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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

EDS Debuts Vanguard Series



An EDS initiative to present short courses independently of EDS conferences debuted July 27 in Austin, Texas. Under the new Vanguard Series of independent short courses, UCLA Professor Asad Abidi delivered a 6-hour course on "Circuit Designs and Technology for RF-CMOS."

Two more courses will be delivered in October. "Overview of Fiber Optic Communications" will be taught by Prof. Joe Campbell, University of Texas, on October 11 in San Jose, California. Dr. Sanjay Banerjee, director of the Microelectronics Lab at the University of Texas will present "Device, Circuit, and Reliability Modeling for Silicon Industry" on October 19 in Austin, Texas.

According to the EDS President Cary Yang, the content of these new one-day courses will be tailored to experienced engineers who are looking for a short burst of intense information on the latest technologies. Courses are designed to help EDS members and other

short course participants stay abreast of current developments in various cutting-edge subjects related to devices and circuits.

University of Illinois, Professor I. Adesida, chair of the society's Educational Activities Committee and the Short Course Subcommittee, plans to present at least four new courses next year, including one to be held in Singapore just prior to the mid-year EDS AdCom meeting.

To make the courses more attractive to industry participants, live courses are being offered in locations having a concentration of semiconductor-related industries. By targeting the local population, the goal is to minimize registrants' travel costs and time away from the office. Four target areas that have been identified in the U.S. are Austin, Portland, Silicon Valley and L.A.-San Diego.

In addition to capturing live presentations on videotape, the opportunity

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Your Comments Solicited

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

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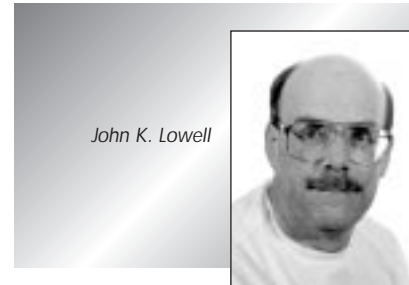
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Spring 2000 AdCom Meeting Summary



John K. Lowell

The Spring 2000 AdCom meeting of EDS was opened by President Cary Yang on May 21st at the ATRIA Mercure Hotel, Toulouse, France, in conjunction with the IEEE International Symposium on Power Semiconductor Devices & ICs (ISPSD).

After the approval of the addendum to the minutes of the December 1999 meeting, Cary announced that the 2001 Spring AdCom meeting will be held in Singapore in conjunction with the IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA). He also reviewed the list of members awarded the IEEE Millennium Medal winners by EDS. A complete list of the winners from all IEEE entities is available at www.ieee.org/organizations/society/eds/millennium.html. He also reviewed the status of IEEE's "new financial model" which has been discussed in earlier meeting summaries. At present, the model has not been approved by TAB, so no immediate actions are being taken. A motion to change the EDS Constitution and ByLaws to give EDS technical committee chairs voting rights and bring the documents up-to-date to reflect current AdCom practices could not be approved at this meeting, since there was not a 2/3 majority of full EDS AdCom voting members in attendance. The changes will be acted on at the December meeting.

Lu Kasprzak gave the society financial report for the new Treasurer, April Brown, who was unable to attend. In 1999, membership revenue increased due to an increase in members electing permanent membership. *Circuits & Devices Magazine* contributed unexpected revenue of \$22K and is doing very well at present as a general publication. There were also non-budgeted returns from *the Journal of Microelectromechanical Systems*, *Transactions on Semiconductor Manufacturing* and *the Journal of Lightwave Technology* in the amounts of \$60.8K, \$44.4K, and \$10.6K, respectively. The Executive Office budget was more than expected, due to the addition of a staff person to support EDL. Due to very favorable market conditions, the EDS return of long-term investments was about \$1.2 million which was excessively more than budgeted. The 1999 surplus for EDS was \$1.5M, and the Society's reserves have doubled over the last five years. Amidst the financial crisis of IEEE, EDS is doing well.

Executive Director, Bill Van Der Vort, reported that his office continues to be busy with numerous projects. They were instrumental in the process of approving and notifying the winners of the Millennium Medal, as well as issuing them invitations to the December EDS luncheon. The EDS Membership Directory has been completed and mailed. They also collaborated with IEEE publications to put the EDS member roster on the Web with quarterly updates. In addition, Bill's office worked with Steve Hillenius, Publications Chair, and Dexter

(continued on page 10)

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

2000

I. Adesida (1)
H. S. Bennett (2)
H. Iwai (2)
A. A. Santos (1)
S. C. Sun (1)
K. Tada (2)
P. K. L. Yu (1)

2001

A. S. Brown (2)
T. P. Chow (2)
K. F. Galloway (1)
S. J. Hillenius (1)
C. Jagadish (1)
M. A. Shibib (2)
R. Singh (1)

*2002

C. L. Claeys (1)
J. A. Dayton, Jr. (1)
M. Fukuma (1)
K. M. Lau (1)
K. Lee (1)
M. L. Ostling (1)
D. L. Pulfrey (1)
K. Shenai (2)

Number in parenthesis represents term.

* Members elected 12/99

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Upcoming Technical Meetings

2000 International Electron Devices Meeting (IEDM)

The 2000 IEEE International Electron Devices Meeting will be held at the San Francisco Hilton and Towers, San Francisco, CA, December 11 to 13, 2000. IEDM is the premier conference for presenting advances in silicon and compound semiconductor devices and processes. It is the annual technical meeting of the IEEE Electron Devices Society, rotating in location between Washington, DC and San Francisco, CA. IEDM is the largest semiconductor device conference in the world, drawing attendees from Europe, Asia and the US. High quality contributions from industry, academia and government are all presented at the conference.

The heart of the IEDM is the technical program. No other meeting presents as much leading work in so many different areas of microelectronics. The IEDM offers students, scientists and engineers an opportunity to hear about the latest work being done in their disciplines and related areas and affords them the opportunity to speak directly with the experts working in these areas.

The meeting highlights include three plenary presentations by prominent experts, eighteen invited talks on all aspects of advanced devices and technologies, two evening panel discussions on future challenges to the industry and the presentation of IEEE/EDS prestigious awards.

The areas to be covered in this year's conference are:

- CMOS Devices
- CMOS and Interconnect Reliability
- Detectors, Sensors, and Displays
- Integrated Circuits and Manufacturing
- Modeling and Simulation
- Process Technology
- Quantum Electronics and Compound Semiconductor Devices
- Solid State Devices

CMOS Devices focuses on device physics, novel MOS device structures, CMOS scaling issues, high performance and low power devices. Other topics of interest include high-frequency, analog and noise behavior of MOS devices, SOI device issues and device measurement and



Completed in 1861, the Fort Point National Historic Site, is a four-tiered brick fortress built at the southern base of the Golden Gate Bridge. Rangers dressed in full Civil War uniform lead frequent tours of the fort.

Credit: San Francisco Convention & Visitors Bureau

characterization. This session will provide attendees with the latest advances in CMOS devices, as well as projections of future device architectures.

CMOS and Interconnect Reliability will cover all aspects of CMOS reliability including both front-end and back-end processing issues. Topics will span a large spectrum including ultra thin gate dielectric wearout and breakdown, interconnect reliability, ESD and soft error issues. In addition, reliability issues for BICMOS and SOI technologies will be addressed.

Detectors, Sensors and Displays play a major role in information delivery. Sessions in this area will cover critical devices, structures, and integration for imaging, displays, detectors, sensors, and micro electro-mechanical systems. Included in these sessions will be CCD's, TFT's, and organic, amorphous and polysilicon devices. Invited papers in emerging areas such fluidic self-assembly and biological applications of microsystems will be featured this year.

The Integrated Circuits and Manufacturing sessions will cover advances in integrated circuits manufacturing process integration for memory and logic applications including high performance architectures, multifunction integrated circuits, low power circuits, RF and mixed signal technologies. Other topics of interest include technology for failure analysis and yield modeling.

Modeling and simulation are important aspects of electronic device development.

Sessions in this area will deal with analytical, numerical, and statistical approaches to modeling electron devices, isolation and interconnect technologies.

The Process Technology sessions will cover front-end and back-end modules for fabrication of CMOS, memory, and Bi-CMOS devices. The sessions will cover lithography, etching, planarization, silicidation, shallow junction formation, interconnect technologies and new materials including high and low k dielectrics.

The IEDM conference provides a forum for introducing new device concepts in electronics and photonics. This year the Quantum Electronics and Compound Semiconductor

Devices sessions will feature the latest results in compound semiconductor and wide-bandgap materials and devices. Topics will cover a wide range including FET's, HBT's, lasers, photodetectors, molecular scale devices, and optical interconnects.

Solid State Devices are increasingly in demand for varied applications in areas ranging from the automotive to communication industries. Sessions in this area will cover integrated power/current /voltage devices, silicon bipolar transistors, discrete and integrated devices, novel analog and digital devices and technologies, integrated RF components, and single electron devices in silicon and germanium/silicon.

A popular feature of the IEDM is the short course program held the Sunday before the conference formally begins. The two short courses that make up the program will be offered on Sunday, December 10. They provide attendees with the opportunity to learn about new emerging areas and to benefit from direct contact with the lecturers who are experts in the field. Introductory material for general audiences is also included.

This year, the Short Course subjects will be "Advanced Interconnects: Design, Process and Integration" organized by Dr. Jim Ryan of IBM and "Technology for the Internet Era", organized by Dr. Sam Shichijo of Texas Instruments.

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IEDM *(continued from page 3)*

The IEDM conference will include three plenary presentations dealing with future trends in semiconductor technologies. Dr. Jiri Marek of Robert Bosch GmbH will discuss "Microsystems for the Automotive Industry." Prof. Shuji Nakamura of the University of California at Santa Barbara will talk on "III-V Nitride-based LED's and Lasers: Current Status and Future Opportunities," and Dr. David DiVincenzo of IBM Watson Research will present "Prospects for Quantum Computation."

IEDM'00 will continue the tradition of holding evening panel sessions on important topics of interest to the electronics

community. This year the topics will be: "Emerging Technologies" moderated by Dr. Pierre Woerlee of Philips and "Beyond 40 Gb/s: What technology will work for these applications?" moderated by Prof. Mark Rodwell of University of California, Santa Barbara.

As is traditional at IEDM, there will be a luncheon featuring a guest speaker. This year, the speaker will be Marc Abrahams, editor and co-founder of "The Annals of Improbable Research." Dr. Abrahams talk is titled, "Improbable Research and the Ig Noble Prizes" and should prove to be an interesting and fun view of scientific research.

The submission date for regular papers and late-news papers has already passed.

For registration and other information, visit the IEDM 2000 Home Page on the World Wide Web at <http://www.ieee.org/conferences/iedm> or contact Conference Managers Melissa Widerkehr and Phyllis Mahoney, Suite 270, 101 Lakeforest Boulevard, Gaithersburg, MD, 20877, USA; TEL: (301) 527-0900 ext. 103; FAX (301) 527-0994.

The San Francisco area provides many attractions for visitors and we encourage attendees to explore them in the off hours of the conference. The IEDM organizers and committee members look forward to seeing you in December 2000.

*Paul Packan
Intel Corporation
Hillsboro, OR*

2000 GaAs IC Symposium (GaAs IC)

Over the last 22 years, the IEEE GaAs IC Symposium has become the preeminent international forum on developments in integrated circuits using GaAs, InP, SiGe, Wide Bandgap GaN or SiC, 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 IEEE GaAs IC Symposium is the forum where the latest results in high-speed digital, analog, microwave/millimeter wave, mixed mode, and optoelectronic integrated circuits are presented. Technical areas covered include: innovative RFIC device & circuit concepts, circuit design & fabrication; manufacturing technology & cost issues; CAD/CAM/CAT tools & techniques, IC testing & methodology; packaging technology, reliability, advanced device applications; system applications (commercial and military, wireless, vehicular, medical); optoelectronic applications, fiber system ICs.

The 2000 IEEE GaAs IC Symposium will be held November 5th through 8th, 2000, at the Westin Hotel in Seattle, Washington, USA. Over 70 technical papers will be selected from worldwide submissions for oral presentation and publication in the Symposium Digest. Invited papers and panel sessions on topics of current importance to the GaAs IC technical community will complete the program. A special issue of the *IEEE Journal of Solid State Circuits* will publish extended versions of selected



papers from the Symposium. As in past years, the Symposium will sponsor an exhibition of products from vendors of materials, IC products, processing equipment, CAD tools, and foundry services. A short course entitled "Linear Power Amplifiers" will be held on Sunday, November 5th. The course will cover current topics including system requirements that drive the need for linear power amplification for wireless and satellite applications, circuit techniques to achieve linearity, and distortion characteristics of various device technologies. The Symposium will again offer the popular primer course, "Basics of GaAs ICs," which is an introductory-level class intended for those wishing to obtain a broad overview of GaAs technology. This Sunday evening course will cover materials and processes, device operation, and both analog/

microwave and digital ICs. The Course will be tailored to provide the specific background needed for participants to understand and appreciate the papers presented in the Symposium Technical program. Symposium social events include the Symposium Opening Reception on Sunday, November 5th, the Exhibition Opening Reception on Monday, November 6th, the Exhibition Luncheon on Tuesday, November 7th, and the Symposium Theme Party on Tuesday, November 7th. The Symposium Theme Party will be "A Northwest Experience." Motorcoach transportation from the hotel to Pier 55 will be followed by a scenic cruise on Puget Sound. After disembarking at Kiana Lodge, a six acre waterfront retreat, a Northwest buffet-style Salmon Bake meal will be served. For additional 2000 IEEE GaAs IC Symposium details please visit our website at <http://www.gaasic.org/>.

Beautiful Seattle is located on a narrow strip of land between Puget Sound and Lake Washington. There are numerous sites and places to visit while in Seattle from the Seattle Waterfront and Pike Place Market to the Seattle Space Needle, Pioneer Square and Ballard Locks. For additional information please visit the web site at <http://www.beautifulseattle.com>.

*Jim Komiak
Sanders, A Lockheed Martin Co.
Nashua, NH*

2000 Semiconductor Interface Specialists Conference (SISC)



The 2000 IEEE Semiconductor Interface Specialists Conference (SISC) will be held December 7-9, 2000 in San Diego, CA, immediately prior to the IEDM. The SISC provides a unique forum for device engineers, solid-state physicists, and materials scientists to discuss issues of common interest. Principal topics for discussion at SISC are semiconductor/insulator interfaces, the physics of insulating thin films, and the interaction among materials science, device physics, and state-of-the-art technology.

This year will be the thirty-first meeting of SISC. The first meeting was held in 1965 and attendance was by invitation. The conference, now public, alternates between the east and west coasts, and meets just before the IEDM. An important goal of the conference is to provide an environment that encourages interplay between scientific and technological issues. Invited and contributed talks, as well as a lively poster session, are presented in an informal setting designed to encourage discussion, and conference participants enjoy numerous opportunities for social gatherings with renown scientists and engineers. Abstracts for contributed talks were due in early August.

The 2000 SISC will be held at the Catamaran Resort Hotel, 3999 Mission

Boulevard, San Diego, CA 92109, phone (619) 488-1081. The Catamaran is on Mission Bay, and one block from the Pacific Ocean (see photo). San Diego typically has fabulous weather, which complements the Catamaran's luxurious Hawaiian decor. The hotel grounds are beautifully lush with colorful fish and tropical birds. San Diego also boasts Sea World', a world-class zoo and historic monuments, all within an easy drive from the Catamaran. Bike and boat rentals are offered on the Catamaran premises.

The conference emphasis is on silicon-based devices, including the SiC and SiGe systems, and topics evolve with the state-of-the-art. Invited talks at this year's conference highlight the many areas discussed at the SISC; a preliminary list of invited presentations as follows:

- M. Ashraf Alam (Lucent Technologies, USA), *Theory of Oxide Breakdown*.
- Doug Buchanan (IBM, USA), *Alternative Gate Dielectrics*.
- Stephen Campbell (Univ. of Minnesota, USA) *Devices built with Column IV-B Metal Oxide Insulators*.
- Steven George (Univ. of Colorado, USA) *Atomic Layer Deposition of Ultrathin Films using Sequential Surface Reactions*.
- Heinz Lendenmann (ABB, Sweden) *Per-*

formance and Reliability of High Power 4.5 kV SiC diodes.

- Shinichi Takagi (Toshiba, Japan), *Carrier Transport in Stressed Thin Gate Oxides*.

The invited and contributed talks are complemented by informal events designed to encourage lively discussion and debate. Generous hospitality allows attendants to focus on enjoying the conference. Hors d'oeuvres, wine, and cheese encourage interaction among poster authors and other conference participants at Thursday's poster session. Friday afternoon has no scheduled talks, to allow time to meet informally, relax on the beach, or visit one of San Diego's numerous attractions. On Friday evening the conference hosts a banquet and awards ceremony, complete with the now-famous (and always riotous) limerick contest. The limericks never fail to give the conference presentations, people and events an entirely new perspective!

This year's SISC will continue the tradition of presenting an award memorializing Prof. E. H. Nicollian. The award 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. In addition, Ed Nicollian co-authored with John Brews, the definitive book *MOS Physics and Technology*.

For registration information and general inquiries about SISC, please contact the Arrangements Chair, Lori Lipkin, at Cree Inc., 4600 Silicon Dr., Durham NC 27713. TEL: 919-313-5525, FAX: 919-313-5696, E-Mail: lori_lipkin@cree.com. Additional information is available at www.IEESISC.com.

Lori Lipkin
Cree Inc.
Durham, NC

2000 Integrated Reliability Workshop (IRW)

The 2000 Integrated Reliability Workshop (IRW), sponsored by the IEEE Reliability Society and the IEEE Electron Devices Society, will be held at the Stanford Sierra Camp on the shore of Fallen Leaf Lake near South Lake Tahoe, CA from October 23rd to 26th, 2000. This workshop provides a unique forum for open and frank discussions of all areas of reliability research and technology for present and future semiconductor applications.

This year's workshop will feature a **keynote address** by Daniel J. DiMaria and James H. Stathis of the IBM T.J. Watson Research Center, entitled, "Defect Generation and Reliability of Ultra-thin SiO₂ at Low Voltage".

The technical portion of the 2000 workshop is being organized by Andreas Martin of Infineon Technologies AG and will focus on six main areas:

- Wafer Level Reliability Tests and Test



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IRW

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Approaches

- Identification of Reliability Effects
- New or Existing Reliability Characterization and Prediction Models
- Reliability Test Structures
- Customer Product Reliability Requirements/Manufacturer Reliability Tasks
- Designing-in-Reliability (Circuits, Processes, Products)

Hot topics include Cu interconnects; reliability of deep sub-micron; high speed, high frequency devices; new dielectric systems; and reliability modeling and simulation.

The IRW is quite a bit different from a typical technical conference. From the moment you arrive, after winding slowly back to the south shore of Fallen Leaf Lake, you realize that you are taking part in something special. Attendees stay in cabins without TVs or phones, dress is casual (suits, ties and high heels are shunned), affiliations are downplayed, and meals are taken at the lodge dining room, family-style. Attendees of the workshop are expected to participate actively. You feel yourself drawn into technical discussions from the start. Every aspect of this conference, from the isolated location to the format of the technical program, is designed to get attendees to interact.

Located just a short scenic drive (less than two hours) from Reno, the Stanford Sierra Camp is situated at 6000 ft in the High Sierra on Fallen Leaf Lake. Attendees stay in cabins nestled amid the pines and cedars along the shoreline. All cabins have decks and breathtaking views of the lake and surrounding peaks (don't worry, the cabins also have warm beds and hot showers; phone booths are available in the lodge). This peaceful setting, free from the distractions and annoyances of modern life, presents a terrific opportunity to get to know your colleagues, including internationally renowned experts. This is an opportunity not

usually available at bigger, more hectic reliability conferences. Instead of watching TV, participants spend their evenings at poster sessions, discussion groups, and special interest groups (SIGs), all with refreshments provided to stimulate discussions.

One unique aspect of this workshop is the opportunity for every attendee to present a poster of their own research, no matter what state it is in. Just arrange for space when you register or bring last-minute results in your briefcase or backpack. Your ideas will be accommodated. This is a great way to share that new project you are working on and to get world-class feedback. The poster presentations are even eligible for a two page write-up in the conference proceedings. The **open poster sessions** are but one example of the opportunities for interaction that sets the IRW apart from other conferences.

Another distinction of the IRW is the moderated **Discussion Groups** that are held in the evenings. Organized this year by William Vigrass of Texas Instruments, the Discussion Groups topics are: 1) Single Event Upsets (SEU), 2) WLR Monitoring, 3) Product Qualification / Burn In, 4) Gate Oxide Integrity, 5) Electromigration, and 6) Designing for Reliability. Lively conversation and debate among participants is promised and written summaries will be included in the workshop proceedings.

For those with the stamina, the Discussion Groups are followed by the **Special Interest Group meetings** or SIGs (as attendees refer to them). The SIGs are composed of small groups of researchers and engineers who often continue their conversations and collaborations even after they leave the workshop. Every attendee has the opportunity to become part of an existing SIG or suggest a new topic and start one of their own. One particularly successful example is the Thin Oxide Integrity SIG which has met for several years and collaborated to produce award winning presentations at

other reliability meetings. Be warned, remnants of the SIG discussions sometimes rage on into the wee hours of the morning.

Yet another advantage of attending the IRW is the **Tutorial Short Course**, presented by world class experts and included at no additional cost. The tutorials review basic topics, as well as the latest developments and are designed to be beneficial both to newcomers and experienced members of the reliability community. Organized this year by Doug Menke of Motorola, the Tutorial Short Course will be broken into three topics: 1) "Integrated Circuit Fabrication Technology and Yield Control," by Ernest Levine, Tom Houghton, and Parth Dave of IBM MicroElectronics, 2) "Ultra-thin Oxide Reliability for ULSI Applications," by Ernest Wu of IBM MicroElectronics, and 3) "Managing Technology Qualification in a Foundry/Fabless Partnership," by Raif Hijab of Cirrus Logic.

Last, but certainly not least, attendees have Wednesday afternoon off to enjoy activities such as hiking (with the annual trek to the top of Mt. Tallac as a favorite goal), volleyball, canoeing, biking, walking, or just conversing by the lake, all in the fresh clean mountain air. This free afternoon is a great way not only to network, but to build long-lasting friendships.

Additional information about the workshop is available on the IRW website at www.irps.org/irw, or by contacting SAR Associates at 301 N. Madison Street, Rome, NY 13440, TEL: 315-339-3968; FAX: 315-336-9134. Note: If you want to take part in this event, please register early as space at the Stanford Sierra Camp is limited to roughly 120 attendees and the workshop has sold out in the past.

On behalf of the 2000 Integrated Reliability Workshop Committee, we look forward to meeting you in Lake Tahoe!

John F. Conley, Jr.
NASA / JPL, California Institute of Technology
Pasadena, CA

Short Courses

(continued from page 1)

nity to access these one-day courses from the Web is being explored.

While plans are still being formulated, the goal is to deliver the courses via the Web and keeping content fresh by updating periodically. In addition, some courses may be offered in the more traditional mechanism via video. Pricing for both the web-based and the videotaped courses

has yet to be determined. However, EDS is offering the live courses at \$495 for IEEE members (\$450 student members) and \$595 for non-members.

The Short Course Subcommittee members within the EDS Educational Activities Committee include: I. Adesida (Univ. of Illinois, Urbana, IL), Chair; K. S. Chari (Electronics Niketan, New Dehli, India); Magali Estrada Del Cueto (CINVESTAV-IPN, Mexico); Yoshiaki Hagiwara (Sony Corporation, Tokyo, Japan); Margaret Huang (Motorola, Mesa, AZ); Stephen Parke

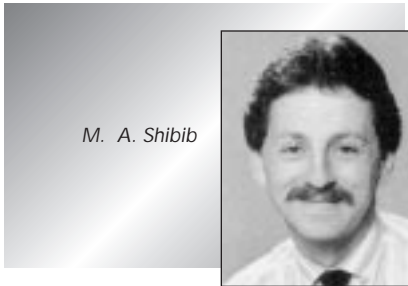
(Boise State Univ., Boise, ID); Emily Sopenky (The Iris Company, Austin, TX); Sunit Tyagi (Intel, Hillsboro, OR); Jason Woo (UCLA, Los Angeles, CA).

For more information on these new short courses, please e-mail Emily Sopenky e.sopenky@ieee.org or call toll free 877-566-IEEE (4333). See also the webpage at www.ieee.org/eds/shortcourses/.

Emily A. Sopenky
The Iris Company
Austin, TX

Society News

Power Devices & ICs Technical Committee - Chairman's Report



M. A. Shibib

The Power Devices & ICs Technical Committee is composed of 18 members, 10 from academia and research institutes and 8 from industry. The focus of the Committee is on recent developments and trends in the discrete and IC power semiconductors.

The main functions of the Committee are:

- Identify hot technical areas in the field of power semiconductors
- Insure that the Society is involved in technical meetings for new hot areas of technology
- Review requests for EDS support of technical meetings
- Insure that the Society has sufficient coverage of power semiconductor devices & ICs in its journals
- Initiate new or modify existing publications for hot areas
- Coordinate workshops in the field
- Sponsor Power Semiconductor Technology Roadmap
- Act as liaison to technically related societies

In its December 1999 report, the Committee presented the following hot areas:

- Low Voltage Power Devices

Personal portable electronics demand high performance, small size and extended battery life. Thus the need for low on-state voltage drop, low power loss and low voltages (less than 60 v). Most recently reported results for specific-on-resistance and voltage level are:

Voltage	Specific-On-Resistance	Device
7 V	4.3 m Ω .mm ²	n-channel Lateral DMOS
25 V	3 m Ω .mm ²	n-channel Trench DMOS
30 V	26 m Ω .mm ²	n-channel Trench DMOS
12 V	21 m Ω .mm ²	p-channel Trench DMOS

Thick copper layers on lateral DMOSs are used to reduce the debiasing effect the width of the device, and to increase the energy capability. Many studies were reported to understand the safe-operating-area (SOA) of the Lateral DMOS.

- High Voltage Power MOSFETs

The R&D focus is on the "Charge

Compensation Principle" which broke the silicon limit of specific-on-resistance versus breakdown voltage. Last year, a 600 volt DMOS device was reported with a factor of 5 reduction in on-resistance using multiple implants and epitaxial depositions. Other approaches considered are: trench etch and refill, trench etch with sidewall implant or neutron transmutation doping.

- RF Power Devices

RF Lateral DMOS (LDMOS) is replacing RF bipolar and GaAs devices in wireless base station applications, and the trend is to integrate the electronics for wireless hand sets. An integrated power amplifier in thin-film silicon-on-insulator (SOI) was demonstrated. A SiC MESFET with a 5.6 W/mm gate width was reported at frequencies up to 3 GHz and power up to 120 watts.

- High Voltage ICs

A 600 volt motor driver IC using self-isolation without epitaxial layers was reported, and at least four companies reported development of high voltage driver ICs for plasma display panels using SOI substrates.

- SiC Power Devices

An 1800 V 6H-SiC MOSFET with a specific-on-resistance of 82 mW.cm² was reported compared to a 1400 V device with 15.7 mW.cm² reported last year. Also observed is the trend of coupling SiC diodes and JFETS to silicon IGBTs and MOSFETs.

- High Power Devices

An 8000 V light triggered thyristor for high voltage DC transmission was reported and is used in converter station.

The Technical Committee noted the publications of two books in the field in 1999, these are:

- "Power Semiconductor Devices: Theory & Applications" by V. Benda, J. Gowar and D. Grant
- "High Voltage Devices & Circuits in Standard CMOS Technologies" by H. Ballan and M. Declerq.

Journal coverage of the field is well represented in: IEEE Transactions on Electron Devices, IEEE Electron Devices Letters, IEEE Transactions on Power Electronics and other journals.

Conference coverage of the field is best represented by the IEEE EDS sponsored International Symposium on Power Semiconductor Devices & ICs (ISPSD), held annually with the site rotating between North America, Europe and Japan.

The Power Devices and ICs Technical Committee is sponsoring a workshop on "Power Semiconductor Technology Roadmap" in conjunction with ISPSD'01 to be held in Osaka, Japan, June 4-7, 2001.

The Committee is maintaining a web site that can be reached at: <http://www.ieee.org/organizations/society/eds/groups.html>

For further information on the Technical Committee's activities, please contact: M. Ayman Shibib, IEEE EDS Power Devices & ICs Technical Committee Chairman, Lucent Technologies, 2525 N. 12th St., P.O.Box 13396, Reading, Pa. 19612-3396, U.S.A. TEL: 610-939-6576, FAX: : 610-939-3769, E-Mail: a.shibib@ieee.org.

M. Ayman Shibib
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IEEE Starts Sensors Journal

The IEEE established the Sensors Council in 1999 for the purpose of creating a professional society focus for sensor activities, and for starting a high quality, affordable journal. (The major competing journal costs \$5,200 per year.) The Council has 26 member societies, with a combined membership of 260,000. EDS is one of the member societies.

The inaugural issue of the IEEE Sensors Journal is scheduled for June 2001. This issue is to consist of a collection of review papers covering a wide range of sensor technologies. The deadline for submissions

was 1 September 2000. The call-for-papers, and other relevant information can be found on the Sensors Council website, <http://www.ieee.org/sensors>.

The subscription price will be \$19- per year for IEEE members. The non-member (institutional) price will be \$395- per year.

Sensor researchers and users are invited to submit papers and help make the Sensors Journal the leading peer-reviewed sensor publication in the world.

John Vig
U.S. Army
Fort Monmouth, NJ

1999 EDS Paul Rappaport Award

W. Dexter Johnston, Jr.



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 \$2,500, presented at the International Electron Devices Meeting (IEDM).

The paper entitled, "In (Ga)As/GaAs Self-Organized Quantum Dot Lasers: DC and Small-Signal Modulation Properties" by Pallab Bhattacharya, Kishore K. Kamath, Jasprit Singh, David Klotzkin, Jamie Phillips, Hong-Tao Jiang, Nalini Chervela, Theodore B. Norris, Tom Sosnowski, Joy Laskar, and M. Ramana Murty was recognized as the best paper appearing in an EDS publication in 1999. The paper was published in the May, 1999 issue of *IEEE Transactions on Electron Devices*. The 1999 award will be presented at the IEDM on 11 December, 2000 in San Francisco. The following are brief biographies of the eleven winners.



Pallab Bhattacharya

Pallab Bhattacharya is the James R. Mellor Professor of Engineering in the department of Electrical Engineering and Computer Engineering at the University of Michigan. He received the Ph.D. degree from the University of Sheffield, U.K., in 1978.

His teaching and research interests include molecular beam epitaxy, low-dimensional quantum confined heterostructures, high-speed electronic and optoelectronic devices, and OEICs. He is the author of the textbook *Semiconductor Optoelectronic Devices* (Prentice-Hall). He is an Editor of the *IEEE Transactions on Electron Devices* and has edited *Properties of Lattice-Matched and Strained InGaAs* (UK: INSPEC, 1993) and *Properties of III-V Quantum Wells and Superlattices* (UK: INSPEC, 1996). He has received the John Simon Guggenheim Award and the SPIE Technical Achievement Award. He is a Fellow of the IEEE and OSA.

Nalini Chervela No photo or bio available.



Hongtao Jiang

Hongtao Jiang received the B. S. degree in Physics from the University of Science and Technology of China, P. R. C in 1992, and the M. S. in electrical engineering and Ph. D. in applied physics from the University of Michigan, Ann Arbor in 1999. His doctoral research was on the strained effect in the InGaAs/GaAs and InGaN/GaN heterostructures. He is currently a design engineer at Newport Communication, Irvine, California.



Kishore Kamath

Kishore Kamath received his Bachelors degree from the University of Mysore in 1987. He received masters and Ph.D degrees from the Indian Institute of Technology, Madras in 1989 and 1993, respectively. From May 1994 to February 1998, he was with the University of Michigan, Ann Arbor, first as a post doctoral fellow and then as a research scientist, where he worked extensively in the area of self-organized quantum dots by MBE and their application in optoelectronic and electronic devices. He is the author/co-author of more than 50 scientific papers in the area of semiconductor optoelectronics. He joined Opto-Electronics Center of Lucent Technologies in March 1998. His current interests are high performance semiconductor lasers such as wavelength stabilized widely tunable lasers, high-speed lasers and electro-absorption modulators. Dr. Kamath is a member of IEEE (EDS, LEOS).



David Klotzkin

David Klotzkin was born in Brookline, MA, in 1966. He received the B.S. degree in electrical engineering from the Rensselaer Polytechnic Institute in 1988, the M.S. degree in Materials Science from Cornell University in 1994, and the M.S. and Ph.D. degrees in electrical engineering from the University of Michigan in 1997 and 1998, respectively. His Ph.D. dissertation was on carrier dynamics and modulation characteristics of

quantum-well and quantum-dot lasers. He was employed from 1998 to 1999 by Lasertron in Bedford, MA, designing high-speed optoelectronic transmission sources, and is currently a laser chip designer for Lucent Technologies in Breinigsville, PA.



Joy Laskar

Joy Laskar received the Ph.D. degree in 1991 from the University of Illinois at Urbana-Champaign and is currently an Associate Professor in the School of Electrical and Computer Engineering at Georgia Tech. His research has focused on wide bandwidth characterization and design techniques with applications to MMICs, OEICs, and their integration. Dr. Laskar has published over 100 papers and at Georgia Tech, he is currently the chair for the Electronic Design Automation technical interest group, the Yamacraw Research Leader for Broadband Access Hardware and the Packaging Research Center (PRC) thrust leader for RF and Wireless. He is a 1995 recipient of the ARO's Young Investigator Award, a 1996 recipient of the NSF's CAREER Award, 1997 PRC Faculty of the Year, 1998 NSF PRC Educator of the Year, 2000 Co-Recipient of the 2000 IEEE MTT best paper award and is co-founder and Director of a Broadband Wireless Company: RF Solutions.



M. Ramana Murty

M. Ramana Murty obtained his Ph.D. in Physics from the Indian Institute of Technology, Madras. He conducted research at the Inter-university Microelectronics Centre (IMEC), Leuven, Belgium on High-Efficiency Silicon Solar Cells and III-V Infrared LEDs. In 1995, he joined the School of ECE, Georgia Institute of Technology, Atlanta as a Research Scientist working on InP HEMTs and Circuits. He worked for a short time at the Jet Propulsion Laboratory, Pasadena and National Semiconductor Corporation, Atlanta. Currently he is employed at the SiGe Technology Development Group of IBM Microelectronics. His areas of interest include High-Speed Semiconductor Device Development, Device Physics & Modeling and MMIC design.

Theodore B. Norris is an Associate Professor in the EECS Department and the Center for Ultrafast Optical Science at the University of Michigan. He received his



Theodore B. Norris

B.A. in Physics (with Highest Honors) from Oberlin College in 1982, and his PhD in Physics from the University of Rochester in 1989. His postdoctoral research was performed at Thomson-CSF in France 1989-1990. His research interests include application of femtosecond optical techniques to the physics of semiconductor structures, and in developing new ultrafast optical and optoelectronic measurement techniques, including applications to nanostructures and to biological imaging. He is a member of IEEE and the American Physical Society, and is a Fellow of the Optical Society of America.



Jamie Phillips

Jamie Phillips received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Michigan in 1994, 1996, and 1998, respectively. His dissertation research focused on the growth of self-assem-

bled quantum dots by MBE and their use in optoelectronic devices. In 1999, he was a postdoc at Sandia National Laboratories in Albuquerque, NM, where he contributed to research on the growth of a variety of antimony-containing III-V materials by MOCVD. He is currently a research scientist at the Rockwell Science Center in Thousand Oaks, California working on HgCdTe materials for infrared detectors.



Jasprit Singh

Jasprit Singh obtained his Ph. D. in solid state physics from the University of Chicago in 1980. He worked in the area of disordered semiconductors for his Ph. D. He then spent 3 years at the University of Southern California, 2 years at Wright Patterson AFB, Ohio and has been at the University of Michigan, Ann Arbor since 1985. His area of research is physics and design of semiconductor heterostructure devices. He has worked on electronic and optoelectronic devices based on traditional III-V materials, HgCdTe, SiGe and the nitrides. Recently he is working on exploiting ferroelectric mate-

rials within conventional semiconductor devices. Jasprit Singh has written seven textbooks. His recent books are: *Modern Physics for Engineers*, (Wiley Interscience, 1999) and *Semiconductor Devices: Basic Principles*, (John Wiley, 2001).



Tom Sosnowski

Tom Sosnowski attended undergraduate school at Johns Hopkins University and received a B.S. in electrical engineering in 1991. He attended the University of Michigan for graduate school and received his Ph.D. in 1998. His work at the University of Michigan Center for Ultrafast Optical Science included research on high-repetition-rate femtosecond amplifiers, OPA's, and ultrafast carrier dynamics in semiconductors. He is currently employed by Clark-MXR where his research concentrates on fiber oscillators and fiber optics.

W. Dexter Johnston, Jr.
Lucent Technologies, Inc.
Reading, PA

On-Line Access to IEEE Journals and CD ROM Package Available to EDS Members

The Electron Devices Society is committed to its on-line access and CD ROM versions of its periodicals. The Society is continuing its participation in the IEEE on-line access dubbed "OPeRA" (On-line Periodicals Research Area), to disseminate transactions, journals and letters on a secure world-wide web site for society members. This is now part of the larger IEEE Xplore interfaces which, when fully implemented later this year, will expand the access of journals back to 1988. Since the start of the project in January of 1997, EDS' *Transactions on Electron Devices* (T-ED) and *Electron Device Letters* (EDL) have been available on-line. In 1998, EDS also began offering an annual CD ROM in lieu of the print versions of T-ED and EDL, which was named the EDS CD ROM Package. Each Package includes the past year's issues of T-ED and EDL, as well as the technical digest of the International Electron Devices Meeting (IEDM).

Most of the IEEE journals are currently available on OPeRA. As an EDS member, you have free on-line access to the full articles of the EDS sponsored publications: T-ED, EDL and *Electrochemical and Solid-State Letters* (ESL). Due to the establishment of mutual access agreements with other IEEE societies and one publications committee, EDS members also have free on-line access to *Transactions on Information Theory*, *Journal of Lightwave Technology*, *Transactions on Microwave Theory and Techniques*, *Microwave and Wireless Components Letters* and *Transactions on Ultrasonics, Ferroelectrics and Frequency Control*. Free on-line access for EDS members was a new benefit given to EDS members as of the start of the 1999 IEEE membership cycle on 1 September 1998. In addition to the on-line access to periodicals included with EDS membership, *Transactions on Semiconductor Manufacturing* and the *Journal of Microelectromechanical Sys-*

tems are available on-line to their respective member subscribers of the print version.

OPeRA access is simple. IEEE members can go to the OPeRA site through the Xplore URL (<http://www.ieee.org/ieeexplore>) and register with their IEEE membership number. They are then given a PIN number and access to any publications that they are entitled to. We encourage all members of the society to explore this new option for getting your journals.

For the upcoming 2001 IEEE membership cycle, the 2000 CD ROM Package will be offered. If you would like to purchase the 1997, 1998 or 1999 CD ROM Packages, please contact the EDS Executive Office (contact information on page 2). As for the 2000 CD ROM Package, you can add this item to your 2001 IEEE membership renewal bill when you receive it this Fall.

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

AdCom Approves EDS Graduate Student Fellowship Proposal

At the May meeting in Toulouse, the EDS Administrative Committee (AdCom) approved a proposal by the Educational Activities Committee to award IEEE Electron Devices Society Graduate Student Fellowships beginning in 2001. One year fellowships will be awarded to promote, recognize, and support graduate level study and research within the Electron Devices Society's field of interest: Compound Semiconductor Devices and Circuits, Device Reliability Physics, Electronic Materials, Microelectromechanical Systems, Optoelectronic Devices, Photovoltaic Devices, Power Devices and ICs, Semiconductor Manufacturing, Vacuum Devices, and VLSI Technology and Circuits.

At least one fellowship will be awarded to students in the Americas, Europe/Mid-East/Africa, Asia-Pacific every year.

The prize for each winner will include a monetary award and plaque to the student and grants to the department and the faculty advisor in support of the student's project. A travel subsidy will be provided to each recipient to attend the IEDM for the presentation of the award.

The candidate must be an IEEE EDS student member at the time of nomination, be pursuing graduate education within the EDS field of interest on a full-time basis, and continue his/her studies at the current institution with the same faculty advisor for twelve months after receipt of award. The

Sponsor must be an IEEE EDS member. Previous award winners will be ineligible.

The EDS Newsletter will feature articles about the EDS Graduate Fellows and their work over the course of the next year.

The proposal has been sent to the Technical Activities Board Awards & Recognition Committee (TABARC) for approval. Details of the application process will be published in December following the approval of TAB at its November 18 meeting. EDS is targeting the award of its first group of Graduate student fellows in August, 2001.

*Arlene A. Santos
National Semiconductor Corp.
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AdCom Summary

(continued from page 2)

Johnston, Electronic Products Chair, to produce the 1999 EDS CD ROM Package, established home pages for EDL & T-ED (now on-line) and created a database for EDS conferences. Upcoming projects include working with IEEE's History Center to coordinate the development of the booklet and display for EDS' 50th anniversary, collaborating with Division I & IV Directors for the Divisions I & IV Region 8 Meeting (in Paris in October) and partnering with Hiroshi Iwai and Jim Clemens to coordinate the Regions 1 - 7 & 9 Chapters Meeting in San Francisco in December. The Executive Office will also soon begin to provide administrative support for the Editor-in-Chief and Editors of T-ED, as well as the new all electronic *Transactions on Device and Materials Reliability*.

Hiroshi Iwai, Regions/Chapters Chair, reported that 5 new chapters were formed in 1999, and so far, in 2000, one more has been formed with additional new chapters under discussion. The Region Champions and Chapter Partners Programs are not working as well as had been expected. Indeed, many chapters have requested that their respective partners be more active. On the other hand, many chapters have not been responsive to partner interaction. To address these issues, the Regions/Chapters Committee has formed a subset of their group called the Regional Chapter Coordination Committee (RCCC). This sub-committee will consist of a chair and vice chair along with chapter chairs and partners for the following 5 regional breakdowns: Regions 1-3 &

7; Regions 4-6; Region 8; Region 9; Region 10. The current region champion and chapter partner assignments will be discontinued. The RCCC will contact chapter chairs directly and discuss topics with them and the possibility of assigning a partner. A chapter will be allowed to refuse the assignment of a partner. On the other hand, multiple partner assignments for a given chapter will be allowable. Also, having the assignment of partners be optional, puts the focus on the ones that need assistance. AdCom approved the motion "To support the new structure of the committee and have a budget of \$25K for the partners travel" Iwai also mentioned that the new structure will necessitate a change in the Chapter of the Year Award, whereby chapters can be self-nominated by their chairs, as well as by any voting member of AdCom.

James Kuo, Membership Chair, reports that in 1999, EDS achieved an all time high membership of 12,977. The number of permanent EDS members has been growing rapidly and now totals 3,500. The percentage of EDS membership outside the U.S. continues to increase, with the figure now being 41%. Despite these numbers, James' committee needs to worry about how to grow new membership. Several of their ongoing projects include: membership promotions at major EDS technical meetings; mailing to non-EDS members with an interest in EDS' technical field; and distribution of promotional materials to EDS sponsored conferences. The committee will introduce new efforts, such as: direct mail campaign to non-IEEE member attendees of selected EDS conferences, encouragement of EDS chapters to

develop their own web pages and holding a contest for best website; production of a Russian language membership brochure; and an offer of a free one year EDS membership to IEEE members who are not EDS members.

In December, the decision was made to have the Vice President be the overall coordinator of the ten EDS technical committees. Therefore, new coordinator, Steve Hillenius, reports that he has received a lot of input from the technical committee chairs, and more is expected. He suggests that the chairs attend the AdCom meeting (particularly at IEDM) to increase participation. In addition, they can utilize the Executive Office support for arranging meetings, conference calls, mailings and creating web sites. The current technical interest profile (TIP) was reviewed, and it was agreed to have it more in line with the technical committee interests.

Following a short report from the host conference, Educational Activities Member, Arlene A. Santos, remarked that the committee membership has almost doubled since December due to the significant number of activities in progress. One of the primary initiatives of EduCom is to establish a series of short courses independent of conferences concerning leading edge technology. For this first year, the courses will remain domestic, with a goal to be international and web-based in 2001. This initiative will help accomplish one of the Society's goals to reach out to the practicing engineers by going to them locally.

Current Publications Chair, Steve Hillenius, announced he will step down by the next AdCom meeting, and Renuka Jindal

will become the new chair. Current activities of the Publications Committee include the selection of the winner of the Rappaport Award, the transfer of the Editorial office for T-ED to the EDS Office in Piscataway and the administrative support at the EDS Office for reduction in the cycle time for EDL and T-ED. It is expected that the centralization of administrative support at the EDS Office for EDL and T-ED will help to accomplish this goal. Doug Verret of Texas Instruments will replace Renuka Jindal as Editor-in-Chief of T-ED and the new manuscript system and administrative support for T-ED will be implemented in October.

Following the approval of the Repeat Meetings List, AdCom recommended that a line be added on the conference budget forms for student travel. It will not be a requirement, but it will at least make the conferences consider this use of funds and EDS will be able to see which conferences employ this practice. Tom Pearsall recommended that conferences contact the National Science Foundation, which provides funding to students studying in the US to attend conferences. The conference can apply for the funds, then pass them on to the students. The Fellows Committee reported that 49 nominations were received and advice was sought from 42 EDS Fellows. The selection of Fellows for 2001 will be made by IEEE in November. Nominations & Elections Chair, Bruce Griffing, called to everyone's attention that the deadline for nominations for officers and AdCom members for 2001 is October 20th. Nominations should be sent to the EDS Office.

Next on the agenda was a discussion of the proposed EDS Graduate Fellowship. It is intended to be a one year fellowship in various technical disciplines. The initiative is budgeted at a maximum of \$10K per award winner with about 4-5 fellowships per year, making a maximum annual allocation of \$50K. There will be a requirement that at least one fellowship be awarded to a student residing in Regions 1-7&9, Region 8 & Region 10. It is proposed that \$1K will be granted to the student's department, \$1K to the student's advisor, \$5K to the student, and up to \$3K in travel grants. To qualify, the student and their sponsor must be an IEEE and EDS member. The fellowships will first be awarded in July 2001. The AdCom unanimously approved the motion to establish the EDS graduate fellowship program.

Progress on a proposal to develop an ISDRS/IEDM winter meeting was reported by Agis Illiadis, Program Chair for the ISDRS last year. As proposed, the ISDRS would be

held either right before or right after the IEDM. The idea is also to have the ISDRS be sponsored by EDS. Requesting EDS financial sponsorship is not an issue, but AdCom did not want to vote on having the ISDRS with the IEDM until the IEDM is approached and they agree with this proposal. Agis Illiedo was asked to pursue this matter with the IEDM. The Compound Semiconductor Technical Committee has proposed satellite workshop. At this point there is little to go on since they are still evaluating how much potential interest there may be the proposal will be revisited in December. The next item was a report on Hiroshi Iwai & Renuka Jindal's trip to India in February 2000. Dr. Iwai gave DL's to both the Bombay and Dehli chapters. The India Chapter is doing a very good job, evidenced by its "Chapter of Year Award" in 1998.

In 1999, AdCom proposed that after the 2000 occurrence, it will no longer financially sponsor the Device Research Conference (DRC) unless it complies with IEEE's policies. The DRC's decision whether to comply with IEEE policies will be made in June at the 2000 DRC. If they decide to stay with EDS, they will have to return their surplus to EDS and ask for seed money every year. At the last AdCom meeting, EDS decided to sponsor a new publication, T-DMR, or *Transactions on Device and Materials Reliability*. It was approved by the various IEEE committees and will be co-sponsored with the Reliability Society (RLS). It will be electronic and web-based, with first issue due to be out in 2001 and free to the entire IEEE membership. The EDS Office will be providing administrative support for this new publication. AdCom received an update on the Historical Electronics Museum (HEM) Project in Baltimore, MD. The museum has opened Pioneer Hall, which contains a gallery of pioneers and supporting societies. The ED/SSC Baltimore chapter provides technical input, solicits donations locally, recognizes new exhibits and acts as a liaison to EDS and SSCS for donations. Its next exhibit, in the components gallery, will focus on miniaturization and integration. The estimated cost is \$10K and they are currently working on a proposal for grants from EDS and SSCS to support it. The IEEE Coordinator's Meeting was held by TAB and had sessions on best practices, society-chapter communications, etc. Arlene Santos, who attended this meeting on behalf of EDS, reported that two societies, Power Engineering and Engineering Management had many different best practices to offer. Many chapters recommended such activities as holding regional chapter chair meetings, and developing a

chapter handbook. President Cary Yang then outlined his EDS Goals starting with the importance of the Graduate Fellowship Program. Cary feels the program opens up a crucial avenue for student interest and more globalization. Implementing the Independent Short Course Program is also extremely important as well.

The Vacuum Devices Technical Committee would like to see the International Vacuum Electronics Conference (IVEC) develop an international IEEE Award. The current award is just a US award connected with the military establishment. IEEE USA - Technology Policy Council committee deals with only policies from the US viewpoint. They are a body with no power except to persuade through communication. They provide the IEEE position of issues currently before Congress and other policy-making bodies. Their most significant contributions to date have been in the development of HDTV Standards in collaboration with the FCC and involvement with Congress on *Spectrum* issues. On their current agenda are the evolution of the US Telecommunications infrastructure over the next decade, and software license and liability issues.

The ED Novosibirsk Student Branch was founded on March 8, 1999. It is the first student branch in Novosibirsk. There are 12 faculties, 50 chairs and more than 12,000 students in the Novosibirsk State Technical University (NSTU). The IEEE Student Branch keeps strong scientific technical connections with the other IEEE chapters in the Siberian and Russian Regions. The ED/MTT France Chapter, with 561 members, held two workshops in 1999. In 2000, they are sponsoring the International Symposium on Power Semiconductor Devices (ISPSD), the International Summer School, and the European Microwave Week. The ED/SSC University of Nis Student Branch Chapter is recovering after the problems in Yugoslavia, but to their surprise, membership is increasing. They established a desk with promotional materials in the beginning of the semester, and had a lecture by Ninoslav Stojadinovic on why students should join IEEE and EDS, as well as a dinner on the occasion of Faculty Day. They have joined with the older ED/SSC Yugoslavia Chapter for meetings and sponsored one DL (Vijay Arora). Both chapters organized the International Microelectronics Conference (MIEL). The ED Japan Chapter plans to have a domestic workshop and conference support. Its annual briefing session on the IEDM after the conference is planned for Jan 2001 in Tokyo. It gives an opportunity to hear the

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Regional and Chapter News

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

Report on the Third International Caracas Conference on Devices, Circuits and Systems (ICCDCS 2000)

by Francisco J. García Sánchez

ICCDCS 2000, was successfully held on March 15 - 17, 2000 at the Camino Real Hotel, in Cancun, Mexico. The Conference's title contains the word "Caracas" as a recognition to the city where it first took place in 1995. The second edition was held in 1998 in Venezuela's Margarita Island. The aim of this series of conferences, being held biannually at different locations in the Caribbean basin, is to provide a proper interdisciplinary forum for Region 9 to facilitate the exchange of recent information, knowledge and experience, pertaining to research, development, design, technology and applications of electron devices, the implementation of circuits, and their application to systems.

On this third occasion total attendance reached near 200 participants from North and South America, Europe, and Asia. The conference was co-organized by Simón Bolívar University (USB), Venezuela, and the National Institute for Astrophysics, Optics and Electronics (INAOE), Mexico; with the technical co-sponsorship of ED and CAS Societies; and the support of the Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV-IPN), Mexico, and Motorola, Inc, USA.

The program was divided into 15 oral sessions: 5 on Solid State Devices, 4 on Solid State Circuits, 3 on Telecommunications, 1 on Digital Signal Processing, 1 on Power Electronics, and 1 on Instrumentation and Measurement. Sessions were commenced with invited talks by experts from

each specific subject area. Additionally there was a Plenary Session featuring two Keynote Speakers: Gustavo Arenas, Corporate Vice-President of Motorola's Semiconductor Products Sector (SPS) for Latin-America, and Gilbert Declerck, President and CEO of the Interuniversity Microelectronics Center (IMEC), in Belgium. Eighty-six papers were presented by authors from 30 countries.

On Thursday evening there was a Panel Discussion Session dealing with "Electronics in Latin-America: Status and Perspectives." It was organized and moderated by Dr. Magali Estrada, chair of the EDS Mexico Chapter. A group of distinguished panelists from Argentina, Brazil, Chile, Cuba, Mexico and Venezuela presented their particular views on the subject to initiate the discussion. A special public session and ceremony, "Technology Licenses for Engineering Education in Ibero-America" was held during ICCDCS 2000 on March 15, where Motorola and Synopsys announced and signed two academic licensing agreements with the Ibero-American Science and Technology Education Consortium (ISTEC), a non-profit organization comprised of educational, research and industrial institutions. These licenses for educational and R&D purposes will be available through ISTEC to Latin American universities members of the Consortium. Motorola's academic license, gives educators and students access to its family of core-based digital signal processor technology and advanced DigitalDNA. Synopsys granted academic licensing of its Electronic Design Automation software. By having hosted this dual licensing agreement, ICCDCS hopes to contribute to broaden the knowledge base of state-of-the-art design practices in Latin American, fostering advanced scientific, engineering and technology education and academic research in the region.

Several social events were arranged, including two cocktail receptions and a conference banquet. The banquet was held at an exclusive resort in Isla Mujeres, a small tourist attraction island a few miles off the coast from Cancun. The boat round trip and the dinner itself, which includ-

ed live music and dancing, provided the ideal social gathering settings for strengthening personal relations among the participants. At dinner's end Prof. Adelmo Ortiz-Conde (USB), ICCDCS Steering Committee Chair, announced the coming fourth conference, which will take place during the first quarter of 2002 in the southern Caribbean Island of Aruba, Kingdom of the Netherlands. Dr. Juin J. Liou of the University of Central Florida, was elected as the next General Chair.

– Adelmo Ortiz-Conde, Editor

ED/SSC Baltimore Chapter holds a Distinguished Lecture on "Dielectric Isolation & SOI for Analog & High Voltage ICs"

The ED/SSC Baltimore Chapter hosted the EDS Distinguished Lecturer Dr. M. Ayman Shibib on June 8th, 2000, at the Historical Electronics Museum in Linthicum, Maryland. Dr. Shibib talked about dielectric isolation (DI) and silicon-on-insulator (SOI) for analog and high voltage integrated circuits.

Dr. Shibib started by reviewing the different types of DI and SOI substrates. The conventional DI process requires the deposition of a very thick polysilicon layer that acts as the substrate of the oxide isolated silicon islands. He presented then an overview of the three SOI substrates prepared by: oxygen implantation (SIMOX), layer splitting, and bond-and-etch-back.

Dr. Shibib then presented the progress of device technologies in DI and SOI spanning the past 20 years from the early eighties to the present. He noted an interesting observation about the progress of DI and SOI device technologies that started around 1982 with the introduction of high voltage bipolar DI technologies moving to bipolar-CMOS-DMOS DI technologies around 1987. The next development came around 1992 with the introduction of complementary bipolar devices in SOI, followed by bipolar-CMOS-DMOS in SOI around 1997. It was noted that the interval of these technology development steps was roughly about five years.

Examples of applications of DI technologies were presented in telecommunications (analog line cards), optically coupled solid state relays, automatic test equipment and high voltage motor control. Then, Dr. Shibib discussed the limitations of the DI substrates in terms of maximum wafer diameter size and ability to define fine linewidth.



He argued that for SOI wafers these limits do not exist, and presented the applications of SOI technologies to high speed amplifiers, analog-front-end digital subscriber lines, pin drivers for automatic test equipment, plasma display panel drivers, automotive and radio-frequency (RF) ICs.

The issues of using SOI substrates were discussed next: cost, availability, power dissipation, defect density and gettering. Dr. Shibib concluded by stating that SOI is particularly suited for analog and power ICs; the cost of SOI substrates limit their wide spread use for analog applications although advanced digital technologies are finding significant benefits in SOI, and that SOI is very useful for system-on-a-chip that includes ultimately digital, mixed signal, analog and power.

– Ayman Shibib, Editor

AP/CAS/ED/MTT Kitchener-Waterloo Chapter

by Arokia Nathan

The chapter has hosted two very interesting lectures this year, which were well attended by IEEE members, including students. All lectures were held at the University of Waterloo.

On January 25, Dr. Yervant Zorian, Chief Technology Advisor of LogicVision presented a lecture on Embedded-Quality for test. He described the basic concept of embedding test functions onto IC design, and further elaborated on associated challenges and quality risks when dealing with the emerging deep submicron technologies and the complex system-on-chip, which now needs a new wave of embedded quality insurance functions. Dr. Zorian discussed such design for quality trends and solutions, and analyzed their impact not only on go/nogo test, but also on a set of expanded quality insurance functions to support debug, measurement, diagnosis and repair.

On June 16, we had Professor Henry Baltes from the Swiss Federal Institute of Technology, Zurich, Switzerland, who presented a very interesting lecture on technology transfer, from Research to Commer-

cialization. He started with two quotations: (1) "It is impossible to prevent technology transfer; you better hand it over as long as you get something in return." (2) "It is useless to look for technology ready to transfer at a University; there is none." The talk went on to reconcile this seeming contradiction. Dr. Baltes described the transfer of science to technology and technology to products based on his 20 years of experience with universities, companies, and transfer organizations. He elaborated on the notorious transfer obstacles and provided three promising transfer methods with examples from the area of integrated microsystems, which include CMOS compatible MEMS, a flow sensor spin-off company, an infrared intrusion detection microsystem, and monitoring of the wire bonding process.

On June 17, the chapter celebrated the conferral of the Honorary Degree of Doctor of Engineering, University of Waterloo, upon Professor Henry Baltes. The ceremony took place at the Spring Convocation of the University of Waterloo. In his convocation address to the graduating class from the Faculty of Engineering, Dr. Baltes talked about the changing world and globalization, and how we belong to the class of people benefiting from these changes because of our technical education. But he also pointed out that while being part of this globalization is crucial for the survival of individuals and whole countries, we should also be aware of those who are left behind, which include individuals, whole societies, and perhaps even one whole continent. He gave specific mention of the works of Dr. Ralf Dahrendorf, Professor of Economics at Oxford and the Global Responsibility project proposed by the Swiss theologian Hans Küng, which is now being pursued by the Global Ethics Foundation.

The chapter also celebrated the conferral of Distinguished Professor Emeritus, on Dr. Jiri Vlach, at the Spring Convocation of the University of Waterloo. Dr. Vlach was a former professor of the University of Waterloo. He is an IEEE Life Member and the recipient of Semi-Centennial Medal of the IEEE Circuits and Systems Society.

Both of these events were well celebrated in terms of a technical get-together of IEEE members from both the University of Waterloo and companies in the region, including ComDev International Ltd., DALSA Inc., and Gennum Corp.

– Arokia Nathan, Editor

Report from the International Conference on Modeling and Simulation of Microsystems, MSM2000

by Andreas Wild

The third edition of the International Confer-

ence on Modeling and Simulation of Microsystems, MSM2000, took place in San Diego, California, USA, on March 27-29, 2000. The Conference was dedicated to modeling, simulation and scientific computing supporting the integration of heterogeneous elements into monolithic structures, in a multi-disciplinary context, bringing together researchers, designers, programmers, and tool vendors in various disciplines, providing a frame for a fruitful dialogue and cross-fertilization.

MSM2000 had 15% more submissions than last year, featuring more than 200 papers from 31 countries, in addition to substantive keynote lectures, delivered by recognized leaders in the field. The oral presentations and poster sessions consisted of papers roughly classified in two main categories: methodology, including computer aided design systems, algorithms, numerical methods and advanced models, and applications in semiconductors, materials, DNA chips and chemical devices, micro-electromechanical devices, sensors, actuators, optical and imaging devices etc. The poster sessions generated the highest interest, sparking discussions way beyond the allocated time.

The next edition of the International Conference on Modeling and Simulation of Microsystems MSM2001 will take place at the Hilton Oceanfront Resort, Hilton Head Island, South Carolina, USA, March 19-21, 2001. The home page URL is <http://www.cr.org/MSM2001>.

–Paul Yu, Editor

Europe, Middle East & Africa (Region 8)

2000 International Conference on Microelectronics (MIEL)

by Dr. Ninoslav Stojadinovic

The 22nd International Conference on Microelectronics (MIEL 2000) was held from 14-17 May 2000 at the Faculty of Electronic Engineering, University of Nis, Yugoslavia. The conference was organized by the IEEE ED/SSC Yugoslavia Chapter in co-operation with the Faculty of Electronic Engineering and Ei-Holding Co. - Nis and under the auspices of Serbian Ministry of Science and Technology and Yugoslav Ministry of Science and Development, Yugoslav Ministry of International Cooperation, Yugoslav Academy of Engineering and City Assembly of Nis.

This year the MIEL conference reached a majestic age of a quarter century and this anniversary represented a timely opportunity to give insight into the evolution of this



Honorary Doctor of Engineering, Henry Baltes, addressing the Faculty of Engineering graduating class, University of Waterloo.



Panelists at the opening ceremony of MIEL.

world known conference, while records and memories are still intact. MIEL was founded in 1974 in the former Yugoslavia as an annual event. The conference became a real international event in 1984, when for the first time a significant number of foreign participants attended. Because of disintegration of Yugoslavia, the conference was not held in 1992 and was re-established in 1993 as a biennial event. For the 1995 and 1997 occurrences, the IEEE Electron Devices Society (EDS) provide technical co-sponsorship support. This year, the conference received co-sponsorship support from the EDS for the first time.

The quarter century of MIEL coincides with the 40th anniversary of the Faculty of Electronic Engineering in Nis, and on that occasion, the ED/SSC Yugoslavia Chapter and the Faculty decided to present awards for outstanding contribution to the MIEL conference. At the MIEL 2000 opening ceremony, the Chapter awarded Prof. Gady Golan, Prof. Juin Liou, Prof. Adrian Rusu, Prof. Krishna Shenai and Prof. Hei Wong, and the Faculty awards went to the Bulgarian Academy of Science, Interuniversity Microelectronics Center - IMEC, Prof. Elena Atanassova, Prof. Vitezslav Benda, Prof. Helmut Detter, Prof. Vyacheslav Pershenkov and Prof. Gerhard Wachutka.



Prof. Krishna Shenai, Prof. G. Mollov, Prof. Philipp Philippov, and Prof. Georgi Sloyanov at the Laboratory for Semiconductor and Hybrid Technologies directed by Prof. Philippov at the Technical University of Sofia, Sofia, Bulgaria.

This MIEL edition was originally scheduled for September 1999, but because of the sad war events in Yugoslavia in the first half of 1999 it was rescheduled for May 2000. These events and their consequences had put the organizers into great difficulties, which had been overcome by the great efforts and enthusiasm of the organizing staff and with the help and understanding of IEEE. We are particularly thankful to the EDS for their understanding and continuous support and to the IEEE Region 8 Conference Committee, which provided

valuable support at the critical moment.

As in previous years, topics covered by the technical program included all important aspects of microelectronic devices and circuits, ranging from Semiconductor Physics and Technology, Device Physics and Technology, Hybrid Technologies, Microsystems Technologies, Power Devices and ICs, Device Reliability and Characterization, and Circuit Design and Testing. A separate session was devoted to each of these seven sessions in the MIEL 2000 program. The short courses, Power Devices and ICs and Microsystems Technologies, were held on 14 May 2000. The total of 45 domestic and 47 foreign participants took part at the conference, representing 27 countries from all over the world (Australia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, China, Czech Republic, Egypt, Estonia, Germany, Great Britain, Hong Kong, Holland, Ireland, Israel, Italy, Japan, Korea, Macedonia, Norway, Poland, Romania, Russia, Ukraine, USA, and Yugoslavia). The total of 13 keynote invited papers and 93 regular papers (44 in oral and 49 poster sessions) were presented. The conference proceedings (two volumes, 766 pages) were published through the IEEE Book Broker Program.

Based on evaluation of the quality of the papers and presentations, three Best Paper Awards were presented to A. Vujanic (Technical University of Vienna) for an oral paper "Silicon microstructure for precise measurements of mechanical moments", to J. Nicolics (Technical University of Vienna) for a poster paper "Investigation of the thermal performance of micro-whisker structured silicon

heat spreaders for power devices", and to P. Igic (University of Wales, Swansea) for student paper "Investigation of the thermal stress field in a multilevel aluminum metalization in VLSI systems using finite element modeling approach". The international scientific journal *Microelectronics Reliability* also awarded the paper "Rise-time effects in ggnMOSf under TPL stress" by G. Boselli, T. Mouthan and F. Kuper from University of Twente.

As is among best traditions of MIEL conferences, the social program of this year's conference was particularly rich, with a conference banquet and gala-dinner as highlights. In general, besides the high quality of presentations, MIEL conferences are flavored by the friendly atmosphere and great hospitality of the organizers and people of Nis. This special charm adds to very positive impressions participants bring from MIEL and Nis and is one of the reasons why one rarely attends MIEL just once: one who comes once will almost certainly come again. So, we are very much looking forward to welcoming old and new friends at MIEL 2002 in Nis.

IEEE Bulgaria Section

by Jordan N. Kolev

Prof. Krishna Shenai, Editor-in-Chief of IEEE EDS Newsletter and EDS Distinguished Lecturer visited the IEEE Bulgaria Section on June 29 - July 4, 2000, and gave two lectures at the Technical University of Sofia, and the Technical University of Varna, on "RF MicroSystem Technologies" and "Power Electronics in the New Millennium." These talks were attended by over 50 people consisting of students, faculty, and researchers from local industries. Prof. Shenai also visited several research institutes including the Telecommunication Institute and a mobile exchange donated by Ericsson. He discussed how IEEE EDS can help its members in this region and pointed at specific membership programs of interest to its members.

ED/MTT/AP St. Petersburg Chapter

by Sergei Zagriadski

During spring 2000, the ED/MTT/AP St. Petersburg Chapter technically supported and co-sponsored several large-scale conferences and hosted a number of seminars.

The 25th International Symposium on Spin Waves was held in St. Petersburg from May 16-19, 2000. It was organized by the Council on Condensed Matter of the Russian Academy of Sciences and A.F. Ioffe Physico-Technical Institute and was supported by the Russian Foundation for Basic Research. Contributions concerning the following main topics were presented: spin

waves in thin films and multilayers; nonlinear phenomena and relaxation processes; magnetic excitations in low-dimensional substances and disordered media; interactions of spin waves with other excitations; spin waves in giant-magnetoresistance materials; scattering of neutrons and other particles from spinwaves; dynamics of magneto-domain walls. Over 70 participants attended the Symposium and presented over 60 oral and poster papers.

The International Seminar "Day on Diffraction Millennium Workshop" (May 29 - June 1, 2000) was organized here by the Faculty of Physics of the St. Petersburg State University, University of Florence, St. Petersburg Branch of Steklov Mathematical Institute, University of Michigan and Euler International Mathematical Institute. It is an annual seminar on mathematical methods in the diffraction theory, traditionally held since the late 1960s. This year the seminar was co-sponsored by the Russian Foundation for Basic Researches and the IEEE Antennas and Propagation Society. The Seminar brought together over 90 scientists working in the area of mathematical theory of diffraction and propagation and researchers interested in applications of wave phenomena of various nature. Over 70 oral reports were presented by participants from Russia, U.K., USA, Belarus, Canada, Czech Republic, Finland, France, Iran, Israel, Italy, Japan, Mexico, and Turkey.

The 7th International Student Seminar on High Temperature Superconductors (HTS) and Ferro-electrics at Microwaves was held June 3 - 8, 2000 in Birmingham, England. It was organized by the University of Birmingham and St. Petersburg State Electrotechnical University.

A student competition in problem solving for junior students studying radio engineering in regional Universities (April 24, 2000) was organized by the St. Petersburg State Technical University and the St. Petersburg State Electrotechnical University. Over 30 students from 6 universities took part in the competition and three winners received monetary awards from the ED/MTT/AP St. Petersburg Chapter.

For further information about conferences organized by the chapter in the St. Petersburg area please contact Prof. Sergei Zagradi; E-Mail: zagr@radio.stu.neva.ru.

MTT/ED/AP/CPMT Saratov-Penza Chapter

by Michael Davidovich

An international conference, "Analytical Theory of Automatic Control and its Applications," was held at The Saratov State Technical University (SSTU), June 5-9,

2000. The conference Chairman was Prof. V.A. Podchukaev (SSTU). There were 105 participants and 67 presentations structured into five oral sessions: analytical methods of analysis for automatic control systems, analytical methods of synthesis for automatic control systems, machine intellect, combined synthesis, and algorithmic, technical and program support of modern systems of automatic control. The conference is continuing the traditions in the area of automatic control at SSTU, which were started several years ago by previous conferences in 1997 and earlier events.

The chapter has also held two technical presentations on ED and AP topics and an administrative meeting. For more detailed information, please contact Dr. Michael Davidovich, Chapter Chair (david@star.sstu.runnet.ru).

ED/COM/AP/MTT/EMC Tomsk Chapter

by Oleg Stoukatch

Efforts to increase the level of IEEE activities in the Siberia and Far East regions of Russia are in progress. There has been significant progress in the last several years. A good example is the International Symposium, "Application of the Conversion Research Results for International Cooperation" (SIB-CONVERS): while SIBCONVERS'95 hosted about 50 participants, the 1999 edition of the conference, which was technically co-sponsored by IEEE, was attended by 300 participants from 8 countries.

Another effort was the formation of the ED/COM/AP/MTT/EMC Tomsk Chapter. The Interim Chapter Chairman is Oleg V. Stoukatch (Tomsk State University of Control Systems and Radioelectronics). In the first half of this year, the chapter has held two technical meetings and we plan to hold another four meetings by the end of the year. In April, we presented the 1994 IEDM Videotape Course to our students and plan to extend this direction of our activity by borrowing more tapes from the EDS Videotape Library.

Currently, the chapter programs are focused on three main aspects: an effort to increase membership by participation of scientists and students in IEEE activities; the utilization of Videotape library; and cooperation in organizing international conferences covering various aspects of radioelectronics, radars, UHF elements production, CAD used for this purpose, and material science. We will continue to make efforts to include our specialists in the scientific and educational process worldwide; and in this respect, count on further precious assistance of IEEE.

MTT/ED/AP/EMC Georgia Chapter

by Zaur Tchakhnakia

Elections for new chapter officers were performed. Prof. R. Zaridze, Chapter Chair, and Dr. N. Khuchua, Chapter Secretary, were re-elected for the next term. Dr. Z. Tchakhnakia, Department Head of I. Javakhishvili Tbilisi State University, was elected as Chapter Vice Chair, and Dr. D. Karkashadze as Chapter Treasurer.

Preparation of the chapter's presentation for the 2000 IEEE Division I & IV Region 8 Chapters Meeting in Paris were discussed at the recent chapter meeting. It was decided that Zauri Tchakhnakia would represent the chapter at the meeting and give a report on chapter activities. Among other important issues, the rotation of chapter members in 2001 was discussed, as well as the status of preparation for the Symposium "Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory", to be held in Tbilisi in November, 2000.

Scientific and technical information in the field of antennas and propagation and semiconductor technology (Tbilisi State University, Tbilisi Technical University, Institute of Physics of the Georgian Academy of Sciences, etc.) has been obtained and disseminated. The chapter organizes regular meetings with students, aimed to better explain the goals of IEEE and its activities.

– Ninoslav Stojadinovic, Editor

IEEE-EDS Israel Chapter

by Gady Golan

"The 18th Annual Conference of the Israel Vacuum Society (IVS), was held on November 17, 1999, in Weizmann Inst. Rehovot. The sessions were: nanocrystals and vacuum dots, Surface interactions in biosystems, Nanocharacterization, Integrated microsystems and MEMS.

The "Giga scale CMOS technology" workshop was held at the Technological Academic Inst., Holon, on November 21, 1999. Opening lecture: Dr. Gady Golan: Application of Atomic Force Microscopy and Scanning Tunnel Microscopy For Microstructure Investigation Of Neutron Irradiated Silicon Detectors" The lecture is available on video. Five student pairs presented their final projects. The best presentation won a \$50 prize and a formal letter from IEEE-ED Israel Chapter.

The 2001 President-Elect of IEEE, Prof. Joel Snyder, visited Israel in March 30-31, 2000. Prof. Ady Seidman, Chairman of IEEE Israel, joined him throughout his professional visits to Israeli universities (Technological Inst. of Holon), as well as to some of the Israeli leading industries. Prof.

Snyder gave a lecture at the Technological Institute of Holon to the Faculty of Electrical Engineering students. Following his lecture an open discussion was initiated on the trends in the electrical engineering industry world-wide. At the end of his trip to Holon, Prof. Snyder had visited the Microelectronics Center, directed by Dr. Gady Golan.

The IEEE ED Israel Chapter arranged a meeting at the Technological Academic Institute - Holon on May 4, 2000. The main event at this meeting was a lecture of Mr. Alex Axelevitch (a Ph.D. student) on "Bilayer structure of Pd-Al₂O₃ thin films for UV vidicon applications". The meeting was organized by Dr. Gady Golan and Prof. Nathan Croitoru, IEEE ED Israel Chapter Chair. The audience was mostly composed of local students from the Faculty of Electrical Engineering at the Technological Inst. of Holon.

IEEE ED Israel Chapter arranged a meeting at the Technological Academic Institute - Holon on June 1, 2000. The main event at this meeting was a lecture by Dr. Gady Golan, Secretary of IEEE ED Israel Chapter on: "Atomic Force Microscopy Investigation of Dislocations Structure And Deformation Characteristics In Neutron Irradiated Silicon Detectors". The audience was mostly composed of local students from the Faculty of Electrical Engineering at the Technological Inst. of Holon.

– Gady Golan, Editor

ED Central/South Italy Chapter

by Salvatore Bellone

During the last year the chapter organized a series of seminars:

In November, 1999, Prof. Mikael Ostling of the Royal Institute of Technology, Stockholm, (Sweden) as an EDS distinguished lecturer gave two talks on "Silicon Carbide Based Devices" and "Silicon Carbide: Material and Processing" held respectively at the University of Salerno and at the University of Naples. Besides a profound introduction into material and process problems, Mikael Ostling gave an excellent overview regarding SiC-based new high power and high frequency devices. These lectures were attended by about 30 scientists of the region and more than 200 students. The event has also helped promote the IEEE/EDS activities to the audience, which resulted in the following affiliation of more than 30 new student members for EDS.

In May 2000, Prof. Martin Green, from the University of New South Wales, Sydney (Australia), gave two lectures, titled "Photovoltaics: Important Issues and Applications of the Next Decade" and "High Efficiency Silicon Solar Cells" also within the EDS Dis-

tinguished Lecturer program. These lectures, held in Salerno and Portici and jointly organized with the National Research Centre for Photovoltaics (ENEA, Portici), gave the opportunity to listen to an excellent overview regarding the state-of-the-art of silicon-based photovoltaics, and also help to stimulate discussions between local electron device specialists and students about the future developments in photovoltaics.

Another event sponsored and co-organized by our chapter was a seminar cycle (June 2000) in Naples and Salerno regarding information technology. One aim of this event was to bring together academics with the local semiconductor industry. Ing. Giuseppe Savarese, Micron (Avezzano), spoke about "Recent developments regarding semiconductor memories," Ing. Roberto Sabella, Ericsson Research Centre (Rome), introduced questions regarding the "Technology and evolution of telecommunication networks," and Dr. Massimo Melanotte, ST Microelectronics (Catania), gave a lecture on "Non-volatile memories: technology and future developments." In connection with this seminar cycle, also attended by a large number of students, the possibility of having graduating students develop their thesis subject in collaboration with industries was discussed.

We plan to organize a further meeting on microelectronics in October 2000, and intend to use this event eventually for the formation of a local student chapter.

– Christian Zardini, Editor

Asia & Pacific (Region 10)

ED/LEO Australia Chapter

by Chennupati Jagadish

The ED/LEO Australia Chapter hosted a recent visit from EDS Distinguished Lecturer, Dr. Alfred Ipri from Sarnoff Research Laboratories, Princeton, New Jersey, USA. Dr. Ipri gave an excellent seminar on "Flat Panel Displays" at the Australian National University in April, which was attended by about 30 people.

The 11th International Semiconducting and Insulating Materials Conference, held at the Australian National University during 3-7, July 2000, was technically co-sponsored by the Australian Chapter. The conference was attended by 80 participants from 19 countries. Topics covered included: Gallium Nitride, Low-Temperature Gallium Arsenide, Quantum Well Intermixing, Quantum Wires, Quantum Dots, Silicon Carbide, Zinc Selenide, Optoelectronic Devices, MESFETs. The conference social program included dances by the Aboriginal and Torres Strait Island artists.

For further information about Chapter activities, please contact the Chapter Chair: Professor C. Jagadish, Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering, The Australian National University, Canberra, ACT 0200. TEL: 61-2-6249-0363, FAX: 61-2-6249-0511, E-Mail: c.jagadish@ieee.org

IEEE LEO/ED Victorian Section Chapter

by Dalma Novak

The LEO/ED Victorian Chapter hosted a recent visit from EDS Distinguished Lecturer, Dr. Alfred Ipri from Sarnoff Research Laboratories, Princeton, New Jersey, USA. Dr. Ipri gave an excellent seminar on "Flat Panel Displays" at the University of Melbourne, on the 27th of April, which generated much interest from the audience of approximately 35.

On the 10th of July, the Joint Chapter presented a seminar by Professor Gunnar Edwall from Ericsson Generic Technologies, Ericsson Radio Systems AB, who discussed "Photonics Components in the Terabits Society".

For further information about chapter activities, please contact Dr. Dalma Novak, Department of Electrical and Electronic Engineering, The University of Melbourne, Parville VIC 3052, Australia, TEL: +61-3-9344-5789; FAX: +61 3 9344 7412, E-Mail: d.novak@ee.mu.oz.au.

ED/MTT India Chapter

by K.S. Chari

The Chapter organized the following events in the last quarter to serve different sections of the members more effectively:

- National Symposium on Electronics Technology (NASET-2K) exclusively for Students

The Chapter together with the Electronics Science Dept. of Kurukshetra University organized the NASet-2K to foster students' interest in science and engineering and the activities of ED/MTT from the northern region of India. The symposium consisted of theme talks, design competitions, hardware model demonstrations and a quiz. The Chapter instituted 10 awards for the Symposium. The Symposium was held 7-8 April 2000 and was attended by about 200 students. The award winners for the various competitions are: Paper presentations (Electronics & Computer section) — Mukesh Sethi and Kapil Mahawar, Tarun Das and Raman-deep Singh (REC Kurukshetra), Saurabh Gupta and Nishant Kulshreshtha (KU), Tarush Verma (SIMIT Radaur); Technical Quiz — Sunil Taya and Pankaj Mittal (Electronics Dept, KU), Sachin, Vikas Rai,

Ashwini and Harsh (University College, Kurukshetra), Swati (Computer Science Dept, KU), Tarun (REC, KU); Hardware competition — Rakesh Kumar, Pramod Kumar and Mohan Kumar (DCE, Delhi), Deepak Gupta, Balakrishnan Gupta and Punit Gupta (JMIT Radaur), Balkar Saini (Electronic Science Dept, KU), Vikas and Piyush (UCK, Kurukshetra). Prof. P.J. George, Dr. Dinesh Kumar, Mrs. Anurekha Sharma, Ms. Portia Sharma and Mr. Sandeep Chouhan and student volunteers of the Electronics Science Dept. hosted the event. The Chapter Chair, Dr. K.S. Chari, from the Ministry of Information Technology, inaugurated the Symposium and the hardware contest and delivered the keynote address.

- IEEE EDS STAR Program

The fourth meeting was held at Kurukshetra University on 7th April, 2000. The Chapter Chair addressed the STAR faculty of the schools and chapter STAR coordinator Ms. Anurekha. The meeting discussed the program for the next 6 months.

- An invited lecture on Laser Communication

Components and Devices was delivered by Mr. N. Mansharamani, the Former Deputy Director of Instruments Research and Development Organization (Dehradun) at the Ministry of Information Technology on 26th June 2000. About 50 participants attended the lecture. The talk touched on the different aspects of laser communication, the components and devices driving the developments in the area and the prospects offered by this mode of communication as a high speed and secure link.

- Representation at MTTs Chapter Chairpersons meeting

Prof. (Ms) Bharathi Bhat, from IIT Delhi and a Chapter Ex-com member, have attended the MTTs Chapter Chairpersons Meeting held in Boston on 13th June 2000 and presented the progress of various chapter activities and initiatives.

- National Seminar on Fibre Optics and Communication (Fibrecom 2000):

The chapter, in association with the Fibre Optic Association Inc. (USA), will organize the Fibrecom 2000 at Aurangabad. This event will provide a common forum for the industry and users within the country. The Seminar was scheduled for 1-2nd July 2000.

For further information, please contact Dr. K.S. Chari, Director, Micro Electronics & Photonics Division, Department of Electronics, C.G.O. Complex, New Delhi, India, TEL: 91-11-4361464; FAX: 91-11-4363082; E-Mail: chariks@usa.net.

AP/ED Bombay Chapter

by Juzer Vasi

During the April-June, 2000 time period, the Chapter organized a well-attended talk on "Quantum Computing" by one of the pioneers in the field, Dr. Lov K. Grover of Bell Laboratories, USA on 20th April 2000. During his talk, Dr. Grover touched upon various issues, including the theory of quantum computation, the potential benefits, and the possibility of fabricating devices which could form the basis of a quantum computer. He used the example of exhaustive search which requires N steps using a classical computer, but could be accomplished in square root of N steps using a quantum computer. Over one hundred persons attended the talk. The audience included computer scientists, physicists as well as electrical engineers.

The Chapter is co-sponsoring, together with the IEEE Bombay Section, a seminar on "VLSI: Systems, Design and Technology" to be held at the Indian Institute of Technology, Bombay December 9-11, 2000. This seminar will focus on several aspects of VLSI, and will have invited, contributory and tutorial papers. For further information, please visit the website: www.ee.iitb.ernet.in/~microel/ or contact by email: vsdt2000@ee.iitb.ernet.in.

For further information, please contact Juzer Vasi, Electrical Engineering Department, IIT Bombay, Powai, Mumbai 400076, India. FAX: +91-22-5783480, E-Mail: j.vasi@ieee.org.

ED Malaysia Chapter

by Burhanuddin Yeop Majlis

Prior to the 2000 IEEE International Conference on Semiconductor Electronics (ICSE2000), the ED Malaysia Chapter is organizing a series of IEDM Video Short Course. This short course is open to university staff and students. The first video short course entitled, 'MBE and MOCVD-New Structures and Devices,' was held at the Faculty of Engineering, Universiti Kebangsaan Malaysia on May 31, 2000. The second IEDM video short course entitled 'Advanced Devices Characterization and Test Methodologies' will be held at the same place on September 23, 2000.

For further information, please contact Prof. Dr. Burhanuddin Yeop Majlis, Director, UKM-TM Microelectronics Research Centre, Faculty of Engineering, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia. TEL/FAX: 603-89265861, E-Mail: burhan@vlsi.eng.ukm.my

REL/ED/CPMT Singapore Chapter

by Y. C. Ng

A 4-evenings (June 6-9) video course on Sub-100 NM CMOS was organized by the IEEE Electron Devices Society, IEEE REL/ED/CPMT Singapore Chapter and Singapore Section Continuing Education Program, and in association with The School of Electrical and Electronics Engineering Nanyang Technological University. The turnout was extremely good with more than 95 attended as both graduate students and IEEE members. For further information, please contact Dr. S. H. Ong, TEL: +65-5595-452. E-Mail: soon.huat.ong@nsc.com.

– W. K. Choi, Editor

ED Korea Council Chapter

by Se-Geun Park

The 2000 Asia-Pacific Workshop was held at Okinawa, Japan for 3 days from June 28. The theme of the Workshop was "Fundamentals and Application of Advanced Semiconductor Devices." It was jointly organized by the Institute of Electronics Engineer of Korea (IEEK), the Institute of Electronics, Information and Communication Engineers (IEICE) of Japan, and IEEE ED -Tokyo Chapter. The annual workshop has been held under the name of "Advanced LSI's and Devices" for 7 years, and the title was changed in order to encourage more participation from the Asia and Pacific region. 48 papers were presented and the number of participants was 69 from Japan, Korea and France. Next year's workshop will be held in Korea in July. The organizing committee hopes to have wide participation, engineers and scientists from university, research institution and industry, from the Asia-Pacific region. For more details, please contact Professor Roh of Sunkyun-kwan University (yhroh@yurim.skku.ac.kr).

– Hisayo Momose, Editor

EDS Beijing Chapter

by Jin-Jun Feng

On June 21, 2000, the EDS Chapter in Beijing organized a Distinguished Lecture at the Beijing Vacuum Electronics Research Institute. The invited speaker, Professor Paul Yu, is an EDS Chapters/Regions Committee member and his presentation topic was "Recent Advances in Photonic Devices for RF/Wireless Communication Applications". The presentation provided a tutorial discussion on the requirements of microwave photonics link for CATV and wireless communication applications, and the challenges to the optical devices such as lasers, external modulators and optical detectors

(continued on page 19)

EDS Meetings Calendar

(As of 29 August 2000)

The complete Calendar can be found at our web site: <http://www.ieee.org/organizations/society/eds/>. Please visit!

October 1 - 3, 2000, T **IEEE CONFERENCE ON INTELLIGENT TRANSPORTATION SYSTEMS**, Location: The Ritz-Carlton Hotel, Dearborn, MI, Contact: Toshio Fukuda, Tel: 81-52-789-4478, Fax: 81-52-789-3909, E-Mail: itsc2k@mein.nagoya-u.ac.jp, Deadline: Past Due, www: <http://www.ewh.ieee.org/tc/its/cfp-itsc-2000.html>

October 2, 2000, T **MANUFACTURING SCIENCE AND TECHNOLOGY GROUP PROGRAM**, Location: Boston, MA, Contact: Alain Diebold, Tel: (512) 356-3146, Fax: (512) 356-7640, E-Mail: alain_diebold@sematech.org, Deadline: Past Due, www: Not Available

October 2 - 4, 2000, T **EUROPEAN GALLIUM ARSENIDE & RELATED COMPOUND APPLICATION SYMPOSIUM**, Location: CNIT, La Defense, Paris, France, Contact: Alain Cappy, Tel: 33-03-20-19-78-59, Fax: 33-03-20-19-78-92, E-Mail: alain.cappy@iemn.univ-lille1.fr, Deadline: Past Due, www: <http://www.eumw.com>

October 2 - 5, 2000, * **IEEE INTERNATIONAL SOI CONFERENCE**, Location: Sheraton Colonial Hotel and Golf Club, Wakefield, MA, Contact: Bobbi Armbruster, Tel: (310) 305-7885, Fax: (310) 305-1038, E-Mail: bacm@mediaone.net, Deadline: Past Due, www: <http://www.drscdca.com/~soiconf>

October 2 - 5, 2000, * **IEEE INTERNATIONAL SYMPOSIUM ON COMPOUND SEMICONDUCTORS**, Location: Hyatt Regency Monterey Resort and Conference Center, Monterey, CA, Contact: LEOS Conference Activities, Tel: (732) 562-3899, Fax: (732) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: Past Due, www: <http://www.ieee.org/organizations/society/leos/LEOSCONF/ISCS/iscsgenl.html>

October 2 - 6, 2000, T **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS & ANALYSIS**, Location: Hotel Westin Bellevue, Dresden, Germany, Contact: Wolfgang Gerling, Tel: 49-0-89-234-22825, Fax: 49-0-89-234-23828, E-Mail: wolfgang.gerling@infineon.com, Deadline: Past Due, www: <http://www.vde.de/ESREF2000>

October 3 - 6, 2000, T **INTERNATIONAL SEMINAR/WORKSHOP ON DIRECT & INVERSE**

PROBLEMS OF ELECTROMAGNETIC & ACOUSTIC WAVE THEORY, Location: Tbilisi State University, Tbilisi, Georgia, Contact: Mykhaylo I. Andriychuk, Tel: 380-322-651944, Fax: 380-322-637088, E-Mail: andr@iapmm.lviv.ua, Deadline: Past Due, www: <http://www.ewh.ieee.org/soc/cpmt/ukraine>

October 10, 2000, T **WORKSHOP FOR TEACHING PHOTONICS AT EGYPTIAN ENGINEERING FACULTIES AND INSTITUTES**, Location: The National Institute of Laser Enhanced Science at Cairo University, Giza, Egypt, Contact: Ibrahim A. Salem, Tel: 20-2-258-0256, Fax: 420-2-3119958, E-Mail: ia.salem@ieee.org, Deadline: Past Due, www: <http://members.xoom.com/workshop2000/workshop2000.htm>

October 10 - 14, 2000, * **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, Location: Sinaia Hotel, Sinaia, Romania, Contact: Doina Vancu, Tel: 40-1-411-46-61, Fax: 40-1-230-14-48, E-Mail: cas@imt.ro, Deadline: Past Due, www: <http://www.imt.ro/CAS>

October 11, 2000, * **IEEE EDS INDEPENDENT SHORT COURSE ON DEVICES AND CIRCUITS FOR FIBER OPTICAL COMMUNICATIONS**, Location: Wyndam Hotel, San Jose, CA, Contact: Emily A. Sopensky, Tel: (512) 452-2448, Fax: (512) 452-8950, E-Mail: e.sopensky@ieee.org, Deadline: Not Applicable, www: <http://www.ieee.org/organizations/society/eds/2000courses.html>

October 15 - 20, 2000, T **PROGRESS IN SEMICONDUCTOR-ON-INSULATOR STRUCTURES AND DEVICES OPERATING AT EXTREME CONDITIONS**, Location: Sanatorium "Puscha Ozerna", Kyiv, Ukraine, Contact: Alexei N. Nazarov or Valeria Kilchytska, Tel: 380 44 441 265 7022, Fax: 380 44 265 6177, E-Mail: lerka@lab15.kiev.ua, Deadline: Past Due, www: <http://www.lab15.kiev.ua/conferences>

October 16 - 17, 2000, # **INTERNATIONAL CONFERENCE ON MATERIALS FOR MICRO-ELECTRONICS**, Location: Dublin Castle, Dublin, Republic of Ireland, Contact: Cathy Pearcey, Tel: 44-171-451-7340, Fax: 44-171-839-2289, E-Mail: cathy_pearcey@materials.org.uk, Deadline: Past Due, www: <http://www.materials.org.uk>

October 16 - 18, 2000, T **INTERNATIONAL CONFERENCE ON ADVANCED SEMICONDUCTOR DEVICES AND MICROSYSTEMS**, Location: Castle of Smolenice, Slovakia, Contact: Juraj Breza, Tel: 4217-60291328, Fax: 4217-65423480, E-Mail: breza@elf.stuba.sk, Deadline: Past Due, www: <http://nic.savba.sk/~elekdam>

October 19, 2000, * **IEEE EDS INDEPENDENT SHORT COURSE ON DEVICE, CIRCUIT AND RELIABILITY MODELING FOR SILICON INDUSTRY**, Location: The Commons, University of Texas, Austin, TX, Contact: Emily A. Sopensky, Tel: (512) 452-2448, Fax: (512) 452-8950, E-Mail: e.sopensky@ieee.org, Deadline: Not Applicable, www: <http://www.ieee.org/organizations/society/eds/2000courses.html>

October 23 - 26, 2000, * **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, South Lake Tahoe, CA, Contact: William R. Tonti, Tel: (802) 769-6561, Fax: (802) 769-6567, E-Mail: wtonti@us.ibm.com, Deadline: Past Due, www: <http://www.irps.org/irw/>

October 26-27, 2000, T **EUROREGIONAL WORKSHOP ON THIN FILM SILICON SOLAR CELLS**, Location: University of Barcelona, Barcelona, Spain, Contact: Ramon Alcubilla Gonzalez, Tel: 34 934016757, Fax: 34 934016756, E-Mail: alcubilla@eel.upc.es, Deadline: Past Due

October 31 - November 2, 2000, T **INTERNATIONAL CONFERENCE ON MICROELECTRONICS (ICM)**, Location: University of Tehran, Tehran, Iran, Contact: M.I. Elmasry, Tel: (519) 888-4567 ext. 3753, Fax: (519) 746-5195, E-Mail: elmasry@uwaterloo.ca, Deadline: Past Due, www: <http://ICM2000.ut.ac.ir/Committees.html>

November 1, 2000, T **IEEE ELECTRON DEVICES ACTIVITIES IN WESTERN NEW YORK**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Karl Hirschman, Tel: (716) 475-5130, Fax: (716) 475-5041, E-Mail: kdhemc@rit.edu, Deadline: Not Available, www: Not Available

November 5, 2000, T **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, Location: Westin Hotel, Seattle, WA, Contact: Anthony A. Immorlica,

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November 5 - 8, 2000, * **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, Location: Westin Hotel Seattle, Seattle, WA, Contact: John Sitch, Tel: 613-763-3851, Fax: 613-763-2404, E-Mail: sitch@nortelnetworks.com, Deadline: Past Due, [www: http://www.gaasic.org](http://www.gaasic.org)

November 5 - 9, 2000, # **INTERNATIONAL CONFERENCE ON COMPUTER-AIDED DESIGN**, Location: DoubleTree Hotel, San Jose, CA, Contact: Ellen M. Sentovich, Tel: (510) 647-2807, Fax: (510) 486-0205, E-Mail: ellens@cadence.com, Deadline: Past Due, [www: http://www.iccad.com](http://www.iccad.com)

November 8 - 9, 2000, T **CONFERENCE OF THE ISRAEL MATERIALS UNION**, Location: Dan Panorama Hotel, Jerusalem, Israel, Contact: Gady Golan, Tel: 972-3-646-5465, Fax: 972-52-891-16, E-Mail: gady@oumail.openu.ac.il, Deadline: Past Due, [www: http://www.intersoft.co.il/agil.htm](http://www.intersoft.co.il/agil.htm)

November 13 - 14, 2000, T **INTERNATIONAL CONFERENCE ON SEMICONDUCTOR ELECTRONICS**, Location: Kuala Lumpur, Malaysia, Contact: Burhanuddin Yeop Majlis, Tel: 603 8251292, Fax: 603 8259080, E-Mail: burhan@eng.ukm.my, Deadline: Not Available, www: Not Available

November 13 - 14, 2000, T **INTERNATIONAL SYMPOSIUM ON HIGH PERFORMANCE ELECTRON DEVICES FOR MICROWAVE AND OPTOELECTRONIC APPLICATIONS**, Location: Glasgow University, Glasgow, Scotland, Contact: Iain Thayne, Tel: 44 0 141 339 3859, Fax: 44 0 141 330 4907, E-Mail: ithayne@elec.gla.ac.uk, Deadline: Not Available, www: Not Available

December 5 - 7, 2000, T **CONFERENCE ON OPTOELECTRONIC & MICROELECTRONIC MATERIALS AND DEVICES**, Location: La Trobe University, Bundoora, Melbourne, Victoria 3083, Australia, Contact: Brian Usher, Tel: 61-3-9479-3745, Fax: 61-3-9479-3025, E-Mail: bfu@mail-host.ee.latrobe.edu.au, Deadline: Past Due, [www: http://www.latrobe.edu.au/www/commad2000/](http://www.latrobe.edu.au/www/commad2000/)

December 7 - 9, 2000, * **IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE**, Location: Catamaran Resort Hotel, San Diego, CA, Contact: Kathleen S. Krisch, Bell Labs, Lucent Technologies, 600 Mountain Ave., Room 2D-308, Murray Hill, NJ 07974, Tel: (908) 582-2432, Fax: (908) 582-2445, E-Mail: krisch@lucent.com, Deadline: Not Available, www: Not Available

December 10 - 13, 2000, * **IEEE INTERNATIONAL ELECTRON DEVICES MEETING**, Location: San Francisco Hilton & Towers Hotel, San Francisco, CA, Contact: Phyllis Mahoney, Tel: (301) 527-0900 ext. 103, Fax: (301) 527-0994, E-Mail: phyllism@widerkehr.com, Deadline: Past Due, [www: http://www.ieee.org/conference/iedm](http://www.ieee.org/conference/iedm)

December 14 - 16, 2000, T **INTERNATIONAL CONFERENCE ON COMMUNICATIONS, COMPUTERS & DEVICES**, Location: Indian Institute of Technology, Kharagpur, India, Contact: C.K. Maiti, Tel: 91-3222-55221, Fax: Not Available, E-Mail: ccd2000@ece.iitkgp.ernet.in, Deadline: Not Available, www: Not Available

AdCom Summary

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IEDM results to most Japanese researchers and engineers who do not have a chance to attend. The chapter plans to increase the

number of Japanese DLs, and to design a "Young Researcher Encouragement Award".

The next AdCom meeting will be on Sunday December 10th at the San Francis-

co Hilton & Towers in conjunction with the 2000 IEDM.

John K. Lowell
Oracle Corporation
Irving, TX

Chapter News

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for meeting these requirements. The meeting was well attended, with members from Peking University and the Institute of Semiconductors. After the presentation, we discussed the recruitment of new IEEE members in China, and the possibility of forming new EDS student chapters at various Universities in the Beijing area.



From the right, Dr. Ming-Qing Ding, Director Jin-Jun Feng, Prof. Xian-Ping Wu, all from Beijing Vacuum Electronics Research Institute; Prof. Paul Yu (speaker), University of California, San Diego; Prof. Yong-Zhen Huang, Institute of Semiconductor, Chinese Academy of Sciences; Prof. Wei-Xi Chen, Beijing University

Report of the 2000 Semiconductor Manufacturing Technology Workshop

by Tahui Wang

The 2000 Semiconductor Manufacturing Technology Workshop, sponsored by the IEEE Electron Devices Society, Taiwan Semiconductor Industry Association (TSIA) and TSMC-Acer Semiconductor Manufacturing Corp., was held in Hsin-Chu, Taiwan June 14-15. The purpose of this workshop was to bring together researchers and engineers actively engaged in research and development to discuss and exchange experiences and ideas on manufacturing technology advancement.

This workshop attracted more than 90 participants. Two keynote speeches were given, "Perspective of the Semiconductor Manufacturing from IC Design" by Shelton Lu, VIA and "Technical and Business Issues of 300mm Implementation" by Randy Goodall, SEMATECH. 19 papers from local industry, universities and research labs were presented on various perspectives of technology strategy, production plan-

ning, yield enhancement and cycle time improvement, CIM system and process control. For more information, please contact Carl Chang, TSMC-Acer Semiconductor Manufacturing Co, TEL: 886-3-5785112, E-Mail: carl.chang@tasmc.com.tw or visit TSIA web site, <http://www.tsia.org.tw>

ED Taipei Chapter

By Tahui Wang

The Election of Chair and Vice-Chair of the ED Taipei Chapter was held June 22. From the voting of less than 300 active members and student members, Dr. Steve S. Chung, Professor of Dept. of EE, National Chiao-Tung University, was elected as Chair and Dr. Y-K. Su, Professor of Dept. of EE, National Cheng-Kung University and also Director of Engineering Division, National Science Council, was elected as Vice-Chair. For more information contact Prof. Chung TEL: 886-3-5731830, FAX: 886-3-5724361, EMail: schung@cc.nctu.edu.tw.

— Tahui Wang, Editor



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