

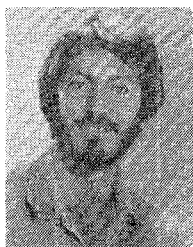
# Contributors



**Nicolaos G. Alexopoulos** (S'68-M'69) was born in Athens, Greece, March 30, 1942. He obtained the B.S., M.S., and Ph.D. degrees in electrical engineering at the University of Michigan, Ann Arbor, in 1964, 1967, and 1968, respectively.

He is currently an Associate Professor in the Electrical Sciences and Engineering Department, the University of California, Los Angeles. His research interests are in the area of applied electromagnetic theory as it relates to integrated microwave circuits, integrated optics and antennas.

He is the author of 40 articles published in the scientific literature. He is also a consultant with the Hughes Research Laboratories.



**Rodolfo F. Cordero-Iannarella** (S'74-M'75) was born in Heredia, Costa Rica, on February 13, 1942. He received the Dipl. Ing. degree in electrical engineering from the Technical University of Munich, Munich, Germany, in 1968, and the Ph.D. degree in electrical engineering from the University of California, Berkeley, 1975.

From 1970 to 1975, he was a Research Assistant at the Electronics Research Laboratory, University of California, Berkeley, where he was engaged in research in the area of integrated

optics. In 1975 he joined the faculty of the School of Engineering and Applied Science of the University of California, Los Angeles, where he is engaged in the teaching and research in the areas of integrated optics, far infrared lasers and electromagnetics.

Dr. Cordero is a member of the Optical Society of America and the American Physical Society. He is currently President of the Santa Monica Bay Section of the IEEE.



**J. N. Crouch, Jr.** (M'70) was born in Leonard, TX, on October 25, 1939. He received the B.S. degree in physics (with honors) from Texas A & M University, College Station, in 1962, the M.S. degree in physics and the Ph.D. degree in electrical engineering from Southern Methodist University, Dallas, TX, in 1968 and 1976, respectively.

From 1962 to 1968 he was employed at Texas Instruments, Inc., as an Electronics Engineer engaged in the design, fabrication, and test of

multielement mercury-doped germanium detectors for use in infrared technology. In addition, he served as a cryogenic consultant and supervised the fabrication of several special-purpose infrared detectors. From 1968-1969 he was engaged in the analyses and integration of electrooptical systems at the Greenville Division of E-Systems, Inc., where he is currently General Supervisor of Electrooptic and Electronic Techniques. His recent interests there included laser radar systems, optical reconnaissance systems, millimeter-wave direction finding/emitter location systems, and microwave-biased infrared detectors. In 1979 he joined the Orlando division of the Martin Marietta Corporation as Senior Member of the Professional Staff.

Dr. Crouch is a member of the Optical Society of America, the IEEE MTT-S Technical Group on Submillimeter Waves, Phi Kappa Phi, and Phi Eta Sigma.



**J. A. Higgins** (M'62-SM'77) received the B.S. degree in electrical engineering from the University of Dublin, Dublin, Ireland, in 1958 with honors. After six years in the microwave communications industry with Lenkurt GTE, he returned from a supervisory position in the Radio Relay Group to graduate school at Stanford University, Stanford, CA, where he received the M.S. and Ph.D. degrees in electrical engineering. While at Stanford, he studied the Transferred Electron Effect in GaAs and its application to

microwave power generation (Gunn and LSA oscillators), and to acoustic coupled mode traveling wave amplification.

Since joining the Rockwell International Science Center, Thousand Oaks, CA, in 1971, he has been engaged in all phases of the fabrication of GaAs FET devices, from epitaxial growth and implantation to microwave amplifier design. He is currently a member of the Microwave Group of the technical staff, in charge of GaAs FET development and application to monolithic circuits.



**Yun-Li Hou** (S'74-M'77) was born in Taiwan, Republic of China, on March 28, 1948. He received the B.S. degree from National Chiao Tung University, Taiwan, Republic of China, in 1970, and the M.S. and Ph.D. degree from the Polytechnic Institute of New York, Brooklyn, in 1975 and 1977, respectively, all in electrophysics.

From 1977 to 1978, he was a Visiting Research Associate at the University of Illinois, Urbana-Champaign, involved in the development of millimeter-wave circuits. In 1978 he joined AIRTRON Division, Litton Systems Inc., Morris Plains, N.J., where he works in microwave components and antennas.



**Vahraz Jamnejad** was born in Tehran, Iran, in 1945. He received his B. S. degree in electrical engineering from Tehran University in 1967 and his M. S. and Ph.D. degrees from the University of Illinois at Urbana-Champaign in 1971 and 1974, respectively.

He was Research Associate with the Electromagnetics Laboratory of the University of Illinois during the years 1974-1975 and he joined the Technical University of Tehran (formerly Arya-Mehr) in 1975 as an Assistant

Professor. He has been a Visiting Assistant Professor at the University of Illinois where he is affiliated with the Electromagnetics Laboratory. His areas of research include electromagnetic scattering and diffraction, millimeter waves, and computer techniques.

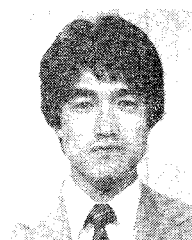
Dr. Jamnejad is a member of Phi Kappa Phi.



**Stephen R. Kerner** was born in El Paso, TX, on January 16, 1948. He received the B.S. degree in physics from San Fernando Valley State College, Northridge, CA, in 1970, and the M.S. degree in electrical engineering from the University of California, Los Angeles, in 1977, where he is currently working toward the Ph.D. degree.

His present interests are in the applications of electromagnetic theory to the areas of integrated optics, integrated microwave circuits, and antenna design. Since 1977, he has been a Member

of the Technical Staff in the Antenna Department of the Hughes Aircraft Company at Culver City, CA.



**Yasuyuki Kondoh** was born in Niigata, Japan, on March 12, 1956. He received the B.E. degree in electrical communication engineering from Osaka University, Osaka, Japan, in 1978. He worked there on research in the areas of electromagnetic theory and optical waveguides.

In 1978 he joined the Japan Broadcasting Corporation (NHK), Japan.

Mr. Kondoh is an associate member of Institute of Electronics and Communication Engineers of Japan.



**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.

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**Reidar L. Kuvås** (S'68-M'70) was born in Porsgrunn, Norway. He received the degree of Siv.ing. in engineering physics from the University of Trondheim, Trondheim, Norway, in 1967 and the M.S. and Ph.D. degrees in electrical engineering from Cornell University, Ithaca, NY, in 1969 and 1970, respectively.

During 1966-1967, he was doing research on wave propagation and bulk effects in semiconductors at the University of Trondheim. In 1970, he joined Bell Laboratories, Reading, PA, as a

member of technical staff where, until 1974, he worked on power-noise modeling and large-signal characterization of IMPATT devices. From 1974 to 1978, he was involved in developing solid-state microwave sources at the Rockwell International Science Center. Presently, he is with the Norwegian Council for Scientific and Industrial Research, directing a broad range of research projects in the electronics area. In addition, he serves as a professor of electrical engineering at the University of Trondheim.

Dr. Kuvås is member of the American Physical Society.

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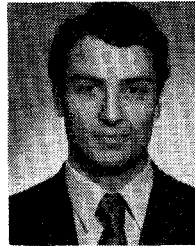


**Leonard Lewin** (A'69-SM'75) was born in Southend-on-Sea, England, on July 22, 1919.

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 Institute of Electrical Engineers (London) 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.

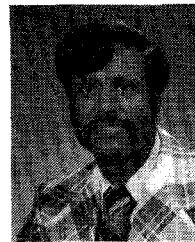


**Robert Aram Minasian** was born in May of 1953. He received the B.E. (Elec.) degree from the University of Melbourne, Melbourne, Australia, in 1974. In 1975 he was awarded a United Kingdom Commonwealth Scholarship for study at University College, University of London, London, England. There he worked on harmonic effects and locking phenomena in TRAPATT oscillators and was awarded the M.Sc. degree with distinction in 1976. Since 1977 he has been involved with research towards

the Ph.D. degree on the large-signal operation of MESFET transistors.

He is currently a Lecturer in Electrical Engineering at the University of Melbourne, Parkville, Victoria, Australia.

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**Raj Mittra** (S'54-M'57-SM'69-F'71) is Professor of Electrical Engineering and Associate Director of the Electromagnetics Laboratory of the University of Illinois at Urbana-Champaign. He is a past President of Antennas and Propagation Society and an active contributor to the many activities of the Society. He serves as a consultant to several industrial and governmental organizations, including the NASA Jet Propulsion Laboratory of the California Institute of Technology. A paper by Pro-

fessor Mittra in the September issue of IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION won the 1978 "Best Paper Award" of the IEEE Antennas and Propagation Society.

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**Katsumi Morishita** (S'74-M'77) was born in Fukui, Japan, on February 24, 1949. He received the B.E., M.E. and D.E. degrees in electrical communication engineering from Osaka University, Osaka, Japan, in 1972, 1974, and 1977, respectively. From 1977 to 1978 he was a Postdoctoral Fellow of the Japan Society for the Promotion of Science. Presently, he is a Postdoctoral Fellow 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.

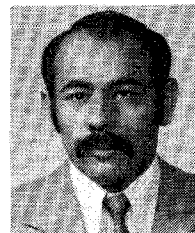
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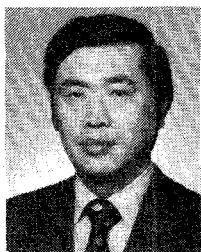
**Thomas Ruehle** (S'78) was born in Redwood City, CA, in 1954. He received the B.S. degree in electrical engineering from the University of Colorado, Boulder, in 1976, and is presently pursuing the Masters degree in electrical engineering at the same school.

Mr. Ruehle is a member of Tau Beta Pi and Eta Kappa Nu.

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**Ahmad Safaai-Jazi** was born in Isfahan, Iran, in 1948. He received the B.Sc. degree from the Arya-Mehr University of Technology, Tehran, Iran, in 1971, and the M.Sc. degree from the University of British Columbia, Vancouver, Canada, in 1974, both in electrical engineering. In 1978 he completed the Ph.D. degree at the Department of Electrical Engineering, McGill University, Montreal, P.Q., Canada.



**Gar Lam Yip** (S'63-M'67-SM'75) was born in Shanghai, China, on December 18, 1937. He received the B.Sc. (Hon.) degree from the Imperial College of London University, England, in 1960, the M.Sc. degree from Queen's University, Kingston, Ont., Canada, in 1963, and the Ph.D. degree from the University of Toronto, Toronto, Ont., Canada in 1967, all in electrical engineering.

He was a Teaching Assistant in the Department of Electrical Engineering, Queen's University, from 1961 to 1963, and then at the University of Toronto from 1963 to 1967, in the areas of electronics and electromagnetic theory. In September 1967, he was appointed an Assistant Professor, and since

September 1973 he has been an Associate Professor in electrical engineering at McGill University, Montreal, P.Q., Canada, where he is teaching and doing research in electromagnetic theory, microwaves and optical waveguides. He spent the summer of 1968 at the Plasma Physics Laboratory, RCA Victor Company, Montreal, P.Q., and in the summers of 1970 and 1971 he held a research appointment at Communications Research Centre in Ottawa, Ont., Canada. In 1969, he initiated research in fiber and integrated optics for optical communications at McGill University in Canada.

Dr. Yip was chairman at the IEEE Montreal Joint Chapter on AP-S/MTT-S for 1975-1978.

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**I. L. Verbitskii**, photograph and biography not available at the time of publication.

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