

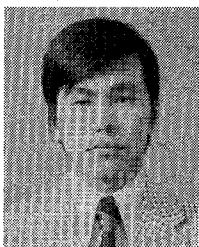
# Contributors



**Esmat A. F. Abdallah** (S'70) was born in Cairo, Egypt. She received the B.Sc., M.Sc., and Ph.D. degrees in communication and electronic engineering from Cairo University, Cairo, Egypt, in 1968, 1972, and 1975, respectively.

She worked as an Electronic Engineer in the Egyptian Broadcast and Television Establishment from January 1969 to November 1969. Since December 1969 she has been with the Electrical and Electronic Engineering Laboratory, National Research Centre, Cairo. She is now an Assistant Professor. She is currently engaged in research on microwave acoustics and ferrite applications in microwave devices.

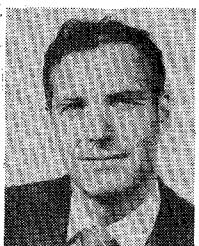
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**Yasuhiro Ando** was born in Hyogo, Japan, on June 4, 1951. He received the B.S. and M.S. degrees in electronics engineering from Osaka University in 1974 and 1976, respectively.

At Osaka University, he was engaged in the research of integrated optical devices. In April 1976, he joined the Musashino Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan.

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**Frank S. Barnes** (S'54-M'58-F'70) received the B.S. degree from Princeton University, Princeton, NJ, and the M.S. and Ph.D. degrees from Stanford University, Stanford, CA, all in electrical engineering.

He has been Chairman of the Department of Electrical Engineering at the University of Colorado, Boulder, since 1963; he was named in 1967 to deliver the University of Colorado Research Lecture. His research efforts have contributed extensively to the understanding of millimeter masers and xenon lasers, to the understanding of the biological effects of lasers and microwaves, and to the understanding of the communication of living cells.

Dr. Barnes holds the Curtis W. McGraw award of the American Society for Engineering Education and numerous other awards. He was recently Vice President, Publication Activities, and a Director of The Institute of Electrical and Electronics Engineers.

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**Kun-Mu Chen** (SM'64-F'76) was born in Taipei, Taiwan, China, on February 3, 1933. He received the B.S.E.E. degree from the National Taiwan University, Taipei, in 1955, and the M.S. and Ph.D. degrees in applied physics from Harvard University, Cambridge, MA, in 1958 and 1960, respectively.

While at Harvard University, he held the C. T. Loo and the Gordon McKay Fellowships. From 1956 to 1957 he was a Teaching Assistant at the National Taiwan University, and from 1959 to 1960 he was a Research Assistant and Teaching Fellow at Harvard University. From 1960 to 1964 he was associated with the Radiation Laboratory, University of Michigan, Ann Arbor, where he was engaged in studies of electromagnetic theory and plasma. In 1962, while on leave from the University of Michigan, he was a Visiting Professor of Elec-

tronics at Chao-Tung University, Taiwan. Since 1964 he has been with Michigan State University, East Lansing, first as Associate Professor of Electrical Engineering, and since 1967 as Professor of Electrical Engineering and Engineering Research. From 1968 to 1973 he was the Director of the electrical engineering program of the Department of Electrical Engineering and Systems Science. He has published numerous papers on electromagnetic radiation and scattering, and plasmas. His current research interests include the interaction of electromagnetic radiation with biological systems.

Dr. Chen is a member of U.S. Commissions A and B of the International Scientific Radio Union, Sigma Xi, Phi Kappa Phi, and the American Association for the Advancement of Science. He is the recipient of Distinguished Faculty Award from Michigan State University in 1976.

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**Paul Diamant** (S'58-M'64), for a photograph and biography see page 626 of the July 1977 issue of this TRANSACTIONS.

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**M. Ezzat El-Shandwily** (S'63-M'66) was born in Shandwily, Egypt, on September 5, 1934. He received the B.Sc. degree with honors in electrical engineering from Cairo University, Cairo, Egypt, in 1957, and the M.Sc. degree in electrical engineering, the M.Sc. degree in physics, and the Ph.D. degree in electrical engineering all from the University of Michigan, Ann Arbor, in 1961, 1964, and 1965, respectively.

From 1957 to 1960 he was an Instructor in the Faculty of Engineering, Cairo University. During the same period he was a student in the Faculty of Science, where he studied pure and applied mathematics in the Mathematics Department for five semesters. During the summer of 1962 he worked as a Research Assistant on microwave antennas at Cooley Electronic Laboratory, University of Michigan. He worked as a Research Associate in the Electronic Physics Laboratory at University of Michigan from 1963 to 1965, where he was engaged in research on microwave devices. In 1965 he joined the Electrical and Electronic Engineering Laboratory, National Research Centre, Cairo, Egypt, as an Assistant Professor. He also works as a part-time lecturer in the Egyptian Universities and Institutes. He is currently engaged in research on microwave tubes, microwave acoustics, and ferrite applications in microwave devices.

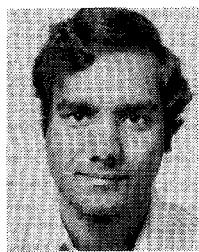
Dr. El-Shandwily is a member of Sigma Xi.

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**Paul A. Goud** (S'58-M'65-SM'71) was born in The Netherlands in 1937. He received the B.Sc. degree in electrical engineering from the University of Alberta, Edmonton, Canada, in 1959, and the M.A.Sc. and Ph.D. degrees in electrical engineering from the University of British Columbia, Vancouver, Canada, in 1961 and 1964, respectively.

During 1965-1966, he was a Member of the Scientific Staff at Bell-Northern Research in Ottawa. Since 1966, he has been with the University of Alberta, where he is Professor of Electrical Engineering. During leaves from the University of Alberta he has been a Visiting Member of the Technical Staff at Bell Telephone Laboratories, Allentown, PA, in 1969, and at Philips Research Laboratories, Eindhoven, The Netherlands, in 1973. He has carried out assignments for UNESCO and the Canadian International Development Agency in the field of engineering education. He has been principally engaged in research, development, and education in microwave electronics and circuits, particularly for telecommunications systems.



**Bhag S. Guru** (S'74-M'76) was born in Shakrulla Pur, India, on January 15, 1945. He received the B.E. degree in electronics and electrical communications from Panjab University, Chandigarh, India, in 1968, and the M.S. and Ph.D. degrees in electrical engineering from Michigan State University, East Lansing, in 1972 and 1976, respectively.

From 1968 to 1971 he was employed by Research and Development Division of Ministry of Defense, India, as a member of the scientific staff.

Currently he is a Research Engineer with the Research and Design Division of Universal Electric Company, Owosso, MI. Prior to this he was engaged in research on the biological effects of microwaves at Michigan State. In addition, his research interests are in the field of electromagnetic propagation, radiation, and scattering.

Dr. Guru is a member of Eta Kappa Nu and Sigma Xi.

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**G. I. Haddad** (S'57-M'61-SM'66-F'72), photograph and biography not available at the time of publication.

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**M. A. K. Hamid** (S'60-M'65-SM'71) is a Professor of Electrical Engineering and Adjunct Professor of Agricultural Engineering, at the University of Manitoba, Winnipeg, Man., Canada. His interests are in electromagnetic engineering, antennas, diffraction, scattering, inverse scattering, radio-wave propagation, microwave electronics, and instrumentation, as well as acoustics and biological and industrial applications of microwaves and ultrasound. He is an Associate Editor of the *Journal of Microwave Power* and a member of the

editorial boards of the *Microwave Journal* and the *IEEE Transactions on Microwave Theory and Techniques* as well as the *IEEE Transactions on Antennas and Propagation*. He is also President of Industrial Microwave Research Associates, Winnipeg, Canada, a member of the National Research Council of Canada—Associate Committee on Bird Hazards to Aircraft, a member of the Policy Committee of the University of Manitoba Center for Transportation Studies, and a Consultant to the Defence Research Board of Canada. He has published more than 100 papers in scientific journals as well as numerous reports, conference papers, and patents.

Dr. Hamid is a fellow of the Institution of Electrical Engineers and a member of various learned societies.

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**James L. Hill** was born in Clinton, OK, in 1937. He received the B.S. in mechanical engineering from the University of Oklahoma, Norman, in 1959 and the M.S. and Ph.D. degrees in theoretical and applied mechanics from the University of Illinois, Urbana, in 1962 and 1963, respectively.

From 1963 to 1968 he was Assistant Professor and then Associate Professor of Engineering Mechanics at the University of Alabama, University. During 1969 he was Assistant Professor of Aerospace Engineering at the University

of Texas, Austin. In 1970 he rejoined the University of Alabama in Tuscaloosa as Professor of Mechanical Engineering. His research interests include wave propagation, vibrations, solid mechanics, and numerical methods.

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**Chia-Lun J. Hu** (S'65-M'66) was born in Nanking, China, on January 18, 1936. He received the B.S. degree from Taiwan University, the M.S. degree from Chiao-Tung University, and the Ph.D. degree (in 1966) from the University of Colorado, Boulder, all in electrical engineering.

Upon completing his degree, he worked as a Post-Doctoral Researcher and taught at the University of Colorado as an Assistant Professor. In 1970, he joined JPL, CalTech as a Research Scientist, and, in 1972, he was invited to teach at

Chiao-Tung University as an NRC Professor. Currently, he is a Professor in the Department of Electrical Engineering, University of Colorado. His primary research interests are in electrooptics, air pollution detection, and biophysics. He has published some twenty articles in these three fields.

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**Magdy F. Iskander** (S'72-M'76) was born on August 6, 1946. He received his B.Sc. degree (honors) in electrical engineering from the University of Alexandria, Alexandria, Egypt, in 1969. He entered the Faculty of Graduate Studies at the University of Manitoba, Winnipeg, Canada, in September 1971 where he received the M.Sc. and Ph.D. degrees in microwaves in September 1972 and February 1976, respectively.

From 1969 to 1971 he was employed as a teaching assistant in the Department of Electrical Engineering at the University of Alexandria. At that time he was engaged in the design and development of ion sources. In 1976 he worked under the auspices of a National Research Council of Canada Post-Doctoral Fellowship at the University of Manitoba where he is currently employed as a Research Associate in the Department of Electrical Engineering. His present field of interest includes scattering and diffraction of electromagnetic waves, microwave power applications and the utilization of leaky-feeders for mobile communications.

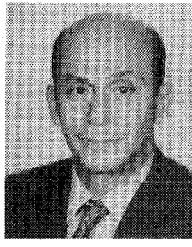
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**Alauddin Javed** was born in India on September 19, 1944. He received the B.Sc. (honors) degree in electrical engineering (communications) from the University of Engineering and Technology, Lahore, Pakistan, in 1965, winning the gold medal for the best performance in communication engineering. He received the Ph.D. degree in electrical engineering from the University of Alberta, Edmonton, Canada, in 1970.

During 1965-66 he was a lecturer in electrical engineering at the University of Engineering and Technology, Lahore, Pakistan. In 1966, he was awarded a Colombo Plan scholarship to pursue a graduate program in electrical engineering at the University of Alberta, Edmonton, Canada. After obtaining the Ph.D. degree in 1970 he returned to the University of Engineering and Technology, Lahore, Pakistan, where he served as an Associate Professor until 1975. During 1975-76 he served as a Research Associate and Sessional Lecturer at the University of Alberta, Edmonton, Canada. At present he is a member of scientific staff of Bell-Northern Research Ltd., Ottawa, Ont., Canada. His areas of interest are solid-state microwave devices, microwave circuit theory, electromagnetic wave propagation, and digital radio systems. He is also the author of a book entitled, "Basic Concepts in Microwave Electronics," published by National Book Foundation of Pakistan.

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**Ahmad A. Kamal** (M'65) was born in Cairo, Egypt, on October 4, 1928. He received the B.Sc. degree in electrical engineering from Cairo University, Cairo, Egypt, in 1951, and the M.Sc. and Ph.D. degrees in electrical engineering from the University of Pennsylvania, Philadelphia, in 1953 and 1956, respectively.

Since graduation he has been working with the Cairo University Department of Electronic and Communication Engineering, where he is now a Professor. During the academic year 1962-1963 he worked at the Moore School of Electrical Engineering, University of Pennsylvania, as a Visiting Lecturer. His current research interests include microelectronics.

Dr. Kamal is a member of Eta Kappa Nu.



**Jiro Koyama** was born in Tokyo, Japan, on November 29, 1924. He received the B.S. and Ph.D. degrees in electrical engineering from Tokyo Institute of Technology, Tokyo, Japan, in 1946 and 1958, respectively.

He was first associated with the Agency of Aeronavigation, working on radio controls of air traffic. In 1950 he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, where he was initially engaged in research on microwave and millimeter wave tubes. From 1967 to 1972 he worked in the fields of traveling-wave-type amplifiers in GaAs bulk semiconductor and optical information storages. Since 1973 he has been a Professor at Osaka University, where he and his associates are now engaged in research on Gunn-effect logic devices and optical wave electronics.

Dr. Koyama is a member of the Institute of Electronics and Communication Engineers of Japan and the Optical Society of America.

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**Feng-Ling Cheng Lin** was born in Shanghai, China, on June 23, 1944. She received the B.S. degree in physics from National Taiwan University, Taiwan, Republic of China, in 1965, and the M.S. degree in physics from the University of Maryland, College Park, in 1968. She also did further graduate work in biophysics at the University of Virginia, Charlottesville.

Since 1972 she has been with the Antenna Engineering Section of the Bendix Field Engineering Corporation, Columbia, MD, where she has been involved in the study of phased array antennas, dichroic sub-reflector design, antenna system calibration techniques for ground station system, and spacecraft applications.

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**Masamitsu Masuda** was born in Ishikawa, Japan, on November 20, 1945. He received the B.S., M.S., and Ph.D. degrees in electronics engineering from Osaka University in 1968, 1970, and 1974, respectively.

He is currently a Research Assistant with Osaka University. He has been engaged in the research of Gunn-effect logic devices and integrated optical devices.

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

Japan.

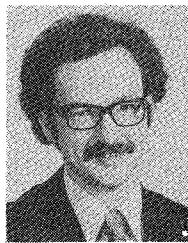
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**David Mathews** was born in Pittsburgh, PA, on December 31, 1940. He received the B.S. degree in physics and also in electrical engineering from Carnegie-Mellon University, Pittsburgh, PA, in 1963 and the M.S. degree in electrical engineering from the University of Cincinnati, Cincinnati, OH, in 1970. He is currently a Ph.D. candidate in electrical engineering at the University of Alabama, Tuscaloosa, AL.

From 1966 to 1968 he was employed with the Research and Development Department of A. C. Electronics Division of General Motors, where he was engaged in research into the effects of nuclear radiation on transistors. In 1971, he joined the Prototype Development Group of the Army Missile Command, Redstone Arsenal, AL, where he is involved in the simulation of electromagnetic pulse effects on missile systems and components.

Mr. Mathews is a member of Eta Kappa Nu and an associate member of Sigma Xi.



**Barry A. Syrett** (S'71-M'76) received the B.Eng. and M.Eng. degrees in electrical engineering from Carleton University, Ottawa, Ontario, Canada, in 1971 and 1973, respectively, and the Ph.D. degree in electrical engineering from the University of Alberta, Edmonton, Alberta, Canada, in 1976.

From 1971 to 1975 he held a National Research Council of Canada postgraduate scholarship. He was a Teaching Assistant at Carleton University from 1971 to 1973, during which time

he did research on the design and modeling of broadband bias lines for active microwave devices operating in  $X$  band. This research was carried out in cooperation with the Microwave Institute Foundation, Stockholm, Sweden, where he studied during the summer of 1972. From 1973 to 1976 he was a Teaching Assistant at the University of Alberta. In 1976 he was the recipient of the Alberta Government Telephones Centennial Fellowship for study in telecommunications. His Ph.D. thesis was concerned with the large-signal characterization of IMPATT diodes, the modeling of nonlinear distortion effects in IMPATT-diode amplifiers, and the reduction of amplifier distortion by means of feedforward linearization. At present, he is the Senior Research Engineer at the Applied Instrumentation Laboratory of the Department of Electronics at Carleton University working in the research and development of prototype electronic instrumentation systems.

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**D. Tang** (M'65), photograph and biography not available at the time of publication.

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**Akihito Tanji** was born in Hyogo, Japan, on September 13, 1951. He received the B.S. degree in electronics engineering from Osaka University in 1975.

He is at present a graduate student at Osaka University. His research is concerned with integrated optical devices using electrooptic crystal.

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

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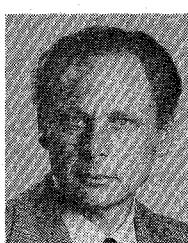


**Vijai K. Tripathi** (M'68) was born in Kanpur, India, on December 23, 1942. He received the B.Sc. degree from Agra University, India, the M.Sc. Tech. degree in electronics and radio engineering from Allahabad University, Allahabad, India, and the M.S.E.E. and Ph.D. degrees in electrical engineering from the University of Michigan, Ann Arbor, in 1958, 1961, 1964, and 1968, respectively.

From 1961 to 1963 he was a Senior Research Assistant at the Indian Institute of Technology, Bombay. In 1963 he joined the Electron Physics Laboratory of the University of Michigan, where he worked as a Research Assistant from 1963 to 1965, and as a Research Associate from 1966 to 1967 on microwave tubes and microwave solid-state devices. From 1968 to 1973 he was an Assistant Professor of Electrical Engineering at the University of Oklahoma, Norman. In 1974 he joined Oregon State University, Corvallis, as an Assistant Professor of Electrical and Computer Engineering, where his current research activities are in the areas of microwave circuits and devices, electromagnetic theory, and solid-state devices.

Dr. Tripathi is a member of Eta Kappa Nu and Sigma Xi.

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**Leo J. van der Pauw** was born in Rotterdam, The Netherlands, in December 1927. He received the Ir. degree in physical engineering and the Ph.D. degree in technical sciences from Delft Technical University, Delft, The Netherlands, in 1951 and 1968, respectively.

Since 1953 he has been with Philips Research Laboratories, Eindhoven, The Netherlands, where he has been working in the fields of solid-state physics, computer science, and applied mathematics.

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**Douglas N. Zuckerman** (S'67-M'77), for a photograph and biography see page 627 of the July 1977 issue of this TRANSACTIONS.