



October 1996  
Vol. 3, No. 4 ISSN:1074 1879  
Editor-in-Chief: Krishna Shenai

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## Contributions Welcome

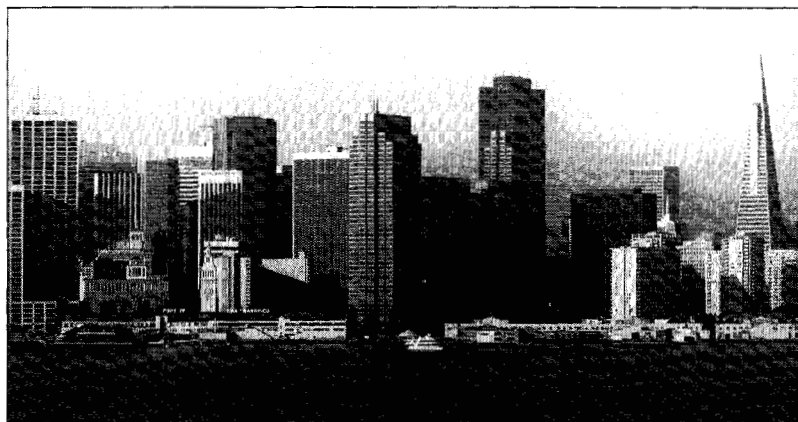
Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

### 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

## 1996 IEEE International Electron Devices Meeting (IEDM)



Photograph courtesy of the San Francisco Convention & Visitors Bureau

The premier technical conference of the Electron Devices Society will return to San Francisco this year when the 42nd annual International Electron Devices Meeting (IEDM) comes to the San Francisco Hilton and Towers from December 8 - 11, 1996.

The IEDM is the world's leading international forum for reporting advances in the technology, design, manufacturing, physics and modeling of electron devices, ranging from deep submicron MOSFETs to flat-panel displays, from compound semiconductor materials to new memory architectures, from novel microelectromechanical (MEMs) devices to smart-power technologies.

The conference attracts authors, attendees and guest speakers from around the world and provides an excellent opportunity to meet colleagues and to keep up with the state-of-the-art in a broad range of interrelated disciplines.

Moreover, the conference hotel is conveniently located close to many of San Francisco's finest restaurants, stores and tourist destinations, making for an enjoyable stay in one of the world's finest cities.

### IEDM'96 Technical Program

The heart of any IEDM is the technical program and no other meeting offers the presentation of so much leading work in so many different areas of electronics. The IEDM offers scientists and engineers a great opportunity to hear about the best work being done in their own disciplines and in related areas, and to talk with the people doing it. This is especially important given the fact that as technology advances, the integration of different technologies is becoming more important and more common.

(continued on page 3)

### 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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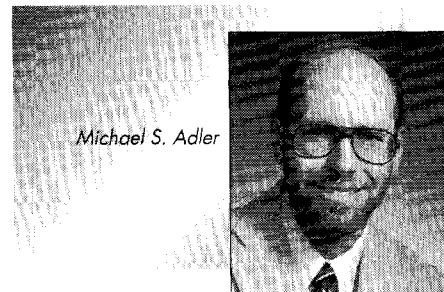
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Michael S. Adler

As the incoming Director of the IEEE Division I, I am writing this article to let you know my priorities for my term. For those not familiar with the IEEE's division structure, there are ten divisions which represent the 38 societies/councils on the Board of Directors. In Division I, there are the: Electron Devices Society; Lasers and Electro-Optics Society; Components, Packaging, and Manufacturing Technology Society; Circuits and Systems Society; and the new Solid-State Circuits Society.

My main focus will be in furthering the globalization of our societies. This effort will occur in three areas: formation of new chapters; support for these chapters; and membership growth. In my previous roles as President and Past President of the Electron Devices Society, we have grown the number of chapters in Region 8 (Europe, Middle East & Africa) from eight in 1994 to 31 at present. Ten of these chapters were formed jointly with the Microwave Theory and Techniques Society in the newly independent nations of Eastern Europe and the Former Soviet Union. For these chapters, EDS and MTTs have subsidized the membership for three years; and in doing so, have enabled these countries to benefit from the technical communication inherent with IEEE membership. We have received many heartfelt thanks and appreciation for this initiative.

My intent as Division Director is to investigate the feasibility of broadening these chapters in Region 8 to include the other societies of Division I and Division IV (which includes MTTs). The first step in accomplishing this goal has been taken by the Division IV Director, Rolf Jansen. He is contacting the ten new chapters in Eastern Europe to investigate whether there is local interest in the technical areas covered by the other Divisions I and IV societies.

This initiative will be an important subject for a first ever joint Divisions I and Division IV Region 8 Chapters Meeting. This event will be held September 8, 1996, in Prague, Czech Republic in conjunction with the European Microwave Conference (EuMC). It is hoped that we will have representatives attend from all of the Divisions I and IV Region 8 chapters, as well as society officers from all of the Division I and IV societies. During this meeting, we will also explore the advisability and feasibility of expanding other existing chapters to include other societies, as well as the formation of totally new chapters as is seen appropriate.

(continued on page 10)

## 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. Verdonck-Vandebroek	C.Y. Yang
R.J. Van Overstraeten		

\* Members elected 12/95

**IEEE Electron Devices Society Newsletter** is published quarterly by the Electron Devices Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 345 E. 47th St., New York, NY 10017-2394. Printed in the U.S.A. One dollar (\$1.00) per member per year is included in the Society fee for each member of the Electron Devices Society. Periodicals postage paid at New York, NY and at additional mailing offices. **Postmaster:** Send address changes to IEEE Electron Devices Society Newsletter, IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

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# Upcoming Technical Meetings

## IEDM

(continued from page 1)

IEDM'96 will feature an increased emphasis and a greater number of papers in the areas of interconnect technology, MEMs and smart-power. Interconnect technology is both a process and a device issue and is a critical limiting factor for highly integrated circuits. MEMs (micro-electromechanical) systems hold the promise of extending familiar silicon processing technology to integrate electronics with on-chip mechanical structures, making possible new types of sensors and motion control devices. So-called smart-power devices, which are logic and power functions integrated on a common substrate, hold the potential to enable true distributed power architectures useful in many different types of electronic systems.

IEDM'96 will feature the presentation of more than 200 invited and contributed papers by authors from throughout the world. The papers will deal with the latest advances in several areas:

- CMOS Devices and Reliability: semiconductor device physics and device performance of MOS structures, scaling, low and high temperature operation, SOI and device isolation;
- Detectors, Sensors and Displays: advances in device theory, performance, modeling, processing, integration and vacuum electronics;
- Device and Interconnect Technology: process integration, interconnect technology and process modules for the fabrication of CMOS, bipolar, and BiCMOS devices;
- Integrated Circuits: advances in device integration, circuit applications and related technologies (e.g. multi-level interconnect schemes);
- Modeling and Simulation: analytical, numerical and statistical approaches to modeling all types of electron devices, their isolation and interconnection;
- Solid State Devices: theory and operation of smart-power ICs, bipolar, discrete power, high voltage, DMOS, IGBT, superconducting, novel devices, SiGe and SiC devices and ICs;
- Quantum electronics and Compound Semiconductor Devices: compound semiconductor electronic and photonic devices and materials, including FETs, HBTs, lasers, LEDs, modulators, photodetectors,

high-power/low-noise devices; devices with quantum, single-electron and ballistic effects, devices based on new physical concepts and optoelectronics.

## Short Courses

A popular feature of the IEDM is the program of short courses which take place the Sunday before the conference formally begins. This year, they will be offered on Sunday, December 8. They are presented by experts in the field and provide attendees with the opportunity to learn about new and emerging areas and to benefit from the experience and up-to-date knowledge of lecturers who are not only very active, but who lead the field. They also include introductory material for general audiences.

This year the two Short Course subjects are: "DRAMs in the 21st Century" and "The Backend at the Forefront." The courses are held at the same location as the conference and since they take place on Sunday, they offer the opportunity to take advantage of discounted air fares that include a Saturday night stopover.

The registration fee for each Short Course is \$350 (for both IEEE members and non-members) and \$50 for students. Advance registration is required.

## Plenary Presentations

In addition to the regular paper sessions, the conference will include three plenary presentations dealing with developing technologies. This year's talks will be, SOL: Materials to Systems, by Andre Auberton-Herve, President of SOITEC in Grenoble, France; Foundry Technologies, by Dr. F.C. Tseng of Vanguard International Semiconductor Corporation, Taiwan; and MEMs Systems, by Professor Kensall Wise, Director of the Center for Integrated Sensors and Circuits, University of Michigan, Ann Arbor, Michigan.

## Gordon Moore is Luncheon Speaker

This year's invited luncheon speaker will be Gordon Moore, Chairman of Intel Corporation and the originator of the well-known Moore's Law, which postulated that integrated circuits would grow in complexity by roughly a factor of two each year. A past IEDM presenter, he will return to the conference to give his observations on the state of the semiconductor industry.

## Panel Sessions

IEDM'96 will continue the tradition of holding lively evening panel sessions on important subjects of interest to the electronics community. Audience participation is encouraged to promote the free exchange of ideas and opinions. This year the topics will be: "System on a Chip: Does It Make Sense?," moderated by Maurizio Arienzo of IBM, and "The People Crunch," moderated by Prof. Karl S. Pister, Chancellor of the University of California.

## Emerging Technologies

The IEDM also features an Emerging Technologies session where invited papers look at future trends in the industry. This year's Emerging Technologies papers include: "GaN-based Light Emitters," by I. Akasaki of Meijo, University in Japan; "SiC Electronics" by A. Agarwal of Northrop-Grumman; and "MEMs for Biomedical Applications" by K. Petersen of CEPHEID.

## Late-News Papers

The submission date for regular papers has already passed but a limited number of late-news papers will be accepted for presentation. If you have very recent developments you wish to publish at the conference, please submit by September 18, one original of your proposed paper (including artwork) and 25 copies to Melissa Widerkehr, IEDM Conference Manager, Suite 270, 101 Lakeforest Boulevard, Gaithersburg, MD 20877, USA. Accepted late-news papers and accompanying figures will be printed as received in the Technical Digest. Submission of a late-news paper for review will be considered by the review committee as consent from the author for its publication, if accepted.

## Further Information

For registration and other information, visit the IEDM 1996 home page on the World Wide Web at <http://his.com/~iedm>. Or contact Conference Managers Melissa Widerkehr and Phyllis Mahoney at TEL: (301)527-0900; FAX: (301)527-0994; or at the following address: IEDM, Suite 270, 101 Lakeforest Boulevard, Gaithersburg, MD 20877 USA.

Gary Dagastine  
Masto Dagastine & Associates  
Latham, NY

# 1996 IEEE GaAs IC Symposium



The 18th annual GaAs IC Symposium will be held at The Peabody Orlando from November 3 - 6, 1996.

This Symposium is the preeminent international forum on developments in integrated circuits using GaAs, InP and other compound semiconductor devices. Coverage embraces all aspects of the technology, from materials issues and device fabrication through IC design and testing, high volume manufacturing, and system applications.

The Symposium attracts authors, attendees and invited speakers from all over the world, and provides attendees with an excellent opportunity to hear the latest results in high speed digital, analog, microwave/millimeter wave, and optoelectronic integrated circuits.

## Conference Location — Orlando, FL

The GaAs IC Symposium returns to Florida in 1996, this time to The Peabody Hotel, an ultra-modern 27-story hotel with a 4-story atrium lobby. It houses 891 lavishly appointed guest rooms, including 57 suites, equipped with everything from two-line phones to a twenty-one inch cable TV with remote-control. The hotel features: round-the-clock room service; a complete athletic club; an olympic-size outdoor swimming pool; and four lighted tennis courts. Be sure not to miss the hotel's world-famous Duck March, held twice daily.

Consider bringing your family and arriving on Saturday. November is a perfect time to visit central Florida's attractions, including: the championship 18-hole Joe Lee golf course; Universal Studios Flori-

da®; the Walt Disney World® Resort; and Sea World®.

## 1996 IEEE GaAs IC Symposium Technical Program

This year's Symposium features twelve invited papers and 61 contributed papers by authors from the United States, Canada, the Far East, and Europe. The Symposium's papers appear in twelve sessions: Reliability and Materials; Applications of GaAs Digital ICs; High Power Amplifier and Device Technologies; > 20 Gb/s Circuits for Lightwave Communications; Advanced Devices and Modeling; System Applications of GaAs Multifunction MMICs; Wide Band Amplifier Techniques; High Performance Devices and Circuits; OC-192 Optical Integrated Circuits; Millimeter Wave Switch and Oscillator Circuits; Device Modeling for Wireless Systems Applications; and Complementary GaAs Applications and Technology.

As in the past, the 1996 GaAs IC Symposium will include panel sessions and vendor product forums. The panel sessions will be held mid-day on Monday and Wednesday, and will address subjects of interest to the GaAs IC Symposium attendee. The Vendor Product Forums, held in parallel with the panel sessions, provide an opportunity for the attendees to learn about some of the latest products available in the GaAs IC marketplace.

## Plenary Session

The Symposium opens with the Plenary Session on Monday morning, featuring five invited presentations from industry experts. Attendees will have the opportunity to

hear: "Unlicensed Millimeter Wave Communications: A New Opportunity for MMIC Technology at 60 GHz" by R. Van Tuyl, Hewlett Packard Laboratories; "Wide Bandgap Semiconductor Electronic Devices for High Frequency Applications" by R. Trew, Case Western Reserve University; "GaAs ICs in Commercial OC-192 Equipment" by H. Willemssen, Nortel Technology; "40-Gbit/s ICs for Future Lightwave Communications Systems" by T. Otsuji, NTT LSI Laboratories; and "Low Cost Packaging Techniques for Commercial GaAs IC Components" by V. Steel, RF Micro Devices, Inc.

## Short Course and Primer Course

Two very popular courses will be offered on Sunday, November 3. The Short Course, "High Frequency Design for Communications," will address important issues and techniques encountered in the practice of designing high frequency ICs for communication applications. Lecturers will address the design approaches and critical considerations for implementing specific IC functions within specific communication application areas.

The Primer Course, "Basics of GaAs ICs," will be offered on Sunday evening as an introductory level class intended for professionals in the electronics industry with little or no experience in GaAs ICs. The material is designed to provide a brief overview of concepts and issues unique to GaAs ICs, so that participants can attend the Symposium's Technical Program with more appreciation.

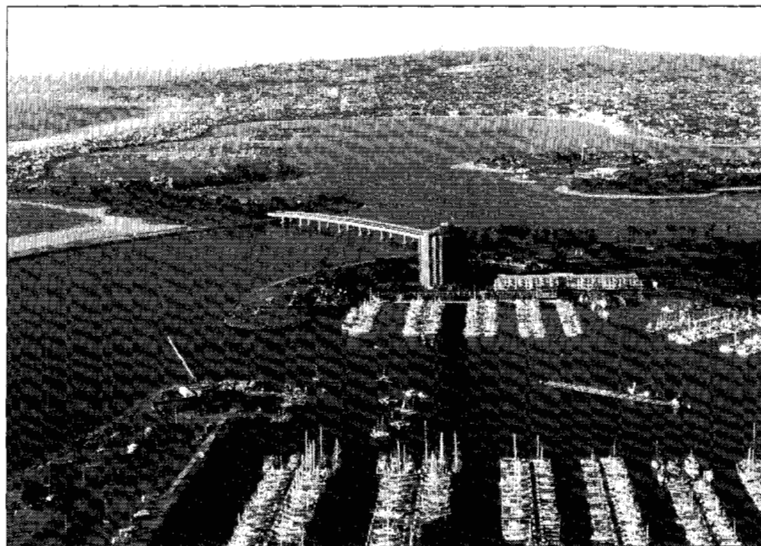
## Late News Papers

Papers containing late-breaking news will be presented this year for the second time in the history of the Symposium. Papers describing significant advances in the technology are being solicited. Authors of accepted papers will make ten-minute presentations at the Symposium.

## 1996 Technology Exhibition

The 1996 Technology Exhibition will open on Monday evening, November 4, with a reception in the exhibit area. The Exhibition is open to all Symposium attendees and will be held concurrently with the GaAs IC Symposium on November 5 and 6. The Exhibition provides attendees the opportunity to see new products on display, and allows the Exhibitors to meet with old and new customers. The Exhibition continues to be a popular event for both Exhibitors and GaAs IC Symposium attendees. Companies desiring booth

# 1996 IEEE Semiconductor Interface Specialists Conference (SISC)



James Ward/San Diego Convention & Visitors Bureau

The 1996 Semiconductor Interface Specialists Conference (SISC) will be held December 5-7, 1996 in San Diego California immediately prior to IEDM. The SISC provides a unique forum for device engineers, solid-state physicists, and material scientists to discuss issues of common interest. Discussions after the talks are encouraged and the conference activities and setting provide many opportunities for informal discussions. Some of the interests include the various semiconductor interfaces, the physics of insulating thin films, and the interaction among materials science, device physics, and state-of-the-art technology issues. One of the main goals of the conference is to provide an environment that encourages an interplay between sci-

entific and technological issues. The SISC emphasizes silicon-based devices, including silicon alloys.

This year will be the twenty seventh meeting of SISC. The Interface Specialists Conference was first held in 1965 and attendance was by invitation. The hot topic of the day was sodium. Starting with the fourth meeting held in 1973, the conference has been held annually. By then, Semiconductor had been added to the conference name giving the conference its present name. The SISC now alternates between the east and west coast and meets just before IEDM.

While SISC has remained focused on silicon based technology, topics have evolved as the state-of-the-art has

advanced. The six invited speakers for this year's conference illustrate the research areas covered. M. V. Fischetti of IBM's T.J. Watson Research Center will present results on "Monte Carlo Simulation of MOS Devices". The advances towards thinner and thinner gate dielectrics and their applications for advanced MOS devices will be discussed by H. S. Momose of Toshiba's Microelectronics Laboratory, Japan in her talk entitled "Thin Gate Dielectrics for Future CMOS Applications". Continuing in the area of MOS devices, G. Groeseneken of IMEC, Belgium will discuss "New insights in the impact of the breakdown mechanisms on the statistics of intrinsic and extrinsic breakdown in thin oxides", whose co-authors include J.L. Ogier, R. Bellens, Ph. Roussel, M. Depas and H.E. Maes, IMEC, Leuven, Belgium. Also concerning the reliability of MOS devices, Prof. J.W. Lyding of The Beckman Institute, University of Illinois at Urbana-Champaign will present new data on "STM Nanofabrication and Deuterium Post Metal Annealing of MOSFETs for Improved Hot Carrier Reliability" with co-authors K. Hess, University of Illinois at Urbana-Champaign and I.C. Kizilyalli, Lucent Technologies. A relatively new technique used for investigating the properties of the Si/SiO<sub>2</sub> interface will be discussed by M.C. Downer of the University of Texas at Austin in his talk "Second Harmonic Spectroscopy of the Si(001) Interfaces Using Femtosecond lasers". Silicon carbide (SiC) has potential advantages for high voltage/high temperature applications and T. Ouisse from ESNERG, Grenoble, France will present a talk entitled "Electron Transport at the SiC/SiO<sub>2</sub> Interface".

This year's SISC will continue to present an award memorializing Prof. E. H. Nicollian. It will be given for the best student presentation. Ed Nicollian was a pioneer in the exploration of metal oxide semiconductor (MOS) systems. His contributions were important to establishing SISC in its early years and he served as the Technical Chair in 1982. With John Brews, he wrote the definitive book about capacitance-voltage and other measurement techniques of MOS devices.

While the heart of the conference is its invited and contributed talks and posters, the surroundings and conference activities enhance the conference. At the poster reception on Thursday evening, the spread of hors d'oeuvres, wine, etc. encourage lively exchanges. Friday afternoon will be free (continued on page 6)

space at the two-day technology exhibition should contact Harry Kuemmerle at VIP Meetings & Conventions, TEL: (310) 459-4691 or FAX: (310) 459-0605.

## Social Events

The technical intensity of the GaAs IC Symposium is balanced with informal social functions. The Sunday evening opening reception at The Peabody Hotel allows attendees to greet colleagues, meet new friends, and plan schedules for the week. Tuesday's Symposium Theme Party will be held at Universal Studios Florida®. Attendees will experience an old-fashioned street party and enjoy exciting rides reserved especially for GaAs IC Symposium attendees and their guests.

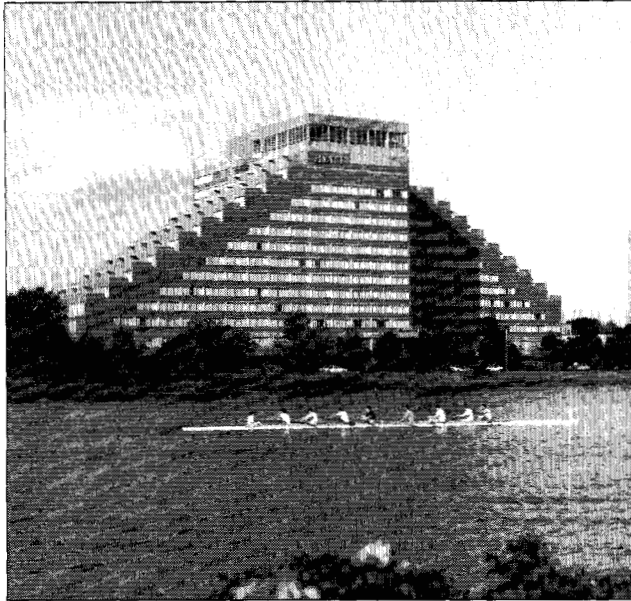
## Further Information

If you would like to be added to the Symposium's mailing list, mail or e-mail your name, address and e-mail address to: Richard B. Brown, 2236 ECCS -1301 Beal Avenue, University of Michigan, Ann Arbor, MI 48109-2122, E-mail: brown@engin.umich.edu For general information, contact the 1996 Symposium Chairman, Elissa Sobolewski at DARPA, E-mail: lsobolewski@darpa.mil or TEL: (703) 696-2254. For up-to-date information concerning the Symposium, visit web-site <http://www.eecs.umich.edu/VLSI/GAASIC>.

Elissa I. Sobolewski  
DARPA  
Arlington, VA



# 1996 IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop (ASMC '96)



Papers at the 7th Annual IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop (ASMC), to be held November 12-14, 1996 at the Hyatt Regency, Cambridge, Massachusetts will reflect not only the conference theme, "Innovative Approaches to Growth in The Semiconductor Industry" but a concern that has been evident at this meeting for the last three years: productivity and the impact of manufacturing costs. Technical abstract submissions for this event increased again this year, and the technical committee has accepted 94 papers for presentation in 14 sessions, including an international perspective

and an increasingly popular poster session. Individual session themes include the following: CIM (Computer Integrated Manufacturing); Inline Inspection for Defect Reduction; Maximizing Equipment Productivity; Methods for Cycle Time Reduction; Manufacturing Cost Reduction Techniques; Defect Reduction in Equipment & Processes; Advanced Processing: Thin Films/Photo; Advanced Processing: Etch; Advanced Metrology; Advanced Process Control; Yield Enhancement Techniques; and Human Resources & Partnering Issues. Poster session papers all address quantitative issues in productivity and production management. This year's

keynote address on strategic alliances and their impact on growth will be given by Dr. Ulrich Schumacher, Vice President, Siemens Semiconductor Division. For the third straight year, Dataquest will present an overview of the status of the semiconductor industry.

ASMC was launched in 1990 as a regional adjunct to the West Coast-based IEEE/SEMI ISMSS. Since then, thanks to the efforts of a large and active cadre of industry volunteers the conference has grown from a New England regional meeting to a national and international venue for the exchange of information between semiconductor manufacturing professional. In 1995, attendance reached an all time high of 300 and demographics confirm that the draw is from a wide geographic region.

The Cambridge Hyatt Regency, once again the site of this year's meeting, is adjacent the Charles River, within walking distance of MIT and Harvard, directly across from downtown Boston. Mid-November weather is usually brisk, but in milder years New England foliage can linger on, offering the visitor an opportunity to sample one of nature's most colorful events along the river front paths. Boston's pace too begins to quicken with preholiday activity at this time of year, and greater Boston offers visitors a wide range of attractions, including a chance to sample the region's best seafood. For further information, contact Margaret Kindling at SEMI, 805 15th St. NW, Ste. 810, Washington, DC 20005; Tel: (202)289 0440; Fax: (202)289 0441; E-mail: mkindling@semi.org

Margaret M. Kindling  
SEMI  
Washington, DC

## SISC

(continued from page 5)

so that there will be time to explore San Diego. Another highlight is the limerick contest held at Friday evening's banquet. Unleash your literary zeal and enjoy the fun. The conference events are given a whole new light.

This year the SISC will be located at the Catamaran Hotel, in San Diego California. "The Catamaran Resort Hotel represents casual elegance in a tropical paradise with acres of lush foliage and sun-drenched beaches. Mission Bay is at your

doorstep while the Pacific Ocean is just a mere 100 yards away. The Catamaran Tower commands a view from the shores of La Jolla or Old Mexico and over Mission Bay to Point Loma and the San Diego skyline. Sea World, the world famous San Diego Zoo and the San Diego International Airport are just minutes away."

While San Diego is best known for its near-perfect climate and miles of sandy beaches is also a city rich in history, art and culture. It has a collection of approximately 90 museums, many fine restaurants and a dynamic night-life. Sea World and

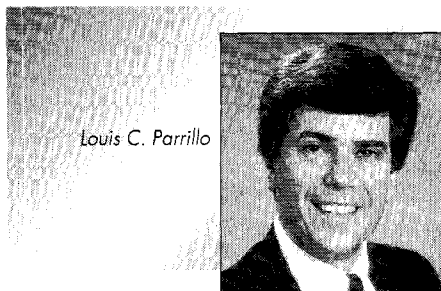
the San Diego Zoo are just a few minutes away by car. History buffs have their choice of the Old Town State Historic Park, preserving California's Spanish history; the county's four missions or downtown's restored Gaslamp Quarter.

For registration information and general inquiries about SISC, please contact the Arrangements Chair, Prof. Len Trombetta, University of Houston, Tel: (713) 743-4424 or E-mail: ltrombetta@uh.edu.

Douglas A. Buchanan  
IBM Research Division  
Yorktown Heights, NY

# Society News

## EDS Goals for 1996 - 1997



Louis C. Parrillo

I am very honored and pleased to address the EDS membership in my first correspondence as EDS president. Overall, I see my role and that of the leadership team, is to strive for continual improvement in our service to EDS members. With that vision in mind, we have selected some major thrusts on which to focus, and we have established key goals to achieve in the 1996 - 1997 timeframe. Some of these goals are new and some continue the initiatives begun by the previous EDS leadership team. The following is a brief description of the major goals. We intend to follow up on progress to these goals in future issues of the Newsletter.

**• Expand five of our single-person AdCom standing committees, Chapters, Education, Meetings, Membership and Publications, to include additional members in an effort to enhance and increase the society's activities in each respective area**

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

- Each expanded team will develop detailed goals and plans for increased effectiveness.

The purposes of this new initiative of expanding these vital committees are to generate new ideas and actions, to share the burden of tasks among several individuals, to allow potential AdCom members an opportunity to contribute to EDS prior to being considered for election, and to cre-

ate a succession of leadership in each of the committees as well as the future EDS executive team.

**• Develop and implement methods to maintain and grow EDS membership**

- Implement a new option for "permanent" EDS membership
- Further extend practice of membership recruitment at meetings
- Expand new recruitment program offering students free IEEE and EDS membership at meetings
- Work with IEEE to implement "renewal based" member retention program
- Analyze why members leave EDS to minimize losses in the future
- Explore EDS affiliate option to increase membership
- Develop an EDS Membership Directory

**• Develop methods to insure vitality of chapters, particularly those that are newly formed**

- Enhance Distinguished Lecturer Program by implementing new method and process to provide more overseas lecturers
- Enhance Distinguished Lecturer program by establishing a methodology for mini-colloquia
- Establish Chapter Chairs Manual describing EDS programs and procedures
- Expand Chapter Chairs Manual to include best practices

**• Further expand Eastern Europe initiative driven by EDS and the Microwave Theory and Techniques Society (MTTS) to form chapters, and subsidize memberships and subscriptions by including other economically disadvantaged areas**

**• Significantly reduce the publication cycle time for Electron Device Letters and Transactions on Electron Devices**

- Explore alternative methods of reviewing and revising manuscripts for shorter cycle time
- Develop procedures toward full electronic submission and review

**• Continue progress in electronic publishing**

- Fully implement our first electronic publication (T-CAD Journal)
- Develop an electronic version of *Electron Device Letters* and *Transactions On Electron Devices*.

**• Strengthen Efforts to work with other IEEE Societies to further expand current joint ventures and to develop new initiatives**

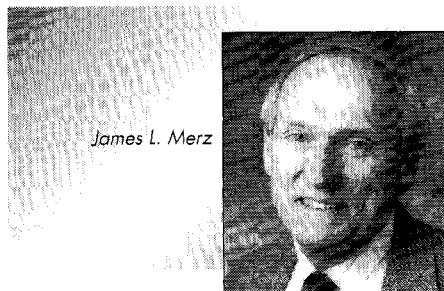
- EDS/MTTS globalization efforts
- Develop methods to attract "Applied Engineers" to IEEE and Societies

This appears to be a long list of ambitious goals, and it is. In fact, we don't know how to achieve some of the goals. Virtually all of the goals have champions however, and we have made significant progress toward several of the goals already. Examples of such progress include the expansion of our critical standing committees, the vitalization of our international chapters by establishing Regional Distinguished Lecturers and our expansion of the Eastern Europe initiative driven by MTTS and EDS, to name a few. Our plan is to articulate our progress toward achieving these goals in future forums including the Newsletter.

Our overall objective is to look back at the end of 1997 and to assess our effectiveness in following our vision of continual improved service to our members. We welcome your comments and critiques in our efforts to improve our society, but most importantly we encourage your active participation in making our society one of excellence in international technical education and communication.

Louis C. Parrillo  
Motorola  
Austin, TX

# Summary of the June 1996 AdCom Meeting



James L. Merz

A meeting of the Electron Devices Society Administrative Committee (AdCom) took place at the Hilton Hawaiian Village Hotel on June 9, 1996 in Honolulu, Hawaii preceding the VLSI Symposia. The following are some of the highlights of the meeting.

## President's Report

— by Lou Parrillo

- As the new EDS President, Lou described in detail his vision and goals for the EDS during his watch. These are described at length on page 7 in this issue of the Newsletter.

- Highlights of the most recent meeting of TAB held this February in San Diego were discussed and included:

- There is an action plan for IEEE publications to reduce publication time and increase revenues.

- IEEE is currently in the process of reviewing proposals to reorganize its volunteer structure.

- The Solid-State Circuits Council has been approved to become a society as of 1/1/97.

## VLSI Symposia Announcement

— by Jim Clemens

- It was announced that a non-published industry meeting was to be held on 6/10, with 60 corporations and academic representatives invited, for the purpose of discussing the future of VLSI. This was done in 1990, and was considered to be very successful.

## Executive Committee Report (ExCom)

- After a review of the 1997 EDS technical meetings calendar and much discussion, it was decided that the Spring 1997 AdCom meeting would be held on May 4th in Santa Clara, CA in conjunction with the Custom Integrated Circuits Conference (CICC).

- Lu Kasprzak discussed a proposal to have the International Reliability Physics Foundation (IRPF) become an IEEE TAB

Committee which would be sponsored by EDS, the Reliability Society and any other interested IEEE society. It was decided that this issue was not yet mature enough to bring to AdCom and that it was best to arrange for an IRPF representative to present the Foundation's plan at the December AdCom meeting.

- Plans were discussed for the 1996 Meetings 'Best Practices' Workshop which will be held December 8th in San Francisco at the IEDM. This Workshop has been held the past two years at the IEDM and both occurrences were considered to be excellent.

- As agreed at the December 1995 ExCom meeting, there will be a meeting at the 1996 IEDM for all our chapters from the U.S., Canada and Latin America (Regions 1-7 & 9). Although the focus of the meeting will be for chapters in these specific geographic areas, it will be open to all Regions 8 & 10 chapters as well.

## Region 8 Globalization (Europe, Middle East & Africa)

— by Mike Adler & Imre Mojzes

- As a result of the EDS and MTTs initiative to subsidize memberships and subscriptions for individuals in Eastern Europe, ten chapters have been formed the past two years. These are all joint chapters with MTT, a process that seems to be working well.

- There will be another meeting of the EDS Region 8 chapters which will be held on September 8, 1996 in Prague. The meeting has been expanded this year to include all eleven societies from IEEE Divisions I & IV. With the large number of EDS and MTTs Region 8 chapters, it is expected that the majority of the attendees will be representatives from these two societies.

## Region 10 Globalization (Asia & Pacific)

— by Kunio Tada and Jim Clemens

- The advance program for the 1996 International Conference on Solid-State Devices and Materials (SSDM) was presented, which showed Technical Co-Sponsorship support by EDS, with the EDS logo prominently displayed on the cover.

- A copy of the first ever Region 10 Newsletter was also shown, entitled *The Asia Pacific Channel*.

- There has been some discussion with the Institute of Electronic, Information, and Communications Engineers of Japan (IEICE) to establish a "Sister Society" agreement with EDS, similar to the one

EDS has with the Japan Society of Applied Physics (JSAP).

- A pilot project has been undertaken to translate IEEE/EDS membership information into Japanese. It was decided that the membership application form itself will continue to be written in English. Plans to translate this information into Mandarin are being formulated, because of the potential growth of IEEE/EDS in Taiwan.

## Treasurer's Report

— by Lu Kasprzak

A detailed budgetary breakdown from 1992 to 1996 was displayed. Highlights included:

- The surplus for 1995 (\$701.3K) was much higher than projected, primarily due to a larger than expected surplus from conferences, a higher than budgeted return from long-term investments and a larger than expected net from *Transactions on Electron Devices*. EDS reserves now total \$3.2 million.

- Currently the Society has about 50% of its reserves in the IEEE Long-Term Investment Fund (\$1.6M), while the balance is held as cash in the IEEE Short-Term Investment Program. Based on an analysis of the amount of cash needed to run the EDS business at any given time of the year, Lu felt EDS should transfer more of its reserves into the IEEE Long-Term Investment Fund. Lu proposed that every year, contingent upon a review of our current cash balance and needs, any accumulated surplus be transferred into the IEEE Long-Term Investment Fund. It was felt that the transfer of year-end surplus could be voted on at each Spring AdCom meeting; while at the December AdCom meeting, we could assess our financial position and decide whether any further fund transfers were in order. AdCom agreed with Lu's proposal.

- Lu asked for a motion that \$700,000 of our reserves (equal to our 1995 surplus) be transferred into the IEEE Long-Term Investment Fund, effective 7/1/96. The motion was passed.

## In progress status of the 1996 Silicon Nanoelectronics Workshop

— by Toshiaki Ikoma

- Despite a very slow start, the Workshop had 23 papers submitted. At the time of this report, the attendance was about 50. It seemed as though the Workshop will break-even.

- Next year's workshop will be in Kyoto, Japan, June 8-9.



## In progress status of the 1996 Symposium on VLSI Technology

— by Dick Chapman

- This year, attendance was a near record, with 488 pre-registered. It was expected to grow to 550-580, which would set a record.

- The number of papers submitted exceeded 240, and more than 90 were accepted, for a 37% acceptance rate. This was slightly greater than some years in the past, for which it was found that attendance was down if too many papers were rejected. International participation has also increased, with more papers from Europe and Asia.

- This conference will again be at the Hilton Hawaiian Village Hotel in June 1998 and June 2000.

## Executive Director's Report

— by Bill Van Der Vort

- Bill is working with the Divisions I & IV Directors, Mike Adler and Rolf Jansen, to coordinate the arrangements, attendance and funding for the Region 8 Chapters Meeting this September in Prague. He is working with the Educational Activities Chair, Jerry Woodall, to increase the number of EDS lecturers residing outside the U.S. Since this past March, 21 lecturers from outside the U.S. have been recruited. Fourteen meetings have been approved for support by EDS, since last December. All systems and procedures have been modified to implement the new EDS 'permanent' membership option, effective this September with the start of the 1997 billing cycle.

- Upcoming adhoc projects: Coordination of: the Divisions I & IV Region 8 Chapters Meeting; the EDS Regions 1-7 & 9 Chapters Meeting; the renewal of memberships for subsidized chapters in Eastern Europe and the Meetings 'Best Practices' Workshop. Development of: an EDS Membership Directory; a Chapters Manual and a revised Technical Meetings Manual.

An enthusiastic round of applause for the EDS Executive Office followed this report.

## Regions/Chapters Chair's Report

— by Cary Yang

- In four years the total number of chapters has doubled, but the membership has not. Cary then displayed a list of the new EDS chapters formed from 1993 - 1996.

- Cary advised that, upon request, we normally grant chapters \$500 a year (sometimes more for new chapters) to help

support their activities. There was some discussion as to whether we should increase the maximum amount a chapter can be granted. Due to the large increase in the number of EDS chapters, it was also a concern that the overall chapter budget needed to be increased. As a result of these discussions, a motion was passed to increase the total 1996 chapter subsidy budget to \$30,000 and to raise the maximum amount a chapter can be granted to \$1,000.

- In an effort to provide further support for our chapters, a motion was also passed to increase the 1996 Distinguished Lecturer budget from \$5,000 to \$15,000.

## Publications Chair's Report

— by Steve Hillenius

- The winners of the 1995 Paul Rappaport Award were announced. There is a full article regarding the award in this issue of the Newsletter.

(continued on page 10)

## EDS Administrative Committee Election Process

The Members-at-Large (MAL) of the EDS AdCom are elected for staggered three-year terms, with a maximum of two consecutive terms. The 1993 Constitution and Bylaw changes mandated increasing the number of elected MALs from 18 to 22, and required that there be at least two members from IEEE Regions 8 (Europe, Mid. East & Africa) and 10 (Asia & Pacific). It also required that there be at least 1.5 candidates for each opening. From 1993 to 1995, eight, seven and seven positions were filled, respectively. In 1996, another eight positions will be filled, as the three year-cycle will start over.

The election procedure begins with the announcement and Call For Nominations in this Newsletter, *IEEE Electron Device Letters*, and the EDS section of the *IEEE Circuits and Devices Magazine*. The slate of nominees is developed by the EDS Nominations Committee and includes the non-Committee and self-nominations received. Nominees are asked to submit a two-page biographical resume in a standard format. Nominations are closed around the end of October, and the biographical resumes are distributed to the 'full' voting members of AdCom prior to the AdCom meeting. Nominees are urged to attend the December AdCom meeting, and the election is held after the conclusion of the meeting.

A continuing flow of new AdCom members who are interested in working for the improvement of the Society and its related technical areas is key to the continued development of EDS and the field of electron devices. Those interested in the field, the Society, and its operations are encouraged to attend AdCom meetings, become involved in Society activities, and to consider running for election to AdCom.

## Call for Nominations - EDS AdCom

The Electron Devices Society invites the submission of nominations for election to its Administrative Committee (AdCom). Presently, the AdCom meets twice per year and is composed of 22 members. Eight members will be elected this year for terms of three years, and a maximum of two consecutive terms is allowed. In 1996, the election will be held after the AdCom meeting on Sunday, December 8th. Electees begin their term in office on January 1, 1997.

Nominees are being sought to fill the slate of candidates. Nominees may be self-nominated, or may be nominated by another person; in the latter case, the nominee must have been contacted and have agreed to serve if elected. Any member of EDS in good standing is eligible to be nominated. As another condition for nomination and election, a nominee must be willing to attend the two annual AdCom meetings.

Please send your nominee's name, address, and supporting information to the EDS Executive Director, W.F. Van Der Vort (see page 2 for contact information) in time to be received by the deadline of October 25, 1996. It is very desirable that submissions include a biographical summary in a standard two-page format. The EDS Executive Office can provide you with an example of the format. If you have any questions regarding the nomination requirements or process, feel free to contact the Nominations and Elections Chair, W. Dexter Johnston, Jr. (see page 2 for contact information).

## Summary

(continued from page 9)

- EDS and the European Solid-State Device Research Conference (ESSDERC) have an agreement to publish the best papers from the conference in *Transactions on Electron Devices*. These papers must go through the standard T-ED review process. From the 1995 conference, 25 papers were selected with 17 being accepted. This represented a much higher acceptance rate than the regular T-ED papers. It was suggested that this is an activity we should expand.

- A proposal was presented to create electronic versions of both ED Transactions and Letters. The long-term goal is to combine electronic publishing and distribution, so that final version of the journals can be accessed by subscribers on the World-Wide-Web. This should result in reduced cost, better service, and a more efficient distribution. The costs involved are primarily that of setting up a server at IEEE. If four societies join the initiative, the cost will be about \$36,000 in the first year and \$20,000 each year thereafter. A motion was passed to have EDS commit to participate in this project, subject to a cost maximum not exceeding \$40,000 in 1997 and pending participation by at least three other societies.

### Meetings Chair's Report

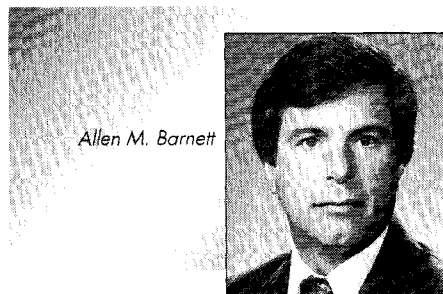
— by Bruce Griffing

- For 1996, EDS will be providing support for 68 meetings. As a point of comparison, EDS was involved with only 39 meetings in 1990. As of 5/96, EDS has a total of 103 active meetings, while in December of 1993 the active meeting count was only 74.

- Bruce advised that he will be stepping down as Meetings Chair as soon as he and Lou can find a replacement.

Other business discussed during the meeting included the Awards Committee, Fellow Evaluation Committee, Chapters Review (Taipei & Beijing Chapters), Publications Review (*EDS Newsletter*, *Journal of Lightwave Technology* & *Transactions on Semiconductor Manufacturing*), Meetings Review (Custom Integrated Circuits Conference, IEDM, International Reliability Physics Symposium and International Symposium on Semiconductor Manufacturing); and Technical Committee Reports (Device Reliability & SRC Cooperative Industry Programs).

## William R. Cherry Award



Allen M. Barnett

The William R. Cherry Award was presented to Allen M. Barnett at the 25th IEEE Photovoltaic Specialists Conference on May 14th. Dr. Barnett is President of AstroPower, Inc., and was honored for his pioneering work on thin crystalline silicon solar cells on a low cost substrate. He was appointed Director of the Institute of Energy Conversion at the University of

Delaware in 1975; and since then, he has been active in the development of thin film solar-cell materials and designs. He has played a key role in international cooperation and is currently the President of the Solar Energy Industries Association.

The William R. Cherry Award was established in 1980 in recognition of the key role played by Bill Cherry in establishing solar cells as the ideal power source for space and for vigorously advocating development of photovoltaics for terrestrial uses. It is awarded at each Specialists Conference to an individual who has made outstanding contributions to the advancement of photovoltaic science and technology.

John D. Meakin  
University of Delaware  
Newark, DE

## Division I Director's Report

(continued from page 2)

In addition, at the Prague meeting, we will listen to the needs of these chapters and explore ways where the societies can support the chapters' activities. One activity we will investigate is further support for the Distinguished Lecturer Program. From previous such regional chapter meetings, it was clear that the top priority for society support was in helping to provide technical content for local chapter meetings. The Distinguished Lecturer Program is one key way of doing this. Other areas of support include providing videotapes of short courses and plenary speeches at conferences. A related initiative we will consider is providing a travelling mini-colloquia of distinguished lecturers which can visit key locations in Region 8 over a one to two week period. It should be possible to have membership drives in conjunction with these colloquia, thus leveraging the activity to hopefully draw in new members.

In addition to building on this existing initiative in Region 8, we would also like to expand activities in Region 9 (Latin America) and Region 10 (Asia & Pacific). Dealing with these regions is more difficult than in Region 8 because of the geographical distances involved. However, several initiatives appear to be possible.

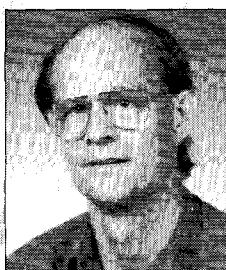
In Japan, most societies only have one very large chapter. In the case of EDS, there is a 2,000 person Tokyo chapter, which in actuality, involves IEEE members throughout Japan. Recent discussions with chapter representatives from Japan suggest that it would be feasible to form five to seven new chapters throughout the country that would serve the membership to a much higher degree. These chapters would be geographically spread throughout Japan obviating the need for members to travel long distances to chapter meetings. We should consider this same issue for all of the Divisions I and IV societies.

The same issues also exist in Region 9, but the level of IEEE involvement there is much smaller. However, I would like to see if we can leverage the activities of individual societies to include other Divisions I and IV societies.

In addition to the forum provided by the joint Region 8 Chapters Meeting this September, we will be having meetings of the Divisions I and IV society presidents during the November Technical Activities Board meetings in Denver. As was the case at the June TAB meetings in Montreal, the November Board meeting series will afford us another opportunity to discuss these globalization activities in addition to other areas of joint concern such as the *Circuits and Devices Magazine* that is published by several of the Division I societies.

## 1995 Paul Rappaport Award Winners

Reinout Woltjer



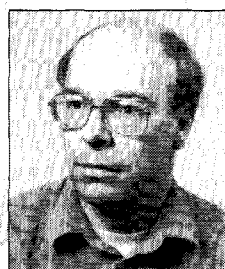
Ger Paulzen



Henk G. Pomp



Herbert Lifka



Pierre Woerlee



The Paul Rappaport Award is given each year to honor the author(s) of the best paper that has appeared in an EDS publication in the preceding calendar year. The recipient(s) is awarded a certificate and a check for \$1,000, presented at the International Electron Devices Meeting (IEDM).

The paper entitled: "Three Hot-carrier Degradation Mechanisms in Deep Submicron PMOSFETS" by R. Woltjer, G. M. Paulzen, H. G. Pomp, H. Lifka and P. H. Woerlee was recognized as the best paper appearing in an EDS publication in 1995. The paper was published in the January, 1995 issue of *IEEE Transactions on Electron Devices*. The 1995 award will be presented at the IEDM on December 10, 1996 in San Francisco, CA.

The following are brief biographies of the six winners who are all employees of Phillips Research Laboratories, in Eindhoven, The Netherlands.

Reinout Woltjer (1958) studied experimental physics at Utrecht University. In 1983, he started at Philips Research Laboratories on 2D magnetotransport in semiconductor structures, resulting in a Ph.D in physics in Utrecht (1988). From 1988-1994, he studied degradation phenomena in transistors. In 1990-1991, he continued this work at Hitachi Central Research Laboratories in Japan as an exchange researcher in the "MOS research" group of Dr. E. Takeda. In August 1994, he became department head of the "Semiconductor Device Architecture" group, where measurements, modeling and device physics of semiconductor devices are the research subjects.

Ger Paulzen received the B.Sc. degree in applied physics at the Technical High School in Eindhoven, The Netherlands. In 1988, he started at Philips Research Laboratories with the measurement and interpretation of hot-carrier degradation in MOSFET's. Since 1994, he has been involved in technology research; growing and characterizing ultrathin nitrides as well as pure gate oxides and optimizing the

front end for 0.25  $\mu\text{m}$  CMOS. Recently he is also involved in Diode Programmable Read Only Memories.

Henk G. Pomp received B.Sc. degree in Applied Physics at the Institute of Technology in Eindhoven, Holland. From September 1987 to January 1994, he was involved in the research of deep-submicron MOS Si-technology at the Philips Research Laboratories in Eindhoven. He specialized himself on the technology and characterization of sub-0.25  $\mu\text{m}$  MOS-transistors. Since February 1994, he is working at the Philips Optoelectronics Center development department for semiconductor lasers.

Herbert Lifka studied Chemistry at the Higher Technical School in Eindhoven. He obtained the B.Sc. degree in Physical Chemistry in 1984. The same year he joined Philips Research in Eindhoven. He

worked on advanced CMOS technology. He was involved in EBEAM and XRAY lithography, worked on 0.5  $\mu\text{m}$  CMOS on SOI and CMP planarization. Since 1993, he worked on the new technology for Diode Programmable Read Only Memories (DPRM).

Pierre Woerlee received the MSc. degree in Electrochemistry from the University of Amsterdam in 1975. In 1979, he received the Ph.D. degree in Physics in Amsterdam. In 1980, he joined the Philips Research Laboratories in Eindhoven. From 1985, he is involved in advanced CMOS research. In 1992, he was appointed as part-time professor at the University in Twente in the field of IC-technology.

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

## STAR Program Report

Studies show that many girls and young women lose interest in math and science during the junior high and high school years. This results from many factors, including some loss of confidence in their ability to achieve in math and science, active and subtle discouragement from teachers and guidance counselors, and lack of contact with real engineers and scientists. Many students do not even understand what engineers do!

The IEEE STAR program (Student-Teacher and Research Engineer/Scientist)

brings together girls/young women with IEEE members to introduce students to the world of the real engineer and scientist. This innovative IEEE program was introduced in 1995 and is jointly administered and funded by the Electron Devices Society and the Microwave Theory and Techniques Society.

While many successful programs aimed at bringing together students and science and engineering professionals exist, most of these programs are a one-time event for  
(continued on page 19)

## Regional and Chapter News

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

#### ED Orlando Chapter

— by Jiann-Shiun Yuan

In the past few months, the ED Orlando Chapter has had two technical seminars. The first seminar was given by Dr. Tom Li, Manager of Advanced Engineering at Lockheed-Martin Corporation in Orlando on April 18, 1996 at the College of Engineering Conference Room, University of Central Florida. Dr. Li's talk was on "Moisture Impact on Plastic Electronic Packaging." Dr. Li gave the audience an overview of electronic packaging and explained the significance of Chip-on-Board packaging. The Chip-on-Board packaging is superior to multi-chip modules in terms of heat removal and protection of IC's from harsh environment factors, such as in military applications.

Dr. Li's seminar was instrumental in opening a dialog between the University of Central Florida and Lockheed-Martin. This dialog subsequently led to a technical meeting, Lockheed-Martin on April 24, 1996, between some faculty at the University of Central Florida and managers and directors at Lockheed-Martin.

The second seminar at UCF was given on May 17, 1996. This seminar was the second of the Distinguished Lecture Series this year. The invited Distinguished Lecturer was Dr. Kwok Ng of Bell Laboratories of Lucent Technologies, Murray Hill, NJ. Dr. Ng presented a talk on a "Survey of Semiconductor Devices," largely based on his recent book published by McGraw-Hill. His survey covered many different semiconductor devices, including traditional semiconductor devices and quantum-mechanical devices.

A third seminar was scheduled for EDS members in Orlando. The invited speaker was Dr. Hung-Shen Chen of the National Semiconductor Corporation in Santa Clara, CA. Dr. Chen presented a talk on "Sub-micron CMOS Processes for Mixed-Mode Signal Applications." This talk was delivered at the University of Central Florida on June 24, 1996.

— Elias Towe, Editor

#### Report of the 1996 Device Research Conference held June 24-26, at the University of California, Santa Barbara

— by Peter Asbeck

The DRC has for years been a key forum for the latest developments in electronic and photonic devices, and this year was no exception. Significant results were presented in traditional research areas of scaled Si devices; high speed transistors in III-V materials and Si; power devices; and lasers, modulators and detectors. Also, many exciting developments were reported in relatively new areas such as wide bandgap semiconductors, quantum effect devices, and organic devices.

The Plenary session featured invited presentations on a variety of key topics for today's and tomorrow's device research: "Trends in Digital Wireless Communications"; "Organic Electroluminescent Devices: Current Status and Prospects"; "Beyond CMOS Scaling"; and "Spin Dependent Transport Devices - an Introduction to Giant Magnetoresistance Applications in Novel Devices." A special invited talk highlighted the emerging breakthroughs in Si MOSFET reliability, based on the use of deuterium anneals to decrease hot-electron degradation effects in gate oxides.

Contributed papers announced breakthroughs in many areas. This year, for example, there were presentations demonstrating the emergence of GaN and SiC as substrates for high power microwave transistors with exceptional breakdown voltage and power density. The organic light emitters were reported to have attained brightness levels hundreds of times greater than TV displays and steadily improving reliability. Blue cw lasers in ZnMgSSe, micro-electromechanical tunable lasers, quantum effect devices and single-electron transistors were among the other emerging areas. Further discussion centered around novel approaches to model and to overcome short-channel effects in Si bulk and SOI MOSFETs, and to improve the structure of high voltage, high power switches.

At the DRC, attendees get together on the UCSB campus for 3 days of intensive interactions. In addition to the regular sessions, there were formal and informal wine, cheese and beer get-togethers, a picnic, and rump sessions. The DRC affords an excellent opportunity for in-depth discus-

sion outside of the confines of the conference room. As usual, the DRC was held in conjunction with the Electronics Materials Conference, which brought materials specialists to the university later in the week, allowing further useful interactions.

Conference attendance was 400. This was somewhat higher than last year. There were 81 contributed papers (including 5 Late News). The DRC is still small enough to allow a lot of interaction between attendees. There is a continuing effort to keep the number of parallel sessions small (a two for the most part) allowing each DRC attendee to get a broad view of the accomplishments in all of the fields of device research.

For more information, contact Peter Asbeck at E-mail: asbeck@ece.ucsd.edu

#### ED Santa Clara Chapter

— by Greg Atwood

Centered in the Silicon Valley and with a large membership, the ED Santa Clara Chapter has had a productive year. We sponsored a series of seven evening seminars and one half-day symposium covering a wide range of topics of interest to the local engineering community. All talks were well attended.

The monthly evening seminars served as the backbone of the Chapter's activities. Several of the evening seminars discussed components of wafer fabrication, including wafer cleaning, chemical mechanical polishing, self-aligned contact techniques, and low K dielectrics. In addition, there were interesting talks on the use of flash memory devices for solid state disks and on the fabrication and characterization of Si micro-machined devices. There was also an interesting discussion on the evaluation of AC hot carrier lifetime and its impact on deep submicron technology. These talks generally ran about 45 min. in length and provided ample opportunity for audience questions and comments.

The Chapter also sponsored a half-day Symposium on Advanced Devices, Scaling, Reliability, and Interconnect Technology. Seven talks were presented, three discussing the design and optimization of deep submicron devices, two on interconnect scaling, and two on device reliability. Most of these papers were presented by local authors at overseas or east coast conferences at sometime during the year. The symposium gave the Santa Clara Valley

engineering community an opportunity to see these talks and interact with the authors.

— Paul K. L. Yu, Editor

## Europe, Middle East & Africa (Region 8)

### ED Germany Chapter

— by Klaus Heime

The 8th Int. Conf. on InP and Related Materials (IPRM'96) was held in Germany, Schwaebisch-Gmuend, April 21-25, 1996. Sponsored regularly by IEEE EDS and LEOS, it was co-sponsored this year by Information Technology Soc. within VDE (ITG), various European companies and the European Commission DG XIII. O.Hildebrand (SEL Alcatel) was Conference Chair. The ED Chapter Chair, Klaus Heime, served as Program Chair.

The conference started with three plenary talks which highlighted the trends in current InP R&D and industrial application: S. Arai (Tokyo Inst. of Technology) talked about the progress in the growth of quantum wires and quantum boxes and their application for advanced laser structures. The trend to the use of nanoscale structures was also shown for electronic device applications in an invited paper by M. van Rossum (IMEC, Leuven, Belgium). The second plenary talk by A. Cappy (Univ. Lille, France) treated a special subject of field-effect transistors, i.e., the use of metamorphic growth. The third plenary talk by W.S. Ishak (Hewlett-Packard, USA) clearly showed the need for InP-based electronics and optoelectronics for the 21st century "Tera Era." The clear message was that both hybrid and mono-lithical integrated circuits will be needed in all areas of applications.

The problem of "Monolithic versus Hybrid Integration in InP Photonics and Electronics" was extensively discussed in a rump session carefully organized by H. Melchior (ETH, Zurich) and well-equipped with snacks and beverages. Of course, no final and concluding answer was available to the problem, but it became very clear from both the plenary talk and the rump session that optimum performance is needed, but cost is the ultimate driving force.

Contributed papers and posters showed many highlights on the continuing progress in the application of compound semiconductor devices. The conference was attended by more than 300 people from all over the world. The afternoon before the meeting was reserved for three

minicourses which gave introductions and overviews of the main stream in InP technology. The next conference in the series will be held on Cape Cod, May 1997.

For further information, please contact Prof. Klaus Heime, RWTH Aachen, D-052056 Aachen; TEL: 49-241-807746; FAX: 49-241-8888199; E-mail: mailbox@enterprise.rwth-aachen.de

### ED Spain Chapter

— by Ramon Alcubilla

The ED Spain Chapter organizes the Conference Dispositives Electronics-97 next year. CDE-97 will be the first meeting to be held in Spain in the field of electron devices. As it is the first time, the meeting will be national, however it is planned to organize invited talks from foreign speakers.

For further information, please contact Chapter Chair: Prof. Ramon Alcubilla Gonzales, Department d'Enginyeria Electrònica, Modul C-4 Campus Nord Barcelona 08034; TEL: 34-3-4016757; FAX: 34-3-4016756; E-mail: alcubilla@eel.upc.es

### ED/MTT France Chapter

— by Robert Adde

The chapter's 1996 main event was its participation in the organization of the 4th European Gallium Arsenide and Related III-V Compounds Applications Symposium (GAAS'96) in Paris, France, June 5-7, 1996. The Conference Chairman, Christian Rumelhard, and the Conference Secretary, Daniel Pasquet, were Chapter Bureau members. The Chapter brought together with MTTs and EDS technical co-sponsorship to the Meeting which included 7 invited papers and 69 communications. A European Workshop with 16 review contributions was associated to GAAS'96 on the CAD Microwave Aspects of Electronic and Optoelectronic Circuits using III-V compounds. It was organized by Philippe Dueme who was also a Chapter Committee member. This workshop organized every year in a different country brought together in France this year engineers working both on electron devices and microwave theory and techniques.

The Chapter started an IEEE membership campaign in 1996 which will continue in 1997. The main goals were: Student Membership; members in every company/university laboratory having ED or MTT related activity; and Senior Membership.

For further information, please contact Chapter Chair: Dr. Robert Adde, IEF Bt 220, UPS, 91405 Orsay; TEL: 33-1-69-41-78-50; FAX: 33-1-60-19-25-93; E-mail:

adde@ief-paris-sud.fr or r.adde@ieee.org

— Robert Adde, Editor

### MTT/ED/AP/LEO UKRI Joint Chapter

— by Neil Williams

The Chapter has a very busy programme for the final three months of 1996. This includes the 4th International Workshop on High Performance Devices for Microwave and Optoelectronic Applications (EDMO'96) which, this year is being held at the University of Leeds on 25 and 26 November. A series of lectures are also being presented by Ralph Levy on the Synthesis of Ground Filters for Modern Communication Systems which are scheduled around the Microwaves and RF'96 Conference and Exhibition at Wembley in October. The Chapter has a stand at the Exhibition, so why not come along and give your suggestions for events which we could include in our 1997 programme.

The full programme for the remainder of 1996 is given below:

- 7-9 October: IEE Conference on 'The Detection of Abandoned Land Mines' at the Edinburgh International Conference Centre (Organized by the IEE in co-operation with the Chapter.)

- Evening lectures on 'The Synthesis of General Filters for Modern Communication Systems', by Ralph Levy (R. Levy Associates) at the following venues:

- ERA Technology Limited – Monday, 7 October

- University of Leeds – Monday 14 October

- 8-10 October: 'Microwaves and RF'96 Conferences and Exhibition at the Wembley Conference Centre, London (Chapter Membership Stand Number 819).

- Evening lectures on 'Microwave CAD with EM Optimisation', by John Bandler (John Bandler Optimisation Systems Associations Inc). Details yet to be finalized.

- 25 and 26 November: '4th International Workshop on High Performance Devices for Microwave and Optoelectronics Applications (EDMO'96)', at Weetwood Hall, University of Leeds.

- Friday, 29 November: IEE Colloquium on 'Advanced Signal Processing for Microwave Applications', at Savoy Place, London (Organized by IEE in co-operation with the Chapter.)

- Wednesday, 4 December: Evening lecture on 'The Application of the TLM Method to the Simulation of EM Problems at High Frequencies', at Kings College, London.

For further information on the above events, please contact the Chapter Chair:



Dr. Neil Williams, ERA Technology Limited, Cleeve Road, Leatherhead, Surrey KT22 7SA, UK. TEL: +44 (0) 1372 367061; FAX: +44 (0) 1372367099; E-mail: neil.williams@era.co.uk

### ED Israel Chapter

— by Gady Golan

On May 9th, the Chapter had an IEDM meeting on heterostructures transistors. The meeting was held in the Center for Technological Education at Holon. Participants were students from the Faculty of Electrical Engineering and IEEE-EDS members who are on the Chapter electronic mailing list from Israeli industries. The meeting was opened by the Israel EDS Chapter Chairman Prof. Nathan Croitoru from Tel Aviv University.

The first speaker was a 4th year student Daniel Gross who spoke about his final work dealing with multi-parameters systems, e.g. deposition systems. Then Dr. Gady Golan presented a lecture on heterostructures devices as an introduction for the IEDM video presentation, which followed. The last lecture was by Dr. Eran Weiss from Intel-Israel, who spoke about reliability problems in advanced IC's. Finally, the meeting was opened for discussion questions and answers.

For further information, please contact the Chapter Chair: Professor Nathan Croitoru, Tel-Aviv University, Faculty of Engineering, Dept. of Physical Electronics, Tel-Aviv 69978, Israel; TEL: 972-3-6408138; FAX: 972-3-64223508; E-Mail: croitoru@eng.tau.ac.il OR Dr. Gady Golan - Center for Technological Education and The Open University, P.O. Box 39328 Tel-Aviv 61392; TEL: 972-3-646-0329; FAX: 972-3-646-0767; E-Mail: gady@oumail.openu.ac.il or golan@barley.cteh.ac.il

— Terry H. Oxley, Editor

### MTT/ED Moscow Chapter

The MTT/ED Moscow Chapter started in September 1995. Now the organizational framework is accomplished. We have elected a Chapter Chair, Vice-Chair and Secretary. Among the first activities there was a Moscow Regional Seminar on Microwave Electrodynamics under the umbrella of our Chapter (Head-Prof. V. Schevtchenko). Also an annual Workshop on Microwave Semiconductor Electronics with representatives from all main Russian research centers was carried out in February 1996. In September, an International Workshop on Three-Dimensional Microwave Integrated Circuits was also

held with the support of our Chapter. For further information please contact the Chapter Chairman: Dr. Vladimir E. Lioubtchenko, Institute of Radioengineering & Electronics, Russian Academy of Sciences, 11 Mokhovaya St., 103907 Moscow, GSP-3, Russia; TEL: 7095-526-92-17; FAX: 7095-203-84-14; E-mail: lyubch@ire216.msk.su

### MTT/ED St. Petersburg Chapter

A student competition for junior students studying radioengineering was organized by St. Petersburg Electrotechnical University, several other universities and higher-education institutions from St. Petersburg with support and cooperation from the Petersburg MTT/ED Chapter. Professor Ushakov, Vice Rector of the Electrotechnical University, was the Organizing Committee Chairman. The event was held at the Electrotechnical University on April 27, 1996.

The goal was to bring together the best students from different universities where electrical engineering is taught, and to give them an opportunity to solve more complicated problems than that from the standard study programs. The linear and non-linear circuit theory, basics of the signal theory, transmission-line theory and other related topics were included in the programme.

Ninety students from six different institutions took part in the event. Both the best individuals and the best university teams were selected: the best team was that of the Electrotechnical University, and the best student in the competition was Mr. Guzenko from the St. Petersburg State Technical University.

On June 4, IEEE Executive Director T. Hissey, visited the St. Petersburg Chapter. At "Leninetz" holding company (mainly specialized in the radar technology) there was a meeting with several leading executives and scientists from Leninetz, Svetlana holding (electron devices), "Ferrite" (ferrites and microwave ferrite devices), representatives of city universities (St. Petersburg State University, State Technical University, Electrotechnical University). The meeting was hosted by Mr. N. Kocheshkov, Secretary of the Leninetz Scientific and Technical Council.

Various aspects of IEEE developments in St. Petersburg area were discussed. Specifically, IEEE Entrepreneurial Skills Seminar (proposed for Summer 1997), possible help from the IEEE for the School of Electromagnetic Waves Propagation (based on St. Petersburg State University),

and continuous education programme of Leninetz holding were discussed. Prof. V. Sarychev (Leninetz holding company) informed about the directions of research and development in his company, and about its scientific and productive potentials, in view of possible contacts with the IEEE.

Interest in possible development of other IEEE Chapters was clearly expressed. Prof. Mickerov (St. Petersburg Electrotechnical University) suggested that there was potential and increasing interest of specialists in power engineering, power electronics, robotics and automation, industrial applications, and control systems. Prof. Sarychev (Leninetz) spoke about his company interest in aerospace electronic systems, engineering in medicine and biology, and signal processing. The problem of high (relative to the local salaries) IEEE fees was raised.

Mr. Hissey visited also Svetlana holding company. During the discussions with Mr. O. Arshinov (Director of Marketing) and Dr. V. Tsvetov (Advisor to the Board of Directors) current problems of electrical engineers in St. Petersburg were analyzed. The issues raised included: low salaries, payment delays, and massive lay-offs (Svetlana lost about 3/4 of its staff in the last few years). The best specialists leave the industry, mainly for entering the financial and commercial fields. The IEEE mission here can possibly help in improving the professional status of electrical engineers, although of course it is a hard time for this profession. Lack of information about the IEEE was discussed. To improve the situation, the Chapter will organize displays of IEEE materials in libraries at universities and industrial companies of the city.

International Seminar "Day on Diffraction'96" was held in St. Petersburg from June 4 to June 6. The seminar was organized by the St. Petersburg Branch of the Mathematical Institute of the Russian Academy of Science and the State University of St. Petersburg (co-sponsored by the IEEE ED/MTT St. Petersburg Chapter). The seminar chairmen were Prof. V.M. Babich and Prof. V.S. Buldyrev. This is a traditional event, first established by Academicians V.A. Fock and V.I. Smirnov. Since 1991, it is an international meeting. Over 30 reports were delivered and scientists from six countries took part in the event.

Effective June 7, 1996 the Chapter has changed its status to include the IEEE Antennas and Propagation Society.

For further information, please contact the Chapter Chairman: Dr. Sergei



University of Niš, Niš, Serbia — Site of MIEL'97

Tretyakov, St. Petersburg State Technical University, Radiophysics Department, 195251 St. Petersburg, Polytexnikenskaya 29, Russia; TEL: 27-12-4202164; FAX: 27-12-433254; E-mail: tretyakov@rphd.hop.stu.neva.ru

### 1997 International Conference on Microelectronics (MIEL'97)

— by Ninoslav D. Stojadinovic

The 21st International Conference on Microelectronics (MIEL'97) will be held September 15-17, 1997 at the Faculty of Electronic Engineering, University of Niš, Yugoslavia. The Conference MIEL'97 will be organized by ED Yugoslavia Chapter, in cooperation with the Faculty of Electronic Engineering, University of Niš, and E-Holding Co.-Niš, under the technical co-sponsorship of the IEEE EDS and under the auspices of Serbian Ministry of Science and Technology.

MIEL is an outstanding European conference, providing an international forum for the presentation and discussion of the recent developments and future trends in the field of microelectronics. Since 1984, there is an aura of internationalization around the MIEL conferences, providing an opportunity for specialists from both academic and industrial environments from the West and East, as well as from the countries of the Third World, to meet in an informal, friendly atmosphere and exchange experiences in the theory and practice of microelectronics.

The topics which will be covered by the technical programme of the Conference MIEL'97 include all important aspects of silicon, GaAs and related devices, circuits and systems, ranging from materials and processes, technologies and devices, device physics and modeling, process and

device simulation, circuit design and application, system design and packaging, characterization and testing, and quality and reliability. Based on the past decade history, it is expected that the technical programme of the Conference MIEL'97 will consist of about 120 contributed papers by the authors from more than 30 countries all around the world, which will be structured into oral and poster sessions. These papers, together with 20 invited papers, which are to be presented by the world-leading authorities from the field of microelectronics, will form the solid foundation of the Conference MIEL'97.

Among the invited speakers are: "The Status and the Future of Microelectronics in Europe" (R. Van Overstraeten, IMEC, Belgium), "Yugoslavia in Global Microelectronics World" (M. Penn, Future Horizons, England), "Silicon MOSFET Scaling Beyond 0.1 Micron" (H. Iwai, Toshiba, Japan), "Submicron IC's and Single Wafer Processing" (R. Singh, Clemson University, SC), "Performances of Low-Voltage SOI CMOS Technology" (J.-P. Colinge, Catholic University of Louvain, Belgium), "New Development in Four-Terminal Device Concept" (T. Shibata, Tohoku University, Japan), "Technology CAD: Process and Device Simulation" (S. Selberherr, Technical University of Vienna, Austria), "Avalanche Effects and Safe Operating Area in Power MOS Devices" (P. Rossel, CNRS-Motorola, France), "Thermal Effects and Electro-Thermal Modeling in Power Bipolar Transistors" (P. Spirito, University of Naples, Italy), "AlGaAs/GaAs Heterojunction Bipolar Transistors: Device Modeling and SPICE Simulation" (J. Liou, University of Central Florida, FL), "Micro-fabricated Biosensors and Microsystems" (P. Hesketh, University of Illinois at Chicago, IL), "Mixed Device and Circuit Simulation: An Emerging CAD Infrastructure for Microelectronics Applications" (K. Shenai, University of Illinois at Chicago, IL), "Design of High Speed Analog Circuit for Mobile Communication" (F. Maloberti, University of Pavia, Italy), "Trends in VLSI Design for a Deep Sub-Micron Technology" (V. Oklobdzija, University of California at Berkeley, CA), "Current Status of Failure Analysis for ULSIs" (S. Nakajima, NTT, Japan).

The authors of the contributed papers are asked to submit two-page extended abstracts (including figures, tables and references) which will serve as a basis for the papers selection. Therefore, it should clearly state the purpose of the work and the novelty and significance of the results obtained. A cover page of the abstract should include the complete address (including fax and e-mail) of the author to be contacted, as well as the preference for oral or poster presentation. The deadline for the receipt of one original plus five copies of the abstracts, which should be sent to the Conference Chairman, is 10 February 1997. After the paper selection, authors of accepted papers will receive information regarding the layout of papers, transparencies, slides and posters, along with the notice of acceptance.

For further information please contact: Prof. Dr. N. Stojadinovic, MIEL'97 Conference Chairman, Department of Microelectronics, Faculty of Electronic Engineering, University of Niš, Beogradska 14, 18000 Niš, Yugoslavia, TEL: +381 18 55-682 or +381 18 49-155; FAX: +381 18 46-180 or +381 18 46-499; E-mail: stojadinovic@efnis.elfak.ni.ac.yu

— by Adrian Veron, Editor

## Asia & Pacific (Region 10)

### ED/LEO Australia Chapter

— by Chennupati Jagadish

Professor Martin Green, Center for Photovoltaic Devices & Systems, University of New South Wales, Sydney and Professor James Williams, Department of Electronic Materials Engineering, Research School of Physical Sciences & Engineering, The Australian National University, Canberra have been elected as EDS Distinguished Lecturers. Prof. Green's topic is "High Efficiency Solar Cells" and Prof. Williams's topic is "Ion Beam Processing of Semiconductors."

The 1996 Conference on Optoelectronic and Microelectronic Materials and

Devices will be held in Canberra during December 9-11, 1996. Deadline for abstract submission is September 2, 1996. Further information can be obtained from Dr. Chennupati Jagadish; FAX: +61-6-249-0511; E-mail: cxj109@phys.anu.edu.au

### ED Hong Kong Chapter

— by Cuong T. Nguyen

The 25th Anniversary Celebration of the Hong Kong IEEE Section continued this July with our organization of a short course on Electronic Packaging, delivered by Prof. C.P. Wong of Georgia Tech and Dr. Anthony Chan from Bell Labs. The one-day short course was held on July 8 at the Hong Kong Polytechnic University.

Also at the Hong Kong Polytechnic University, the 3rd annual Hong Kong Electron Devices Meeting was held on June 29. Since the first such meeting organized in 1993, the one-day symposium has grown in reputation and participation, both in submissions and attendance. This year saw a large increase in submissions from outside of Hong Kong, including from North America and other Pacific Rim countries.

### ED/MTT India Chapter

— by K.S. Chari

The new ED/MTT executive committee under Dr. K.S. Chari (Chairman) and Dr. M.H. Cori (Vice Chairman) has assembled a committee consisting of representatives from concerned industries and academic/research institutions. The new composition strives to blend the wide experience of different groups in chapter activities. In addition, we have identified the following as key focal points:

- Enhancing membership drive and interaction with members across the country
- Organizing select workshops, drawing the local talent and services of EDS Distinguished Lecturers
- Identify and coordinate a series of national lectures by local experts. Tapping into the IEEE video course material for exposure for local scientific and industrial communities.

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

— Cuong Nguyen, Editor

### Message from new ED Tokyo Chapter Chair

— by Chihiro Hamaguchi

The ED Tokyo Chapter now has more than 1,000 members and we are proceeding the promotion. The members are very active and the chapter focuses on the fol-



Chihiro Hamaguchi

lowing activities: 1996 International Conference on Solid State Devices and Materials (SSDM '96) was held on August 26 - 29, 1996, at Pacifico Yokohama, Yokohama. The conference was sponsored by The Japan Society of Applied Physics and the IEEE Electron Devices Society was the technical co-sponsor. The SSDM'95 was held on August 21 - 23, 1995, at International House of Osaka, Osaka and the participants were 574 from Japan and 168 from 13 foreign countries. Most of the papers presented at the conference covered the field of electron devices.

The chapter is planning to hold the members' meeting and the review meeting of the 1996 IEDM simultaneously at the end of December 1996 or at the beginning of January 1997. The chapter is also planning to hold a series of joint technical meetings with two technical groups of IEICE (Institute of Electronics, Information, and Communication Engineers) of Japan during the fiscal year 1996 (April 1996 - March 1997). The two groups are "Silicon Devices and Materials" and "Integrated Circuits and Devices," and about twelve technical meetings are scheduled together, highlighting the recent advancement of semiconductor materials, devices and integrated circuits.

### Report of the International Symposium on Basis for the Future Electronics Technology (FUET'96)

— by Jun Ueda

The International Symposium on Basis for the Future Electronics Technology (FUET'96) was held at Oiso Prince Hotel, Kanagawa Japan on February 1-2 after a lapse of five years. A total of 150 people participated in the Symposium. It was co-sponsored by Japan Electronic Industry Development Association (JEIDA) and Semiconductor Industry Research Institute Japan (SIRIJ) and was supported by the IEEE ED Tokyo Chapter and other societies. The Symposium consisted only of twelve invited talks in four technical sessions and one evening session. Participants eagerly discussed how to break through limitations by developing future electronics.

Opening speeches were delivered by Prof. Shoji Tanaka, the founder of FUET, and others. Prof. Tanaka said the second information revolution was taking place on a global scale, electronics devices technology must be developed not only from the aspect of enhancing its capability, but from a new standpoint. In evidence, all technical sessions in this Symposium have some relations with "network society" or "network era." On the discussion of technical sessions, the necessity for the reduction of communication fee especially in Japan and the globalization of the communication are required. And the possibility of cost-driven limitation of semiconductor chips was indicated and the limitation views of silicon technology in the past, which always didn't agree with their situation afterwards, were introduced. Finally, the actuality of emerging technology other than silicon was reconsidered.



FUET opening speech by Prof. Tanaka

The panel discussion in the evening session (Chair: Dr. Ikoma) focused on the new relationship between the industry and academia. Dr. Sasaki of SIRIJ reported the foundation of a new joint-venture STARC (Semiconductor Technology Academic Research Center) in Japan. STARC will promote the mutual understanding between industry and universities in Japan through cooperative researches in the fields of silicon technology. The panelist and the participants in the floor eagerly discussed on some subjects. The recent rapid increase of both research budgets and number of doctor-course students in universities became the key topics. And the weakness of activities in the LSI architecture or design fields in Japanese universities was also discussed.

(continued on page 19)

# EDS Meetings Calendar

(As of August 6, 1996)

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

Sept. 29 - Oct. 2, 1996, \* **IEEE BIPOLAR/BICMOS CIRCUITS AND TECHNOLOGY MEETING**, Location: Marriott City Center Hotel, Minneapolis, MN, Contact: Janice V. Jopke, Tel: (612) 934-5082, Fax: (612) 934-6741, E-Mail: jjopke@aol.com, Deadline: Past Due

Sept. 29 - Oct. 4, 1996, \* **IEEE INTERNATIONAL AL SOI CONFERENCE**, Location: Sanibel Harbour Resort & Spa, Ft. Myers, FL, Contact: Sandra Grawet, Tel: (310) 316-5153, Fax: (310) 316-0713, E-Mail: 70541.1225@compuserve.com, Deadline: Past Due

Oct. 7 - 9, 1996, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER DESIGN: VLSI IN COMPUTERS AND PROCESSORS**, Location: Omni Hotel, Austin, TX, Contact: Jacob Abraham, Tel: (512) 471-8983, Fax: (512) 471-8967, E-Mail: jaa@cerc.utexas.edu, Deadline: Past Due

Oct. 14 - 18, 1996, ✓ **MANUFACTURING SCIENCE AND TECHNOLOGY GROUP PROGRAM**, Location: Pennsylvania Convention Center, Philadelphia, PA, Contact: Fredrick H. Dill, Tel: (914) 945-3332, Fax: (914) 945-4201, E-Mail: f.dill@ieee.org, Deadline: Not Available

Oct. 20 - 23, 1996, \* **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, South Lake Tahoe, CA, Contact: Cleston Messick, Tel: (801) 562-7546, Fax: (801) 562-7500, E-Mail: cccrml@teum2.nsc.com, Deadline: Past Due

Nov. 3, 1996, # **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, Location: Peabody Orlando Hotel, Orlando, FL, Contact: Anthony A. Immarlica, Tel: (315) 456-3514, Fax: (315) 456-0695, E-Mail: None, Deadline: Past Due

Nov. 3 - 6, 1996, \* **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, Location: Peabody Orlando Hotel, Orlando, FL, Contact: Elissa I. Sobolewski, Tel: (703) 696-2254, Fax: (703) 696-2203, E-Mail: Isobolewski@arpa.mil, Deadline: Past Due

Nov. 6, 1996, ✓ **IEEE ELECTRON DEVICES ACTIVITIES IN WESTERN NEW YORK CONFERENCE**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Yawcheng Lo, Eastman Kodak Co. Research Labs, B81 Rochester, NY 14650-2008, Tel: (716) 477-2023, Fax: (716) 477-4947, E-Mail: yclo@mtds00.kodak.com, Deadline: Past Due

Nov. 10 - 14, 1996, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER-AIDED DESIGN**, Location: Red Lion Hotel, San Jose, CA, Contact: Robert A. Rutenbar, Tel: (412) 268-3334, Fax: (412) 268-2859, E-Mail: rutenbar@ece.cmu.edu, Deadline: Not Available

Nov. 12 - 14, 1996, \* **IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE AND WORKSHOP**, Location: Hyatt Regency Hotel, Cambridge, MA, Contact: Margaret M. Kindling, Tel: (202) 289-0440, Fax: (202) 289-0441, E-Mail: mkindling@semi.org, Deadline: Past Due

Dec. 5 - 7, 1996, \* **IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE**, Location: Catamaran Resort Hotel, San Diego, CA, Contact: Douglas A. Buchanan, Tel: (914) 945-3175, Fax: (914) 945-2141, E-Mail: buchan@watson.ibm.com, Deadline: Past Due

Dec. 8 - 11, 1996, \* **IEEE INTERNATIONAL ELECTRON DEVICES MEETING**, Location: San Francisco Hilton & Towers Hotel, San Francisco, CA, Contact: Phyllis Mahoney, Tel: (301) 527-0900, Fax: (301) 527-0994, E-Mail: pwmahoney@aol.com, Deadline: Past Due

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) 562-0510, Fax: (408) 562-0503, E-Mail: smehrotra@sandisk.com, Deadline: 10/18/96

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: Radisson Hotel, Denver, CO, Contact: Ajit K. Goel, Tel: (408) 734-2987, Fax: (408) 734-2984, E-Mail: ajitg@aol.com, Deadline: Past Due

May, 1997, ✓ **INTERNATIONAL SYMPOSIUM ON PLASMA PROCESS INDUCED DAMAGE**, Location: Bay Area of California, Contact: Charles Kin P. Cheung, Tel: (908) 582-6483, Fax: (908) 582-5980, E-Mail: kpckpc@lucent.com, Deadline: Not Available

May 5 - 8, 1997, \* **IEEE CUSTOM INTEGRATED CIRCUITS CONFERENCE**, Location: Santa Clara Convention Center, Santa Clara, CA, Contact: Melissa Widerkehr, Tel: (301) 527-0902,

Fax: (301) 527-0994, E-Mail: cicc96@aol.com, Deadline: 12/4/96

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: 11/11/96

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, CO, Contact: Louis Liu, Tel: (310) 812-8372, Fax: (310) 813-9623, E-Mail: louis\_liu@qmail4.sp.trw.co, Deadline: 12/2/96

June 15 - 19, 1997, @ **IEEE TRANSDUCERS - INTERNATIONAL SOLID-STATE SENSORS AND ACTUATORS CONFERENCE**, Location: Hyatt Regency Chicago, Chicago, IL, Contact: Kensall D. Wise, Tel: (313) 764-3346, Fax: (313) 747-1781, E-Mail: wise@engin.umich.edu, Deadline: Not Available

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

June/July, 1997, \* **IEEE UNIVERSITY/ GOVERNMENT/INDUSTRY MICROELECTRONICS SYMPOSIUM**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Lynn Fuller, Tel: (716) 475-2035, Fax: (716) 475-5041, E-Mail: ifeefe@rituxvax.edu, Deadline: Not Available

July 27 - Aug. 2, 1997, @ **INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: Hilton Hawaiian Village Hotel, Honolulu, HI, Contact: William D. Jackson, Tel: (301) 946-1586, Fax: (301) 946-4374, E-Mail: hmjjutland@aol.com, Deadline: Not Available

Aug. 4-6, 1997 \* **IEEE CORNELL CONFERENCE ON ADVANCED CONCEPTS IN HIGH SPEED SEMICONDUCTOR DEVICES AND CIRCUITS**, Location: Cornell University, Ithaca, NY, Contact: Chris Clarke, Tel: (412) 256-1997, Fax: (412) 256-1877, E-Mail: cclarke@aescad.pgh.wec.com, Deadline: Not Available

Sept., 1997, ✓ **ELECTRICAL OVERSTRESS/ ELECTROSTATIC DISCHARGE SYMPOSIUM**, Location: Santa Clara, CA, Contact: David Swenson, Tel: (512) 984-3153, Fax: (512) 984-3202,

E-Mail: usmmmr9m@ibmmail.com, Deadline: Not Available

Sept. 7 - 11, 1997, @ **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 SEMICONDUCTOR PROCESSES AND DEVICES**, Location: Marriott Cambridge, Cambridge, MA, Contact: Mark Law, Tel: (904) 392-6459, Fax: (904) 392-8381, E-Mail: law@tcad.ee.ufl.edu, Deadline: Not Available

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: Not Available

Sept. 29 - Oct. 3, 1997, \* **IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE**, Location: 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., 1997, \* **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, Location: Bay Area, 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: Not Available

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: Not Available

Oct. 12 - 15, 1997, \* **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, Lake Tahoe, CA, Contact: James W. Miller, Tel: (512) 933-7297, Fax: (512) 933-7662, E-Mail: rvkg60@email.sps.mot.com, Deadline: 7/7/97

Nov. 9 - 12, 1997, \* **IEEE INTELLIGENT TRANSPORTATION SYSTEMS CONFERENCE**, Location: Boston Park Plaza Hotel, Boston, MA, Contact: IEEE Boston Section, Tel: (617) 890-5290, Fax: (617) 890-5294, E-Mail: sec.boston@ieee.org, Deadline: 11/15/96

Dec. 4 - 6, 1997, \* **IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE**, Location: Mills House Hotel, Charleston, SC, Contact: Len Trombetta, Tel: (713) 743-4424, Fax: (713) 743-4444, E-Mail: ltrombetta@uh.edu, Deadline: Not Available

Dec. 7 - 10, 1997, \* **IEEE INTERNATIONAL ELECTRON DEVICES MEETING**, Location: Washington Hilton & Towers Hotel, Washington, DC, Contact: Phyllis Mahoney, Tel: (301) 527-0900, Fax: (301) 527-0994, E-Mail: pwmahoney@aol.com, Deadline: Not Available

## Europe, Middle East & Africa (Region 8)

Oct. 8 - 11, 1996, ✓ **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS**, Location: Best Western Dish Hotel, The Netherlands, Contact: Herman E. Maes, Tel: 32-16-281-283, Fax: 32-16-281-501, E-Mail: maesh@imec.be, Deadline: Past Due

Oct. 9 - 12, 1996, \* **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, Location: Sinaia Hotel, Sinaia, Romania, Contact: Doina Vancu, Tel: 401-633-30-40, Fax: 401-312-75-19, E-Mail: None, Deadline: Past Due

Nov. 25 - 26, 1996, ✓ **WORKSHOP ON HIGH PERFORMANCE ELECTRON DEVICES FOR MICROWAVE AND OPTOELECTRONIC APPLICATIONS**, Location: The University of Leeds, Weetwood Hall, Leeds, UK, Contact: Stavros Iezekiel, Tel: 44-113-233-2088, Fax: 44-113-233-2032, E-Mail: s.iezekiel@elec-eng.leeds.ac.uk, Deadline: Past Due

Dec. 16 - 18, 1996, # **INTERNATIONAL CONFERENCE ON MICROELECTRONICS**, Location: Nile Hilton Hotel, Cairo, Egypt, Contact: M.I. Elmasry, Tel: (519) 888-4567, Fax: (519) 746-5195, E-Mail: elmasry@vlsi.uwaterloo.ca, Deadline: Past Due

Jan. 6 - 10, 1997, ✓ **ADVANCED WORKSHOP ON >FRONTIERS IN ELECTRONICS**, Location: Hotel Las Dalias, Tenerife, Canary Islands, Spain, Contact: Fritz Schuermeyer, Tel: (513) 255-8649, Fax: (513) 255-2306, E-Mail: fritz@el.wpafb.af.mil, Deadline: Not Available

Feb. 6-7, 1997, ✓ **ELECTRON DEVICES CONFERENCE**, Location: University Politecnica Catalunya, Barcelona, Spain, Contact: Ramon Alcubilla Gonzalez, Tel: 34-3-4016757, Fax: 34-3-4016756, E-Mail: alcubilla@eel.upc.es, Deadline: Not Available

March 16 - 19, 1997, # **EUROPEAN WORKSHOP ON MATERIALS FOR ADVANCED METALLIZATION**, Location: Villard delans, France, Contact: G. Bomchil, Tel: 33-76-76-42-22, Fax: 33-76-76-40-63, E-Mail: Not Available, Deadline: 10/96

March 23 - 25, 1997, ✓ **NATIONAL RADIO SCIENCE CONFERENCE**, Location: Cairo, Egypt, Contact: Ibrahim A. Salem, Tel: 20-2-258-0256, Fax: 20-2-349-8217, E-Mail: None, Deadline: 10/10/96

May 26 - 29, 1997, @ **IEEE INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS**, Location: Hilton Hotel, Weimar, Germany, Contact:

ISPSD'97 Office, Tel: 49-69-63-08-202, Fax: 49-69-63-52-13, E-Mail: 100145.67@compuserve.com, Deadline: 10/14/96

June 5 - 7, 1997, \* **IEEE INTERNATIONAL WORKSHOP ON CHARGE-COUPLED-DEVICES AND ADVANCED IMAGE SENSORS**, Location: Hotel Burg, Bruges, Belgium, Contact: Albert J.P. Theuwsen, Tel: 31-40-742734, Fax: 31-40-743390, E-Mail: theuwsen@prl.philips.nl, Deadline: Not Available

June 30 - July 4, 1997, ✓ **EUROPEAN PHOTOVOLTAIC SOLAR ENERGY CONFERENCE AND EXHIBITION**, Location: Palacio de Congresos, Barcelona, Spain, Contact: WIP, Tel: 49-89-7201232, Fax: 49-89-7201291, E-Mail: renewables@mail.tnet.de, Deadline: 12/15/96

Sept. 15 - 17, 1997, ✓ **INTERNATIONAL CONFERENCE ON MICROELECTRONICS**, Location: University of Nis, Nis, Serbia, Contact: Tatjana Trajkovic, Tel: 381-18-49-155, Fax: 381-18-46-180, E-Mail: miel@efnis.elfak.ni.ac.yu, Deadline: 2/10/97

Sept. 22 - 25, 1997, ✓ **EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE**, Location: Stuttgart, Germany, Contact: B. Hofflinger, Tel: 49-711-685-7333, Fax: 49-711-685-5930, E-Mail: hoeflinger@mikro.uni-stuttgart.de, Deadline: Not Available

Oct., 1997, ✓ **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS**, Location: France, Contact: Herman E. Maes, Tel: 32-16-281-283, Fax: 32-16-281-501, E-Mail: maesh@imec.be, Deadline: Not Available

Oct. 8 - 11, 1997, \* **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, Location: Mountain Resort, Sinaia, Romania, Contact: Doina Vancu, Tel: 40-1-2121553, Fax: 40-1-3127519, E-Mail: None, Deadline: 4/15/97

## Asia & Pacific (Region 10)

Oct. 2 - 4, 1996, @ **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, Location: Hotel East, Tokyo, Japan, Contact: Secretariat of ISSM'96, Tel: 81-3-3815-8775, Fax: 81-3-3815-8529, E-Mail: riz@ppp.bekkoame.or.jp, Deadline: Past Due

Oct. 22 - 23, 1996, ✓ **SEMICONDUCTOR MANUFACTURING TECHNOLOGY WORKSHOP**, Location: Taiwan Semiconductor Manufacturing Company Limited, (TSMC), Hsinchu, Taiwan, Contact: J.H. Tzeng, Tel: 886-35-780221 ext. 2095, Fax: 886-35-781546, E-Mail: jhtzeng@tsmc.com.tw, Deadline: Not Available

Nov. 11 - 15, 1996, # **INTERNATIONAL PHOTOVOLTAIC SCIENCE & ENGINEERING CONFERENCE**, Location: SEAGALA Convention Complex, Miyazaki, Japan, Contact: Akira Yamada, Tel: 81-3-5734-2698, Fax: 81-3-5734-2897, E-Mail: yamada@pe.titech.ac.jp, Deadline: Past Due



Nov. 26 - 28, 1996, ✓ **IEEE INTERNATIONAL CONFERENCE ON SEMICONDUCTOR ELECTRONICS**, Location: Shangri-La's Rasa Sayang Resort, Penang, Malaysia, Contact: Burhanuddin Yeop Majlis, Tel: 603-825-1292, Fax: 603-825-9080, E-Mail: burhan@eng.ukm.my, Deadline: Past Due

Dec. 9 - 11, 1996, ✓ **CONFERENCE ON OPTO-ELECTRONIC MATERIALS AND DEVICES**, Location: Australian National University, Canberra, Australia, Contact: Chennupati Jagadish, Tel: 61-6-249-0363, Fax: 61-6-249-0511, E-Mail: cxj109@phys.anu.edu.au, Deadline: Past Due

Dec. 9 - 13, 1996, # **INTERNATIONAL CONFERENCE ON FIBER OPTICS AND PHOTONICS**, Location: Hotel Park Sheraton, Madras, India, Contact: Mallikarjun Tatipamula, Tel: (613) 763-0904, Fax: (613) 763-0511, E-Mail: mallikr@bnr.ca, Deadline: Past Due

Dec. 16 - 20, 1996, # **INTERNATIONAL ELECTRON DEVICES AND MATERIALS SYMPOSIUM**, Location: National Tsing Hua University, Hsinchu, Taiwan, ROC, Contact: Charles C.H. Hsu, Tel: 886-35-718300, Fax: 886-35-715971, E-Mail: chhsu@ee.nthu.edu.tw, Deadline: Past Due

June 3 - 5, 1997 # **INTERNATIONAL SYMPOSIUM ON VLSI TECHNOLOGY, SYSTEMS AND APPLICATIONS**, Location: Grand Hyatt Hotel, Taiwan, R.O.C., Contact: T.P. Ma, Tel: (203) 432-4211, Fax: (203) 432-7769, E-Mail: Not Available, Deadline: 12/16/96

June 8, 1997, @ **WORKSHOP ON STATISTICAL METROLOGY**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Masahiko Ogirima, Tel: 81-428-33-2001, Fax: 81-428-33-2151, E-Mail: Not Available, Deadline: 2/15/97

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# = Cooperation Support

June 10 - 12, 1997, @ **SYMPOSIUM ON VLSI TECHNOLOGY**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Bill Siu, Tel: (602) 554-5421, Fax: (602) 554-7019, E-Mail: Not Available, Deadline: 1/7/97

June 12 - 14, 1997, # **SYMPOSIUM ON VLSI CIRCUITS**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Ian Young, Tel: (503) 613-3923, Fax: (503) 613-8039, E-Mail: Not Available, Deadline: 1/7/97

July 21 - 25, 1997, ✓ **IEEE INTERNATIONAL SYMPOSIUM ON PHYSICAL AND FAILURE ANALYSIS OF INTEGRATED CIRCUITS**, Location: Raffles City Convention Centre, Singapore, Contact: Philip Ho, Tel: 65-840-2480, Fax: 65-840-2568, E-Mail: pho@micro.lucent.com, Deadline: 1/15/97

Aug. 17 - 21, 1997, @ **IEEE INTERNATIONAL VACUUM MICROELECTRONICS CONFERENCE**, Location: Kyongju, Korea, Contact: Jae Soo Yoo, Tel: 82-2-820-5274, Fax: 82-2-822-0635, E-Mail: ivmc97@cau.ac.kr, Deadline: 2/28/97

Aug./Sept., 1997 ✓ **INTERNATIONAL CONFERENCE ON SOLID-STATE DEVICES AND MATERIALS**, Location: Hamamatsu, Japan, Contact: R. Itoh, Tel: 81-3-3812-2111 (6840), Fax: 81-3-5689-8263, E-Mail: Not Available, Deadline: Not Available

Oct. 27 - 31, 1997, ✓ **INTERNATIONAL CONFERENCE ON NITRIDE SEMICONDUCTORS**, Location: Kyodo-bunka-kaikan, Tokushima, Japan, Contact: Hadis Morkoc, Tel: (513) 255-2923, Fax: (513) 476-4095, E-Mail: morkoc@uiuc.edu, Deadline: Not Available

## Regional & Chapter News

(continued from page 16)

cussed. To have best solutions for those subjects, the importance of promoting cooperation between industry and academia was recognized by all participants.

— Hiroshi Iwai, Editor

### ED Taipei Chapter

— by S.C. Sun

On June 6, 1996 Professor James Harris of Stanford University visited NDL and National Chiao Tung University and gave a lecture. His topic was "Atomic Engineering and Thin Films: Science or Industrial Capability."

On June 26, 1996 Professor Mitsumasa Koyanagi of Tohoku University visited NDL and National Chiao Tung University and gave two lectures. The first one was "Hot carrier effect in submicron devices". The second lecture was "New integration technology for future LSI and system."

### ED Beijing Chapter

— by Fu J. Liao

The First National Display Technology Conference, co-sponsored by Chinese Institute of Electronics (CIE), Society for Information Display (SID), Beijing Chapter, IEEE/ED Beijing Chapter and Chinese Vacuum Electronics Profession Association, will be held on Nov. 29-Dec. 2, 1996 in Tianjin, China. This conference will play the role to prepare Chinese papers for the SID International Conference ASID'97 (Asian Symposium for Information Display) in Xian Yang (near Xi'an), China Winter 1997.

— S.C. Sun, Editor

## Star Program Report

(continued from page 11)

the student - such as a career day at a local school. The STAR program takes a different approach. Participants are encouraged to interact with students over a longer time period, for example an academic year, and within that time period pursue a number of activities with a common set of girls. In this way, our program complements, rather than duplicates existing programs, and effectively connects local IEEE members to a given local organization - such as a local junior high school or a local Girl Scout chapter.

A number of existing programs show

how different IEEE members have shaped their STAR program to best suit their abilities and the local environment. Julia Brown, of Hughes Research Laboratories has worked with a local high school teacher and four students throughout the past academic year. She has visited the school and given demonstrations - how do we observe and record the properties of liquid nitrogen - and has taken the girls to Hughes for a show and tell of atomic force microscopy and robots. Karen Moore of Motorola is investigating a joint program with the Girl Scouts. The STAR program initiated by the Yugoslavia Section, under the direction of Ninoslav Stojadinovic, Aleksandar Jaksic, and Tatjana Trajkovic, has

had numerous joint activities with girls at a local high school, including a university visit, participation in an annually-held electronics faculty meeting with knowledge and sports competitions, and software training.

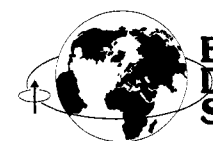
New participants in this program are welcome. If you would like to start your own STAR program, please contact: April S. Brown, Georgia Institute of Technology, School of Electrical and Computer Engineering, Atlanta, GA 30332-0250; TEL: (404) 894-5161, E-Mail: april.brown@ee.gatech.edu.

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