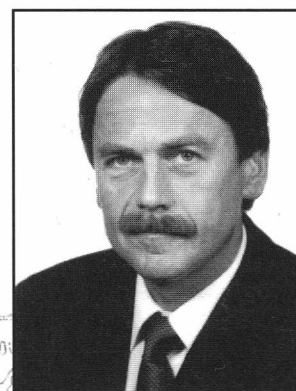


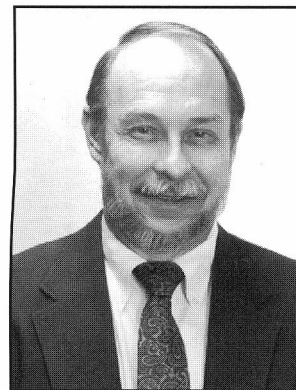
IEEE MTT-S Newsletter is published three times yearly by the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, Piscataway, NJ 08855

## Rolf Jansen on founding new MTT-S Chapters in the former Soviet Union

Rolf H. Jansen  
Director  
Division IV



# Incoming President's Message



by John W. Wassel  
1996 President  
MTT-S AdCom

## Welcome from MTT-S

The IEEE Microwave Theory and Techniques Society (MTT-S) is a transnational society with more than 9,000 members and 80 chapters worldwide. Our society promotes the advancement of microwave theory and its application at frequencies usually from 1 GHz to 100 GHz and beyond. For more than 20 years the MTT-S has worked to advance the professional standing of its members and enhance the quality of life for all people through the development and application of microwave technology. As we enter into an exciting future our mission is to continue to understand and influence microwave technology. The activities sponsored by the MTT-S include a broad spectrum of conferences, workshops, tutorials, technical committees, chapter meetings, publications and professional education programs.

Membership is open to all members of the IEEE in any grade, including students.

*The introduction above is from the IEEE World Wide Web Server that is maintained by Roger Pollard on behalf of the Electronic Communications Committee of the MTT-S AdCom. Access is by*

<http://www.ieee.org/./mtt/mtt.html>

The MTT-S server provides a description of the principal activities of our society and I urge to consult it periodically. You can easily obtain up-to-date information about the International Microwave Symposia (Call for Papers), co-sponsored Conferences and Symposia, Publications including previews of the Table of Contents of the next issues, MTT-S Administrative Committee, and the MTT-S Ombudsman. Roger Pollard solicits comments and suggestions for our Home Page and is always looking for contributions to the MTT-S web offering. Please send your inputs to Roger at

[r.pollard@ieee.org](mailto:r.pollard@ieee.org).

We have a busy year planned. The 1996 IEEE MTT-S International Microwave Symposium will be held in San Francisco the week of 17-21 June. A record number of papers were submitted to the Technical Program Committee, over 810 papers at present. With the workshops, the Microwave and Millimeter-wave Monolithic IC Symposium, and the Automatic RF Techniques Group, Microwave Week promises to be one of the best means to advance your professional education. The IMS Steering Committee Chairman, Jim Crescenzi, and his committee members are working hard to put the finishing touches on an outstand-

ing slate of activities. The Microwave Exhibition will have over 465 booths for you to see the latest offerings of microwave manufacturers and technical publications. San Francisco is the Queen City of the Pacific coast and will be a beautiful setting for the IMS. More details will be furnished in the next edition of the *MTT-S Newsletter*.

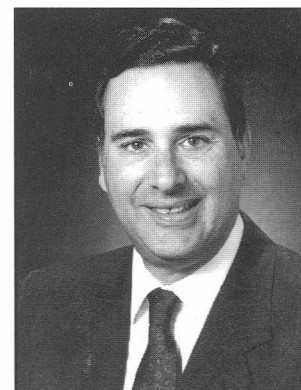
Eliot Cohen has done a wonderful job as our 1995 President. He now joins the ranks as one of the Old Elephants and will continue his services to our society as a senior advisor and confident to the AdCom. We are indeed fortunate to have so many previous Presidents who continue to be involved in our activities.

The Orlando IMS Steering Committee headed by Keith Huddleston and Rudy Henning announced a surplus of close to \$400K for the 1995 IMS. These funds will be used to support our ongoing programs in publications, chapter activities, and membership development. We will be planning to expand some of our membership activities with the extra funds.

Your involvement in our society is encouraged and appreciated. Your suggestions and comments are always welcomed.



# Outgoing President's Report



by Eliot D. Cohen

It has been a great pleasure and honor to serve as your President during 1995. This has been a productive year for the Microwave Theory and Techniques Society. An outstanding International Microwave Symposium was held in Orlando, the publication backlog of our Transactions was eliminated, and the number of MTT-S members has stabilized (8715 members on June 15, 1995 compared to 8414 members on June 15, 1994). Good progress is being made toward our goal of making the Microwave Theory and Techniques Society a truly international organization. We have been successful in establishing six joint (with the Electron Devices Society) chapters in eastern Europe and the former Soviet Union. We co-sponsored a very successful SBMO conference in Brazil and we are optimistic about becoming co-sponsors of another major non-U.S. microwave conference. We are also continuing to work closely with the Electron Devices Society in our joint efforts to encourage more women to enter the engineering profession.

Unfortunately, this year has also contained more than its share of sadness, including the loss of Mario Maury, Jr.; our Vice President; William J. Getsinger, the 1995 recipient of the MTT-S Microwave Career Award; and Frank Reggia, the "father" of the ferrite phase shifter. All of these individuals were great contributors to the mi-

crowave profession and all will be very much missed.

During our AdCom meeting in Los Angeles, CA, held September 9 and 10, elections of new officers and members were held. I want to warmly welcome our new President-elect, John Wassel. As I mentioned in the last Newsletter, John has, for many years, contributed enormously to the MTT-S. I know that he will be an outstanding President. I also want to welcome our new Vice-President elect, R. E. (Skip) Bryan. Skip has served MTT-S in many capacities including as Treasurer and, during the past year, as co-chairman of the Meetings and Symposia committee. Skip is another "doer"; a person who gives unstintingly and graciously of his time to greatly benefit our profession. Finally, I want to welcome Randall (Randy) Lehmann, who will serve as the 1996 MTT-S Secretary. Many of you know Randy for his work on GaAs devices, MMICs, and radar and communications modules at Texas Instruments. Randy is a Senior Member of the IEEE. He served on the Microwave Prize Committee for the past 3 years, as technical program co-chairman for the 1990 IMS in Dallas, on the MTT-S Technical Program Committee for many years and as chairman of the Dallas chapter of MTT-S.

Seven AdCom members were elected. They are as follows: Charles

Jackson, Roger Pollard, Jung Woong Ra, Ed Rezek, Roger Sudbury, Glenn Thoren and Robert Trew. Charles Jackson is new to AdCom but is a significant contributor to MTT-S and the microwave profession. His previous service to MTT-S includes being a very active member of the 1994 International Microwave Symposium committee. Jung Woong Ra is also new to AdCom; he is the chairman of the 1995 Asia-Pacific Microwave Conference being held this year in Korea. Robert Trew is our final new AdCom member. He is already well known to our membership in his role as editor of the IEEE Microwave Theory and Techniques Transactions. Roger Pollard, Ed Rezek, Roger Sudbury and Glenn Thoren are all elected AdCom members. They, as well as all of the other continuing AdCom members, were a fantastic help to me during the past year. Charles Jackson has been elected to a one-year term; the others, three-year terms.

I want to thank two members of MTT-S AdCom who chose not to run for reelection, Derry Hornbuckle and Keith Huddleston. Derry has been a member of AdCom since 1993. He has done an exemplary job during the past three years, serving first, in 1993, as vice chairman of our Publications committee and during 1994 and 1995 as chairman of the Publications committee. He has also been active on the

MTT-S Long Range Planning committee. Derry will be very sorely missed. Keith has only been an AdCom member for a short time. He did an incredible job as co-chairman of the 1995 International Microwave Symposium. I'm truly sorry that he will not be able to continue as an AdCom member.

Another person whom I want to give heartfelt thanks to is this year's MTT-S Secretary, Bob Bierig. It would be impossible to enumerate all of the ways that Bob has personally helped me to carry out my role as your President during the past year and all of the ways that he has contributed to our society and profession. He is another of our outstanding volunteers that always can be counted on to come through with an excellent job. Bob, thanks again for always being there for me.

As part of our efforts to serve our membership more effectively, the es-

tablishment of a new technical committee, MTT-19, Microwave Technology Business Issues, was approved at the last AdCom meeting. This committee will focus on how business considerations impact microwave technology and product development. The committee was proposed by Bert Berson. Its current members are Brian Flynn, CEO of INNOVA Corporation and Managing Partner of Bachow and Associates; Jim DiLorenzo, General Manager of Raytheon Microelectronics Center; Jacques Robinson, CEO of Cincinnati Microwave; Don Pezzolo, Founder and CEO of Diablo Research Corporation; Bert Berson, President of Berson & Associates, and myself. Additional participants are welcome. I believe that this committee will be valuable to MTT-S membership by providing opportunities to bridge the gap between microwave research and technology developments and the successful fielding of microwave products.

Also, at the AdCom meeting, approval was granted to implement a new technical marketing session at the 1996 International Microwave Symposium. The 1996 IMS will be held in San Francisco during the week of June 17-21, 1996. This session will be on the exhibition hall floor and will feature presentations by many of the exhibitors at the conference. I expect it to be an exciting addition to IMS. It will allow attendees to gain a much better understanding of many of the products that are being displayed at the conference.

Thank you again for the opportunity to be your President during the past year. It's been a wonderful experience. Thanks again to all of the AdCom members and aoo of the other contributors to our Society who have done so much to help the microwave profession.

## OUTSTANDING!

A volunteer doesn't have to be a rocket scientist (literally!) to be formally recognized by the IEEE. Rather than focusing on technical achievement, the Regional Activities Board's five awards honor volunteers (and in one case, even non-members) for their outstanding accomplishments in fulfilling the goals and in developing or completing RAB's projects and activities. Nominations are now being accepted for the RAB Innovation Award, Larry K. Wilson Transnational Award, RAB Achievement Award, RAB Leadership Award and Friend of IEEE Regional Activities Award.

Is there someone in your Section (or a non-member who has assisted your Section) whose accomplishments should be acknowledged? Nominees for all awards may be from any Region. Everyone is eligible. The nominee does not have to be affiliated with the Regional Activities Board.

Deadline for submitting completed nomination forms is November 2, 1995. Contact Dan Toland for specifics about individual awards and about how to submit a nomination. It's the least you can do for someone who is always in there working for the IEEE.

## Correction

In the Fall 1995 issue of the MTT Newsletter, there is a missing reference in the paper "Microwaves," pp. 46-47:

<sup>4</sup>N. Carrara, "The detection of microwaves," Proc. I.R.E., Vol. 20, No. 10, pp. 1615-1625, October 1932.

## Notice

The name of the meeting listed in the Master Calendar (Fall '95) as "Optical Microwave Interactions to Microwave Photonics" has been changed to "International Topical Meeting on Microwave Photonics (MWP'96)."

# 1996 MTT-S Awards



*by David N. McQuiddy, Jr.  
Chairman, Awards Committee*

At the September 1995 AdCom meeting, the following awards were unanimously approved and will be presented at the awards banquet of the 1996 International Microwave Symposium in San Francisco, California:

## Microwave Career Award

John H. Bryant—"For Leadership in the Miniaturization of Microwave Circuits and Interconnections, and for Pioneer Historical Research on Radar and the work of Heinrich Hertz"

## Pioneer Award

Kaneyuki Kurokawa—"For Pioneering Developments on the General Theory of Microwave Solid-State Oscillators"

## Microwave Application Award

Kikuo Wakino—"For pioneering the Development of Low-Loss, Temperature-stable, Ceramic Dielectric Resonators"

## Distinguished Educator Award

George L. Haddad—"For Leadership in Teaching, Research and in the Microwave Community"

## Microwave Prize

"Terahertz-Bandwidth Characteristics of Coplanar Transmission Lines on Low-Permittivity Substrates" IEEE Transactions on Microwave Theory and Techniques, vol. 42, no. 12, December 1994, pp. 2399-2406

H. J. Cheng  
T. M. Weller

J. F. Whitaker  
L.P. B. Katehi

## Distinguished Service Award

Rudolf E. Henning—"For Distinguished Service to the profession, the IEEE and the Microwave Theory and Techniques Society"

## N. Walter Cox Award

(no award this year)

## 1996 IEEE Fellow Awards

Ten MTT-S members who were evaluated by our Society were elected to the grade of Fellow, effective 1 January 1996.

Adalbert Beyer—"For the development of numerical field analysis techniques and their application to the design of new reciprocal and nonreciprocal millimeterwave finline components.

Radoslaw M. Biernacki—"For contributions to the theory and implementation of microwave and analog CAD technology.

Hans H. Brand—"For contributions to microwave networks, for their applications to realtime imaging systems and for the extension of microwave technology into the Terahertz region.

Chun-Hsiung Chen—"For contributions to the development of variational methods applied to coplanar waveguides and various other structures.

E. James Crescenzi, Jr.—"For contributions to the development of microwave amplifiers, integrated circuit technology, and miniature receivers for defense applications.

Victor Fouad Hanna—"For contributions to the development of advanced numerical techniques for analysis and modeling of passive microwave and millimeterwave circuits.

J. Michael Golio—"For contributions to the characterization, parameter extraction, and modeling of microwave transistors.

Paolo Lampariello—"For pioneering investigations of leakage effects on open waveguides with application to a new class of millimeterwave antenna.



Christopher M. Snowden—For pioneering work on the development and application of physical models to the design of microwave and millimeterwave semiconductor devices and circuits.

Charles T. Stelzried—For pioneering development of low noise ground antenna systems used for deep space tracking.

The following six new Fellows are also MTT-S members but were evaluated by other IEEE Societies:

Donald G. Bodnar—For contributions to the understanding of the polarization characteristics of reflector and phased array antennas, and for techniques for measuring polarization characteristics of antennas.

Richard B. Dyott—For developments in optical fibers and optical fiber components.

Nader Engheta—For contributions to the electromagnetic theory of complex media.

Andrzej W. Kraszewski—For contributions to the science of microwave measurements and the development of techniques for measuring water content in moist substances and permittivity, density, and mass of particulate dielectric materials.

Tetsuo Nishi—For contributions to linear and nonlinear theory.

John L. Volakis—For contributions to computational electromagnetics, including hybrid finite element and high frequency methods.

## Call for Nominations to MTT-S Awards



by David McQuiddy, Jr.  
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

Phone: (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 Oltmann
1991	Charles T. Rucker
1992	Richard Sparks
1993	Stephen F. Adam
1994	John B. Horton
1995	Reinhard K. Knerr
1996	Rudolf E. Henning

## 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
1996	John H. Bryant

## 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
1996	Kaneyuki Kurokawa

## 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
1996	Kikuo Wakino

## 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
1996	(no award)

## 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 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 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
1996	George I. Haddad

# MTT-Society Ombudsman

I have been selected by the MTT-S AdCom to continue serving as your Ombudsman for 1996. It was a pleasure to serve in previous years and I look forward to continuing. The Ombudsman's purpose is to receive complaints and assist members in solving problems in obtaining membership services from IEEE and MTT-S.

As your Ombudsman, I received 29 inquiries (15 non-US) from MTT-S members in 1995 and to my knowledge all members have been satisfied. A summary of the inquiries is listed below:

- Ten members needed specific issues of MTT-S Transactions and/or Microwave and Guided Wave Letters which were not received. *Missing issues were sent to members either in paper form or on microfiche film. IEEE does not keep issues in paper form older than 2 years, but will provide the issues on microfiche film.*
- Four members needed confirmation from IEEE that dues were received. *IEEE was contacted (voice: (800) 678-4333 or (908) 981-0225, e-mail: member.services@ieee.org), and membership dues were received for all 4 people. 1995 membership cards were sent out to these members.*
- Two members wanted to know when they will become Life Members. *Contacted IEEE and gave members the year when they will become life members. See note below for specifics.*
- Two members prepaid IMS fees but had to re-register since the preregistration information was lost. *Contacted Horizon House and requested duplicate payment to be sent to attendee which was done.*
- Two Life Members requested MTT-S Transactions and Microwave and Guided Wave Letters and wanted to know why they were not receiving them recently. *In 1994, MTT-S unbundled their dues and periodicals. MTT-S dues include membership in the society as well as Newsletter and meeting notices. MTT-S members can choose to receive either or both MTT-S Transactions and Microwave and Guided Wave Letters by paying the associated fee listed below. With this unbundling, Life Members must now pay for the periodicals, since they are now not included in the basic membership fee. The Life Members were informed of this with information on how to obtain back issues.*
- Yugoslavia members needed 94/95 back issues and 95 membership cards. *All periodicals and cards sent to members.*
- One member did not attend the 95 MTT-S (IMS) and wanted to purchase the 95 IMS Digests. *Informed member that Digests can be purchased by calling IEEE, (800) 701-4333, and requesting them. Member received the Digests.*
- TRW 95 IMS attendees required receipts. *List given to Horizon House, (407) 729-7795, which provided specific receipts.*
- One person needed MTT-S application and one member requested senior member application. *IEEE mailed application member to members.*
- One 95 MMWMC Symposium registrant was unable to attend and requested the MMWMC Digest. *Horizon House, (407) 729-7795, provided the Digest to the member.*
- One student member wanted to receive MTT-S and AP periodicals. *Informed student member that he must join the society in question to receive their free periodicals which is at 50% of the member fee. For societies that charge extra for periodicals, they can be obtained at 75% of the member fee.*
- One Life Member wanted certain periodicals discontinued. *Informed IEEE and periodicals were discontinued.*
- One member does not receive MTT-S Newsletter or advance meeting notice. *IEEE corrected this error in the mailing.*



by Ed Niehenke  
Westinghouse Electric Corporation  
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(410) 765-4573  
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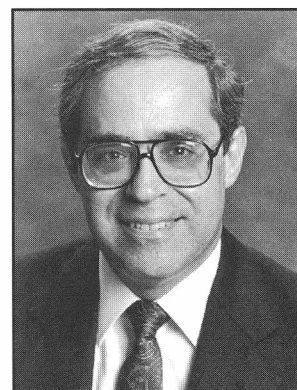
Information on the requirements for Life Member is as follows: Your age plus your years of membership must add up to 100. When you reach this status, the following year, you are a Life Member. The rules also have a minimum age requirement. To be a Life Member for 1995, you must be 62. In 1997, you must be 61, and in 1998 there is no minimum age requirement to become a Life Member. Life Member benefits include free IEEE dues and free periodicals which come free by being an IEEE member. In a society, if you are and have been a member in that society for the past 5 years, then your membership in that society is also free and all subscriptions that come free by belonging to that society are also free. If a society offers a periodical for a fee, then you can request the periodical by mailing the cost.

The 1995 fee structure for MTT-S membership and periodicals is: MTT-S membership fee \$8 US dollars, the Microwave and Guided Wave Letters is \$8 US dollars, and the Transactions is \$13 US dollars.

Please feel free to contact me by letter, telephone, or e-mail concerning any complaint you may have or any assistance you may need in obtaining membership services from IEEE and MTT-S.



# Call for MTT-S AdCom Nominations and Committee- Appointment Suggestions



*by Barry E. Spielman  
Chairman  
Nominations and Appointments  
Committee*

The nomination of candidates for election to the MTT-S Administrative Committee (AdCom) will be conducted by the MTT-S Nominations and Appointments Committee (N&A Committee). The N&A Committee will handle the nominations with the same procedure as in past years specified in the MTT-S Bylaws and Procedures Manual. In addition to the elections, the N&A Committee seeks interested and qualified individuals who will be recommended to the incoming President for his consideration to serve on various MTT-S committees.

At its Fall Meeting, the MTT-S AdCom elects members to serve on AdCom. The Bylaws state that the Nominations Committee will present a slate of at least two members for each vacancy which will occur the fol-

lowing January 1. The Nominations Committee shall consider in their selection the geographical and organizational distribution, as well as AdCom effectiveness. AdCom members who have served three consecutive terms by the following January 1 are ineligible for nomination by the N&A Committee.

The Bylaws provide three means by which one may be nominated for AdCom consideration. They are as follows:

- Nomination by the Nominations Committee,
- Nomination by petition signed by 25 MTT-S members and submitted to the Nominations Committee prior to July 1, 1996,
- Chapter nomination submitted prior to July 1, 1996.

All nominees will be contacted to ascertain that they will accept the nomination and will commit themselves for active participation in at least two meetings a year, held at various locations in the United States.

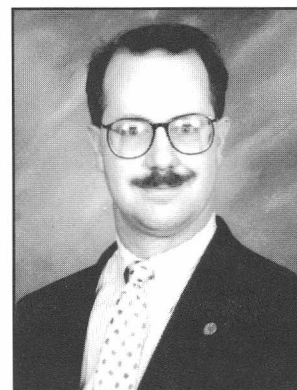
The geographical and affiliation distributions of AdCom members who will hold positions during the calendar 1996 year are given below:

The Nominations Committee needs your help in suggesting potential nominees to serve our membership as AdCom members. Please submit your suggestion to your local Chapter Chairman and/or to B. Spielman, N&A Committee Chairman, Washington University, One Brookings Drive, Box 1127, St. Louis, MO 63130, or fax 314-935-7500 by July 1, 1996.

Present Elected AdCom (1995): Total = 18

Mid-Atlantic & Eastern U.S.	4	Industry	11
Southeastern U.S.	1	Government	2
Middle Region U.S.	3	University	5
Southwestern U.S.	1		
Western U.S.	5		
Europe	2		
Asia-Pacific Region	2		

# Chapter Meeting = Value



by J. K. McKinney

When was the last time you attended a chapter meeting? If the answer is more than a couple of months, then it may be time to stop and investigate the reasons why.

Chapter meetings provide a forum for continuing education, visibility of emerging technologies, peer interaction, and a chance to meet your local chapter leadership. Let's look at each of these reasons for attending.

Being able to listen to a recognized leader in your field is usually a good thing to do. One of the many reasons is that they may have arrived at their solution via a different process than yours. Expanding one's field of thought and investigation can lead to new or improved solutions. The opportunity to hear and talk to a person who is developing emerging technology can be just the spark one needs to identify and solve a little nagging concern with your ongoing research.

Informal discussions with one's peers can be viewed as a valuable expenditure of time. It is hard to tell just when this interaction will be valuable, but in the long run time will demonstrate that peer interaction has significant benefit. Being able to talk with the local chapter leadership and suggest potential topics or speakers is an opportunity that is readily available during face-to-face meetings.

The above are just some of the benefits that attendance provides. There is a large number of symposia and conferences that are held each year to promote the above reasons. Some of these various symposia and conferences charge high admission prices. When considering the admission price for chapter meetings is included with one's society dues, it is a good decision to attend.

As a member of the Microwave Theory and Techniques Society, I would encourage you to attend a meeting of your local chapter and build on the value of your membership. You will find the information and peer interaction to be fun and have merit. If for some reason, you did not find your local chapter meeting to be of value, please send me a brief note describing your experience. My e-Mail address is [j.mckinney@ieee.org](mailto:j.mckinney@ieee.org).

## IEEE-USA: For U.S. Sections It's Free!

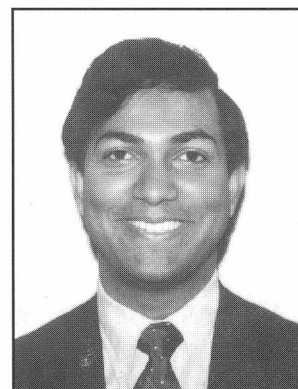
It won't tell you how much the guy down the hall is making, but it will give you a good idea of the salaries and benefits of engineers with various qualifications in different parts of the country. The all-new 1995 IEEE U.S. Membership Salary and Fringe Benefit Survey can provide you with the information you need if you are job-hunting or negotiating new benefits. You get definitive information on

salaries compared to primary areas of technical expertise, industry, sex, age, experience, education, and other demographics. Use the included regression-analysis formula (which analyzes more than 50 individual variables) to determine salaries.

The book retails for \$119.95 plus shipping and handling (\$74.95 for members), but US Sections can

receive one copy for free. On your official Section letterhead, write to Bill Anderson at our IEEE-USA office to request your copy. You can send the letter via mail or fax. Please do not call or e-mail, since all requests must be in writing on Section stationery. If you want to order a copy for yourself or your business, call the IEEE toll-free 800 number and ask for product #UH0198-2.

# MTT-6: Vision, Commitment & Results...You Can Be Sure



by Fazal Ali  
Westinghouse Electric Corporation  
Chairman, MTT-6 Technical Committee

I would like to introduce our society members to one of the most active technical committees of the MTT-S — the MTT-6. This Technical Committee on Microwave and Millimeter-Wave Integrated Circuits, focuses on all aspects of IC technologies covering microwave, millimeter-Wave and in recent years has started to expand its role into the wireless communication ICs and optical areas. The function of the committee is to emphasize emerging technologies and advancements in the integrated circuit area and to bring these advancements into a forum (such as

panel sessions, workshops, focus sessions, topical meetings and special issues of the IEEE MTT-S Transactions) in which the information can be disseminated to a wide variety of interested people. Our committee of 12 is quite active and generally sponsors/organizes three to four workshops and two to three panel sessions at the annual International Microwave Symposium. The Committee Members and their affiliations are shown below.

Our Committee meets twice a year, first at the Microwave Sympo-

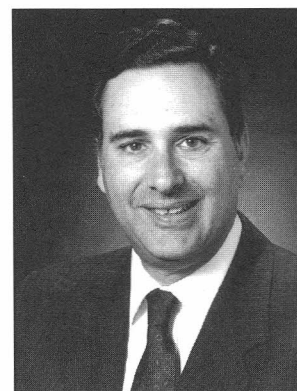
sium Technical Program Committee meeting in the winter and again at the Microwave Symposium in the Summer. The Chairman serves for three years and the members serve on the committee as long as they are active. New members are selected by the committee. Many Members of the committee present lectures in their areas of expertise at local meetings of MTT-S chapters. We are committed to serve our members in the field of RF, Microwave and Millimeter-Wave Integrated Circuits. Feel free to contact me if you have inputs for our committee or if we can assist you.

Committee Members	Affiliation	Telephone
Fazal Ali	Westinghouse Electric Corp.	(410)-765-4540
Gailon Brehm	Texas Instruments	(214)-995-5571
Charles Buntschuh	Microwave Engineering Services	(516)-427-1149
Rudolph Henning	University of South Florida	(813)-974-4782
Derry Hornbuckle	Hewlett Packard	(707)-577-3658
Rolf Jansen	Jansen Microwave	49-21028 3095
<i>Douglas Maki</i>	Raytheon Company	(508)-470-9502
<i>Edward Niehenke</i>	Westinghouse Electric Corp.	(410)-765-4573
<i>Barry Spielman</i>	Washington Univ. in St. Louis	(314)-935-5565
<i>Frank Sullivan</i>	Raytheon Company	(508)-858-4298
<i>James Wiltse</i>	Georgia Tech Research Inst.	(404)-894-3494
Tsukasa Yoneyama	Tohoku University	81-22-227-6200
(past chairmen in italics)		



# Highlights from the Technical Activities Board Meeting

## November 12, 1995



by Eliot D. Cohen

The third meeting of the 1995 Technical Activities Board (TAB) was held on November 12, 1995 at Marriott's Mountain Shadows Resort and Golf Club, Scottsdale, Arizona. The following actions were taken:

### *Elections*

TAB announced the following election results:

- Mr. Harold L. Flescher was elected Chair of the TAB Liaison Council for the term 1996-97.
- Prof. Tariq S. Durrani was elected Chair of the TAB Periodicals Council for the term 1996-97.
- Mr. John S. Ryan was elected Chair of the TAB Nominations and Appointments Committee for the term 1996.
- Dr. W. Dexter Johnston, Jr. and Dr. Richard D. Klafter were elected Society President
- Representatives to the TAB Finance Committee for the term 1996
- Dr. Walter J. Karplus and Ms. Deborah Flaherty Kizer were elected Society President Representatives to the TAB Management Committee for the term 1996.
- Dr. Peter N. Clout and Dr. Edward K. Reedy were elected Society President Representatives to the TAB Nominations and Appointments Committee for the term 1996.
- Mr. Richard L. Doyle, Dr. Fred C. Trutt and Mr. John Wassel were elected Society Representatives to the TAB Steering Committee on

Design and Manufacturing Engineering for the term 1996. Dr. Myron Kayton, Dr. Richard D. Klafter and Dr. Ralph W. Wyndrum, Jr. were elected for the term 1996-97.

- Mr. Pierre A. Thollot and Dr. Stephen H. Unger were elected Division Director Representatives to the TAB Management Committee for the term 1996.
- Dr. James H. Aylor and Prof. Tzyh-Jong (T.J.) Tarn were elected Division Director Representatives to the TAB Nominations and Appointments Committee.

### *1996 Memberships of TAB Councils*

TAB announced the 1996 memberships of the TAB Periodicals, Products and Technical Meetings Councils.

### *1996 TAB Budget*

As requested by the TAB Finance Committee, TAB approved the 1996 TAB Budget.

### *TAB Environment, Health and Safety Committee Surplus*

As requested by the TAB Finance Committee, TAB approved that the TAB Environment, Health and Safety Committee be allowed to keep the surplus from their activities, retroactive to 1995, in an effort to make them independent from TAB funding. If expenses exceed their surplus, the Vice President—Technical Activities will be

requested to cover costs from the Vice President's contingency fund.

### *1996 Society/Council (S/C) Budgets*

As requested by the TAB Finance Committee, TAB approved the 1996 Society/Council (S/C) budgets.

### *IEEE Electronic Communications Department*

As requested by the TAB Finance Committee, TAB approved a one time expenditure of \$40k in 1995 to help support the IEEE Electronic Communications department, with no implied commitment in 1996. The \$40k expenditure will be funded from the All Periodicals Package (APP).

### *Student Branch All Periodicals Package (APP) Subscriptions*

As requested by the TAB Finance Committee, TAB approved restructuring the Student Branch All Periodicals Package (APP) subscriptions to permit the Student Branches to select varying numbers of journals at the Student rate.

### *Proposed Revisions to IEEE Bylaw 109.2—Dues, Fees and Regional Assessments*

As requested by the TAB Liaison Council, TAB endorsed modifications to IEEE Bylaw 109.2 to allow Societies to set their own policy with respect to

services provided to IEEE Life Members after December 31, 1996, for recommendation of approval by the IEEE Board of Directors.

#### ***Staff Recognition for Excellence Award***

TAB approved the elimination of the Staff Recognition for Excellence Award and noted that other methods of recognizing staff achievement are available.

#### ***Camera-Ready Pages of Publications***

As requested by the TAB Periodicals Council, TAB approved that camera-ready pages of publications produced outside the IEEE be weighted the same as camera-ready publications produced inside the IEEE.

#### ***Proposed Revisions to IEEE Policy Statement 6.10—Overlength Page Charges***

As requested by the TAB Periodicals Council, TAB endorsed modifications to IEEE Policy Statement 6.10 regarding overlength page charges, for recommendation of approval by the IEEE Board of Directors.

#### ***Publications Produced by IEEE***

TAB referred back to the TAB Periodicals Council a Motion that each publication produced by the IEEE be charged the IEEE page rate for their actual page count or 95% of their page budget, whichever is greater.

#### ***Discount to Subscription Agents***

As requested by the TAB Products Council, TAB approved a 50% discount to subscription agents for new All-Society Periodicals Package (ASPP) subscriptions.

#### ***Information About IEEE Periodical Publications and Proceedings***

As requested by the TAB Products Council, TAB approved a resolution with guidelines to provide accurate,

timely and cost-effective information about all IEEE periodical publications and conference proceedings.

#### ***IEEE/IEE Electronic Library (IEL) Network Pricing***

As requested by the TAB Products Council, TAB approved the IEEE/IEE Electronic Library (IEL) network pricing.

#### ***Formation of a Society from the IEEE Solid-State Circuits Council***

TAB endorsed the formation of a Society from the IEEE Solid-State Circuits Council following the proposal outlined by the IEEE Solid-State Circuits Council, with a Field of Interest as submitted. The Society name is to be developed in conjunction with the IEEE Circuits and Systems Society, for submission to TAB for recommendation of approval by the IEEE Executive Committee. The new Society would be in place January 1, 1997.

#### ***IEEE Fellows Issues***

TAB took the following actions on items relating to IEEE Fellows:

- TAB requested that the IEEE Fellows Committee change the Fellows nomination due date for 1996 back to April 15, 1996. It is currently set at March 15, 1996.
- TAB requested that IEEE staff review the Fellow nomination review procedure with a goal of speeding processing and improving volunteer support.

#### ***1996-97 TAB Operating Plan***

TAB endorsed the 1996-97 TAB Operating Plan.

#### ***TAB Strategic Planning and Review Committee Charter***

TAB approved revisions to the TAB Strategic Planning and Review Committee Charter.

#### ***TAB Chapters Coordinating Ad Hoc Committee***

TAB failed to approve a Motion for a new TAB Chapters Coordinating Ad Hoc Committee.

#### ***Society Reviews***

As requested by the TAB Society Review Committee, TAB accepted the reviews of the IEEE Electromagnetic Compatibility Society (EMC), IEEE Electron Devices Society (ED) and IEEE Professional Communication Society (PC).

#### ***Society Awards***

TAB approved the following actions regarding awards:

- Revision to IEEE Information Theory Society Claude E. Shannon Award
- Establishment of IEEE Industry Applications Society Power Systems Protection Prize Paper Award
- Establishment of IEEE Engineering in Medicine and Biology Society EMBS
- Whitaker Foundation Student Design Competition Awards
- Establishment of IEEE Industry Applications Society Myron Zucker Undergraduate Student Design Awards
- Establishment of IEEE Industry Applications Society Myron Zucker Graduate Student Design Award

#### ***Next Technical Activities Board Meeting***

The Technical Activities Board will hold its next meeting in San Diego, California, on February 17, 1996.

#### ***TAB Governance Workshop***

The workshop for all 1996 Society/Council Presidents and incoming officers is being held on February 15, 1996, in San Diego, California, in conjunction with the TAB meeting.

#### ***TAB Finance Workshop***

The workshop for all Society Treasurers and Financial Officers is scheduled for April 12, 1995, at the IEEE Operations Center.

# Helpful IEEE Phone Numbers

Here's a list of helpful people in IEEE that members may need to contact:

Regional Activities Department  
General Information  
(908) 562-5501 (voice)  
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Bill Anderson, Manager  
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Washington, DC 20036-5104  
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(202) 785-0835 (fax)  
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Nancy Dibiase, Supervisor  
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(908) 981-9667 (fax)  
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Gloria Gutwein, Supervisor  
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Manager  
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Piscataway, NJ 08855-1331

# Faces: New and Familiar

## Steve Wolfe

The newest member of the Regional Activities Department is Steven M. Wolfe, who joined the IEEE as Membership Director on May 22. No stranger to volunteer organizations, Steve brings a wealth of association membership experience with him; he was previously membership director for both the Public Relations Society of America and the Risk and Insurance Management Society.

Steve says he has begun work on two of his initial projects. The first is to strengthen Headquarter's ability to help Sections and Regions conduct effective and efficient membership development programs on a local basis. The other is to facilitate the generation and implementation of a master plan for membership development which will act as a guide for a more productive and effective IEEE Membership Director program for years to come.

## Barbara Koenig

Barbara Koenig, who has been a Regional Activities staff member for almost eight years (in Admission and Advancement), is now Staff Assistant for Student Services. Starting her new job June 5, Barbara's expertise and IEEE background have made her an immediate asset to her new department. In addition to her other duties, Barbara is responsible for recording Student Branch officer changes and filling requests for Student Branch supplies.

Welcome aboard and best of luck, Steve and Barbara!

# AICN Consultants' Directory

The Alliance of IEEE Consultants' Networks (AICN) has published its first national Directory of Electrotechnology Consultants. The Directory includes information on the 30 existing consulting networks in the

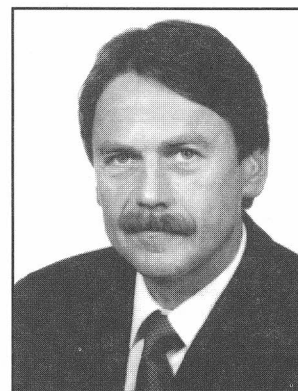
USA as well as information on IEEE members who are consultants. It will be extensively publicized to industry and government, and is available free to potential clients in print, on disk, and on the Internet for one year.



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# IEEE Division IV

## Electromagnetics and Radiation



*by Rolf H. Jansen  
Director  
Division IV*

Previously described as a Division not leading the pack in transnational membership with its Societies, in 1995 Division IV participated in one of the major initiatives within IEEE to develop a foothold in Eastern Europe (EE) and the Former Soviet Union (FSU). This initiative started originally as a joint activity of the Microwave Theory and Techniques Society and the Electron Device Society and is now growing into a joint effort of Division IV and Division I with its incoming Director Mike Adler. As a result of this cooperation, 6 new chapters have been established in the EE/FSU region by the end of 1995 and 4-5 more in other parts of Region 8 and in Region 10 have been set up or are close to being formed. Antennas and Propagation has been encouraged to join in, making use of their natural links of technical interest and first progress is seen in this respect, too. Further, the Electromagnetic Compatibility Society is a natural contender to benefit from the synergies of this process. With a continuation and consolidation plan at hand already for 1996, it is very likely that there will be 4 more chapters created in EE/FSU by the mid of the coming year under the umbrella of the mentioned initiative.

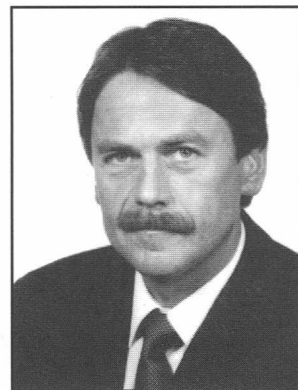
Working as a Division Director, the first year of my term of office gave

me a lot of insight into the globalization process within the Institute and the organizational structures engaged in it. Serving in parallel as a member of the RAB/TAB Transnational Committee brought me into direct contact with other initiatives and groups involved in the development of transnational membership and in the improvement of services for this IEEE community outside of the U.S. Last but not least, sitting together in the Board with the Directors of Regions 8-10 provided the necessary cross-links with RAB and the procedures and committees installed there to pursue similar goals. In this complex organizational environment, it became very obvious to me that I would have to work as a Division Director on enhancing the coordination of the many disconnected structures and activities dealing with Transnational Activities and Globalization within the IEEE. This will help all Societies in Division IV and beyond to achieve their transnational goals. As a specific step, the development of a model (organizational structure, interaction and guidelines) that shall serve as a vehicle for transnational activities for the IEEE Societies was brought on the way by myself within the RAB/TAB TC. In the relatively short term, the Magnetics Society and the Society for Nuclear

and Plasma Sciences could benefit from this with their membership potential in the EE/FSU region. In the joint effort conducted by Divisions I and IV, the model will be modified and optimized to be truly applicable to all IEEE Societies. While this can be well done within the framework of the current IEEE and Society bylaws, the coming Organizational Improvement process may also provide the chance to yield the presently disconnected structures well coordinated and efficient.

During the second year of my term of office as Division Director, I shall try to link my transnational activities with an initiative in Educational Activities, conforming with my statement of candidacy. Improving the quality of engineering education is an important topic presently in Europe where the IEEE could also play its role of technical leadership and step out of the U.S. to contribute to educational program definition as a global promoter of high standards. A first brainstorming on this was already conducted together with Jerry Yeargan, the incoming Vice President of Educational Activities. I look forward to another exciting year of service. Thanks to all of you in Division IV and beyond for your support.

# Report on the Current Joint IEEE MTT/ED Initiative for Aiding Eastern Europe and the Former Soviet Union



by Rolf H. Jansen  
IEEE Division IV Director  
(Electromagnetics and Radiation)  
RAB/TAB Transnational Committee  
Member  
MTT-S Transnational Committee Co-  
Chairman

The initiative reported here has found much interest recently on various levels of the IEEE organization and is a noteworthy example of the cooperation of two Societies (MTT and ED) being associated with different Divisions. The organizational structures employed during the initiative may become a suitable general model for Society-based membership development outside of the US and the first step planned is to make this model popular within Division IV. During the June 1995 RAB/TAB Transnational Committee Meeting, a motion presented by myself was already approved, namely that a model be developed for application throughout IEEE Societies and the first draft of such a model will be described in detail in a separate contribution. The initiative reported here is just one example of what can be done out of Society-based transnational activities in direct cooperation with Headquarters.

Under the presidency of Peter Staecker, 1993 MTT-S President, the first ideas for the initiative were generated as a result of the end of the "cold war." It was realized then that EE and the FSU was a large geographical area with virtually no IEEE membership at all, except for a few engineers privileged under the previous political system. It needed an organi-

zational effort to get into contact with engineers in the EE/FSU area, identify their interest, help to form membership and Chapters, so that these members of the electrical engineers community could participate in the worldwide exchange of technical information being a natural feature of IEEE. Upon request by Peter Staecker, the MTT-S Transnational Committee established an Ad Hoc Committee for aiding EE/FSU in 1993 and started to work on the initiative. The Ad Hoc Committee integrated individuals from Central Europe where in the period beforehand well working Chapters had already been established in Hungary, Poland and Czechoslovakia. Two individuals who particularly contributed to the Ad Hoc Committee work and the success of the described initiative are Dr. Ari Sihvola of the Finland Chapter and Prof. Jozef Modelski of the Polish Chapter. Thanks are also due to Andre Vander Vorst, IEEE Region 8, for his continuous support.

The outlined initiative started with the development of an activity plan and with the generation of a status report describing the situation in EE/FSU with electrical engineering key locations, institutions, potential membership figures and country overviews listing IEEE Membership, Sections and Chapter status. The Polish MIKON

Conference was identified and favored as one of the possible focus points for interaction with the existing and future membership in the EE/FSU area. As far as possible, even membership details and names, addresses etc. were collected and listed by countries.

Parallel to the start phase of the initiative, the ED Society was working on an ED-S globalization trust and it became obvious that there were closely related interests between ED-S and MTT-S. One of their major activities in EE/FSU was the Eastern Europe Library Project conducted by Mike Adler, ED-S 1993 President, organizing free IEEE journal supplies for selected public libraries in the region. This resulted in an October 1993 MTT-S AdCom requirement to coordinate the EE/FSU initiative with ED-S. Via the Society Liaisons the coordination between the two Societies began and the first ideas of closely coordinating the activities came up. In May 1994 the MTT-S Transnational Committee presented a 30 page overview and a detailed action plan to jointly promoting with ED-S the formation of MTT/ED Chapters in the EE/FSU area. MTT-S AdCom approved the planned procedures contingent to coordination with ED-S. The plan was based on the fact that a typical member in EE/FSU with an engineering income level of US \$ 30

per month would not be able to pay even the minimum income fee for IEEE membership. It had become obvious that for a certain transition time a small number of members in various focus areas would have to be fully subsidized in order to create IEEE activities and a reasonably sized membership in the EE/FSU vacuum within a reasonable time span. During this transition time, with the help of the Societies, Chapter activities would have to be created to attract finally self-paying members from the industry in the area and gradually put the IEEE members in EE/FSU on their own feet.

Specifically, it was decided to select 6 focus areas and sponsor 12–14 members in each area with the goal of Chapter formation and the setting-up of local MTT/ED-related activities. The plan was approved first for a time period of 3 years, costing each of the involved Societies a total of about US \$ 2000,— per year. In August 1994 the agreement with ED-S on the joint initiative was finalized and approval by Jim Crescenzi, the 1994 MTT-S President, was given to start the budget-relevant activities. The 6 focus areas to be addressed first were selected as St. Petersburg/Russia, Vilnius/Lithuania, Lvov-Kharkov/Ukraine, Sofia-Varna/Bulgaria, Saratov-Penza/Russia and



Moscow/Russia. The selection made was a result of the previous status analysis for EE/FSU and of personal contacts in the areas existing for myself and the mentioned Ad Hoc Committee members. The named locations are shown in the overview map given

above together with Central European Chapter locations and places of relatively high MTT/ED-related activity.

At the time when the budget spending was approved, Bill Van Der Vort, ED-S director at IEEE Headquar-

**Table 1.**

Status 7/95	Bulgaria Varna-Sofia	Lithuania Vilnius	Russia Moscow	Russia Russia Saratov-Penza	Ukraine St. Petersburg	Lvov/Charkov
Chapter Organizer	H. Hristov	B. Levitas	V. Lyubchenko	M. Davidovich	S. Tretyakov	N. Voitovich
Application Forms	1/95 (14)	12/94 (13)	expected in 8/95	3/95 (12)	10/94 (12)	9/94 (13)
IEEE Membership Numbers Assigned	1/95	2/95		4/95	11/94	10/94
Petition to Form a Chapter	3/95	4/95		5/95	1/95	1/95
Approval Letter/ Chapter Formation	June 26, 1995	May 3, 1995		July 11, 1995	April 6, 1995	Jan. 26, 1995
Also Interest in AP-Society	X	X	X	X	X	X
First Activities		Workshop Planned for September 1995			Workshop Parallel to URSI May 1995	

ters, joined the MTT-S team. Of course, Bill had been doing similar preparatory work within ED-S before the approval for the initiative was jointly given by ED-S and MTT-S. Also, it turned out that Bill Van Der Vort's joining the team was a very happy event which resulted in excellent teamwork. Bill has direct access to all groups at IEEE Headquarters and my role—being located in Region 8—is the direct interaction with the Ad Hoc Committee and the EE/FSU selected Chapter Organizers.

Needless to say, a variety of difficulties had to be solved in each case, be it accelerating the approval of a not yet existing Section (Bulgaria) or the affiliation of a Chapter with a Section sitting in the neighbour country (Lithuania/Poland). Going through learning phases, organizational difficulties, new cultural experiences etc. was all in all a lot of fun, particularly the pleasant cooperation with Bill Van Der Vort, ED-S Director, and the key Ad Hoc Committee members Ari Sihvola and Józef Modelski.

As of mid July 1995 the results achieved under the initiative for membership development and Chapter formation are listed in Table 1.

This table shows that 5 Chapters have been formed and approved already, the Saratov-Penza Chapter in

Russia has just received the Section's approval and came into existence recently. Chapter formation in Moscow (number 6) is now on the way with a new widely accepted Chapter Organizer. Originally this should have been the easiest one considering the membership concentration in Moscow, however due to competing interest in the area and a controversial first choice of the Chapter Organizer, this process was delayed. We are now in contact directly with the IEEE Russia Section and are creating a broad agreement in the Moscow membership community for the details of this Chapter formation. In the second half of September there will be a Region 8 ED-S Chapter Chairpersons meeting at The Hague, Netherlands, and most of the new Chapter Chairmen have approved their attendance. The IEEE Russia Section Vice-Chair is also planning to attend, so that this meeting will provide an excellent opportunity for Bill Van Der Vort and myself to discuss the new situation and problems of mutual interest with the EE/FSU participants.

As a final comment in this report, we are now thinking on all levels, to which I have access as the Division IV Director, about the second phase (consolidation phase) in order to stabilize the result of this initiative. Within the RAB/TAB Transnational Committee information exchange with other IEEE levels working on transnational issues

and globalization information exchange with other IEEE levels working on transnational issues and globalization is now being created. Also my work in the RAB/TAB Technical Committee and in the IEEE Board of Directors provides now the knowledge and background to really develop a good transnational cooperation model, suitable for the majority of IEEE societies and for efficient interaction with RAB/TAB and Headquarters.

I am planning to outline and present this model in the near future to all Societies and to RAB/TAB Technical Committee, starting first within Division IV. Preliminary discussions have been conducted with AP-S during their last AdCom meeting at Newport Beach, CA, mid of June. As the above table indicates, AP-S is the most natural partner for all of the newly formed Chapters in EE/FSU and each of these Chapters has already a small number of members having AP-S membership in addition. I look forward to hearing the AP-S decision how they would like to join in with the initiative. Needless to say, that it would be a pleasure to see more Division IV Societies make use of the established links, contacts and procedures for their own membership development in EE/FSU. Please contact me if you think that our experience in the region could be exploited for your Society plans too.

## Just What We Need...Another Acronym

Actually, FOD may be exactly what you need. FOD stands for Fax On Demand, and is a new service that the Regional Activities Department will be providing in the near future. Scheduled to go on-line on a limited test basis in early September, FOD will allow you to call the Regional Activities faxserver computer from your fax machine, seven days a week, 24 hours a day. Then, you are provided with a list of the information items available. After making your selection, you press the "start" key on your machine, and the faxserver sends the information

you requested. This is called same-call faxing; no additional phone calls are necessary, and you receive the document you requested almost instantly. Another benefit is that the image you receive will be as clean as possible, since the faxed material is not scanned, but computer-generated.

FOD will start modestly. About 25 of RAB's most requested forms and information documents will be available when the service first begins. Plans are to significantly increase the

number of documents and forms you can obtain through FOD over a period of time. We will have four phone lines initially, and be able to support up to 64 should the demand require them.

Just think! Call when it is convenient for you — no need to call during IEEE office hours. No waiting to receive the information or forms you need.

Watch for more information about FOD in future issues of SCOOP and The Institute.



# Yugoslavia IEEE/MTT-S Chapter Under Sanctions



by Branka Jokanovic  
Chair of the YuMTT-S Chapter

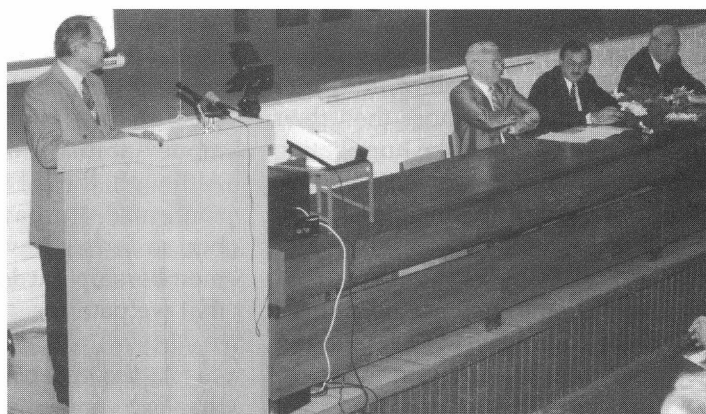
This is yet another sad story about Yugoslavia—about the part of the country away from the raging war, which is permanently deteriorating under the strains of the UN sanctions imposed against it in 1992. This is a story about Serbia and Montenegro, which are the only two states that have remained in the Yugoslav Federation. Another four—Slovenia, Croatia, Bosnia-Herzegovina and Macedonia—seceded one after another, from the former Federation in 1991.

Montenegro and Serbia, which then also included Macedonia, were the only independent states when Yugoslavia was integrated in 1918, after the First World War. The other members of the newly created federation used to be parts of the Austro-Hungarian monarchy. From the very beginning of its life as a federation, Yugoslavia was a linking point between the West and the East, in both cultural and political respects. This political creation lived for more than seventy years. It survived the Second World War and the Cold War.

I think we used to be a happy nation before this nightmare began. Since 1991 catastrophes have been coming in short intervals—we have hardly been able to take a breath between two blows. In the same year of 1991 more than half a million of refugees fled Croatia and Slovenia to find asylum in

Serbia. In 1992 war in Bosnia began and severe sanctions against Serbia and Montenegro were imposed. All financial transactions outside Yugoslavia were cancelled. To travel abroad, the Yugoslavs had to have visas for almost all countries and people queued in front of embassies in Belgrade. Air traffic to and from Yugoslavia was banned. Private letters sent abroad returned. We were expelled from the world community. This country turned into a concentration camp.

Yugoslav companies could no longer trade or cooperate with foreign partners. People started losing their jobs. Pensions were cut down to the minimum. Educated young people were leaving the country massively. Unofficial statistics suggest that around 50% of electrical and electronics engineers under the age of 35 have left the country to take jobs in Canada, Australia, New Zealand and the Republic of South Africa. Black-market-ing flourished. People started selling

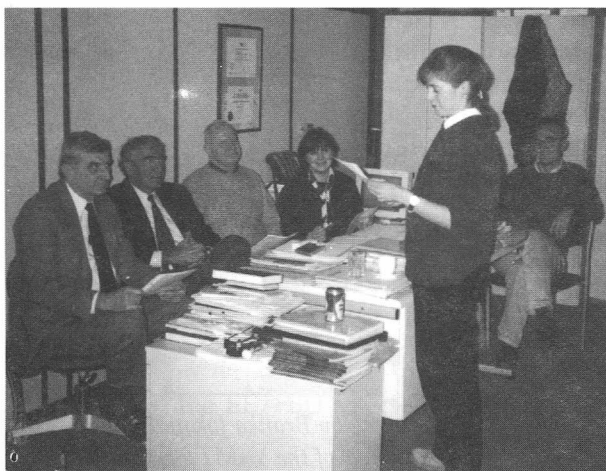


Opening Session at 2nd Conference Telsiks '95, 10-12 October 1995—Telecommunications in Modern Satellite and Cable Services, Nis. Standing: Prof. Radojkprot; sitting: Prof. I. Stojanovic, Prof. B. Milovonovic, Prof. J. Surutka (Chairman).

all kinds of things on the streets: gasoline smuggled from the neighbouring countries, food and drugs, personal belongings.

The galloping inflation reached 20% a day at the end of 1993. Stores emptied. We witnessed the crisis that reminded very much of the one in Germany of the 20s. Then the restrictions of electricity consumption came. Whole parts of towns were cut from the public network for hours. Central heating was out of work. Lifts in high buildings stopped. People were desperate.

When we thought that finally peace would be reached, in August



*The Organizing Committee of the 5th Anniversary Celebration during informal discussion. From left: (sitting) B. Jovanovic, Prof. A. Nestic, Prof. N. Dekleva, B. Jokanovic, S. Jovanovic; (standing) I. Radnovic.*

1995, after the Croatian attack of Kraina, another 100,000 people, mainly farmers and their families, left their homes with nothing more than their clothes on and started the humiliating journey on their tractors to Serbia. We could only watch this helplessly, unable to feel more pain.

These are the circumstances under which the Yugoslav MTT-S Chapter has been working. It may seem impossible that our Chapter could work at all. Our only professional contacts with the world have been through the organisation of IEEE.

During the Yugoslav crisis, when the press world-wide was leading terrible campaign against the Serbs, the IEEE passed an exam as an international, highly professional organisation that follows its Code of Ethics and has not discriminated its members in any way. More than that, people from the IEEE did their best in order to make our life easier. For example, when researchers from Yugoslavia were not able to get the U.S. visa to present their papers and participate in the IEEE conferences due to U.N. sanctions, they were writing letters to the Office of Foreign Assets Control.

I would like to cite a part of the letter sent to Washington D.C. by Prof. Rolf Jansen, Director Division IV:

"I consider it of utmost importance to let researchers participate in open exchange of technical information, that is the policy of the IEEE."

Although this kind of action was without success, we highly appreciate it because it gives us hope that we are not left alone.

The Yugoslav MTT-S Chapter has about 30 members, but since last year 16 of our members have not been registered as the IEEE members and have not received the IEEE publications. In April 1994, we made an effort to find the way to effect payment of the annular membership fee, because there is no regular transfer of money abroad due to the sanctions. Although, the IEEE Operation Center confirmed our payment last September, so far we have not received our membership cards and publications that we paid for.

At the end of February this year, thanks to precious help of Dr. Martin Schneider and Bill Hunter, the IEEE Membership Development, we were informed that members who are not registered for 1994 are now registered for 1995 and that back issues of IEEE publications for 1994 would be sent to these members.

In the meantime, the IEEE customer service representative let us know that all mail was suspended for Serbia/Yugoslavia, because U.N. sanc-

tions prohibited commercial mail to this area and when the situation is resolved, these members would be serviced.

But solution was found thanks to Ed Niehenke who organised the publications to be sent to Budapest to Prof. Frigyes, Hungarian Chapter Chairman. Finally, we went to Budapest by car and took the publications to Belgrade.

I would like to remind of the letter sent to Prof. Jansen two years ago, when he asked me what people from AdCom could do for Yugoslav Chapter in these hard times:

"Finally, I do not expect any real help from people who are in AdCom because it is very difficult to help those designated as the world enemies and monsters as we are here. Also more that 100 000 very young and promising people have left Serbia, but I don't think that we all should leave this country. The only thing I expect from distinguished people I met in IEEE is not to take part in the latest holocaust against Serbs. It seems that human beings can not live without wars and holocausts.

Now I know that I was not right, because the IEEE people have helped us so much, nevertheless how much effort it required. They gave us not only moral support but also real help to stay within the profession and possibly to stay normal persons.

Finally, we do hope that other IEEE Chapters will never share our bad experience with the sanctions.



*Prof. Nikola Dekleva giving lecture on Recent Advances in Medical Applications of Microwaves at the Faculty of Electronics, Nis. More than one hundred people were present.*

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# Report of the West Ukraine MTT/ED/AP Chapter

*Nikolai Voitovich, Chapter Chairman  
Sergey Prosvirnin, Vice-Chairman*

The West Ukraine MTT/ED/AP Chapter is formed January 26, 1995. It consists of 13 IEEE members. There are 10 members from Lviv and 3 members from Kharkov. This new members joined IEEE owing to the financial support received from MTT and ED Societies. Chapter presents MTT and ED Societies interests in all Ukraine. The Chapter's Chairman is Prof. Nikolai Voitovich (Lviv), Vice-Chairman is Prof. Sergey Prosvirnin (Kharkov). This report was prepared by them together.

For us it is very important we have become the members of IEEE. It has given us the opportunity to receive information about symposiums, conferences and other events concerning to our professional interests which were almost inaccessible for us earlier. The receiving of IEEE magazines with results of the last achievements in a scientific world is even more important for us. In last years our libraries did not received these editions. At present the members of Chapter make accessible these editions for the specialists in their regions and supply scientific libraries with these editions.

## Activity of the Chapter in this Year:

Three technical meetings were held by the Chapter (2 at Lviv and 1

at Kharkov). The main activity of the Chapter in the past months was directed to preparation and to holding Seminar/Workshop "Direct and Inverse Problems of the Electromagnetic and Acoustic Waves Theory." The Seminar took place in vicinities of Lviv and was finished two days ago. We think this Seminar is the main result of the Chapter's activity.

The similar seminars were conducted annually in 1982-1990 in Lviv. Traditionally they were assembling a small group of the scientists and engineers from different cities of former Soviet Union, connected by general or close themes of research. Seminars were not organized in the few last years because of non-scientific reasons.

Basically the financial support of the ED and MTT Societies helped to reinstate work of this seminar. The seminar organizers are sincerely thankful to Dr. Van Der Vort (EDS Executive Director) and to Dr. Jansen (4th Division Director) for their help in this matter.

There were 37 reports from Lviv, Kharkov, Moscow, Nizny Novgorod, Tbilisy, Warsaw submitted at the Seminar, September 19-21, 1995. Topics of the reports concerned to problems of diffraction and scattering of waves by bodies with a various structure and geometry, of synthesis and renewal of the shape of radiating and scattering

objects, of influence of regular and random inhomogeneities on the characteristics of electromagnetic or acoustic fields. The Proceedings of the Seminar were prepared and published. There are brief texts of the reports in Russian, Ukrainian, English, or French and abstracts in English in this book. The Proceedings are attached to this report.

Unfortunately a part of the authors of papers have not arrived to the Seminar because of financial difficulties. The financial support awarded by MTT-S for holding the Seminar was not received to its beginning and consequently was not used completely. Almost all EDS's financial support was used to preparation of the Seminar.

## Future Activity Plans

It was resolved the Seminar would be hold annually. The brief name will be DIPED (Direct and Inverse Problems of Electrodynamics). In particular, in the next year the seminar will be hold as a workshop during the International Conference "Mathematical Methods in Electromagnetic Theory" (MMET'96) in Lviv. The Chapter is taking active participation in organization of this Conference in whole. The Chairman (Prof. Z. Nazarchuk) and 5 members of the Organizing Committee are members of our Chapter. We will request a special subsidizing for this Conference.

We plan visits of the chapter members to some cities of Ukraine with the purpose of explanation of aims and problems of the IEEE and of expansion of IEEE membership. The organization of a technical meetings with invitation of participants from different cities is planned too.

We plan to cooperate with other Chapters from FSU and Eastern Europe which have the same scientific goals. The visit of our Chapter's Chairman and Secretary / Treasurer is scheduled to Warsaw before the end of this year for acquaintance with work of Poland ED and MTT/AP Chapters and organization of cooperation with them.

It is desirable to organize meeting of representatives of chapters from FSU and Eastern Europe for their cooperation. Our Chapter can offer Lviv as a place of such meeting.

## Problems and Propositions

Chapter has significant difficulties in realization of some measures. In particular we can not invite those or

other foreign lecturers for reading of lectures and exchange by the information because of financial difficulties. At the same time a number of our scientists and engineers have a very high professional level. They can suggest some interesting themes for inclusion into the IEEE programs. The Chapter plans to work out the list of these themes and lecturers.

Unfortunately the scientific results of the scientists from FSU are not always accessible to their western colleagues because of language barriers. We think the editors of IEEE issues could propose to specialists of the world level from FSU by through Chapters the preparation of scientific reviews.

We know about the Eastern Europe Library Project. We hope that in the list of cities in which are planned to create IEEE libraries will be included such scientific and industrial centers of Ukraine as Lviv, Kharkov, Kiev.

There are a number of technical difficulties in Chapter activity. One of them is connected with bad state of telecommunication and a low level of their development in our country.

Only e-mail functions relatively reliably basically due to the support of the International Scientific Foundation. The Chapter, the Institutes, on the basis of which exists it, have not financial means for purchase of modern communication facilities ( fax, modems and other).

There are significant difficulties in the membership payment, in subscription of the IEEE issues, as well as in procedure of the receiving of Societies financial support. These difficulties are connected with bad system of banks in our country. This circumstance constrains the attracting of new IEEE members, joining other IEEE Societies, etc. The keeping of a part of Chapter's financial support on account IEEE with the subsequent offset its as membership payment and subscription would become acceptable exit from this situation.

We understand IEEE has a limited resources for chapters in FSU. We don't hope for solving all our problems, but we think it is possible to formulate it here.

We are thankful for the possibility to work in the IEEE community. Thank you.

# IEEE-USA's 9th Biennial Careers Conference

The U.S. Activities division of the Institute of Electrical and Electronics Engineers Inc. (IEEE-USA) will host its Ninth Biennial Careers Conference on April 11-12, 1996, in Minneapolis. The conference theme, "Winning in a Global Economy: Helping Engineers Develop Career Resilience," will emphasize new information that can help organizations, managers and engineers create environments for successful, effective engineering careers.

Focusing on success stories of individuals and the organizations where they work, the conference goal is to encourage and equip engineers for fruitful careers in an era of globalization, re-engineering,

downsizing and outsourcing. Participants will learn from and exchange ideas with experts from some of America's leading businesses and institutions, including AT&T Bell Labs, Du Pont, 3M, Exxon and Texas Instruments.

The conference will offer sessions on organizational success stories, surviving and thriving in today's career environment, strategies and skills for career successes, new career roles for engineers, and educating engineers for work in the 1990s and beyond. Workshops will concentrate on transitions and conflicts, and keynote speaker Michael Bonsignore of Honeywell will give a CEO's perspective on career

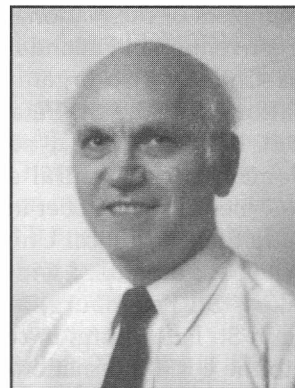
development for engineers.

For more information or to register, contact IEEE-USA's Scott Grayson at (202) 785-0017, ext. 339 (phone); (202) 785-0835 (fax); or [s.grayson@ieee.org](mailto:s.grayson@ieee.org) (e-mail); or access IEEE-USA's World Wide Web site at <http://www.ieee.org/usab>.

The IEEE is the world's largest technical professional organization, with a membership of more than 315,000 electrical, electronics and computer engineers in approximately 150 countries. IEEE-USA promotes the career and technology-policy interests of the nearly quarter-million IEEE members in the United States.



# Region 8 MTT-S Chapter Round-up



by Roger Pollard  
MTT-S Transnational Committee  
Region 8 Coordinator

The Chapters in Region 8 have increased their activities during 1994/95 and their mixture of technical lectures, workshops and conferences offer something for all members, whether they work in industry, government or academia.

The MTT Society program to encourage the formation and development of Chapters in the countries of Eastern Europe, especially those which comprised the former Soviet Union has been very successful and 1995 has seen the birth of six new Chapters in the Region. We look forward to reports of their activities in 1996.

It is especially gratifying to be able to include a report on the strong activity by the Yugoslavian Chapter who manage to maintain technical meetings in a part of world ravaged by war which would be the envy of many Chapters in peaceful countries.

The annual Region 8 Chapter Chairpersons Meeting was held during the European Microwave Conference in Bologna and was, as usual, very well attended by representatives of most of the Chapters in Region 8.

The following summary includes information provided by those Chapters who were able to respond to my request for information in time for the publication deadline. If I have omitted your activities, please accept my apologies; I will try and include your Chapter in a future issue. I hope that this review gives some of the flavor of the wide range of Chapter activities in Region 8 during the past year. Once again, we especially thank the MTT-S Distinguished Lecturers who have

given of their time to visit Region 8 during the past year.

## Czechoslovakia

*Chairman: Zbynek Skvor*

The MTT/AP Joint Chapter has completed two years of existence. The chapter co-organized RADIOELEKTRONIKA'95, a two day radioelectronics conference in Brno (April 26-27, 1995). Attendees enjoyed about one hundred papers presented in oral sessions and another forty in poster sessions including a special session devoted to microwaves.

The most important event has been the MITEKO'95 conference, held from June 22 to June 23, 1995, in Pardubice. This national microwave conference with quite a nice tradition has been organized by the chapter. With the aid of multiple supporters, including MTT-S, the conference has attracted more than hundred participants. This conference included an exhibition and a workshop, started by the industry. It was a pleasure to hand out a number of IEEE application forms during MITEKO.

A "Thesis competition" has been run in order to help final year students know about MTT-S. The results are to be officially announced during Workshop on CAD & CAE, to be held November 30 in Prague. This Workshop has now been organized since 1993.

## Finland

*Chairman: Ari Sihvola, Helsinki University of Technology*

Technical meetings:

- November 1, 1994—"New developments in the electromagnetics of exotic materials," Dr. Sergei Tretyakov (St. Petersburg State Technical University, Russia)
- November 20, 1994—"Spatial dispersion microwave effects in composite materials," Dr. Alexei Vinogradov (Academy of Sciences, Moscow, Russia)
- February 20, 1995—"Cloud and clear air remote sensing with W band and VHF Doppler radars," Prof. Dennis Thomson (Penn State University, USA)
- March 16, 1995—"VLF atmospheric effects of power line harmonic EM radiation," Dr. Tauno Turunen and Jyrki Manninen (Geophysical Observatory, Sodankyla, Finland)
- March 22, 1995—"Some numerical methods for bioelectromagnetics: ELF to microwave frequencies," Prof. Om Gandhi (University of Utah, USA)
- May 17, 1995—"Symmetries of electromagnetic acoustic fields in compressible magnetolozmas," Prof. Kurt Suchy (University of Dusseldorf, Germany)
- June 26, 1995—"Constitutive relations for electromagnetic effects in magnetic media," Prof. Roger Raab (University of Natal, South Africa)
- September 26, 1995—"High-density electronic packaging," Dr. Michael Adler (General Electric, Schenectady, NY, USA)

In addition, the Chapter were

part-organizers of the National Radio Science convention in Finland in October. The Chapter also organized (in cooperation with the St. Petersburg informal IEEE group) a seminar "Electromagnetics of chiral and bianisotropic media," in October in the St. Petersburg State Technical University. In May 1995 we organized with Sergei Treatyakov (St. Petersburg) an IEEE meeting in St. Petersburg, in conjunction with the URSI International Electromagnetic Theory Symposium, where we brought together Eastern Europe and former Soviet Union present and potential IEEE activists, in the hope of starting a new Chapter to be formed in that area.

## France

*Chairman: Robert Adde*

The French MTT&ED Chapter focused its 1994 annual event on the frontiers between microwave and optical engineering. The "1994 International Topical Meeting on Optical Microwave Interactions" took place on November 21-23 1994 in Abbaye des Vaux de Cernay, an 11th Century Cistercian Abbey situated in Valle de Chevreuse, 35km south west of Paris (France). This was the first time this Meeting has been held outside the USA. The International Technical Program Committee had selected an excellent program attended by over 80 participants and included 7 invited papers, 35 contributed papers and a CAD software demonstration. The meeting was considered to be highly successful.

The Chapter 1996 main event will be its involvement and cotechnical sponsorship of the 4th European Gallium Arsenide Applications Symposium (GAAS 96) in Paris, France, 5-7 June, 1996. A CAD workshop involving European Chapters is planned within GAAS96.

In 1995 the Chapter held also three afternoon seminar Meetings.

- June 6, 1995—"Silicon MOSFET scaling beyond 0.1 micron", Dr. Hiroshi Iwai (ULSI Research Labs, Toshiba, Kawasaki, Japan).
- June 28 1995—"Millimeter-Wave Electronics and Micromachined

Microwaves at the Univ. of Michigan", Prof. G. Rebeiz, (Univ. Michigan at Ann Arbor).

- September 28, 1995—EDS Vice-President Dr. Louis Terman

The major forthcoming event is the IEEE MTT&ED FRANCE 1995 IEEE INTERNATIONAL TOPICAL MEETING on Nomadic Microwave Technologies and Techniques for Mobile Communications and Detection—November 16-17, 1995, Palais des Congres, Arcachon, Gironde, France

## Israel

*Chairman: Dr. Asher Madjar, The Technion, Haifa*

- October 20, 1994—One day symposium with 9 papers on various topics of antennas and microwave components. The guest lecturer was Dr. Ferdo Ivanek (MTT-S Distinguished Lecturer) and 70 people attended.
- November 20, 1995—One day symposium with 13 papers on antennas and microwaves, including talks on the TEVCHSAT II micro satellite, the newly formed Israeli GaAs foundry, components for cellular communications and much more. The guest speaker is Rahul Dixit, the 1995 MTT-S Distinguished Lecturer.

## Poland

*Chairman: Jozef Modelski, Warsaw Institute of Technology*

The Chapter held four successful technical meetings last year and was awarded the "Best Chapter of 1994" prize by the AP-Society.

- November 9, 1994—"How to Design Dielectric Resonator Filters", Dr. Adam Abramowicz, (Warsaw University of Technology).
- November 30, 1994—"Superconducting Accelerating Cavities: State of the art and Application to the Next Generation of Linear Colliders", Dr. Dieter Proch (DESY, Hamburg, Germany).
- December 7, 1994—"Overlapped Microline and their Applications", Wojciech Matczewski, (Space Research Center, Polish Academy of

Sciences).

- January 4, 1995—"Measurements of Materials' Properties at Microwave Frequencies", Dr. Hab. Jerzy Krupka (Warsaw University of Technology).

In addition, the Chapter is involved with a number of other activities including:

- MIKON-96: Organization of the XIth International Microwave Conference to be held in Warsaw, May 27-30, 1996. co-operatively sponsored by the IEEE MTT Society.
- A competition for the Best M.Sc. Thesis for students from the Polish Technical Universities who graduate in the period April 1994 to February 1996 to be presented at MIKON-96.
- Help with the initiative to create new Chapters in the Former Soviet Union Republics

## Spain

*Chairman: Magdalena Salazar-Palma, Cuidad Universitario, Madrid Technical meetings:*

- May 18, 1995—"Adaptive Antenna Array Utilizing the Conjugate Gradient Method for Multipath Mobile Communication", Prof. Tapan K. Sarkar (Electrical Eng. Dept. Syracuse University (New York), USA)
- September 15, 1995—"Progress and Critical Research Issues in Time Domain Electromagnetic Modelling with TLM", Prof. Wolfgang J.R. Hoefer (Electrical Eng. Dept. Victoria University, Canada)
- National symposium: September 27-29, 1995

A national meeting covering various fields of electrical engineering is organized each year in September by one of the schools for Telecommunication Engineering or other university faculties related to the field, each year in a different city. The meeting allows to contact all our colleagues in Spain (and some from Portugal, France and UK, that usually attend our meeting) and to learn about the work done by the different groups during the past year. The meeting is sponsored by URSI and co-sponsored by the Spanish section of IEEE and other local in-

stitutions. An invited speaker gives the opening lecture. This year 307 people attended the meeting held in Valladolid, Spain and the opening session speaker was Prof. Miguel-Angel Lagunas of the R+D National Programme. There were 53 oral sessions with a total of 291 papers and a 1158 page book of proceedings.

## South Africa

*Chairman: David Davidson (Univ. Stellenbosch)*

The new committee, including John Cloete (Vice Chairman) and Johann de Swardt (all of the Dept. of E&E Eng, Univ. Stellenbosch), has taken over the reins from Barend Taute (Aerotek, CSIR). Many thanks to Barend and the previous committee for their work, not least in putting the chapter's finances on a very sound footing.

The annual IEEE/SAIEE AP/MTT Symposium is to be held at the Univ. of Pretoria on 17 November. The symposium chairman is Jacob Coetzee. The arrangements are well advanced and letters of acceptance went out this week. Duncan Baker (acting IEEE Chairman of the SA Section) was instrumental in getting this symposium organized following some problems earlier this year and the committee greatly appreciates his efforts in this regard.

Technical meetings held to date include:

- March 30, 1995—"Research at the Electromagnetics Laboratory, Helsinki University of Technology", Dr Ari Sihvola, (Helsinki University of Technology).
- May 12, 1995—"Recent advances and critical issues for implementing the FDTD method", Dr Corne Olivier, (Univ. of Pretoria); and "Application of the FDTD method to the simulation of frequency selective surfaces", Dr David Davidson, (Univ. of Stellenbosch).
- May 29, 1995—"Telecommunication Antennas for the World Market", Mr Johan Pretorius, (OmniPless, Hout bay, Cape Town).

## Switzerland

*Chairman: Werner Baechtold, ETH Zurich, Laboratory for Electromagnetic Fields and Microwave Electronics*

*Technical meetings:*

- May 9, 1995—"Interferometry with several wave lengths for accurate distance measurement", Prof. R. Daendliker, (University of Neuchatel, Switzerland).
- Sept. 15, 1995—"Modelling of a broadband TCDMA communication system", Prof. F. Seifert, (Technical University of Vienna)

## United Kingdom and Republic of Ireland

*Chairman: Terry Oxley*

The Chapter represents the interests of the Microwave Theory & Techniques, Electron Devices, Antennas & Propagation and Lasers & Electro-Optics Societies IEEE members, within the United Kingdom & Republic of Ireland. Technical meetings since the last report have included:

- "Progress and Change in Microwave Radio Communications" by Ferdo Ivanek (1994 MTT-S Distinguished Lecturer) was given at three venues in different regions of the UKRI:
  - September 20, 1994 at University of Edinburgh.
  - September 22, 1994 at University College Dublin.
  - September 28, 1994 at King's College London.
- October 6, 1994 at Queen's University Belfast—"The Development of the Microwave Mixer: an industrial experience", Terry Oxley.
- October 24, 1994 at Wembley Conference Centre London—2nd Joint European MTT Chapter Workshop on "CAE, Modelling and Measurement Verification". The technical programme was organized by the UKRI Chapter and the event held in cooperation with Microwaves 94.
- October 26, 1994 at UMIST, Manchester—"Advanced Theory and Numerical Techniques to Treat Anisotropic Media" by Cliff Krowne, NRL, USA.

- November 14, 1994 at King's College London—EDMO'94 Workshop on "Electron Devices for Microwave and Optoelectronic Applications". The event was jointly sponsored by the Chapter and King's College London in cooperation with the ED & MTT Societies and the IEE. The one-day programme presented eighteen papers with many overseas contributions.
- November 23, 1994 at King's College London—"Whatever Happened to SDI", Peter Varnish, (UK Ministry of Defence).
- December 7, 1994 at King's College London—"Intelligent Driver Support", Raglan Tribe, (Lucas Advanced Engineering Centre).
- March 6, 1995 at University College Dublin—"Physical Modelling of Microwave Devices", Chris Snowden, (University of Leeds).
- March 8, 1995 at King's College London—"Frequency Selective Surfaces as Waveguiding Structures", Jannis Vardaxoglou, (Loughborough University).
- June 7, 1995 at University College London—"Microwaves and Optoelectronics", Alwyn Seeds, (University College London).
- September 15, 1995 at Queen's University Belfast—A Colloquium of Postgraduate Student Presentations on high frequency topics jointly sponsored by the Chapter and QUB with support from Hewlett Packard UK. This very successful event attracted 24 high quality research papers from 11 UKRI Universities and will be held again in 1996.
- September 20, 1995 at King's College London—"Personal Communications", Hamid Aghvami, (King's College, London).

Other 1995 activities have included:

- a visit from the Daniel Swanson (Watkins-Johnson Co.) who lectured at Chapter meetings at three venues,
- a workshop "RF & Microwave IC: the technology background" in conjunction with M+RF'95.
- 11th July 1995 at Danbury Park Conference Centre, Chelmsford—One-Day Educational Course on



NEC (the industry-standard Method of Moments Code) organized by the Applied Computational Electromagnetics Society-UK (ACES) in cooperation with the Chapter. The course was successful with all places filled and it will be repeated in 1996.

- 25-27th October 1994 at Wembley Conference Centre London—Chapter Membership Booth at Microwaves'94. This provided excellent promotion of the IEEE and enquiries in excess of 60 were dealt with.

A very full program of activities is already planned for the rest of 1995 and 1996.

## Yugoslavia

*Chairman: Branka Jokanovic,  
Institute of Microwave Technology  
and Electronics, Belgrade*

The Yugoslavia IEEE MTT Chapter has been working under difficult conditions since June 1992 when the U.N. sanctions against Yugoslavia were imposed. Also, researches from Yugoslavia are not able to get U.S. visa to present their papers and participate in the IEEE conferences due to U.N. sanctions. The only professional contacts with the world are realized thanks to the IEEE. However, in spite of the difficulties, the Chapter has been trying to continue its activities, to keep Chapter alive and do the things which are not influenced by sanctions. Last year they celebrated the fifth anniversary of the Chapter's activities. At the ceremony organized on December 20, 1994, the Chapter Chairman gave the detailed report of Chapter's activities and it was printed in YU MTT Informer, a special issue published for that occasion. The YU MTT-S Chapter established the Invited Lecture Award for the best lecture given in the 1989-1994 period which consists of the Certificate of Recognition and the golden coin with the figure of Nikola Tesla.

Since 1989, when the Chapter was formed, we have organized 14 technical talks and the First International Scientific Meeting: Microwaves in Medicine'91. Among 14 given talks, two lectures were awarded:

- Some Recent Developments in the

Transmission-Line Modeling (TLM) Method by Prof. Christos Christopoulos, The University of Nottingham, Department of Electrical and Electronic Engineering, England; and

- Nikola Tesla Contributions to the Development of Radio by Prof. Aleksandar Marincic, the Faculty of Electrical Engineering Belgrade, Yugoslavia.

Also YU MTT-S Chapter gave three Distinguished Service Awards to: Olga Boric-Lubecke, UCLA, Los Angeles, USA, Prof. Nikola Dekleva, Hyperbaric Medical Center, Belgrade, Yugoslavia, and Dr. Martin Schneider, AT&T Bell Laboratories, Holmdel, USA for the exceptional contribution made during the first five years of the Chapter's activities.

The Chapter's activities were held at the IMTEL—The Institute of Microwave Technology and Electronics, Belgrade, the Faculty of Electrical Engineering, Belgrade and the Faculty of Electronics, Nis. This year Chapter organized following technical meetings:

- "Recent Advances in Medical Applications of Microwaves", Prof. Nikola Dekleva. The lecture was held at The Faculty of Electronics, Nis and more than hundred people were present.
- "Review of Research Activities in the Field of Microwave Technology at the Universities of UCLA and Caltech", Dr. Olga Boric-Lubecke.
- "Quasi-Optical Components and Systems", Prof. Zoya Basta-Popovic, (University of Colorado at Boulder)

This year we expect to see Dr. Stephen Maas in Belgrade in October, who is going to give the lecture about microwave mixers and frequency multipliers.

YU MTT Chapter was one of the organizers of the second Conference TELSIS'95 (Telecommunications in Modern Satellite and Cable Services) which was held in Nis from 10-12 October 1995. The Organizing Committee Chairman Prof. Bratislav Milovanovic and his team from Faculty of Electronics, Nis did a really good job. In these hard times, the Conference was perfectly organized and on the whole imbued with Charman's incredible en-

thusiasm. This year the Conference focused on Modern Broadcasting Technologies. The Conference included 2 plenary invited keynote papers, 15 invited keynote papers and 126 regular papers. The papers were presented in one plenary session and 18 technical sessions. Technical part of the Conference involved also 2 round tables on actual topics from the programme areas of the Conference. It should be noted that 26 eminent foreign authors were contributed to TELSIS'95: one from Finland, 3 from Germany, 2 from New Zealand, 2 from Republic Srpska, 3 from Romania, 2 from the Ukraine, 3 from the United Kingdom and 10 from the U.S.A. The Exhibition included products in the areas of emission, transmission, distribution and receiving TV signals. Most important domestic companies took part in the exhibition.

Finally, 300 copies of the second issue of the YU MTT Informer (50 pages, mainly in English), was published in October this year.

## Cherchez les Femmes

Though the IEEE has published a Membership Directory for many years, it now has another—this one containing the names and contact information of women members only. Designed as a networking tool for women engineers and other IEEE members, the directory lists female members in two ways—standard alphabetical order, and the much asked-for geographical groupings, which facilitates finding individuals in your area.

Containing the names of thousands of women who comprise about 6% of total IEEE membership, the directory is the product of the IEEE Women in Engineering Committee. You can obtain a copy for a \$15 handling and shipping charge by contacting Patricia Holst, Manager, Institutional Research Department.





Information, ideas and issues affecting the microwave industry today, as well as in the future years, will be exchanged as part of the panel and rump sessions. Subjects for discussion at these sessions include:

Microwave Week 1996 is comprised of the technical and professional meetings of the MTT-S International Microwave Symposium (IMS), Microwave and Millimeter-Wave Monolithic Circuits (MMWMC) Symposium, and the 47th Automatic RF Techniques Group (ARFTG) Conference. The latest advances in state-of-the-art microwave technology and applications will be reported in 62 technical sessions presented during the week. IMS topics cover a wide range of technologies and applications, from CAD procedures and theory to commercial and medical applications. The International Microwave Exhibition is the largest in the world for microwave and millimeter-wave equipment. Held in conjunction with IMS, the MMWMC Symposium consists of technical and panel sessions on the latest monolithic developments, while the ARFTG conference features papers and informal discussions, as well as a manufacturer's exhibit relating to RF and microwave measurement systems and design techniques.

This year's workshops represent a major element in the week's technical agenda. These sessions offer a unique opportunity to interact with and learn from a group of specialists in a wide range of timely and interesting subjects. The workshop program this year has been extended into three full days with sessions being held on Sunday, Monday and Friday. The three workshops on Sunday are more tutorial in nature and examine the application of wavelets to electromagnetics, microwave photonic systems and digital cellular telephones. There are seven full-day and six half-day workshops on Monday and 10 workshops on Friday. These workshops represent state-of-the-art design, measurement and manufacturing techniques. Topics will cover the whole spectrum in terms of frequencies, device technologies, applications, circuit design and measurement methodologies.

This year's special technical sessions feature six focused and seven panel/rump sessions, as well as 26 workshops. The emerging technologies making a global impact are addressed in the following focused sessions:

- Microwave/mm-wave/Optical Applications in Personal Communications
- Personal Communications via Satellites: Technology & Trends
- High Speed Lightwave Communications Systems
- Automotive Applications of Microwave and mm-wave Techniques
- Progress in High Speed Digital Applications
- Micromachining for Microwave and mm-wave Applications

A Special Session on "Historical Perspectives on Microwaves in the San Francisco Bay Area" is also planned. This session will review the significant development and advances made in the field of microwaves and RF technology over many decades.

## Microwave Application & Product Seminars

μAPS '96 is a new addition to Microwave Week. This forum features product application seminars and will be held on the exhibit floor. These seminars will be presented by exhibitors and will address the PCS, WLAN, cellular, satcom, military, telecom and medical markets.

ACTIVITY	June	Sun/16	Mon/17	Tues/18	Wed/19	Thurs/20	Fri/21
<b>MTT-S</b>	<b>Symposium &amp; Exhibition</b> —Moscone			MA	MA	MA	
	<b>Workshops</b> —Moscone	MA	MA				MA
	<b>Panel Sessions</b> —Moscone			N	N	N	
	<b>Rump Session</b> —Hilton			E			
<b>MMWMC</b>	<b>Symposium</b> —Moscone		MA	MA			
	<b>Panel Sessions</b> —Moscone		N				
	<b>Workshop</b> —Moscone	MA					
<b>ARFTG</b>	<b>Technical Conference</b> —Moscone					A	MA
	<b>Microwave Exhibits</b> —Moscone						MA
<b>SOCIAL</b>	<b>Monolithic Reception</b> —Hilton	E					
	<b>Microwave Journal/MTT-S Reception</b>		E				
	<b>Awards Banquet</b> —Hilton				E		
		<b>M-Morning</b>	<b>N-Noon</b>	<b>A-Afternoon</b>	<b>E-Evening</b>		

## Getting to San Francisco

From the San Francisco Airport or the South Bay, take highway 101 north. As you approach San Francisco, take the way labeled "Bay Bridge." To get to the Hilton Hotel, exit at the "Seventh Street" off-ramp, stay to the right; proceed two blocks on Bryant and turn left on 5th Street. Go up 5th Street one block past Market Street and turn left on Ellis. Continue a half block on Ellis to Mason. Across Mason Street you will see the Hilton Hotel garage on your right. To get to the Moscone Convention Center, exit at the "Fourth Street" off-ramp, stay in the left lane and proceed on Bryant one block and turn left on 3rd Street. Moscone Convention Center is up 3rd Street two blocks between Folsom and Howard. Numerous parking facilities are available as you continue on 3rd Street.

San Francisco International Airport is only 20 minutes from the Moscone Convention Center and the convention hotels. Ground transportation is available from the airport by rental car, taxi (\$32) or SFO Airporter (\$9 one way, \$15/round trip). SFO Airporter leaves San Francisco Airport every 15 minutes for the convention hotels. Routes and serviced hotels will be indicated on the buses.

## Weather

San Francisco temperatures typically range from the 70s during the day to the 40s at night. Rain is unlikely but definitely possible in June. A sweater or light jacket, and an umbrella or raincoat are strongly recommended.

## Transportation Services

Free bus service will be provided beginning the afternoon of Sunday, June 16th and continuing each day of Microwave Week until 6:00 PM Friday, June 21st. Transportation will be available to and from the Convention Center and most convention hotels. Routes and serviced hotels will be indicated on the buses.

## Guest Programs

Tours chosen for the 1996 IEEE MTT-S International Microwave Symposium include lunch and will depart at 9:00 AM from the Taylor Street side of the San Francisco Hilton Hotel. Tickets will be included in the registration packets of those who have preregistered for the Symposium. Please make reservations as part of the advanced registration, as all tours are sold on a first come, first serve basis. Sorry, no children under seven due to insurance restrictions.

**Tuesday, June 18, 1996**  
9:00 AM-3:30 PM

**Cost: \$42 per person**  
**San Francisco Highlights Tour**  
**and Bargain Shopping**

Visit the Golden Gate Bridge, stopping to take pictures, then travel through Chinatown, North Beach, Pacific Heights and Nob Hill, going past the Cliff House and seal rocks, through Golden Gate Park and by many restored turn-of-the-century Victorians. See the interior of the modern 2500 seat St. Mary's Cathedral and the historic Garden Court of the Palace Hotel. Then it's off to lunch at Fisherman's Wharf in one of its top restaurants with a spectacular view. After lunch you will visit four major shops or complexes that house stores filled with bargains catering to all ages.

**Wednesday, June 19, 1996**  
9:00 AM-3:30 PM

**Cost: \$38 per person**  
**Giant Redwoods/Sausalito/Chinatown**  
**Walking Tour/Dim Sum Lunch**

The tour begins by crossing the Golden Gate Bridge to Muir Woods, home of the giant coastal redwood trees. Stroll among these giants, some more than 1000 years old before stopping in Sausalito, the famous waterfront village filled with restaurants, shops and galleries, exhibiting works by local artists. Then travel to Chinatown and a delicious dim sum lunch as you listen to an entertaining, informative speaker discuss how to buy jade and pearls in San Francisco. Guides host a walking tour of the narrow streets and back alleys to discover small Chinese temples, St. Mary's Square and Church, oriental herb shops and much more.

**Thursday, June 20, 1996**  
9:00 AM-4:00 PM

**Cost: \$45 per person**  
**Dynasty Mansion and Gardens/Allied Arts/**  
**Stanford University**

Travel south to the lovely Georgian-style mansion, Filoli, once used in the TV series *Dynasty*. Tour both the mansion and the magnificent gardens before enjoying a special lunch at the Allied Arts Guild, a delightful composite of Old World buildings housing many craft stores including woodworking, weaving, a candle store and a kitchen shop. The tour then continues to Stanford University and visits the famed Rodin Sculpture Garden and the lovely restored Memorial Church before returning to San Francisco.

**Saturday, June 22, 1996**  
9:00 AM-5:00 PM

**Cost: \$63 per person**  
**NAPA Valley Wine Tour**

Take a delightful excursion through the beautiful vineyards and orchards of Napa Valley for a glimpse of the wine-making process and wine tasting. Explore two different wineries to observe their differences and sample the delicious results. The day includes lunch at a delightful new restaurant housed in the stately building of the former Christian Brothers Winery. This restaurant is associated with the prestigious Culinary Institute of America located in Hyde Park and is the first of its kind located on the West Coast.

## Industry Hosted Cocktail Reception

Prior to the Awards Banquet, exhibitors will host a cocktail reception at the Hilton Hotel on Wednesday, June 19th from 6:00 PM to 7:30 PM. Complementary beverage tickets will be included in the registration packages and additional tickets will be available for purchase during the reception.

## The IEEE MTT-S Awards Banquet

The annual MTT-S Awards Banquet will be held on Wednesday, June 19 from 7:45 PM to 10:15 PM in the Grand Ballroom at the Hilton Hotel. Lively entertainment unique to San Francisco will follow an elegant dinner and presentation of awards.

## Microwave Journal/MTT-S Reception

*Microwave Journal* and MTT-S will sponsor a reception for all attendees and exhibitors on Monday evening June 17th from 6:00 PM to 8:30 PM at the Hyde Street Pier. The Hyde Street Pier is part of the National Maritime Museum and features several historic ships that will be open to the attendees. The pier is located on the waterfront at the end of Hyde Street near Ghirardelli Square. Bus service will leave from the Moscone Center beginning at 5:30 PM with continuous service until 6:30 PM. Return bus transportation to the convention hotels will begin departing at 8:00 PM and will continue every 20 minutes until 9:20 PM.

## Official Airlines

United Airlines is the official airline of the 1996 IEEE MTT-S Symposium and Exhibition. To obtain the best fares and/or schedule information, or to make reservations call United, Specialized Meeting Reservations Center at 1-800-521-4041. Make sure you refer to **Meeting ID Number 536XV** to receive an additional five percent discount off the lowest applicable discount fare, including First class, or a 10 percent discount off mid-week coach fares. These discounts have no advance-day requirements. Discounts also apply to Shuttle by United and United Express. Dedicated reservation personnel are on duty seven days a week from 7:00 AM to 10:00 PM EST.

## Car Rental Discounts

Avis and Alamo rental car companies will offer to the attendees of the 1996 MTT-S International Microwave Symposium and Exhibition meeting discounts of 10 percent off the applicable rental rates when reservations are made in conjunction with United Airlines air travel reservations.

## Advance Conference Registration

# 1996 IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM

June 16-21, 1996 ♦ San Francisco, CA ♦ MTT-S ♦ MMWMC ♦ ARFTG

Each Conference Attendee must submit a separate registration form. A copy of this form may be used.  
The deadline for advanced registration is May 17, 1996. Late registration will be charged on-site fees.  
*On-Site fees will be approximately 30% higher.*

NAME \_\_\_\_\_  
Last First  
AFFILIATION \_\_\_\_\_  
Company, Etc. Mail Stop  
ADDRESS \_\_\_\_\_  
Street  
City State Postal Code  
Country  
US/CANADA TEL. \_\_\_\_\_ INT'L TEL. \_\_\_\_\_  
IEEE MEMBER ☐ Yes ☐ No ☐ IEEE Membership No. \* \_\_\_\_\_  
\*Must be given to qualify for member discount  
MTT-S MEMBER ☐ Yes ☐ No ☐ GU \_\_\_\_\_  
Spouse's name (if attending) \_\_\_\_\_

### JOB CATEGORY

- A. Gen. Mgmt.
- B. Res./Engr. Mgmt.
- C. Res./Engr.
- D. Des./Proj. Engr.
- E. Manufacturing
- F. Mkt./Sales/Purch.
- G. Teaching
- H. Student
- I. Government
- J. Consulting
- K. Guest
- L. Other

Check ☒ each function for which you wish to register. Check ☒ the appropriate fees and enter the fees in the Remittance column.

♦ **MTT-S SYMPOSIUM**  
Tue., Wed. & Thur.  
☐ All MTT-S Sessions (Includes MTT-S Digest) ☐ \$235 ☐ \$325 \$ \_\_\_\_\_  
☐ Single-Day Registration (No Digest) ☐ \$105 ☐ \$150 \$ \_\_\_\_\_  
☐ Student, Retiree, Life Member (No Digest) ☐ \$ 30 ☐ \$ 50 \$ \_\_\_\_\_  
♦ **MMWMC SYMPOSIUM**  
Sunday Evening, Mon. & Tue., (Includes MMWMC Reception and Digest) ☐ \$ 85 ☐ \$110 \$ \_\_\_\_\_

♦ **ARFTG-AUTOMATIC RF TECHNIQUES CONFERENCE**  
Fri., (Includes breakfast, lunch and ARFTG Digest)  
☐ ARFTG Member ☐ \$130 ☐ \$130 \$ \_\_\_\_\_  
☐ ARFTG Non-member ☐ \$155 ☐ \$155 \$ \_\_\_\_\_  
☐ ARFTG Student (No Digest) ☐ \$ 75 ☐ \$ 75 \$ \_\_\_\_\_

♦ **ADDITIONAL DIGESTS**  
MTT-S Qty. \_\_\_ @ ☐ \$75 ☐ \$90 \$ \_\_\_\_\_  
MMWMC Qty. \_\_\_ @ ☐ \$35 ☐ \$50 \$ \_\_\_\_\_  
CD ROM Qty. \_\_\_ @ ☐ \$40 ☐ \$50 \$ \_\_\_\_\_  
ARFTG (member) Qty. \_\_\_ @ ☐ \$20 ☐ \$20 \$ \_\_\_\_\_  
(non-member) Qty. \_\_\_ @ ☐ \$45 ☐ \$45 \$ \_\_\_\_\_

♦ **PANEL SESSIONS**  
(MTT-S registration required to attend. Includes box lunch)  
☐ PMOA-Low Voltage Low Power RFICs ☐ \$15 \$ \_\_\_\_\_  
☐ PTUB-Silicon Based RF/MW ICs ☐ \$15 \$ \_\_\_\_\_  
☐ PTUC-System Applications of mm-wave ICs ☐ \$15 \$ \_\_\_\_\_  
☐ PWED-Effective CAD ☐ \$15 \$ \_\_\_\_\_  
☐ PTHE-Solderless Interconnects for MW Modules ☐ \$15 \$ \_\_\_\_\_

♦ **RUMP SESSION** (MTT-S registration required to attend.  
Price includes beverage and hors d'oeuvres)  
☐ RTUA-Commercial MW Product Development ☐ \$15 \$ \_\_\_\_\_

♦ **AWARDS BANQUET**  
Wed. evening, Hilton Qty. \_\_\_ @ ☐ \$40 \$ \_\_\_\_\_

WO ♦ **WORKSHOPS (FOR TITLES, SEE REVERSE SIDE)**

	Attendee	Student/Retiree/ Life Member
<b>Full Day</b> (includes continental breakfast and lunch)	<input type="checkbox"/> \$80	<input type="checkbox"/> \$45
<b>Half Day</b> (AM includes continental breakfast & PM includes lunch)	<input type="checkbox"/> \$50	<input type="checkbox"/> \$30

**SUNDAY**  
☐ WSFA (Full Day) \$ \_\_\_\_\_  
☐ WSFB (Full Day) \$ \_\_\_\_\_  
☐ WSHC (Half Day) \$ \_\_\_\_\_  
**MONDAY**  
☐ WMFA (Full Day) \$ \_\_\_\_\_  
☐ WMFB (Full Day) \$ \_\_\_\_\_  
☐ WMFC (Full Day) \$ \_\_\_\_\_  
☐ WMFD (Full Day) \$ \_\_\_\_\_  
☐ WMFE (Full Day) \$ \_\_\_\_\_  
☐ WMFF (Full Day) \$ \_\_\_\_\_  
☐ WMFG (Full Day) \$ \_\_\_\_\_  
☐ WMHH (Half Day) \$ \_\_\_\_\_  
☐ WMHI (Half Day) \$ \_\_\_\_\_  
☐ WMHJ (Half Day) \$ \_\_\_\_\_  
☐ WMHK (Half Day) \$ \_\_\_\_\_  
☐ WMHL (Half Day) \$ \_\_\_\_\_  
☐ WMHM (Half Day) \$ \_\_\_\_\_  
**FRIDAY**  
☐ WFFA (Full Day) \$ \_\_\_\_\_  
☐ WFHB (Half Day) \$ \_\_\_\_\_  
☐ WFFC (Full Day) \$ \_\_\_\_\_  
☐ WFFD (Full Day) \$ \_\_\_\_\_  
☐ WFFF (Full Day) \$ \_\_\_\_\_  
☐ WFFG (Full Day) \$ \_\_\_\_\_  
☐ WFFH (Full Day) \$ \_\_\_\_\_  
☐ WFFI (Full Day) \$ \_\_\_\_\_  
☐ WFHJ (Half Day) \$ \_\_\_\_\_

**Total for all WORKSHOPS**  
\$ \_\_\_\_\_

♦ **GUEST PROGRAMS** (Lunch and transportation are included)  
See reverse side for complete information  
GA: City Sights/Outlet Shopping (Tues.) Qty. \_\_\_ @ ☐ \$42 \$ \_\_\_\_\_  
GB: Giant Redwoods/Chinatown (Wed.) Qty. \_\_\_ @ ☐ \$38 \$ \_\_\_\_\_  
GC: Dynasty Mansion/Stanford (Thurs.) Qty. \_\_\_ @ ☐ \$45 \$ \_\_\_\_\_  
GD: Napa Valley (Sat. 6/22) Qty. \_\_\_ @ ☐ \$63 \$ \_\_\_\_\_

The only acceptable forms of payment are cash, check, money order, MasterCard or VISA.  
♦ Make your check or money order (US \$ ONLY on a US Bank or Travelers Check) payable to:

"1996 IEEE MTT-S Symposium" ♦ Or charge your MasterCard or VISA: ☐ MasterCard ☐ VISA

Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_  
Signature \_\_\_\_\_

♦ Written requests for refund will be honored if received by May 17, 1996.  
A \$25 cancellation fee will be charged for processing.

**TOTAL REMITTANCE \$ \_\_\_\_\_**  
**PAYMENT MUST ACCOMPANY FORM**

MAIL COMPLETED FORM AND PAYMENT TO:  
1996 IEEE SYMPOSIUM, c/o HORIZON HOUSE PUBLICATIONS INC., 685 Canton Street, Norwood, MA 02062, USA  
FAX: (617) 762-9230. If this form is sent by FAX do NOT also mail; a Credit Card Number & signature,  
or a check or money order in US dollars must be included.

PLEASE FAX OR MAIL; DO NOT FORWARD HARD COPY IF FAXED

## WORKSHOPS

	Number	Time	Title
<b>Sunday</b> Convention Center	WSFA	8 AM-5 PM	Digital Cellular Telephones: Systems & Technologies
	WSFB	8 AM-5 PM	The Application of Wavelets to Electromagnetics
	WSHC	1 PM-5 PM	Microwave Photonic Systems
<b>Monday</b> Convention Center	WMFA	8 AM-5 PM	Nonlinear CAD
	WMFB	8 AM-5 PM	Electromagnetic Wave Interaction with Water & Moist Substances
	WMFC	8 AM-5 PM	Device Field Interactions for Future Advances in Microwave & RF Circuits
	WMFD	8 AM-5 PM	Introduction to Digital Wireless Communication Systems
	WMFE	8 AM-5 PM	Making Accurate On-wafer Measurements
	WMFF	8 AM-5 PM	New Directions in Nonlinear RF and Microwave Characterization
	WMFG	8 AM-5 PM	Multilayer Microwave Circuits
	WMHH	8 AM-12 PM	Microwave/mm-Wave Module Integration Technology
	WMHI	8 AM-12 PM	Propagation Issues in Urban Areas for PCS
	WMHJ	8 AM-12 PM	Ferrite CAD and Applications
	WMHK	1 PM-5 PM	Wireless Power Transmission
	WMHL	1 PM-5 PM	Active Aperture/TR Module Architecture & Design
	WMHM	1 PM-5 PM	Technology Selection for High & Low Power Base Stations in Wireless Mobile Digital Communication Systems
<b>Friday</b> Convention Center	WFFA	8 AM-5 PM	Dielectric Resonators in Microwave Active and Passive Circuits
	WFHB	8 AM-12 PM	New Developments in Mixer Design for Microwave and mm-wave Applications
	WFFC	8 AM-5 PM	The Role of Superconducting Technology in Wireless Communication Systems
	WFFD	8 AM-5 PM	Microwave/mm-Wave Technology for Intelligent Vehicles
	WFFE	8 AM-5 PM	Photonics for Microwave and mm-Wave Antennas
	WFFF	8 AM-5 PM	Everything You Wanted to Know About Noise, but ...
	WFFG	8 AM-5 PM	Wireless LAN—What's Next?
	WFFH	8 AM-5 PM	Global EM Simulators of Planar Microwave Circuits
	WFFI	8 AM-5 PM	Statistical Based MMIC & Module Design Techniques
	WFHJ	8 AM-12 PM	Design Oriented Microwave Education

## PANEL SESSIONS

12:00 NOON TO 1:30 PM

PMOA	Monday	Low Voltage, Low Power Consumption RFICs: It's Sooo. . . . Easy
PTUB	Tuesday	Design Issues for Silicon Based RF/Microwave ICs
PTUC	Tuesday	System Applications of mm-Wave ICs—When?
PWED	Wednesday	Effective CAD: A Dilemma of Models!
PTHE	Thursday	Solderless Interconnects for Microwave Modules—Is it possible?

## RUMP SESSION

7:00 PM TO 9:00 PM

RTUA	Tuesday	Commercial Microwave Product Development: Business Issues
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## GUEST PROGRAMS

<b>Tuesday</b>	GA	9:00 AM-3:30 PM	City Sights/Outlet Shopping – Visit the Golden Gate Bridge, Cliff House and Seal Rocks, St. Mary's Cathedral and Fisherman's Wharf with designer outlet shopping after lunch.
<b>Wednesday</b>	GB	9:00 AM-3:30 PM	Giant Redwoods/Chinatown – Walk among giant redwood trees, visit galleries in Sausalito then on to Chinatown for lunch and a walking tour.
<b>Thursday</b>	GC	9:00 AM-4:00 PM	Dynasty Mansion/Stanford – A lovely mansion and garden tour followed by an after-lunch visit to Stanford University and its Rodin Sculpture Garden.
<b>Saturday</b>	GD	9:00 AM-5:00 PM	Napa Valley Wine Tour – Explore two wineries, taste their wines and lunch at the Culinary Institute of America restaurant.





## CONFERENCE HOUSING

# 1996 IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM

June 16–21, 1996 • San Francisco, CA

MTT-S • MMWMC • ARFTG

Reservations will be accepted by phone Monday through Friday between 9:00 AM and 8:00 PM EST, by fax or mail.

Reservations must be received at the housing bureau by May 17, 1996. PLEASE REGISTER EARLY.

**Phone requests to:**

(800) 632-0078 (US & Canada)

(214) 851-4071 (Int'l)

**or Fax to:**

(800) 944-0010 (US)

(214) 702-1042 (Int'l)

**or Send completed forms to:**

San Francisco Housing Bureau

c/o World Travel, PO Box 802948

Dallas, TX 75380

*Hotel locations and rates are shown on the reverse side of this form*

### INSTRUCTIONS AND HOUSING BUREAU POLICY

1. Please print or type all data requested.
2. Reservations will be processed on a first-come, first-served basis.
3. A \$125.00 (US dollars) deposit payable by credit card or check is required for each room requested. Credit cards will be charged immediately. After May 1, 1996, only credit card deposits will be accepted.
4. Changes may be made before May 17 by calling the Housing Bureau. Full refunds will be made for cancellations made with the Bureau by May 17.
5. After May 17, changes must be made with hotels. Those made more than 72 hours before arrival will be charged \$9.50 per room. Full deposits will be forfeited for cancellations within 72 hours of arrival date.
6. Reservations will be confirmed by the SF Housing Bureau **only**. You will not receive a confirmation from the hotel.
7. The following information should be available when calling for reservations:
  - Name of meeting—state you're a conference attendee
  - 1st, 2nd, 3rd choice of hotel
  - Arrival/departure dates
  - Type of room(s) needed
  - Number of occupants and names
  - Credit card number, name as it appears on the card and valid expiration date
  - Mailing address
  - Phone and fax numbers

### HOTEL PREFERENCE

*(Please write full name of hotel and show at least three choices)*

First choice \_\_\_\_\_ Third choice \_\_\_\_\_

Second choice \_\_\_\_\_ Fourth choice \_\_\_\_\_

**Confirmations for all rooms reserved will be sent to:**

NAME \_\_\_\_\_

*Last*

*First*

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

COUNTRY \_\_\_\_\_ PHONE ( ) \_\_\_\_\_

**Guaranteed by (must be completed):**

CARD NAME: ☐ MasterCard ☐ Visa ☐ AMEX ☐ Check made payable to World Travel enclosed (A single check must guarantee all rooms requested.)

CARD HOLDER NAME \_\_\_\_\_

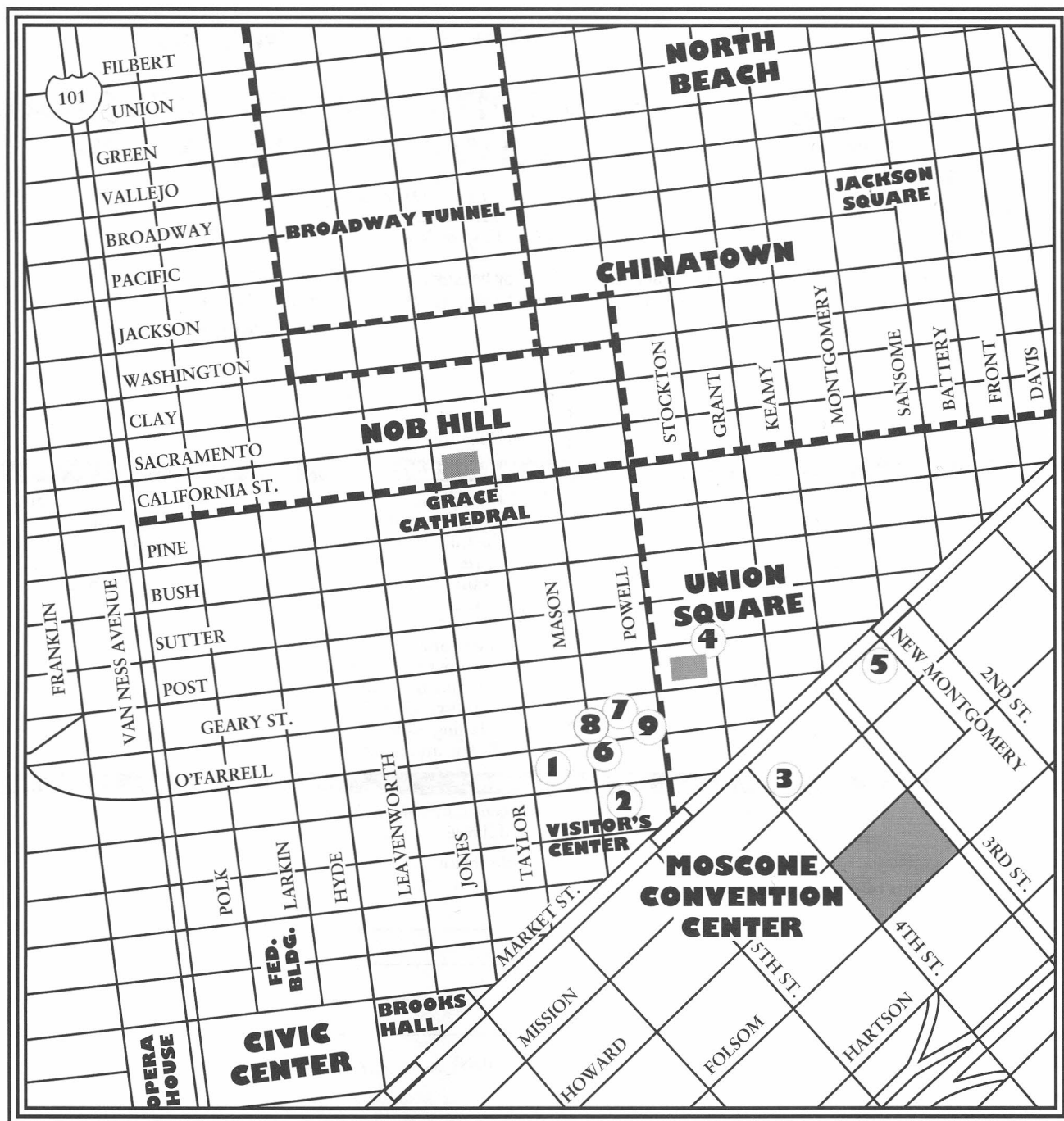
CARD NO. \_\_\_\_\_ EXP. DATE \_\_\_\_\_

### ROOM OCCUPANTS

1. Print or type names of persons occupying each room. If more than 3 rooms are required, attach a list providing the information requested below for each additional room.
2. Select room type desired, indicate arrival and departure dates and arrival time.

*Occupants (last name first)*

<b>ROOM NO. 1</b>	1. _____ 2. _____	Check one: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Double/Double <input type="checkbox"/> King Arr. Date _____ Dep. Date _____ <input type="checkbox"/> Smoking <input type="checkbox"/> Non-smoking <input type="checkbox"/> Handicap
<b>ROOM NO. 2</b>	1. _____ 2. _____	Check one: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Double/Double <input type="checkbox"/> King Arr. Date _____ Dep. Date _____ <input type="checkbox"/> Smoking <input type="checkbox"/> Non-smoking <input type="checkbox"/> Handicap
<b>ROOM NO. 3</b>	1. _____ 2. _____	Check one: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Double/Double <input type="checkbox"/> King Arr. Date _____ Dep. Date _____ <input type="checkbox"/> Smoking <input type="checkbox"/> Non-smoking <input type="checkbox"/> Handicap



■■■■CABLE CAR LINE

#### 1996 IMS HOTELS

MAP REFERENCE	HOTEL	SINGLE	DOUBLE
1	SAN FRANCISCO HILTON (HEADQUARTERS HOTEL)	\$129	\$149
2	PARC 55	\$120/99*	\$120/99*
3	SAN FRANCISCO MARRIOTT	\$135	\$155
4	GRAND HYATT SAN FRANCISCO	\$139	\$159
5	SHERATON PALACE	\$159	\$179
6	HOTEL NIKKO	\$129	\$149
7	HANDLERLY UNION SQUARE	\$102/88*	\$107/88*
8	KING GEORGE HOTEL	\$101	\$106
9	VILLA FLORENCE	\$115	\$125

\*GOVERNMENT RATE

# 1996 IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM — SCHEDULE OF EVENTS

<b>SUNDAY, JUNE 16</b>		<b>WORKSHOP REGISTRATION</b>		<b>7:00 TO 9:00 AM</b>		<b>LOWER LOBBY MOSCONE CONVENTION CENTER (MCC)</b>	
		<b>IMS REGISTRATION</b>		<b>5:00 TO 9:00 PM</b>		<b>MCC LOBBY</b>	
		<b>MMWMC RECEPTION</b>		<b>7:00 PM TO 10:00 PM</b>		<b>HILTON HOTEL, IMPERIAL</b>	
8:00 AM–5:00 PM	WSFA	Digital Cellular Telephones	MCC Rm. 123/120	WSFB	Application of Wavelets to Electromagnetics	MCC, Rm. 124	
1:00 PM–5:00 PM	WSHC	Microwave Photonic Systems	MCC, Rm. 125				
<b>MONDAY, JUNE 17</b>		<b>REGISTRATION</b>		<b>7:00 AM TO 5:00 PM</b>		<b>MCC</b>	
8:00 AM–5:00 PM	WMFA	Nonlinear CAD	MCC, Rm. 130	WMFE	Accurate On-wafer Measurements	MCC, Rm. 122	
	WMFB	EM Wave Interaction	MCC, Rm. 120	WMFF	Nonlinear RF and MW Characterization	MCC, Rm. 132	
	WMFC	Device Field Interaction	MCC, Rm. 121	WMFG	Multilayer MW Circuits	MCC, Rm. 133	
	WMFD	Digital Wireless Communications	MCC, Rm. 131				
8:00 AM–12:00 PM	WMHH	MW/mm-wave Modules	MCC, Rm. 123	WMHJ	Ferrite CAD and Applications	MCC, Rm. 125	
12:00 PM–1:30 PM	WMHI	Propagation in Urban Areas	MCC, Rm. 124				
1:00 PM–5:00 PM	PMAO	Low Voltage Low Power Consumption RFICs				MCC, Rm. 102	
	WMHK	Wireless Power Transmission	MCC, Rm. 123	WMHM	Power Base Stations in Wireless	MCC, Rm. 125	
	WMHL	Active Aperture/TR Modules	MCC, Rm. 124				
		<b>MMWMC SYMPOSIUM</b>		<b>8:30 AM TO 5:00 PM</b>		<b>MCC, Rm. 134/135</b>	
		<b>MICROWAVE JOURNAL/MTT-S</b>		<b>6:00 PM TO 8:30 PM</b>		<b>HYDE STREET PIER</b>	
<b>TUESDAY, JUNE 18</b>		<b>REGISTRATION</b>		<b>7:00 AM TO 5:00 PM</b>		<b>MCC</b>	
		<b>MMWMC SYMPOSIUM</b>		<b>8:00 AM TO 5:50 PM</b>		<b>MCC</b>	
		<b>EXHIBITION AND MICROWAVE APPLICATION &amp; PRODUCT SEMINARS</b>		<b>9:00 AM TO 5:00 PM</b>		<b>MCC</b>	
8:00 AM–9:50 AM	TU1A: Low Noise mm-wave MMICs	TU1B: Automotive Application of Microwave and mm-wave	TU1C: High Power Sources and Control Components	TU1D: Hybrid MCM Techniques & Applications	TU1E: Nonreciprocal Ferrite & Semiconductor Devices		
10:15 AM–12:00 PM	TU2A	Plenary Session				MCC, Rm. 102/103/104	
12:15 PM–1:35 PM	PTUB	Design Issues for Silicon Based RF/Microwave ICs				MCC, Rm. 120/123	
	PTUC	System Applications of mm-wave ICs—When?				MCC, Rm. 121/124	
1:40 PM–3:30 PM	TU3A: Large Signal Generation & Amplification	TU3B: New Guiding & Radioactive Effects on Planar Circuits	TU3C: Frequency Domain Modeling of Microwave Structures	TU3D: Historical Perspectives on Microwaves in the San Francisco Bay Area	TU3E: Packaging & Interconnect Technologies		
	TU4A: System Components	TU4B: Waves Interactions	TU4C: Intelligent Transportation Systems	TU4D: Modern Concepts in Microwave Field Theory	TU4E: mm-wave and sub-mm-wave Receivers		
4:00 PM–5:50 PM							
7:00 PM–9:00 PM	RTUA	Commercial MW Product Development: Business Issues				Hilton Hotel	
<b>WEDNESDAY, JUNE 19</b>		<b>REGISTRATION</b>		<b>7:00 AM TO 5:00 PM</b>		<b>MCC</b>	
		<b>EXHIBITION AND MICROWAVE APPLICATION &amp; PRODUCT SEMINARS</b>		<b>9:00 AM TO 5:00 PM</b>		<b>MCC</b>	
8:00 AM–9:50 AM	WE1A: Low loss Acoustic Filters	WE1B: TLM Modeling of Microwave Structures	WE1C: Filters I	WE1D: Microwave/mm-wave/Optical Applications in PCS	WE1E: mm-wave Systems & Components		
10:20 AM–12:10 PM	Student Paper Competition					MCC, Rm. 125	
10:20 AM–12:10 PM	WE2A: Power Amps, Wireless Amps	WE2B: Time Domain Techniques	WE2C: Filters II	WE2D: Personal Communications via Satellites	WE2E: Control & Frequency Translation		
12:15 PM–1:30 PM	PWED	Effective CAD: A Dilemma of Models				MCC	
1:40 PM–3:30 PM	Student Paper Competition					MCC, Rm. 125	
1:40 PM–3:30 PM	WE3A: Power Amplifier Technology	WE3B: Integral Equation Based Numerical Analysis	WE3C: CAD Methodology	WE3D: Wireless Technology	WE3E: Power Dividers & Couplers		
2:30 PM–5:00 PM	Open Forum					MCC, Rm. 102/103	
4:00 PM–5:50 PM	WE4A: Biological Effects	WE4B: Quasi-optical Amps and Systems	WE4C: Micromachining for MW and mm-wave Applications	WE4D: Commercial & Space MW System Applications	WE4E: Passive Components Technology		
	<b>INDUSTRY-HOSTED COCKTAIL RECEPTION</b>		<b>6:00 PM TO 7:30 PM</b>		<b>HILTON HOTEL, GRAND BALLROOM B</b>		
	<b>MTT-S AWARDS BANQUET</b>		<b>7:45 PM TO 10:15 PM</b>		<b>HILTON HOTEL, GRAND BALLROOM A</b>		
<b>THURSDAY, JUNE 20</b>		<b>REGISTRATION</b>		<b>7:00 AM TO 5:00 PM</b>		<b>MCC</b>	
		<b>EXHIBITION</b>		<b>9:00 AM TO 3:00 PM</b>		<b>MCC</b>	
8:00 AM–9:50 AM	TH1A: Low Noise Device & Circuits	TH1B: Quasi-optical Modulators & Oscillators	TH1C: Mario Maury Memorial Session	TH1D: High Speed Lightwave Comm. Systems	TH1E: Linear Device Modeling		
10:20 AM–12:10 PM	TH2A: Progress in High Speed Digital Applications	TH2B: Nonlinear Modeling & Analysis	TH2C: Scattering Parameter & Dielectric Measurements	TH2D: Microwave Photonic Devices	TH2E: CAD Techniques using Field Theory		
12:15 PM–1:35 PM	PTHE Solderless Interconnects for Microwave Modules					MCC, Rm. 120/123	
1:40 PM–3:40 PM	TH3A: Superconductor Microwave Technology	TH3B: Sources	TH3C: Mapping of Fields & Waves in IC Structures	TH3D: Microwave Photonic Systems	TH3E: Phased Arrays		
2:30 PM–5:00 PM	Open Forum					MCC, Rm. 102/103	
4:00 PM–5:50 PM		TH4B: Chaos in Microwave Systems					
<b>FRIDAY, JUNE 21</b>		<b>ARFTG CONFERENCE</b>		<b>8:30 AM TO 5:00 PM</b>		<b>MCC, Rm. 220/226</b>	
		<b>ARFTG EXHIBITION</b>				<b>MCC, Rm. 200/212</b>	
8:00 AM–5:00 PM	WFFA	Dielectric Resonators	MCC, Rm. 130	WFFF	Everything You Wanted to Know about Noise	MCC, Rm. 132	
	WFFC	The Role of Superconductors	MCC, Rm. 125	WFFG	Wireless LAN	MCC, Rm. 133	
	WFFD	Technology for Intelligent Vehicles	MCC, Rm. 131	WFFH	Global EM Simulators	MCC, Rm. 122	
	WFFE	Photonics for MW Antenna	MCC, Rm. 124	WFFI	MMIC and Module Design	MCC, Rm. 123	
8:00 AM–12:00 PM	WFFB	Mixer Design for MW & mm-wave	MCC, Rm. 120				
	WFFJ	Design Oriented MW Education	MCC, Rm. 121				

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# Master Calendar

## MTT-S Sponsored Conferences<sup>1</sup>

1996

Name	Date/Location	Involvement	
• Space Technology and Applications International Forum (STAIF-96)	7-11 January Albuquerque, NM USA	Cooperate	Prof. Mohamed S. El-Genk Institute for Space and Nuclear Power Studies University of New Mexico Albuquerque, NM 87131-1341 Tel. 505 277-5442 FAX 505-277-2814 email: mgenk@unm.edu
• 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
• Ultrawideband Short Pulse Electromagnetics Sysmposia	27-31 May Albuquerque, NM USA	Technical Co-Sponsor	Prof. Lawrence Carin Dept. Of Electrical Eng. Duke University Box 90291 Durham, NC 27708-0291 Tel. 919 660-5270 FAX 919 660-5293 email: lcarin@ee.duke.edu
• MTT-S International Microwave Symposium	17-21 June San Francisco, CA USA	Sponsor	Dr. E. James Crescenzi Watkins-Johnson Co. 3333 Hillview Ave. Palo Alto, CA 94304-1204 Tel.: 415 813-2506 FAX 415 813-2402 email: j.crescenzi@ieee.org
• Microwave and MM-Wave Monolithic Symposium	17-18 June San Francisco, CA USA	Sponsor	Dr. Mahesh Kumar Unisys Corp. 365 Lakeview Road, M/S F8 Great Neck, NY 11020-1696 Tel.: 516 574-3295 FAX 516 574-1244
• Advanced Technolgy Workshop on Wireless Communications	21-23 August Boulder, CO USA	Technical Co-Sponsor	Dr. Roger Marks NIST Mail Code 813.06 325 Broadway Bolder, CO 80303-3328 Tel.: 303 497-3037 FAX: 303 497-7828 email: r.b.marks@ieee.org
• Directions for the Next Generation of MMIC Devices and Systems	11-13 September New York City USA	Technical Co-Sponsor	Prof. Nirod Das Polytechnic University Route 110 Farmingdale, NY 11735 Tel.: 516 755-4228 FAX: 516 755-4404 email: ndas@prism.poly.edu



## 1996 (continued)

Name	Date/Location	Involvement	
• 2nd High Frequency Postgraduate Student Colloquium	13 September Manchester England	Technical Co-Sponsor	Dr. Rob Sloan Dept. of Elect. Engineering UMIST P.O. Box 88 Manchester, M60 1QD England Tel.: +44 0161 200 4640 FAX: +44 0161 200 4820 email: sloan@umist.ac.uk
• IEEE International Symposium on Phase Array Systems & Technology	15-17 October Boston, MA USA	Technical Co-Sponsor	Dr. Eli Brookner Raytheon Company Equipment Division 528 Boston Post Road Sudbury, MA 01776 USA Tel. 508-440-5636
• GaAs IC Symposium	3 Nov. - 6 Nov. Orlando, FL USA	Co-sponsor	Elissa Sobolewski ARPA/ESTO 3701 North Fairfax Drive Arlington, VA 22203-1714 Tel.: 703-696-2254 FAX 703-696-2203 email: lsobolewski@arpa.mil
• International Topical Meeting on Optical Microwave Interactions	3-5 December Kyoto Japan	Technical Co-sponsor	Prof. Tsukasa Yoneyama Tohoku University Research Institute of Electronic Communications Katahiracho 2 Come 1-1 Sendai 980, Japan

## 1997

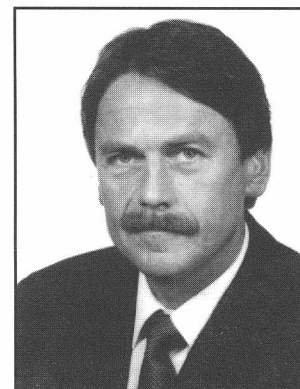
• International Topical Symposium on Technologies for Wireless Applications (WTS)	23-26 February Vancouver, BC Canada	Sponsor	Dr. Reynold Kagiwada TRW Space Electronics Group 3117 Malcolm Ave. Los Angeles, CA 90034-3406 Tel.: 310 475-5255 FAX: 310 475-5483 email: r.kagiwada@ieee.org
• International Topical Meeting on Microwave Photonics	Date TBD (Fall) Duisburg Germany	Technical Co-Sponsor	Prof. Dr. Dieter Jaeger Gerhard-Mercator-Universitaet Gesamthochschule Duisburg Kommandantenstrasse 60, KA D-47048 Duisburg, Germany Tel.: +49 02 03 379-2341 FAX: +49 02 03 379-2409 email: jaeger@optorisc.uni-duisburg.de

Notes: <sup>1</sup>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.

## 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 (EuMC)  
Annual (Cooperate)
  - Asia Pacific Microwave Conference (APMC)  
Annual (Cooperate)
  - MIOP  
Biennial - 1993, etc. (Cooperate)
  - MIKON  
Biennial - 1994, etc. (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)
  - Int'l Workshop on High Perf. Electron Devices for Microwave and Optoelectronic Applications (EDMO)  
Annual (Cooperate) (with UKRI MTT/AP/Leo Joint Chapter and King's College London)
  - Cornell University Conference on Advanced Concepts in High Speed Semiconductor Devices and Circuits  
Biennial (Technical Co-sponsor) (Sponsored by the IEEE Electron Device Society)
- |   |                                    |            |  |
|---|------------------------------------|------------|--|
| Intelligent Transportation Systems Conference | 8-10 November<br>Boston, MA<br>USA | Co-Sponsor | Lyle Saxton<br>6108 Browning Lane<br>Broadrun, VA 22014<br>Tel.: 540 347-9512<br>FAX.: 540 347-3311<br>email: lsaxton@ieee.org<br>email: ndas@prism.poly.edu |
|---|------------------------------------|------------|--|

# Report on Chapter Formation Activities in Thailand



*by Rolf H. Jansen*

Following several years of preparation and contacts with various MTT, AP and ED related groups in Thailand, rediscussion of joint MTT/AP/ED Chapter formation was started again in tight coordination with Professor Yamashita following APMC 95. The economic and background situation in Thailand is now much more favourable for Chapter formation than it has been about 3 years ago, when the first discussions were started. Thailand has now a total number of Society memberships in the IEEE Thailand Section of 797. The IEEE 1994 Annual Report of The Secretary lists 14 MTT members, 15 AP members and 7 ED members. An EM/C Chapter (Engineering Management and Computer) has been founded recently and the Communication Society (CM) established a new Chapter in 1994 with a total of 67 members. The Chairman of the Thai COM Chapter is affiliated with the Asian Institute of Technology—AIT—at Rangsit, North Bangkok, one of the groups that have been involved in the previous discussions.

The key groups rediscussing with me the formation of a joint MTT/AP/ED Chapter in Thailand are located at Chulalongkorn University, Bangkok, one of the leading Thai Universities and at KMITL (King Mongkut's Institute of Technology at Ladkrabang), about one hour driving East of

Bangkok. There are 3 KMIT institutions in the larger area of Bangkok, all of them mainly considered with engineering. The chairman of the Thai IEEE Section is presently Professor Samruay Sangkasaad, with whom I also talked in the past and who was always very supportive for the planned Chapter formation. He is also located at Chulalongkorn.

Professor Narong Yoothanom, Dean of Electrical Engineering at Chulalongkorn University, has agreed in the discussions with me to serve as the Chapter Organizer and first interim Chairman following Chapter formation up to the first formal election. Indeed Professor Narong has always been the key point of contact and is now in a position that give him sufficient weight to stronger put forward the plans of Chapter formation. Actually he has prepared already a petition with nearly enough signatures for a joint MTT/AP Chapter formation, but was also open to the idea to further expand this community to include ED members. I explored to him the strategical adventures that we would have in teaming with ED, the overlap of interesting technical topics and the support of Bill Van Der Vort, the current ED-S Director, with his direct access to all groups within IEEE Headquarters. It was agreed with Professor Narong to complete the petition for a joint MTT/AP/ED Chapter formation

before the end of this year.

In this context I also had a meeting with Professor Somsak Panyakeow, Head of the Electronic Device Research Lab at Chulalongkorn University, who has several ED members in his group. He promised support too, and nominated his senior staff member and colleague, Professor Banyong Toprasertpong, who happens to be Vice Dean of Electrical Engineering at Chulalongkorn University. Professor Somsak's SDRL group includes a staff of about 30 with an accumulated publication list of more than 50 international papers and more than 170 domestic papers. Professor Banyong will act as a point of contact of the ED members within the planned joint Chapter.

Finally I had a detailed meeting and discussion with Professor Monai Krairiksh at KMITL, who is a frequent attendant of APMC, has many international contacts and expressed his serious interest in the Chapter formation and promised to support Professor Narong's activities. Professor Monai is also a member of the APMC International Steering Committee, which I attended as the only European guest. It was discussed that Professor Monai could possibly serve as the Vice Chairman or Secretary of the Chapter to be formed and closely cooperate with Professor Narong. In the background

Professor Monai's activities are again supported by Professor Wanlop Surakamponorn, Vice President of Academic and Research Affairs of KMITL.

Furthermore, during the APMC International Steering Committee Meeting, Thailand's future possible role in APMC was discussed briefly and when listing the places for future APMCs in the Committee, the year 2006 was tentatively reserved for Thailand.

Later, a similar issue came up when I talked to Professors Narong and Monai at Bangkok and also to Dr. Strunk, Head of the German-Thai Chamber of Commerce and Organizer of GTS 96 (end of 96 in Bangkok,

Gennan-Thai Technology Symposium, annual 15000 attendees in 93). The occasion of GTS 96 may be very well suited to have in parallel organized and run—with the support of MTT, AP and ED—a Chapter Workshop of the then hopefully established Chapter. A tentative topic of the workshop may be "Wireless applications" which should be of strong interest in the Bangkok area with its strongly growing mobile communications subscriber community. This idea had been previously explored also with Professor Paul Cheung at Hongkong, the current Region 10 IEEE Director, who will provide support from his side, too. With the above mentioned contacts and Chapter formation activities plus Society support and regional support well coordinated, GTS 96 and the par-

allel workshop could form kind of an opening event for the new planned Thailand joint IEEE MTT/AP/ED Chapter.

The described Chapter formation activities are another excellent example of particularly the MTT/ED cooperation. The planned Chapter will probably come into existence early next year. Just a few days ago Professor Narong, the Chapter Organizer, informed me that he will have his petition with the necessary signatures completed by December 10, 1995.

We look forward to welcome the new Thailand Chapter very soon and would like to wish his Organizer, Professor Narong, good luck and success with his first Chapter activities.

## Could This Really Be It?

The fourth, and hopefully, the last White diskette for 1995 was mailed on July 18 to each participating Section's Membership Data Diskette Program recipient. We intend to start the distribution of your Pink (update) files with the creation of the next diskette.

The latest diskette is a full data base (White) rather than the expected update file (Pink) because we discovered (after distributing the May diskette) that as many as 130,000 records did not contain all the information which had been provided by the members. The inputting of that data is now complete, so you should find your diskette as up-to-date as possible. The information on them is current as of July 1. There is, however, still one remaining problem: in a number of cases, you will find that the employer name appears as "The Member/Affiliate Company" rather than the real name of the member's employer. This is a dummy name set up so the record could be established when the system would not accept the real employer's

name. The system experts are working on a solution to the problem.

We anticipate that the production of the Pink diskettes will occur with more regularity than that of the Whites (yes, we realize that this is not a tough record to beat!). The target for the creation of the first Pink is from the middle to the end of August, followed by once a month production of the updates for the balance of the year. At this time, there are no guarantees, but we have been assured that there is every reason to believe we can supply you with the Pinks as planned.

As usual, please let Susan Sacks know if you find any consistent problems, or if you have questions. If you need to have changes made to specific records, here are two useful e-mail addresses, both of which will send your message directly to the proper people. (You will receive an automatic e-mail acknowledgment to let you know that your message has been re-

ceived in the proper mailbox.) Be sure to include both the member's name and member number when corresponding:

address.change@ieee.org for all address changes;

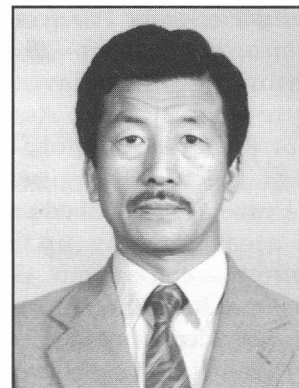
record.change@ieee.org for all other changes to a record.

## Planning Ahead:

Watch for your renewal form for the 1996 Data Diskette Program. You should start seeing the forms in the mailer with your diskette in August or September. If your Section officers and the diskette recipient remain the same, you can renew via e-mail. Otherwise, mail or fax the form back as soon as you have filled in the required information. Don't forget to have the form signed by an elected entity officer! We cannot process your renewal with changes unless it has been properly signed.



# Region 10 Chapter Activity Reports



by Eikichi Yamashita  
Co-Chairperson  
Transnational Committee

Chapter officers in Region 10 submitted the following reports on their activities in 1995:

## Nanjing

Nanjing Joint Chapter of AP/MTT/EMC was newly formed in January, 1995, and the Interim Chapter Chairperson is Professor Wen-xun Zhang of Southeast University, Nanjing, China.

## Hong Kong

Hong Kong Joint Chapter of AP/LEOS/MTT was newly formed in September, 1995, and the Interim Chapter Chairperson is Professor Kenneth K. Mei of City University of Hong Kong.

## India

### Lecture Meetings

- Acoustic Wave Propagation in Solids—Professor Eric L. Adler, McGill University, Canada (IIT Delhi)
- Efficient Capacitance Computation in a Stratified Dielectric Medium—Vikram Jandhyala, University of Illinois at Urbana (IIT Delhi)
- Status of Microelectronics Technology at DIMES—Professor C. I. Beenakker, Delf Institute of Microelectronics and Submicron Technology, (IIT Delhi)
- Approaching Fundamental Limits on Signal Detection: Devices and Principles—Professor Renuka Jindal (IEEE ED Distinguished Lecturer),

AT&T Bell LABS, USA (IIT Delhi)  
*Symposia/Workshops*  
*(Organized/Sponsored)*

- Workshop on Phased Array Radar Techniques, IIT Delhi, Feb. 9-11, 1995
- Workshop on Fibre Optics and Applications, University of Delhi, South Campus, Dec. 2-3, 1995
- National Symposium on Recent Trends in Microwave and Lightwaves, University of Delhi, South Campus, Dec. 4-6, 1995
- Seminar on Microwave Superconductivity, NPL, Delhi, Dec. 7, 1995
- Workshop on Millimetre Wave Integrated Circuits, IIT Delhi, Dec. 29-30, 1995
- Symposium on Electromagnetic Fields and Life Processes, School of Env. Sciences, JNU, Feb. 1-2, 1996.

### Star Programme

In a recently held meeting, the chapter decided to participate in the STAR Programme, Professor (Ms.) Bharathi Bhat of the Indian Institute of Technology has been nominated as the coordinator from India.

### New Members

This year, 27 new members/student members joined the chapter.

## NSW

The committee for 1995 comprised: Chairman: Dr. Trevor Bird; Vice-Chairman: Mrs. Carol Wilson; Secretary/Treasurer: Mrs. Oya Sevimli; Members: Mr. Tim Aubrey, Dr. Karu Esselle, Dr. Henry Fooks, Dr. Steve

Giugni, Dr. Alan McPhail, and Dr. Graham Town.

### Activities

Newsletters were prepared in March, April, August and October and distributed to all IEEE Joint Chapter members.

Four meetings were arranged in 1995:

### Millimetre-wave Technology Seminar, 14 March

This seminar was arranged to coincide with the visit and lecture by MTT Distinguished Lecturer, Professor Tsukasa Yoneyama of Tohoku University, Japan. Invited presentations were:

- "Millimetre-wave Wireless LANS—Technologies for the Missing Link"—Dr. Terry Percival (CSIRO Division of Radiophysics)
- "GaAs MMIC Prototyping at the CSIRO Division of Radiophysics"—Bob Batchelor (CSIRO Division of Radiophysics).

Terry Percival outlined possible future millimetre-wave wireless LANS and some of the major design issues. An integral part of such systems will be GaAs MMICs. Bob Batchelor reviewed current MMIC prototyping up to 60 GHz at CSIRO. Professor Yoneyama outlined the background theory of non-radiative dielectric (NRD) waveguides. As well, he described a range of applications that included an impressive set of experimental results and prototype systems using NRD waveguides.

Attendance: 25 Members 10 Non-members

### ***New Millimetre-wave Wireless Communications Systems—18 May***

Continuing the flavour of millimetre-wave systems, Associate Professor Richard Compton, of the School of Electrical Engineering, Cornell University, described possible market areas opening up in the millimetre-wave spectrum. Critical components of future millimetre-wave systems were identified. In particular, cost-effective solid-state oscillators will be important and Richard described how many low-power solid-state oscillators could be integrated in antennas to radiate directly into free-space.

Attendance: 15 Members 7 Non-members

### ***Biological Effects of Radio-Frequency Radiation—31 August***

Dr. Stan Barnett, of CSIRO Division of Radiophysics, gave an overview of the present state of knowledge of RF-induced bioeffects. The lecture was very timely, owing to recent community concerns about proliferation of mobile handsets and base stations, and was based on a detailed study prepared by CSIRO for the Commonwealth Government's Spectrum Management Authority. Stan said that much of the past research concentrated on RF-induced hyperthermia, but current research is looking into other possible mechanisms. He reported that the data from experiments with low-level exposures is contradictory and research is in progress to determine if a link exists to tumour promotion. The talk showed that our knowledge of the problem is imperfect and probably insufficient to make pronouncements about the safe levels. In particular, he recommended that current maximum levels given in the Australian Standard should be maintained until further data comes available.

Attendance: 29 Members 15 Non-members

### ***Visit to Telstra Oxford Falls Earth Station—2 November***

The Oxford Falls site houses Telstra's Sydney Satellite Earth Stations, which is the major Australian east coast station for international satellite communications using the INTELSAT system. Garry Housfield, a Specialist Engineer in Satellite Technol-

ogy at Telstra, gave a history of the site and overviewed its current operations. The first antenna was completed in 1986 and, today, the station comprises five antennas ranging from 4.5 m to 32 m. After the talk, AP/MTT members were given a tour of the operations centre, the transmission equipment room and the 32 m antenna.

Attendance: 12 Members 2 Non-members

### ***General***

At the end of 1994, Carol Wilson stepped down as Chairperson. Carol is congratulated for her leadership of the Chapter during the preceding three years. My thanks go to the Committee for their help during 1995.

## **South Australia**

The year of 1995 could be characterised by feast or famine. Two technical meetings have been held so far in 1995—both meetings were held in March a week apart. The first meeting was organised at short notice to take opportunity of a visit by Charles Boyd of Microwave Applications Group, Santa Clara, California, who spoke on the development of latching ferrite rotary-field phase shifters. The second meeting was one stop for Prof. Yoneyama on his MTT Distinguished Lecturer tour of Australia. He gave a lecture on non-radiative dielectric waveguide technology and applications. While the number of attendees at both lectures was small, the lectures were well received by those present.

After a famine of technical events since March, the second part of the "feast" is planned to be a one day course on the relation between geometric optics and field theory. The course is being offered by Prof. Harry Green, a well-known figure in the IEEE and electromagnetic communities. More details will be available shortly.

The Annual General Meeting is to be held on 5th December where the 1996 Committee will be elected. The members of the committee for 1995 were: Chairman: Bevan Bates; Vice Chairman: Greg Haack; Secretary/Treasurer: Michael Webb; Professional Activities: Andrew Parfitt.

Membership currently numbers 34 (a slight decrease from last year.)

## **Singapore**

The Chapter organised/participated in the following specialised workshops, conferences and technical talks:

***March 16-17, 1995—MMIC Workshop on the design and fabrication of phase shifters and amplifiers.***

Course Leaders: Professor Rolf E. Jansen of Jansen Microwave & Dr. Liam Devlin of GEC-MARCONI, UK. The number of participants was restricted to 15 from industry and government laboratories. The workshop consisting of 2-day lectures and hands-on sessions on the use of CAD software was extremely well received and will be repeated.

***IEEE Globe Com '95 (13-17 November 1995, Westin Stamford & Westin Plaza Hotels, Singapore.) Theme: Communications for Global Harmony.***

The MTT-S Chapter participates in the conference through the chairing of the publicity activities by the MTT-S Chapter Vice-Chairman, Dr. S. P. Yeo, and other members.

***IEEE Singapore ICCS '96—(IEEE Singapore International Conference on Communications Systems, 25-29 November 1996, Westin Stamford & Westin Plaza Hotels, Singapore.) Theme: Forging Ahead With Communications.***

The organising committee for the conference is co-chaired by the MTT-S Chapter Vice-Chairman, Dr. S. P. Yeo. MTT-related topics of the conference include Microwave Components & Systems, Antennas & Propagation and Radar. MTT-S members also assist through chairing of technical sessions. ***Two seminars by Professor Carson Stewart of Queen's University, Belfast, UK (18 May 1995, National University of Singapore)—Research in EE at Queen's University; Millimetre-wave Silicon Applications.***

A number of future collaborative projects were identified as a result of Prof. Stewart's visit.

## Taipei

- April 12, 1995—Prof. K. K. Mei and the delegation from City Polytechnic University of Hong Kong visited the Taipei Chapter. Issues concerning the 1997 Asia-Pacific Microwave Conference in Hong Kong were discussed. They were: Programs including paper presentation, commercial exhibition, educational exhibition and special sessions.
- April 29, 1995—The MTT-S Taipei Chapter became a legal entity in ROC. Chapter meeting was also held on the same day.
- April 29, 1995—The MTT-S Taipei Chapter organized the Wireless Communication Technology Development Workshop, held in Hsinchu, Taiwan. Topics covered hidden type planar antenna, filters, monolithic ICs for wireless applications, high power source, and electromagnetic comparability.
- May 25-26, 1995—Nano Devices Technology Symposium was held at Chiao Tung Univ., Hsinchu, Taiwan. IEEE MTT-S Taipei Chapter was one of the cooperating organizations.
- August 10-11, 1995—IEEE MTT-S Taipei Chapter co-organized a microwave and RF circuits design course, which was held in Taipei. Prof. Ching-Kuang Tzuang was one of lecturers.
- August 17, 1995—IEEE MTT-S Taipei Chapter co-organized 2 sessions of lectures: Technology Trend and Perspective of Telecommunication: 1. on Components, and 2. on Wireless Communication System Design. The speakers were Prof. C. K. Tzuang and Prof. C. T. Hwang, respectively; they both are members of the MTT-S Taipei Chapter.
- Nov. 17, 1995—Prof. S. T. Peng will act as the representative of the MTT-S Taipei Chapter, and deliver an invited speech at the annual conference of the Engineering Association of ROC.

## Beijing

IEEE MTT-S Beijing Chapter has

more than 20 members. Most of them have built good relations with the Society of Microwaves, CIE. That is the base of joint organization of meetings and sessions between the two organizations. So the joint organization of academic activities is the unique feature of the two organizations in China.

In this year,

- The 7th National Conference on Microwave Applications was held in Beijing on 18-21 Sept., 1995. There were more than 100 persons attending the conference, among whom there were 12 members of IEEE MTT-S Beijing Chapter. Microwave power applications are one of the subjects concerned by engineers and scientists at home and abroad.
- 1995 International Laser, Lightwave and Microwave Conference and Exhibition were held in Shanghai on Oct. 9-12, 1995. IEEE MTT-S Beijing Chapter was one of the sponsors. More than 100 delegates attended the conference. The papers, "Coordinate Transformation Method Approach to Coupled Optical Fibers", "Prospects of Lightwave and Microwave Communications in National Information Infrastructure", "On the Interact of Lightwave with Superconductor", "The Possibility of Optical CT", were worthy of notice. Prof. Weigan Lin, Chairs of both Society of Microwaves, CIE and IEEE MTT-S Beijing Chapter, presided at the conference.
- 95 National Microwave Conference is a large-scale comprehensive conference held every two years in China. More than 400 engineers and scholars will attend the conference. This year's conference has received papers more than 400. It'll be held in Nanjing on Nov. 7-9, 1995. Prof. Weigan Lin, Academician of the Chinese Academy of Sciences, Chairs of Society of Microwaves, CIE and IEEE MTT-S Beijing Chapter, will preside at the conference. More than 40 IEEE members will also attend the conference. It is very important to the Chinese microwave people, because it usually reflects the progresses of microwave theory and techniques in the past

two years to a certain extent in China.

## Nanjing

The Joint Chapter under Beijing Section and covering the southeast area of China Mainland was approved by the Regional Activities Board in January 1995, and Wen Xun Zhang was appointed as an interim chairperson. According to the instructions from Beijing Section, Zhang should have the responsibilities of interim chairperson for two years (Jan. 1995—Dec. 1996) for:

- establishing smooth communications to the mother societies;
- formulating "Chapter Bylaws";
- organizing frequent technical activities;
- promoting the membership developments;
- preparing a regular election of chapter officers.

The Joint Chapter has contacted all three mother societies' Chapter Coordinator and other officers respectively.

The Joint Chapter has published and distributed the first issue of "Chapter Newsletter" in Chinese, and made a "Chapter Bylaws" for discussion among the members.

- The Joint Chapter has found twelve member candidates, most of whom are applying for IEEE membership. A special seminar on "Introducing the IEEE and its societies" will be held in Nanjing, Shanghai and Hangzhou successively.
- 1995 technical schedule consists of 14 events. Among them the first 6 events have been performed, and the last one is in discussion. The titles of these events are listed below.

The financial situation is not so good. We have only one hundred U.S. dollars incoming from AP society. The Joint Chapter is running into debt now. We hope to make balance in 1996.

- Lecture on "Wavelet analysis and applications" (Mar., Son-Geng Son)
- Lecture on "Some topics on counter-stealth techniques" (May, Shou-Yuan Lin)
- Workshop on "Applications of commercial softwares in

electromagnetics and microwaves" (June, Lai-Cheng Ou, Li Zhou & Guang Hua)

- Co-sponsor "1995 National Symposium on Antennas" (Aug., Wen-xun Zhang & Neng-Hang Fang)
- Lecture on "Engineering analysis of waveguides" (Sept., Dian-Cheng Wang)
- Lecture on "Advanced techniques in frequency synthesizer" (Sept., Xiao-Hua Yun)

## Korea

### *Fund-Raising Microwave Workshop for APMC '95*

Presenter: Dr. Man-Young Chung, Kumho Group

- Overview of Digital Mobile Communication—Presenter: Prof. Jung Ki Kim, Chung Ang University
- Characteristics of Leaky Coaxial Lines—Presenter: Prof. Dong-II Kim, Korea Maritime University
- Wideband Branch Circuit Design for CATV—Presenter: Dr. Ok-Ilyun Chung, Luck-Goldstar Communication Co.
- Frequency Synthesizer Design—Presenter: Prof. Sang-Won Yun, Sogang University
- Miniature Circulator Design—Presenter: Dr. Soon-Young Eom, Electronics and Telecommunications Research Institute
- DAMA/SCPC RF System—Presenter: Prof. Dong-Chul Park, Chungnam National University; Title: Waveguide Bandpass Filter Design; Date: Feb. 23-24, 1995; Place: Sogang University, Seoul; No. of Attendance: IEEE members 50, nonmembers 100; Sponsor: APMC '95 Steering Committee

### *Microwave Symposium '95 Spring*

Date: May 27, 1995; Papers Presented: 42; Guest Speaker: Dr. Hyung-Moo Park (Electronics and Telecommunications Research Institute); Place: Sogang University, Seoul; Host:—Korea Institute of Telecommunications and Electronics—IEEE MTT Korea Chapter; No. of Attendance: IEEE members 90, nonmembers 110; Meeting (Attendance) Charges: Yes.

### *1995 Asia-Pacific Microwave Conference*

Date: Oct. 10-13, 1995; Papers Presented: 256; Tutorial Speaker: Prof. O. L. Matthaci (U.S.A.); Prof. T. Itoh (U.S.A.); Prof. V. K. Tripathi (U.S.A.); Prof. Yoshiyuki Nalto (Japan); Place: Korea Advanced Institute of Science and Technology (KAIST), Taejon; Host:—Korea Institute of Telecommunications and Electronics;—Korean Institute of Communication Sciences;—Korea Electromagnetic Engineering Society;—IEEE MTT Korea Chapter; No. of Attendance: IEEE members 250, nonmembers 230; Meeting (Attendance) Charges: Yes.

## Tokyo

### *News*

Prof. Tsukasa Yoneyama of Tohoku University, a former Tokyo Chapter Chairperson, served as Distinguished Microwave Lecturer. His lecture title was "Nonradiative Dielectric Waveguide and Applications".

Tokyo Chapter played an important role in organizing 1994 Asia-Pacific Microwave Conference (APMC '94), which was held on December 6 to 9, 1994, at Makuhari, Tokyo. Dr. Crescenzi, Jr., President of the IEEE MTT-S gave a message from MTT Society at the opening ceremony.

Dr. Y. Kobayashi (Chairperson) and Dr. T. Nishikawa (Vice Chairperson) attended MTT-S Chapter Chairperson's Meeting held at Clarion Plaza Hotel, Orlando, Florida, on May 16, 1995.

Tokyo Chapter is in cooperation with 1995 Microwave Workshop and Exhibition (MWE '95) to be held on December 12 to 14, 1995, at Pacifico Yokohama.

Tokyo Chapter sponsors memorial lectures by Microwave Career Award and Pioneer Award recipient scheduled on December 12 during MWE '95.

### *Technical Meetings*

May 9, 1994: 77 attendants. "Microwave Patch Radiators—CAD Issues and Active Antennas"; K. C. Gupta, University of Colorado.

July 18, 1994: 40 attendants. "Future Trend in Electromagnetic Analysis of Microwave Circuits Containing Active Devices"; T. Itoh, UCLA; "Report on 1994 IEEE MTT-S

International Microwave Symposium"; H. Ogawa, NTT, and eight other members.

October 18, 1994: 80 attendants. "Principle and Application of Nonradiative Dielectric Waveguide"; T. Yoneyama, Tohoku University.

January 20, 1995: 40 attendants. "1994 European Microwave Conference Report"; T. Nojima, NTT Docomo and five other members.

April 22, 1995: 70 attendants. "Recent Progress of High-To Superconductive Microwave Devices"; K. Suzuki, ISEC.

May 25, 1995: 80 attendants. "Technological Trends in Mobile Communications"; H. Yamamoto, AIST.

June 22, 1995: 40 attendants. "1994 Asia-Pacific Microwave Conference Report"; S. Mizushima, Shizuoka University.

July 24, 1995: 45 attendants. "A Report on 1995 IEEE MTT-S International Microwave Symposium"; H. Ogawa, NTT and seven other members.

### *Future Plans*

December 12, 1995. MWE '95 at Pacifico Yokohama Convention Center  
"Memorial Lectures of Recipients of Microwave Career and Pioneer Award"—Chairman: Dr. Y. Naito, Tokyo Institute of Technology; "Microwave Career Award Recipient"—Dr. Y. Konishi, Tokyo Institute of Polytechniques; (Chairman: Dr. K. Kurokawa, Fujitsu Labs.); "Microwave Pioneer Award Recipient"; Dr. M. Uenohara, NEC.

January 25, 1996: "1995 European Microwave Conference Report"; T. Hirota, NTT and three other members.

February, 1996: "A Report on 1995 Asia-Pacific Microwave Conference"; S. Kawasaki, Tokai University and others.

### *Non-Technical Meetings*

December 19, 1994: 5 attendants. "Joint meeting with the former and new chapter officers" at REALISE Co.

April 14, 1995: 9 attendants. "Exercise of Oral Presentation for 1995 IEEE MTT-S International Microwave Symposium"; Advisor: T. Tsukii, Raytheon Systems Co. at Mitsubishi Electric Co.



# 1994 International Conference on Infrared and Millimeter Waves Sendai, Japan October 17-20, 1994

by Koji Mizuno  
Research Institute of Electrical Communication  
Tohoku University  
Sendai, 980-77 Japan



The 1994 International Conference on Infrared and Millimeter Waves (94 IR & MM Waves) was held on October 17-20, 1994, at the Sendai International Center, Sendai, Japan. This was the 19th Conference of this series, just 20 years after the first conference was held in Atlanta, Georgia, 1974 and the 2nd conference in Japan after 10 years. Sendai is known as the "Tree-Clad City" and is surrounded by beautiful places such as Matsushima, one of the scenic trio of Japan, and Zao mountain range ("Mountain of Gods"). The logo of the Conference symbolizes the Tachibana-type anode of the split anode magnetron which was successfully used by Dr. K. Okabe to obtain RF oscillation with a wavelength of 12 cm in 1927 at Tohoku University, Sendai, following the invention of the Yagi antenna in 1926 also at Tohoku University.

The Conference was sponsored by the Japan Society of Applied Physics with co-operative sponsorships of IEEE MTT-S, IEEE MTT-S Tokyo Chapter, the Institute of Electronics,

Information and Communication Engineers of Japan, the Institute of Electrical Engineers of Japan, and the Institute of Physical and Chemical Research (RIKEN). Prof. Jun-ichi Nishizawa, President of Tohoku University, served as the Conference chairman. IEEE MTT-S was represented by Prof. Eikichi Yamashita of the University of Electro-Communications.

Over 320 abstracts from more than 25 countries were submitted to the Conference, covering mainly millimeter and submillimeter wave technologies and measurements. Of the abstracts about 280 papers were accepted for presentation at the Conference, including 34 invited keynote papers. The number of attenders of the Conference is 324 including 98 from abroad. The technical program consisted of 4 invited plenary talks, one in the morning of each day, and 32 regular sessions which were scheduled in four parallel sessions which started with one or two invited keynote papers (see Table).

Sessions	Number of Papers
Plenary	4
FEL	13
Gyrotron	65
Solid State Sources	17
SubMM Detectors	19
Spectroscopy	57
Gas Lasers	10
Guided Wave Propagation and Components	28
Astronomy & Atmospheric Research	16
Plasma Diagnostics	14
Optical/Microwave Interactions	8
MMW Systems & Technology	18
Technical & Industrial Applications	9
Application in Biology & Medicine	6
Post Deadline	5
Total	289

The invited plenary talks included:

- T. Sueta, "Microwave-lightwave technology and ultrafast optoelectronics"
- T. G. Phillips, "Developments in submillimetre wave astronomy"
- A. J. Sievers, "Two-level systems in glasses, mixed crystals and celestial solids"
- G. F. Bland, "Development and applications of frequency tunable, submillimeter wave gyrotrons"

On the evening of the day before the Conference a welcoming party was held, and 160 people attended to enjoy friendship for about two hours. A conference buffet reception was held on the evening of the second day. Over

300 guests attended the party which initiated with a welcoming address from Professor J. Nishizawa. Congratulatory speeches were given by distinguished guests, including Prof. A. Sievers, Prof. M. von Ortenberg, Dr. R. Temkin, Prof. K. Shimoda, and Prof. A. Mitsuishi who offered the toast. The guests enjoyed a Japanese traditional folk dance called "Shishiodori" (Deer Dance). Even after closing the party many small parties enjoying further conversation were seen until late into the evening. During the conference, five kinds of ladies programs were held, which included "koto" (a Japanese musical instrument) concert, Japanese flower arrangement, kimono dressing, Japanese tea ceremony, and paper folding. The works of the flower arrangement decorated the conference

party room. These ladies programs were performed by volunteer groups from Sendai.

Part of the Conference was financially supported by 33 related companies and foundations. This May, the conference settlement of accounts was reported at a meeting of the board of directors of the sponsor of the Conference, the Japan Society of Applied Physics and approved.

The Conference Digest is available at a cost of 3,000 Yen plus postage. Please write to: Miss Reiko Sasaki, Conference Secretary, 94 IR & MM Waves, Photodynamics Research Center, RIKEN, 19-1399 Koeji, Aoba, Sendai 980, Japan (Fax: +81-22-228-2128).

## Is It in the Mail?

Does your US Section publish a newsletter or send other mailings on a regular basis? Is your Section a holder of a third-class nonprofit postal permit? (If not, see \* below) If so, you need to be aware of the new third-class nonprofit mail regulations which will go into effect as of October 1, 1995.

The regulations are not yet engraved in stone, so we can only provide you with the latest and almost final proposal. What we do know is that as of October 1, something similar to the following will be in place:

The new rules restrict advertising for products or services unless the mailpiece qualifies as a periodical.

To qualify as a periodical publication, the proposed rule states that a publication must:

1. Consist of at least 25%

nonadvertising matter

2. Have a title on the front cover in a distinguishable style and size
3. Be formed of printed pages (no stencils, mimeographs or hectographs)
4. Contain an ID statement (masthead) on one of the first five pages that includes: title; issue date; frequency; name and address of the authorized nonprofit organization; issue number; ISSN (if applicable) and subscription price (if applicable).

If your publication does not meet the requirements of a periodical, any advertising you may print will be severely restricted if you want to be allowed to use the third-class nonprofit postage rate. As of October 1, special bulk rate (third-class nonprofit) mailings that contain prohibited ads will be

required to pay regular third-class rates.

Be prepared! The US Postal Service warns there will be no grace period once the new regulations are implemented; if your material doesn't meet the criteria, you will have to pay the higher postage costs. We suggest you meet with your commercial account representative at your local post office to review your newsletter so you don't find yourself paying higher than necessary postage fees.

\*If your US Section does a considerable amount of mailing and has no third-class nonprofit permit, talk to your post office about obtaining one. You may be able to save a great deal of money. Most likely, you will need proof of IEEE's 501(c)(3) tax status. If so, you can obtain a copy of the IRS letter granting the Institute nonprofit status by contacting Susan Sacks.

# Report of the 1994 Asia-Pacific Microwave Conference

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## Outline

The 1994 Asia-Pacific Microwave Conference (APMC'94) was held at the Nippon Convention Center, Makuhari, Chiba, Japan, on December 6-9, 1994. That conference was organized and sponsored by the Institute of Electronics, Information and Communication Engineers (IEICE) of Japan, and is cosponsored by IEEE MTT-S Tokyo Chapter and was cooperatively sponsored by IEEE MTT-S and URSI.

## Conference Organization

Under Dr. B. Oguchi, the Conference Chairperson, Fujitsu Laboratories Ltd., six committees, i.e., Organizing Committee (Chairperson: Prof. Y. Naito), Advisory Committee (Chairperson: Prof. T. Yoneyama), Funding Committee (Chairperson: Dr. M. Kuwahara), International Steering Committee (Chairperson: Prof. E. Yamashita), Steering Committee (Chairperson: S. Mizushina), Technical Program Committee (Chairperson: Prof. M. Akaike), were organized. The members of the committees were invited from the governmental organizations, academia, and companies. The number of persons who participated in running the conference, including reviewing papers, were more than one hundred and fifty.

## Conference Venue

The Convention Center (Makuhari Messe), Makuhari, Chiba, is located 20-km east of downtown Tokyo. Makuhari is near Tokyo Disney Land.

## Conference Schedule

The conference was held for three days, through December 6 to 8. Six sessions ran in parallel including open forums (poster sessions). The workshops were held on December 9.

## Attendees

About seven hundred people from seventeen countries attended the conference. They were 624 from Asia-Pacific countries, 46 from North and South American countries, and 29 from European and African countries.

## Opening Session

In the opening session, opening speeches were given by Dr. B. Oguchi (Figure 1), Prof. Y. Naito, Prof. E. Yamashita, and Prof. S. Mizushina, and congratulatory speeches were given by Dr. E. J. Crescenzi, Jr. (MTT-S President) (Figure 2), Dr. Y. Furuhashi (URSI Japanese Committee Chairperson), and Prof. T. Berceli (EuMC Liaison). An extraordinary success of the conference was felicitated.



Figure 1. Dr. B. Oguchi, the Conference Chairperson, Fujitsu Laboratories Ltd., gives an opening speech.



Figure 2. Dr. E. J. Crescenzi, Jr., MTT-S Chairperson, Watkins-Johnson Company, gives a congratulatory speech.

## Keynote Address

Prof. T. Yoneyama, Tohoku University, gave a keynote address, "Millimeter waves and beyond" (Figure 3) in which he suggested promising utilization and applications of frequencies with shorter wavelengths.



Figure 3. Prof. T. Yoneyama, Tohoku University, gives a keynote address, "Millimeter waves and beyond."

## Invited Sessions

Eight invited sessions were given. They were:

- (1) Recent activities in Asia-Pacific countries
- (2) Recent activities in European countries
- (3) The role of the radio amateur in microwave engineering development
- (4) Recent innovation stories in microwaves
- (5) Future microwave and millimeter-wave systems
- (6) Phased array systems (1)—system applications
- (7) Phased array systems (2)—basic hardware technologies
- (8) Ultimate microwave and millimeter-wave technologies

## Presented Papers

A total of 452 papers were submitted from 27 countries. Selection of the submitted papers was very strict. Many referees were invited from over-

seas. A total of 290 papers were presented, among which 264 were contributed papers and 26 were invited papers. The number of sessions were 44, among which 42 were oral presentation sessions and 2 were poster sessions. The main topics are basic electromagnetic theory, active devices and circuits, passive devices and circuits, and systems and applications.

## Workshops

The workshops were held on December 9. The topics of the workshops reflect recent attractive aspects of microwave fields. Presented papers are invited.

- (1) Millimeter-wave MMIC technology
- (2) Optoelectronics signal processing and application to microwave systems
- (3) Personal communications and related technology

- (4) Present status and trends of mobile/satellite communications
- (5) Advanced nonlinear device modeling for circuit simulations
- (6) Microwave and millimeter-wave radar/sensor technology
- (7) Microwave circuit simulation technology by electromagnetic field analysis
- (8) Superconducting device applications to microwave and millimeter-wave circuits

## Japan Microwave Prize

To the best papers in the APMC'94, Japan Microwave Prize was awarded (Figure 4). Six papers shown below were selected:

- (1) W. A. Arturi Jr. and T. Yoneyama, "Ridge coplanar waveguide for optical amplitude modulator"
- (2) Y. Ishikawa, T. Nomoto, T. Okada, and S. Shinmura, "A signal-to-noise enhancer with extended bandwidth using two MSSW filters and two 90-degree hybrids"
- (3) S. Kimura and Y. Imai, "DC-to-40-GHz MESFET Distributed baseband amplifier"
- (4) J. H. Searls, C. Mcneilage, E. M. Ivanov, M. E. Tobar, and R. A. Woode, "Improved microwave os-



Figure 4. Japan Microwave Prize was awarded to the best six papers presented in the APMC'94.



cillators based on sapphire loaded cavity resonators"

- (5) I. Toyoda, M. Hirano, and T. Tokumitsu, "An Ultra-wideband miniature balun for 3-dimensional MMICs"
- (6) AU Tsien Ming and LUK Kwai Man, "Rigorous analysis of aperture-coupled offset dual-patch antenna"

## Microwave Exhibitions

### Technical exhibitions (Microwave Exhibitions '94)

A total of 204 companies exhibited microwave products and related techniques (Figure 5). Five thousand people attended the exhibition. Active discussions were developed about these products.

### Historical/Special Display

As the reciters of Japanese microwave history in the 20th century, radars and magnetrons of the early age, guided millimeter-wave transmission devices were displayed. Furthermore, a thermal model of a maritime observation satellite (MOS-1) and video images were displayed. Since this display was the first trial, the scale was small. More extensive exhibition is expected.

## Tutorial Presentations

For promoting the participation of younger generations in the conference, a tutorial program in which basic microwave technologies are lectured was given. The following ten subjects were lectured in simple language by leading researchers from companies and universities. This tutorial is evaluated as raising the population of radio and microwaves in younger researchers generation.

For basic electromagnetic waves and microwave theory:

- (1) Striplines
- (2) Electromagnetic waves and distributed lines
- (3) Microwave circuit theory
- (4) Passive components
- (5) Magnetostatic wave devices

For Microwave semiconductor devices and integrated circuits:

- (1) Basics of microwave semiconductor devices
- (2) Semiconductor processes
- (3) Design theory for microwave semiconductor devices/circuits
- (4) Evaluation technology for microwave semiconductor devices/circuits
- (5) Devices/circuits module



Figure 5. A total of 204 companies participated in the Microwave Exhibitions'95 and five thousand people attended.

## International Steering Committee

The International Steering Committee was convened by its Chairman, Prof. E. Yamashita, APMC'94, attended by Prof. Jui-Pang Hsu, Prof. Y. Naito, Prof. T. Yoneyama (Vice Chairpersons), Prof. Lin Deyun (China), Prof. J. Ceremuga (Australia), Prof. C-K Tzang (Taiwan), Prof. E. K. N. Yung (Hong Kong), Prof. J-W Ra (Korea), Prof. L. M. Seng (Singapore), Prof. E. K. Sharma (India) (Delegates from Asia-Pacific countries), Dr. E. J. Crescenzi, Jr., Prof. T. Itoh (Delegates from MTT-S), Prof. T. Berceli (Delegate from EuMC), Prof. K. Miyauchi, and Prof. S. Mizushima (Delegates from APMC'94).

In the committee, host countries from 1995 have been decided, i.e., Korea (1995), India (1996), Hong Kong or China (1997), Japan (1998), Singapore (1999), Australia (2000), Taiwan (2001), Japan (2002), and Korea (2003). As the international cooperation in running APMCs henceforth, "Guidelines" and cooperative work in reviewing submitted papers were discussed.

# 4th Topical Meeting on Electrical Performance of Electronic Packaging Portland, Oregon

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The 4th topical meeting, held in Portland on October 1-4, was extremely well attended this year with a 35% increase in participants (163) over last year. The meeting was sponsored by the MTT and the CPMT societies. The workshop-like format of the topical meeting is quite conducive to closer interactions between attendees and presentations that report on work-in-progress. The general feeling was that this meeting has now become the premier meeting for researchers and engineers working on electrical performance issues of high-speed and microwave electronic systems.

The meeting had eleven oral sessions, one open forum (poster), and four short tutorials on the day prior to the start of the meeting. The short courses were offered for the first time this year and were very well attended. The following topics were covered:

- electrical design of multi-chip, multi-layer packaging
- understanding, performing, and applying high-frequency electrical package measurements
- practical EMC design and modeling
- electrical design and characterization of packages.

Each of the three days had distinct areas of focus:

- digital system design issues
- microwave and communication package design and measurements
- progress in simulation and modeling techniques.

Due to the continuing trend of

transferring more and more of the system components (such as CPU and cache) on large microprocessor chips, a new topic was introduced this year that addressed the challenges raised for packaging these components. Bill Siu, VP for Packaging at Intel Corp., set the tone of the session with an invited presentation on the technical and economical issues that will govern microprocessor packaging in the year 2000. One of the key constraints that he stressed was the requirement of keeping the price of even the most complex microprocessor chip at around \$300.

On the first day, very informative invited talks were also given by M. Tripp (Intel Corp.), B. McCredie (IBM Corp., Poughkeepsie), and B. Rubin (IBM Corp., Yorktown Heights). The entire day stressed the increasing demands placed by high-speed, high-I/O-count microprocessor chips on the containment of simultaneously switching noise, crosstalk, attenuation and signal integrity on multi-drop nets, both on and off-chip, while at the same time providing cost effectiveness. The same theme of cost-effectiveness was echoed on the second day by the two invited speakers, K. Jackson (IBM Corp., Rochester) and S. Ponnappalli (IBM Corp., Yorktown Heights) in their presentations on optical computer interconnections and antenna design for wireless systems such as laptop computers, respectively. Microwave packaging was also shown to focus on transition to flip-chip configurations and lower cost assemblies. The experimental characterization papers investigated new techniques for high-

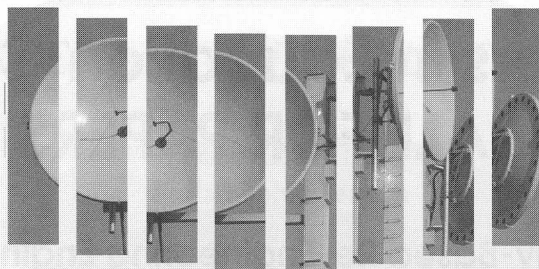
speed production testing, extraction of package inductive matrix for high lead count single chip carriers, and novel approaches to package and system design of high-data rate communication links.

The simulation/modeling sessions on the third day were started with a very informative review by Prof. M. Nakhla (Carleton University, Canada) on recent progress in moment-matching techniques for lossy interconnect simulation. New circuit element complexity reduction technique based on tensor analysis and network diakoptics were proposed and inclusion of retardation losses in PEEC modeling was recommended. Improvements to moment-matching, method-of-moments, and finite-element techniques were presented and generated interesting discussions. New attempts were proposed for combining circuit simulators and electromagnetic based package parameter extractors into unified tools.

During the evening of the open forum session, Prof. R. Mittra (University of Illinois) applauded the efforts made by the technical program committee in maintaining an equal balance of participation from industry and academia which fosters very fruitful cross-fertilization of technical and practical experiences.

The city of Portland provided an excellent environment with great weather, friendly people and great views. The next meeting is scheduled to be held in Napa Valley, California, during the last week of October, 1996.





**CALL FOR PAPERS**

## for the 1997 IEEE MTT-S International Topical Symposium on Technologies for Wireless Applications

23–26 February 1997, Vancouver, B.C., Canada

To complement the annual International Microwave Symposium, the Microwave Theory and Techniques Society (MTT-S) of the Institute of Electrical and Electronics Engineers (IEEE) is sponsoring a series of International Topical Symposia in areas of special interest to its membership. The second of these Symposia is scheduled to be held 23–26 February 1997 in conjunction with INTER COMM 97 in Vancouver, B.C., Canada.



**Prospective authors are requested to submit 10 copies of both a 50 word abstract and an extended Summary (not to exceed 1000 words) with supporting figures, clearly stating the significant contribution.**

**Submit proposed papers to:**

Frank Sullivan  
c/o LRW Associates  
1218 Balfour Drive  
Arnold, MD 21012, USA  
Tel: (410) 647-1591  
Fax: (410) 647-5136

A separate cover sheet should include the name, address, telephone and fax numbers of the corresponding author.

The topic of this symposium, Technologies for Wireless Applications, is intended to highlight the application of RF, microwave and millimeter wave technologies to all aspects of wireless communications. Contributions of original work are solicited in the field of wireless applications, including personal communication systems, local and wide area networks, stationary and mobile communication systems, global positioning systems and others. Areas of special interest include, but are not limited to:

- ✓ *System Design Tradeoffs*
- ✓ *Antenna and Path Design*
- ✓ *Devices and Circuits*
- ✓ *Components for Consumer Products*
- ✓ *High Speed Digital Processing*
- ✓ *Design for Manufacturing*
- ✓ *Design for Testing*
- ✓ *Manufacturing Technologies*
- ✓ *Packaging and Interconnection Technologies*

**Deadline for the receipt of papers is 26 July 1996. Notifications to authors of accepted papers will be mailed by 26 August 1996. For the Digest of Papers, an archived and copyrighted publication of the IEEE which will be available at the Symposium, authors are expected to provide a camera ready manuscript by 21 October 1996. Instructions for its preparation, including a copyright release form, will be provided with the notification.**

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# 1996 Frontiers in Education Conference

## CALL FOR PAPERS

**Theme: "Technology-Based Re-Engineering Engineering Education"**  
**Marriott Hotel, Salt Lake City, Utah / November 6-9, 1996**

The 1996 FIE Conference will bring together experts and colleagues who are interested in the fast-growing area of technology-based engineering education and curriculum development. Topics of interest include:

- Simulation software in engineering education
- Multimedia and technology-based curriculum developments
- Distance learning
- Assessment of educational innovations
- Student preparation and curriculum revisions
- Students' Corner — Evaluation of their preparation and the changes in engineering education
- Multidisciplinary undergraduate engineering projects
- NSF coalitions — Where's the beef?
- Communication advances and engineering education
- Corporate participation in engineering education — Programs and impact
- Accreditation and modern curriculum developments
- Engineering design/manufacturing programs
- Educational infrastructure
- General perspectives on engineering education — Past, present, and future

Papers, workshops, and sessions addressing the conference theme and the above topics of interest are invited. The conference will also invite speakers to address the state-of the-art of the topical issues of general interest to engineering education. Abstracts, not exceeding 300 words, should be submitted by mail, fax, or e-mail to the General Chair. Authors of accepted abstracts must submit full papers for review and possible publication in the conference proceedings. Final papers will be submitted on diskette. The proceedings will be converted and put on the World Wide Web. Authors are expected to attend the conference and present their work to their peers. Information about the conference may be obtained from the General Chair. The conference encourages exhibitors to participate and display their latest technology, software, expertise, and services with attendees. Interested parties should contact the Exhibit Co-Chair for more information.

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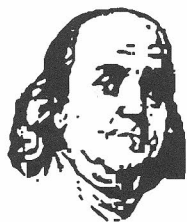
FEBRUARY 15, 1996—Submission of abstracts due to General Chair  
APRIL 1, 1996—Notification of acceptance to authors  
MAY 15, 1996—Full papers due for review  
JULY 31, 1996—Submission of final papers on diskette



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# ANNOUNCEMENT AND CALL FOR PAPERS

IEEE AP/MTT-S  
Philadelphia Section



## 14th ANNUAL BENJAMIN FRANKLIN SYMPOSIUM on Antenna and Microwave Technology

The **Philadelphia Chapter** of the **IEEE AP/MTT-S** and the **Franklin Institute** will hold the 14th Annual Benjamin Franklin Symposium on Friday, May 3, 1996 from 8:30 AM to 5:00 PM. This one-day symposium will consist of two sessions:

**Morning Session:** Interactive Session of contributed papers and a Plenary Session of invited Papers.

**Afternoon Session:** Parallel Sessions of contributed papers on all theoretical and applied work related to **Antennas, Propagation, Microwaves and Photonics**.

**Place:** The Franklin Institute, 20th Street and the Benjamin Franklin 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, without page numbers) by **March 8, 1996** to:

Dr. Bill Jemison  
181 Water Street  
Ambler, PA 19002  
Phone: 215-674-5100 or 215-542-0164  
email: jemison@flam.com

**Special Issue of the Franklin Journal:** Conference organizers will solicit authors of some selected papers to submit extended versions of their 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.

**For further information:** Please call William Jemison at (215) 674-5100 or Eric Holzman at (609) 722-4400 (eholzman@motown.ge.com). Inquiries regarding the Franklin Institute may be directed to Kathy DeLuca at 215-448-1329.

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# **26th EUROPEAN MICROWAVE CONFERENCE**

## **The International Conference Designed for the Microwave Community**

### **Hotel Hilton Atrium, Prague, Czech Republic**

In co-operation with:

Czech Technical University, Prague, Faculty of Electrical Engineering, Department of Electromagnetic Field  
Czech Electrotechnical Society

IEE—The Institution of Electrical Engineers

IEEE—The Institute of Electrical and Electronics Engineers—Region 8, MTT Society and Czechoslovak Section

URSI—The International Union for Radio Science

In association with: Nexus Information Technology

## **CALL FOR PAPERS**

Conference: 9-12 September 1996

Exhibition: 9-19 September 1996

Workshops: 13 September 1996

### **CONFERENCE TOPICS:**

1. Terrestrial and satellite communications
2. Mobile and personal radiocommunications
3. Active and passive radars, remote sensing
4. Antennas and propagation
5. Millimetre and sub-millimetre waves, components, circuits
6. Microwave and lightwave interaction
7. Solid state devices, modelling and technology
8. Active circuits and systems
9. Passive components and circuits
10. Linear and non linear CAD
11. Microwave measurements and new materials
12. Field theory
13. Industrial, biological, environmental and scientific applications
14. Electromagnetic compatibility, packaging and interconnections

### **CONTRIBUTIONS:**

Summaries of papers describing new work in the areas listed above are invited for consideration by the Technical Programme Committee and should be received by 2 February 1996. The summaries should be in English.

Authors are asked to submit six copies of their summaries by mail. The summaries should be typed single-space and occupy no more than three (but not less than two) A4 pages including graphs and diagrams. The summary should include an abstract and should also emphasize what is new and distinguish carefully between theoretical, simulated and practical results. The summary should include a brief conclusion.

The author's name, affiliation, full address and telephone/fax numbers/e-mail should be given on the first page together with the topic number which seems most appropriate to the work. Please use number 15 for topics which are not listed.

### **DEADLINE FOR ABSTRACTS 2 FEBRUARY 1996**

Summaries should be sent to:

Professor Jan Machac, 26th EuMC Conference Secretary  
Czech Technical University, Technicka 2, 16627 Prague 6  
Czech Republic

Authors will be informed on the decision of the Technical Programme Committee by 10 May 1996. A complete manuscript will be required by 5 July 1996 for inclusion in the Book of Proceedings. This paper prepared to camera ready copy standard can be submitted on disk, with accompanying hard copies, and must not exceed six sides of A4 including diagrams, figures, etc. Detailed instructions will be sent to all accepted authors by the organisers, Nexus Information Technology. Authors are responsible for obtaining publication approval from their employer.

Summaries will not be returned to the authors. All correspondence from the organisers will be addressed to the first author of the paper.

All papers presented at the conference will be in English.

## TECHNICAL PROGRAMME COMMITTEE

Chairman: J. Zehentner, Czech Technical University, Czech Republic

Secretary: J. Machac, Czech Technical University, Czech Republic

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Z. Skvor, Czech Technical University, Czech Republic  
O. G. Vendik, St. Petersburg Electrotechnical University, Russia  
J. Vrba, Czech Technical University, Czech Republic

## WORKSHOPS

Three workshops will be organised on Friday 13 September 1996 at the Hotel Hilton Atrium, Prague, Czech Republic.

1. Open transmission lines for millimetric applications—Organiser: T. Rozzi, University of Ancona, Italy
2. New microwave sensors and industrial applications—Organiser: J. Detlefsen, TU Munich, Germany
3. Rapidly developing East/West economic relations bring forward new perspectives for micro/millimetrewave applications—Organiser: H. Meinel, Daimler Benz, Germany

## EuMC MICROWAVE PRIZE

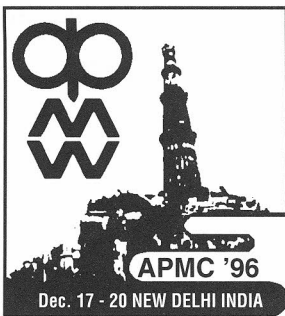
The Management Committee will award the EuMC Microwave Prize of SF 1000 to the author(s) of the best paper presented at the conference.

## EXHIBITION:

There will be an exhibition in conjunction with the conference from 9-12 September 1996 at the Hotel Hilton Atrium, Prague, Czech Republic

## FURTHER INFORMATION

Gillian Shinar, 26th EuMC Conference,  
Nexus Information Technology, Nexus House, Swanley,  
Kent BR8 8HY, UK  
Tel: +44 (0) 1322 660070, Fax: +44 (0) 1322 661257



# APMC'96

## 8th Asia Pacific Microwave Conference

17-20 December 1996, New Delhi, India  
cooperatively sponsored by IEEE MTT-S and URSI

## Call for Papers and Participation

The aim of the APMC conference is to provide an annual forum for the presentation and discussion of recent advances in the areas listed below. The program committee invites contributions for APMC'96 in New Delhi, in following areas:

- Solid State Devices and Circuits
- QaAs FET, HEMT, HBT and other Devices
- Low-noise Devices and Techniques
- High-Power Devices and Techniques
- Microwave and Millimeter Wave Monolithic Circuits
- High-Speed Digital Circuits
- Microwave Measurement for Gigabit Devices
- Opto-Electronic Techniques
- Microwave and Millimeter Wave Packing
- Passive Devices and Circuits
- Microwave Superconductivity
- Electromagnetic Field Theory
- Ferrite Devices
- Microwave Acoustics
- Millimeter Wave and Submillimeter
- Wave Techniques
- EMC/EMI
- Scattering and Propagation
- Microstrip Antennas
- Measurement Theory and Techniques
- Computer Aided Design
- Microwave and Millimeter Wave Systems
- Microwave Terrestrial, Satellite and Mobile
- Communication Systems
- Microwave Industrial Applications
- Microwave Medical/Biological Applications
- Phased and Active Array Techniques
- Remote Sensing

Prospective authors are requested to submit one camera ready original and four copies of the final paper written according to the requirements given in the section "Information for Authors", to the conference Secretary. Provide on separate sheet the title of the paper, the relevant area, the name, the affiliation, the full address, the telephone, the fax and the e-mail of the correspondence author:

**Deadline for the receipt of a paper is June 1, 1996**

All papers will be reviewed, and the authors will be informed of the decision of the Technical Program Committee by August 10, 1996. A limited number of papers may be accepted as a poster, with reproduction of full paper in proceedings. Accepted papers will be printed in the proceedings without opportunity for further change.

### Information for Authors

All papers must be written in English. Papers must be submitted in final form to be published in the proceedings. Type the text inside a frame of size 17x25 cm. on A4 paper and keep single spacing between text lines. Use 12 points fonts with serif. The title should be centered in capital letters with 1 cm. margins with respect to the frame. The author name and complete organizational and affiliation should be two lines below the title. The abstract should start three lines below this in a single column across the page. Section headings should be typed in bold face: Figures and tables should fit inside the frame. Captions must be single spaced and centered. Only black and white photographs are acceptable. References should be listed at the end according to IEEE, MTT transactions. Do not type page numbers. Number the pages (Maximum 4) of the manuscript in pencil on the bottom of each page.

### Exhibition:

There will be no exhibition during the conference from December 17-20, 1996 to exhibit the commercial and industrial products.

**All enquiries should be addressed to the conference Secretary**

**Conference Chair**  
**Prof. G. P. Srivastava**  
Department of Electronic Science  
University of Delhi South Campus  
New Delhi—110021, India

**Conference Secretary**  
**Dr. R. S. Gupta**  
Department of Electronic Science  
Univ. of Delhi South Campus  
New Delhi—110021, India

**Fax: 91-11-6886427**  
**Tel: 91-11-601955 ext 432 or 91-11-602440**  
**e-mail: abbai@udsc.ernet.in**



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# 43rd International Field Emission Symposium

July 14-19, 1996 • Moscow, Russia

## Call for Papers

The event is organized by the Institute of Theoretical and Experimental Physics (Moscow) and Association "Ultramicroscopy in Science and Technology" (Moscow). The co-chairmen of the Symposium are Prof. R. Bakhtizin and Prof. A. Suvorov. This Symposium in Moscow will be the 43rd meeting in its series that started in 1952, organized by the late Professor Erwin W. Muller, inventor of field emission microscopy, field ion microscopy and atom probe.

The Symposium is the most comprehensive one in this field and the scope of the meeting covers a variety of microscopy, including field emission and field ion microscopy, scanning tunneling microscopy and spectroscopy as well as atom probe microanalysis.

The Symposium will be organized in the form of plenary and section sessions as well as several workshops. The main topics are as follows:

- Theory of field electron and field ion emission
- Field electron microscopy and spectroscopy
- Field ion microscopy and atom probe analysis of materials and interfaces
- Field ionization mass-spectrometry
- Scanning tunneling microscopy and spectroscopy
- Vacuum microelectronics
- Electron, ion and liquid-metal sources

The deadline for submission of abstracts (1 page in two copies) is March 31, 1996. Time for presentation: plenary session—40 min; section session—20 min.

The language of the Symposium is English.

The address of the Organizing Committee of the Symposium is:

Professor Alexander L. Suvorov, IFES'96  
Institute of Theoretical and Experimental Physics  
Association "Ultramicroscopy in Science and Technology"  
B. Cheremushkinskaya 25, Moscow 117259, Russia  
Tel.: (095)1259691, (095)1253439; fax: (095)1253439  
e-mail: suvorov@cl.itep.ru or umst@cl.itep.ru

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## — Call for Papers —

# IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES

## Special Issue on Automated Circuit Design Using Electromagnetic Simulators

Recent advances in microwave CAD technology, the availability of powerful workstations and massively parallel systems, suggest the feasibility of interfacing electromagnetic (EM) simulations into optimization systems or CAD frameworks for direct application of powerful optimizers. With fast, robust, commercial EM simulators increasingly available, microwave engineers are already pushing the frontiers beyond traditional uses of EM simulators. The new thrust is to integrate EM simulations directly into the linear/nonlinear circuit design process in a manner transparent to the designer. This Special Issue, to be published in August 1997, addresses the evolution of this novel art and exciting new directions of research and development. Expectations of using EM simulations as effective tools in an automated design environment have been raised, based on the considerable and excellent work currently in progress. This emerging design technology is expected to be a cornerstone of future integrated CAD systems. Novel theoretical contributions as well as practical applications and software implementational aspects are encouraged. Topics of particular interest include but are not limited to:

- Design with tolerances and yield-driven design using EM simulators
- Implementable adjoint parameter sensitivity computations
- Automatic layout optimization with EM validation
- Techniques for capturing and automating parameterization of 2D and 3D geometries
- Novel parameterized geometrical model primitives
- Scalable models for optimization
- Space Mapping optimization
- Quasi-global modeling of EM simulated subcircuits and devices
- Parameter extraction methodologies for companion modeling
- Novel techniques for numerical, geometrical and EM decomposition
- Optimization strategies for complex and irregular shapes
- Active device physical/EM simulation and optimization
- Use of supercomputers, massively parallel and heterogeneous workstations
- Novel software architectures for EM optimization environments
- Use of data bases and automated table look-up for EM simulations
- Multidimensional response approximation and effective interpolation techniques
- Exploitation of meshing, simulation accuracy and simulation speed
- Techniques for inverse electromagnetic problems
- Visualization for automated EM design
- Mixed analytical, empirical and numerical EM simulation and optimization
- Merging of linear/nonlinear circuit theoretic and field-theoretic simulations
- Asymptotic waveform techniques applied to EM simulations
- Optimization techniques for chip compaction
- Optimization in the frequency, time and mixed domains
- Applications: filters, multiplexers, antennas, waveguides, MMICs, interconnects, etc.

Authors should submit five copies of their paper describing original work by June 3, 1996, to the Guest Editor:

Dr. John W. Bandler  
Optimization Systems Associates Inc.  
P.O. Box 8083, Dundas, Ontario  
Canada L9H 5E7  
Tel: 905 628 8228  
Fax: 905 628 8225  
e-mail: j.bandler@ieee.org

**MOVING RF WIRELESS INTO THE 21ST CENTURY!**



# Call for Papers

## ADVANCED TECHNOLOGY WORKSHOP ON WIRELESS COMMUNICATIONS

Clarion Harvest House, Boulder, Colorado  
August 21-23, 1996



**IEEE**



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Mr. Chandler C. Tedholm, *AT&T Network  
Systems*, Whippany, NJ

Prof. Vijai Tripathi, *Oregon State University*,  
Corvallis, OR

TBA, *Philips N.V.*

The pace of the wireless revolution threatens to overwhelm not only consumers but engineers as well! Whether working with systems, active or passive components, packaging, antennas, or EMI, engineers have a limited exposure to other fields which make up their industry.

This second annual workshop, now cosponsored by the IEEE Microwave Theory and Techniques Society and the IEEE Components, Packaging, and Manufacturing Technology Society, as well as by the International Society for Hybrid Microelectronics (ISHM), offers an opportunity to present new ideas in a wide variety of wireless technologies. At the same time, it will emphasize a broad, integrated view. Participants are asked to think about and speculate on the future evolution of the industry. A special session will offer the opportunity to roadmap the wireless future and itemize technical priorities for industry, academia, and governments.

The conference will be held in a relaxed atmosphere at the foot of the Rocky Mountains. The National Institute of Standards and Technology will offer the opportunity to tour its RF and microwave network and materials measurements laboratories as well as antenna and electromagnetic interference test ranges.

Presentations are solicited primarily in the following fields:

- wireless systems
- RF packaging, interconnects, and substrates
- active RF components
- passive RF components
- antennas, propagation, and electromagnetic interference
- measurements
- modeling tools

In keeping with the informal and timely nature of the workshop, only one- or two-page summaries will be printed and distributed. These will be due on August 1, 1996.

Please submit abstracts for *consideration*, clearly stating the significance of the work, no later than April 1, 1996, to the Technical Chair:

Dr. Modest Oprysko  
IBM T. J. Watson Research Center  
P. O. Box 218, Yorktown Heights, NY 10598  
phone: 1-914-945-2838; fax: 1-914-945-1974; modest@watson.ibm.com

For additional information, please contact the General Chair:

Dr. Roger Marks  
National Institute of Standards and Technology  
325 Broadway, MC 813.06, Boulder, CO 80303  
phone: 1-303-497-3037; fax: 1-303-497-7828; marks@nist.gov

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# 1996 IEEE MICROWAVE AND MILLIMETER-WAVE MONOLITHIC CIRCUITS SYMPOSIUM

San Francisco, CA — June 17-18, 1996

The 1996 IEEE Microwave and Millimeter-Wave Circuits Symposium will be held in San Francisco on Monday, June 17, and Tuesday, June 18, 1996. The Symposium is held annually in conjunction with the IEEE MTT-S International Microwave Symposium (IMS).

The following subject areas will be presented:

- New RF, microwave, mixed signal or millimeter-wave chip or chipset designs.
- System applications of monolithic circuits, such as in wireless, satellite, military, automotive, or optical fiber systems.
- Innovative high-frequency device and circuit concepts for Si, GaAs, InP, SiGe, SOI, SiC, or other semiconductor technologies.
- Components and subsystem design and design methodology.
- Multi-chip module microwave packaging.
- Production techniques including cost reduction, cycle time reduction, design for manufacturability, design for testability.
- Back-end fabrication technology including packaging, testing, and reliability qualification.

High-frequency monolithic technology is the foundation of many exciting new commercial and military systems. This international conference is an ideal opportunity to compare your latest results with progress made by others throughout the industry.

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**Louis Liu**

TRW, Inc.

(310) 812-8372 • (310) 813-9623 (fax)

e-mail: louis\_liu@qmail4.sp.trw.com





The 1996 IEEE-MTT-S International Microwave Symposium will be held in San Francisco, California, June 16-21. Topics and technical areas of interest to be presented are listed below:

- Biological Effects and Medical Applications
- Passive Components
- Acoustic and Surface Wave Components
- Signal Generation, Frequency Conversion and Control Circuits
- Filters and Multiplexers
- Ferrite Components
- Guided Waves and Propagation Characteristics
- Transistor Power Amplification
- Nonlinear Modeling and Analysis
- Measurement Theory and Techniques
- High Power Sources and Control
- Phased Arrays
- Low Noise and Special Function Amplifiers
- Manufacturing, Production and Packaging
- Advances in Hybrid Technology
- Millimeter and Submillimeter Wave Technology
- EM Analytical and Numerical Techniques
- Field Theory
- Monolithic Technology
- CAD Procedures, Techniques and Modeling
- Microwave and Communications Systems
- Active and Quasi-Optic Arrays
- Lightwave Technology and Techniques
- Superconductivity Technology
- Digital Microwave Circuits
- Vehicular Technology
- Wireless Technology

**FOR MORE INFORMATION SEE:**  
**<http://www.ieee.org/mtt/imscall.html>**

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