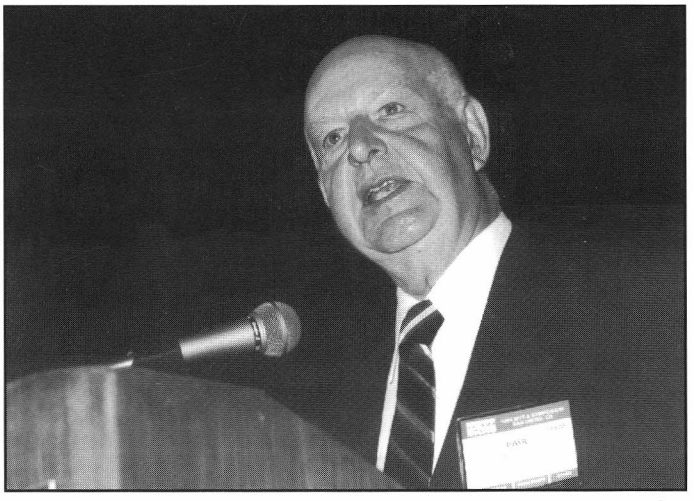
IEEE SOCIETY ON
MICROWAVE THEORY
AND TECHNIQUES

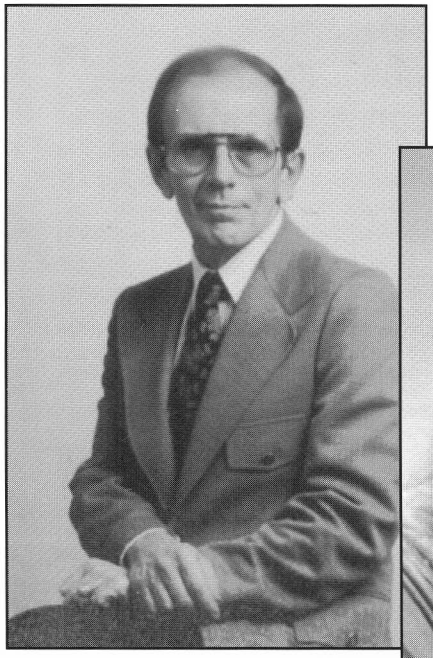
NEWSLETTER

Number 139
Winter 1994

Dr. Martin Schneider receives the 1994 Microwave Applications Award from MTT-S President Jim Crescenzi, Jr.

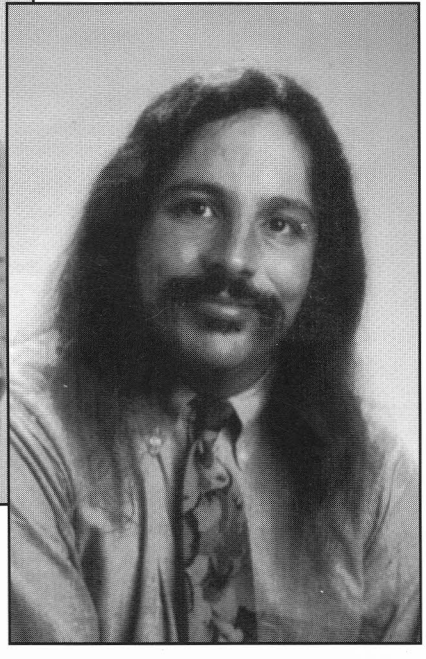


Dr. Paul Coleman expresses his appreciation for receiving the 1994 Distinguished Educator Award at the IMS Awards Banquet.

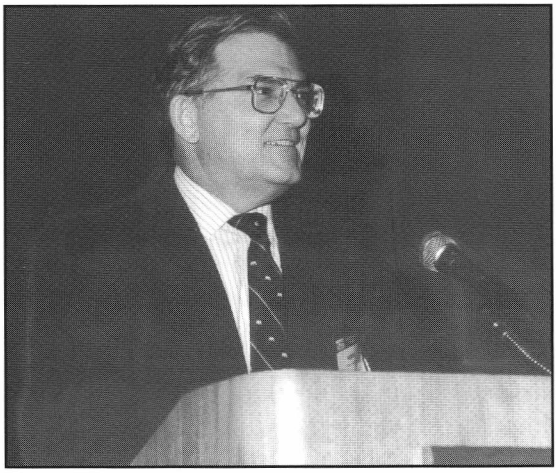


Dr. John Choma, Jr., and P. Chris Grossman were co-recipients of the 1994 Microwave Prize.

About the Award Recipients (page 9)



Rolf Jansen Elected Region IV Director (page 4)



Dr. Robert Eisenhart, Chairman of the 1994 IMS Technical Program Committee, at the IMS Awards Banquet in San Diego.

Table of Contents

The MTT Newsletter staff is interested in obtaining feature articles dealing with current topics in the technical and professional areas of interest to MTT members. These articles should provide members with a general understanding of the topic and its significance in current and future activities in the microwave field. I would like to emphasize, however, that these special articles should cover topics in a broad, general sense. Specific design techniques and applications will be covered in the papers appearing at the MTT Symposium and in the *Transactions*.

If you know of a topic that is current and/or you are willing to contribute an article to the Newsletter, please contact:

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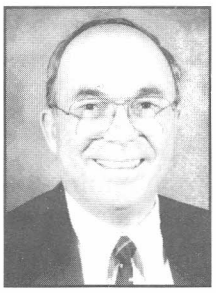
1994 in Retrospective: Outgoing President's Report



by E. James Crescenzi, Jr.

I am especially grateful for the opportunity and privilege to have served as your president in 1994. The year has sped by, from a personal viewpoint. It seems like only yesterday that I was suggesting goals to your AdCom for 1994. Now, it is appropriate to ask if the year was successful for the Society.

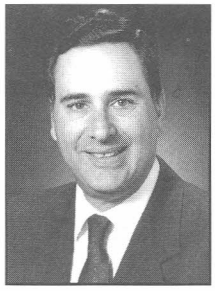
Whether by planning, or to some degree luck, 1994 turned out to be a year of growth and progress for the MTT Society, with a few areas of uncertainty. The core activities of publications and technical meetings are very strong and expanding. Our chapter formations are growing, most notably with expansion into the former Soviet Union and Eastern Europe, although our net membership has declined about one percent for the Society as a whole (with some positive signs of turnaround for those of us with an optimistic interpretation). We have expanded our use of electronic communications, with the expectation that it will make participation in Society activities more accessible and more efficient for our total membership, regardless of location. New services such as advance listing of the tables of contents of our technical publications, job postings and consultant networks are being introduced via electronic media. New initiatives to strengthen our ties with academia have included a new university liaison program, as well as a new MTT-S microwave graduate scholarship fund. We hope this will help us to significantly increase scholarship activity in future years.

1994 has been a year in which your AdCom has increased focus on providing and preparing to provide enhanced services to the MTT-S membership. Our most recent financial report shows a net worth of two million dollars—a sufficient amount to allow your AdCom to focus on activities and services, a welcome switch from the more defensive posture associated with the era of defense transition for much of the microwave industry.

One of the objectives for 1994 was to become more aware of our membership composition, so that activities and services (current and future) can be shaped to meet the needs of our members. We learned, for example, that about 40 percent of our members (students included) joined the MTT-Society in 1990-1994! For a society with a rich heritage, we have very young membership. Additionally, membership growth in Regions 9 and 10 contin-

(continued on page 6)

Incoming President's Message



Eliot Cohen

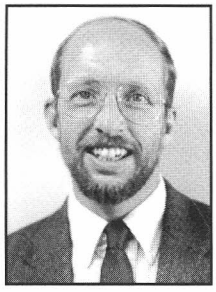
This is an era of change and excitement for the microwave profession. New products making use of microwave technology are becoming available for wireless communications, automotive applications, office equipment, medical applications, identification and tracking of vehicles, and for entertainment systems. During 1995, MTT-S will increase its efforts to better serve its members and to stimulate opportunities for members to increase their enthusiastic involvement in society activities.

The principal objective of the Microwave Theory and Techniques Society is to serve its members well by providing rapid, efficient access to needed information. This must be done both by providing information in a way that makes it easy to use and by providing opportunities for members to identify problems of mutual interest and develop collaborative solutions to them. I want to expand the opportunities for members of diverse organizations (e.g., academia, industry, and government) and those pursuing various related technical disciplines, to interact in a collegial manner with the objective of spawning new technical advances and products of benefit to society. To that end, it is clear that we all need to become more familiar with several technical areas related to microwave technology. For example, many MTT-S members will benefit from up-to-date information about the interface characteristics of digital circuitry used for controlling microwave circuit functions and the design, fabrication and cost considerations that are of importance in considering microwave/optical interconnections for use in many applications.

It is also important for our society to reach out to students at all levels (elementary, high school, university and graduate) to interest them in considering a microwave engineering career. We will increase our efforts to inform students of microwave engineering activities through increased involvement with many schools. MTT-S is also beginning a new initiative to encourage more women to enter our profession. International interactions and cooperation among members and their orga-

(continued on page 23)

New Editors for MTT-S Publications



by Derry Hornbuckle
Publications Chairman

New editors will be taking over responsibility for both the *MTT Transactions* and the *Microwave and Guided Wave Letters* in the coming months. In December 1994, Tatsuo Itoh will be turning over *MGWL* editorship to Professor Roberto Sorrentino of the University of Perugia, Perugia, Italy. And in March 1995, Dan Massé will conclude his three year term as *Transactions* editor; Dr. Robert Trew of Case Western Reserve University will be the new *MTT Transactions* editor.

Professor Roberto Sorrentino is a 1971 graduate of the University of Rome, "LaSapienza," Rome, Italy. He has held Assistant and Associate Professor posts at that university, as well as positions at the University of Catania, the University of Ancona, and the University of Texas at Austin. He was Professor at the Second University of Rome, "Tor Vergata," from 1986 to 1990, and has been Professor at the University of Perugia since 1990. He is known for his work in the analysis and design of microwave and millimeter-wave passive circuits, besides having worked on the propagation in anisotropic media and interactions of electromagnetic fields with biological tissues. He is the current *MTT Transactions* Associate Editor for Tutorial and Review Papers. He is also a member of the International Microwave Symposium Technical Program Committee, the MTT-15 Microwave Field Theory Technical Committee, and has served as Chairman of the Central and South Italy MTT Chapter. He was elected IEEE Fellow in 1990. The MTT Editors Selection Committee is particularly pleased to have found such an outstanding individual who represents the international nature of the Society. In the age of electronic communication, we are confident that location outside North America is not an impediment to timely publication, even with the demanding turnaround time goals of the *MGWL*.

The Society owes a debt of gratitude to Professor Tatsuo Itoh for pioneering the *Microwave and Guided Wave Letters* since its inception. Tatsuo overcame all the hurdles which arose from the time the concept of a Letters Journal arose in the MTT Publications Committee, under Dr. Martin V. Schneider, to the inaugural issue of January 1991, and has been editor ever since. As a testament to the success of this effort, and to his many other MTT contributions, Dr. Itoh was recognized as a new Honorary Life Member by the MTT AdCom at its meeting of September 24, 1994.

Dr. Robert Trew of Case Western Reserve University will become *Transactions* Editor in March 1995. Dr. Trew received his Ph.D. from the University of Michigan in 1975. He worked at Watkins-Johnson from 1975 to 1977, before joining the faculty of North Carolina State University, where he became Professor and Director of the High Frequency Electronics Laboratory. He has been Professor at Case Western Reserve University since 1993. He is known for his work in microwave and millimeter-wave solid-state device characterization, parameter extraction, device physics, and circuit design. Dr. Trew was elected IEEE Fellow in 1991.

On behalf of the membership, I would like to thank Dan Massé for his outstanding service to the Society as editor for the past 3 years. Dan championed the increase in the *Transactions* page budget which is bringing us 16 issues in 1994, including 4 special issues. He dealt with publication delays as IEEE converted to electronic publishing. Dan also tightened the review process, with additional instructions to reviewers, and communications via editorials and the *Newsletter*. He has brought the current rate of paper acceptance in line with the annual page budget of 2800 pages. And his proposal for a one-year increase of the page budget to 3500 pages in 1995 will reduce the backlog of accepted papers awaiting publications to a desirable working level of about 2 months, down from over 6 months now.

Finally, I would like to thank the MTT Editorial Selection Committee: Eliot Cohen, Jim Crescenzi, Mike Golio, Tatsuo Itoh, Reynold Kagiwada, Steve Maas, Dan Massé, and Peter Staecker.

It was the dedicated efforts of this committee which led to the selection of the new editors for the *Transactions* and *Letters*.

IEEE Election Results

Following are the results of the elections validated by the IEEE Tellers Committee:

Office of the President-Elect	Wallace S. Read
Office of Division Director	
Division II	Pierre A. Thollot
Division IV	Rolf H. Jansen
Division VI	Stephen H. Unger
Division X	Tzyh-Jong (T.J.) Tarn
Office of Division Director-Elect	
Division V	Michael C. Mulder
Office of Region Director-Elect	
Region 1	Arthur W. Winston
Region 5	John R. Reinert
Region 6	John B. Damonte
Region 7	Linda E. Weaver

1995 MTT-S Awards

David N. McQuiddy, Jr.
Chairman, Awards Committee

At the September 1994 AdCom meeting, the following awards were unanimously approved and will be presented at the awards banquet of the 1995 International Microwave Symposium in Orlando, Florida.

Microwave Career Award:
Mr. William J. Getsinger

Citation: "For a career of meritorious achievement and outstanding contributions in the field of microwave theory and techniques."

Pioneer Award:
Mr. William C. Brown

Citation: "For pioneering work on crossed field amplifiers or platinotrons."

Applications Award:
Dr. Cheng Paul Wen

Citation: "For the invention and development of the Coplanar Waveguide and for the application of the waveguide to various microwave structures."

Distinguished Educator Award
Dr. G. P. Rodrigue

Citation: "For an exemplary career in education and research and dedicated service to the microwave profession."

Microwave Prize
Mssrs. Frank Olyslager, Daniël De Zutter, and Krist Blomme

"Rigorous analysis of the propagation characteristics of general lossless and lossy multiconductor transmission lines in multilayered media," *IEEE Transactions on Microwave Theory and Techniques*, Vol. 41, No. 1, January 1993.

Distinguished Service Award
Dr. Reinhard H. Knerr

Citation: "For his outstanding and dedicated service to the society."

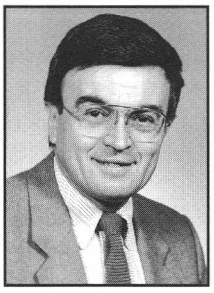
N. Walter Cox Award
Dr. Krishna K. Agarwal

Citation: "For exemplary service, given in a spirit of selfless dedication and cooperation."

1995 Fellow Awards

The following individuals were elected IEEE Fellows from the MTT-S Society, effective January 1995: Jerry C. Aukland, John B. Davies, Lionel E. Davis, Robert L. Eisenhart, Lawrence E. Larsen, John A. Pierro, Peter A. Rizzi, Klaus Schuenemann, Richard A. Sparks, Barry E. Spielman, Peter W. Staecker, and Britton T. Vincent, Jr.

Message from the Outgoing Chairman of the Awards Committee



by Reinhard Knerr

I am proud to have served as your Awards Chairman! Having served in many different functions in MTT-S, it was a special privilege for me to interact with the members of the Awards Committee, a group of our senior MTT people who represent the U.S., Europe and Asia.

They handled the selection of the award recipients in an absolutely professional, above board manner. They did so without any visible recognition since, for obvious reasons, we do not publish their names prior to the selection process.

By way of this message, I would like to publicly thank them for their help and professionalism.

Dr. Harold Sobol, who chaired the Fellow Evaluation Committee, has done an excellent job with his committee to maintain the quality and quantity of MTT members who became Fellows of the IEEE. Thank you, Harold, for a job well done.

Dr. George Heiter, who heads the committee that selects the Microwave Prize, must be as proud as I am of the accomplishments of his committee. I have personally attended their final meetings and was immensely impressed by how well all members were prepared and how professional they were in evaluating the numerous, complicated candidate papers.

I welcome the new chairman, Dr. David McQuiddy. Dr. McQuiddy has served on the Awards Committee and has had many functions in MTT-S, including President in 1987. He shares my view that the recognition of peers through the awards program is one of the most important functions of our Society and that it has to be handled accordingly.

I want to thank Dave for his willingness to accept this important assignment and know that he will make valuable contributions towards further improvements of the program.

Dr. Reinhard Knerr served as MTT-S President in 1986 and has been Chairman of the MTT-S Awards Committee for the last two years. He has served on numerous committees and was Editor of the MTT-S Transactions *from 1980-1982. Dr. Knerr is a Fellow of IEEE.*

In Memoriam: Edward S. Hensperger

by Stephen F. Adam (LF)

Edward S. Hensperger, Senior member of IEEE and MTT-S, passed away on September 11, 1994. Ed was a graduate of Rutgers University, of the class of 1952. He made a number of contributions during his 42 years of service to the microwave industry. Among some of his technical papers still being cited are:

- Ridged Waveguide Transformers; *IRE Trans.* GMTT, July 1958;
- Directional Coupler Design; *Microwave Journal,* August 1959;
- Waveguide Filter Design; *Microwave Journal*, November 1959;
- UHF Telemetry Amplifiers; *Telemetry Journal*, June 1967;
- High Power Microwave Components; *Microwave Journal,* May 1974.

After graduation from Rutgers, Ed started his microwave design experience at AIRTRON in Linden, NJ, where he gathered valuable experience designing microwave components. His last position was Section Head of advanced R&D group.

From 1959 through 1960 he was chief engineer, in charge of all engineering functions of WAVELINE, Caldwell, NJ.

Between 1960 and 1962 he was Sales Manager for NARDA, Plainview, NY, in charge of all marketing and sales functions. Between 1962 and 1963 he rejoined AIRTRON, then a division of Litton, Morris Plains, NJ, as Engineering Product Manager, with overall engineering direction of design, marketing and production of microwave subsystems.

From 1963 to 1967, Ed worked at EIMAC, a division of Varian, San Carlos, CA, as Senior Project Engineer in the design of microwave cavity oscillators, amplifiers, and related devices. He served as Projec Manager for several large engineering programs

In 1967, Ed joined MELABS, Palo Alto, where he was working until 1968, as Engineering Department Manager in charge of three design sections specializing in filters, multiplexers, solid state sources, parametric amplifiers, and frequency converters. He was also heavily involved in customer contacts, proposal preparation, and other sales activities.

From 1968 to 1971, he was employed by AEL, Mountain View, CA, and Colmar, PA, as Microwave Product Manager of the West Coast facility (EMTECH). His responsibilities included engineering leadership basically with high power oriented products. In 1970 he was transferred to Pennsylvania, as Microwave Laboratory Manager in charge of MIC and stripline components and subsystems.

Between 1971 and 1974 he was Marketing Manager of Microwave devices at TRANSCO, Venice, CA. His responsibilities encompassed all marketing and sales activities of antennas, switches, components and subsystem packages.

Between 1974 and 1977, Ed was Vice President, Director of Marketing of WAVECOM, Northridge, CA. His activities included all aspects of marketing and sales, primarily filters and multiplexers for aerospace, satellite communications, and microwave systems marketplace.

From 1977 until his untimely death Ed was Vice President in charge of sales activities of RYT Products, Santa Clara, CA. His responsibilities included all aspects of marketing and sales, and pre-engineering, proposal preparation of all filter products.

Ed Hensperger was quite active in the IEEE MTT Society with his latest involvement being Treasurer of the 1984 International Microwave Symposium held in San Francisco. He has left his wife, Phyllis, and four children, who miss him very much. We would also like to pay tribute to him for his long service to the microwave industry. He will be sorely missed.

1994 in Retrospective

(continued from page 3)

ues to outpace that in other regions. With these demographic shifts, as well as the down-shifting of the defense industry, one can reasonably anticipate that our technical focus will change appropriately, reflecting the priorities of our members. The 1994 International Microwave Symposium, for example, reflected these trends and demonstrated a very healthy ability to respond to changing times.

One of the most significant operational difficulties of 1994 was the delay in publication of papers in the *Transactions on Microwave Theory and Techniques.* Our Editor had labored to overcome administrative difficulties as the IEEE changed the mechanics of its publication activities, only to experience an unexpected increase in paper submissions and acceptance for publication. The Publications Committee recently presented a plan to increase pages published by 25 percent in 1995 (on a one time basis) to bring the backlog of unpublished papers down to normal levels. The AdCom, with the benefit of healthy financial reserves, approved the prerequisite (large) increase in publications budget. The result is that subscribers to the *Transactions* will receive 700 extra pages next year. Our goal is to maintain the reputation of the *Transactions on Microwave Theory and Techniques* as the preeminent publication in its field, by offering improved service to members and to authors.

In conclusion, 1994 has been an active and positive year for your society. The future is very promising, and I am certain we will all benefit as the new administration brings its particular insight, new priorities, and creativity to the governance of the Society. We are indeed fortunate to have such outstanding new leadership. Good luck in 1995!

Call for Nominations to MTT-S Awards

by David McQuiddy
Awards Committee Chairman

Whenever a discussion about the latest awards arises, invariably there are suggestions about people who should get or should have gotten the award or who, in the opinion of the person, are more deserving. There is no way to judge if that is true or not, unless somebody takes the time to submit an application! Please take the time to nominate your deserving colleagues. We will make sure that all nominations will be evaluated in a fair and professional manner.

DEADLINE FOR NOMINATIONS IS JULY 1!

Nomination forms can be obtained by contacting

Dr. David N. McQuiddy, Jr.
Chairman, MTT-S Awards Committee
Texas Instruments
M/S 228
P.O. Box 655474
Dallas, TX 75265
Tel: (214) 995-2808
Fax: (214) 995-3347
e-mail: dave.mcquiddy%dnm@timsg.csc.ti.com

In the following, we summarize the present MTT-S Awards and show the previous winners.

Distinguished Service Award
Prize: Plaque
Eligibility: Significant contributions and outstanding service to the Microwave Theory and Techniques Society and microwave profession over a sustained period of time.
Basis for judging: Service to AdCom and IEEE.

Award Recipients:

1983 Theodore Saad
1984 Alvin Clavin
1985 G. P. Rodrigue
1986 Harold Sobol
1987 Kiyo Tomiyasu
1988 Fred Rosenbaum
1989 Don Parker
1990 H. George Oltman
1991 Charles T. Rucker
1992 Richard Sparks
1993 Stephen F. Adam
1994 John B. Horton
1995 Reinhard K. Knerr

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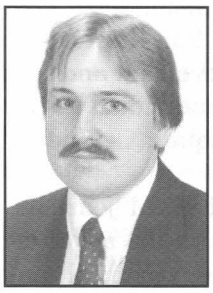
Free Electronic Job Searching



by Fred Schindler

The Microwave Theory and Techniques Society has made a new service available to its members. We are proving a new job searching facility, in cooperation with the Online Career Center. This service allows MTT-S members to electronically search for jobs, free of charge. The only thing you need is Internet access. And if you don't have Internet access, we can still help you (more information on that later).

About the Online Career Center

The Online Career Center (OCC) is a non-profit organization, supported by its members. It provides services to job searchers free or charge. It maintains a Internet accessible database of job listings ("help wanted" ads), resumes and other useful information. It provides convenient access and searching tools.

OCC is supported by member companies. The only way to post a "help wanted" ad at the OCC is to become a member. All other services are available to members and non-members alike. (It is possible to search all posted jobs, all posted resumes, or to enter resumes free of charge). Membership to OCC costs $3900 (one time), and $60 per password annually. We are encouraging employers in the microwave technology business to join OCC. Right now OCC has about 100 members. If you would like information on joining OCC as a full member, please contact the author.

The MTT is not a member of OCC. MTT and OCC have agreed to cooperate in providing a no cost job search capability to MTT members.

Accessing the Online Career Center

OCC is accessible interactively over the Internet 2 ways: 1) via gopher or 2) via telnet (which actually allows you to connect to their gopher). Internet access and gophers are available to most people where they work or go to school. If you belong to any of a number of dial-up services such as America Online, Compuserve, Delphi, etc., you can use their gopher server.

My employer, for example, has an interactive Internet gatekeeper, but not a gopher. If you do have a gopher available, you can type "gopher.occ.com", and you will be connected to OCC. (Alternatively, you can type only "gopher" and go through a series of menus, similar to

(continued on page 20)

Call for Nominations to MTT-S Awards

(continued from previous page)

Microwave Career Award

Prize: Certificate, plaque and $2000

Eligibility: A career of meritorious achievement and outstanding technical contribution by an individual in the field of microwave theory and techniques; individual must be a member of IEEE.

Basis for judging: Publications in technical journals, presentation of lectures, contributions to the advancement of microwave technology and other technical contributions considered in conjunction with any or all of these areas of contribution; nominations are considered annually; award is made aperiodically.

Award Recipients:

1973 W. Mumford
1974 H. Wheeler
1975 H. Riblet
1976 J. Whinnery
1977 E. Weber
1978 A. G. Fox
1979 S. Cohn
W. Kleen
1980 K. Tomiyasu
1982 A. Oliner
A. Matsumoto
1983 M. Hines
1984 J. R. Pierce
1985 N. Marcuvitz
H. M. Barlow
1986 G. L. Matthaei
1987 R. W. Beatty
1988 Leo Young
1989 A. Cullen
H. F. Cook
1990 R. A. Pucel
1991 Sogo Okamura
1992 Theodore S. Saad
1993 Leonard Lewin
Herbert Doring
1994 Yoshihiro Konishi
1995 William J. Getsinger

Pioneer Award

Prize: Plaque and $1000

Eligibility: Publication of contribution in an archival journal, an individual or team not exceeding three persons. Deceased persons are ineligible for nomination. Preference may be given to IEEE members.

Basis for judging: Proposed award is to recognize an individual(s) who has made a major, lasting contribution in the field of interest of MTT-S at least 20 years prior to the year of the award.

Award Recipients:

1990 Hatsuaki Fukui
1991 Robert H. Dicke
1992 Robert M. Barrett
1993 Claud Cleeton
Lester Hogan
1994 Michiyuki Uenohara
1995 William C. Brown

Microwave Application Award

Prize: Certificate and $1000

Eligibility: Outstanding application of microwave theory and techniques by an individual to create a new device, component or technique; novel use of a device or component; or any combination of the above.

Basis for judging: The most outstanding application of microwave theory and techniques by an individual; nominations must be submitted by member of the Society; nominations are considered annually; award is aperiodic.

Award Recipients:

1974 Dean F. Peterson III
1975 James F. White
1976 Martin G. Walker
1977 Stephen I. Long
1978 Dale H. Claxton
1979 Erwin F. Belohoubek
1980 Julius Lange
1982 Charles R. Boyd, Jr.
1983 L. Besser
1984 Paul Meier
1985 James Cheal
1986 C. Burke Swan
1988 L. S. Napoli
M. Fukuta
1989 Kenneth L. Carr
1990 Allen F. Podell
1991 Eric W. Strid
K. Reed Gleason
1992 Bernard Hershenov
1993 Irv Reingold
John Carter
1994 Martin V. Schneider
1995 Cheng Paul Wen

N. Walter Cox Award

Award Recipients:

1989 Richard Sparks
1990 Peter Staecker
1991 Helmut E. Schrank
1992 Barry Spielman
1993 James E. Degenford
1994 Chuck Swift
1995 Krishna K. Agarwal

Distinguished Educator Award

Prize: Plaque and honorarium of $1000

Description and background: The creation of this award was inspired by the untimely death of Prof. F. J. Rosenbaum (1937-1992), an outstanding teacher of microwave science and a dedicated MTT-S AdCom member/contributor.

Eligibility: The candidate must be a member of IEEE and MTT-S at the time of nomination.

Administration: The award will be administered by the MTT-S Awards Committee. Candidates will be considered each year, and a recommendation will be made to MTT-S AdCom if a suitable candidate is identified.

Basis for judging: The awardee must be a distinguished educator, recognized, in general, by an academic career. It is desirable for the candidate to have received other teaching awards. The effectiveness of the educator should be supported by a list of graduates in the field of microwave science, who have become recognized in the field. Relevant letters of support are encouraged. The candidate shall also have an outstanding record of research contributions, documented in archival publications. The candidate shall have a record of many years of service to MTT-S.

Presentation: When presented—at the annual IMS awards banquet.

Award Recipients:

1993 Arthur A. Oliner
1994 Paul D. Coleman
1995 G. P. Rodrigue

About the Award Recipients

Paul D. Coleman

Distinguished Educator Award

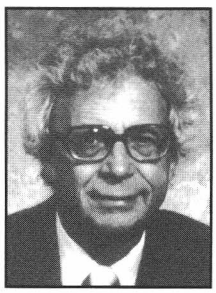
Dr. Paul D. Coleman received his B.A. degree under Paul J. Ovrebo in 1940 and an honorary D.SC. degree in 1978 from the Susquehanna University, the M.S. degree in physics under D. Rank in 1942 from Penn State University, and the Ph.D. in physics under J. C. Slater from MIT in 1951.

From 1942 to 1951 he was with the U.S. Air Force at Wright Field, Dayton, Ohio, and with the Cambridge Air Research Center where he was engaged in countermeasures, aircraft antenna, broad band impedance matching, and millimeter waves, for which he received a Meritorious Citizen Award from General T. Spatz. His Ph.D. thesis was on the generation of microwaves via megavolt electronics using a magnetic wiggler.

Following this period he joined the University of Illinois as a professor of electrical engineering and established the Electro-Physics Laboratory. His research interests have been in megavolt electronics, electron beam interactions (i.e., Cerenkov radiators), harmonic generation, millimeter and submillimeter wave techniques, quantum electronics, molecular and chemical lasers, nonlinear optics, far IR optical properties of materials, resonant tunneling, pyroelectric and MOM detectors, and Landau level semiconductor lasers.

Dr. Coleman is a Fellow of APS, OSA and a member of AAAS. He was on the founding committee of MTT in 1952, chairman of IEEE Quantum Electronics Council, Associate Editor of IEEE-JQE, member of the Hoover Medal Board of Award, and treasurer of IEEE DRC for over twenty years. He received the IEEE Centennial Medal in 1984. He has directed nearly fifty Ph.D. and seventy-five M.S. degrees in EE and physics and published 115 papers in refereed journals.

Dr. Coleman became an emeritus professor of ECE in 1988, but is still active in graduate research—and on the golf course.



Martin V. Schneider

Application Award

Dr. Martin V. Schneider received the M.S. degree in physics in 1955 and the Ph.D. (Dr.SC.Nat.) in 1959 from the Swiss Federal Institute of Technology in Zurich, Switzerland. He was involved in research on the properties of thin metallic films and their applications at microwave frequencies.

In 1961 he joined the group of John Pierce and Rudolf Kompfner at AT&T Bell Laboratories in Holmdel, New Jersey, and began work on active microwave devices and circuits needed for short hop radio systems at 11 and 18 GHz. Subsequently, Dr. Schneider developed microstrip components and planar transmission line elements to realize compact filters and heterodyne mixers at microwave and millimeter-wave frequencies ranging up to 230 GHz. As a member of the research team of Arno Penzias and Robert Wilson, he developed low-noise mixer diodes which were used in radio-astronomical experiments and later successfully flown on the space shuttle *Atlantis*.

Dr. Schneider developed the first high-speed photodiode consisting of a thin film Schottky diode with an optimized dielectric matching layer. He also showed that the spectral noise density of optical receivers can be computed directly from the physical parameters of the photodiode and the HEMT device which performs the preamplification of the signal.

He devised a subharmonically pumped homodyne mixer which he and his team used for gigabit rate digital modulators and demodulators.

He is currently a supervisor in the Wireless Technology Research Department at AT&T Bell Laboratories in Holmdel.

Dr. Schneider is a recipient of a number of awards including the Microwave Prize (1979), the IEEE Centennial Medal (1984), the IEEE Region I Award (1984), and the IEEE/MTT Meritorious Service Award (1989). He served on the IEEE Board of Directors (1991-1992) where he was in charge of the Electromagnetics and Radiation Division. He led the IEEE Committee on New Technology Directions, his team created the IEEE Portfolio on Emerging Technologies, proposed a new approach to facilitate the development of global standards, identified "Seven Grand Challenges in Electrotechnology" and initiated the first IEEE bilingual videotapes on emerging technologies.

As a member of the MTT Administrative Committee (AdCom) from 1984 to 1990, he started the new Letters Journal, *Microwave and Guided Wave Letters*, and increased MTT membership by 35 percent and the number of chapters from 46 to 62 worldwide over a three-year period. Dr. Schneider was also instrumental in organizing a number of scientific workshops and directed with Leo Esaki a NATO Scientific Institute on "Solid-State Devices in Communications."

Chuck W. Swift

N. Walter Cox Award

Chuck Swift was born in Detroit in 1927 and was educated at UCLA. He worked for Hughes Aircraft Company from 1951 to 1955 and then for Bertram D. Aaron for three years. He is president of his own company, C. W. Swift & Associates, Inc., located in Van Nuys, California, which he started in 1958.

Chuck has been involved with the MTT-S for over thirty years. He is perhaps the greatest supporter of local chapters, having "attended more MTT-S chapter meetings than any other member." In addition to participating in the meetings, he has provided financial and logistical support, and, above all, provided life and energy with his unique personal style and enthusiasm. In a lighter vein, he is the pistachio nut king, always showing up at MTT meetings with nuts for everyone or some other gimmick for entertainment. He loves to tell stories and strives to entertain people, make them laugh and feel good. During these many years, chapter chairmen and other officers have come and gone, giving service for a few years and then discontinuing their active participation. Not so with Chuck. He still seeks ways to build up attendance at local meetings.

Chuck has also contributed significantly at the national level for many years. He has been local arrangements chairman for three microwave symposia: 1963 in Santa Monica, California; 1970 in Newport Beach, California; and 1981 in Los Angeles, California. Chuck was chairman of the 1989 International Microwave Symposium in Long Beach, California. He wrote the "One Penny Opera" presented at the Awards Banquet that year.

In the words of one of Chuck's fans, "I can't imagine anyone who better fits the description of the N. Walter Cox Award as he is one 'who has given exemplary service to the society in a spirit of selfless dedication and cooperation.'"

If you saw two men arriving at the Symposium on motorcycles, it was Chuck and his son, Steve. They have done this the last few years—even when the symposium has been held on the East Coast.

P. Chris Grossman and John Choma, Jr.

Microwave Prize Co-Recipients

P. Chris Grossman

P. Chris Grossman was born in Pasadena, California, in 1957, and grew up in Manhattan Beach, California, where he now resides. He earned his B.S.E.E. and M.S.E.E. degrees in 1983 and 1985, respectively, from the University of Southern California where he will complete his Ph.D. degree early in 1994.

Since 1987 he has been a Senior Member of the Technical Staff at TRW Space and Electronics Group in Redondo Beach, California, working on large signal modeling, reliability, failure analysis, and test procedures for heterojunction bipolar transistors (HBTs) and the design of HBT circuits. He has developed SPICE models for both production and new research processes. The models he developed have been successfully used for most of the HBT circuits designed by TRW and its foundry customers.

From 1983 through 1989 he was a research/teaching assistant at USC where he did research on oscillator design principles, magnetic effects in FETs, and the design of cochlear implants. From 1979 to 1983, he was employed by the Display Electronics Department at Hughes Aircraft Radar Systems Group, El Segundo, California, where he designed a digital raster generator and CPU boards for the F14 weapons control system. His professional interests include device modeling and the design of microwave, analog, high speed digital, and power conversion circuits.

He enjoys motorcycling, deep sea fishing, scuba diving, and open ocean swimming. He is also a founding board member of Ocean Quest, a nonprofit organization to further education about the ocean environment. Mr. Grossman is a member of Eta Kappa Nu.

John Choma, Jr.

Dr. John Choma, Jr., earned his B.S., M.S. and Ph.D. degrees in electrical engineering from the University of Pittsburgh in 1963, 1965 and 1969, respectively. He is currently a Professor of Electrical Engineering at the University of Southern California where he offers undergraduate and graduate courses in electrical circuits and analog electronics. He is a frequent consultant to electronic circuits and systems industries for wideband analog and high speed digital integrated circuit analysis, design and modeling.

Prior to joining the USC faculty in 1980, Prof. Choma was a senior staff design engineer in the TRW Microelectronics Center in Redondo Beach, California. His earlier positions include technical staff at Hewlett-Packard Company in Santa Clara, California, Senior Lecturer in the Graduate Division of the Department of Electrical Engineering of the California Institute of Technology, and part or full time positions with the University of Pittsburgh, University of Santa Clara, University of Pennsylvania, and the University of California at Los Angeles.

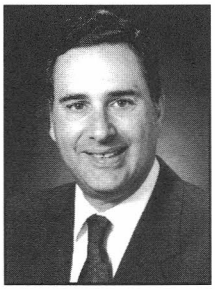
Dr. Choma is the author or co-author of 80 journal and conference papers, the author of the 1985 Wiley Interscience text, *Electrical Networks: Theory and Analysis*, and the author of a forthcoming Richard D. Irwin text on electronic circuit design. He has contributed chapters to two edited electronic circuit texts. He is a Fellow of the IEEE, and he is currently a member of the Board of Governors for the IEEE Circuits and Systems Society. He is also completing his term as Associate Editor for the *IEEE Transactions on Circuits and Systems*. Prof. Choma is an Associate Editor for the *Journal of Analog Integrated Circuits and Signal Processing*, and he is a Regional Editor for the *Journal of Circuits, Systems, and Computers*.

Prof. Choma's research interests include wideband analog and high speed digital integrated circuit design, feedback network theory, integrated device modeling, and engineering education in the circuits and systems areas. He is a recipient of a Phi Kappa Phi research award and has received several local and national teaching awards.

1994 MTT AdCom Elections

by K. Tomiyasu, Chair
Nominations & Appointments Committee

At its 24 September 1994 fall meeting, the MTT-S Administrative Committee, chaired by President E. James Crescenzi, Jr., elected the following: 1995 President, Eliot D. Cohen; 1995 Vice President, Mario A. Maury, Jr.; 1995-1997 Term Members, S. Jerry Fiedziuszko, Rolf H. Jansen, Robert T. Kemerley, Daniel G. Swanson, John W. Wassel, and Eikichi Yamashita: 1995 Term Member, Mario A. Maury, Jr.



Eliot D. Cohen

1995 President

Eliot Cohen (S '62, M' 63, SM '78, F '91) received the BEE and MSE degrees from the George Washington University, Washington, DC, in 1963 and 1966, respectively. Since then, he has completed additional graduate work at the George Washington University. He is an IEEE Fellow and 1995 President of the IEEE Microwave Theory and Techniques Society Administrative Committee (MTT-S AdCom). He previously served on MTT-S AdCom as 1994 Vice President, Chairman of the Budget Committee, Vice Chairman of the Long Range Planning Committee, Co-Chairman of Meetings and Symposia, and Vice Chairman of the Technical Coordinating Committee. He is also the Advanced Research Projects Agency (ARPA) Member of the OSD Advisory Group on Electron Devices (AGED).

Mr. Cohen is a member of the U.S. Government's Senior Executive Service. He is currently serving as the Executive Director for Microwave and Millimeter-Wave Technology in the Electronic Systems Technology Office (ESTO) at the Advanced Research Projects Agency (ARPA). He was appointed to this position in 1991. In this capacity, he has overall responsibility for the $577 million Microwave/Millimeter-Wave Monolithic Integrated Circuits (MIMIC) program, the High Density Microwave Packaging (HDMP) program, and the new Microwave and Analog Front End Technology (MAFET) program. He played the primary role in the development in the Rapid Prototyping of Application Specific Signal Processors (RASSP) program and served as the manager of that program between January 1992 and May 1993.

In January 1989, Mr. Cohen joined the Defense Advanced Research Projects Agency (DARPA) (now called ARPA) and was named Manager of the MIMIC program. Between February 1990 and May 1991, Mr. Cohen also served as Deputy Director of the Defense Manufacturing Office at DARPA. Mr. Cohen shared responsibility with the Director of the Defense Manufacturing Office for guiding and directing key technological and analytic programs in support of Department of Defense requirements for advanced manufacturing capabilities. The overall program included projects on semiconductor manufacturing, infrared focal plane array production, high definition display technology, x-ray lithography, microwave/millimeter-wave monolithic integrated circuits and intelligent processing of semiconductor materials. The office also had responsibility for administering the Department of Defense grant to the Semiconductor Manufacturing Technology Consortium (SEMATECH).

Between 1986 and 1988, Mr. Cohen was Deputy Director for Microwave and Millimeter-Wave Programs in the Department of Defense's Technology Analysis Office (DTAO), where he had primary responsibility for technical planning and management of the MIMIC program.

Between 1980 and 1986, Mr. Cohen served as the Navy Director of the Very High Speed Integrated Circuits (VHSIC) program at the Space and Naval Warfare Systems Command (formerly Naval Electronic Systems Command). Under this program, two generations of high speed, high density, silicon digital circuits were developed for advanced signal processing applications.

From 1972 to 1980, he was Head of the High Frequency Devices Section at the Naval Research Laboratory, performing and directing research on microwave and millimeter-wave solid state devices and circuits.

From 1963 to 1972, he was an electronic engineer at the Naval Research Laboratory, performing research on microwave and millimeter-wave solid state devices and circuits.

Mario A. Maury, Jr.

1995 Vice President

Mario Maury is President, CEO and Chairman of the Board at Maury Microwave Corporation, Ontario, California. Mr. Maury attended Mt. San Antonio College and California State College at Los Angeles, where he majored in Electrical Engineering.

Mr. Maury started his career at General Dynamics, Pomona, California, and in 1961 joined Maury Microwave on a full time basis. He has designed a wide variety of passive microwave components and instruments in coaxial, waveguide and stripline structure from literally DC to 110 GHz. Mr. Maury has been active in the development of calibration/verification standards for automated network analyzers, precision noise measurement equipment, transistor test fixtures, automated tuner systems, high frequency coaxial connectors (he designed the first 40 GHz mode free connector in 1973), improved

millimeter waveguide flanges (1984) and improved microwave measurement techniques. Mr. Maury has authored, co-authored and presented numerous technical papers on a wide variety of microwave measurement topics, several of which have been invited papers.

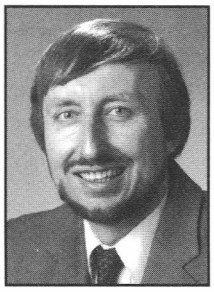
Mr. Maury is a member of IEEE, MTT-S, IM-S and ARFTG. He became a member of IEEE in 1968 and a Senior Member in 1986. He has been active in MTT-S activities since 1980. He was originally appointed to AdCom in 1981 and became an elected member in 1986. Mr. Maury has served as Chairman of Membership Services, Meetings and Symposia, and Publicity Committees and on various other committees such as: TC-12 Chairman, Automated Measurements, Founder; Secretary/Treasurer, *ad hoc* Committee to Promote National Microwave Standards (PNMS); TC-11 Microwave Measurements; *ad hoc* Committee Negotiated European Session at IMS and U.S. Session at EuMC; Hertz Centennial Committee (Fund Raising & Publicity); Site Negotiating Committee; MMMC/Expand Microwave Week, Long Range Planning Committee; and *ad hoc* Committee Aiding Eastern Europe and the Former Soviet Union (EE/FSU). Mr. Maury has also served as ARFTG Liaison, AdCom Representative to the IEEE R&D Committee and as a Reviewer for the *MTT-S Transactions.*

Mr. Maury has also been active in serving on International Microwave Symposiums. He has been a member of the Technical Program Committee continuously since 1982. He chaired a workshop on High Frequency Coaxial Connectors in 1984 and chaired sessions on Microwave Measurements in 1986 and 1993. He has served on three Steering Committees: 1989 as Publicity Chairman, 1994 as Special Sessions Chairman, and in 1999 he will be the General Chairman in Anaheim, California.

Mr. Maury was also very active with the Automatic RF Techniques Group (ARFTG) where he was a member of the Executive Committee (1979-1986) and served as President (1980-1982). He also served in various other capacities such as MTT-S Coordinator, Awards Chairman, Publications Chairman, Exhibits Chairman, 20th Conference Chairman, 23rd Conference Technical Program Chairman, and 26th Conference host.

Mr. Maury has also served in other IEEE and industry activities as follows: IEEE P287 Committee Member (Precision Coaxial Connectors), IEEE P1179 Committee Chairman (Precision Waveguide Flanges), Member Editorial Review Board *Microwave Journal*, Technical Expert U.S. National Committee/IEC-SCD46 RF Committee, IMS-TC12 National Measurement Standards and NCSL-RF and Microwave Metrology Subcommittee.

Mr. Maury has received a number of technical and professional awards. In 1980, he received the ARFTG Service Award and in 1983, the ARFTG Distinguished Service Award. In 1984, he received the HP Honored Contributor Award for his contributions to the HP8510 Automated Network Analyzer. In 1989, he received the ARFTG Honorary Life Member Award. In 1991, he received the ARFTG Career Award for his many contributions to automated microwave measurements.



S. Jerry Fiedziuszko

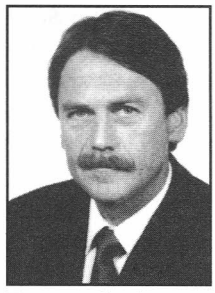
S. Jerry Fiedziuszko (M '73, SM '83, F '92) received the MSEE degree from Warsaw Technical University, Warsaw, Poland, in 1967 and completed doctoral requirements in 1971 (formally received Ph.D. in 1993). He has more than 25 years working for the following microwave industry and research institutions: Space Systems/LORAL (formerly Ford Aerospace), LDV Electro Science, Syracuse University, and the Institute of Electronic Technology of the Polish Academy of Sciences. His present position at SS/L is Consulting Scientist/Manager, Advanced Microwave Development. His technical work of the past several years has focused on applications of dielectric resonators, high performance filters and multiplexers for communication satellites, and HTS (High Temperature Superconductivity) microwave components.

Dr. Fiedziuszko is a former Chairman of the IEEE MTT Standards Coordinating Committee, former Co-Chairman of the IEEE MTT "Filters and Passive Components" Technical Committee, and a member of the IEEE MTT "Microwave Superconductor Applications" Technical Committee. He is also a member of the Technical Program Committee for the MTT International Symposium, Technical Program Committee Co-Chairman for the 1996 IMS in San Francisco, and the Editor of *MTT Transactions Special Symposium Issue* in 1996.

From 1987 he also served as an officer of the Santa Clara Valley MTT Chapter.

S. Jerry Fiedziuszko graduated with distinction, received the Ford Aerospace Exceptional Inventor Award, Ford Aerospace Outstanding Principal Investigator Award, and the 1990 Aerospace Laurels Award from *Aviation Week*. He serves as a reviewer for the *IEEE Transactions in Microwave Theory and Techniques, MGWL, IEE Proceedings* and the *Electronics Letters (Great* Britain), and the National Science Foundation. He is a Fellow of IEEE.

He has more than 50 publications and 12 patents granted with 7 pending.



Rolf H. Jansen

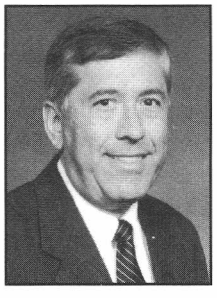
Rolf H. Jansen (M '75, SM '84, F' 89) was born in Cologne, Germany, on June 24, 1946. He received the Master's degree and Ph.D. in electrical engineering from the University of Aachen (RWTH), Germany, in 1972 and 1975, respectively.

From 1976 to 1979 he was a Senior Research Associate at RWTH Aachen, In 1977 he became an Industrial Research Associate for the radio

communication division of Standard Elektrik Lorenz AG (SEL) in Pforzheim, Germany. He served as a Professor of Electrical Engineering from 1979 to 1985 at the University of Duisburg, Germany, teaching and carrying out research on electromagnetic theory, microwave techniques and CAD, measurement techniques and modeling. He is Manager and Head of Jansen Microwave, Ratingen, Germany, which he established in 1985. Since then, he has also been a Senior Research Consultant and Subcontractor to Plessey Research Caswell, U.K., now GEC-Marconi Materials Technology, and has been engaged in developing a CAD Workstation for GaAs MMICs using new, layout- and physics-related design concepts. Further, from 1985 to the present, he initiated and conducted a large number of hybrid MIC hardware projects, mainly for the German communications industry. Since August 1994, Professor Jansen holds the position of the Chair of Electromagnetic Theory in the EE Faculty of RWTH Aachen Technical University, Aachen, Germany.

He is known for his contributions to the field of microwave and mm-wave CAD, particularly with regard to MIC and MMIC design, and developed various field theory-based and physics-related simulation approaches. He is one of the pioneers in the field of 3-D electromagnetic simulators for CAD, analytical microstrip structure modeling, spectral domain techniques and geometry-related active device modeling. He developed and introduced the first layout-oriented general purpose microwave CAD package in the German production-oriented communications industry 1979-1981 and is the principal author of the advanced, field theory-based linear and nonlinear LINMIC +/N package for MIC and MMIC design.

Dr. Jansen was a co-founder of the German MTT-S Chapter and its first Chairman during the period of May 1985 to May 1987. During 1987-1988 he served as an IEEE Distinguished Lecturer for the MTT-S, lecturing worldwide on the CAD of microwave and mm-wave ICs. Dr. Jansen serves on the AdCom of the IEEE MTT-S Society as an elected member since 1989 and has the function of the MTT-S European Coordinator and Co-Chairman of the Transnational Committee. He was Chairman of the 1992 European GaAs Applications Symposium (GaAs '92), Noordwijk, Netherlands, April 1992. He is a member of the editorial boards of various international journals related to microwaves, CAD and numerical modeling. He is a Member of the Electromagnetics Academy. He holds two patents and is the author or co-author of about 90 publications.



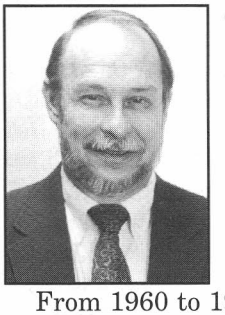
Robert T. Kemerley

Robert T. Kemerley (S '70, M '71, SM '94) received the BSEE and MSEE degrees from Ohio State University in 1971 and 1978, respectively. He is the Chief of the Microwave Division of the Electronic Technology Directorate, Wright Laboratory. He is responsible for exploratory and advanced development research of microwave and millimeter-wave electronics.

In the 1972-1987 period, Mr. Kemerley worked on microwave solid state device and integrated circuit research and development programs. Work on silicon and gallium arsenide diodes and transistors, hybrid and monolithic microwave integrated circuit, and transmit/receive (T/R) modules for phased array antennas was conducted. He held Group and Branch level supervisory positions within the Microwave Division. Both contractual and in-house research and development programs were pursued.

In 1987, Mr. Kemerley assumed his present position as the Chief of the Microwave Division. He is responsible for solid state and thermionic devices, monolithic microwave/millimeter-wave integrated circuits, T/R modules, and advanced phased array antennas. Such devices, components and subsystems provide the technology base for advanced Air Force radar, electronic warfare, and communication systems.

Mr. Kemerley participates in a number of Department of Defense (DoD) level technical planning and coordination activities. He is a member of the Advisory Group on Electron Devices (AGED), Working Group A (Microwave Devices). This Army, Navy, Air Force, and ARPA organization conducts joint technology planning across the DoD. He is involved in the management of the ARPA/Tri-Service Microwave/Millimeter-Wave Monolithic Integrated Circuit (MIMIC) program and the High Density Microwave Packaging (HDMP) program. Mr. Kemerley is the Air Force focal point for the Tri-Service Vacuum Electronics Initiative. The initiative concerns the development of advanced thermionic device technology.



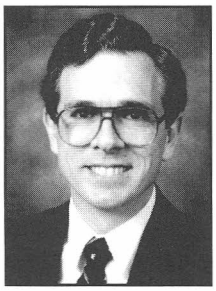
John W. Wassel

John W. Wassel (M '69, SM '83) received the degrees of B.S. in physics from the University of Oklahoma, Norman, in 1960 and the M.S. in electrical engineering from Southern Methodist University, Dallas, TX, in 1967. He is a Senior Member of the IEEE.

From 1960 to 1964, John was employed at Continental Electronics in Dallas developing high-power radar and radio transmitters. He was an engineer at Microwave Physics in Garland, TX, from 1964 to 1965 developing parametric amplifiers and YIG filters. From 1965 to 1968, he was in microwave telecommunication systems at Collins Radio in Dallas. Since 1968, he has been a senior engineer at Texas Instruments, involved in varied microwave design activities. Presently, he is deputy manager of microwave and antenna research and development programs.

John has served the Dallas IEEE Microwave Theory and Techniques Group as program co-Chairman, Treasurer, Secretary, and Chairman. He also has served the Dallas IEEE Section as Technical Studies Chairman and is now serving as Historian. John was chairman of the 1990 IEEE MTT-S International Microwave Sympo-

sium and was a member of the Steering Committees of the 1987 and 1982 MTT-S IMS. He was honored as the Dallas IEEE Section Engineer of the Year in 1991. He is now serving as *MTT-S Newsletter* editor and as Chairman of the Operations Committee.

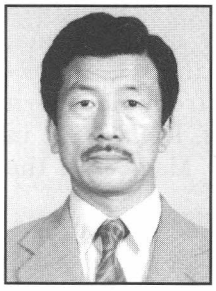


Daniel G. Swanson, Jr.

Daniel G. Swanson, Jr. (S '74, M' 78, SM '91) received is BSEE degree from the University of Illinois in 1976 and his MSEE degree from the University of Michigan in 1978.

In 1978 he joined Narda Microwave, where he developed a 6-18 GHz low-noise amplifier, an 8-10 GHz low-noise amplifier, and a de-embedding system for S-parameter device characterization. In 1980 he was with the Wiltron Company designing YIG tuned oscillators for use in microwave sweepers. He also developed a broadband load-pull system for optimization of output power. In 1983, Mr. Swanson joined a start-up company, Iridian Microwave, where he was responsible for the dielectric resonator oscillator product line. In 1984 he joined Avantek Inc., where he developed thin-film microwave filters, software for filter design, and a low-frequency broadband GaAs MMIC amplifier. In 1989, he joined Watkins-Johnson Company where he is Staff Scientist. His current work includes thin-film filter design and the application of electromagnetic field solvers to microwave component design.

Mr. Swanson served as an officer in the Santa Clara Valley Chapter of the MTT-S from 1985 to 1989. In 1991 he was MTT-S AdCom Secretary. He has served on the Budget Committee, the Education Committee, and the Membership Services Committee. Mr. Swanson is presently serving as MTT-S AdCom Treasurer.



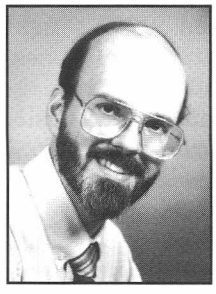
Eikichi Yamashita

Eikichi Yamashita (M '66, SM '79, F '84) was born February 4, 1933, in Tokyo, Japan. He received the B.S. degree from the University of Electrocommunications, Tokyo, Japan, and the M.S. and Ph.D. degrees from the University of Illinois, Urbanna, all in electrical engineering, in 1956, 1963, and 1966, respectively.

From 1956 to 1964, he was a member of the research staff on millimeter-wave engineering at the Electrotechnical Laboratory, Tokyo, Japan. While on leave from 1961 to 1963 and from 1964 to 1966, he studied solid-state devices in the millimeter-wave region at the Electro-Physics Laboratory, University of Illinois. He became Associate Professor in 1967 and Professor in 1977 in the Department of Electronic Engineering, the University of Electrocommunications, Tokyo, Japan. Since 1956, his research work has been principally on applications of electromagnetic waves such as various microstrip transmission lines, wave propagation in gaseous plasma, pyroelectric-effect detectors in the submillimeter-wave region, tunnel-diode oscillators, wide-band laser modulators, various types of optical fibers, and ultrashort electrical pulse propagation on transmission lines.

Dr. Yamashita was Chairperson of the Technical Group on Microwaves, IEICE, Japan, for the period 1985-1986 and Vice Chairperson, Steering Committee, Electronics Group, IEICE, for the period 1989-1990. He has served as Associate Editor of the *IEEE Transactions on Microwave Theory and Techniques* during the period 1980-1984. He was elected Chairperson of the MTT-S Tokyo Chapter for the period 1985-1986. He served as Chairperson of International Steering Committee, 1990 Asia-Pacific Microwave Conference, held in Tokyo. He edited the book, *Analysis Methods for Electromagnetic Wave Problems* published by Artech House.

MTT-S Consultants' Network Update



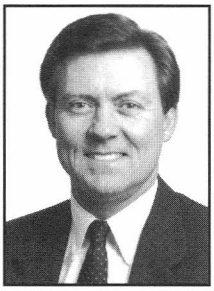
by Steve Maas

A Consultants' Network focused specifically on microwave engineering has been organized to assist the increasing numbers of engineers working in private practice. The objective is to complement the services offered by the eight or so IEEE Consultants' Networks which serve specific geographic areas: Boston, Long Island, San Diego, Los Angeles, etc., and cover all fields of electrical engineering. The MTT network will improve the efficiency of referrals by concentrating on microwave engineering and would be available to potential clients worldwide, thus providing global coverage.

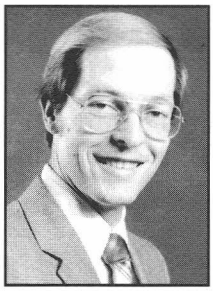
Initial emphasis is concentrated on compiling a database of consultants for referrals. Start-up activities are being sponsored by the MTT, and for the time being no dues are being charged for this referral service. However, the network is expected to be self-supporting after start-up is completed (approximately 1 year), and eventually, dues will have to be charged to defray the cost of running the network. The amount will be determined at a later date, depending, among other factors, on the number of participating members.

To get into the database, or for additional information, please contact Steve Maas by phone or fax at (310) 426-1639 or by e-mail at either smaas@aol.com or smaas@ieee.org. Steve may also be contacted through Non-Linear Technologies, Inc., P.O. Box 7284, Long Beach, CA 90807.

MTT-S Meetings & Symposia Committee Report



R. E. (Skip) Bryan



E. A. Rezek

September 1994 Ad Com Meeting

Following is a summary of the committee business concluded at the September 24-25 AdCom meeting in Baltimore, Maryland.

Meeting Sponsorship

Regions 1-6

MTT-S addressed several technical events held in Regions 1-6.

The Society provided the Long Island Section of the IEEE with the MTT-S mailing list to expand publicity distribution for the Adaptive Antenna Systems Symposium. This is a periodic event organized by the Long Island Section. The 1994 focus was on the marriage of analog and digital technologies in support of future electronic systems and equipment development. Publicizing the event to the nearly 10,000 members of the Society was expected to boost attendance.

AdCom approved technical co-sponsorship of a workshop on the Role of Fiber Optics in Wireless Communications, to be held jointly with the 1995 Optical Fiber Communication Conference. This is the second time that the Society has co-sponsored a workshop at the OFC. The OFC is sponsored by the Optical Society of America, which is also jointly sponsoring the workshop. OFC '95 will be held February 26-March 3, 1995, at San Diego, CA. The workshop will take place on Sunday, February 26, 1995. The point of contact is Alwyn Seeds, University College, Torrington Place, London WC1E 7JE UK. His telephone number is +44 71 387 7050 x3972; his fax number is +44 71 387 4350. Information can also be obtained from Professor Peter Herczfeld (MTT-3) at Dept. of Electrical & Computer Engineering, Drexel University, Philadelphia, PA 19104; his telephone number is (215) 895-2256; his fax number is (215) 895-4968; his e-mail address is herezfeld@ece.drexel.edu.

AdCom also approved a motion from the IEEE Components, Packaging and Manufacturing Technology (CPMT) Society to become a co-sponsor of the Electrical Performance of Electrical Packaging Conference. Our Society was the sole sponsor of the inaugural conference. The event is the major technical conference in a very topical area and serves as the major forum for technical interchange. The addition of the CPMT-S will strengthen the conference attendance and will enhance the emphasis on manufacturing activities.

MTT-S is continuing its effort to reach out to its members outside of the United States. Important developments have taken place in Regions 8 and 9 during the last period.

Region 8

The Society approved continual cooperative sponsorship of the MIKON conference. In the past this conference was primarily localized to Poland. However MIKON has undergone some positive changes recently and is becoming a regional event and has the potential to become a major forum for scientific exchange between the West and the former Eastern European Community. Approving continual cooperative sponsorship is one way that the Society can endorse this growth. We can thank a very active local chapter for taking the initiative to expand the scope of MIKON. The next MIKON conference will be held in May 1996 in Warsaw, Poland. Details may be obtained from Professor E. Sedek; his address is Telecommunication Research Institute, PIT, Poligomowa 30, 00-991 Warszawa, Poland. His telephone number is + 4882 102571 and his fax number is + 4822 102571.

We approved co-sponsorship of the 1994 Topical Meeting on Optical Microwave Interaction. This event was initially an IEEE-LEOS conference and is several years old with a strong technical following. As part of a plan to increase the Society involvement in this event it was agreed in the past that the meeting would have alternating IEEE-MTTS and IEEE-LEOS leadership. 1994 is the year for MTT-S to take the lead in organizing the meeting. MTT-3 and the ED French Chapter are championing the meeting this year. The 1994 meeting will be held from November 21-23, 1994, and will be at the Abbaye des Vaux de Cernay, Ile-de-France, France. Details may be obtained from Professor Peter Herczfeld (MTT-3) or Prof. Robert Adde (French ED Chapter). Prof. Herczfeld's address is Dept. of Electrical and Computer Engineering, Drexel University, Philadelphia, PA 19104. His telephone number is (215) 895-2256; his fax number is (215) 895-4968; his e-mail address is herczfeld@ece.drexel.edu. Prof. Adde's address is IEF, Bat 220, Universite Paris Sud, 91405 Orsay Cedex, France. His telephone number is 33 1 69 41 78 50 and his fax number is 33 1 60 19 25 93; his e-mail address is adde@ief-paris-sud.fr.

We also have opened a dialog with the European Microwave Conference to find a path for greater Society involvement in the flagship European microwave event.

Region 9

We are continuing activities for Society co-sponsorship of the 1995 SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference to be held in July 1995 in Rio de Janeiro, Brazil. A variety of administrative details continue to surface and are being worked. The point of contact is Professor Luiz A. R. Silva-Mello, CETUC-PUC, Rua Marques de Sao Vicente, 225 Rio de

Janeiro, Brazil RJ 22435-9000, tel.: 55-21-529-9384; fax: 55-21-294-5748. To increase exposure for this event the Call for Papers was published twice in *Microwave Journal* as well as this *Newsletter*.

The Society received a formal request from the organizers of the 1997 SBMO International Microwave and Optoelectronics Conference to continue the co-sponsorship-sponsorship that is in place for 1995. The Society will act on this request at the December meeting of the Administrative Committee.

Region 10

No new activities are being pursued at this time in this region.

The Society also completed a review of sponsored conferences that were held in the last review period. We analyzed conference metrics (attendance, demographics, finance, etc.) for MIKON '94, the 5th International Symposium on Space Terahertz Technology, the 1994 European GaAs Application Symposium, the Topical Workshop on Heterostructure Transistor Technology and Physics, and the Ultra-Wideband Short-pulse Electromagnetics Symposium. This review helps us guarantee that the Society is supporting the technical needs of its members.

1994 International Microwave Symposium

Don Parker presented a top level summary of the 1994 IMS. As all the attendees could tell, the 1994 event was a resounding success. The technical program exceeded even Don's aggressive expectations in many ways. The overall attendance set a new record of 1848. Furthermore, attendance records were set for both the workshops (1390) and the panel sessions (1052). One particularly bright note was the outstanding attendance at the Sunday Workshop on Wireless Communication. The 1994 Steering Committee did an exceptional job of selecting workshops that matched the technical interests and needs of the Society membership. For people who worry about these things, we are also happy to report that the IMS was a major financial success. The preliminary (unaudited) surplus is over $380K. This money is important to the Society because it allows us to continue and expand the services offered to our members.

International Microwave Symposium Technical Program Committee

The Society has begun a review of the overall Technical Program Committee (TPC) structure for the IMS. In response to member feedback regarding the need to improve the TPC process, a team of Larry Brockman, Skip Bryan, Bob Eisenhart, Derry Hornbuckle and Jerry Fiedziuszko had been formed to do a bottoms-up review. A survey form is being prepared and will be sent to Society members to solicit input and suggestions on how we can better serve the Society and the microwave industry. The survey will be out in early 1995.

2002 IMS

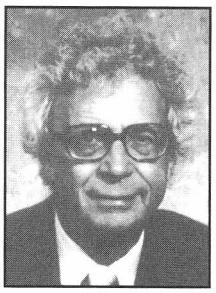
Selection of the location of the 2002 MTT-S International Microwave Symposium is well under way. We had a short discussion from the Philadelphia Chapter regarding proposal preparation activities. We are soliciting inputs from other chapters at this time. Please contact Fred Schindler if you need further information at: Raytheon Co., Research Division, 131 Spring Street, Lexington, MA 02173, tel.: (617) 860-3065, fax: (617) 860-3194, e-mail: m.schindler@ieee.org.

Future MTT-S Symposia

Following is a listing of the International Microwave Symposia sites through 2001 with their chairmen. If you are interested in participating, please contact the chairmen directly. They can always use the help and this is a good way to actively support your Society.

- 1995—Orlando, Florida, May 16-18, 1995
  Keith Huddleston, Chairman
  Martin Marietta Corp.
  tel.: (407) 356-7201
  fax: (407) 356-0933
- 1996—San Francisco, California, June 17-21, 1996
  Jim Crescenzi, Chairman
  Watkins-Johnson Co.
  tel.: (415) 813-2506
  fax: (415) 813-2402
  e-mail: j.crescenzi@ieee.org
- 1997—Denver, Colorado, June 8-13, 1997
  Claude Weil, Chairman
  tel.: (303) 497-5305
  fax: (303) 497-6665
  e-mail weil@bldrodoc.gov
- 1998—Baltimore, Maryland, June 7-12, 1998
  Steve Stitzer, Chairman
  Westinghouse Electric Corp.
  tel.: (301) 765-7348
  fax: (301) 993-7747
  e-mail: stitzer@zeus.bwi.wec.com
- 1999—Anaheim, California, June 13-18, 1999
  Mario Maury, Jr., Chairman
  Maury Microwave Corp
  tel.: (909) 987-4715 ext. 201
  fax: (909) 987-1112
  e-mail: mamjr@easyst.com
- 2000—Boston, Massachusetts, June 11-16, 2000
  Glenn Thoren, Chairman
  Lockheed/Sanders Corp.
  tel.: (603) 885-2988
  fax: (603) 885-3177
  e-mail: thoren@ncavax.sanders.lockheed.com
- 2001—Phoenix, Arizona, May 19-27, 2001
  Mike Golio, Chairman
  Motorola SPS
  tel.: (602) 897-5947
  fax: (602) 897-3518
  e-mail: m.golio@ieee.org

1994 Distinguished Microwave Lecturer



by Martin V. Schneider

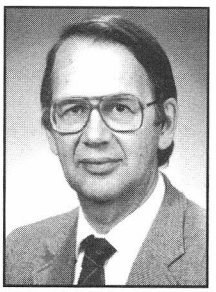
After serving on the IEEE Board of Directors in 1992/93 I received a new assignment from the MTT Society to give lectures on the topic of "Wireless Communications" to both MTT Chapters and other IEEE entities for the three-year period 1994-96. I got off to an early start with my first talk on January 8, 1994, at the San Diego AdCom meeting. The paper was entitled "The Impact of Emerging Technologies on Wireless Communications." This was followed by a lecture to the Swiss MTT Chapter on January 12 at the Institute of Applied Physics at the University of Bern, Switzerland. The topic of the presentation was "Small Antennas and Filters for Wireless Communications." Because of the great interest in these areas, the lecture hall was filled with about fifty people from both research and industry. Thanks to the support of Niklaus Kaempfer, Andreas Magun and Erwin Schanda, Research Leaders of the Remote Sensing Group, as well as the MTT Chapter Chairman Leon Prost, my airline ticket was fully prepaid to save me the effort of filling out the dreaded IEEE expense vouchers which take months of processing at the IEEE Headquarters.

My spring lectures were given to the Princeton and Philadelphia MTT Chapters in conjunction with the David Sarnoff Symposium (April 22) and the Benjamin Franklin Symposium (May 6). Attendance at each meeting was about eighty people. This series was followed by an invited keynote speech at the 1994 IEEE MTT-S International Microwave Symposium in San Diego on May 22. My talk was the introduction to the Wireless Workshop organized by Ed Niehenke and George Heiter and attended by 220 people. Another paper, entitled "The Seven Grand Challenges of Wireless Communications," was given on June 17 in Denver at the IEEE Emerging Technology Workshop sponsored by the Technical Activities Board (TAB) and attended by IEEE Society Presidents including the IEEE President, Troy Nagle.

In the fall I continued my work mainly with Chapters that include the MTT Distinguished Lecture as part of a half-day or full-day workshop on a number of microwave topics that are of interest to their members. Typical examples are: 1. the workshop on "Wireless Communications" hosted by John Upshur, Virginia Mountain MTT

(continued on page 21)

1995 Distinguished Microwave Lecturer



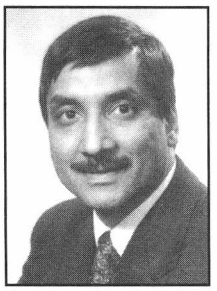
by Denis Webb

The MTT-S AdCom is pleased to announce that Mr. Rahul Dixit of TRW will be the 1995 Distinguished Microwave Lecturer.

Automotive Electronics—Challenges and Opportunities

Over the next decade, there will be a significant increase in the electronic content of automobiles. The continuing emphasis on vehicle and occupant safety, on driver convenience, and ergonomic interfaces will provide many challenges and opportunities for the engineering community. Advanced products like automotive radar and the introduction of ITS (IVHS) products will also require the development of cost effective products.

This talk will present some of the trends in automotive electronics, possible areas of product application, current array of various product families, and some examples of advanced product development—including automotive radar.



Rahul Dixit

Mr. Dixit has over 20 years of experience in the aerospace, automotive and semiconductor fields. He is currently employed as Director of Engineering, at TRW's Automotive Electronics Group, where his area is involved in the development of electronic components for automobiles. These include vehicle and occupant safety products, driver convenience products, switch type interface products, and advanced technology products like automotive radar. Prior to this he was in increasingly responsible positions developing and managing engineers who developed space communications hardware.

Prior to coming to TRW, Mr. Dixit worked at Rockwell International, where the work related to creating a production facility for GaAs ICs. His tasks included IC design, test and packaging. Prior to this he worked at Spar/RCA ltd. and was involved in developing space communication hardware and in payload I&T.

Mr. Dixit has published several papers, and given many invited talks at various international and society conferences and forums.

Master Calendar MTT-S

— 1995 —

Name	Date/Location	Involvement	Key Contact
• INTER COMM 95	February 21-23 Vancouver, B. C. Canada	Co-Sponsor*	Mr. Harlan Howe Microwave Journal 685 Canton St. Norwood, MA 02062 Tel. 617 769 9750, Fax 617 762 9230
• Workshop on the Role of Fiber Optics in Wireless Communications	February 26 San Diego, CA	Technical Co-Sponsor	Prof. Peter Herczfeld Drexel University Electrical and Computer Engrg. Philadelphia, PA 19104 Tel. 215 895 2256, Fax 215 895 4968 herczfeld@ece.drexel.edu or Dr. Alwyn Seeds Dept. of Electron. & Electr. Engng. University College Torrington Place London WC1E 7JE UK Tel. 44 71 387 7050, Fax 44 71 387 4350
• Combined Optical and Microwave Earth and Atmospheric Sensing	April 3-6 Atlanta, GA USA	Co-Sponsor*	Dr. Al J. Gasiewski Georgia Inst. of Technol. Atlanta, GA 30332-0250 Tel. 404 894 2934 ag14@prism.gatech.edu
• MTT-S International Microwave Symposium	May 16-19 Orlando, FL USA	Sponsor*	Dr. Keith Huddleston Martin Marietta MP 200 P.0. Box 555837 Orlando, FL 32855-5837 Tel. 407 356 7201, Fax 407 356 6406
• Microwave & Millimeter-Wave Monolithic Circuits Symposium	May 15-16 Orlando, FL USA	Sponsor*	Mr. Terry Duffield Martin Marietta P.O. Box 555837 Orlando, FL 32855-5837 Tel. 407 356 4509, Fax 407 356 0413
• National Telesystems Conference	May 17-19 Orlando, FL USA	Sponsor*	Mr. Madjid A. Belkerdid University of Central Florida 413 Abbeywood Lane Casselberry, FL 32707 Tel. 407 823 5793, Fax 407 823 5835
• Automatic RF Techniques Group	May 19 Orlando, FL USA	Cooperate* Affiliated	Prof. Lawrence Dunleavy University of S. Florida Tampa, FL 33620 Tel. 813 974 2574, Fax 813 974 5250
• MIOP'95	May Stuttgart-Sindelfingen Germany	Cooperate	Network GmbH Wilhelm-Suhr-Str. 14 D-3055 Hagenburg Germany Tel. 49 5033 7944, Fax 49 5033 7944
• Optical Microwave Interactions Topical Meeting	July USA	Technical Co-Sponsor	Prof. Chi Lee University of Maryland College Park, MD 20742 Tel. 301 405-3739, Fax 301 314 9281
• SBMO/IEEE MTT-S International Microwave and Opto-electronic Conference	July 24-27 Rio de Janeiro Brazil	Co-Sponsor	Dr. L. A. R. da Silva Mello CETUC-PUC/Rio 22453-900 Rio de Janeiro-RJ Brazil Tel. 55 21 529 9255, Fax 55 21 294 5748 smello@cetuc.puc-rio.br
• Asia-Pacific Microwave Conference	October 10-13 Taejon, Korea	Cooperate*	Prof. Noh-Hoon Myung Dept of EE KAI ST 373-1 Kusong-dong, Yusong-gu Taejon 305-701, Korea Tel. 82 42 869 5417, Fax 82 42 869 8010 nhmyung@eekaist.kaist.ac.kr

Sponsored Conferences[1]

— 1995 (cont.) —

Name	Date/Location	Involvement	Key Contact
• Int'l Symposium on Signals, Systems and Electronics	October 25-27 San Francisco USA	Co-Sponsor	Prof. Ming C. Wu UCLA, EE Dept. 405 Hilgard Avenue Los Angeles, CA 90024-1594 Tel. 310 825 6859, Fax 310 825 6954 wu@icsl.ucla.edu
• Int'l Semiconductor Device Research Symposium	December 5-8 Charlottesville, VA USA	Co-Sponsor	Dr. Elias Towe Dept. of Electrical Engineering Thornton Hall University of Virginia Charlottesville, VA 22903 Tel. 804 924-6078, Fax 804 924-8818
• Microwaves in Medicine	TBD USA	Cooperate*	Prof. James C. Lin Dept of EECS University of Illinois (Chicago Circle) 851 S. Morgan St. Chicago, Illinois 60607 Tel. 312 413 1052, Fax 312 413 0024

— 1996 —

• 5th International Conference on Satellite Systems for Mobile	15-17 April London	Cooperate	Mr. Terry Oxley "Tremont" Back Lane, Halam, Newark Notts NG22 8AG England Tel. 44 636 815510, Fax 44 636 815865

— MTT-S Continuously Sponsored Conferences —

- MTT-S International Microwave Symposium (IMS)
  Annual (Sponsor)
- IEEE Microwave & Millimeter-Wave Monolithic Circuits Symposium (MMWMC)
  Annual (Co-Sponsor)
- Automatic RF Techniques Group (ARFTG)
  Semi-annual (affiliated)
- European Microwave Conference (EMC)
  Annual (Cooperate)
- Asia Pacific Microwave Conference (APMC)
  Annual (Cooperate)
- Combined Optical and Microwave Earth and Atmospheric Sensing
  Biennial (1993, etc.) (with GRSS-S, LEO-S)
- International Microwave Conference/Brazil (SMBO)
  Biennial—1993, etc. (Cooperate; Co-Sponsor 1995)
- IEEE GaAs IC Symposium
  Annual (Co-Sponsor)
- IEEE Conference on the Computation of Electromagnetic Fields
  Biennial—1992, etc. (Cooperate)
- European GaAs Applications Symposium
  Biennial—1992, etc. (Cooperate)
- Topical Meeting on Electrical Performance of Electronic Packaging
  Annual (Sponsor)
- 19th International Conference on Infrared and Millimeter Waves
  Annual (Cooperate)
- Microwaves in Medicine
  Triennial—1993, etc. (Cooperate)
- National Radio Science Meeting
  Annual (Cooperate) (with International Union of Radio Science)

Notes: [1]Meetings listed are those that have been officially sponsored by MTT-S (i.e., AdCom approved). There are many other microwave related meetings (chapter sponsored, commercial, etc.) that are not listed.
*Continuous MTT-S involvement approved by AdCom
[2]MTT-S conference involvement (Involvement may change for particular years).

Free Electronic Job Searching

(continued from page 7)

what's described below. The object is to pick menus to get you "gopher servers" or "other gopher servers".)

If you don't have a gopher, you can telnet. You'll have to find out how to telnet out from your computer network. Generally it's quite simple. For example, I telnet to my employer's gatekeeper and it asks me where I want to connect to (telnet to), to which I respond "gopher.msu.edu". (This connects me to the gopher at Michigan State, which is where OCC resides.) Once you have made a telnet connection to gopher.msu.edu, proceed as follows:

Login: gopher [RETURN]
(Select from menu): Network & Database Resources [RETURN]
(Select from menu): Internet Resources by type [RETURN]
(Select from menu): Gopher Servers [RETURN]
(Select from menu): All the Gopher Servers...[RETURN]
Type: /
Type: Online Career Center [RETURN]

(This last step is a shortcut to avoid sifting through all the gophers in the world to get to OCC, which is a cumbersome process even if they are listed alphabetically).

Using the Online Career Center

Once you have connected to OCC, there is a series of menus you can go through to do whatever you would like. The first menu you see will look something like this:

Online Career Center (at Msen)
1. Questions and Comments to: occ@mail.msen.com.
2. About Online Career Center/
3. Company Sponsors and Profiles/
4. Employment Events/
5. Career Assistance/
6. FAQ—Frequently Asked Questions about OCC/
7. '94 College & University Resume Books/Diskettes/
8. * Search Jobs/
9. * Search Resumes/
10. * Other Employment Databases//
11. Recruitment Advertising Agencies/
12. "Online Career Center" On Campus/
13. Help Files: Keyword Search/Enter Resume/Print/
14. How To Enter A Resume.
15. Online Career Center Liability Policy.

Some hints for working with gopher menus: "u" takes you to the previous menu, " " (space) takes you to the next page of the menu you are on, and "/subject name" takes you to menu line called subject name, or you can enter the number of the line you are interested in.

You can do keyword searches of jobs, resumes, etc. (items 8, 9 and 10 in the menu above). For simple searches, the procedure is straightforward. For a description of keyword search conventions, use the online help files (item 13 in the menu above).

You may also enter your resume into the OCC database. OCC resumes are not anonymous; you must include your name, address, etc. Methods of including anonymous resumes are being studied for future implementation. Instructions on entering your resume are available online (use item 14 in the menu above).

The OCC may also be accessed through Mosaic at "url:http://occ.com/". Mosaic is a graphical interface for Internet servers. Ask your computer network support organization if you have Mosaic available (I don't).

If You don't have Internet Access

If you don't presently have Internet access, there are a number of things you can do. First, check with the computer network organization where you work. You may have Internet access available, but just aren't aware of it. Second, check with a college or university. Generally, you can have Internet access through a college or university you are associated with. Frequently you can obtain access through a local college or university that you don't have any other association with. When you call a college or university, ask for their "computer services department."

You can also access the Internet through a number of dial up services. Some phone numbers are listed below. (No endorsements are implied):

AMERICA ONLINE—(800) 827-6364
COMPUSERVE—(800) 848-8990
DELPHI—(800) 695-4005
PSI WORLD-DIAL—(800) 827-7482—Ask for "World-Dial"
UUNET—(703) 204-8000—Ask for a "tac" account
MSEN, INC.—(313) 998-4562
INTERNIC—(800) 444-4345—An Internet information service which has a list of access providers.

Even if you do not find an easy way to have Internet access, you can post your resume at the OCC in a database used by potential employers. If you DO NOT have Internet access, you may mail your typed resume (cover letter optional) to: ONLINE RESUME SERVICE, 1713 Hemlock Lane, Plainfield, IN 46168.

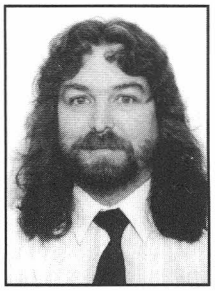
Your resume will be processed and entered online into the OCC resume database for six (6) months. Each resume submitted to ONLINE RESUME SERVICE must contain a "title line" not to exceed 45 spaces, for example: "Microwave Engr/5 Yrs MMIC/MIC Industry-NY." This costs $10.00 for up to three (3) pages, including cover letter. (The fee is a nominal charge for a private typing service, and does not provide any income for either the OCC or MTT-S.) If you wish to submit your resume this way, include a check or money order made out to

ONLINE RESUME SERVICE.

Let Us Know

I encourage you to try out this new electronic job searching facility. I'd be very interested receiving feedback from you. Send an e-mail message to m.schindler@ieee.org, or write me the old fashioned way at: Fred Schindler, Raytheon Research Div., 131 Spring Street, Lexington, MA 02173.

Meetings: The Practical Alternative to Work



by Mike Golio
IEEE Press Liaison

If I were forced to choose between finding Bo Cambert standing in front of my office at 7:00 a.m. or crawling through the desert naked, it would be a tough decision. Yet there he was, and no one was offering me the desert option.

As I opened the door to my office, I said, "Hi, Bo. What brings you this way?" I have a tendency to speak one sentence too many. "Hi, Bo" would have been enough to be nice without inviting abuse or stupidity. It's those trailing questions that always get me into trouble.

Bo didn't miss the opportunity. As he followed me through the door, he said, "Well, Mike, you know that I've had some tough times lately." A few years ago, Bo had been anointed by upper level management and promoted to "god of technology" or something. The combination of his unbridled ego and complete ignorance of engineering principles had been devastating to us. He went on. "I went on vacation several months ago, and when I returned, they had replaced me and demoted me to a job with no authority, no goals, and no budget."

0f course I had heard the story, but that was the hook Bo needed to make me sit and listen. As bad as he might have been, no one deserved to be treated that way. What kind of spineless, evil, jerk would abuse someone in their absence rather than approach them directly and treat them with the dignity every human deserves? I hope I never understand it.

Bo talked for a long time. He told me about the changes he had been through—denial, anger, frustration, family problems. I think he mentioned that his goldfish died. He seemed at ease now, though. I commented on that.

"Well, yes," he replied. "Just three weeks ago I discovered that I still had signature authority in the cafeteria. That's made all the difference."

I didn't understand, and the look on my face must have let Bo know that I was completely lost.

"With signature authority," he explained, "you can get donuts and coffee at your meetings. And if you serve donuts and coffee, you can get all the best technical people to attend. Good technical people seem to have an endless appetite for donuts—especially cream filled." He seemed delighted with his explanation. I was still lost.

"Mike," he went on, "you're never lonely if you're at a well attended meeting. You don't have to work on your own and you don't have to make decisions on your own. You can draw org-charts and feel important. At first, that was enough of a reason for me to call meetings almost hourly." Bo was really getting passionate about this explanation. "But eventually, do you know what happened?"

I not only didn't know what had happened in Bo's meetings, I wasn't sure what was happening right now.

Bo went on. "We started solving problems!!—problems related to wireless communications. I even understand them." Bo was beaming. "I don't mean that I was a major technical contributor," he said, "but I think my organization of the meetings helped, and I think we've done some marvelous things."

Bo paused. He seemed a little embarrassed. I had never seen him get this excited, even when he was wielding a lot of power in the company.

"That's why I came to see you this morning," Bo continued. "We think we can produce an IEEE Series of books on this subject that would really be interesting to the wireless communications industry. Between the experts we have right here and our professional contacts, we can cover this topic fairly thoroughly." Bo looked at me. "So what do you think of the idea?" he asked.

I like it. I am a little offended that I was never invited to the donut meetings, but I'll get over it. I'd like to hear your ideas too. Write to me, or send e-mail to: m.golio@ieee.org

1994 Microwave Lecturer

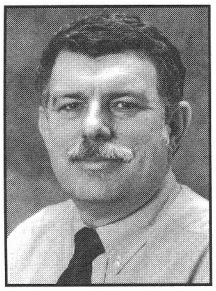
(continued from page 17)

Chairman, at the Baltimore Historical Electronics Museum on Saturday, October 29; 2. the workshop on "Wireless Microwave Technology" organized by Larry Dunleavy and Rudolf Henning of the Florida West Coast MTT/AP Chapter on Saturday, November 19, at the University of South Florida in Tampa. These weekend meetings have greatly benefited engineers in industry who are unable to expand their knowledge and invest in their careers during regular working hours.

I also accepted invitations to speak at the MTT Chapter meetings of Dick Snyder at the New Jersey Institute of Technology in Newark on October 19, and of Paul Carr at the Hewlett Packard office complex in Burlington on October 25. My final meeting in 1994 is on December 15 in San Francisco where I will be hosted by Steve Cripps. The title of the presentation will be "Penny Antennas and Nickel Filters for Wireless Communications" to emphasize the small size and low cost of microwave components required for achieving progress in the evolution of wireless communications systems.

I would like to take this opportunity to thank my hosts for giving me the opportunity to speak to their chapters and am looking forward to continued productive work with IEEE groups and members in 1995.

ARFTG Highlights Winter '94



by John T. Barr, IV

The Automatic RF Techniques Group (ARFTG) is an independent professional society that is affiliated with the MTT-S as a conference committee. ARFTG's primary interests are in computer-aided microwave analysis, measurement and design. ARFTG holds two conferences each year, one in conjunction with the MTT-S International Microwave Symposium and a second one later in the fall.

44th ARFTG CONFERENCE— Multichip Systems: Models and Measurements

The 44th ARFTG Conference will be held at the Clarion Harvest House, Boulder, CO, on December 1 and 2, 1994 (due to the Newsletter lead-time, you may be reading this newsletter after the conference has occurred). The theme of this two day technical conference with concurrent manufacture exhibits will be "Multichip Systems: Model and Measurements." The measurement and modeling of densely packed, high performance multichip systems present new and difficult challenges for designers. Multichip modules, hybrids, and high density circuit boards require sophisticated analysis of discontinuities, crosstalk, and signal quality using a variety of frequency and time domain instruments and circuit simulation tools. Papers are solicited on the RF/Microwave aspects of multichip systems design, verification and analysis. Additionally, papers are invited on other areas of automated microwave and RF testing including improved techniques for calibration and verification, MMIC related measurements issues, CAD, millimeter wave systems and other topics of current interest to the RF/ Microwave community.

In addition to the technical presentations, the attendees will have ample time for informal discussion among themselves during the breaks and during the provided lunches and dinner (your spouse is invited to the Awards Banquet at no extra cost). There will be time for discussions with vendors and viewing of exhibits to see the latest in automation and measurement products. The registration fee includes technical sessions, exhibits, and all meals and break refreshments, one year membership in ARFTG and conference digest of the presented papers.

Those interested in participating should contact Conference Chair: Ray Tucker, Rome Laboratory/ERST-A, 525 Brooks Road, Griffiss AFB, NY 13441-4505, (w) (315) 330-3884, (f) (315) 330-7083, or Conference TPC: Ron Ginley, NIST, 325 Broadway, MS 813.06, Boulder, CO (w) (303) 497-3634, (f) (303) 497-3970. Those interested in exhibiting should contact: Bill Pastori, Maury Microwave Corp., 2900 Inland Empire Boulevard, Ontario, CA 91764, (w) (909) 987-4715, (f) (909) 987-1112. A conference digest is available, contact: Henry Burger, ARFTG, 1008 East Baseline Road, No. 955, Tempe, AZ 85283-1314. Cost is $20.00 for an ARFTG Member and $45.00 for a nonmember. An additional $9.00 is requested for airmail outside the USA.

Upcoming Activities 45th ARFTG CONFERENCE— Testing and Design of RFlC's

The 45th ARFTG Conference will be held in Orlando, FL, on May 16, 1995, in conjunction with the IEEE MTT-S International Microwave Symposium. The theme of this one day technical conference with concurrent manufacturer exhibits will be "Testing and Design of RFIC's." Radio frequency integrated circuits continue to expand the performance, complexity, and volume-production envelope. Competitive pressures are forcing RF design and test engineers to develop circuits and test techniques which combine high performance, ease-of-use, and low cost. Papers are solicited on topics related to RFIC design and testing, on-wafer RF testing using frequency- and time-domain techniques, efficient in-process monitoring and testing methods which lead to overall RFIC quality improvements, and comparison and compatibility issues with conventional techniques and products. Papers are also invited on other areas of automated microwave and RF testing including improved techniques for calibration and verification, MMIC related measurements issues, CAD, millimeter wave systems and other topics of current interest to the RF/ Microwave community.

Along with the technical presentations, the attendees will have ample time for informal discussion among themselves during the breaks and during the provided lunch. At the associated Manufacturers' Exhibit, there will be time for discussion with vendors and viewing of exhibits to see the latest in automation and measurement products. The registration fee includes technical sessions, exhibits, lunch and break refreshments, one year membership in ARFTG and a conference digest of the presented papers.

Those interested in participating should contact Conference Chair: Edward M. Godshalk, (w) (503) 628-4772,

(continued on page 30)

Dr. Paul Coleman receives the Distinguished Educator Award from MTT-S President Jim Crescenzi at the Awards Banquet.

1994 IMS Chairman of the Steering Committee Don Parker at the IMS Awards Banquet in San Diego.

MTT-S President Jim Crescenzi presents the 1994 Microwave Prize to P. Chris Grossman at the Awards Banquet. (Co-recipient John Choma not shown.)

Incoming President's Message

(continued from page 3)

nizations are also being fostered with the objective of applying worldwide expertise to solve many of our most pressing technical problems.

MTT-S plans to serve as a catalyst and facilitator of more regional meetings on topics of current high priority to the profession. These meetings will complement our existing regional and section activities as well as our immensely successful and comprehensive International Microwave Symposium (IMS). The next IMS will be held in May 1995 in Orlando, Florida. As always, efforts are under way to provide the best, most timely papers coupled with exhibits that are both informative and enjoyable.

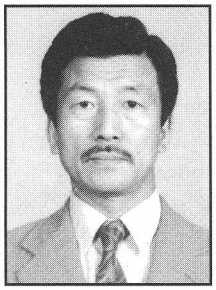
To provide more rapid dissemination of technical articles, we have authorized an increase in the number of pages of the *MTT Transactions* to be published during 1995. A total of 3500 pages will be published, representing an increase of 700 pages over 1994. This will greatly reduce the time between paper acceptance and publication. The *MTT-S Transactions* are an incredible bargain at only $12 per year. In addition, we continue to offer the informative *Microwave and Guided Wave Letters*. This publication provides shorter articles about recent technical developments that are of interest to society members.

This year, we are instituting a review of our technical committee structure with the objective of assuring that we are providing the best opportunities for information generation, collection, and exchange in all relevant areas of microwave technology. We also want to stimulate coupling between technical committees with interest in related areas. We encourage members to contact the chairman of one or more of our 18 technical committees to learn more about their objectives and to become actively involved in their activities.

In summary, our goals are to raise interest level in microwave technology, provide our members with the very best access to the technical knowledge that they need, and, most importantly, to encourage their active involvement with their society colleagues. We want to do everything possible to both retain our existing membership and to encourage many new people to join. Through society activities you will be able to meet colleagues with similar interests, initiate collaborative efforts, explore a wide variety of technical areas, and enjoy the excitement of a very dynamic professional organization.

As your new president, I look forward to serving you, the microwave engineering professionals, in a way that meets your needs, increases your professional enthusiasm, allows you and your profession to increase the contributions to society, aids your professional growth, and contributes to increased prosperity.

Region 10 Chapter Activity Reports



Eikichi Yamashita
Co-Chairperson
Transnational Committee

Chapter officers in Region 10 submitted the following reports on their activities in 1994:

South Australia (MTT/AP Chapter)

- The first meeting for 1994 was a visit to the Broadcast Division of Radio Frequency Systems on 27th September. This division is Australia's largest manufacturer or broadcast antennas and combining equipment. The meeting, hosted by Darryl Hancock, consisted of an overview of the activities of RFS, followed by a factory tour covering design, manufacture and testing of antennas (including panel arrays for TV and FM radio, slot, dipole, Yagi and parabolic antennas) and a variety of TV and FM channel combiners. 10 attendees.
- A second meeting, planned for 29th November, is a visit to Integrated Silicon Devices, who design and manufacture RF ID transponders for a range of applications.
- In March 1995, the chapter plans to host a visit by Prof. Yoneyama, a Region 10 Distinguished Lecturer for MTT. A series of informal seminars is also planned to cater for the needs of those interested in technical discussion of specialized topics.

The members of the committee for 1994 2343: Chairman, Bevan Bates; Vice Chairman, Greg Haack; Secretary/Treasurer, Michael Webb; Professional Activities, Andrew Parfitt.

The committee met four times during 1994 and the Annual General Meeting is to be held on 13th December where the 1995 Committees will be elected. The Chairman also had the opportunity to attend the MTT Chapter Chairman's meeting held in conjunction with the MTT International Microwave Symposium in San Diego in May.

New South Wales (AP/MTT Chapter)

- Microstrip Antennas: Principles and Applications. Mr. Robert Munson, Chief Scientist, Bell Telecommunications Systems Division, Boulder, CO USA. Wednesday 30 March, 6 pm, CSIRO Division of Radiophysics, Epping NSW. This talk reviewed the principles of operation of microstrip radiators and discussed a number of practical applications of microstrip patches and arrays, including wraparound antennas, fixed-beam, and phased-array microstrip antennas. Recent work in wireless communications and comformable automobile antennas for numerous applications such as communications, entertainment, navigation, safety, intelligent vehicle highway systems (IVHS) and proximity sensing were presented. 21 people attended, including 12 IEEE members.
- Photonics in Microwave Radar and Signal Processing Systems. A/Prof. Robert Minasian, Dept. of Electrical Engineering and Optical Fibre Technology Centre, the University of Sydney. Thursday 1 September, 6 pm, CSIRO Division of Radiophysics, Epping NSW. The lecture described some of the unique properties of photonics for use in active phased arrays and microwave signal processing applications. Topics included advanced and highly efficient beamforming techniques for multifunction phased array radars, the use of optical gain elements, optimum optoelectronic conversion processes and the use of special domain properties. New developments in photonics for signal processing applications of microwave signals were also presented, including the use of in-fibre grating and phase structures for realizing transversal filter functions at high frequencies, and adaptive filtering techniques for processing high-speed signals. 16 members and 2 guests attended the lecture.
- CAA Facilities Associated with Sydney's Parallel Runway Project. Bill Eckert, SADP Project Manager; Steve Lansell, SADP Engineering Manager; Edsall Williams, CAA Chief Engineer, Radar. Thursday 1 December, 6 pm, Sydney (Kingsford Smith) Airport. The program presented an overview of the Civil Aviation Authority's (CAA) facilities at the new Sydney Airport parallel runway. The design of the air traffic control tower, to ensure the necessary visual resolution of runways and taxiways and approach and departure paths, was discussed, as well as communications and support equipment to control air traffic within the tower's areas of responsibility. The presentation concentrated on the surface movement radar, the instruments landing systems and the parallel approach runway monitor. Attendance was limited to 35, and the program attracted high interest from members and non-members alike.

Professor Tsukasa Yoneyama has been invited as a Distinguished Lecturer for the joint Chapter in March 1995. It is expected that the Chapter will also organize evening lectures as in previous years. Last year a survey of members has very limited response, indicating either that members are satisfied with the current arrangements, or are not interested in any type of group activity. All members are encouraged to contact the committee during the year with suggestions for lectures or other activities.

The committee for 1994 has been: Chairman, Mrs. Carol Wilson, CSIRO Division of Radiophysics; Vice Chairman, Dr. Trevor Bird, CSIRO Division of

Radiophysics; Secretary/Treasurer, Mrs. Oya Sevimli, CSIRO Division of Radiophysics; members: Dr. Jonathon Scott, Department of Electrical Engineering, University of Sydney; Dr. Bruce Thomas, CSIRO Division of Radiophysics.

Korea (MTT Chapter)

- A Microwave Symposium was held at Kwang Woon University in Seoul, Korea, on 21 May 1994. A total of 57 papers were presented. The Guest Speaker was Professor Dong I. Kim of the Korea Maritime University. The meeting, hosted by the Korean Institute of Telecommunications and Electronics and the IEEE MTT-S Korea Chapter, was attended by 90 IEEE members and 230 non-members.
- The Third Microwave and Millimeter-Wave Workshop was conducted at the Korea Science Foundation in Taejon, Korea, on 8 July 1994. This meeting was sponsored by the Korea National Radio Observatory. The meeting was well attended with 40 IEEE members and 80 non-members. The presenters were Dr. Takashi Noguchi of the Nobeyama Radio Observatory, who spoke on the SIS Receiver Development at NRO; and Dr. Jin-Pyo Hong of the Samsung Advanced Institute of Technology, who spoke on High-Temperature Superconducting Millimeter-Wave Mixers Integrated with Planar Antenna Structures. The Korea National Radio Observatory and the Korea MTT-S Chapter were the hosts for the workshop.
- Samsung Hewlett-Packard Company and the IEEE MTT-S Korea Chapter hosted an HP EEs of High Frequency Design Software (HFDS) User Workshop on 1 September 1994 at the Swiss Grand Hotel in Seoul. Mr. Chang Hwa Lee of the Electronics and Telecommunications Research Institute presented Ceramic Filter Design Using HFDS. Mr. Moon-Kyu Lee of Seoul National University spoke on the Design of Microwave Wideband Oscillator using a Yig Resonator. The meeting, attended by 10 IEEE members and 40 non-members, was sponsored by the Samsung Hewlett-Packard Company.
- The Fall '94 Microwave Symposium, which started 15 October 1994, attracted a good turnout of 310 people (90 were IEEE members). A total of 55 papers were presented during the meeting held at Korea Advanced Institute of Science and Technology. The guest speaker was President Soo-Young Jang of the Poohang Institute of Technology. The meeting hosts were the Korean Institute of Communication Sciences and the IEEE MTT-S Korea Chapter.

Singapore (MTT Chapter)

Conferences:

- Our market survey suggested to us that there was some demand for a course on the analysis and design of monolithic integrated circuits (MMICs) amongst the microwave/electromagnetic engineers in the various defense-related organizations (together with their supporting companies) here in Singapore. Hence, we thought it would be a good idea to meet that need and a course was organized by our Chapter to generate both publicity and income. The course was scheduled for April 1994 and the invited instructor was Dr. Sener Uysal (author of the Artech book entitled *Non-Uniform Line Microstrip Directional Couplers and Filters*). Unknown to us, however, a similar course was also offered during the same period by others and we were unfortunately not able to attract sufficient registrants to meet the costs of running the course. We consequently had to withdraw the course (despite the efforts put in by our Chapter officers and the course instructor) but we hope to offer it again, say, in a year's time. We are also currently scouting for other experienced resource persons to contribute to such a course.
- Another group of the microwave/RF engineers in Singapore is engaged in the telecommunication industry and so we additionally channelled our efforts towards this target group by working with the local IEEE Communications Chapter to organize International Conference on Communication Systems (ICCS/94). This conference (held at Westin Singapore on 14-18 November 1994), was the fourth in the International Conference on Communication Systems (ICCS) series, the previous ICCS/88, ICCS/90 and ICCS/92 having successfully attracted some 400 delegates from 30 countries. For ICCS/94, our Chapter specially arranged for—in addition to the regular sessions on communication-related topics—special sessions on microwave related topics. We have managed to attract a sizeable number of papers and they are organized under the following session: Microwave Components, Microwave Devices and Systems, Optical Devices and Fibres, Antenna Structures, Antennas and Propagation, Radar and Scattering, and Microwave Measurements. The International Advisory Committee members for the microwave-related sessions are Professor W. C. Chew of Illinois University of USA, Professor S. K. Chaudhuri of Waterloo University, Canada, Professor J. B. Davies of University College London, UK, Professor M. E. Bialkowski of University of Queensland, Australia, and Dr. N. Fourikis of DSTO, Australia. In addition to the publicity, we hope to be able to generate $10,000-$15,000 (representing 20% of the total conference profits) for our Chapter's coffers.
- Another major project undertaken by our Chapter is to second two of our officers to assist in the organization (again together with the local IEEE Communications Chapter) of Global Telecommunication Conference (GLOBECOM/95), the next conference in the Global Telecommunication Conference series. The prestigious GLOBECOM series has been regularly attracting more than 1500 delegates at each of its annual conferences. This is in fact the first time

that such a conference is to be hosted in Singapore, all other previous conferences in the GLOBECOM series having been held at different cities in the United States (with the exception of GLOBECOM/87 in Tokyo). Our Chapter Vice Chairman, Dr. S. P. Yeo, will be part of the Singapore delegation that will be attending GLOBECOM/94 (in San Francisco, USA) for coordination and publicity meetings.

- The Asia-Pacific Microwave Conference (APMC'94, Tokyo, Japan) conference has attracted many papers and the Singapore MTT/AP/EMC Chapter has provisionally been allocated the organization of the APMC'99 Conference in Singapore. The Chapter Chairman will be representing the Singapore Chapter at the APMC International Steering Committee meeting, to be held on December 7, 1994, during the APMC'94. He will also be attending the MTT-S Region 10 Chapter Chairpersons' meeting on December 8, to discuss, amongst other issues, the feasibility of starting branches of APMC Association (with headquarters in Japan) which will promote the activities of APMC in respective countries in association with the MTT Chapters in the Asia-Pacific region. Such activities are envisaged to include publication of APMC Proceedings, utilization of some of the profits to provide a number of scholarships for work in areas of microwaves and partial support of the travelling expenses of young participants/members.

Other Chapter Activities

The following seminars were also organized for the benefit of the members during 1994:

- "Design and Production of VSATs," by Visiting Professor XU Qinxi, Department of Electrical Engineering, NUS, held on 14 July 1994.
- "Dyadic Green's Functions for Rectangular Waveguide and Discontinuity," by Dr. LI LW, Visiting Research Scientist, Department of Electrical Engineering, NUS, held on 1 August 1994.

Future Activities

Activities planned for March 1995 include seminars by Professor T. Yoneyama and Rolf E. Jansen. The former, the 1993-95 IEEE MTT-S Distinguished Microwave Lecturer, will deliver his talk on "Nonradiative Dielectric Waveguide and Its Applications."

Chapter Officers for 1994/95: Chairperson, Professor Mook-Seng LEONG; Vice Chairperson, Dr. Swee Ping YEO; Secretary, Dr. Tat Soon YEO; Treasurer, Dr. Chun Sum NG.

Tokyo (MTT Chapter)

Masami Akaike, Chairperson; Masayoshi Aikawa, Vice Chairperson; Mitsuo Makimoto, Secretary; and Kazuhiko Honjo, Treasurer.

Prof. Tsukasa Yoneyama, Tohoku University, the former Tokyo Chapter Chairperson, has been selected to be a 1993-1994 MTT-S Distinguished Lecturer. His lecture title is "Nonradiative Dielectric Waveguide and Its Applications." He gave two distinguished lectures in Tokyo and Sendai. Another lecture is planned within this year.

Another big event is the 1994 Asia-Pacific Microwave Conference (APMC'94), now in progress, in which the Tokyo Chapter plays an important role. Dr. E. J. Crescenzi, Jr., the President of the IEEE MTT-S, will give us a message from MTT Society in the opening session.

As listed below, Tokyo Chapter held 7 meetings with 36 speakers in this term.

- December 13, 1993
  35 attendees. "Report on 1993 Microwave Workshop and Exhibition (MWE'93)," M. Aikawa, NTT.
  35 attendees. "Conference Review: The 18th International Conference on Infrared and Millimeter Waves," K. Mizuno, Tohoku University, and three other members.
  35 attendees. "Conference Review: 4th International Symposium on Space Terahertz Technology," K. Mizuno, Tohoku University.
- January 21, 1994
  55 attendees. "Report on 1993 GaAs IC Symposium," Y. Yamane, NTT, and three other members.
  58 attendees. "Report on 23rd European Microwave Conference," K. Joshin, Fujitsu Lab., and four other members.
- January 25, 1994:
  72 attendees. "Lightwave Technology Toward Next Generation," K. Nosu, NTT.
  72 attendees. "Nonradiative Dielectric Waveguide and Its Applications," T. Yoneyama, Tohoku University.
- February 17, 1994
  77 attendees. "Microwave Patch Radiators—CAD Issues and Active Antennas," K. C. Gupta, University of Colorado.
- July 18, 1994
  40 attendees. "Future Trend in Electromagnetic Analysis of Microwave Circuits Containing Active Devices," T. Itoh, UCLA.
  40 attendees. "Report on 1994 IEEE MTT-S International Microwave Symposium," H. Ogawa, NTT, and eight other members.
- October 18, 1994
  80 attendees. "Principle and application of Nonradiative Dielectric Waveguide," T. Yoneyama, Tohoku University.

Singapore (MTT Chapter)

Lecture Meetings:

- 14 July 1994—"High Frequency Characteristics of Heterojunction Bipolar Transistors," Solid State Physics Lab, Delhi; Prof. Shiela Prasad, North Eastern University, MA, USA. 30 attendees.
- 22 July 1994—"High Frequency Characterization of Heterojunction Bipolar Transistors," I.T.T., New Delhi;

Prof. Shiela Prasad, North Eastern University, MA, USA. 20 attendees.

- 20 Oct. 1994—"Surface Acoustic Wave Devices—Fundamentals, Current Status, and Future Trends," I.I.T., New Delhi, Prof. Eric L. Adler, IEEE UFFC-S Distinguished Lecturer for 93/94. 35 attendees.
- 20 Oct. 1994—"Acoustic Wave Propagation in Solids," I.I.T., New Delhi; Prof. Eric L. Adler, IEEE UFFC-S Distinguished Lecturer for 93/94.

The chapter also recorded highest membership growth (%) from Regions 8-10. The chapter chairman attended the MTT Symposium and the Chapter Chairpersons Meeting held in San Diego in May 1994. He is also planning to attend Region 10 Chapter Chairpersons Meeting to be held in Tokyo on Dec. 8, 1994, during APMC.

The chapter has planned a workshop with support from Transnational Committee Region 10. The details of the workshop are:

- 9-11 Feb. 1995—"Workshop on Phased Array Radar Techniques," I.I.T., New Delhi; ;Prof. Shiban K. Koul, Centre for Applied Research in Electronics, Indian Institute of Technology, Delhi, Hauz Khas, New Delhi-110016, India, tel.: 91-11-6863165, fax: 91-11-6862037, e-mail: s.k.koul@ieee.org or skkoul@care.iitd.ernet.in.

The names of current officers are: Chairperson, Shiban K. Koul; Vice Chairperson, K. S. Chari; Secretary/Treasurer, Sanjeev Grover.

Beijing (MTT Chapter)

MTT-S Beijing Chapter held its activities in 1994 as follows:

- "5th National Symposium on MIC and Technology," 23-31 Aug. 1995, Shanghai. More than 100 attendees, including 11 IEEE members. 82 papers submitted; the invited paper was entitled "Personal Communications and MIC."
- "2nd National Symposium on Developments of Microwave Compatibility," 6-9 Oct. 1994, Amoy. More than 60 attendees, including 9 IEEE members. 50 papers submitted, 3 invited papers were reported at a special session.
- "1st National Symposium on MM and SUBMM-Wave Technology," 2-8 Nov. 1994, Wuhan. More than 48 attendees, including 8 IEEE members. 46 papers submitted; invited paper was "MM-Wave Applications to High Speed Information Highway."

Taipei (MTT Chapter)

Chairperson: Prof. Kwo Ray Chu, Dept. of Physics, National Hsing Hua University, Hsinchu, Taiwan, R.O.C.

- Prof. Tsukasa Yoneyama of Tohoku University in Japan (the 1994 MTT-S Distinguished Lecturer) lectured at National Taiwan University on Nov. 17, 1994. The audience was mostly graduate students and faculty members, estimated to be more than 120 persons. The following day he visited the Science-Based Industrial Park at Hsinchu, 50 miles south to Taipei, where the CEO of Microelectronic Technology Inc. (specialized in satellite receivers), Dr. Shieh, and the vice president of Hexawave (the GaAs MMIC foundry house), Dr. Chen, gave him a brief description of company profiles. In the afternoon, Prof. Yoneyama gave the second two-hour lecture at National Chiao Tung University, attended by 80 people. A Hsinchu county tour was arranged for Prof. Yoneyama on Nov. 19. The next day Prof. Yoneyama left for Kao Hsung, the largest seaport in southern Taiwan. He went to the Ken-Ding National Park on Sunday, Nov. 21. Monday morning he lectured at National Sun Yat-Sen University (also known as National Chung Shan University). He departed for Hsinchu at noon. On Nov. 23, Professor Yoneyama completed his around-the-island lecture tour on principles and applications of millimeter-wave NRD guides.
- Local IEEE MTT Taipei Chapter Meeting—National Chiao Tung University, Nov. 25, 1993. Dr. Chi-Fu Den, President of National Chiao Tung University, and several other IEEE MTT members, including Dr. Ching-Lin Liu, Dr. Tran-Fu Wu, Dr. Y. C. Chien, Dr. Tzu-Hwa Hsu, Dr. Ming-H. Chen, Profs. S. T. Peng, Kwo-Fay Chu, C. K. Tzuang, met to discuss how to register the MTT as a legal entity in Taiwan.
- Prof. A. A. Oliner, IEEE Life Fellow, was invited for a 5-day intensive course titled "Leakage Crosstalk and Package Effects in Microwave and Millimeter-Wave Integrated Circuits," April 4-8, 1994. Prof. Oliner gave a comprehensive treatment on the most up-to-date field theory course on the leaky wave research. He received very warm appreciation from the research and development RF engineers, graduate students, and professors who came from all over the island. The audience's enthusiasm and spirits were maintained very high from the very beginning till the last moment. On behalf of the IEEE MTT Taipei Chapter, we were very grateful to Prof. S. T. Peng and his wife who made all the arrangements for Prof. Oliner's trip through the sponsorship of the Ministry of Education.
- IEEE MTT Taipei Chapter assisted Hewlett-Packard on a one-day workshop titled "RF Active Device Modeling for CAD, a Coming Necessity" held at National Chiao Tung University on April 12, 1994. The speakers were veteran Hewlett-Packard engineers Dr. Gary Roberts, Mr. Bob Schaefer, and Mr. Jim Tabuchi. This was the first of its kind held in Taiwan regarding microwave on-wafer probing and nonlinear device parameter extraction. The audience, estimated at more than 100 persons, packed the meeting hall at the Engineering IV building. During the lunch break and after the workshop, a live demonstration of complete system was conducted for interested people. This was a successful workshop which drew many people from southern Taiwan.

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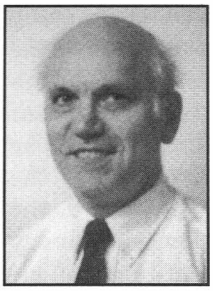
Region 8 MTT-S Chapter Round-Up



by Roger Pollard
MTT-S Transnational Committee
Region 8 Coordinator

The Chapters in Region 8 have been very active during 1993/94 and their mixture of technical lectures, workshops and conferences continues to offer stimulating technical material which provides interest for members in academic or industrial environments. We are pleased to note that one of our Chapter Chairmen, Terry Oxley of the UK and RI Chapter, was awarded the Region 8 IEEE Volunteer Award, reflecting an especially high level of activity and service to members.

The MTT Society AdCom has initiated a program to encourage the development of Chapters in the countries of Eastern Europe, especially those which comprised the former Soviet Union. This activity, spearheaded by Rolf Jansen, is beginning to bear fruit and we can expect a significant growth in Chapter activities from that quarter in the next few years, especially as problems with currency exchange ease and allow more people to join the Society. Also noteworthy is the growth of inter-Chapter collaboration in Europe resulting in joint workshops and proposals for a European topical conference. The establishment of an *ad hoc* European MTT Coordination Committee has been supported by the MTT-S AdCom.

The annual Region 8 Chapter Chairpersons Meeting was held in Cannes on September 7, 1994. The meeting was, as usual, very well attended (22 attendees, including representatives of most of the Chapters in Region 8) and widely regarded as very useful.

The following summary includes information provided by those Chapters who responded in time. I hope that it gives some of the flavor of the wide range of Chapter activities in Region 8 during the past year. It is noteworthy how many of the Chapters enjoyed visits by one or more of the MTT-S Distinguished Lecturers during the year; their time and effort in planning visits to Region 8 is much appreciated.

Benelux

Chairman: C. G. M. van 't Klooster

Two technical meetings have been organized in 1994:

- "Recent Developments in Non-Radiative Dielectric Waveguides," Professor T. Yoneyama, Japan, held at Estec, Noordwijk, The Netherlands.
- "Low-Loss Microwave Components Using Micro-Machining Techniques," Professor G. Rebeiz, USA, held at Estec, Noordwijk, The Netherlands.

Czechoslovakia

Chairman: Zbynek Skvor

In the first year of activities three well-attended technical meetings have been organized:

- "Radioelektronika 94" included 99 papers.
- Workshop on CAD and CAE included 16 papers.
- "Microwave Systems in Radiolocation" included 11 papers.

Attendances have exceeded 200. Two more technical meetings have been arranged for the fall.

Winner of the student competition was Petr Zlamal—"Experimental Receiver for Verifying Propagation Conditions of a 35 GHz Electromagnetic Wave."

France

Chairman: John Magarshack

A series of half day conferences with one to three speakers have continued throughout the year.

- April 1, 1994—"Spanish Activities in Microwaves and Modelling," Magdalena Salazar-Palma (University of Madrid); "mm-Waves in Germany," Hans Hartnagel (Darmstadt); "Calibration in Microwave Measurements," Roger D. Pollard (University of Leeds, UK).
- "Image-Guide Methods," Serge Toutain (Brest); "Dielectric Waveguides," Prof. Yoneyama (University of Tohoku, Japan).
- "CAD of MMIC Circuits," John Bandler (University of McMaster, Canada).
- "Silicon Carbide Components for Future High Power and High Temperature Applications," Steven Tic (Thomson, Paris).

The workshop held last year was on "New Civil Applications in Microwaves," and this year it will be on November 21-23, 1994, on "Optics and Microwaves."

Germany

Chairman: Prof. Dr. Fritz Arndt, University of Bremen

A large number of meetings have been organized. Of particular note are the following workshops and conferences:

- October 11-13, 1993—"High-Speed Bipolar Devices," organized and chaired by Prof. Schumacher (University of Ulm).
- October 28-29, 1993—"Discrete Time Domain Modeling of Electromagnetic Fields and Networks," organized and chaired by Prof. Russer (Ferdinand-Braun-Institut fur Hochstfrequenztechnik, Berlin) and Prof. Nossek (Technical University, Munich).
- April 13-15, 1993—ITG Conference on Antennas, organized by the Informationstechnische Gesselschaft in cooperation with the German IEEE MTT/AP Chapter, in Dresden. Chaired by A. Brunner (Siemens AG), the conference was attended by 200 people and included 68 papers which are printed in "ITG

Fachbericht," Vol. 128.

- May 16, 1994—Mini-workshop on "Dielectric Waveguides" at the University of Bremen, included talk by Distinguished Microwave Lecturer Prof. Yoneyama from Japan.
- September 12-13, 1994—European workshop on "Low-Noise Quasi-Optics" at the Max-Planck-Institut for Radio Astronomy in Bonn. The organizer, Nigel Keen, assembled 30 papers surveying advances in the last seven years.
- October 1-7, 1994—3rd International Workshop on "Integrated Nonlinear Microwave and Millimeter Wave Circuits" (INMMC'94) at the University of Duisberg. Organized and chaired by Prof. I. Wolff and Prof. A. Beyer, 110 attended the 28 presented papers.
- November 10-11, 1994—"Silicon Based High Frequency Devices and Circuits" at Reisensburg, Ulm. Organized by Prof. Menzel (University of Ulm) and Dr. J-F Luy (Daimler Benz AG).

A full program of events is planned by the German Chapter for 1995 including:

- "High Speed Bipolar Devices" joint workshop organized by French and German Chapters.
- "MMIC Technology and Characterisation," May 30, and "MIOP'95 Microwaves and Optronics" (8th Exhibition and Conference), May 30-June 1, 1995, both at Sindelfingen.
- "3rd International Workshop on Terahertz Electronics," August 31-September 1, 1995, at Zermatt, Switzerland.
- "Microwave Opto-Electronics," September 14-15, 1995, at Bologna, Italy.

Hungary

Chairman: Prof. Kalman Fazekas, Technical University of Budapest

Technical meetings:

- January 20, 1993—"Optical Formats for High Speed Networks," Prof. Imrich Chlamtec (University of Massachusetts, USA).
- March 25, 1993—"Research Toward the Chip Level Integration of Photonic and Microwave Devices," Prof. Peter R. Herczfeld (Drexel University).
- May 28, 1993—Image Digital Coding. A one-day seminar presented by Prof. K. R. Rao (University of Texas, USA).
- September 15, 1993—"Experiences of a Hungarian Communication Engineer in Japan," Assistant Prof. Ferenc Memyei.
- October 4, 1993—"High-Accuracy Oscillators and Clocks," John R. Vig (Army Research Laboratory, USA).
- May 2, 1994—"Scalar and Vector Quantization of Images," Prof. Manfred Gorze (Techische Hochschule Darmstadt).
- May 19, 1994—"The USA Solution for HDTV—An Overview," Arpad G. Toth (Eastman Kodak).
- June 28, 1994—"Surface Charging and Secondary Electron Emission Investigation on BN and BeO Ceramics as well as on BeO/Be Cathodes," Dr. Andras Dallos.

Israel

Chairman: Dr. Asher Madjar, The Technion, Haifa

- October 20, 1994—A one-day symposium of 9 papers on various topics covering antennas and microwave components. The invited talk was "Progress and Change in Microwave Radio Communications," Dr. Ferdo Ivanek (MTT-S Distinguished Lecturer).

Spain

Chairman: Magdalena Salazar-Palma, Cuidad Universitario, Madrid

Technical meetings:

- September 21-23, 1994—IX URSI National Symposium covering microwave, antennas, radar, optics and signal processing areas.
- October 17, 1994—"Second Generation Mobile Communications," Prof. Hamid Aghvami (King's College London, UK).

Sweden

Chairman: Dr. J. R. Sanford, Chalmers University of Technology, Gothenberg

Among the sixteen meetings held were:

- November 8, 1993—"An Overlooked RCS Prediction Tool," Gary A. Thiele.
- November 18, 1993—Speaker T. Biding.
- January 31, 1994—"Modelling of Non-linear Behaviour in High Temperature Super-conducting Transmission Lines," Dr. Jeffrey Herd.
- March 22-23, 1994—"Gigahertz 94" with 21 speakers.
- April 11, 1994—"Antenna Development at Radiophyzika JSC," Dr. Alexander Shishlov.
- April 11, 1994—"Design of Flat Topped Array Elements and Array Techniques," Sergei Skobelev.
- April 27, 1994—Electromagnetics Tools Workshop, five speakers.
- May 11, 1994—"Recent Progress in Optical Telescope Design," Dr. Torbin Andersen.
- May 31-June 2, 1994—"Antenna 94" with 41 speakers.
- September 15, 1994—"Synthesis of an Optimum Millimetre-Wave Varactor Frequency Multiplier," Dr. Marek T. Faber.
- October 13, 1994—"Numerical Techniques for Scattering and Antenna Problems," Dr. Stefano Maci.
- October 27, 1994—"Time-Frequency Processing of Wideband Radar Echo from Fixed-Resolution to Super-Resolution," Dr. John Moore.

Switzerland

Chairman: Leon Prost, Swiss Federal Office of Metrology, Berne

Technical meetings:

- January 10, 1994—"Integrated Circuits for Wireless

Communication," W. Baumberger, supported by ETH Zurich.

- January 12, 1994—"Small Planar Antennas and Filters for Wireless Communication," Dr. M. Schneider, supported by the University of Berne.

All the following colloquia were held at and supported by EPF Lausanne:

- May 20, 1994—"Remote Geomagnetic Field Monitor for Measuring Solar Magnetic Storms," F. Tesche.

Four talks were given by Prof. K. Michalsky (Texas A&M University, USA):

- May 18, 1994—"Formulation of Electromagnetic Green's Function."
- May 20, 1994—"Mixed Potential Integral Equation for Antennas and Scatterers."
- June 15, 1994—"Discrete Complex Image Method for Antennas in Stratified Media."
- June 17, 1994—"Examples of Application of the DCIM in the Analysis of Antennas."

United Kingdom and Republic of Ireland

Chairman: Terry Oxley

The status of the existing joint Chapter has been changed to incorporate the Lasers and Electro-Optics Society in addition to the IEEE MTT, Electron Devices and Antennas and Propagation Societies.

A very full program of technical meetings has included:

- September 22, 1993—"Digital Radio Links Move Into Millimetric Frequencies," Barry R. Pilley (GTP Ltd.).
- October 7, 1993—"Active Antennas—Design and Analysis," Tatsuo Itoh (University of California, USA).
- October 18, 1993—EDMO'93 first workshop on "High Performance Electron Devices for Microwave and Optoelectronic Applications."
- November 18, 1993—"Personal Communication Networks and Wireless Access," John Phillips (BNR Europe Ltd.).

December 8, 1993—"The Problem in Modelling Antennas on Aircraft," Pat Foster (Antenna Software Ltd.).

- March 10, 1994—"High Frequency Semiconductor Technology and Applications Within the UK," Ian Eddison (Department of Trade and Industry).
- April 21, 1994—"Micromachined Circuits for mm-Wave Applications," Linda Katehi (University of Michigan, USA).

Nine further activities have been organized for 1994 including a visit from the MTT-S Distinguished Lecturer Ferdo Ivanek on "CAD, Modelling and Measurement Verification," and EDMO'94.

A full program of events for 1995 is already in preparation and includes a series of lectures, workshops and EDMO'95.

ARFTG Highlights

(continued from page 22)

fax (503) 627-5177, or Conference TPC: David K. Walker, National Inst. of Stds & Tech., 325 Broadway, MS-813.06, Boulder, CO, 80303, USA, (w) (303) 497-5490, fax (303) 497-3970, e-mail walker@bldrdoc.gov. Deadline for paper submissions is March 3, 1995. Early submissions are encouraged and will allow authors to receive advance publicity. Potential presenters should request the ARFTG Author's Preparation Package in advance. Those interested in exhibiting should contact: Bill Pastori, Maury Microwave Corp., 2900 Inland Empire Boulevard, Ontario, CA 91764, (w) (909) 987-4715, (f) (909) 987-1112.

Measurement Professional? or Interested in Learning More?

We will be looking forward to discussing the latest in measurement automation and accuracy with you in Boulder. ARFTG brings you the latest in RF, microwave and millimeter wave analysis, design and measurement. State of the art papers are presented twice a year. If you are involved in automated measurement techniques, come and join your peers and keep current with our ever-evolving technology. For more information on ARFTG or future conferences, write: John Barr, Santa Rosa System Division—3US-Q, Hewlett-Packard, 1400 Fountaingrove Parkway, Santa Rosa, CA 95403 or (fax) (707) 577-5644.

Region 10 Chapter Activity Reports

(continued from page 27)

- Local IEEE MTT Taipei Chapter Meeting—National Chiao Tung University, July 20, 1994. Emerging needs for servicing domestic microwave, telecommunication, computer and information-related industries concerning EMI, EMC, and EMS matters had interested members of MTT in Taiwan. Prof. S. T. Peng called a formal meeting of the industrial representatives, university professors, government and private research officers, and engineers to form a consortium. The IEEE MTT participants were Dr. Chi-Fu Den, Dr. Ching-Ling Liu, Dr. C. F. Wu, Dr. Y. C. Chien, Dr. Tzu-Hwa Hsu, Prof. S. T. Peng, Kuo-Ray Chu, and Ching-Kuang Tzuang.
- Local IEEE MTT Taipei Chapter Meeting—National Chiao Tung University, Nov. 25, 1994. The bylaws and related matters have been completed. The formal registration of MTT Taipei Chapter as a legal entity in Taiwan will be completed by the end of June 1995.

Region 9 Chapter Activities—1994

by Denise Consoni
Region 9 Coordinator
MTT-S Transnational Committee

The Region 9 Chapter activities for 1994 are:

Venezuela (MTT/COMM)
Chairman: Aldo Bianchi (Universidad de Carabobo)

10.03.94—Seminar: "Fiber Optics Communications," Eng. Aldo Bianchi (Universidad de Carabobo), IUPFAN (Polytechnic University of Armed Forces, Maracay. 150 attendees.

17.06.94—Conference: "VSAT," Victor Godoy and Enrique Rodriguez, IUPFAN (Polytechnic University of Armed Forces), Maracay. 20 attendees.

22.06.94—Conference: "Fiber Optics: Information Superhighway," Eng. Aldo Bianchi (Universidad de Carabobo), Main Conference Room, Parque Central, Caracas. 200 attendees.

22.09.94—Conference: "Line of Sight and Satellite Radio Links," Eng. Aldo Bianchi (Universidad de Carabobo), Electrical Engineering School, Carabobo University. 15 attendees.

23.09.94—Conference: "Fiber Optics Communications," Eng. Aldo Bianchi (Universidad de Carabobo), Communications Lab, Carabobo University. 25 attendees.

05.10.94 to 21.12.94—20 hours (10 weeks) course: "Navigating the Internet," Eng. Aldo Bianchi (Universidad de Carabobo), Communications Lab, Carabobo University.

Rio de Janeiro/Brazil (MTT/AP/ED)
Chairman José Ricardo Bergmann (CETUC-PUC/RJ)

11.08.94 to 18.08.94—Seminars: "Application of the finite-element method to the analysis of optoelectronic devices," Dr. B. M. A. Rahman (City Univ., England, UK), CETUC-PUC/RJ. 10 attendees. Support of: The British Council, CNPq (Brazil) and TELEBRAS (Brazil).

South Brazil (MTT)
Chairman: Antonio Octavio Martins de Andrade (Instituto Mauá de Tecnologia)

29.11.94—Seminar: "Finite-Element Method Applied to Electromagnetic Field Calculations," Dr. José Roberto Cardoso (University of São Paulo), Instituto Mauá de Tecnologia.

The new Region 9 Coordinator is: Antonio Octávio Martins de Andrade, IMT-Instituto Mauá de Tecnologia, Estrada das Lágrimas, 2035, CEP 09580-900 São Caetano do Sul, SP, Brazil, Fax 55-11-743-8988, e-mail: andsrade@nmc001.maua.ansp.br.

Region 8 Section Volunteer Award

by Professor E. Folke Bolinder

The Region 8 Fellows and Awards Committee, under the chairmanship of Professor Bolinder, has initiated a new award, to be presented to a member of a regional section for outstanding meritorious service to his section. Potential candidates must be nominated by the section chairman and a seconder. From the candidates submitted for the award in 1994, Mr. Terence Oxley, of the UKRI Section, has been selected.

Mr. Oxley has been chairman of the section's joint chapter MTT/ED since 1990 and is an ex-officio member of the UKRI Section executive committee. He was elected as IEEE Fellow in 1992 and has published in excess of 100 articles; he has been a frequent lecturer at technical meetings.

He became chairman of the MTT/ED chapter at a time when it was almost totally inactive. He converted it into one of the most active chapters in the section, successfully adding "AP" and "LEO" to the original group; the chapter has regular financial support from the parent societies.

During his period of office there has been a significant increase in membership of his societies. The chapter has pioneered the regular scheduling of meetings in many different locations both in UKRI and in Europe. He has regularly contributed news of chapter events to both the *UKRI Section News Letter* and to *Region 8 News.*

ANNOUNCEMENT AND CALL FOR

IEEE AP/MTT-S
Philadelphia Section

13th ANNUAL BENJAMIN FRANKLIN SYMPOSIUM

on

New Frontiers in Antenna and Microwave Technology

Friday, May 5, 1995

The Philadelphia Chapter of the IEEE AP/MTT-S and the Franklin Institute will hold the 13th Annual Benjamin Franklin Symposium on Friday, May 5, 1995 from 8:30 AM to 5:00 PM. This one-day symposium will consist of two sessions:

Morning Session: Plenary Session of Invited Papers

Afternoon Session: Parallel Sessions of Contributed Papers on all Theoretical, Experimental and Applied Research Works related to **Antennas, Wave Propagation, Microwaves** and **Photonics.**

PLACE: The Franklin Institute
20th & the Parkway
Philadelphia, PA 19103
(Rooms available at the Korman Suites Hotel)

PAPERS: Authors are invited to submit papers in any of the above fields. Please send a camera-ready summary (one to four 8.5" x 11" pages, one inch margins) by **March 10, 1995** to:

Professor Ahmad Hoorfar
Department of Electrical and Computer Engineering
Villanova University
Villanova, PA 19085
Phone: (610) 519-7223
e-mail: hoorfar@ece.vill.edu

SPECIAL ISSUE: Conference organizers will solicit authors of some selected papers to submit extended versions of papers for publication in a special symposium issue of the Journal of the Franklin Institute. The papers will be subject to the normal review process.

Guest Editor: Professor Nader Engheta
Moore School of Electrical Engineering
University of Pennsylvania.
Phone: (215)898-9777
e-mail: engheta@pender.ee.upenn.edu

FOR FURTHER INFORMATION: Please call William Jemison, Flam & Russel, (610) 674-5100, Eric Holzman, Martin Marietta (609)722-4400, or Wendy Ellis, The Franklin Institute, (215) 448-1349.

MTTS ®

AUTOMATIC RF TECHNIQUES GROUP

CALL FOR PAPERS
SPRING 1995 CONFERENCE

The Automatic RF Techniques Group will hold its 45th Conference in conjunction with MTTS in Orlando, FL, May 16, 1995. The conference theme is:

TESTING AND DESIGN OF RFIC'S

Radio frequency integrated circuits continue to expand the performance, complexity, and volume-production envelopes. Competitive pressures are forcing RF design and test engineers to develop circuits and test techniques which combine high performance, ease-of-use, and low cost. Papers are solicited on topics related to RFIC design and testing, including circuit modeling and simulation, design-for-testability and manufacturability, on-wafer RF testing using frequency- and time-domain techniques, efficient in-process monitoring and testing methods which lead to overall RFIC quality improvements, and comparison and compatibility issues with conventional techniques and products.

Papers are also invited in other areas of automated microwave and RF testing, including improved techniques for calibration and verification, MMIC-related measurement issues, CAD, CAT, millimeter wave systems, and other topics of interest to the RF/microwave community.

Presentations should be informal 20-minute talks using viewgraphs or 35 mm slides. Authors are requested to submit two copies of a one-page abstract and a 500 to 1000 word summary, including illustrations, to allow evaluation with regard to the interests of the attendees. This submittal should be made to the Technical Program Chair no later than **March 3, 1995.** Early submissions are encouraged and will allow the authors to receive advance publicity. Manufacturers interested in setting up an exhibit should contact the Exhibits Chair for information and application forms. More information can be obtained from the Conference Chair, Mr. Edward M. Godshalk, tel. (503)628-4772, fax (503)627-5177.

Technical Program Chair:
Mr. David K. Walker
National Inst. of Stds. & Tech.
325 Broadway
Mail Stop 813.06
Boulder CO 80303
Tel: (303)497-5490, FAX: -3970
E-mail: walker@bldrdoc.gov

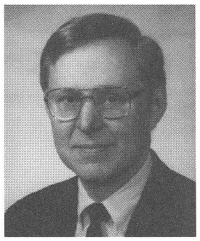
Exhibits Chair:
Mr. W. E. Pastori
Maury Microwave Corp.
2900 Inland Empire Blvd.
Ontario CA 91764
Tel: (909)987-4715
Fax: (909)987-1112

1995 IEEE MTT-S INTERNATIONAL TOPICAL SYMPOSIUM

ON TECHNOLOGIES FOR WIRELESS APPLICATIONS

20 to 22 February 1995—Vancouver, BC, Canada

INVITATION FROM THE CHAIRMEN



On behalf of the Steering Committee, it is a pleasure to invite you to join us for the 1995 IEEE MTT-S International Topical Symposium on Technologies for Wireless Applications, to be held in Vancouver, BC, Canada, 20 to 22 February 1995. This conference will be held in conjunction with INTER COMM '95, a comprehensive exposition concentrating on topics of interest to key decision and policy makers, industry leaders, and political groups involved in the communications industry.

While the main thrust of the exposition is to expand the market dialogue, the MTT-S Topical Symposium will focus on specific technology aspects of interest to the engineering and scientific community. The MTT-S Topical Symposium will consist of a single "track" of technical sessions on wireless applications throughout the three days of the INTER COMM '95. Joint sessions with INTER COMM '95 will address areas of common interest to all participants.

This co-location of international delegates and topics on issues of policy, markets and technology will afford a unique opportunity to join these groups in broad discussions of mutual interest. The MTT-S Topical Symposium will add an additional dimension of contributed technical papers to an established and successful exposition in INTER COMM. We look forward to your participation in this event in Vancouver.

Peter Staecker
Steering Committee Chairman

Wireless applications have seen an explosive expansion in both the hardware and the systems areas. This expansion extends well past the more traditional segment of personal communications into such areas as wireless access and automotive designs for intelligent vehicle highway systems (IVHS). Many of these applications involve high volume, low cost production requirements, not generally associated with the traditional high frequency markets.

This symposium is part of a Topical Symposia series being sponsored by the Microwave Theory and Techniques Society (MTT-S) to provide a forum for the discussion of relevant areas from the architecture to devices, design, manufacture and testing of systems. The format of the technical program emphasizes interaction between presenters and attendees by allocating discussion time following each paper.

Continuing the high technical standards of the MTT Society, the Technical Program Committee has selected 26 papers from seven countries to be presented in eight technical sessions on specific topics, including a focused session on digital audio broadcasting and a Monday evening panel session. In addition, two joint sessions with INTER COMM '95 are scheduled, including two invited speakers discussing the present and future of wireless applications.

The combination of this carefully selected technical program with the parallel events of INTER COMM '95 are expected to provide attendees with a stimulating and rewarding opportunity to discuss topics in wireless applications. We look forward to greeting you in Vancouver.

George L. Heiter
Technical Program Chairman

MTT-S TOPICAL SYMPOSIUM TECHNICAL PROGRAM

VANCOUVER TRADE AND CONVENTION CENTER
MEETING ROOM LEVEL

MONDAY, 20 FEBRUARY 1995

08.30 to 10.00 **MM1–OPENING SESSION (Joint with INTER COMM)**
Chair: Peter Staecker, M/A-COM

Wireless: Growth Engine for Advanced Global Telecommunications
George Smyth, President, Bell Northern Research, Ottawa

10.30 to 12.00 **MM2–SUBSYSTEMS FOR WIRELESS APPLICATIONS**
Chair: Mike Golio, Motorola

10.30 **Miniaturized Receiver Front-End Hybrid ICs for Mobile Communication Equipment using Flip-Chip Bonding Technology**
J. Itoh, Y. Yagi, K. Takashi, M. Takemoto and M. Sagawa, Matsushita Electric Inc. Co., Osaka, Japan

11.00 **A MMIC 2.4 GHz Transmitter and 5.78 GHz Receiver for Wireless LAN Applications**
D. Fitzgerald, Y. Tajima, R. Donahue, M. McPartlin, R. Binder, G. Chu and J. Wendler, Raytheon, Andover, MA, and M. Tsai, Whistler Inc., Andover, MA

11.30 **Local Oscillator Subsystem Design for an DAMA-SCPC System**
C.S. Pyo, S.Y. Eom and J.Y Ahn, Electronics and Telecom Research Institute (ETRI), Daejon, Korea

14.00 to 15.30 **MA1–COMMUNICATION SYSTEMS I**
Chair: Peter Tackats, SPAR Aerospace

14.00 **CMDA Digital Cellular Overview and Field Trial Results**
R.J. Sanchez, Qualcomm Inc., San Diego, CA

14.30 **High Processing Gain, High Data Rate Spread Spectrum Signalling for Wireless Communications**
A.Y.C. Wong and V.C.M. Leung, The University of British Columbia, Vancouver, BC, Canada

14.45 **Application of Linearized Amplifiers in Adaptive Antennas**
H. Xue, M. Beach and J. McGeehan, University of Bristol, Bristol, UK

15.00 **A Low Cost Optical Link for Personal Communications Networks**
A. Gameiro, J.C. Pedro, A.J. Ramos, L. Gomes, M. Garaca and J.R.F. Da Rocha, University of Aveiro, Aveiro, Portugal

16.00 to 17.30 **MA2–COMMUNICATION SYSTEMS II**
Chair: Rob Gilmore, QUALCOMM Inc.

16.00 **Simulcast in Narrowband PCS**
R. Petrovic, University of Mississippi, University, MS; W. Roehr, Telecom Network Cons., Raston, VA; and D. Cameron, MTEL Technologies, Jackson, MS

16.30 **Trading Coverage for Capacity in Cellular Systems**
C. Wheatley, Qualcomm Inc., San Diego, CA

17.00 **Frequency Coordination between CDMA and non-CDMA Systems**
S. Soliman and C. Wheatley, Qualcomm Inc., San Diego, CA

For a full program and registration forms, return completed coupon to:

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❑ Yes, I would like additional information on attending the MTT-S Topical Symposium
❑ Yes, I would like additional information on attending INTER COMM '95

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Organization _____
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1995 IEEE MTT-S INTERNATIONAL TOPICAL SYMPOSIUM

ON TECHNOLOGIES FOR WIRELESS APPLICATIONS

20 to 22 February 1995—Vancouver, BC, Canada

MTT-S TOPICAL SYMPOSIUM TECHNICAL PROGRAM

MONDAY, 20 FEBRUARY 1995

20.00 to 21.30 **ME1–PANEL SESSION**
GaAs MMICs for Wireless Communication Applications

Organizers and Chairs: Charles Huang, Anadigics Inc.
Michael Florian, Boeing Company

Panelists: George Norris, Motorola
Michael L. Frank, Hewlett Packard
Robert Bayruns, Anadigics Inc.
Dave Norbury, RF Micro Devices
Ewald Pettenpaul, Siemens
Martin Gold, EE Times

Since the late sixties, phased-array radars for military and space applications have been touted as a major market for GaAs MMICs. For various technical and economical reasons, the promises have not been quite fulfilled. During the late eighties, there were major efforts to develop GaAs MMICs for commercial wireless communications applications. Once again, the success was limited. GaAs MMICs make good switches, attenuators, mixers and low noise amplifiers. But the cost of radios for wireless communication terminals are driven by duplexers, saw filters, ceramic filters, VCOs, temperature compensated crystal oscillators and discrete hybrid power amplifier modules. These functions are still the primary domain of discrete components. This panel session examines what GaAs MMIC manufacturers can do to gain a higher level of penetration into the explosively growing wireless communications markets.

TUESDAY, 21 FEBRUARY 1995

08.30 to 10.00 **TM1–OPENING CEREMONY**
(Joint with INTER COMM)

10.30 to 12.00 **TM2–MANUFACTURING AND DEVICE PROCESSING**
Chair: Al Imhoff, M/A-COM

10.30 **A Low Cost and Low Power Silicon npn Bipolar Process with NMOS Transistors and its Wireless Applications**
K.O.T. Tewksbury, G. Dawe, C. Tsai, P. Garone, B. Scharf, C. Kermarrec and J. Yosaitis, Analog Devices, Wilmington, MA

11.00 **Manufacturing Test Technologies for Commercial GaAs RF Microwave Integrated Circuits**
P. Ersland, S. Cousineau, J. Mahon and J.P. Lanteri, M/A-COM, Lowell, MA

11.30 **Measurement of Stray Capacitance due to Solder Flux Residue in Radio Frequency Circuit Boards**
M.S. Heutmaker, L.M. Fletcher and J.E. Sohn, AT&T Research Center, Princeton, NJ

14.00 to 15.30 **TA1–ACTIVE CIRCUITS FOR COMMUNICATIONS**
Chair: Doug Maki, Raytheon

14.00 **A Low Current High Performance LNA for Global Positioning Receiver Applications**
F. Bonn, Motorola SPS, Tempe, AZ

14.30 **Some Considerations in Modeling GaAs MESFETs for Portable Communication Systems**
J. Staudinger, Motorola Semiconductor Products Sector, Tempe, AZ

15.00 **High Efficiency FET Amplifier with Very Low Drain Bias for Mobile Communication**
J. Huang, Electronic Instrument Inst., Yangzhou, PR China and Z. Ding, Yangzhou Inst. of Technology, Yangzhou, PR China

16.00 to 17.30 **TA2–PASSIVE DEVICES**
Chair: Steve Avery, Watkins Johnson Co.

16.00 **Modeling of Monolithic Inductors and Transformers for Silicon RFIC Design**
J.R. Long and M.A. Copeland, Carleton University, Ottawa, Ontario, Canada

16.30 **Miniature Microwave Filters using High Permittivity Ceramics**
A.J. Kennerley and I.C. Hunter, University of Bradford, Bradford, West Yorkshire, UK

17.00 **Tapped-Feed Combline-Type Coplanar Waveguide Resonator Bandpass Filters**
Y. Noguchi, K. Wadi, E. Higashino and J. Ishii, Kinki University, Osaka, Japan

WEDNESDAY, 22 FEBRUARY 1995

08.30 to 10.00 **WM1–DIGITAL AUDIO BROADCASTING**
Chair: René Douville, Industry Canada

08.30 **Digital Audio Broadcasting Overview–Invited Paper**

09.00 **Digital Audio Broadcasting: US Technologies and Systems Terrestrial and Satellite**
R.L. Anglin, Jr., Anglin & Giaccherni, Attorney at Law, Del Mar, CA

09.20 **Antenna Candidates for Digital Radio Broadcast**
L. Shafai, University of Manitoba, Winnipeg, Canada; H. Moheb, Info Magnetics Tech. Corp., Winnipeg, Canada; and A. Ittipiboon, Communication Research Center, Ottawa, Canada

09:40 **Versatile, High Dynamic Range Receiver Front End for Digital Radio Broadcast and M-SAT Reception**
J. Wright, Carleton University, Ottawa, Ontario, Canada

10.30 to 12.00 **WM2–ANTENNAS FOR WIRELESS APPLICATIONS**
Chair: Robert Peterson, Texas Instruments

10.30 **Aperture Coupled Unidirectional Dielectric Radiator (UDR) and UDR Array for Microwave and mm-Wave Wireless Communication**
H. An, R.G. Bosisio and K. Wu, Ecole Polytechnique, Montreal, Quebec, Canada

11.00 **A Multilayered Microstrip Phased-Array for Mobile Satellite Communications**
R. Telikepalli and T. Muselow, CAL Corporation, Ottawa, Ontario, Canada

11.30 **Gain Improvement for a New Built-In Antenna System on a Headset, including the Proximity Effect of the Hand and Head**
M. Hirose and M. Miyake, Communication Technology Lab, CASIO Computer Co. Ltd., Tokyo, Japan

What Is An Engineer?

How Do You Describe Your Profession to Young People?

If you need help preparing for a Career Day or other event at your child's school, you can borrow IEEE-USA's new guidelines for talking with young people about the profession of electrical, electronics, and computer engineering. IEEE-USA's Precollege Education Committee has produced a speaker's guide and suggested script—with 42 slides—to help IEEE volunteers plan presentations about the electrical engineering profession.

Whether you're addressing middle-school and high-school classes, youth clubs, or other groups of young people, you will find the guidelines helpful. You can add your own slides to the presentation to illustrate the work you do.

Contact the IEEE-USA Office now to get "What Is An Engineer?"—especially if you're planning to participate in Discover "E" school visits during National Engineers Week . Address: IEEE United States Activities, 1828 L Street N.W., Suite 1202, Washington, DC 20036; (202) 785-0017; fax (202) 785-0835; or e-mail a.hartfiel@ieee.org (Internet).

IEEE UNITED STATES ACTIVITIES

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