

# IEEE ELECTRON DEVICES SOCIETY

## TABLE OF CONTENTS

<b>Upcoming Technical Meetings</b> .....	1
• 2005 SOI	• 2005 IIRW
• 2005 BCTM	• 2005 ISSM
<b>Message from the EDS President</b> .....	3
<b>Call for AdCom Nominations</b> .....	7
<b>Society News</b> .....	8
• Announcement of Newly Elected Officers and AdCom Members	
• EDS AdCom Election Process	
• Call for Nominations for the EDS Chapter of the Year Award	
• Report from the EDS Vice-President of Regions/Chapters	
• Congratulatory to the EDS Members Elected to the National Academy of Engineering (NAE)	
• Report from the EDS Vice-President of Meetings	
• Report from the Chair of the EDS Power Devices & ICs Technical Committee	
• Congratulations to the EDS Members Recently Elected to IEEE Senior Member Grade	
• Report from the Chair of the EDS Semiconductor Manufacturing Technical Committee	
• EDS Chapter Subsidies for 2006	
• Status Report from the 2004 EDS Graduate Student Fellowship Winners	
• EDS DL Program - Lecturers Residing in Europe, Middle East & Africa (Region 8)	
• How to form an IEEE Student Branch and Student Branch Chapter	
• EDS Archival Collection on DVD	
<b>Regional and Chapter News</b> .....	20
<b>EDS Meetings Calendar</b> .....	26
<b>EDS Distinguished Lecturers Visit Spain</b> ..	28

### YOUR COMMENTS SOLICITED

Your comments are most welcome. Please write directly to the Editor-in-Chief of the Newsletter at [nstojadinovic@elfak.ni.ac.yu](mailto:nstojadinovic@elfak.ni.ac.yu)

## 2005 IEEE INTERNATIONAL SOI CONFERENCE (SOI)



*Hyatt Regency Waikiki, Honolulu, Hawaii*



*Hyatt Regency Waikiki - Interior Waterfalls*

The 31st Annual IEEE International SOI Conference, the premier conference dedicated to current trends in Silicon-on-Insulator technology, will be held October 3–6, 2005 at the Hyatt Regency Waikiki Resort & Spa in Honolulu, Hawaii. A one-day Tutorial Short Course will precede the conference on Monday, October 2nd.

The SOI conference was established with the support of IEEE to provide a forum for open discussion in all areas of silicon-on-insulator technologies and their applications. Ever increasing demand and modifications in this technology bring the industry together to discuss new accomplishments and gains. Original papers presenting new developments in the industry will be presented at the conference.

The 2005 SOI International Conference will begin with a half-day plenary session followed by two days of oral sessions, a poster session and a late news session. A Best Paper Award will be presented at the closing on Thursday. Session topics will focus on basic materials research, device research, circuit development (special and improved) and applications and uses. Rump sessions will be held on Wednesday evening, October 5. These sessions encourage attendees to share their opinions and expertise on the chosen topics of discussion.

Additionally, a materials and equipment exhibition relating to SOI technology will be held concurrently with the conference. Participants will have the opportunity to visit the exhibit area to see what's new in SOI. Overall, the 2005 SOI International Conference offers attendees a broad spectrum of information, opportunities for discussion with one's peers, and is a must for engineers with direct involvement or partial involvement in SOI.

*continued on page 7*

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### EDS AdCom Elected Members-at-Large

Elected for a three-year term (maximum two terms) with 'full' voting privileges

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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. The e-mail addresses of these individuals are listed on this page. Whenever possible, e-mail is the preferred form of submission.

### Newsletter Deadlines

Issue	Due Date
January	October 1st
April	January 1st
July	April 1st
October	July 1st

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## MESSAGE FROM THE EDS PRESIDENT



Hiroshi Iwai

With half a year remaining as President of the Electron Devices Society, I would like to report on the status of the Society's efforts at this point. In order for EDS to be more flexible in its ability to respond quickly to technical shifts in the community and to allow the technical committees to have more leverage in influencing the Society's directions, we made the Technical committees and Meetings Committee create concrete action items at the May 2004 AdCom Meeting series. With these actions, we encouraged the representatives of EDS Sponsored and Technically Co-Sponsored meetings to become members of the relevant technical committees in order to provide input concerning the new movement of EDS related conferences. We recognized that Nano and Organic Electronics are strategically important fields for the future EDS direction and are preparing to launch an EDS sponsored emerging electronics workshop to cover such areas.

Education is an important role of the Society, and the Distinguished Lecturer (DL) Program is one of the most attractive programs for the members. Based on the plan announced at the May 2004 AdCom meeting series, we are on the way to increase the number of DLs. In fact, since May 2004, we have added 40 new DLs, with the total now being 138. EDS is also making a specific effort to increase the number of DLs in the regions where the counts are low, such as Asia and the Pacific, Latin America and Africa. EDS also has a procedure in place to try to keep its DLs active and to eliminate those who are not active. We are more flexible now with increasing the DL budget, since we have a strong collaboration between the Educational Activities and the Regions/Chapters committees. Also, EDS started to provide a special budget for mini-colloquia whereby a group of lecturers visit a given geographic area and give talks at one or more locations.

To make EDS membership more useful and attractive to the members, last December we published an Archival DVD Collection which includes all issues and years of *Transactions on Electron Devices* (T-ED), and *Electron Device Letters* (EDL), and all published digests of the International Electron Devices Meeting (IEDM), which is available to our members for only 30 USD. If you are interested in purchasing the DVD, please contact the EDS Executive Office. EDS is now closely working with its flagship conference, the IEDM, to promote both EDS and IEDM services to the members/participants. It was decided that the General Chair and Program Chair of the IEDM regularly participate in the meetings of the EDS Executive Committee to discuss issues such as encouraging and increasing the student and industry participation for both the IEDM and EDS.

Although there are an enormous number of industrial people in the world participating in Electron Devices development, manufacturing, and application, only a small portion of these individuals are members of the Society. At this moment, there is no clear solution to solve this problem. We will make an effort to enhance industrial fields in conferences and journals, and to provide industrial exhibitions at conferences.

The number of Electron Devices engineers and scientists is increasing very rapidly in the non-US Regions such as Asia. We have made a strong effort to form new chapters in those non-US regions to accommodate the near future situation. In fact, new chapters are being formed in India, China, Brazil, etc. However, the high cost of IEEE membership is a serious problem in securing a sufficient number of members to initiate the chapters. To help support the formation of chapters in low income areas, EDS offers the Membership Fee Subsidy Program whereby IEEE membership is offered at a 50% discount and EDS pays the cost of the other 50% for up to 12 new members. Also, EDS has decided to informally support the formation of groups that include 50% of

the required number of members (with 50% of EDS support) as long as the activities and finances are coordinated by a parent chapter. The Regions/Chapters and the Membership committees will work together to promote membership.

In general, the number of the members in IEEE societies has been decreasing for the past few years. Although the decrease is one of the smallest among the societies, it is also true for the EDS. The primary reason for the decrease in society memberships is that the major purpose for becoming an IEEE EDS member has changed. Until about 10 years ago, obtaining a subscription to the Society's journals as well as receiving conference information by airmail were the main reasons for becoming a member. Now, all the subscriptions can be obtained through university or company networks (regardless of membership), as big organizations purchase large package subscriptions that their employees and students can use. Also, conference information is easily delivered through the Internet. Now, what is the value of becoming an IEEE EDS member? EDS can offer individuals a leading technical community or forum such as the IEDM and *Transactions on Electron Devices* in which people can publish recognized papers and obtain/exchange/discuss about the most advanced information. This is a very important value of EDS and we will make every effort to maintain our membership and recruit new members by offering some valuable new benefits in the future.

The importance of Electron Devices for the world is increasing more than ever and we are proud that our Society is participating in such important activities in such an exciting period.

I would like to encourage you all to think about ways that we can enhance EDS activities and let me know how the Society can better serve you each individually.

Hiroshi Iwai  
EDS President  
Tokyo Institute of Technology  
Yokohama, Japan

## UPCOMING TECHNICAL MEETINGS

### 2005 IEEE BIPOLAR/BICMOS CIRCUITS AND TECHNOLOGY MEETING (BCTM)



*Fess Parker Double Tree Resort,  
Santa Barbara, California*

The 2005 IEEE Bipolar/BiCMOS Circuits and Technology Meeting will be held October 9-11 at the Fess Parker DoubleTree Resort in Santa Barbara, California (<http://www.fpdtr.com/index1.html>).

You will want to be at this conference if you're interested in the leading edge processes, devices, and circuits used in state of the art telecommunication and power control systems. Bipolar/BiCMOS technologies, particularly SiGe HBT BiCMOS technology, continue to play a key role in these systems. Papers covering the design, performance, fabrication, testing and application of bipolar and BiCMOS integrated circuits, bipolar phenomena, and discrete bipolar devices are presented.

The Santa Barbara scenery and atmosphere cannot be beat, with the ocean, mountains, palm trees, ideal climate and many great things to do and see (<http://total-santabarbara.com>). The attractions

include the waterfront with beaches and a wharf, excellent restaurants, historical buildings like the Santa Barbara Mission, and Wineries. The conference will be held during the wine grape harvest so come and see a place famous for the Pinot Noir grape recently popularized in the movie "Sideways".

The conference starts with a one-day short course, followed by two full days of contributed and invited papers, including a special session on Emerging Technologies. The BCTM Banquet will be held on Monday evening, and that the details will be announced soon on the conference web page (<http://www.ieee-bctm.org>). Following the conference on Wednesday, there will be a workshop on compact device modeling for RF/Microwave applications organized by TU Delft.

We are fortunate to have Dr. Herb Kroemer for the keynote. Dr. Kroemer won the Nobel Prize in Physics in 2000 ([\[nobelprize.org/physics/laureates/2000/\]\(http://nobelprize.org/physics/laureates/2000/\)\) for developing semiconductor heterostructures used in high-speed and optoelectronics. Dr. Kroemer first proposed the SiGe HBT in a paper in 1954, inventing much of what the BCTM conference focuses on. This is a great opportunity to come and hear Dr. Kroemer speak.](http://</a></p></div><div data-bbox=)

The short course features three renowned experts on "Power Management ICs - Technology and Modeling."

Invited speakers include:

- "Using SiGe HBTs for Extreme Environment Electronics" John Cressler (GIT, USA)
- "Polar Modulation" Earl McCuine (Tropian, USA)
- "Statistical Modeling Approaches" Michael Schröter (TU Dresden/UCSD)
- "Integration of Magnetic Materials on Silicon for Inductors" Y. Shuang (TU Delft, Netherlands)
- "Advances in Low Voltage Power Devices" Gary Donly (Fairchild, USA)
- "Satellite Microwave Frontends" Cicero Vaucher (Philips Research, Eindhoven)

Two days of technical paper sessions, a luncheon with guest speaker, exhibits and the evening banquet round out the program. The banquet features entertainment, local history, and promises to be a memorable evening. Exhibition booths are available which feature the latest products.

See you in Santa Barbara!

*Alvin Joseph  
Publicity Co-Chair, 2005 BCTM  
IBM Microelectronics Division  
Essex Junction, VT, USA*



## 2005 IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP (IIRW)

The 2005 IEEE International Integrated Reliability Workshop (IIRW), 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 17th to 20th, 2005. 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. We are now accepting abstract submissions through July 1st, 2005. Submissions on interconnect and product reliability are particularly encouraged in addition to the usually well represented dielectric reliability abstracts and other possible topics listed below."

The Technical Program of the 2005 workshop is being organized by Dr. John F. Conley, Jr., and will focus on these main areas but is not limited to them:

- Designing-in reliability (Products, Circuits, Processes)
- Customer Product Reliability Requirements / Manufacturer Reliability tasks
- Root cause defects, Physical Mechanisms & Simulations and modeling
- Identification and Characterization of New Reliability Effects
- Deep Sub-micron Transistor and Circuit Reliability

These hot reliability topics in research and industry are addressed quite a bit differently than in technical conferences. Attendees stay in cabins without TVs or phones, dress is casual (suits, ties and high heels are shunned), affiliations are downplayed, and meals are provided 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.

The 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 other conferences. Participants spend their



*Stanford Sierra Camp, South Lake Tahoe, California*

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 his or her 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 the intense interaction that sets the IIRW apart from other conferences.

Another distinction of the IIRW is the moderated Discussion Groups that are held in the evenings. Organized this year by Yvonne Nelson, the Discussion Groups topics include: high-k gate dielectrics, NBTI, interconnects, circuit/memory reliability, New reliability effects and Product reliability. Lively conversa-

tion and debate among participants is promised and written summaries will be included in the workshop proceedings.

The Discussion Groups are followed by the Special Interest Group meetings (SIG). 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. Be warned, remnants of the SIG discussions sometimes rage on into the wee hours of the morning.

Yet, another advantage of attending the IIRW is the extensive Tutorial Course, presented by world-class experts and included at no additional cost. This year's tutorial course organized by Sylvie Bruyere, includes such Non Volatile Memory, Defects in High-k dielectrics, Product Reliability, Negative Bias Temperature Instability (NBTI) – A design perspective, MEMS, Radiation Effects, Reliability Methodology: Statistical Aspects and Backend Reliability. Tutorials are designed to be beneficial to newcomers as well as experienced members of the reliability community.

Additional information about the workshop is available on the IIRW website at <http://www.iirw.org>, or by contacting John F. Conley, Jr., (TP.Chair@iirw.org). 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 2005 IEEE International Integrated Reliability Workshop Committee, I look forward to meeting you in Lake Tahoe!

*Krish Mani  
Communications Chair, 2005 IIRW  
C M Innovations Inc.  
Santa Clara, CA 95054 USA*

# 2005 IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING (ISSM)



*The Fairmont San Jose, San Jose, California*

The Fifteenth International Symposium on Semiconductor Manufacturing (ISSM) will be held Tuesday, September 13 through Thursday, September 15 at the San Jose, California, Fairmont Hotel. Educational workshops will precede the conference on Monday, September 12th. ISSM is the largest world-wide forum specifically designed for semiconductor device manufacturers and suppliers. The conference also welcomes technical articles from Advanced Backend Packaging.

Created more than a decade ago by leading corporate executives, ISSM places an emphasis on sharing industrial experiences, technical solutions and opinions on the advancement of manufacturing science. ISSM has developed into one of the most respected and well-attended conferences in the industry. Now celebrating its fifteenth anniversary, ISSM has a stellar conference planned for 2005.

Recognizing that manufacturing expertise is a cornerstone to corporate success, ISSM places a high priority on relevance, significance and applicability to wafer fabrication. Additionally, plenary presentations provide opportunities for presenting broad visions and outlining key challenges facing the industry.

This year's event covers timely and important topics like Factory Design; Manufacturing Strategy and Structure; Ultra Clean Technology; Process and

Metrology Equipment; Process Materials Optimization; Environment, Safety and Health; Manufacturing Control and Execution; Robust Engineering; Advanced Backend Processing; Process Control and Monitoring; and Yield Enhancement.

As an international conference, ISSM seeks the best talent from around the world. As many as sixty companies from twenty-one countries are represented in a typical year. Conference presenters include manufacturing professionals, engineers, and managers from semiconductor, equipment, and materials companies as well as academic experts from universities and research organizations. Thus, attendees are exposed to the latest technical information.

Each day is introduced with keynote addresses from renowned industry executives. Past speakers have included Gordon Moore, Andy Grove and Craig Barrett from Intel, Morris Chang from Taiwan Semiconductor Manufacturing Corporation, Hector Ruiz from Advanced Micro Devices, Richard Chang from SMIC, Doug Dunn from ASML, Mike Splinter from Applied Materials, Kaoru Tosaka from NEC, Ken Schroeder from KLA-Tencor, Rick Hill from Novellus and many other very recognizable leaders. This year's speakers are certain to present analyses, strategies and demonstrations as they reveal their perspectives to an attentive and rapt audience.

ISSM 2005 will be held at the Fairmont Hotel in San Jose, California. Located in the heart of Silicon Valley, the area offers a wide variety of interests to those visiting from out of state or out of the country. Extended time can be spent in San Francisco, the Napa Valley wine country, Lake Tahoe, Yosemite National Park or the charming seaside towns of Carmel and Monterey.

Online conference registration and hotel information will be available on the ISSM web site in mid-June ([www.issm.com](http://www.issm.com)).

For registration or general information about ISSM, please visit our web site at <http://www.issm.com>, or contact Drue Hulmer at ISSM, c/o Maritz Travel Co., 1777 Botelho Dr., Suite 100, Walnut Creek, CA 94596, Phone: 925-287-5221, FAX: 925-287-5398, e-mail: [issm2005@maritz.com](mailto:issm2005@maritz.com).

ISSM is sponsored by IEEE (Electron Devices Society and the Components, Packaging and Manufacturing Technology Society), the Society of Applied Physics of Japan (JSAP), and Semiconductor Equipment & Materials International (SEMI).

*Bruce Sohn  
Conference Chair, 2005 ISSM  
Intel  
Rio Rancho, NM, USA*

## 2005 IEEE INTERNATIONAL SOI CONFERENCE (SOI)

(continued from page 1)

The 2005 SOI Conference seeks papers on a wide range of SOI technology including:

- SOI material science/modification, material characterization, and manufacture
- SOI device Physics and modeling
- SOI circuit applications (high-performance microprocessors, srams, asic, low power, high-voltage, rf, analog, Mixed mode, etc.)
- Double Gate/Vertical Channel Structures; Other Novel Structures
- Strained Si-Ge structures
- New SOI structures, Circuits, and applications (optics, 3d integration, displays, microactuators - MEMS, microsensors, Drop-in RAMS, etc.)
- SOI reliability issues (hot-carrier effects, radiation effects, high-temperature effects, etc.)
- Manufacturability and process integration of SOI devices and circuits
- Alternate silicon-on-insulator material

Abstracts for the SOI 2005 Conference were due no later than May 5, 2005.

Late news papers with exceptional merit will be considered for the Late News session if submitted on or before August 13, 2005 to BACM, by e-mail ONLY to SOIPaper@bacm.com in PDF format.

Once again, the popular One-Day Tutorial Short Course will be offered preceding the 2005 SOI International Conference. Tutorial Short Course instructors have many years of experience in the field of silicon-on-insulator technology. The course is intended to educate attendees in detail about current trends and issues in the SOI industry. The SOI 2005 Tutorial Short Course will focus on future trends in SOI technologies to enable low power electronics. Participants will receive copies of all visual presentations.

Hawaii's beauty is famous around the world. Oahu is the sun and fun capital of the Hawaiian Islands with lots of sea, land and sporting activities from which to choose. Enjoy hiking through rainforests, biking along

mountain ranges and swimming in the azure blue waters of the Pacific.

Honolulu is served by regular flights from most major US mainland gateway cities (New York, Chicago, Los Angeles, Houston, Detroit, San Francisco, Las Vegas, Oakland, Dallas, San Jose, Portland, St. Louis, Newark, Atlanta, Vancouver, Toronto, Seattle), over 400 flights a week, as well as direct flights from Tokyo, Osaka, Sydney, Auckland, Seoul, and Taipei.

You may contact the 2005 IEEE International SOI Conference for additional information as follows: c/o BACM, 520 Washington Blvd., #350, Marina del Rey, CA 90292, Tel: 310-305-7885; Fax: 310-305-1038; Email: bobbi@bacm.com or the SOI Conference website at <http://www.soiconference.org>.

*Christophe Tretz  
Executive Committee  
– Technical Chair  
IBM – San Jose Design Center  
San Jose, CA, USA*

### CALL FOR NOMINATIONS - EDS AdCOM

The Electron Devices Society of the IEEE invites the submission of nominations for election to its Administrative Committee (AdCom). Presently, the AdCom meets twice per year and is composed of 22 members. Eight members will be elected this year for a term of three years, and a maximum of two consecutive terms is allowed. In 2005, the election will be held after the AdCom meeting on Sunday, 4 December. Electees begin their term in office on 1 January 2006. For your information, the nominees do not need to attend the AdCom Meeting/Election to run.

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

Please send your nominee's name, address, and supporting information to the EDS Executive Office Administrator, Laura J. Riello, IEEE, 445 Hoes Lane, Piscataway, NJ 08854, Fax: 732-235-1626, E-Mail: [l.riello@ieee.org](mailto:l.riello@ieee.org) in time to be received by the deadline of 15 October 2005. It is very desirable that submissions include a biographical summary in a standard two-page format. The EDS Executive Office can provide you with an example of the format. If you have any questions regarding the nomination requirements or process, feel free to contact the Nominations and Elections Chair, Steven J. Hillenius ([s.hillenius@ieee.org](mailto:s.hillenius@ieee.org)).

# SOCIETY NEWS

## ANNOUNCEMENT OF NEWLY ELECTED OFFICERS AND ADCOM MEMBERS

On December 12, 2004, the EDS AdCom held its annual election of officers and members-at-large. The following are the results of the election and brief biographies of the individuals elected.

### I. OFFICERS

The following individuals were elected as officers for a one-year term beginning 1/1/2005:



**JUIN J. LIOU** (Treasurer) received the B.S. (honors), M.S., and Ph.D. degrees in electrical engineering from the University of Florida, Gainesville, in 1982, 1983, and 1987, respectively.

He is now a Professor at University of Central Florida.

Dr. Liou has published 6 textbooks, more than 190 journal papers, and more than 140 papers (including 46 keynote or invited papers) in international and national conference proceedings. He serves as a regional editor for the *Microelectronics Reliability*.

Dr. Liou received ten different awards on excellence in teaching and research from the University of Central Florida (UCF) and six different awards from the IEEE. Among them, he was awarded the UCF Distinguished Researcher Award three times (1992, 1998, 2002) and the IEEE Joseph M. Biedenbach Outstanding Engineering Educator Award in 2004 for his exemplary teaching, research, and international collaboration.

Dr. Liou is an IEEE EDS Distinguished Lecturer, Vice-Chair of the IEEE EDS Regions/Chapters Subcommittee for North America East

and Canada, member of the IEEE EDS Administrative Committee, member of the IEEE EDS Educational Activities Committee, and Senior Member of the IEEE. He holds the Cao Guang-Biao Endowed Professorship at Zhejiang University, China.



**JOHN K. LOWELL** (Secretary) received the Ph.D. degree in Applied Physics from the University of London. He has held technical and managerial assignments for United

Technologies, Northern Telecom, Mostek, Texas Instruments, British Telecom/Dupont, AMD, Applied Materials, Oracle and PDF Solutions. Presently, he is the President and Chief Consultant at Lowell Consulting in Dallas. He has also been a Professor at Texas Tech University and in the University of Texas system, and held Consulting Professorships at other universities in addition to being a Visiting Scholar at the NSF Center for the Synthesis, Growth and Characterization of Electronic Materials at the University of Texas at Austin.

Dr. Lowell is a Senior Member of the IEEE, a Distinguished Lecturer of the EDS and has held AdCom-level positions previously within the LEO and CAS societies. For fifteen years, he was also the Associate Editor-in-Chief of the *IEEE Circuits & Devices Magazine*, and was its Guest Editor twice.

### II. ADCOM MEMBERS-AT-LARGE

A total of seven persons were elected to three-year terms (2005-2007) as members-at-large of the EDS

AdCom. Two of the seven individuals were re-elected for a second term, while the other five were first-time electees. The backgrounds of the electees span a wide range of professional and technical interests.

### A. SECOND TERM ELECTEES:



**MAGALI ESTRADA DEL CUETO** was born in Havana, Cuba. Received her Master in Science degree from the Faculty of Physics at Moscow State University in 1966

and her Ph.D. from NW Polytechnic Institute in Leningrad in 1977. Since 1966 is engaged in teaching, research and development on Microelectronics, including technology, design and characterization of MOS devices and circuits. From 1966 worked as researcher and Professor at the Faculty of Physics at the University of Havana, and since 1977 as Titular Professor. From 1978-1990, held different positions at the Central Institute of Digital Research, in Havana, Cuba. From 1990-1994, was Head of Laboratory of Microelectronics at the International Center for Informatics and Electronics in Moscow. Since 1995, is a Titular Professor at the Section of Solid State Electronics, of the Department of Electrical Engineering at the Center of Research and Advanced Studies of Mexico D.F. She has been Head of many Research Projects; lecturer; author of book and author and coauthor of technical papers and patents; has participated in many other professional activities, receiving several awards. She is an EDS Distinguished Lecturer, Chair of EDS



Region 9 Section/Chapters Subcommittee since 2000 and Adcom member since 2002. Her areas of interest are physics and technology of dielectrics for submicrometric devices, as well as, amorphous and polycrystalline devices, including modeling.



**NINOSLAV D. STOJADINOVIC**

received the D. Sc. degree in electrical engineering from the University of Nis in 1980, where he is now Professor and Head of the Department of Microelec-

tronics. He authorized 67 papers in international journals and 135 conference papers.

Dr. Stojadinovic is IEEE Fellow and EDS Distinguished Lecturer. He is Editor-in-Chief of *"Microelectronics Reliability"* and Chair of the IEEE International Conference on Microelectronics. He is Chair of the Yugoslavia IEEE Section and the Yugoslavia ED/SSC Chapter.

Dr. Stojadinovic is President of the National Society for Electronics, Telecommunications, Computers, Automation and Nuclear Engineering (ETAN). He is member of Academy of Engineering Sciences of Serbia & Montenegro and Serbian Academy of Science and Arts.

**B. FIRST-TIME ELECTEES:**



**JOACHIM BURGHARTZ**

received the MS degree from the RWTH Aachen, Germany, in 1982 and the Ph.D. from the University of Stuttgart, Germany, in 1987. From 1987 to

1998 he was with the IBM Research Division, working on selective epitaxial growth, Si and SiGe HBTs, CMOS, RF passive components (particularly on-chip inductors), and RF circuit design. Since 1998 he is a full professor at Delft University of Technology in the Netherlands. In 2001 he became the scientific director of the research institute DIMES at TU Delft.



**MANSUN CHAN**

Dr. Mansun Chan received his Ph.D. degree from University of California at Berkeley where his research contributes to the unified BSIM model for SPICE, which has been

accepted by most US companies and the Compact Model Council (CMC) as the first industrial standard MOSFET model. Currently, he is with the EEE department of Hong Kong University of Science and Technology. His research interests include nano-device technologies, image sensors, SOI technologies, high performance IC, 3D Circuit Technology, device modeling and Nano BIOMEMS technology. Between July 2001 and December 2002, he was a Visiting Professor at University of California at Berkeley and the Co-director of the BSIM program. At present, he is still consulting on the development of the next generation BSIM model.



**SHUJI IKEDA**

received the B.S. degree from Tokyo Institute of Technology, Tokyo, Japan in 1978, the M.S.E.E. degree from Princeton University, Princeton, New Jersey and Ph.D.

degree from Tokyo Institute of Technology. He joined Semiconductor Division, Hitachi Ltd., Tokyo, Japan in 1978, where he was engaged in research and development of state of the art SRAM process and devices, including high resistive poly load / thin film transistors for SRAM application. He was also working on developing process technology for LOGIC, embedded memories, Flash and CMOS power RF devices. In

October 2000, he joined Trecenti Technologies Inc. He chaired IEDM in 2002. He is a Fellow of IEEE.



**JEFFREY J. WELSER**

received his Ph.D. in Electrical Engi-

neering from Stanford University in 1995, and joined IBM's T.J. Watson Research Center. His graduate work focused on utilizing strained-Si and SiGe materials for FET devices. Since joining IBM, Jeff has worked on a variety of novel devices, including nano-crystal and quantum-dot memories, vertical-FET DRAM, and Si-based optical detectors, in addition to teaching as an adjunct professor at Columbia University. In 2000, Jeff took a corporate assignment in Technology group headquarters, and moved from there to the Microelectronics division in 2001, as project manager and then Director of high-performance SOI and BEOL technology development and IBM manager for the Sony, Toshiba, and AMD development alliances. Jeff recently returned to the Research division, and is now Director Next Generation Technology Components at the Almaden Research Center, working on server components and systems for the 2010 timeframe.



**REBECCA J. WELTY,**

received the B.S. degree in Electrical Engineering from the University of California at Davis in 1997. In 1999 she received the M.S. degree and in 2002 the Ph. D. degree in Electrical

Engineering, specializing in Applied Physics, from the University of California at San Diego. Her dissertation research focused on high-speed GaInP/GaAs and GaAs/GaNAs based heterojunction bipolar transistors (HBTs). In 2002 she joined Lawrence Livermore National Laboratory as a Staff Research Engineer in the area of optoelectronic device development in III-V materials has focused on the development of photonic integrated circuits and radiation detectors. Her research interests are in device physics of electron and optoelectronic devices and advanced process technology.

*Steven J. Hillenius  
EDS Nominations  
and Elections Chair  
Agere Systems  
Allentown, PA, USA*

## EDS ADMINISTRATIVE COMMITTEE ELECTION PROCESS

The Members-at-Large (MAL) of the EDS AdCom are elected for staggered three-year terms, with a maximum of two consecutive terms. The 1993 Constitution and Bylaws changes mandated increasing the number of elected MAL from 18 to 22, and required that there be at least two members from both IEEE Region 8 (Europe, Middle East & Africa) and Region 10 (Asia & Pacific). In 2003, EDS made changes to its Constitution and Bylaws to require that at least one elected AdCom member is a Graduate of the Last Decade (GOLD member). A GOLD member is defined by IEEE as a member who graduated with his/her first professional degree within the last ten years. It is also required that there be at least 1.5 candidates for each opening. From 2002 to 2004, eight, seven and seven positions were

filled, respectively. In 2005, eight positions will be filled.

The election procedure begins with the announcement and Call For Nominations in the *EDS Newsletter*. The slate of nominees is developed by the EDS Nominations Committee and includes the non-Committee and self-nominations received. Nominees are asked to submit a two-page biographical resume in a standard format. Nominations are closed on 15 October, and the biographical resumes are distributed to the 'full' voting members of AdCom prior to the December AdCom meeting. The election is then held after the conclusion of the meeting. The nominees do not need to attend the AdCom Meeting/Election to run. On the other hand, if you are elected, you are expected to attend the two AdCom meetings a

year. In general, the travel and accommodation costs to attend these meetings are borne by the elected member.

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

*Steven J. Hillenius  
EDS Nominations  
& Elections Chair  
Agere Systems  
Allentown, PA, USA*

### CALL FOR NOMINATIONS FOR THE EDS CHAPTER OF THE YEAR AWARD

The EDS Chapter of the Year Award is given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st – June 30th period. Nominations for the award can only be made by Chapter Partners, SRC Chairs/Vice-Chairs, or self-nominated by Chapter Chairs.

The winning chapter will receive a certificate and check for \$1,000 to be presented at the International Electron Devices Meeting (IEDM).

The schedule for the award process is as follows



ACTION	DATE
Call for Nominations E-Mailed to Chapter Chairs, Chapter Partners, SRC Chairs & SRC Vice-Chairs	1 June
Deadline for Nominations	15 September
Regions/Chapters Committee Selects Winner	Early October
Award given to Chapter Representative at IEDM	First Week of December

## REPORT FROM THE EDS VICE-PRESIDENT OF REGIONS/CHAPTERS



*Cor L. Claeys*

During the past year, the EDS Regions/Chapters Committee has been very active and successful in the formation of new chapters. At the end of 2004 there were in total 114 EDS chapters, which is an annual increase of nearly 5%. Compared to December 2003, new chapters have been formed in Region 5 (Central North Carolina), Region 7 (Vancouver, Canada), Region 8 (student Chapter Lviv, Ukraine), Region 9 (Puebla, Mexico and student Chapter Campinas, Brazil), and Region 10 (Student Chapter at Sri Jayachamarajendra College of Engineering, India). Presently, the formation of another 20 new chapters is in progress or under discussion.

In 2004, we gave for the first time the Outstanding Student Paper Award for Region 9. The award is given biennially to a regional student who authored or co-authored the previous year a paper or conference manuscript in an IEEE Journal or Proceedings Volume. The first winners are Miguel A. Aleman-Arce and Adeilton C. Oliveira, Jr. The extension of this initiative to other regions will be explored.

Regional Chapter meetings have been organized in Region 8 (Madrid, Spain, May 2004) and Regions 4-6 (San Francisco, USA, December 2004). The Madrid meeting, in conjunction with the EDS AdCom meeting, was preceded by a mini-colloquium. Other mini-colloquia, in which 5 to 10 Distinguished Lecturers are participating, have been organized in the USA, Boise (WIMED, April 2005), Singapore (WIMNACT 4, July 2004), Hong Kong (WIMNACT 5, September 2004) and Taiwan (WIMNACT 6, January 2005). In general, the number of events organized by the different chapters has been growing. In 2004 much attention

has been given to increase the number of DLs in the different regions. This will ensure that the successful DL program remains attractive in the future and that the number of chapters using DL presentations will further increase.

Much attention is also given to increase the number of chapters in dedicated regions such as Region 9 (Latin America) and Region 10 (China and India). These regions have a good growth potential and will strongly increase their EDS activities in the coming years. A chapter is in the final stage of formation in Xi'an, China, with plans underway to form chapters in Nanjing and Suzhou as well.

For 2005, Regional Chapter meetings are scheduled for Region 10 (Seoul, Korea, June), Region 9 (Veracruz, Mexico, August) and Regions 1-3 & 7 (Washington, D.C., USA, December). The meeting in Seoul will be preceded by the WIMNACT 7 mini-colloquium and combined with the EDS AdCom meeting. For the Region 9 Chapter Meeting, there are plans for a mini-colloquium. The Regions 1-3 & 7 Chapters Meeting will also be held in conjunction with the EDS AdCom meeting as well as the IEDM in D.C. In addition, WIMNACT 8 has been scheduled to be held in Singapore this July.

The well being of a chapter is directly related to the membership growth and strongly driven by the organization of activities and events in response to the expectations of its members. The chapters are there for their members and their direct involvement and participation is therefore crucial. All possible input is highly appreciated and will surely be taken into account.

*Cor L. Claeys  
EDS Vice-President of  
Regions/Chapters  
IMEC  
Leuven, Belgium*

### CONGRATULATIONS TO THE EDS MEMBERS ELECTED TO THE NATIONAL ACADEMY OF ENGINEERING (NAE)

The U.S. National Academy of Engineering (NAE) elected seventeen IEEE members in 2005. Three of the seventeen members elected are EDS members. These members will be inducted into the NAE this October.

A private, nonprofit institution, the NAE has more than 2,100 peer-elected members and foreign associates - senior professionals in business, academia and government who are among the world's most accomplished engineers.

The three EDS members elected in 2005 were elected as NAE Members. They are: Fellow, Mark T. Bohr; Fellow, Roger T. Howe; and Fellow, Lawrence L. Kazmerski.

The other fourteen IEEE members elected as NAE Members are: Member, Paul G. Allen; Fellow, John E. Bowers; Fellow, A. Robert Calderbank; Fellow, Edmund M. Clarke; Senior Member, David E. Culler; Fellow, Per K. Enge; Fellow, Alexander G. Fraser; Fellow, Richard D. Gitlin; Fellow, Leah H. Jamieson; Life Fellow, David A. Landgrebe; Member, Michael E. Lesk; Fellow, Marc D. Levenson; Member, Roger R. Schmidt; and Member, Neil G. Siegel.

Our congratulations to all the IEEE members elected to this prestigious institution, and I encourage all of our newly elected and other IEEE/NAE members to actively seek out, identify and arrange for the NAE nomination of worthy IEEE colleagues so that we can add this activity as another reason to be a member of EDS/IEEE.

*Jerry M. Woodall  
EDS Chair, National Academy of  
Engineers  
Purdue University  
West Lafayette, IN, USA*

## REPORT FROM THE EDS VICE-PRESIDENT OF MEETINGS



*Kenneth F. Galloway*

Technical meetings, conferences, and symposia sponsored by the Electron Devices Society are a key part of our professional lives. We present our work, we exchange ideas, we meet new colleagues, and we learn about the state-of-the-art.

The EDS Meetings Committee membership includes representation from twelve of the fourteen Society Technical Committees, the Vice-President of Technical Activities, and the Society Treasurer (see table). The committee receives outstanding support from the EDS Executive Office. One of the goals of the Committee is to encourage an alignment between the actual meetings, conferences, and symposia sponsored by the EDS and the EDS Technical Committees with the Technical Committees serving in an oversight capacity for meetings in their area of interest.

In 2005, EDS will sponsor or co-sponsor 24 meetings and will be technical co-sponsor for another 90 meetings. EDS is involved, overall, in 147 meetings (30 meetings with a financial stake and 117 as technical co-sponsors). In terms of attendance, the International Electron Devices Meeting (IEDM) is usually the largest EDS meeting with as many as 2000 attendees and then there are workshops or regional meetings with as few as 100 in attendance.

EDS supports meetings in two categories; EDS is the full sponsor or co-sponsor (with another IEEE Society or another professional society), or EDS is a technical co-sponsor (with another IEEE Society or another pro-

fessional society). The meetings that EDS fully sponsors or co-sponsors are the ones for which we have financial responsibility – that is usually a financial advance is provided by EDS to assist with meeting organization and planning and IEEE EDS provides a financial backstop for the meeting and liability insurance. In return, EDS expects the advance to be repaid and EDS to receive any budget surplus as the conference books close (100% for meetings that are solely sponsored by EDS).

plans for the meeting's next occurrence and the proposed budget is reviewed by the Executive Office, the Vice-President for Meetings, and the Treasurer. EDS repeat meetings scheduled for 2006 were approved at the 2004 December ADCOM Meeting at IEDM. Repeat occurrences of meetings that receive technical co-sponsorship are approved on the same schedule. Proposed new meetings with or without financial involvement are required to provide organizational

Committee Member	Technical Committee Represented/Office Held
H.S. Bennett	Compound Semiconductor Devices and Circuits, Optoelectronic Devices, Technology Computer Aided Design
J.A. Dayton, Jr.	Vacuum Devices
K.F. Galloway	EDS Vice-President - Meetings
C. Jagadish	Nanotechnology
M.E. Law	EDS Vice-President - Technical Activities
J.J. Liou	EDS Treasurer
A.S. Oates	Device Reliability Physics
S. Saha	Compact Modeling
M.A. Shibib	Power Devices and ICs
R. Singh	Semiconductor Manufacturing
H.S.P. Wong	Nanotechnology
J.M. Woodall	Electronic Materials
P.K.L. Yu	Compact Modeling

Technical co-sponsorship refers to meetings that EDS endorses, allows the use of the IEEE and EDS logos, and notes in calendars and lists of EDS meetings and IEEE meetings. These meetings are deemed to be of technical interest to the membership with some membership involvement, but EDS has no financial liability or stake in the meeting.

Return of budget surplus from financially sponsored meetings is one of the major revenues streams for support of society activities. For an average calendar year, this amounts to approximately \$350,000.

For an established EDS sponsored or co-sponsored meeting,

information and plans to the EDS Executive Office (contact Joyce Lombardini, j.lombardini@ieee.org) and this information is reviewed by Meetings Committee members and relevant EDS Technical Committees to determine what, if any, EDS involvement will occur.

EDS has a very well functioning structure for support of technical meetings of interest to the membership. We welcome your comments and suggestions as to the operations of the Meetings Committee.

*Kenneth F. Galloway  
EDS Vice-President of Meetings  
Vanderbilt University  
Nashville, TN, USA*



## EDS TECHNICAL COMMITTEE REPORT - POWER DEVICES & ICs

The Power Devices & ICs Committee consists of fifteen members. The present members are: Toshiaki Yachi (Tokyo University of Science) – Chair, Gehan Amaratunga (University of Cambridge), Claudio Contiero (STMicroelectronics), Taylor R. Efland (Texas Instruments), Allen R. Hefner (National Inst. Of Standard and Tech.), Noriyuki Iwamuro (Fuji Hitachi Power Semiconductor), Daniel Kinzer (International Rectifier), Oh-Kyong Kwon (Hanyang University), Ashraf Lotofi (Agere Systems), Akio Nakagawa (Toshiba), Mikael L. Ostling (KTH, Royal Institute of Technology), Johnny K. O. Sin (The Hong Kong Univ. of Science & Tech.), Paolo Spirito (University of Napoli), Ninoslav D. Stojadinovic (University of Nis), and Richard K. Williams (Advanced Analogic Technologies).

The main functions of the technical committee are to identify new technical areas, assist and sponsor meetings, assist with publications involvement, among others. In the field of power devices, attention has been given to Power ICs, Super-junction Devices, such as cool-MOS, and Wide Band-gap Power Devices. The International Symposium on Power Devices & ICs, ISPSD, is the main conference covering the field. Five of our committee members have served as the General Chair of previous ISPSDs.

The first ISPSD was held in Tokyo in 1988 and facilitated technical discussion in all aspects of Power Semiconductor Devices, Power ICs and their applications. Since then, ISPSD has provided an annual international forum alternatively hosted in Japan, the USA, and Europe. ISPSD were held sixteen times from 1988 to 2004. The Technical Committee for the ISPSD has three sub-committees concerned with High Power Devices, Low Power Devices, and Power ICs, respectively. Attendance has increased considerably over time, with more than double the number attending the last conference (440 persons) than the first symposium in 1988. ISPSD has presented Awards to encourage researchers in this technical field, such as the “Georges Charitatt Awards” for young researchers, and the best paper Award. ISPSD 2005 was held in Santa Barbara, USA, from May 22-26, 2005. From 162 submitted papers, 35 papers were accepted for oral presentations with another 30 accepted as poster session papers. ISPSD 2006 and ISPSD 2007 will be held in Naples and South Korea, respectively.

*Toshiaki Yachi  
EDS Power Devices &  
ICs Technical Committee Chair  
Tokyo University of Science  
Tokyo, Japan*



*Technical Committee in San Francisco on December 4, 2004. From the left, Richard K. Williams (Advanced Analogic Technologies), Daniel Kinzer (International Rectifier), Toshiaki Yachi (Tokyo University of Science), Taylor R. Efland (Texas Instruments), Paolo Spirito (University of Napoli), and Ninoslav D. Stojadinovic (University of Nis).*

### CONGRATULATIONS TO THE EDS MEMBERS RECENTLY ELECTED TO IEEE SENIOR MEMBER GRADE!

Farrokh Ayazi	Alexander H. Owens*
Jochen Beintner	Mehmet C. Ozturk
William R. Bidermann	Christos MA Papavassiliou
Detlef Bonfert*	Xin-Ping Qu
Richard C. Borgioli	Jae-sung Rieh
Karim S. Boutros	Leonard M. Rubin*
Robert T. Croswell	Andrew M. Sarangan
Veronique Ferlet-Cavrois	William J. Semancik
Jan V. Grahm	George E. Smith*
Leo G. Henry*	Matthew L. Smith
Yi Hu	Scott F. Smith
Kazunan Ishimaru*	Emilio A. Sovero
Robert G. Jackson	Thomas G. Swahn
Hamadi Jamali	Dennis W. Tom
George R. Kaelin	Wilman Tsai
Michael G. Khazhinsky	Bill Vassilakis
Lester J. Kozlowski	Han-Olof Vikes
Guoliang Liu	Faa-Ching Wang*
Kaizad Mistry	Tiechang Yan
Eric R. Molto	Paul D. Yoder
M.K. Moravvej-Farshi	Edward T. Yu*
Larry Akio Nagahara	C. Patrick Yue
Koji Nakamae	Revaz Zaridze
Nanad Novkovski	

\* = Individual designated EDS as nominating entity

If you have been in professional practice for 10 years, you may be eligible for Senior Membership, the highest grade of membership for which an individual can apply. New senior members receive a wood and bronze plaque and a credit certificate for up to US \$25 for a new IEEE society membership. Upon request, a letter will be sent to employers, recognizing this new status.

For more information on senior member status, visit [http://www.ieee.org/membership/grades\\_cats.html#SENIORMEM](http://www.ieee.org/membership/grades_cats.html#SENIORMEM). To apply for senior member status, fill out an application at <http://www.ieee.org/organizations/rab/md/smelev.htm>.

## EDS CHAPTER SUBSIDIES FOR 2006

The deadline for EDS chapters to request a subsidy for 2006 is 1 September 2005. For 2005, the EDS AdCom awarded funding to 55 chapters, with most amounts primarily ranging from US\$250 to US\$1,000. In June, Chapter Chairs were sent an e-mail notifying them of the current funding cycle and providing them with a list of guidelines. In general, activities which are considered fundable include, but are not limited to, membership promotion travel allowances for invited speakers to chapter events, and support for student activities at local institutions. Subsidy requests should be sent via e-mail, fax or mail to the EDS Administrator, Laura J. Riello, IEEE, EDS Executive Office, 445 Hoes Lane, Piscataway, NJ 08854, l.riello@ieee.org or fax 732 235 1626. Prior to the submission of the subsidy request, the Chapter Chair must submit a Chapter Activity Report to its respective SRC Chair and Laura Riello of the EDS Executive Office by July 1. This report should include a general summary of chapter activities (one to two pages) for the prior July 1<sup>st</sup> - June 30<sup>th</sup> period. You must also attach a copy of the activity report to your chapter subsidy request. Final decisions concerning subsidies will be made by the EDS SRC Chairs/Vice Chairs in December. Subsidy checks will be issued by late January.



## REPORT FROM THE EDS CHAIR OF THE SEMICONDUCTOR MANUFACTURING TECHNICAL COMMITTEE



Robert R. Doering

At the time of writing (March 4, 2005), the IEEE EDS Semiconductor Manufacturing Technical Committee has 10 members — from industry, academia, government, and consortia in the U.S., Japan, and Korea. During the next year, we will seek to further diversify the membership internationally.

In addition to the relatively routine business of making recommendations on EDS co-sponsorship of several conferences related to semiconductor manufacturing, we have recently completed a project which resulted in recruitment of several new EDS Distinguished Lecturers in the area of semiconductor manufacturing. Currently, the Semiconductor Manufacturing Technical Committee is working toward a special issue of the *IEEE Transactions on Semiconductor Manufacturing*, which will focus on the metrology challenges that we are facing now and in the near future. It is anticipated that most of the articles will be based on presentations from the 2005 International Conference on Characterization and Metrology for ULSI Technology (ICCM 2005), held at the University of Texas at Dallas in Richardson, Texas on March 15-18, 2005. This conference is organized into 11 sessions covering all aspects of semiconductor metrology and characterization — off-line, in-line, and in-situ. The papers in this conference fit our vision for the potential breadth of the special issue. They address major issues in current manufacturing, challenges anticipated by the International Technology Roadmap for Semiconductors (ITRS) over the next 15

years, and even future frontiers of metrology at the increasingly fuzzy boundaries between semiconductor, biotech, and other nanotechnologies.

During our early discussion on potential projects for 2005, other general topics under consideration included: (1) working with the Semiconductor Industry Association (SIA) and its international partners on a special contribution to the ITRS, or (2) with organizations promoting research on “future nanomanufacturing” for electronics. For example, by the time of this newsletter, the SIA’s new Nanoelectronics Research Initiative (NRI) should be officially launched as the program of a new consortium, the NanoElectronics Research Corporation (NERC). The principal goal of the NRI is to identify device concepts which might enable “post-CMOS” technologies. Of course, useful technologies require practical manufacturing, and several organizations around the world are involved in the pursuit of novel techniques for nanomanufacturing. One such example is Semiconductor Equipment and Materials International (SEMI), which is now planning for its second annual NanoForum, to be held in San Jose, California on October 3-5. Thus, the EDS Semiconductor Manufacturing Technical Committee plans to engage in discussions with NERC, SEMI and other organizations with a stake in such research to see if we can identify appropriate future projects which are synergistic with their interests and those of the EDS membership.

Robert R. Doering  
EDS Semiconductor Manufacturing  
Technical Committee Chair  
Texas Instruments, Inc.  
Dallas, TX, USA

## STATUS REPORT FROM THE 2004 GRADUATE STUDENT FELLOWSHIP WINNERS

In 2000, the IEEE approved the establishment of the Electron Devices Society Graduate Student Fellowship Program. The Program is designed to promote, recognize, and support graduate level study and research within the Electron Devices Society's Field of Interest which include: All aspects of the physics, engineering, theory and phenomena of electron and ion devices such as elemental and compound semiconductor devices, organic and other emerging materials based devices, quantum effect devices, optical devices, displays and imaging devices, photovoltaics, solid-state sensors and actuators, solid-state power devices, high frequency devices, micro-mechanics, tubes and other vacuum devices. In deference to the increasing globalization of our Society, at least one fellowship is to be awarded to students in each of three geographical regions: Americas, Europe/Mid-East/Africa, and Asia & Pacific.

In July 2004, EDS announced the winners of the 2004 Fellowships'. The four winners were: David W. DiSanto of Simon Fraser University, Burnaby, British Columbia, Canada; David L. John of the University of British Columbia, Vancouver, British Columbia, Canada; Martin Von Haartman of the Royal Institute of Technology, Kista, Sweden and Hongyu Yu of the National University of Singapore, Singapore. The winners are pursuing distinctly different research topics for their doctoral degrees. The following are brief progress reports written by the award winners.



*David DiSanto*

**DAVID DISANTO** was born in 1973 in British Columbia, Canada. He received his bachelor's degree in engineering physics at Queen's University, Ontario, Canada. His masters degree was in low temperature physics and astrophysics at the University of British Columbia, Vancouver, BC. For his Ph.D. he jumped at the chance to join Professor Colombo Bolognesi in the

Compound Semiconductor Device Laboratory at Simon Fraser University, Burnaby, BC, Canada.

He is investigating fabrication and characterization issues related to AlGaIn/GaN HEMTs. His research interests include delay time characterization, novel fabrication techniques, device modeling, and slump characterization.



*David John*

**DAVID JOHN** Following his career as a technical director for live theatrical events, David John received the Bachelors of Science degree in Engineering Physics from the University of British Columbia (UBC) in 2002. He is currently pursuing a Ph.D. in modeling carbon nanotube field-effect transistors in Dr. D. L. Pulfrey's Nanoelectronics Group in the Department of Electrical and Computer Engineering at UBC. As a member of the Institute of Applied Mathematics, David's research employs both numerical and analytical techniques in order to derive his physics-based models. David would like to thank his wife, Kerri, and children, Alicia and Emlyn, for supporting him in the work that has resulted in this award.



*Martin Von Haartman*

**MARTIN VON HAARTMAN** was born in Södertälje, Sweden, in 1976. He received the M.S. degree in Electrical Engineering from KTH, The Royal Institute of Technology, Stockholm, Sweden in 2001, and was elected as the "best graduate of the year" by the School of Electrical Engineering. During the fall of 2000, he was a visiting student at the University of Florida at Gainesville under guidance of Prof. G. Bosman, researching his master's thesis. Martin is currently pursuing a Ph.D. degree in solid-state electronics at KTH, Dept. of Microelectronics and Informa-

tion Technology. His research interests include device physics, characterization and modelling of Si and SiGe based CMOS and bipolar devices with the main focus on low-frequency noise. He has authored or co-authored 12 papers in referred journals and conference proceedings. Martin is also a popular and frequently used teacher in the undergraduate education at KTH.



*Hongyu Yu*

**HONGYU YU** was born in TianJin, China in 1976. He received the B.Eng. degree from Tsinghua University, Beijing, China, in 1999, and the Masters of Science degree from the University of Toronto, Toronto, Canada, in 2001. Since January of 2001, he has been pursuing the Ph.D. degree at the Department of Electrical & Computer Engineering in the National University of Singapore.

His current research centers on the advanced gate stack for future generation Nano CMOS device applications, including the process technology, material and electrical characterization, and reliability study for the metal gate electrode and high-K gate dielectrics. He has authored or co-authored more than 30 papers in referred technical journals and conference proceedings in the area of semiconductor physics and fabrication.

Hongyu Yu was awarded with the NUS President Graduate Fellowship in 2002. He also received the University of Toronto Graduate Fellowship in 2000 & 2001.

*Paul K.L. Yu  
EDS Vice-President of  
Educational Activities  
University of California at San Diego  
La Jolla, CA, USA*

*Stephen A. Parke  
EDS Graduate Student  
Fellowship Chair  
Boise State University  
Boise, ID, USA*

# EDS DISTINGUISHED LECTURER PROGRAM - LECTURERS RESIDING IN EUROPE, AFRICA & MIDDLE EAST

The EDS Distinguished Lecturer Program exists for the purpose of providing EDS Chapters with a list of quality lecturers who can potentially give talks at local chapter meetings. To arrange for a lecture, the EDS chapters should contact the Distinguished Lecturer directly. A general guideline for the visit, but not the absolute rule, is that the lecturer should be able to include the meeting site with an already planned travel schedule at a small incremental cost to the travel plan. Alternatively, a prior coincident travel plan would not be required if the lecturer is already located within an approximate fifty mile radius of a meeting site. Although the concept of the program is to have the lecturers minimize travel costs by combining their visits with planned business trips, EDS will help subsidize lecturer travel in cases where few/no lecturers will be visiting an area and/or a chapter cannot pay for all the expenses for a lecturer trip. For a full listing of EDS Distinguished Lecturers and travel plans please contact Laura Riello of the EDS Executive Office (Tel: 1-732-562-3927, Fax: 1-732-235-1626, E-Mail: l.riello@ieee.org).

## **HERZL AHARONI**

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- Two Terminal and Multiterminal Efficient Planar Silicon Light Emitting Devices (Si - L.E.D's) Fabricated by Standard IC Technology as Components for All Silicon Monolithic Integrated Optoelectronic Systems
- Low Temperature (400oC) Growth of High Quality, Low Leakage Current, Reliable, Silicon Oxide and Silicon Oxynitride Thin Films, on Silicon Surfaces, by Microwave - Excited, High - Density Plasma Techniques, for Future ULSI Microelectronic Systems Fabrication
- Two Terminal and Multiterminal Efficient Planar Silicon Light Emitting Devices (Si - L.E.D's) Fabricated by Standard IC Technology Components for All Silicon Monolithic Integrated Optoelectronic Systems

## **JOACHIM N. BURGHARTZ**

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- RF Silicon Technology
- Add-On Process Modules for RF Silicon Technology
- Integrated Passive Components

## **RICHARD G. CARTER**

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- Microwave Tubes and Related Topics in High Power Microwave and RF Engineering
- Microwave Vacuum Devices
- Modelling and Analysis of Microwave Tubes

## **COR L. CLAEYS**

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- Radiation Effects in Semiconductor Materials and Devices for Space Applications
- Future of Silicon-on-Insulator for Cryogenic Applications
- Low Frequency Noise in Advanced Submicron CMOS Technologies

## **SORIN CRISTOLOVEANU**

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- Scaling of SOI Devices and Innovating Architectures for Ultimate SOI MOSFETs
- Silicon On Insulator Technologies for Low-Power/Low Voltage Integrated Circuits
- Characterization Methods of Thin Film SOI Materials and Transistors
- Reliability of SOI MOSFETs: Radiation and Hot Carrier Effects
- SOI Materials and Devices - Novel Concepts & Dimensional Effects

- Physics and Technology of Multiple-Gate MOSFETs

## **SIMON DELEONIBUS**

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- CMOS Logic and Non-Volatile Memories Devices Architectures and sc
- Sub 50nm NanoCMOS Transistors Devices Architectures and Advanced Modeuls Integration: Metal Gate/HiK Gate Stack, Stained SiGeC Channels
- Multigate Devices and Fully Depleted SOI Devices Integration
- Field Isolation for High Density CMOS and Non-Volatile Memories

## **DANIEL DONOVAL**

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- Analysis of the Electrical Properties of Schottky Diodes
- Design and Analysis of Power Semiconductor Devices Supported by TCAD Modeling and Simulation

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- Low Frequency Noise in Advanced CMOS Devices
- Reliability Issues in Ultra Thin Oxides
- Low Temperature Operation and Reliability of CMOS/SI & SOI Devices
- Parameter Extraction in MOS Capacitance and MOS Transistors

**GADY GOLAN**

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- From theory to practice – Integration of Academic Life With High-Tech Start-Ups – Six Years Summary
- Novel Technologies in Polycrystalline Silicon Carbide Mfg.
- Embedded Miniature Displays for Smart Cards Applications

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- Theory and Principal Construction of Combined Silicon Pressure-Temperature Sensor
- An Application of Conform Mapping Method for Analyzing the Piezotransducer with Special Form of Current Spread Region
- An Analyzing the Sensitivity and Non-Linearity of Four-Terminal Silicon Pressure Piezotransducer
- An Elementary Theory for Three-Terminal Silicon Pressure Piezotransducer
- Mechanical Stresses in Silicon Diaphragm: Comparison of FEM and Ritz Variation Method

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- Simulation and Modeling of Nanoscale Multiple-Gate SOI MOSFETs
- Modeling of Thin Film Transistors for Circuit Simulation RF Macro-Modeling of Advanced MOSFETs

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- Modern State and Development Perspectives of Optical Information Systems
- Dynamic Phenomena in Optically Transparent Magnetic Thin Films

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- Silicon Carbide Devices and Processes - Present Status and Future Perspective
- Power Devices for Switch and rf-Applications
- Si/SiGe Bipolar Technology for rf-Applications
- SiGe MOFSET Technology for Ultimate Scaling
- Silicide Technology in Microelectronics

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- Microwave Vacuum Electronics
- High Power Microwave Electronics and Its Applications

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- Dielectric Components for Frequency Agile Microwave Electronics

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- Recent Developments in Deep Sub-micron Devices – Theory and Experiment
- E-Learning in ICT and Microelectronics
- Quantum Transport in Sub-Micron Devices

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- New Photoelectric Measurement Methods of the Basic MOS Structure Parameters

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- Si/SiGe Heterojunction Bipolar Transistors for Wireless Communications
- Silicon-Based Front-End Ics for the 24 GHz ISM Band

**SIEGFRIED SELBERHERR**

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- Process Simulation for Modern Microelectronics Technologies
- Technology CAD
- Current Transport Models for Engineering Applications

**LUCA SELMI**

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- Carrier Transport in Nano-MOSFETs
- Monte Carlo Methods for the Solution of the BTE in Electron Devices
- CHISEL Injection and Degradation in MOSFETs and NVM cells
- Statistical Analysis of SILC in FLASH EEPROM

**NINOSLAV D. STOJADINOVIC**

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- Effects of Elevated-Temperature Bias Stressing on Radiation Response in Power VDMOSFETs
- Effects of Electrical Stressing and Subsequent Recovery Treatment in Power VDMOSFETs

## HOW TO FORM AN IEEE STUDENT BRANCH AND STUDENT BRANCH CHAPTER



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An IEEE Student Branch gives students the opportunity to meet and learn from fellow students, as well as faculty members and professionals in the field. A good IEEE Student Branch can be one of the most positive elements in an Electrical Engineering, Computer Engineering or Engineering Technology department. IEEE Student Branches are established at over 1,000 universities and colleges throughout the world. Student Branch activities offer numerous educational, technical, and professional advantages of IEEE membership through special projects, activities, meetings, tours and field trips.

Establishing an IEEE Student Branch requires the signatures of 20 IEEE Student members on a petition. The petition must specify the name of the Branch, and the names of the Interim Student Chair and faculty member who will serve as Counselor of the Branch. The petition must also be approved by the Department Chair and two faculty members, who are also IEEE members above student grade. Submit the petition to IEEE Student Services to begin the approval process, which includes verification of the IEEE membership of the students and the faculty members on the petition, review of the programs offered at the educational insti-

tution, review and approval by the IEEE Regional Director, the Regional Student Activities Committee Chair and the IEEE Regional Activities Board (RAB). If further information is required, please contact: IEEE Student Services, Phone +1 732 562 5527/5392, Fax +1 732 463 3657 or e-mail: [student-services@ieee.org](mailto:student-services@ieee.org)

Once a university/college has established an IEEE Student Branch, an affiliation can be made with one or more of IEEE's technical societies to form a Student Branch 'Chapter'. There are currently over 300 IEEE Student Branch Chapters, with the Electron Devices Society having 10 at various institutions in a number of regions. The requirements for the establishment of an IEEE Student Branch Chapter for EDS are as follows:

- A petition by not less than twelve (12) Student Branch members, who are members of the IEEE technical Society, must be submitted to Stacey Waters of the EDS Executive Office at 445 Hoes Lane, Piscataway, NJ 08854 USA or via fax at 732-235-1626.
- The petition must specify the name of the Student Branch, the name of the technical Society with which the Student Branch Chapter will be affiliated, the

name of the interim Branch Chapter Chair and the name of the faculty Advisor, who must be a member of IEEE and the technical Society above student grade.

- After the Advisor and the IEEE Student Branch Executive Committee have approved the petition, it should be sent to the EDS Executive Office.
- Upon receipt of the petition, the EDS Office will forward it to IEEE Student Services to verify the IEEE and technical Society membership of individuals who signed the petition. If the petition is in order, Student Services staff will take the necessary action to obtain formal approval of the petition by the Society President, the Regional Director and the Regional Student Activities Committee Chair. Student Services staff will acknowledge receipt of the petition and will keep the faculty advisor informed of the status of the request.

EDS welcomes the formation of new Student Branch Chapters and we look forward to hearing from you. If you have any further questions, please contact Stacey Waters ([s.waters@ieee.org](mailto:s.waters@ieee.org)).

# NEW!!

## EDS ARCHIVAL COLLECTION On DVD

**Archival Collection Includes** a comprehensive author, subject, and publications indexes, abstract pages and all articles in PDF for the following publications:

- + **Transactions on Electron Devices** All issues from **1954** through **August 2004**
- + **Electron Device Letters** All issues from **1980** through **August 2004**
- + **International Electron Devices Meeting** All technical digests from **1955** through **2004**

**Collection also includes** abstract pages for the publications listed below:

- + **Journal of Solid-State Circuits** All issues from **1966** through **2003**
- + **International Solid-State Circuits Conference** All issues from **1955** through **2003**
- + **VLSI Circuits Symposium** All proceedings from **1988** through **2003**

**Electron Devices Society 50<sup>th</sup> Anniversary Commemorative Booklet and EDS Newsletter (1999-2004), also included.**

As a member of EDS, you can purchase this amazing collection for just \$30, by just visiting the IEEE Online Store at <http://shop.ieee.org/store/>. Be sure to log in as an EDS Member to get the \$30 price break. The IEEE product number for the DVD is JD1554. New members are welcome to join at <http://www.ieee.org/eds/join>

## REGIONAL AND CHAPTER NEWS

### USA, CANADA & LATIN AMERICA (REGIONS 1-6, 7 & 9)

#### ED Vancouver

The ED Vancouver Chapter, chaired by Prof. K.S. Karim, hosted Dr. Harry Kwok, Dept. of Electrical and Computer Engineering, University of Victoria, who presented a seminar on "Current Transport and Light Emission in Organic Field Effect Transistors (OFETs)" in the faculty of Applied Sciences Bldg, Simon Fraser University, Burnaby.

~ **Jamal Deen, Editor**

#### ED South Brazil Makes Use of the IEEE/EDS Distinguished Lecturer Program

- by *Jacobus W. Swart and Ricardo Cotrin*  
In March 2005, two chapter meetings were held using the Distinguished Lecturer Program of EDS: the first one was a Workshop called SEMINATEC and the second one was a seminar. The first one was organized together with the EDS student chapter at UNICAMP.

The SEMINATEC workshop was held on March 4th at the State University of Campinas, UNICAMP. A lecture was delivered by Prof. Hiroshi Iwai, President of EDS and professor at Tokyo Institute of Technology. The title of the lecture was "Challenges for the CMOS roadmap and nanotechnology beyond CMOS". After his lecture, other oral presentations were given, followed by a poster session with about 50 papers and at the end a round table discussion. More than 130 persons attended the workshop. Details about the workshop, as well as a copy of the proceedings can be found at <http://www.ccs.unicamp.br/seminatec/>. At the end of the workshop, 4 posters were selected for best paper awards. The awarded papers were: F.S. Campos et al. (A FPN digital correction method for digital CMOS imagers in time domain); C. Verissimo et al (Effects of the process parameters in the carbon nanotubes growth by thermal CVD);



*The ceremony of the best paper award. From the left to right: Stanislav Moshkalev, Ricardo Cotrin, Wilhelmus van Noije and Hiroshi Iwai.*

E.J. Carvalho et al. (Fabrication and replication of periodic submicrometric structures using interferometric lithography) and A. Kostryukov et al (ICP reactor development and plasma characterization)

Before and after participating on the SEMINATEC workshop, Prof. Iwai also visited 4 other universities in the country, located in Brasilia, Recife, Rio de Janeiro and Porto Alegre, where he also delivered lectures.

The second chapter meeting was held on March 22nd at the Federal University of Santa Catarina, UFSC, in Florianópolis, SC. A seminar was given by Prof. Siegfried Selberherr, from the Technical University of Vienna, Austria, and distinguished lecturer of EDS. The seminar was entitled "Current Transport in Upcoming Microelectronic Devices". A group of about 20 persons attended the seminar, followed by discussions. Also a visit to the microelectronics laboratory was held. This visit was guided by professors Carlos Galup-Montoro and Marcio Schneider, showing the activities going on in the group and discussing results.

Social events were also held together with both chapter meetings. At the SEMINATEC a cocktail get-together was organized for all participants, while in Florianópolis, a nice dinner closed the meeting.

~ **Adelmo Ortiz-Conde, Editor**

### EUROPE, MIDDLE EAST & AFRICA (REGION 8)

#### ED Israel

- *Gady Golan*

**A.** On Monday, March 14, 2005, at Hasharon Hotel, Hertzlia.

Subject of meeting: "Electronic Inspections of Climate Disasters",  
Lecturer: Dr. Baruch Ziv, The Open University of Israel.

Chairman of the meeting: Prof. Gady Golan

25 people, students and academic staff, attended the meeting at Hasharon Hotel.

**B.** On Sunday, April 3, 2005, at HAIT (Holon Academic Institute of Technology), Holon.

Subject of meeting: "Ring Resonators",  
Lecturer: Dr. Kobby Schoyer - Caltech, CA, USA.

Chairman of the meeting: Prof. Gady Golan

#### Abstract:

The transition from the contemporary low scale integration of optical devices to future highly-integrated photonic processors requires new high-quality materials on one hand and inexpensive mass-production fabrication methods on the other. Polymeric materials have interesting optical and mechanical properties, making them an attractive



*IEEE Israel Section Chair, Arie Braunstein and ED Israel Chapter Chair, Gady Golan, listening to lecturer, Dr. Kobby Schoyer.*



choice for future photonic systems. In addition to low optical losses and material dispersion, polymer are simple to manipulate and to cast using a wide variety of fabrication methods including soft-lithography techniques. Moreover, the ability to dope polymeric materials with molecules that exhibit a large electro-optic coefficient, nonlinear response or optical gain, paves the way to all-polymer integrated optical circuits that include on-chip sources, processors and detectors.

75 people, students and academic staff, attended the meeting at HAIT.

**C.** On Sunday, April 17, 2005, at HAIT (Holon Academic Inst. Of Technology), Holon.

Subject of meeting: "The discovery of the Polarization Rotation effect in asymmetric loaded waveguides"

Lecturer: Dr. Yosi Shani - Linx, Israel.  
Chairman of the meeting: Prof. Gady Golan

**Abstract:**

The polarization rotation effect in asymmetric loaded optical waveguides was discovered at 1990 during my work at AT&T Bell Labs. The effect enabled, for the 1st time, the fabrication of short passive polarization rotators in integrated optic devices. Since its discovery the effect was investigated thoroughly by many groups around the world and was repeated, simulated and improved.

In the present talk the steps that led to the discovery of the effect are reviewed, and in particular, in addition to the effect itself, some of the adiabatic integrated optic devices that were fabricated are described.

60 people, students and academic staff, attended the meeting at HAIT.

~ **Gady Golan, Editor**

**ED/MTT/AP St. Petersburg**

- by Margarita F. Sitnikova

Some important events technically supported by our chapter will be presented below.

The Seminar 'Day on Diffraction in New Millennium', an annual international seminar on mathematical methods in the diffraction theory, was held in St. Petersburg June 29 – July 2, 2004. The official organizers of this



*Registration of participants for the 8th All-Russia Student Conference in Radiophysics*

seminar were the Faculty of Physics of the St. Petersburg State University, St. Petersburg Branch of Steklov Mathematical Institute and Euler International Mathematical Institute. Over 180 participants presented 90 oral papers. The official Seminar Web page is <http://mph.phys.spbu.ru/DD>.

The idea of organizing annual seminars on diffraction theory and wave propagation started in 1968, and the first seminar was held in June. The day after the Seminar was the relaxation day. All participants, who were young at that time, went to the bank of the Gulf of Finland, played volleyball, football on the beach, and drank tea. Since this time, all the sessions are always finishing with friendly picnic parties with a campfire and traditional Russian games. Year by year the Soviet scientists from other cities began to participate and the "Day on Diffraction" became an All Union Seminar. Since 1986 until the last decade, the Seminar had been held for two days: the first day was organized in Leningrad, the second day was at the Faculty of Physics in Peterhoff. Within the last decade the Seminar became international and is now held for four days with the number of participants exceeding one hundred.

The Seminar on Modern Problems of Computational Electrodynamics was held at St. Petersburg Electrotechnical University "LETI" July 1 – 2, 2004. The Seminar is intended for presenting the latest results and achievements in the field of computational electrodynamics and for discussing the modern problems existing in this field. Main topics for the Seminar were modern numerical methods for the

solution of Maxwell's equations, new results in solving huge systems of linear algebraic equations, new methods of solving eigenvalue problems, modern optimization techniques, new computer codes for analysis and optimization of microwave devices and systems. The Workshop on QWED3D computer code will be held during the Seminar.

An invited lecture was presented by Prof. Wojciech Gwarek from the Warszawska Politechnika, Institute of Radio Electronics. His topic of presentation was 'Design of microwave passive structures without hardware prototyping – how close it comes with state-of-art electromagnetic simulation'.

The 8th All-Russia student conference in Radiophysics was organized in Peterhoff, December 7-8, 2004. Among the official organizers were St. Petersburg State University, St. Petersburg State Technical University and others. About 60 participants, including 44 students representing 10 universities and research institutes from 8 cities of Russia attended. Five IEEE Members and Student Members participated in the Conference. Three best paper awards were awarded. The abstracts for these papers are published in the *IEEE Microwave Magazine*. Abstracts of all presented papers are published on the web at <http://radio.stu.neva.ru/studconf.htm>.

**AP/ED/MTT/COM/EMC Tomsk**

- by Oleg V. Stukach

The 10th International Symposium on Advances of Measurement Science was held June 30 to July 2, 2004 in the Hotel 'Saint-Petersburg, St.-Petersburg, Russia. The symposium was organized



*The Tomsk organizers of the Symposium in Senate Square of St.-Petersburg*

by the AP/ED/MTT/COM/EMC Tomsk Chapter upon request of the International Measurement Confederation.

In three halls of the Hotel 'Saint-Petersburg', parallel sessions were organized in the following fields: Foundations of Measurement Science and Metrology; Uncertainty of Measurement; Measurement Signals and Data Processing; Intelligent Measurement Systems; Methods and Algorithms for Measurement, Testing, Diagnostics, and Recognition; Quality and Reliability.

Before the symposium, the Proceedings and CD-ROM were published. Papers were selected by the International Program Committee based on the reviewing of the extended thesis. Only papers consisting of new original ideas and important practical results were selected. The reports were only oral, and there was no poster section. In addition to sessions, the symposium program included two discussion panels.

The Symposium has concluded that it is necessary to supply an opportunity to create a knowledge base on the measurement systems. It is important to promote more active participation of the IEEE members in their own IEEE units, as well as to extend cooperation to new young researchers and other IEEE Societies.

~ **Alexander V. Gridchin, Editor**

## 2006 International Conference on Microelectronics (MIEL 2006)

- by *Tatjana Pesic*

The 25th International Conference on Microelectronics (MIEL 2006) will be held May 14-17, 2006, at the Faculty of Electronic Engineering, University of Nis, Serbia & Montenegro. The MIEL 2006 Conference will be organized by the IEEE Yugoslavia Section - ED/SSC Chapter, in cooperation with the Faculty of Electronic Engineering, University of Nis, Ei-Holding Co.-Nis, and Society for ETRAN, under the co-sponsorship of the IEEE EDS, with the cooperation of IEEE SSCS, and under the auspices of Ministry of Science and Environmental Protection, Serbian Academy of Science and Arts, Academy of Engineering Sciences of Serbia and Montenegro, and City Assembly of Nis.

MIEL is an outstanding European conference providing an international forum for the presentation and discus-

sion of the recent developments and future trends in the field of microelectronics. Since 1984, there is an aura of internationalization around the MIEL conferences, providing an opportunity for specialists from both academic and industrial environments from the West and East, as well as from the countries of the Third World, to meet in an informal and friendly atmosphere and exchange their theoretical and practical experiences. Since 1995, MIEL has been organized under the technical co-sponsorship of IEEE EDS, while the conference received IEEE EDS co-sponsorship for the first time in 2000.

The topics to be covered by the technical program of the MIEL 2006 Conference include all important aspects of microelectronic devices, circuits and systems, ranging from materials and processes, technologies and devices, device physics and modeling, process and device simulation, circuit design and testing, system design and packaging, and characterization and reliability. Based on the past decade history, the technical program is expected to consist of about 150 contributed papers by the authors from more than 30 countries all around the world, which will be structured into oral and poster sessions. These papers, together with 13 invited papers, which are to be presented by the world leading authorities in the field of microelectronics, will form the solid foundation of the conference. The workshop, "Power Devices and ICs", containing five additional invited papers, will round off the technical program.

The invited lectures are: "High Voltage SOI Power ICs" (G. Amaratunga), "Failure of Ohm's Law: Its Implications on the Design of Nanoelectronic Devices and Circuits" (V. Arora), "Wireless Ultra-low Power Smart Data



Faculty of Electronic Engineering, University of Nis, Serbia and Montenegro

Acquisition System for Pressure Sensing in Medical Application" (K. Arshak), "Defect Engineering and Stress Control in Advanced Devices on High-mobility Substrate" (C. Claeys), "A-SiC:H and Polycrystalline SiC TFTs: Fabrication and Modeling" (M. Estrada), "Effects of Device Aging on Radiation Response and Reliability" (D. Fleetwood), "Low Frequency Noise and Fluctuations in sub 0.1um Bulk and CMOS Technologies" (G. Ghibaudo), "Leakage Reduction for RAMs in Nanometer Era: Present and Future" (K. Itoh), "Fringing Electric Field Induced Capacitance Behavior of sub-100nm FD SOI NMOS Devices with High-k Gate Dielectrics" (J. Kuo), "High Speed Electro-thermal Models for Inverter Simulations" (P. Mawby), "Evolution of Silicon Power Devices and Challenges to Material Limit" (A. Nakagawa), "Silicon Carbide Device Technology for High Voltage Bipolar Transistors" (M. Ostling), "Overview for the Development of IGBTs" (Y. Seki), "Optimization Issue in Interconnect Analysis" (S. Selberherr), "Gate Oxide Reliability for Nano-scale CMOS" (J. Stathis), "Vision Sensors" (J. Van der Spiegel), "A New Challenge in Modern RF IC Design: On-Chip ESD Protection Circuitry" (A. Wang) and "Silicon Integrated Photonics: Potentials and Promises" (H. Wong).

For registration and other information, visit the MIEL 2006 Home Page at <http://europa.elfak.ni.ac.yu/miel>, or contact the MIEL Conference Secretariat, Department of Microelectronics, Faculty of Electronic Engineering, University of Nis, Aleksandra Medvedeva 14, 18000 Nis, Serbia & Montenegro; Tel.: +381 18 529 325; Fax: +381 18 588 399; E-mail: [miel@elfak.ni.ac.yu](mailto:miel@elfak.ni.ac.yu)

## ED Poland

- by *Andrzej Napieralski*

On 7 December 2005, a joint meeting of the IEEE ED Chapter and the Section of Microelectronics of the Committee of Electronics and Telecommunication of the Polish Academy of Sciences took place. During the meeting Stefan Simrock (DESY, Hamburg, GERMANY) presented a topic entitled, "The European X-FEL: RF Control Challenges". The meeting was organized in Lodz, POLAND.

From June 22nd to 25th, 2005 the 12th MIXDES Conference "Mixed Design of Integrated Circuits and Systems" tech-

nically co-sponsored by EDS will be held in the Hotel Pegaz, Krakow, Poland. The areas of interest are as follows:

- Design of Integrated Circuits and Microsystems
- Thermal Issues in Microelectronics
- Analysis and Modelling of IC and Microsystems
- Microelectronics Technology and Packaging
- Testing and Reliability
- Power Electronics
- Signal Processing
- Embedded Systems
- Medical Applications
- Information Technology
- Education

During the conference there are five special sessions and a tutorial planned:

- "Advanced Compact Modeling and its Standardization Compact Models as Link between R&D, Foundry and IC Design" organised by Dr. Wladyslaw Grabinski, Freescale Geneva, Switzerland and Prof. Hiroshi Iwai, Tokyo Institute of Technology, Japan
- "Special Topics in Emerging Electronics Technologies" organised by Dr. Daniel Foty, Gilgamesh Associates, USA
- "A glimpse into the future" with top speakers from Europe, Japan and the USA (presentations about future directions of microelectronics, nano-electronics and related technologies).
- CARE Project Special Session organised by Dr. Stefan Simrock and Prof. Dieter Proch
- EDUCHIP Project Special Session coordinated by Prof. Wieslaw Kuzmicz from WUT and Prof. Andrzej Kos from AGH in Krakow

And a tutorial entitled:

- Quality-driven System on Chip Design coordinated by Prof. Lech Jozwiak from Tu/e, The Netherlands.

During the conference, the meeting of the IEEE ED Poland Chapter is planned. All people interested in this meeting, in particular all the members of the Polish section of IEEE, are invited to take part in the event. For more information, please refer to <http://www.mixdes.org>.

~ **Andrzej Napieralski, Editor**

### ED Benelux

- by Hans Wallinga

Thursday, 27 January 2005, the ED Benelux Chapter organized a colloquium

by Prof. Dr. Gijs Bosman of the department of Electrical and Computer Engineering of the University of Florida in Gainesville. His tutorial entitled "Low Frequency Excess Noise and Charge Transport in Carbon Nanotubes", was attended by 42 persons of which approximately 50% were IEEE members.

Professor Bosman started his presentation by explaining the favorable electrical, mechanical, and growth properties of carbon nanotubes. These are the reason that carbon nanotubes moved to the forefront of the research community as serious contenders for leading roles in future nano-scale device technology and circuitry. An important figure of merit for determining their usefulness for electronic applications, especially at the nano-scale, is noise characteristics. After a general introduction to charge transport in these structures the talk focused on their noise characteristics. The shot noise of carbon nanotubes was reported to be suppressed. However, the  $1/f$  noise of carbon nanotubes was found to be unexpectedly high. To delineate the physical mechanisms that contribute to these, potentially show stopping, high noise levels, we measured the noise spectral density at frequencies between 10Hz and 100 kHz over a temperature range from 77K to 300K. The noise observed is a combination of low frequency excess noise and thermal noise. The excess noise spectra showed the presence of Lorentzian noise components superimposed on  $1/f$  noise and were found to be a function of temperature. Using this temperature dependence, the noise producing trap energies, both discrete and distributed, were calculated and interpreted in terms of the carbon nanotube bandstructures.

~ **Cora Salm, Editor**

## ASIA & PACIFIC (REGION 10)

### ED Japan

- by Hiroshi Ishiwara

On January 17th, the third Japan Chapter Student Award was given to Hiroyuki Ito (Tokyo Institute of Technology), Hiroshi Irie (University of Tokyo), Takafumi Kamimura (Osaka University), Takeshi Kawano (Toyohashi University of Technology) and Masumi Saitoh



Winners of the 3rd Japan Chapter Student Award and Prof. H. Ishiwara (Chair of EDS Japan Chapter - on the left).

(University of Tokyo). This award was established in 2002 to encourage student members who actively contribute to the research of electron devices. The Japan Chapter selected these five students who have shown outstanding activities in the last year. They received metallic certificate plaques and premium from the Chapter Chair at the Japan Chapter annual meeting held in Tokyo on January 17th.

After the annual meeting, the briefing session for the 2004 IEDM was held to provide a summary discussion on the highlights of the 2004 IEDM. The five invited speakers delivered topics covering Integrated Circuits, CMOS Devices, CMOS Interconnects/Process, Modeling/Simulation, and Compound/Quantum Devices. This session has won popularity with a lot of the Japanese engineers who did not have a chance to attend the last IEDM to discuss the most advanced information of electron device technology. The session was very successful with 100 participants.

The Distinguished Lecturers Meeting was held on February 9th by the Japan Chapter, at Tokyo Institute of Technology in Yokohama, Japan. Two prestigious speakers from EDS gave presentations on: "On the Scaling Issues and High-k Replacement of Ultrathin Gate Dielectrics for Nanoscale MOS Transistors" by Prof. Hei Wong (City University of Hong Kong, China), and "The new generation of the photoelectric measurement methods of the MOS structure parameters" by Prof. Henryk M. Przewlocki (Institute of Electron Technology, Poland).

### ED Kansai

- by Toshimasa Matsuoka

The ED Kansai Chapter held a Technical Meeting at Osaka University, Osaka,





DL meeting held on 9 February 2005. Prof. H. Wong, Prof. H. M. Przewlocki, and participants.

Japan, on February 18, 2005. Three prestigious lecturers gave presentations on device technology trends reviewing papers presented in the 2004 International Electron Devices Meeting. The first talk on CMOS technology was delivered by Dr. Takahisa Eimori (Renesas Technology). His talk focused on advanced technologies related to gate stack, shallow junction, and strained silicon. The second talk on memory technologies was given by Dr. Atsushi Hori (Matsushita). His talk included SRAM/DRAM and Nonvolatile memory as well as emerging memories (FeRAM, MRAM, RRAM, and PRAM). He also stressed the importance of their applications in research and development. The last speaker, Dr. Masahiro Hikita (Matsushita), reviewed high power and high frequency devices realized by advanced compound semiconductor technologies. Dr. Yoji Mashiko (Renesas Technology), chaired the meeting and the number of participants was 29 including students and researchers from industries.

~ **Hisayo S. Momose, Editor**

## ED/SSC Bangalore

- by Dr. P.R. Suresh

The IEEE EDS/SSCS joint chapter organized several technical events during the first quarter of 2005 that received an excellent response from the technical community.

The first event was a seminar by Dr. John Cowels of Analog Devices on January 11 and the topic was "Analog Design for the Information Age". In this talk, Dr. John reviewed the 100-year history of electronics and the challenges for the analog

designer. He also presented his views on the future prospects for new processes and circuit techniques, within an applications context. About 50 people from both industry and academia attended this seminar and it received positive comments from the audience.

An IEEE distinguished lecture was given by Prof. V. Ramgopal Rao, IIT Bombay, on "Novel Device Architectures and Processes for the 65 nm CMOS Technology Node and Beyond". About 100 people attended this talk. Prof. Rao reviewed the challenges that one encounters when the conventional CMOS technology is scaled below the 65 nm technology node. He also discussed technology, circuit and system level approaches in tackling the power dissipation issues for future CMOS technologies.

Another IEEE distinguished lecture was given by Dr. Kiyoo Itoh of Hitachi. This DL topic was "Leakage reduction in low-voltage embedded RAMs". In this talk, Dr. Itoh reviewed state-of-the-art subthreshold-current reduction circuits for RAM cells & periphery. He also gave prospects of RAM cells and periphery with emphasis on further needs for new devices & circuits to reduce leakage in active mode and speed variations.

Ashish Dixit, Vice President of Hardware Engineering, Tensilica, gave a talk on "Breaking the I/O bottleneck for high compute processors on SoCs", on February 15. Ashish described the technology that makes it possible to extend embedded

processors for compute intensive applications requiring very large data bandwidth.

Dr. Mouli Vaidyanathan of Texas Instruments, Dallas, gave a seminar on "Another approach to yield improvement" on March 21. Dr. Vaidyanathan discussed several components of failure analysis such as Data analysis, Fail pareto analysis and Constructional analysis (comparisons of some critical layers between foundries).

A technical talk on "Energy Aware Algorithm Design via Probabilistic Computing: From Algorithms and Models to Moore's Law and Novel (Semiconductor) Devices", was given by Prof. Krishna V. Palem of Georgia Institute of Technology, USA. Prof. Palem outlined an entirely new approach to energy-aware computing, trading the probability of the BIT being correct for savings in the energy consumed, yielding a probabilistic bit or PBIT (instead of a conventional BIT which is guaranteed to be correct). About 30 people attended this talk.

The Chapter along with IEEE Circuits and Systems Society and VLSI Society of India, co-sponsored a two-day workshop on Low Power Design Techniques. About 100 people from industry and academia attended this workshop.

## AP/ED Bombay

- by Dr. Mahesh Patil

The IEEE AP/ED Bombay Chapter organized the following events.

1. Dr. Abhijit Bhattacharyya, Department of Applied Science, University of Arkansas, gave a talk on "Morphing aircraft, micromirrors and shape memory alloys" on January 3.
2. On January 17, Dr. Amol Joshi, Spansion LLC, Sunnyvale, talked on "High performance of CMOS for 3D ICs with metal induced crystallization of amorphous silicon".
3. On January 25, Prof. D. Mukhopadhyay, Jadavpur University, presented a seminar on "Monte-Carlo simulation of electron transport in elemental and compound semiconductors".
4. On February 3, Mr. Aatish Kumar, Philips, Eindhoven, discussed "A New Cell-Based Per





Prof Vikram Dalal discussing the role of thin-film Si in photovoltaics at IIT Bombay.

- formance Metric for Novel CMOS Device Architectures".
5. Prof. Vikram Dalal, Iowa State University, IEEE EDS Distinguished Lecturer, presented a seminar on "The photovoltaics challenge: role of thin film Si", on February 14.
  6. On February 15, Prof. Yong Cho, Konkuk University, Korea, gave a talk on "SoC Applications: HW/SW Co-Design of MPEG-4 Video Decoder".
  7. On February 24, Prof. Raj Mittra, Life Fellow, IEEE, Pennsylvania State University, presented a seminar on "Some Techniques for Performance Enhancement of Microstrip Patch Antennas using Metamaterials as Substrates and Superstrates".
  8. On March 3, Dr. Rustom Bhiladvala, Pennsylvania State University, gave a talk on "Nonlinear and fluid results for experiments with nano-oscillators".
  9. Prof. S.G. Mhaisalkar, Nanyang Technological University, gave a talk on "A new understanding of electromigration induced void nucleation, growth, and movement in Cu interconnects", on March 4.
  10. Prof. P.K. Basu, University of Calcutta, gave a talk on "Electron transport in Si and its quantum heterostructures", on March 4.
  11. On March 23, Prof. Rajendra Singh, Fellow IEEE Clemson University, gave a talk on "Manufacturing of nanosystems and

microsystems: challenges and opportunities".

## REL/CPMT/EDED Singapore

- by Dr. K.L. Pey

The REL/CPMT/ED Singapore Chapter reports the following activities.

### 1. Technical talks and short courses:

- On 12 January, Assoc. Prof. K.S. Narayan, Jawaharlal Nehru, Centre for Advanced Scientific Research, Jakkur, Bangalore, India, gave an EDS DL talk on "Optically induced features in polymer based field effect transistors".
- On 5 January, Professor Vijay K. Arora, Wilkes University, USA, gave a talk on "Ohm's law failure: new insights into the charge transport in the multivalley band structure of GaAs".
- On 27 January, Mr. Chuan Seng Tan, of Massachusetts Institute of Technology, gave a talk on "Sky is the Limit: Multi-layer Three-Dimensional Integration Achieved by Wafer Bonding".
- On 14 March, Professor Arokia Nathan of the University of Waterloo, Canada, an EDS DL, gave an EDS DL talk on "Nanoscale Elastic Circuits".
- On 28 March, Mr. Chen Jinghao of the National University of Singapore, gave a talk on "Novel Nano-crystals and SONOS-type Nano-dots Flash".

### 2. Conferences:

- **6th EPTC (EPTC 2004)**  
With the 6th conference in the series, the Electronics Packaging Technology Conference (EPTC), has truly achieved the status of a major packaging conference and is now the premier event for the Asian region. 264 participants from 22 countries attended the 3-day event. Besides participation by all the major electronics manufacturers and design houses in the island republic, there were strong contingents from USA, Malaysia, Taiwan, Germany and Japan. The delegates represent a total of 91 organizations, about two-thirds from the commercial sector and one-third comprising universities and research institutes.
- **12th IPFA (IPFA 2005)**  
The 12th International Symposium on the Physical and Failure Analysis

of Integrated Circuits (IPFA 2005), Asia's leading IC Failure Analysis conference, will be held 27 June - 1 July 2005 at Shangri-La's Rasa Sentosa Resort, Singapore. The Symposium is devoted to the fundamental understanding of the physical mechanisms of device failures, and issues related to device reliability, especially in advanced process technologies. In conjunction with the three day technical symposium, two days of tutorials will be held on the 27 and 28 June 2005. The technical sessions are: Advanced FA, Die Level FA, Package FA, Sample Preparation Metrology and Material Characterization, Novel Device Reliability, Novel Gate Stack/Dielectrics, Advanced Interconnects and BEOL Reliability, ESD/EOS and CMOS Latch-up. As a departure from tradition, there will also be a poster session on the second day. The Keynote Speaker will be Dr. Shi-Chung Sun, Senior Vice President of Technology Development at Chartered Semiconductor Manufacturing, Singapore. The invited Speakers include Dr. Michael Bruce (AMD), Dr. Camelia Hora/Dr. Stefan Eichenberger (Philips Semiconductors), Dr. Mahadeva Iyer Natarajan (IMEC), Prof. Jacob Phang (NUS, Singapore), Dr. James Stathis (IBM), Dr. Luc Tielemans (Qtest), and Dr. Ehrenfried Zschech (AMD). As part of best paper exchange program with ISTFA, the Best Paper from ISTFA 2004 will be presented at IPFA 2005 while the best paper in failure analysis at IPFA 2005 will be presented at ISTFA 2005. For further information, please visit the IPFA website at <http://www.ieee.org/ipfa>.

3. The Chapter donated a sum of US\$800 to two activities organized by the Student Chapter of the Nanyang Technological University branch. These are the IEEE Science Symposium (2005) and IEEE - Student Professional Awareness Conference.
4. The Chapter is planning a one-day Workshop and IEEE EDS Mini-colloquium on Nanometer CMOS Technologyworkshop 1 (**WIM-ACT8-Singapore**) on 2 July, 2005.  
~ **Xing Zhou, Editor**

# EDS MEETINGS CALENDAR

## (AS OF MAY 10, 2005)

THE COMPLETE EDS CALENDAR CAN BE FOUND AT OUR WEB SITE:  
[HTTP://WWW.IEEE.ORG/SOCIETY/EDS/MEETINGS/MEETINGS\\_CALENDAR.XML](http://www.ieee.org/society/eds/meetings/meetings_calendar.xml) PLEASE VISIT!

July 1 - 5, 2005, T **Siberian Russian Workshop and Tutorial on Electron Devices and Materials**, Location: Novosibirsk State Technical University, Novosibirsk, Russia, Contact: Alexander Gridchin, E-Mail: ieeensk@yandex.ru, Deadline: Not Available, www: Not Available

July 10 - 14, 2005, @ **International Vacuum Nanoelectronics Conference**, Location: St. Catherine's College, Oxford, United Kingdom, Contact: Priscilla Frost, E-Mail: info@oxconf.co.uk, Deadline: 4/1/05, www: <http://www.ivnc2005.org>

July 11 - 14, 2005, T **International Conference on the Physics of Semiconductors**, Location: Petros M. Nomikos Conference Center, Fiorstefani, Greece, Contact: Yiannis Cotronis, E-Mail: cotronis@di.uoa.gr, Deadline: 2/4/05, www: <http://icps2005.cs.ucr.edu>

July 11 - 15, 2005, T **IEEE Conference on Nanotechnology**, Location: Nagoya Congress Center, Nagoya, Japan, Contact: Fumihito Arai, E-Mail: arai@mein.nagoya-u.ac.jp, Deadline: 2/28/05, www: <http://www.mein.nagoya-u.ac.jp/IEEE-NANO/IEEE-NANO-2005>

July 11 - 14, 2005, T **International Conference on the Physics of Semiconductors**, Location: Petros M. Nomikos Conference Center, Fiorstefani, Greece, Contact: Yiannis Cotronis, E-Mail: cotronis@di.uoa.gr, Deadline: 2/4/05, www: <http://icps2005.cs.ucr.edu>

August 8 - 12, 2005, T **IEEE International Symposium on Microwave, Antenna, Propagation and EMC Technologies for Wireless Communications**, Location: Chinese Institute of Electronics, Beijing, China, Contact: Mengqi Zhou, E-Mail: mqzhou@public.bta.net.cn, Deadline: 3/31/05, www: <http://www.cie-china.org/ieee2005>

August 28 - September 2, 2005, T **International Conference on Nitride Semiconductors**, Location: Congress Center Bremen, Bremen, Germany, Contact: Carsten Kruse, E-Mail: secretary@icns6.org, Deadline: 4/1/05, www: <http://www.ifp.uni-bremen.de/icns6/index.php>

September 1 - 3, 2005, @ **International Conference on Simulation of Semiconductor Processes and Devices**, Location: Komaba Eminence, Tokyo, Japan, Contact: Nobuyuki Sano, E-Mail: sano@esys.tsukuba.ac.jp, Deadline: 3/7/05, www: <http://www6.eie.eng.osaka-u.ac.jp/sispad>

September 4 - 7, 2005, T **Symposium on Microelectronics Technology & Devices**, Location: Universidade Federal de Santa Catarina-UFSC, Florianopolis, Brazil, Contact: Jacobus Swart, E-Mail: jacobus@led.uni-camp.br, Deadline: 3/12/05, www: [www/sbmicro.org.br/sbmicro](http://www/sbmicro.org.br/sbmicro)

September 7 - 9, 2005, T **International Conference on Electrical and Electronics Engineering**, Location: Installations of CINVESTAV-IPN, Mexico City, Mexico, Contact: Felipe Gomez-Castaneda, E-Mail: iceee@mail.cinvestav.mx, Deadline: 5/8/05, www: [www.iceee.ie.cinvestav.mx](http://www.iceee.ie.cinvestav.mx)

September 7 - 9, 2005, T **Conference on Electrical Engineering**, Location: Installations of CINVESTAV-IPN, Mexico City, Mexico, Contact: Felipe Gomez-Castaneda, E-Mail: iceee@mail.cinvestav.mx, Deadline: 5/8/05, www: [www.iceee.ie.cinvestav.mx](http://www.iceee.ie.cinvestav.mx)

September 11 - 16, 2005, T **Electrical Overstress/Electrostatic Discharge Symposium**, Location: Anaheim Marriot, Anaheim, CA, USA, Contact: Lisa Pimpinella, E-Mail: info@esda.org, Deadline: Not Available, www: [www.esda.org](http://www.esda.org)

September 12 - 16, 2005, T **International Conference on Electromagnetics in Advanced Applications**, Location: Centro Congressi Tornio Incontra, Torino, Italy, Contact: Roberto Graglia, E-Mail: graglia@polito.it, Deadline: 2/25/05, www: <http://www.iceaa.polito.it>

September 12 - 15, 2005, T **IEEE International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic**

**and Acoustic Wave Theory**, Location: Pidstryhach IAPMM, NASU, Lviv, Ukraine, Contact: Mykhalyo Andriychuk, E-Mail: andr@iapmm.lviv.ua, Deadline: 7/1/05, www: [www.ewh.ieee.org/soc/cpmt/ukraine](http://www.ewh.ieee.org/soc/cpmt/ukraine)

September 12 - 16, 2005, T **European Solid-State Device Research Conference**, Location: Alpes Congres - Alpexpo, Grenoble, France, Contact: Iris Espejo, E-Mail: esscirc-essdrc@imag.fr, Deadline: 4/9/05, www: [www.essdrc2005.com](http://www.essdrc2005.com)

September 12 - 16, 2005, T **International Crimean Microwave Conference "Microwave & Telecommunication Technology"**, Location: Sevastopol National Technical University, Sevastopol, Ukraine, Contact: Pavel Yermolov, E-Mail: yermolov@sinfo.net.us OR crimico-2005@mail.com, Deadline: 5/11/05, www: <http://ieee.orbita.ru/aps/crim05e.htm>

September 12 - 16, 2005, @ **IEEE International Symposium on Semiconductor Manufacturing**, Location: Fairmont Hotel, San Jose, CA, USA, Contact: Drue Hulmer, E-Mail: drue.hulmer@maritz.com, Deadline: 5/20/05, www: [www.issm.com](http://www.issm.com)

September 12 - 15, 2005, T **International Conference on Solid-State Devices and Materials**, Location: International Conference Center Kobe, Kobe, Japan, Contact: Emi Yamaguchi, E-Mail: ssdm@intergroup.co.jp, Deadline: 5/12/05, www: [www.ssdm.jp](http://www.ssdm.jp)

September 18 - 21, 2005, T **IEEE Custom Integrated Circuits Conference**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Melissa Widerkehr, E-Mail: melissaw@widerkehr.com, Deadline: 4/5/05, www: <http://www.ieee-cicc.org>

September 19 - 23, 2005, T **International Conference on Noise in Physical Systems and 1/F Fluctuations**, Location: Historical Building of Salamanca University, Salamanca, Spain, Contact: Javier Mateos, E-Mail: javierm@usal.es, Deadline: 12/17/04, www: <http://www.usal.es/icnf>

October 2 - 5, 2005, **T IEEE International Conference on Computer Design**, Location: San Jose Doubletree Hotel, San Jose, CA, USA, Contact: Edward Grochowski, E-Mail: edward.grochowski@intel.com, Deadline: 5/6/05, www: www.iccd-conference.org

October 3 - 5, 2005, \* **International Semiconductor Conference**, Location: Sinaia Hotel, Sinaia, Romania, Contact: Dan Dascalu, E-Mail: dascalu@imt.ro, Deadline: 5/25/05, www: http://www.imt.ro/CAS

October 3 - 6, 2005, \* **IEEE International SOI Conference**, Location: Hyatt Regency Waikiki Resort & Spa, Honolulu, Hawaii, USA, Contact: Bobbi Armbruster, E-Mail: bobbi@bacmnc.com, Deadline: 5/6/05, www: www.soiconference.org

October 3 - 4, 2005, **T European Gallium Arsenide and Other Semiconductor Applications Symposium**, Location: CNIT Paris la Defense, Paris La defense, France, Contact: Raymond Quere, E-Mail: quere@brive.unilim.fr, Deadline: 3/2/05, www: www.eum2005.com

October 5 - 7, 2005, **T International Conference on Advanced Thermal Processing of Semiconductors**, Location: Fess Parker's DoubleTree Resort, Santa Barbara, CA, USA, Contact: Bo Lojek, E-Mail: blojek@atmel.com, Deadline: 5/31/05, www: www.ieee-rtip.org

October 9 - 11, 2005, @ **Bipolar/BiCMOS Circuits and Technology Meeting**, Location: Fess Parker Doubletree Resort, Santa Barbara, CA, USA, Contact: Janice Jopke, E-Mail: ccs@mn.rr.com, Deadline: 3/15/05, www: www.ieee-bctm.org

October 12, 2005, **T Workshop on Compact Modeling for RF/Microwave Applications**, Location: Fess Parker's Double Tree Resort Hotel, Santa Barbara, CA, USA, Contact: Slobodan Mijalkovic, E-Mail: s.mijalkovic@its.tudelft.nl, Deadline: 3/31/05, www: http://hitec.ewi.tudelft.nl/cmrf05

October 17 - 20, 2005, \* **IEEE International Integrated Reliability Workshop**, Location: Stanford Sierra Conference Centers, South Lake Tahoe, CA, USA, Contact: Lynett Westergard, E-Mail: lynett\_westergard@amis.com, Deadline: 7/1/05, www: www.iirw.org

October 30 - November 2, 2005, \* **IEEE Compound Semiconductor IC Symposium**, Location: Hyatt Grand Champions Resort, Indian

Wells, CA, Contact: Kevin Kobayashi, E-Mail: kkobayashi@sirenza.com, Deadline: 5/9/05, www: www.csics.org

November 6 - 10, 2005, **T IEEE International Conference on Computer Aided Design**, Location: Doubletree Hotel, San Jose, CA, USA, Contact: Kathy MacLennan, E-Mail: kathy@mpasociates.com, Deadline: 4/20/05, www: http://www.iccad.com

December 1 - 3, 2005, \* **IEEE Semiconductor Interface Specialists Conference**, Location: Key Bridge Marriott, Arlington, VA, USA, Contact: Matthew Copel, E-Mail: mcopel@us.ibm.com, Deadline: Not Available, www: www.ieeesisc.com

December 5 - 7, 2005, \* **IEEE International Electron Devices Meeting**, Location: Washington Hilton & Towers Hotel, Washington, DC, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: http://www.ieee.org/conference/iedm

December 13 - 17, 2005, **T International High Power Microwave Electronics: Measurement, Identification, Application Conference**, Location: Novosibirsk State Technical Univ. Conference Center, Novosibirsk, Russia, Contact: Alexander Gridchin, E-Mail: ieeensk@yandex.ru, Deadline: Not Available, www: http://iee.sibsutis.ru

December 13 - 15, 2005, **T International Conference on Microelectronics**, Location: Sarena Hotel, Islamabad, Pakistan, Contact: Muid Mufti, E-Mail: muid@uettaxila.edu.pk, Deadline: Not Available, www: http://vlsi.uwaterloo.ca/~icm

December 13 - 17, 2005, **T International Workshop on the Physics of Semiconductor Devices**, Location: National Physical Laboratory, New Delhi, India, Contact: Vikram Kumar, E-Mail: vikram\_kumar/sspl@ssplnet.org, iwpsd@ndf.vsnl.net.in, Deadline: Not Available, www: www.iwpsd.net

December 19 - 21, 2005, **T IEEE Conference on Electron Devices and Solid State Circuits**, Location: New World Renaissance Hotel, Tsimshatsui, Kowloon, Hong Kong, Contact: Manson Chan, E-Mail: mchan@ee.ust.hk, Deadline: 8/26/05, www: www.ee.ust.hk/iee\_eds/edssc/

January 10 - 13, 2006, @ **IEEE Emerging Technologies - Nanoelectronics**, Location: Meritux

Mandarin Hotel, Singapore, Singapore, Contact: Cher Tan, E-Mail: ecmtan@ntu.edu.sg, Deadline: 6/30/05, www: www.ieeectet.org

February 13 - 15, 2006, @ **IEEE Non-Volatile Semiconductor Memory Workshop**, Location: Hyatt Regency, Monterey, CA, USA, Contact: Richard Eguchi, E-Mail: richard.eguchi@freescale.com, Deadline: 10/14/05, www: www.ehw.ieee.org/soc/eds/nvsmw

March 6 - 9, 2006, @ **International Conference on Microelectronic Test Structures**, Location: Hyatt Regency on Town Lake, Austin, TX, USA, Contact: Wendy Walker, E-Mail: wendyw@widerkehr.com, Deadline: 9/14/05, www: www.ed.ed.ac.uk/ICMTS

May 8 - 11, 2006, @ **IEEE International Conference on Indium Phosphide and Related Materials**, Location: Princeton University, Princeton, NJ, USA, Contact: Gregory Olsen, E-Mail: golsen@sensorsinc.com, Deadline: Not Available, www: Not Available

May 8 - 12, 2006, @ **World Conference on Photovoltaic Energy Conversion**, Location: Hilton Waikoloa Village, Waikoloa, HI, USA, Contact: Americo Forestieri, E-Mail: moeforestieri@att.net, Deadline: Not Available, www: www.ieeeepvsc.org

May 14 - 17, 2006, \* **International Conference on Microelectronics**, Location: University of Nis, Nis, Yugoslavia, Contact: Ninoslav Stojadinovic, E-Mail: nstojadinovic@elfak.ni.ac.yu, Deadline: 9/30/05, www: http://europa.elfak.ni.ac.yu/miel

May 14 - 17, 2006, **T International Workshop on Expert Evaluation & Control of Compound Semiconductor Materials & Technologies**, Location: Hotel Atlantico, Cadiz, Spain, Contact: Daniel Araujo, E-Mail: daniel.araujo@insa-lyon.fr, Deadline: Not Available, www: Not Available

May 22 - 24, 2006, **T International Conference on Microwaves, Radar and Wireless Communication**, Location: Krakow, Poland, Contact: Elzbieta Sedek, E-Mail: godlewska@pit.edu.pl, Deadline: Not Available, www: Not Available

May 22 - 24, 2006, \* **IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop**, Location: Boston, MA, Contact: Margaret Kindling, E-Mail: mkindling@semi.org, Deadline: 9/22/05, www: Not Available

\* = Sponsorship or Co-Sponsorship Support  
T = Technical Co-Sponsorship Support

@ = Alternates support between 'Sponsorship/Co-Sponsorship' and 'Technical Co-Sponsorship'

## EDS DISTINGUISHED LECTURERS VISIT SPAIN



*Prof. Michael Shur (right) and Prof. X. Correig (left), CDE chairman.*

February 2-4, 2005, the Electronic Engineering Department of the Rovira i Virgili University, Tarragona, Spain, organized the 5th Spanish Conference on Electron Devices, technically co-sponsored by the IEEE EDS. The total number of accepted papers was 148, and the total number of attendees was 195. The Conference was divided in thematic sessions composed of plenary invited talks and poster scientific communications presented by the authors.

Two invited talks were given by EDS Distinguished Lecturers. Firstly, Prof. Jamal Deen from the ECE Dept. at McMaster University in Hamilton, Canada, dealt with the state of the art and the recent advances in Plastic Microelectronics. In addition, Prof. Michael S. Shur from the Rensselaer Polytechnic Institute, Troy, New York, USA, presented the recent

progress in developing deep UV LEDs and the potential applications of GaN-based devices in the terahertz range of frequencies. The other invited talks were given by Spanish researchers: Dr. Pardo, Univ. Salamanca, explained their results in ultra fast nanometer scale devices based on ballistic transport; Dr. Puigdollers, UPC, Barcelona, presented an interesting overview on organic electron devices and the future trends on this issue; Dr. Fontanilles, Lear Automotive EEDS, Valls, showed the work of the activity of their European tech. center in the automotive industry related with devices and micro-systems; Dr. Pau, UPM, Madrid, dealt with UV and visible photo-detectors based on GaN and their applications; and Dr. Urbina, UPC, Cartagena, explained the fundamentals of carbon nan-

otubes and their application to molecular electronics.

The posters accepted were presented in three sessions, showing the recent advances in fabrication, characterization, modeling and simulation of semiconductor devices, power, RF and microwave devices, photovoltaic, optoelectronic and photonic devices, micro and nanotechnologies, micro-systems and MEMS, sensors and actuators.

Finally, the scientific committee decided that the next Spanish Conference on Electron Devices will be held in El Escorial, Madrid, during 2007, organized by Dr. Algora from the Solar Energy Institute, Politechnical University of Madrid.

*Josep Pallares  
2005 CDE Organizing Committee  
University Rovira i Virgili  
Tarragona, Spain*