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Editor-in-Chief: Krishna Shenai

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Contributions Welcome

Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

Newsletter Deadlines

<u>Issue</u>	<u>Due Date</u>
January	October 1st
April	January 1st
July	April 1st
October	July 1st

IEEE Electron Devices Society Newsletter

1997 Custom Integrated Circuits Conference (CICC)



The 1997 Custom Integrated Circuits Conference will be held May 5-8, 1997 in Santa Clara, California. Sponsored by the IEEE Electron Devices Society, CICC is the leading technical conference supporting the design, fabrication and integration of application specific integrated circuit (ASIC) technology. Through technical and educational sessions, panel discussions, vendor exhibits and sessions, CICC provides a unique opportunity for circuit designers, CAD developers, device manufacturers and ASIC users to present, review and discuss new developments and industry trends. This diverse attendance makes CICC a unique forum, and insures interesting discussion from a broad spectrum of viewpoints.

CICC's Santa Clara venue is in close proximity to the many related businesses in Silicon Valley, allowing the combination of business and conference attendance, minimizing travel. The Santa Clara Convention Center provides the site for the conference activities, with the adjacent Westin Hotel providing comfortable accommodations for the conference attendees, exhibitors and press.

The core of CICC is the approximately 140 technical papers presented during the three days of technical sessions. Topics in digital signal processing and communications will be covered, as will analog and mixed-signal circuits and systems. Both full custom and semi-custom approaches, using programmable elements and gate arrays, will be addressed. Important issues in design

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Your Comments Solicited

Your comments are most welcome. Please write directly to the Editor-in-Chief of the Newsletter at the address given on the back cover page.

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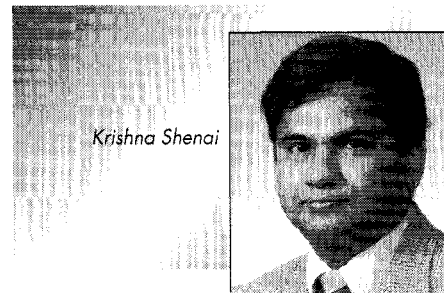
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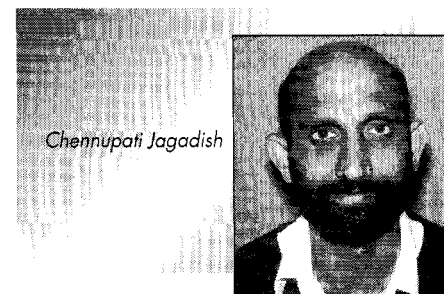
A Message from the Editor



Krishna Shenai

It is now more than two years since we started the new EDS Newsletter. In these two years, the Newsletter has improved dramatically and is now serving as the premier link among the EDS members around the world. There are a total of eleven Editors who are constantly in touch with EDS chapters all around the world and report up-to-date information on EDS related activities. The editorial duties are voluntary, and often thankless. I would like to take this opportunity to thank Prof. Cuong T. Nguyen for his dedicated service to the Newsletter as a Region 10 Editor. Cuong has decided to step down because of other commitments. Replacing Cuong is Prof. Chennupati Jagadish from the Australian National University, whose biography follows. Jagadish comes with a lot of experience in EDS related activities and it is my pleasure to welcome him as the new Region 10 Newsletter Editor for Australia, New Zealand and South Asia.

Chennupati Jagadish received a B.Sc. degree in Physics from Nagarjuna University (India) in 1977, a M.Sc. (Tech) degree in Applied Physics (Electronics) from Andhra University in



Chennupati Jagadish

1980 and M.Phil and Ph.D. degrees in Semiconductor Physics from the University of Delhi in 1982 and 1986, respectively. He worked in Sri Venkateswara College (University of Delhi) as a lecturer in Electronics during 1985 - 1988 and moved to Queen's University, Kingston, Ontario, Canada in 1988 as a post doctoral research associate. In 1990, he moved to the Australian National University where he is currently a Senior Fellow and Head of the Semiconductor Growth and Characterisation Group. He has co-authored a book on "semiconducting transparent thin films," published by the Institute of Physics Publishing Company, and edited conference proceedings. He has published about 100 research papers in refereed journals and about 40 papers in refereed conference proceedings. He has given a number of invited talks and

(continued on page 11)

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

<u>1996</u>	<u>1997</u>	<u>*1998</u>
B.F. Griffing	H.S. Bennett	S. Asai
T. Ikoma	J.T. Clemens	A.S. Brown
R.P. Jindal	H. Iwai	T.P. Chow
J.B. Kuo	J.L. Merz	M.A. Shibib
J.K. Lowell	K. Tada	R.D. Sivan
I. Mojzes	R.J. Temkin	J.M. Woodall
T.H. Ning	S. Verdonckt-Vandebroek	C.Y. Yang
R.J. Van Overstraeten		

* Members elected 12/95

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Upcoming Technical Meetings

CICC

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automation and design methodology will be covered, as well as advances in circuit simulation and modeling. Device fabrication, reliability and testing improvements are also presented, making CICC the single best conference to attend to gain a broad understanding of all the facets in the dynamic area of ASICs.

Supplementing the technical sessions are several evening panel discussions which provide a more interactive format for considering key issues and trends in the industry. Participants and attendees at these lively discussions will participate in thought provoking dialog on predictions for RF CAD tools, fab capacity, and cost effectiveness of circuit testability.

Preceding the conference, a full day of educational sessions provide extended tutorials on key areas, allowing practicing professionals to gain familiarity with areas outside their specialties. Respected lecturers will present on three general topics. The first track on IC design will cover the topics of high speed CMOS and bipolar, high performance switched capacitor circuits and low power digital. The second track will review the basics of wireless, RF fundamentals and PLL/VCO and frequency synthesis, both high level and circuit level. A third track will provide an introduction to interconnect and SPICE modeling, covering the topics of submicron interconnect modeling, ESD and I/O design and layout, and topics in SPICE modeling.

Conference attendees have the opportunity to efficiently contact multiple vendors in related product areas in the extensive exhibits area central to the conference facilities. Supplementary marketing sessions held in concert with the technical sessions provide technical presentations of key new products and capabilities of interest to the CICC audience.

Santa Clara, easily accessible from the San Jose airport, is convenient to a wide array of activities. The Great America amusement park, near the conference hotel, offers rides, dining, and various shows and entertainment. The adjacent San Jose area is known for its table wines and boasts more than 50 wineries ranging from family run establishments to large corporations. Museums in the area include the

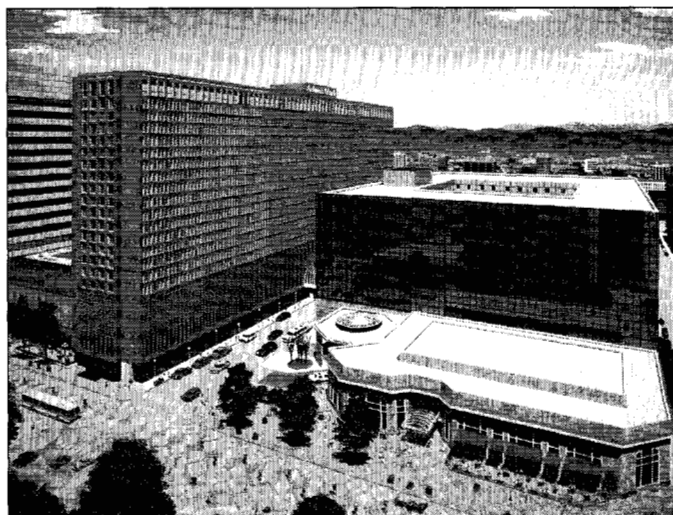
Children's Discovery Museum of San Jose, the Rosicrucian Egyptian Museum and Planetarium, the San Jose Museum of Art, and the De Saisset Museum. Tours of the nearby USC Lick Observatory are available for those interested. In addition, the area offers an array of parks, public gardens and shopping areas, as well as serving as a gateway to all the attractions of San Francisco.

For registration information and general inquiries about CICC, please contact the Conference Manager, Melissa Widerkehr, CICC, 101 Lakeforest Boulevard, Suite 270, Gaithersburg, MD 20877. TEL: (301)-527-0902, FAX: (301)-527-0994, E-mail: widerkehr@aol.com.

Jenny Ford

Semiconductor Product Sector, Motorola
Mesa, AZ

1997 International Reliability Physics Symposium (IRPS)



The 1997 International Reliability Physics Symposium (IRPS), will be held April 7-10 in Denver, Colorado. The IRPS is the foremost symposium dealing with the physical mechanisms that affect the reliability or performance of integrated circuits and microelectronic devices. The 1997 Symposium will continue emphasizing the key IC reliability areas of metallization and interconnect systems, dielectrics, hot carriers, ESD, Latchup, Packaging reliability, the reliability of advanced semiconductor devices and non-silicon devices, as well as failure analysis techniques and device/process interactions. The IRPS is co-sponsored by the IEEE Electron Devices and Reliability societies and the symposium focuses on topics of direct interest to both societies.

The IRPS is a truly international symposium. The 1997 conference will be comprised of a technical program of over 40 papers presented by authors from around

the world. These presentations are grouped in various sessions scheduled over three days. A very thorough and rigorous review process is employed by the technical program committee to evaluate and accept papers based on criteria such as novelty, originality and importance of the work to be presented. The technical program committee consists of leading experts from industry, universities, government labs and research institutions. In addition to the technical sessions, the conference has a strong tutorial program on the first day, covering plasma induced damage, hot carriers (including recent advances in technology), reliability issues for copper metallization systems, time dependent dielectric breakdown, and the interactions between IC processing and reliability. In addition to the tutorials, the Workshops are a popular feature of the symposium, where attendees can discuss

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IRPS

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in detail and in small groups various aspects of reliability physics and put their questions to the panelists — experts in their respective fields. Finally, the conference also provides a forum for a powerful equipment demonstration program where vendors show the latest equipment for reliability physics analysis and failure analysis. Attendees can bring their own samples to evaluate the equipment. For more information on the symposium, browse our website at <http://www.irps.org>.

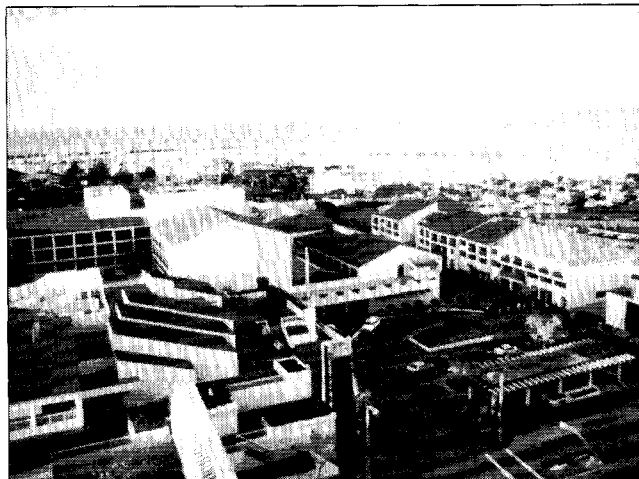
An evening reception is tentatively scheduled for Tuesday April 8, 1997 at the Denver Museum of Natural History, featuring a famed dinosaur collection, rock & mineral exhibits, Native American displays, an IMAX theater and a planetarium. Attendees and their guests are invited to tour the museum, take in the exhibits, meet old friends and make some new ones while enjoying the food served. The traditional awards banquet will be held on Wednesday evening. Winners of the 1996 technical program best paper and outstanding paper awards will be honored.

This year, the symposium is situated in Denver, the mile high city. At the foot of the majestic Rocky Mountains, Denver boasts a gleaming modern skyline, a booming economy and more than 300 sunny days a year. Denver started with the discovery of a little gold dust in the South Platte River in 1858, and was named to gain the favor of James W. Denver, then territorial governor of Kansas. Today, Denver has a futuristic international airport, a brand new Coors Field baseball stadium, and the historic yet new 58-acre amusement park, Elitch Gardens, located in the center of downtown. Nearby attractions include guided tours of the US Mint (where over 5 billion coins are made per year), and every Saturday and Sunday the SKI TRAIN departs from Denver's Union Station for a two-hour trip through Colorado's spectacular high country, much of which is only accessible by train.

For more information concerning the conference, please contact the General Chair, Ajit Goel, Applied Materials, Inc., TEL: (408) 986-3682, FAX: (408) 986-2891, E-mail: ajitg@aol.com.

*Kaizad Mistry
Digital Equipment Corp.
Hudson, MA*

Tenth International Conference on Microelectronic Test Structures (ICMTS)



On March 18-20, 1997, the IEEE Electron Devices Society will sponsor the 10th International Conference on Microelectronic Test Structures (ICMTS) at the Doubletree Inn in Monterey, California. The conference will be preceded by a one day tutorial on the basics of test structures and their use in the microelectronics industry.

Most of what we know about integrated circuits comes from measurements done on test structures. During process development entire mask sets are devoted to test structures which investigate design rule parameters, isolation structures, transistors, interconnection and parasitics. During manufacture a limited set of test structures monitor the health of a technology, and their proper choice and use can be of paramount importance to a corporation's health. For all its importance, the science and engineering of test structures and their use is often an underappreciated aspect of the microelectronics industry. ICMTS is the forum where designers and users of test structures can learn about the latest advances in the subject and interact with others in the industry to compare ideas.

ICMTS is a truly international conference, meeting on a three year rotation between North America, the Far East and Europe. The conference is guided by an international steering committee and a technical committee which is equally divided between the three regions which dominate the integrated circuit industry. The organization for each year's conference, however, arranged by a local committee gives each year of ICMTS a unique flavor of its host country. While this arrangement has its challenges, it insures that there is a central forum for advances in test structure

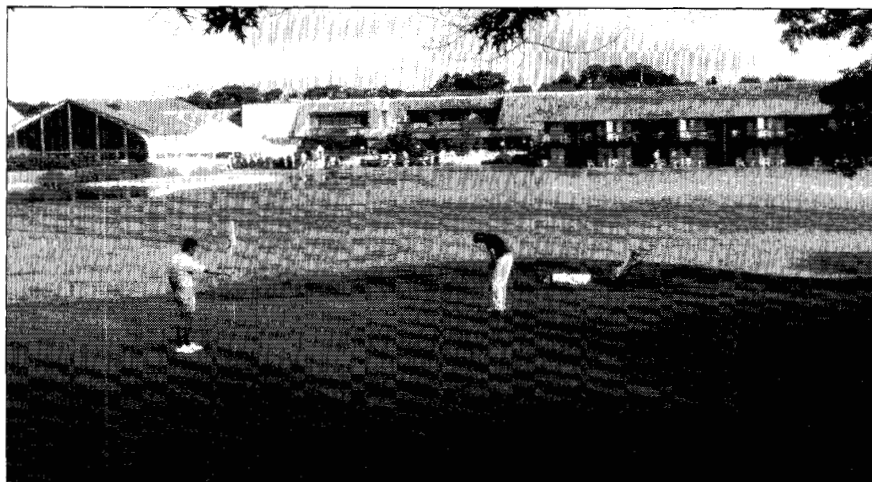
design and use, and participants get a true understanding of the world-wide state of the art.

The conference will begin with a one-day tutorial taught by leaders in a variety of test structure topics. The 1997 ICMTS Tutorial will cover test structure fundamentals, measurement of critical feature sizes and overlay tolerance, reliability including wafer level reliability, yield structures, parameter extraction, data analysis, low current measurement, and high frequency measurement. Participants will receive copies of all visual presentations.

The conference itself will consist of approximately 8 oral sessions and 1 poster session. Session topics will include Process Characterization, Device Characterization, Device Parameter Extraction, Critical Dimension Measurement, Overlay Measurement, Sensors and Reliability. A topic which has grown a great deal in recent years at ICMTS is the measurement of the matching characteristics of circuit elements such as transistors, resistors and capacitors. This trend may mirror the increased inclusion of analog functions, which require accurately matched circuit elements, within the mainstream of integrated circuit products. The poster session at ICMTS is always preceded by a short oral presentation by each poster session presenter to guide conference participants to topics of particular interest. In an effort to recognize exceptional work, a best paper will be selected. Announcement of the winner of the award will be made at the end of the conference and the formal award will be made at the 1998 conference in Kanazawa, Japan.

There will also be an equipment exhibit

Ninth International Conference on Indium Phosphide and Related Materials (IPRM)



This year, the Ninth International Conference on INDIUM PHOSPHIDE and RELATED MATERIALS, sponsored by IEEE LEOS and EDS will be held from MAY 11-15, 1997 at the Tara Resort in Hyannis, Massachusetts. Hyannis is a small resort town on the south coast of Cape Cod, approximately an hour's drive from Boston and Providence, RI. In addition to a "New England" style environment, the conference

will feature its usual full range of interesting technical papers. The technical areas in this year's conference include an additional topic of New Materials and Quantum Structures in recognition of the rapid advances made in this technological area in recent years. In particular, the meeting is soliciting contributions in the following areas:

- Optoelectronics: Advances in lasers,

detectors, optical amplifiers, and waveguide based devices; Quantum structures, Optoelectronic and Photonic integrated circuits; New devices for optical switching, networking and signal processing, and Solar cells.

- Electronic devices: HEMTs and HBTs; Millimeter wave and microwave circuits; Pseudomorphic and lattice-matched devices; Low noise and power characteristics; Quantum effect, resonant tunnelling, and mesoscopies devices.

- Processing: New Schottky and ohmic contacts; Low damage dielectric deposition; Passivation and reliability issues; Selective wet and dry etching; New processing techniques for advanced compound semiconductor materials.

- Epitaxy: MOVPE, MBE, MOMBE/CBE, ALE and related techniques; Selective epitaxy and growth on structured substrates; Novel materials and heteroepitaxy with InP and related materials.

- Bulk: Advances in crystal growth technology, including semi-insulating substrates; InP and InGaAs bulk crystals; Methods for in-situ and post growth defect, doping control; Wafer thermal stability and characteristics.

- Characterization and Control: Novel methods and new results on the characterization of materials (bulk and epi) and devices, in-situ control of growth and of processing steps with emphasis on quality control and reproducibility.

- New Materials and Quantum Structures: Lattice-mismatched epitaxial materials and other InP or related materials growth, devices and characterization; Low dimensional quantum structures such as quantum dots and wires, photonic band gaps.

The deadline for submission of papers to the LEOS office is DECEMBER 16, 1996.

IPRM '97 is chaired by Stephen Forrest, of Princeton University. In addition, Peter Asbeck of the University of California, San Diego (UCSD) is serving as the Program Chair, and Leslie Kolodziejski of the Massachusetts Institute of Technology (MIT) is the Local Arrangements Chair. There will also be an opportunity for industrial participants to exhibit their latest products used by scientists and engineers involved in all aspects of InP-based materials and device technologies.

For more information, or to receive a Call for Papers, please contact IEEE/LEOS at: TEL: (908) 562-3895; FAX: (908) 562-8434; E-mail: msarcone@calypso.ieee.org

Steve Forrest

Princeton University
Princeton, NJ

at ICMTS 1997. Exhibitors will be demonstrating the latest in measurement instruments, wafer probing equipment, and computer software for data analysis, parameter extraction and measurement control.

To insure that there is ample opportunity for interaction of the participants, there will be a continental breakfast for the tutorials each day of the conference. There will also be a luncheon on the day of the tutorial as well as on the first and second day of the conference. The highlight of the conference may well be the conference banquet to be held at the Monterey Bay Aquarium. The newly expanded aquarium features the environment of Monterey Bay including seals, sea otters and an impressive three story kelp forest. The newest part of the aquarium has the world's largest window which looks out on a giant tank and shows a view of life in the open ocean off of Monterey.

The Doubletree Hotel in Monterey is located right on Fisherman's Wharf. This area was made famous in novels of John Steinbeck, such as *Cannery Row*. The sar-

dine canneries of Steinbeck's day are gone, but the area is still lively with an active harbor where short trips to explore the bay can be arranged and there is a wide array of shops and restaurants. Monterey is also an excellent location to start a more in depth exploration of a fascinating part of the United States. Monterey is just north of the Big Sur coast of California, noted for the steep cliffs which drop down to the water's edge. On the rocks off shore, seals, sea lions and sea otters can be seen. Monterey is also close to Carmel, known for its artistic charm. Carmel is home to the famous "17 Mile Drive", the well known "Lone Cypress" and the "Pebble Beach Golf Course".

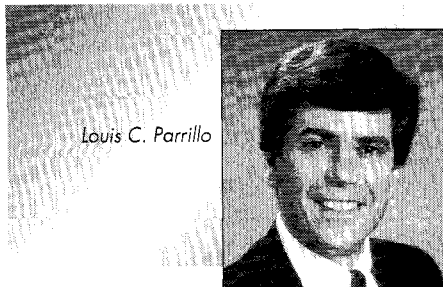
For more information concerning the conference, please contact the Conference Coordinator, Sandra Grawett, All About Meetings, TEL: (310) 316-5153, FAX: (310) 316-0713, E-mail: 70541.1225@compuserv.com.

Robert Ashton

Lucent Technologies Inc.
Orlando, FL

Society News

Update Concerning EDS Goals for 1996-1997



Louis C. Parrillo

As I described in the October issue of the EDS Newsletter, one of our goals for 1996-1997 was to expand five of our single-person AdCom standing committees (Educational Activities, Meetings, Membership, Publications, and Regions/Chapters) to include additional members in an effort to enhance and increase the society's activities in each respective area. This goal involved the following actions:

- Have each committee include at least one member from each of the following three Regional groupings: Regions 1-6, 7 & 9 (USA, Canada & Latin America); 8 (Europe, the Middle East & Africa); and 10 (Asia & Pacific) to insure a transnational membership

- Have each expanded committee develop detailed goals and plans for increased effectiveness

I am pleased to announce that we have completed the expansion of the five standing committees concerned, as well as the inclusion of at least one member from each of the three regional groupings on each committee. In addition, goals and plans are currently being defined by each committee.

The names and affiliations of the members of the five expanded standing committees are listed to the right.

In a later correspondence, we will update you as to our progress in meeting our 1996-1997 goals.

With Best Wishes,

Louis C. Parrillo
Motorola
Austin, TX

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Ilesanmi Adesida, University of Illinois, Urbana, IL
April S. Brown, Georgia Institute of Technology, Atlanta, GA
Dennis J. Flood, Lewis Research Ctr., Cleveland, Ohio
Gady Golan, The Open University, Tel Aviv, Israel
Toshiaki Ikoma, Texas Instruments, Ibaraki, Japan
Arlene A. Santos, National Semiconductor, Annapolis Junction, MD
C. R. Viswanathan, University of California, Los Angeles, CA

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J.M. Xu, University of Toronto, Toronto, Ontario, Canada

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Ranjit Singh Mand, Photonic Devices, Inc., San Jose, CA
Rajendra Singh, Clemson University, Clemson, SC
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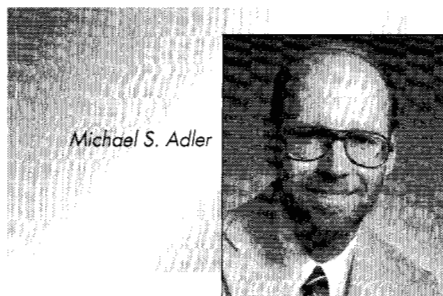
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Muhammad El-Banna, University of Alexandria, Alexandria, Egypt
Chennupati Jagadish, Australian National University, Canberra, Australia
Serge Luryi, State Univ. of New York at Stony Brook, Stony Brook, NY
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Shojiro Asai, Hitachi, Ltd., Saitama, Japan
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Hiroshi Iwai, Toshiba Corporation, Kawasaki, Japan
Imre Mojzes, Technical University of Budapest, Budapest, Hungary
Kunio Tada, University of Tokyo, Tokyo, Japan
Paul K. L. Yu, University of California at San Diego, La Jolla, CA

Summary of the 1996 Divisions I and IV Region 8 Chapters Meeting



Michael S. Adler

On Sunday, September 8, 1996, the IEEE Division I Director, Michael S. Adler, and the IEEE Division IV Director, Rolf H. Jansen hosted a Divisions I and IV Region 8 Chapters Meeting in conjunction with the European Microwave Conference (EuMC) in Prague, Czech Republic. This meeting was an all day event and the first of its kind involving Region 8 chapter chairs from Divisions I and IV societies. Attending the meeting were approximately 50 people from 24 different Region 8 countries and representing 38 chapters involving the ED, LEO, CAS and CPMT societies from Division I and the MTT and AP societies from Division IV. The majority of these chapters are joint chapters involving multiple societies. In attendance were: Peer Martin Larsen, Region 8 Director; Zbynek Skvor, Czech Republic Section Chair; Lou Parrillo, EDS President; Bill Van Der Vort, EDS Executive Director; Michael Lightner, CAS President; Ralph Wyndrum, CPMTS President; Ed Labuda, LEOS Executive Director; and the Region 8 Chapter Coordinators for APS & MTTs, EDS and CAS, Andre Vander Vorst, Imre Mojzes, and Tony Davies, respectively.

Mike Adler began the meeting by stating the primary meeting objectives of: increasing communications among the chapters; increasing communications between the chapters, sections, region and the societies; listening to problems and issues; and finding areas where societies can help. An additional objective was identifying opportunities to form new chapters. In this case, the focus was adding new society affiliations to existing chapters where there is already a sufficient number of existing members to form a chapter. Based on 1995 year-end statistics, it was stated that there is an opportunity for each of the societies represented at the meeting to increase the number of its Region 8 chapters as follows: EDS (23 to 32); CAS (13 to 30); CPMTS (4 to 32); LEOS (5 to 32); MTTs (22 to 31); and APS (17 to

31). A second focus was to encourage the 12 new EDS & MTTs chapters in Eastern Europe to add other Divisions I and IV society affiliations. With the exception of the East Ukraine Chapter (Kharkov), these chapters were formed as a result of the EDS and MTTs initiative to subsidize the required number of IEEE and society memberships (12 per chapter). Each of these chapters is currently in the process of surveying its members to identify which society affiliations are desired based on the technical activity in their area.

Rolf Jansen spoke next about his efforts to provide an IEEE-wide roadmap for transnational committee structure for societies and also about the status of the joint MTTs and EDS chapter formation process in Eastern Europe. As previously noted, there are 12 chapters now in place and additional society affiliations are being pursued.

Peer Martin Larsen reported about the growth of the regional workshops sponsored by Region 8, the various Region 8 library projects, the upcoming TAB Colloquia in Eastern Europe and the Entrepreneurial Skills Seminar to be held next year in Kiev, Minsk and St. Petersburg. He emphasized the importance of having the Region be involved in society and chapter activities and that the society regional coordinators help to make this possible.

Lou Parrillo spoke about EDS activities for chapters such as an increased level of financial support, the STAR Program (Student-Teacher Research Engineer/Scientist), an expanded Distinguished Lecturer Program involving 19 lecturers from Region 8, and the growth of EDS Region 8 chapters to reach its current count of 31.

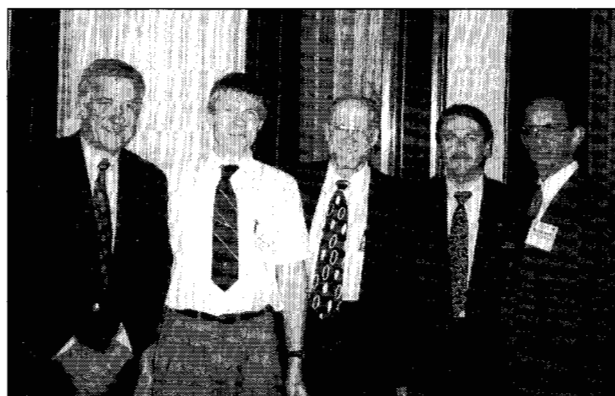
Michael Lightner noted that 40% of CAS members reside outside Regions 1-7 and highlighted new CAS efforts to grow chapters plus new initiatives to put the society publications on the World-Wide Web. In particular, he noted that CAS will have a Region 8 Web site to facilitate easy access to the journals.

Ralph Wyndrum noted that he will be in contact with all the chapters represented at the meeting and will invite them to become

affiliated with CPMT. He noted that CPMT is attempting to grow its members and increasing the number of its chapters is a key part of the strategy.

Ed Labuda noted that LEOS is looking to expand its Region 8 chapters from the six at present. He highlighted the \$2,000 maximum support available as well as the chapter awards for chapter of the year, most improved, most innovative, and most membership growth. He also spoke of an innovative chapter angel program whereby each member of the Board of Governors will focus on helping two/three chapters and attend at least one meeting a year.

The meeting then switched to presentations from the various chapters present.



Pictured left to right at the Divisions I & IV Region 8 Chapters meeting are: Ed Labuda, LEOS Executive Director; Zbynek Skvor, IEEE Czechoslovakic Section Chair; Mike Adler, IEEE Division I Director; Rolf Jansen, IEEE Division IV Director and Bill Van Der Vort, EDS Executive Director.

The following are the major themes noted by the chapter representatives.

- The most common complaint was the difficulty in getting accurate membership lists for their chapters. In principle, the lists are available through the sections, but not all sections make the effort to distribute them. A suggestion was for the societies to distribute membership lists to the chapters directly.

- The EDS Videotape Lending Library of the IEDM (International Electron Devices Meeting) short courses was deemed valuable, particularly for students. It was commented that the quality of the tapes could be improved. One suggestion was to tape courses directly in the PAL format.

- The report on the Eastern Europe library project was generally favorable, but there was some dissatisfaction with the microfiche format. It was commented that microfiche is difficult to use and to print

(continued on page 8)

EDS Members Named Winners of 1997 IEEE Technical Field Awards

Seven EDS members were among the winners of the 1997 IEEE Technical Field Awards. They are:

Dr. Milton Feng, a professor of Electrical and Computer Engineering at the University of Illinois, Urbana-Champaign, won the David Sarnoff Award "for contributions to the theoretical and experimental understanding of the fundamental speed limitations of MESFETs and HEMTs." Dr. Feng and his research group conclusively demonstrated that the speed of MESFETs

and HEMTs is not determined by the low-field mobility. Rather, high-field velocity is the crucially important factor. Dr. Feng is a Fellow of the IEEE.

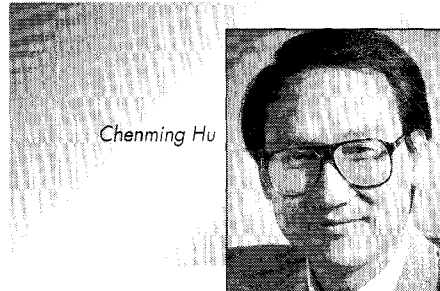
Dr. Chenming Hu, a professor of Electrical Engineering and Computer Sciences at the University of California, Berkeley, won the Jack A. Morton Award "for outstanding contributions to the physics and modeling of MOS device reliability." Dr. Hu's research on hot-electron effect, AC electromigration, and thin gate oxide

reliability has been widely used in the production of reliable and high-performance integrated circuits. This research also led to the development of the circuit reliability simulator, BERT (Berkeley Reliability Tool) — a prototype of a potentially new class of IC CAD tools. Dr. Hu is a Fellow of the IEEE.

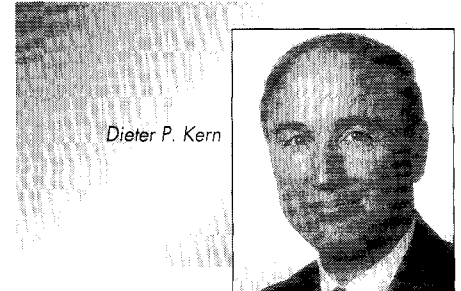
Dr. Dieter P. Kern, a Professor of Physics at the University of Tübingen in Germany, **Dr. George A. Sai-Halasz**, a Research Staff Member at the IBM



Milton Feng



Chenming Hu



Dieter P. Kern

Meeting Summary

(continued from page 7)

copies from. One suggestion was to offer future library copies in CD-ROM. As a comment, this was considered at the outset of the project, but CD-ROMs of the past ten years worth of journals were not available at that time. In other cases, machines are needed to make copies from the microfiche such as in Belarus and Lithuania. It was noted that a Vilnius company makes such machines. This will be investigated.

- Chapters spoke about the value of IEEE membership and society affiliation and noted that regional activities are the key. People will not join just to get the journals, since they are generally available. In this vein, support from the societies for regional activities, such as meeting sponsorship, distinguished lecturers and student activities is very important.

- A suggestion was made to have a web site in Region 8 to facilitate e-mail between chapters and from the society.

- There was an observation that conference fees are much too high, particularly in Europe. Rolf Jansen reported on MTTs' efforts to improve the European Microwave Conference from 1998 on (new format of EuMC Microwave Week), and noted that the EuMC will reduce its fees in the future. Another suggestion was to hold meetings in areas where the living costs are lower.

- Another suggestion was for the organizers of regional technical meetings to join together and rotate the location of these conferences on an annual basis.

Comments concerning the Eastern European Chapters included the following:

- Particular attention was given to the presentations from the 12 new Eastern European chapters supported by EDS & MTTs. In general, they are all doing well and growing slightly in membership without any more direct society support. All of the chapters were actively holding two meetings per year, and often these were regional conferences.

- Some specific observations and suggestions were made by these 12 Eastern European chapters:

- Income levels in Eastern Europe are very low relative to those in the west, often on the order of \$100/month

- Specific suggestions were for lower conference fees for Eastern European attendees as well as travel subsidies

- In general, there was a desire for the conference fees to be reduced

- Journals often arrive very late

- It is difficult to get funds to the chapters; Checks are a big problem, since it takes a long time to cash them and a large fee is charged

- Direct bank transfers are better; An additional suggestion was an IEEE credit card for the chapters

- Support was requested for continu-

ing education as well as for entrepreneurial workshops to help people in setting up new businesses.

Finally, relative to the chapter chairman's meeting itself, some comments and suggestions were made:

- The meeting was very worthwhile and should continue. The major benefit was the communication between the chapters and societies.

- There was good agreement that holding the meeting as a joint Division I and Division IV meeting was worthwhile, because of the large number of common chapters. The meeting should continue to be an adjunct to a technical meeting and the suggestion was to alternate between the European Microwave and European Solid-State Device Research meetings.

- In the future the suggestion was made to focus more on problems and issues and reduce the time taken on reports of chapter activities. One possibility would be to have working sessions on particular topics.

- One final point was that there was unanimous agreement and praise for the work done by Zbynek Skvor and Bill Van Der Vort in setting up this meeting.

- There also was particular praise for Rolf Jansen and Bill Van Der Vort for their efforts in setting up the 12 Eastern European chapters.

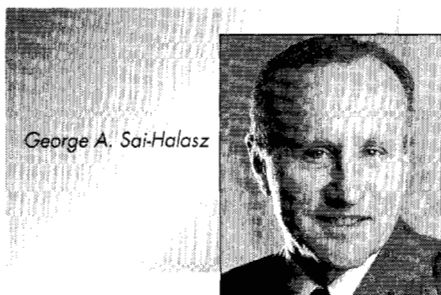
Michael S. Adler
General Electric Company
Schenectady, NY 12301

Thomas J. Watson Research Center, Yorktown Heights, New York, and **Dr. Matthew R. Wordeman** at IBM's Semiconductor Research and Development Center, Hopewell Junction, New York, are co-winners of the Cleo Brunetti Award "for the development of sub-0.1 micron MOSFET devices and circuits." They clearly demonstrated the effects of velocity overshoot in short channel MOSFETs and the potential of MOSFETs for high-speed and low-power applications.

Dr. Kerns' research has been mainly centered around electron optical design for

micron MOSFET Design, which has been a popular reference for designers of submicron MOSFETs.

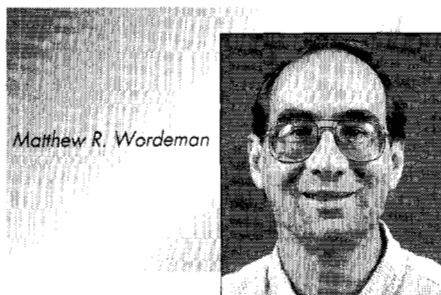
Dr. Fujio Masuoka, a professor at the Research Institute of Electrical Communication, Tohoku University, Sendai, Japan, won the Morris N. Liebmman Memorial Award "for the development of flash EEPROM and NAND-type EEPROM technology." Prior to joining Tohoku University in 1994, Dr. Masuoka was with Toshiba. He invented flash memory in 1980. Flash memory is now an important and growing sector of the semiconductor



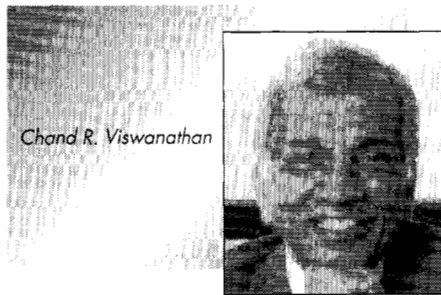
George A. Sai-Halasz



Fujio Masuoka



Matthew R. Wordeman



Chand R. Viswanathan

high-resolution and high-accuracy electron-beam lithography systems and electron-beam testing systems, and on basic modeling of electron-beam lithographic processes and reactive-ion etching. He left IBM and joined the University of Tübingen in 1993.

Dr. Sai-Halasz has made significant experimental/theoretical contributions, some seminal, to fields ranging from basic physics to technology and systems. He was one of the originators and theoretical exponent of Type II superlattices. He also pioneered using Monte-Carlo procedure to evaluate radiation-induced soft errors in VLSI chips. He is a Fellow of the IEEE.

Dr. Wordeman was a Research Staff Member at the IBM Thomas J. Watson Research Center. He was one of the first to investigate the effects of inversion-layer capacitance and inversion-layer mobility on scaled devices operating at low voltages. In 1984 he co-authored with G. Bacarani the paper "Generalized Scaling Theory and its Application to a 1/4

market. He also invented and developed the so-called NAND-type flash memory, which, because of its high density, is particularly suitable for use as replacement for disk drives in portable systems. Dr. Masuoka is an IEEE Fellow.

Dr. Chand R. Viswanathan, a professor of Electrical Engineering at the University of California, Los Angeles, won the Undergraduate Teaching Award "for inspirational undergraduate teaching and curriculum development in solid-state electronics." Dr. Viswanathan has taught courses in solid-state electronics (his field of expertise), and in other related fields in electrical engineering. He created undergraduate and graduate courses in solid-state electronics and developed them into a major field of study at UCLA. He has received outstanding teaching evaluations in all classes he has taught. Dr. Viswanathan is a Life Fellow of the IEEE.

Tak H. Ning
IBM Research
Yorktown Heights, NY

1997 Issues of ED Letters & Transactions to be Available on the Web!

EDS is participating in the IEEE project to disseminate transactions, journals and letters publications on a secure World-Wide Web site for society member subscribers. The project, dubbed "JOLLY" (Journals On-Line Launch Year), was the initiative of IEEE volunteer Randy Geiger, IEEE Transactions Committee Chair. Geiger contacted several IEEE societies/councils interested in making their scholarly publications available electronically on the Web, in addition to print and microfiche formats. Supported by volunteers Dexter Johnston, Periodicals Oversight Committee member of the IEEE Publications Board and EDS Past President, and Friedolf Smits, IEEE Publications Board Finance Chair, IEEE Periodicals and Electronic Products staff offered its development and project management services to the societies interested in launching this project in time for their respective January 1997 issues.

The EDS AdCom voted at its June 1996 meeting to participate in this project. So far, the Circuits and Systems Society, Lasers and Electro-Optics Society, Signal Processing Society and the Neural Networks Council have also approved to join the project. The participating societies and one council will share the cost of maintaining the service. The timing of the on-line availability of each publication will coincide with the mail date of the respective print product.

This initiative will allow Electron Device Letters (EDL) and Transactions on Electron Devices (T-ED) to be made available to the current EDS member subscribers of the corresponding print or microfiche versions. The project will kick-off with the January 1997 issue of T-ED being made available on 12/23/96, while the EDL January issue will follow a week later on 12/30/96. EDS has decided to leave each issue out on the Web for a period of three months. We hope to enhance this initiative in the near future by offering subscribers the option of receiving the on-line version and a CD ROM in lieu of the print or microfiche version.

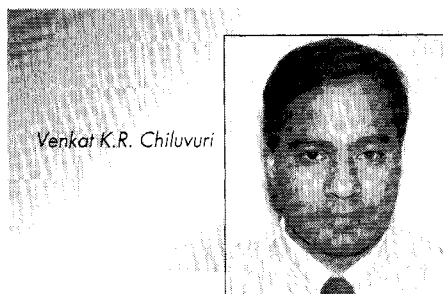
Steven J. Hillenius
Lucent Technologies, Inc.
Murray Hill, NJ

1995 T-SM Best Paper Award

The IEEE Transactions on Semiconductor Manufacturing Best Paper Award is presented to the authors of that paper considered by the Transactions' Editorial Staff and reviewers to be the most outstanding paper published during the year. The Award is based on the accuracy, originality, and importance of the technical concept, as well as the quality and readability of the manuscript. The Best Paper is also based on the immediate or potential impact that this work will have on the overall semiconductor manufacturing industry.

The Transactions on Semiconductor Manufacturing Best Paper Award, presented at the annual Advanced Semiconductor Manufacturing Conference and Workshop, recognizes the on-going partnership of this conference and the IEEE.

The Editorial Staff is pleased to announce that the paper entitled "Layout Synthesis Techniques for Yield Enhance-



Venkat K.R. Chiluvuri



Israel Koren

ment" by V.K.R. Chiluvuri and I. Koren has been recognized as the best paper published in the 1995 Transactions. This paper, that appeared in the May issue, has been chosen because it represents a novel method to apply yield enhancement techniques at a high level of design abstraction. The techniques discussed enable the IC to be desensitized to point defect related yield loss without increasing the die area during the layout synthesis phase of IC development. The techniques described in this paper have been used in a commercially available CAD framework. As integrated circuit features continue to scale into the deep sub-micron region, novel tools and techniques for evaluation and optimization of product yields continue to have a significant cost impact.

Venkat K. R. Chiluvuri received the B. Tech degree in electronics and communication from the JNTU College of Engineering, Kakinada, India in 1982, the M. Tech degree in Electrical Engineering from the Indian Institute of Technology, Kharagpur, in 1984 and the Ph.D. degree in Electrical and Computer Engineering from the University of Massachusetts, Amherst in 1995. He is currently a Senior Staff Engineer at Motorola, Austin, TX. From 1984 to 1990, he was with Wipro Information Technology Ltd., Bangalore, India. From 1993 to 1994, he worked at the IBM T. J. Watson Research Center, Yorktown Heights, NY. His research interests include layout synthesis, CAD for yield and manufacturability, and VLSI design.

Israel Koren received the B.Sc., M.Sc., and D.Sc. degrees, all in electrical engineering, from the Technion-Israel Institute of Technology, Haifa, in 1967, 1970

and 1975, respectively. He is currently a Professor of Electrical and Computer Engineering, University of Massachusetts, Amherst. Previously, he was with the Departments of Electrical Engineering and Computer Science at the Technion-Israel Institute of Technology. He also held visiting positions with the University of California, Berkeley, University of Southern California, Los Angeles and University of California, Santa Barbara. He has been a consultant to several companies including IBM, AMD, Intel, DEC, National Semiconductor and Tolerant Systems. His current research interests are fault tolerant architectures, models for yield and performance, floor planning of VLSI chips and computer arithmetic. He published extensively in several IEEE Transactions and has over 100 publications in refereed journals and conferences. He was guest co-editor for the IEEE Transactions on Computers special issue on high-yield VLSI systems, April 1989. Since January 1992, he served on the editorial board of this Transactions. He also served as a program committee member for numerous conferences. He was the General Chair of the 1996 IEEE Symposium on Defect and Fault Tolerance in VLSI systems (DFT96) Boston, MA, November 1996 and the General Chair of the 1996 Conference on Parallel Architectures and Compilation Techniques (PACT96), Boston, MA, October 1996. He has edited and co-authored the book, *Defect and Fault Tolerance in VLSI Systems*, Vol. 1, 1989, (New York, Plenum). He is the author of the textbook, *Computer Arithmetic Algorithms*, Prentice-Hall, 1993.

Gary C. Cheek
Analog Devices, Inc.
Wilmington, MA

NEW! EDS 'Permanent' Membership Option

Effective with the start of the 1997 IEEE member billing cycle (9/1/96), EDS members are being offered the option of making a one-time payment of \$25 to become a 'permanent' member of EDS. The only requirement to become a permanent EDS member (besides the \$25 fee) is to maintain your IEEE membership.

Current IEEE and EDS members are able to request this new option via their 1997 IEEE membership renewal bill. IEEE members who are not members of EDS can also use their 1997 renewal bill to request permanent EDS membership. In addition, non-members of the IEEE are also able to request this option by completing the appropriate section of the 1997 IEEE/EDS membership application form. We encourage you to take advantage of this new EDS offering and benefit. This option is not available to IEEE student or EDS affiliate members.

Call for Book Proposals

The IEEE Electron Devices Society, in conjunction with the IEEE Press, is soliciting proposals and original manuscripts for book publication relating to the theory, design, and performance of electron and ion devices, solid-state devices, integrated electronic devices, optoelectronic devices, and energy sources. It is intended that books sponsored by the Electron Devices Society will be published by the IEEE Press.

We are particularly interested in original single-author (or multi-author) books and original edited books with contributed chapters by experts in the field. Collections of papers in the form of reprint books will only be considered if substantial original material of a tutorial or background nature is included in order to illuminate the papers. New issues of classic and out-of-print books will also be considered.

Advantages of publishing a book through IEEE Press include:

- Established advertisement and distribution network of IEEE
- Superior editorial support and production capabilities of the IEEE Press
- Competitive royalties and attractive pricing
- Peer review by leading experts in partnership with you
- The prestige of the IEEE and EDS Society logos on your book

A basic proposal should include the following materials:

- A prospectus commenting on the rationale for your book, the targeted audience and the potential market, and the author's experience reflecting the ability to accomplish the project

- Table of contents
- Sample chapters, if available

For a complete set of IEEE Press Proposal Guidelines, or for any additional information about the IEEE Press, please contact:

Lisa Dayne, Review Coordinator
IEEE Press
445 Hoes Lane
Piscataway, NJ 08855-1331
E-Mail: pressbooks@ieee.org

Electron Devices Society Liaison to the IEEE Press - Kwok Ng
(k.ng@ieee.org)

EDS/JSAP Agreement - EDS Members Can Obtain Subscriptions to the Japanese Journal of Applied Physics

Effective January 1, 1995, the Electron Devices Society (EDS) and the Japan Society of Applied Physics (JSAP) signed an agreement that allows EDS Members to subscribe to the *Japanese Journal of Applied Physics* (JJAP) and JSAP members to subscribe to *Electron Device Letters* (EDL) and *Transactions on Electron Devices* (TED) at low 'sister society' rates. This agreement continues to be in effect for 1997 subscriptions.

JJAP consists of two bound editions, Parts 1 and 2. Part 1 is divided into Part 1A and Part 1B and is published monthly. Part 1A is for the regular papers, short notes and review papers. Part 1B is for special issues which contain review and regular papers presented at international conferences, symposia, etc., sponsored by JSAP and accepted according to the standard review process of JJAP. Part 2 is for letters, and is published semi-monthly.

The fields of the contributed papers are as follows: superconductors, metals and

conductors, semiconductors, magnetic materials, dielectrics, crystals, glasses and amorphous materials, polymers, liquid crystals and biological materials, thin films, surfaces and interfaces, liquids and solutions, and plasmas and gases, including their physics, characterization, preparation, production and application to instrumentation and devices; electric, magnetic and optical properties, mechanical and acoustic properties, thermal properties, including their application to devices and instrumentation; optics and opto-electronics, X-rays and electron, neutron and ion beam including their optics, application and instrumentation; nuclear science, information science, low temperature physics, metrology and quantum phenomena including analysis and application to devices and instrumentation.

If you would like to obtain an order form for the JJAP for 1997, please contact the EDS Executive Office listed on page 2.

IEEE Fellow Kits Ready

Nomination kits for the 1998 class of the IEEE Fellows are now available in both traditional and electronic versions. The deadline for receiving nominations is March 15, 1997. The electronic version of the kit is a dummy nomination form that may be edited to produce a finished form. It requires a LaTeX document processor in a Unix system. The files should be tested with the dummy form to ensure that they work on the nominator's local computer system. Note, though, that no support is available from the IEEE if files do not work locally. For the traditional kit, contact: IEEE Fellow Committee, 445 Hoes Lane, Piscataway, NJ, USA 08855-1331; Tel: 1-908-562-3889; Fax: 1-908-981-9019; E-mail: "fellow-kit@ieee.org".

A Message from the Editor

(continued from page 2)

served on the program committees of numerous international conferences, including LEOS '96, IBMM '95, and SIMC9. He is Chairman of the 1996 Conference on Optoelectronic and Microelectronic Materials and Devices to be held in Canberra in December, 1996. He has been active in IEEE activities since 1991 as Vice-Chairman of the IEEE ACT Section, Foundation Chair of the IEEE Australian Chapter of EDS

& LEOS and a member of the Publications Committee of the EDS. He is a Fellow of the Australian Institute of Physics, Senior Member of IEEE and elected as scientific member of The Bohmische Physical Society for his contributions to the MOCVD growth and ion implantation research. His current research interests are in the areas of: optoelectronic devices, epitaxial growth of quantum wires and dots, quantum well intermixing, defects in silicon and compound semiconductors, ion implantation, ultrafast photodetector materials.

Regional and Chapter News

USA, Canada & Latin America (Regions 1-6, 7&9)

AP/ED/MTT San Diego Chapter

— by Paul Yu

We had five meetings so far since the beginning of this year. On January 22, Professor Zoltan J. Cendes of Carnegie Mellon University, who founded Ansoft Corporation, presented a talk on "Fast Methods for Computing Electromagnetic Fields in Complex Structures". New and fast numerical approaches such as adaptive mesh refinement and asymptotic waveform evaluation were described which handle complex microwave and radiating structures. A demonstration using the latest 3D field solver developed by Ansoft Corporation was set-up to illustrate these approaches. More than 30 people attended the meeting.

At the March 18 meeting, Dr. Ralph Levy, who is one of our past chapter chairs, presented a talk on "Filters for Modern Communications Systems". Advances in the synthesis of generalized microwave filters, and some examples of designed filters using combline, waveguide, and other resonator technologies were presented. The meeting was well attended.

On April 18, Dr. Steve Pappert of Naval Command, Control & Ocean Surveillance Center in San Diego presented a talk on "Microwave Photonic Links for Modern Transmission Systems". In this talk, photonic links and modulation techniques which handle both broadband and narrowband signals out to 50 GHz were described. A new photonic link signal mixing approach was introduced for efficient frequency conversion. The meeting was well attended. On May 20, Dr. Jitendra Goel of TRW presented a talk on "Recent Advances in MMIC Technology". He emphasized the recent advances in high power, low noise GaAs and InP devices and circuits.

After the summer break, a chapter meeting was held on September 9. During the meeting, Mr. Rick L. Sturdivant of Hughes Aircraft presented a talk on "Low Cost RF and Microwave Packaging Technology". The talk addressed current trends in microwave packaging including flip chips and design guidelines for low cost

packaging. Issues such as reliability without hermeticity as well as package designs for interconnecting transmission lines were discussed. The meeting was well attended.

On October 16, Dr. Larry Larson, who was formerly with Hughes Networks and is now with the University of California, San Diego, presented a talk on "Trends in RF Integrated Circuits for Wireless Communications."

Europe, Middle East & Africa (Region 8)

MTT/ED/AP West Ukraine Chapter

The MTT/ED/AP West Ukraine Chapter was formed as a result of the joint MTT/ED initiative for supporting IEEE activities in Eastern Europe and the Former Soviet Union countries. Now our Chapter counts 13 members (10 in Lviv and 3 in Kharkov), all of them sponsored by MTT, ED, and AP (since 1996) societies. There are a few dozen potential IEEE Members in our region. Some of them have submitted applications for joining the ED and CAS societies in 1997, but many others are not able to pay the membership fees.

The Chapter activity in 1996 included three technical meetings held between January and August of 1996, two in Lviv and one in Kharkov. The International Conference "Mathematical Methods in Electromagnetic Theory" (MMET'96) was held in Lviv, Ukraine from September 9-13, 1996. The conference was organized by the active support of our Chapter. Six Chapter members were also members of the Conference Organizing Committee, including the Conference Chairman, Prof. Zinovi Nazarchuk and the Technical Chairman, Dr. Oleg Ovsyannikov. One-hundred thirty papers from 16 countries were presented at this conference, the majority of them from Ukraine (83) and Russia (27), and the other from Japan, Germany, Italy, Switzerland, UK, USA, Greece, Poland and Yugoslavia. The Conference Proceedings (535 pages) were published in English before the Conference opening. Our Chapter had a dedicated session in the Conference program - the Workshop "Antenna Theory" as a form of the annual Seminar/Workshop "Direct and Inverse Problems of Electromagnetic Wave Theory - DIPED." In our specific economic situation the organization of such a Conference was

very difficult. We acknowledge the essential support received from the ED Society in the form of technical co-sponsorship.

Among the planned Chapter activities for 1997 are: the organization of the Seminar/Workshop DIPED-97 in September 1997 with an open invitation to representatives from other Chapters; the extension of cooperation between IEEE Chapters in the frame of the Black Sea Union on Applied Electromagnetism (BSUAE); and the development of new activities in local Universities.

For further information, please contact the Chapter Chairman: Dr. Nikolai N. Voitovich, Institute of Applied Problems of Mechanics and Mathematics of the Nat. Acad. of Sciences of Ukraine, Naukova Str. 3"b", 290601 Lviv, Ukraine; TEL: 38-0322-651944; FAX: 38-0322-271216; E-mail: voi@ippmm.lviv.ua

MTT/ED Novosibirsk, Russia Chapter

Our joint MTT/ED Chapter in Novosibirsk, Russia has only recently been formed. May 28, 1996 was a remarkable date for local engineering and scientific Community as a birthday of the most Eastern MTT/ED Chapter, Novosibirsk, Russia. The process of forming the new Chapter was greatly simplified thanks to the active help from IEEE colleagues, especially Mr. William Van Der Vort (EDS Executive Director) and Prof. Rolf Jansen (MTT Transnational Committee). The Chapter consists of 18 specialists working in the field of electron devices and microwaves both in local Universities and Industry. As a first organizing step, the officers coordinating the Chapter activities have been elected and current plans of work have been considered. They have included membership development, technical support for regional workshops and conferences, extending the Chapter toward other IEEE Societies, encouraging student membership, etc. A Chapter representative took part in the Region 8 Chapters Meeting at Prague on September 8, and supported many of the initiatives announced there. We hope that many activities will be developed in the frame of our Chapter providing benefits to its members and contributing to the progress of selected engineering and science fields.

For further information, please contact the Chapter Chairman: Dr. Boris Kapilevich, Kirov Str. no 86, Siberia State Acad-

emy of Telecommunications & Informatics, Dept. of Appl. Electromagnetics & Antennas, 630102 Novosibirsk, Russia; TEL: 007-3832-660943; FAX: 007-3832-222581, E-mail: boris@neic.nsk.su.

MTT/ED/AP Nizhny Novgorod, Russia Chapter

One of the most significant activities organized by our Chapter in 1996 was a student scientific competition comprising original papers and/or technical projects in the fields of TV, Radio Communications, Electron Devices (including Laser devices), Antennas and Propagation, and Automatic Design. About 40 students from the State Technical University took part in this contest. A scientific committee formed from 8 famous scientists and engineers selected the best student paper and awarded a special prize offered by the IEEE MTT/ED/AP Nizhny Novgorod Chapter. The best technical project was presented by Mr. V. Golubev "Time-domain method of oscillators design (theory and experiment)".

Our Chapter also held a local technical meeting on July 5, 1996 on the theme "Industrial and Scientific Usage of Hydrogen Masers. Space Applications of Standard Frequencies". The main sponsors of this meeting were IEEE ED Society and the small company "Vremya-Ch" which produces frequency standards. Dr. C.G.M. van't Klooster from ESTEC, The Netherlands, who is also the Benelux AP/MTT Chapter Chairman, delivered a lecture as an invited speaker. The members of MTT/ED/AP Nizhny Novgorod Chapter from The Institute of Measurements Systems were also invited and made their own contributions at the meeting.

Another local meeting was held on July 8, 1996 with the members of MTT/ED/AP Nizhny Novgorod Chapter from the Radiophysical Research Institute and the Institute of Applied Physics. The sponsors were IEEE ED Society and the Radiophysical Research Institute. The meeting agenda included the lecture "News of ESA Space Activity" delivered by Dr. C.G.M. van't Klooster from ESTEC, The Netherlands as well as a presentation concerning the "Ongoing Activities of MTT/ED/AP Nizhny Novgorod Chapter and AP/MTT Benelux Chapter". The Chairmen of the two Chapters encouraged and planned future joint activities. A lot of members of the Radiophysical Research Institute participated in this meeting.

For further information, please contact the Chapter Chairman: Dr. Yuri I. Belov, Radio Physics Res. Inst., Bol'Shaya Pecher-

skaya 25, Nizhny Novgorod 603600, Russia; TEL: 7-83-12-336751; FAX: 7-83-12-369902; E-mail: belov@astro.kis.nnov.su

— by Adrian Veron, Editor

MTT/ED/AP Bulgaria Chapter

— by H.D. Hristov

Since the chapter was first founded in 1995, the member count has increased to 19. This means that more than 20% of all active IEEE Bulgaria Section members belong to the Chapter. During the short duration of the chapter a strong promotional activity has been undertaken. Membership development meetings were held in Varna, Bourgas and V. Tarnov. Information folders, etc., were sent to many institutions. The chapter also participated in publishing the first issue of the Bulgarian Section News Bulletin (VESTI).

A video course on microelectronic packaging was shown in both TU-Varna and TU-Sofia. The chapter also provided financial help to form a Student Branch at TU-Varna.

During September 26-28, 1996 the chapter co-organized and sponsored the 18th School on "Microelectronics, Microwaves and Active Antennas". On October 10-11, the chapter co-organized the conference "Electronics '96".

A STAR mentoring program is planned to be launched around January 1997.

MTT/AP/ED Czechoslovakia Chapter

— by M. Zeman

The current member count is 34, but only about 10 are from the ED Society. The chapter co-organized the European Microwave Conference (EuMC) in September 1996 in Prague and is also the co-organizers of RADAR 96. The Workshop CAD&CAE '96 was also co-organized by the Chapter.

The two E-mail bulletins RADIOBOX and ELMAGPO are maintained through the chapter which will be arranging RADIOELEKTRONIKA 97 as the next major event.

MTT/AP/ED Finland Chapter

— by Keijo Nikoskinen

During 1996, the Chapter invited 3 lecturers to give presentations. In October of 96, the Chapter co-organized the XXI Convention on Radio Science covering radio communications, remote sensing, radio astronomy and electromagnetics.

For further information, please contact the new Chapter Chairman: Keijo Nikoskinen, Electromagnetic Laboratory, Helsinki

University of Technology; E-mail: keke@eml.hut.fi

ED Poland Chapter

— by J.W. Klamka

The ED Poland Chapter was established in January 1995 and the current membership count is 12. In May of 1996, the chapter co-organized the international microwave conference, MIKON '96, in Warsaw with the AP/AES/MTT Chapter. Furthermore, two regular scientific meetings were held. In the near future, the ED Poland Chapter will try to intensify cooperation with the ED/MTT joint chapters in Eastern Europe.

ED Romania Chapter

— by G.I. Brezeanu

The chapter shows a steady growth and currently has 65 members. This year has been a very intensive period where a number of activities can be reported. Invited lecturer Dr. I. E. Opris, Stanford University, presented a talk concerning "Non-linear analogue circuits with value selective properties". Prof. R. Van Overstraeten, IMEC, Belgium spoke on "The future of research and development in microelectronics." A student symposium was organized in May 1996, with the topic "New research in Microelectronics" where 11 papers were presented. Moreover, a short intensive course, "New advances in process and device modeling", was arranged in June with W. Schoenmaker, T.J. Mouthaan and H.C. de Graaf as invited lecturers.

In October, the 19th edition of the International Semiconductor Conference (CAS'96) was co-organized. More than 300 attendees were pre-registered. In October of 1997, the chapter will co-organize the 20th edition of the International Semiconductor Conference.

ED Sweden Chapter

— by Mikael L. Ostling

The chapter has been in operation since July 1995 and the member count now reaches about 75. Since the start, the Chapter has held 13 official meetings. Some highlights to be mentioned are invited talks in August 1996 by Prof. Krishna Shenai, Editor-in-Chief of the EDS Newsletter, who delivered two presentations; one on IGBTs: Technology, Design and market trends, and the other on Low-power technology.

Dr. Raj Jain, NASA Lewis Research Center, Cleveland, was invited to talk on "InP technology and surface passivation/recombination."

Prof. W. Leuschner, University of Preto-

ria, visited in September and gave a talk on microelectronics research in South Africa.

In August, the chapter organized an IEDM video short course on "Portable Technology". In 1997, the ED Sweden Chapter will co-sponsor and co-organize the following conferences: GigaHerz 97 in Stockholm, May 1997 and the International Conference on Silicon Carbide and Ill-Nitrides (ICSCIII-N '97) in Stockholm, September 1997.

— Mikael L. Ostling, Editor

MTT/ED/AP/LEO UKRI Chapter

— by Neil Williams

At the time of writing this report, twenty-four chapter activities were planned for 1996, at venues across the UKRI region. Chapter sponsored/organized events included seventeen lectures, a one-day colloquium, a two-day workshop and a membership promotion booth at M+RF'96. Co-sponsored events made up the total program. The lecture series included five overseas speakers with three Distinguished Lecturers representing the Chapter parent Societies. The "2nd High Frequency Post-graduate Student Colloquium" held at UMIST, Manchester on September 13th, incorporated thirteen first class papers introduced by Professor Lionel Davis. Delegates enjoyed a colloquium dinner on a very successful technical day and educational experience.

Following this very busy 1996, the chapter is now focusing on the detailed planning of its 1997 program. The committee is always keen to receive suggestions from members for new events, so, if there are any burning issues which you think we should be addressing or topics which you would like to see in the program, please contact us!

A full list of activities for 1997 will be given in future issues of the newsletter. Two events already arranged for the first quarter of the year are listed below:

- Two day course on NEC (Numerical Electromagnetic Code) at Imperial College, London during March, organized by ACES (UK) with the support of the chapter
- Evening lecture on "high speed optical communication networks" by Nick Doran on Wednesday, March 5th, 1997 in London

For further information, please contact the Chapter Chair: Neil Williams, ERA Technology Limited, Cleeve Road, Leatherhead, Surrey KT22 7SA, UK. TEL: +44 (0) 1372 367061. FAX: +44 (0) 1372 367099, E-mail: neil.williams@era.co.uk.

ED/MTT Egypt Chapter

— by Ibrahim Salem

Chapter activities of interest include:

- The 13th National Radio Science Conference which was held March 19-21, 1996

- The 8th International Conference on Microelectronics planned for December 16-18, 1996. This conference is being organized by the Faculty of Engineering, Ain Shams University and is coordinated in cooperation with the Electron Devices Society. For more information, contact Professor M.K. Elsaid: FAX: 202 -284-2774; E-mail: icm@frcu>.eun.eg.

For further information regarding the chapter's activities, please contact the Chapter Chair: Professor Ibrahim A. Salem, 17 Elqouba Street/3, Roxy Heliopolis, Cairo - 11341, Egypt. TEL: 202-349-8214, FAX: 202-263-6802.

ED/MTT Greece Chapter

— by Nikolaos Uzunoglu

Chapter activities of interest include the following:

- Printing of the abstract book from the "Trans Black Sea Region Symposium on Applied Electromagnetics" held last April in Greece and its distribution to all participants of the Symposium.

- Dissemination of information to all members of Black Sea Region Scientific Union of Applied Electromagnetism.

- Future plans include the organization of two Seminars on Microwave CAD Tools for Engineers and Students.

For further information please contact the Chapter Chair: Professor Nikolaos K. Uzunoglu, National University of Athens, Dept. Electrical & Computer Eng., Division of Electrosience, Heroon Polytechniou 9 Street, Zografou 15773, Athens, Greece. TEL: 30-1-77223556; FAX: 30-1-7723557, E-mail: nuzu@zeus.central.ntua.gr.

— Terry Oxley, Editor

Asia & Pacific (Region 10)

ED/LEO Australia Chapter

— by Chennupati Jagadish

The 1996 Conference on Optoelectronic and Microelectronic Materials and Devices to be held in Canberra during December 8-11, 1996 has received an overwhelming response. Invited speakers at COM-MAD '96 include: Prof. Hadis Morkoc, University of Illinois; Dr. Kevin Lear, San-

dia National Laboratories; Prof. Osama Aboelfoteh, North Carolina State University; Prof. Rick Cohen, University of Utah; Prof. Vinod Malhotra, University of Hawaii; Professor S.C. Shen, Shanghai Institute of Technical Physics; Prof. Martin Green, University of New South Wales; Professor Trevor Tansley, Macquarie University; Dr. Peter Coleridge, National Research Council of Canada; Dr. Jeongho Lyu, Seoul National University.

Professor Hadis Morkoc, EDS Distinguished Lecturer, will give seminars in Melbourne, Sydney and Perth (tentative).

Dr. Kevin Lear, LEOS Distinguished Lecturer, will give seminars in Sydney and Melbourne.

For further information, please contact the Chapter Chair: C. Jagadish, FAX: 61-6-249-0511, E-mail: cxj109@rsphysse.anu.edu.au

ED/MTT India Chapter

— by K.S. Chari

The chapter has taken many actions to increase the depth and contents of chapter activities. These initiatives resulted in the following: 1. Two EDS distinguished lecturers Professor Mike Lee, Korea and Dr. Sorin Cristoloveanu, France will be visiting early next year to give workshops in MOS IC reliability and SOI devices respectively. Two more DL's, Professor John Cressler and Professor Krishna Shenai, from the U.S.A have expressed their interest to visit and help the chapter promote activities. 2. A Workshop on Power Semiconductor Devices with Indian faculty was held on October 25, 1996 to address the needs of industry and emerging issues in this area. 3. The chapter has set-up an annual ED/MTT student paper contest on an all India basis to encourage innovation and idea generation at graduate and post-graduate levels in these fields. Two prizes, one in the ED field and one in the area of MTT, have been constituted for awarding to the two best student authors, respectively. The awards will begin in the Fall of 1997.

For further information, please contact the Chapter Chair: K.S. Chari, TEL: 436-1464; FAX: 436-3079; E-mail: chari@xm.doe.ernet.in

ED Malaysia Chapter

— by Burhanuddin Yeop Majlis

We organized an International Conference on Semiconductor Electronics which was held on November 26-28, 1996. We received about 70 papers from different parts of the world. As part of ICSE'96, we also organized an exhibition of semicon-

ductor research equipment with participation from local and overseas companies.

For further information, please contact the Chapter Chair: Burhanuddin Yeop Majlis, TEL: 603-829-2928; FAX: 603-825-9080; E-mail: burhan@eng.ukm.my

AP/MTT/ED Thailand Chapter

— by Narong Yoothanom

The AP/MTT/ED Chapter of the Thailand Section was approved on August 8, 1996. Professor Narong Yoothanom was the interim chairman. The first meeting of the chapter was held on September 27, 1996 and Professor Yoothanom was elected as first chairman.

For further information, please contact the Chapter Chair: Narong Yoothanom, TEL: 662-252-7178, FAX: 662-253-6161.

— Chennupati Jagadish, Editor

ED Tokyo Chapter Report of the 9th International MicroProcess Conference (MicroProcess '96)

— by Kei Horiuchi

MicroProcess'96 was held at the Kitakyushu International Conference Center in Kitakyushu, Japan, between July 8 and 11. There were 271 participants in attendance. Ninety (90) papers and 17 invited talks were presented on lithography and resists, etching and deposition, nanofabrication, surface reaction, and others. Papers on ArF lithography showed recent advances in this field. Increased papers on vacuum microelectronics, beam optics, and inspection added variety to the conference. In the panel discussion, the most critical process in the development of 0.1-0.15 μm technology seemed to be lithography. Conference awards were established this year. A paper of integrated lens for small electron beam column was selected for the most impressive poster on the basis of the vote of the participants. The outstanding paper will also be selected by the committee.

Next year, MPC '97 will be held at the Nagoya Congress Center in Nagoya, Japan from July 7 to 10. For further information please contact: Secretariat-Micro-Process '97, c/o Business Center for Academic Societies Japan, TEL: +81-3-5814-5800, FAX: +81-3-5814-5823, E-mail: conf@bcasj.or.jp

Report of the 1996 Topical Workshop on Heterostructure Microelectronics (TWHM'96)

— by Kanji Yah

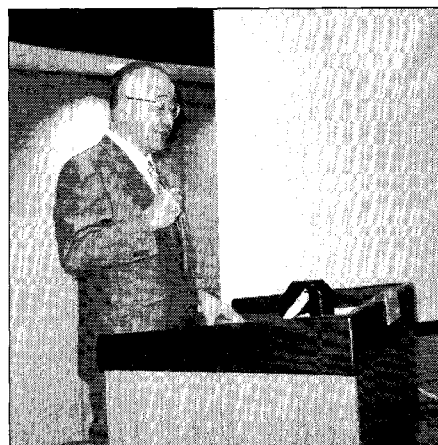
The Topical Workshop on Heterostructure Microelectronics (TWHM'96) was held at

Sapporo Theme International Hotel, Sapporo Japan, from August 18 to 21, 1996. A total of 82 participants from 8 countries joined and had fruitful discussions. Fifty-one papers, including 23 invited papers and 2 late news papers, were presented in 10 oral sessions. Both invited and contributed papers, especially those from leading companies, stimulated intensive discussions on hot topics such as Microwave/Millimeterwave Power Devices, Manufacturability and Reliability of Devices, Wide Bandgap Heterostructure Devices and Telecommunication and Signal/Data Processing Applications of Heterostructure Devices. As was the case with wide bandgap materials, special attention was paid to electronic applications of GaN. System applications included Wireless Systems, Telecommunication Systems, Global Grid Systems and High Speed ICs for Signal/Data Processing. The workshop, being held in the rapidly expanding multimedia era, was timely and successful. The next workshop (TWHM'98) will be held in two years in the Tokyo area. For details, please contact Dr. T. Ishibashi of NTT, TEL: +81-462-40-2888, Fax: +81-462-40-2798, E-mail: ishi@aecl.ntt.jp

Report of the 1996 International Conference on Solid-State Devices and Materials (SSDM'96)

— by Makoto Yoshimi

The 1996 International Conference on Solid-State Devices and Materials (SSDM'96) was held at the Pacifico Yokohama Convention Center in Yokohama, Japan, from August 26 to 29, 1996. Seven-hundred and twelve participants attended and 291 papers were presented as regular or poster sessions. Among them were 37 invited papers, including 3 outstanding plenary talks by Dr. K.V. Klitzing, Max-Planck-Inst.;



Prof. Sugano gave the opening and welcome remarks at the 1st SISPAD.

Dr. R.H. Dennard, IBM; and Prof. Y. Suematsu, NAIR. This year's SSDM Award was given to Dr. K. Izumi, Dr. M. Dohken, and Dr. H. Ariyoshi for their pioneering paper on SIMOX technology, which was presented at the 11th Conference in 1979. The discussion touched on various fields, ranging from Si and non-Si devices and their processes, quantum devices, crystal growth, characterization, and so on. In particular, this year's conference included 5 symposiums on "SOI technology", "Control of epsilon materials", "Fabrication and characterization of quantum nanostructures", "GaN- and ZnSe-based light emitters and their degradation mechanism", and "Single electron devices".

SSDM '97 will be held in Hamamatsu, Japan, from August 17 to 20. For further information, please contact: SSDM Secretariat, c/o Business Center for Academic Societies, Japan, TEL: +81-3-5814-5800; FAX: +81-3-5814-5823; E-mail: conf@bcasj.or.jp

Report of the 1996 International Conference on Simulation of Semiconductor Processes and Devices (SISPAD'96)

— by Masaaki Tomizawa

SISPAD'96 was held at Toyo University in Tokyo, Japan, September 2-4, 1996. This conference was the first unified conference from three precedent conferences on semiconductor process and device modeling - NUPAD in USA, SISDEP in Europe, and VPAD in Japan. Two-hundred and twelve participants attended from 13 countries. Eighty-one technical papers, including 7 invited papers from 12 countries, were presented. There were 8 regular sessions and one poster session on the latest research and development in Transport Model, Process Modeling, Impurity Modeling, Future Device Model, Advanced Silicon Device Model, Equipment and Topography Modeling, TCAD, and Mesh Generation and Circuit Model. In the poster session, hot topics were extensively discussed. Participants and attendees gained a deeper understanding of the current status and the future prospects throughout the lively discussions. SISPAD is organized annually and is held on a rotating basis in Japan, U.S.A. and Europe. SISPAD'97 is scheduled to be held in Cambridge, MA, USA, September 8-10, 1997. For more information, please contact: Prof. M. Law, Univ. of Florida, FL, USA, TEL: +1-904-392-6459; FAX: +1-904-8381; E-mail: law@tcad.ee.ufl.edu

— Hiroshi Iwai, Editor

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(As of November 22, 1996)

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Princeton/Cent. Jersey	Walter R. Curtice	(609) 799-1175
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Czechoslovakia	Miroslav Zeman	42-5-4778-5227
Egypt	Ibrahim A. Salem	202-349-8214
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France	Robert Adde	33-1-69-41-76-12
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Germany	Klaus Heime	49-241-807745
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Hungary	Istvan Frigyes	36-1-463-3689
Israel	Nathan Croitoru	972-3-640-8138
Central & South Italy	Paolo Spirito	39-81-7683138
North Italy	Carlo N. Naldi	39-11-5644069
Poland	Jerzy W. Klamka	48-22-47-21-61
Lithuania	Borissas Levitas	370-2-236-522
Minsk	Sergei A. Malyshev	375172-656164
Romania	Gheorghe I. Brezeanu	40-1-410-54-00
Moscow	Vladimir E. Lioubtchenko	7095-526-92-17
Nizhny Novgorod	Yuri I. Belov	7-83-12-336751
Novosibirsk	Boris Kapilevich	7-3832-660943
Saratov-Penza	Michael V. Davidovich	7-845-2-257750
St. Petersburg	Sergei Tretyakov	7-812-552-76-85
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Spain	Ramon Alcubilla	343-401-6757
Sweden	Mikael Ostling	46-8-752 1402
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Central Ukraine	Yuri M. Poplavko	38-044-441-39-05
East Ukraine	Yarkov S. Shifrin	38-0572-409430
West Ukraine	Nikolai N. Voitovich	38-0322-651944
UK & Rep. of Ireland	Niel Williams	44-1372-367061
Yugoslavia	Ninoslav D. Stojadinovic	381-18-55-682

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Rio De Janeiro	Jose R. Bergmann	55-21-529-9254

REGION 10 (Asia and Pacific)

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Beijing	Han C. Hu	86-1-436-1731
Hong Kong	Charles Surya	852-2766-6220
India	K. S. Chari	91-11-4361464
Korea	Mingu Han	82-2-880-7248
Malaysia	Burhanuddin Yeop Majlis	603-829-6305
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Taipei	S.C. Sun	886-35-726100
Thailand	Narong Yoothanom	662-2527178
Tokyo	Chihiro Hamaguchi	81-6-879-7765

EDS Meetings Calendar

(As of November 22, 1996)

USA, Canada & Latin America (Regions 1-6, 7 & 9)

Feb. 3 - 5, 1997, * **IEEE MULTI-CHIP MODULE CONFERENCE**, Location: The Coconut Grove Hotel, Santa Cruz, CA, Contact: Paul Franzon, Tel: (919) 515-7351, Fax: (919) 515-7382, E-Mail: paulf@ncsu.edu, Deadline: Past Due

Feb. 6 - 8, 1997, **IEEE INTERNATIONAL SOLID-STATE CIRCUITS CONFERENCE**, Location: San Francisco Marriott, San Francisco, CA, Contact: Diane S. Suiter, Tel: (202) 639-4255, Fax: (202) 347-6109, E-Mail: isscc@mcimail.com, Deadline: Past Due

Feb. 9 - 13, 1997, * **IEEE NON-VOLATILE SEMICONDUCTOR MEMORY WORKSHOP**, Location: Hyatt Regency Hotel, Monterey, CA, Contact: Sanjay Mehrotra, Tel: (408) 542-0510, Fax: (408) 542-0503, E-Mail: smehrotra@sandisk.com, Deadline: Past Due

March 16 - 21, 1997, ✓ **ULTRAFAST ELECTRONICS AND OPTOELECTRONICS TOPICAL MEETING**, Location: Hyatt Lake Tahoe, Incline Village, Nevada, Contact: Gerri Davis, Tel: (202) 223-8130, Fax: (202) 223-1096, E-Mail: Not Available, Deadline: Past Due

March 18 - 20, 1997, * **IEEE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES**, Location: Doubletree Inn, Monterey, CA, Contact: Sandra Grawet, Tel: (310) 316-5153, Fax: (310) 316-0713, E-Mail: 70541.1225@compuserve.com, Deadline: Past Due

April 7 - 10, 1997, * **IEEE INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM**, Location: Adams Mark Hotel, Denver, CO, Contact: Ajit K. Goel, Tel: (408) 986-3682, Fax: (408) 986-2891, E-Mail: ajitg@aol.com, Deadline: Past Due

May 5 - 8, 1997, * **IEEE CUSTOM INTEGRATED CIRCUITS CONFERENCE**, Location: Westin Hotel Santa Clara Convention Center, Santa Clara, CA, Contact: Melissa Widerkehr, Tel: (301) 527-0902, Fax: (301) 527-0994, E-Mail: cicc97@aol.com, Deadline: Past Due

May 11 - 15, 1997, @ **IEEE INTERNATIONAL CONFERENCE ON INDIUM PHOSPHIDE AND RELATED MATERIALS**, Location: Tara Resort, Hyannis (On Cape Cod), MA, Contact: Samantha Padilla, Tel: (908) 562-3894, Fax: (908) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: Past Due

May 12 - 14, 1997, ✓ **INTERNATIONAL SYMPOSIUM ON PLASMA PROCESS INDUCED DAMAGE**, Location: Monterey Conference Center, Monterey, CA, Contact: NCCAVS Business Office, Tel: (408) 737-0767, Fax: (408) 737-2403, E-Mail: nccavs@technicalmarketing.com, Deadline: 1/17/97

May 27 - 30, 1997, # **1997 INTERNATIONAL CONFERENCE ON ELECTRON, ION AND PHOTON BEAMS**, Location: Marriott's Laguna Cliffs Resort, Dana Point, CA, Contact: Anthony Novembre, Tel: (908) 582-2304, Fax: (908) 582-2300, E-Mail: aen@bell-labs.com, Deadline: 1/14/97

May 28 - 30, 1997, ✓ **INTERNATIONAL WORKSHOP ON COMPUTATIONAL ELECTRONICS**, Location: University of Notre Dame, Notre Dame, IN, Contact: Wolfgang Porod, Tel: (219) 631-6376, Fax: (219) 631-4393, E-Mail: wolfgang.porod@nd.edu, Deadline: 2/14/97

June 8 - 10, 1997, * **IEEE RADIO FREQUENCY INTEGRATED CIRCUITS SYMPOSIUM**, Location: Colorado Convention Center, Denver Colorado, Contact: Louis Liu, Tel: (310) 812-8372, Fax: (310) 813-9623, E-Mail: louis_liu@qmail4.sp.trw.co, Deadline: Past Due

June 15 - 19, 1997, @ **IEEE TRANSDUCERS - INTERNATIONAL SOLID-STATE SENSORS AND ACTUATORS CONFERENCE**, Location: Hyatt Regency Chicago, Chicago, IL, Contact: Ken-sall D. Wise, Tel: (313) 764-3346, Fax: (313) 747-1781, E-Mail: wise@engin.umich.edu, Deadline: Past Due

June 23 - 25, 1997, * **IEEE DEVICE RESEARCH CONFERENCE**, Location: Colorado State University, Ft. Collins, CO, Contact: James C. Sturm, Tel: (609) 258-5610, Fax: (609) 258-3747, E-Mail: sturm@ee.princeton.edu, Deadline: 2/28/97

July 20 - 23, 1997, * **UNIVERSITY/ GOVERNMENT/INDUSTRY MICROELECTRONICS SYMPOSIUM**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Lynn F. Fuller, Tel: (716) 475-2035, Fax: (716) 475-5041, E-Mail: lffeee@ritvax.isc.rit.edu, Deadline: 3/15/97

July 27 - Aug. 2, 1997, @ **INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: Hilton Hawaiian Village Hotel, Honolulu, HI, Contact: Rosa Serrata, Tel: (212) 705-7450, Fax: (212) 705-3294, E-Mail: rosas@aiche.org, Deadline: 1/6/97

Aug. 4 - 6, 1997, * **IEEE CORNELL CONFERENCE ON ADVANCED CONCEPTS IN HIGH SPEED SEMICONDUCTOR DEVICES AND CIRCUITS**, Location: Cornell University, Ithaca, NY, Contact: R. Chris Clarke, Tel: (412) 256-1997, Fax: (412) 256-1877, E-Mail: cclarke@aescad.pgh.wec.com, Deadline: 4/8/97

Sept. 7 - 11, 1997, @ **IEEE INTERNATIONAL SYMPOSIUM ON COMPOUND SEMICONDUCTORS**, Location: Hotel Del Coronado, San Diego, CA, Contact: Samantha Padilla, Tel: (908) 562-3894, Fax: (908) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: 4/14/97

Sept. 8 - 10, 1997, @ **IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMI-CONDUCTOR PROCESSES AND DEVICES**, Location: Boston Marriott Cambridge, Cambridge, MA, Contact: Fely Barrera, Tel: (415) 723-1349, Fax: (415) 725-7731, E-Mail: fely@ee.stanford.edu, Deadline: 3/3/97

Sept. 16 - 18, 1997 # **INTERNATIONAL DISPLAY RESEARCH CONFERENCE**, Location: Sheraton Center Toronto Hotel, Toronto, Canada, Contact: Ralph Nadell, Tel: (212) 620-3341, Fax: (212) 620-3379, E-Mail: rnadell@newyork.palisades.org, Deadline: 4/1/97

Sept. 23 - 25, 1997, ✓ **ELECTRICAL OVER-STRESS/ELECTROSTATIC DISCHARGE SYMPOSIUM**, Location: Santa Clara Convention Center, Santa Clara, CA, Contact: ESD Associates, 7902 Turin Road, Suite 4, Rome, NY 13440-2069, Tel: (315) 339-6937, Fax: (315) 339-6793, E-Mail: None, Deadline: 1/10/97

Sept. 28 - 30, 1997, * **IEEE BIPOLAR/BICMOS CIRCUITS AND TECHNOLOGY MEETING**, Location: Minneapolis Marriott City Center, Minneapolis, MN, Contact: Janice V. Jopke, Tel: (612) 934-5082, Fax: (612) 934-6741, E-Mail: jjopke@aol.com, Deadline: 3/31/97

Sept. 29 - Oct. 3, 1997, * **IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE**, Location: Anaheim Marriott, Anaheim, CA, Contact: Paul A. Basore, Tel: 61-2-385-6151, Fax: 61-2-662-4240, E-Mail: p.basore@unsw.edu.au, Deadline: 5/5/97

Oct. 6 - 8, 1997, * **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, Location: Westing St. Francis Hotel, San Francisco, CA, Contact: Court Skinner, Tel: (408) 721-7420, Fax: (408) 721-6454, E-Mail: l.skinner@ieee.org, Deadline: Not Available

Oct. 6 - 9, 1997, * **IEEE INTERNATIONAL SOI CONFERENCE**, Location: Tenaya Lodge at Yosemite, Fish Camp, CA, Contact: Sandra Grawet, Tel: (310) 316-5153, Fax: (310) 316-0713, E-Mail: 70541.1225@compuserve.com, Deadline: 5/9/97

Oct. 11 - 16, 1997, * **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, Location: Anaheim Marriott Hotel, Anaheim, CA, Contact: Phillip Wallace, Tel: (908) 412-5987, Fax: (908) 412-5985, E-Mail: wallacepw@aol.com, Deadline: 5/9/97

Oct. 12, 1997, # **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, Location: Anaheim Marriott Hotel, Anaheim, CA, Contact: Anthony Immorlica, Tel: (603) 885-1100, Fax: (603) 885-1074, E-Mail: None, Deadline: Not Available

Oct. 12 - 15, 1997, * **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, Lake Tahoe, CA, Contact:

tact: James W. Miller, Tel: (512) 933-7297, Fax: (512) 933-7662, E-Mail: rvkg60@email.sps.mot.com, Deadline: 7/7/97

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