, where he worked in the field of high-power traveling-wave tubes. During the year 1964-1965 he was a Visiting Research Fellow in the Electrical Engineering Department of Sheffield University, Sheffield, England, where he was engaged in research on the use of photoelectric mixing of coherent light to produce millimeter waves. In September 1965, he returned to Stanford University as a Research Associate in the Stanford Electronics Laboratory. There he worked on theoretical beam-plasma interaction problems and the theory of internally modulated ring lasers. In September 1966, he joined the staff of SRI International, Menlo Park, CA. There, during the period 1966 through 1974, he was primarily engaged in work on microwave acoustics, in particular, thin-film transducers and surface-wave devices. Since 1975, he has renewed his interest in electromagnetics, and he is currently involved in the study of electromagnetic scattering and antennas.

Dr. Bahr is a member of Tau Beta Pi, Phi Kappa Phi, Phi Eta Sigma, Sigma Xi, the IEEE Group on Sonics and Ultrasonics, and the IEEE Antennas and Propagation Society. He was President of the Sonics and Ultrasonics AdCom during 1975 and was the Guest Editor of the G-MTT Transactions special issue on Microwave Acoustics published in November 1969.



Giuseppe Caruso was born in Palermo, Italy, in 1948. He received the Ph.D. degree in electronic engineering from the University of Palermo, Palermo, Italy, in 1973.

Since completing his military service, he has been working at the University of Palermo as a Researcher. At present he is interested in noise characterization and measurements of solid-state microwave components.

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Jerzy Chramiec received the M.S. and Ph.D. degrees in electronics from Technical University of Gdansk, Poland, in 1956 and 1966, respectively.

From 1956 to 1977 he worked at the Technical University of Gdansk, Institute of Telecommunication as a member of the teaching staff. At the same time he was engaged in the research on microwave parametric circuits and the development and application of microwave integrated circuits. Since 1977 he has been with the University of Basrah, Basrah, Iraq, as an Assistant Professor in the field of microwave techniques.

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B. N. Das, for a photograph and biography please see page 218 of the March 1978 issue of this TRANSACTIONS.

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Dilip Kumar Banerjee was born in Calcutta, India, on February 15, 1932. He received the M.Sc. degree in physics in 1952 and the Ph.D. degree in radio communications in 1955, both from Banaras Hindu University, Varanasi, Uttar Pradesh, India.

From 1956 to 1957 he was a Senior Scientific Assistant of the Research Department, All India Radio, New Delhi. During the period from October 1957 to December 1960, he served in Blau Punkt Werke GmbH, Hildesheim Körting Radiowerke GmbH, Grassau and Valvo GmbH, Hamburg, Germany. Also he was with the Technical University at Braunschweig, Germany, as a German Academic Exchange Programme (DAAD) scholar from May 1961 to April 1963. He joined the Department of Electrical Engineering, Indian Institute of Technology, Madras, India, as an Assistant Professor in June 1963, and since May 1973 he has been with the same department as a Professor. His current research includes work on UHF techniques and microwave communication systems.



M. D. Deshpande (M'77) was born in Lohgaon, a village in Maharashtra, India in 1948. He received his B.E. degree in electrical engineering from Nagpur University in 1970, the M. Tech. degree from Indian Institute of Technology, Kharagpur, in 1972.

In 1973 he joined the Department of Electronics and Electrical Communication Engineering, I.I.T., Kharagpur, where he is working toward his Ph.D. degree.

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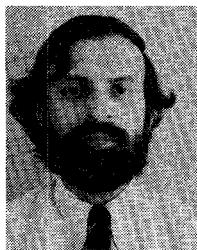
Brian Easter was born in Chelmsford, Essex, England, in 1924. He studied at University College, London, England, and Chelsea Polytechnic, London, England, and was awarded the B.Sc. (Eng.) and M.Sc. degrees by the University of London, London, England, in 1945 and 1951, respectively.

From 1944 to 1947 he was employed by Marconi's Wireless Telegraph Company, Ltd., working on high-frequency communication receivers. From 1948 to 1965 he was employed at the Hirst Research Centre of the General Electric Company at Wembley, and was mainly concerned with problems in the development of microwave radio-relay systems. Since 1965 he has been a member of the academic staff of the School of Electronic Engineering Science, University College of North Wales, Bangor, Caerns., Wales. His recent interests have centered on passive microwave circuits including microstrip transmission lines and circuits.



George H. Behrens, Jr., was born in New York City, NY, on July 8, 1934. He received the B.S. degree in electrical engineering from the University of Maine, Orono, in 1960.

From 1960 to 1964 he was employed by Deco Electronics, Incorporated, Leesburg, VA, and was involved in the design of shipboard antenna systems and related microwave components. In 1964 he joined the National Radio Astronomy Observatory, Green Bank, WV, and since that time has been involved in the design, testing, and maintenance of radio astronomy receivers and associated components.

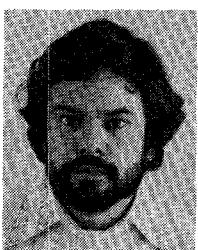


Anand Gopinath (S'64-M'65) received the B.E. degree from Madras University, Madras, India, the M. Tech. degree from the Indian Institute of Technology, Kharagpur, India, and the Ph.D. degree from Sheffield University, Sheffield, England.

He was a Graduate Apprentice with A.E.I. (Manchester) Ltd., Manchester, England, and then worked as an Engineer with Jessop & Company, Ltd., Calcutta. Since obtaining his Ph.D. in 1965, he was, at first, Research Assistant at Sheffield University, and then became Lecturer in Electronics at the University College of North Wales, Bangor, Gwynedd, U.K., in 1966. He spent most of 1971, while on leave of absence from the University College of North Wales, at McGill University, Montreal, Canada. He originally worked in the heavy-current area, but over the past 12 years his interests have been, and are currently, in microwaves and solid-state devices. He has contributed several papers on various aspects of microstriplines and microwave integrated circuits, and is active in this area. He also directs a research group which operates a scanning electron microscope in the stroboscopic mode up to 9 GHz for dynamic device studies and this has enabled Gunn domains to be observed in *X*-band devices. His current interests are in some of the theoretical problems of microstrip lines, in integrated optical guides, in various aspects of Gunn devices and GaAs FET devices, and in the limitations of very high speed bipolar logic.

Dr. Gopinath is a member of the Institution of Electrical Engineers, London, England, a graduate member of the Institution of Mechanical Engineers, London, England, and a member of Sigma Xi.

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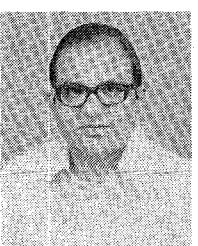


Chandra Gupta (S'76) was born in Ajmer, India on March 10, 1954. He obtained the B. Sc. with honors in electronic engineering in 1975 from the University College of North Wales, Bangor, U.K. He is currently working towards the Ph.D. degree at the same university.

During the summer of 1974 he worked as a Design Engineer in Ferro-Mag Limited, Wembley, U.K., where he was designing, scheduling, and costing transformers in the range 50 vA-20KVA. In 1974 he won the W. E. Williams prize awarded by the University College of North Wales, Bangor, for the highest attainment in the second year of B.Sc. course in electronic engineering. In 1975 he received the Institute of Electrical Engineers (Great Britain) Prize for the highest attainment in the B.Sc. in electronic engineering at the University College of North Wales.

Mr. Gupta is also an associate member of the Institute of Electrical Engineers, Great Britain.

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Krishna Kumar Gupta was born in New Delhi, India, on April 1, 1942. He received the B.Sc. (Hons) and the M.Sc. degrees from the Delhi University in 1964 and 1966, respectively, and the M.Sc. (Tech) degree in electronics from the Birla Institute of Technology and Science, Pilani, India, in 1968.

From 1969 to 1970, he was a Senior Research Fellow at the Central Electronics Engineering Research Institute, Pilani. After serving as a Senior Research Fellow and as a Research

Associate at Indian Space Research Organisation, Ahmedabad, and at the Indian Institute of Technology, Bombay, respectively, he joined the Center for Systems and Devices of the I.I.T., Madras in 1973. His areas of interest are microwaves, antennas, and radar system engineering.

Joseph Helszajn (M'64), for a photograph and biography please see page 128 of the February 1978 issue of this TRANSACTIONS.

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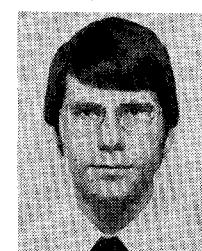
Masahiro Ikeda (M'69) was born in Hiroshima, Japan, on May 15, 1944. He received the B.S. and M.S. degrees in electrical engineering from Kyoto University, Kyoto, Japan, in 1967 and 1969, respectively.

He joined Musashino Electrical Communication Laboratory, N.T.T., Musashino-shi, Japan, in 1969, and has been engaged in research in fiber optics. Since 1976 he has been studying transmission characteristics of optical transmission cables at Ibaraki Electrical Communication

Laboratory, N.T.T., Ibaraki-ken, Japan.

Mr. Ikeda is a member of the Institute of Electronics and Communication Engineering of Japan.

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Daniel Jablonski was born in Washington, D.C., on November 15, 1954. He received the S.B. and S.M. degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge, MA, in 1976 and 1977, respectively.

In 1974 he joined the Naval Surface Weapons Center, White Oak, MD, as a cooperative student. While alternately studying at M.I.T. and working at NSWC, he has been involved with an investigation of electromagnetic pulse (EMP) on shipboard environments, the engineering development of a radar fuze, and research into properties of dielectrics at millimeter wavelengths. He is currently on leave from the Electromagnetics Branch at NSWC, and is studying for a doctorate in the Low Temperature Physics Group of the Cavendish Laboratory, University of Cambridge, Cambridge, England.

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Yasuyuki Kato was born in Yamagata Prefecture, Japan, on July 20, 1954. He received the B.S. degree in electrical engineering from the University of Yamagata, Japan, in 1977.

In 1977 he joined Ibaraki Electrical Communication Laboratory, N.T.T., Tokai-mura, Ibaraki, Japan. His current interest is in the bending loss problems of single-mode optical fiber cables.

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Tatsuya Kimura (S'66-M'71) was born in Osaka, Japan, on February 20, 1940. He received the B.S. degree in electrical engineering, the M.S. degree in electronics engineering, and the Ph.D. degree in quantum electronics from the University of Tokyo, Japan, in 1962, 1964, and 1967, respectively.

In 1967, he joined the Musashino Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, where he is a Senior Staff Engineer. He has been engaged in

research on optical transmission systems and equipment such as optical modulators, detectors, PM-AM converters, optical FDM filters, and laser oscillators, and in the development of guided millimeter-wave transmission systems.

Dr. Kimura is a member of the Institute of Electronics and Communication Engineers, the Japan Society of Applied Physics, the Physical Society of Japan, the Institute of Electrical and Electronics Engineers, and the American Physical Society.

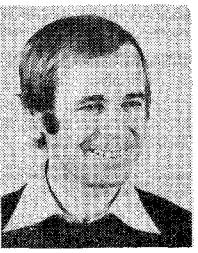


Kenichi Kitayama (S'75-M'76) was born in Kobe, Japan, on October 28, 1950. He received the B.E. and M.E. degrees in Communication engineering from Osaka University, Osaka, Japan, in 1974 and 1976, respectively.

In 1976 he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokai-mura, Ibaragi, Japan, where his research is currently on the transmission characteristics of optical fiber cables.

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

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Jürgen Köhler received the Ing. grad. degree in physics in 1964 from the School of Technical Physics at Wedel, Germany.

Since 1965 he has been with the Philips Research Laboratory, Hamburg, where, as a member of the Microwave and Measuring Techniques Group, he has mainly been engaged in developing microwave components and systems. At present he works on microwave thermography systems.

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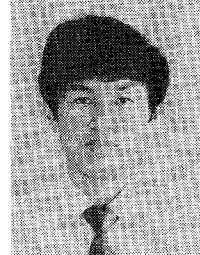


Nobuaki Kumagai (M'59-SM'71) was born in Ryojun, Japan, on May 19, 1929. He received the B.Eng. and D.Eng. degrees both from Osaka University, Osaka, Japan, in 1953 and 1959, respectively.

From 1958 to 1960 he was a Visiting Senior Research Fellow at the Electronics Research Laboratory of the University of California, Berkeley, where he was engaged in research on electromagnetic wave scattering and parametric amplifiers. From 1960 to 1970 he was an

Associate Professor of Communication Engineering at Osaka University. In 1966, he was invited to the 11th G-MTT International Symposium as an invited speaker. Since 1971, he has been a Professor of Communication Engineering at Osaka University, Osaka, Japan, where he is engaged in research and education in electromagnetic theory, microwave and millimeter-wave engineering, optical waveguides and devices, and lasers and their applications. He is the co author of *Microwave Circuits* (OHM-sha, Tokyo, 1963) and *Introduction to Relativistic Electromagnetic Field Theory* (Corona Publishing Co., Tokyo, 1971).

Dr. Kumagai is a member of the Institute of Electronics and Communication Engineers of Japan, the Institute of Electrical Engineers of Japan, the Japan Society of Applied Physics, and the Physical Society of Japan.

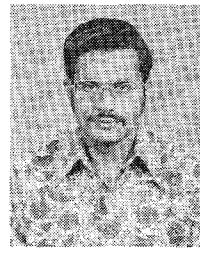


Katsumi Morishita (S'74-M'77) was born in Fukui, Japan on February 24, 1949. He received the B.E., M.E., and Ph.D. degrees in electrical communication engineering from Osaka University, Osaka, Japan, in 1972, 1974, and 1977, respectively.

Presently, he is a postdoctoral fellow of the Japan Society for the Promotion of Science in the Faculty of Engineering, Osaka University, engaged in research work in the area of electromagnetic field problems.

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

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Perambur S. Neelakantaswamy was born in Nanjangud, India, on February 11, 1945. He received the B.E. degree in electronics and communications from the University of Madras in 1966, and the M.E. degree in electrical communication engineering from the Indian Institute of Science, Bangalore, India, in 1968, and the Ph.D. degree from the I.I.T., Madras, in September 1975.

From 1968 to 1970, he was a member of the teaching staff at the Department of Aeronautical Engineering (Rockets and Missiles Group), Indian Institute of Science, Bangalore. Since August 1970, he has been with the Department of Electrical Engineering, Indian Institute of Technology, Madras, India, as a Lecturer. During the period June 1973 to September 1974 he was on deputation for advanced research work at the Technical University at Aachen, Germany, under the German Academic Exchange Programme (DAAD). He is presently with the Electronics Section, School of Applied Sciences, University Science Malaysia, Minden, Penang, Malaysia. His current research includes work on instrumentation (biomedical and industrial), antennas, and microwave techniques.

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Donald D. Paolino (M'73) was born in San Francisco, CA, on April 13, 1950. He received the B.S. degree (with honors) in electrical engineering from the University of California, Berkeley, in 1972.

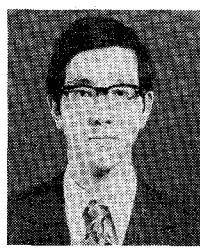
He has been employed by the Naval Weapons Center, China Lake, CA, since 1972. From 1972 to 1976 he was involved with numerical modeling and development of microstrip components for direction finding receivers, radome theory, and antenna research. From September 1976 to

April 1977 he studied applied electromagnetics and did research on directional couplers for integrated optical circuits at the University of California, Berkeley, while on a graduate fellowship from the Naval Weapons Center.

His current research is in the area of techniques for improving broadband stripline component directivity.

Mr. Paolino is a member of Eta Kappa Nu.

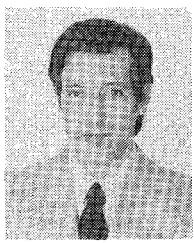
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Jun-ichi Sakai was born in Hyogo, Japan, on January 6, 1948. He received the B. Eng. and M. Eng. degrees in applied physics from the University of Osaka, Japan, in 1971 and 1973, respectively.

In 1973, he joined the Musashino Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, where he has been engaged in the research on transmission characteristics of optical fibers, mainly single-mode fibers.

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



Mario Sannino was born in Cannobio, Novara, Italy, in 1940. He received the Ph.D. degree in electronic engineering in 1964 from the University of Palermo, Palermo, Italy, and the "Libera Docenza" in applied electronics in 1972. He has been Assistant Professor of Applied Electronics at the University of Palermo since 1965. At present he is interested in noise characterization and measurements of solid-state microwave components, mathematical methods of nonlinear oscillation analysis, and digital instrumentation.

Dr. Sannino is a member of Associazione Elettrotecnica ed Elettronica Italiana (AEI).

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Burkhard Schiek received the Diplom-Ingenieur and the Doktor-Ing. degrees in electrical engineering from the Technical University of Brunswick in 1964 and 1966, respectively.

From 1964 to 1969 he was an assistant at the institute for HF Technique at Brunswick, latterly working on m.i.s. interface physics and the development of MIS varactors. Since 1969 he has been with the Microwave and Measuring Techniques Group of the Philips Research Laboratory Hamburg where he has mainly been

concerned with the stabilization of solid-state oscillators, oscillator noise, and microwave integration. More recently he has been engaged in the development of microwave systems, among them a microwave spectroscopy system for gas analysis and microwave distance meters.

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Volker Tulaja was born near Hamburg, Germany, on December 7, 1944. He received the Dipl. Ing. degree in electrical engineering from the Technical University of Brunswick, Germany, in 1972.

There he was a Research Assistant working in a project of the "Deutsche Forschungsgemeinschaft" on microwave filtering. Since 1975 he has been a Scientific Assistant at the Institute for General and Theoretical Electrical Engineering of the Fernuniversität Hagen, Germany.

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P. N. Walker, photograph and biography not available at the time of publication.

Overseas Abstracts

Papers from Journals Published in Australia, India, and Japan

Compiled by Prof. T. Okoshi, Department of Electronic Engineering, University of Tokyo.

The periodicals investigated are: 1) Transactions of the Institute of Electronics and Communication Engineers of Japan (Trans. IECEJ), 2) Journal of the IECEJ, 3) Journal of the Institution of Engineers (J. IE (India)), 4) Proceedings of the Institution of Radio and Electronics Engineers—Monitor (Proc. IREE (Australia)), and 5) Australian Telecommunication Research (ATR).

As for the Japanese papers in the Trans. IECEJ, which carry volume numbers J60B or J60C, single-page English summaries (1/4 page for Correspondences) will be found in the "Transactions of IECEJ, Section E" issued in the same month, where "E" denotes English. Papers carrying volume number E60 are papers written originally in English and will be found in Section E. Both the Section J and Section E issues are published from the IECEJ, Kikai-Shinko-Kaikan, 3-5-8 Minato-ku, Tokyo 105, Japan.

Field Theory and Electromagnetic Compatibility

1

Numerical Analysis of Scattering from Echelette Grating—Smoothing Process on Mode-Matching Method, by K. Yasuura, Y. Okuno (Faculty of Engineering, Kyushu University, Fukuoka-shi, 812 Japan), and H. Ikuno (Faculty of Engineering, Kumamoto University, Kumamoto-shi, 860 Japan): *Trans. IECEJ*, vol. J60-B, pp. 189–196, March 1977.

A new method of analysis is proposed in which the oscillatory solution given by summing up a finite number of modes is smoothed to assure proper matching with physical boundary conditions.

2

A Scattering Technique Using Phase Modulation for Measurement of Microwave Field Distribution (Correspondence), by E. Oka (Faculty of Engineering, Meiji University, Kawasaki-shi, 214 Japan) and Y. Soma (Oki Electric Industry Company, Tokyo, 105 Japan): *Trans. IECEJ*, vol. J60-B, pp. 289–290, April 1977.

A new method is proposed and experimented with, in which a small metallic plate is vibrated in the direction of the incident wave.