

# IEEE ELECTRON DEVICES SOCIETY

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## 2005 IEEE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS)



Market Place Leuven

The 18th International Conference on Microelectronic Test Structures (ICMTS) will be held at the Katholieke Universiteit in Leuven, Belgium April 5-7, 2005. The conference will be preceded by a one-day Tutorial Short Course on Microelectronic Test Structures on April 4, 2005. This conference will be sponsored by the IEEE Electron Devices Society.

The development of semiconductor devices and the characterization of their features depend basically on appropriate test structures. These macros are used for the control of semiconductor manufacturing and the extraction of device and modelling parameters. The shrink of device sizes, the lower supply voltages, and the increasing number of devices in integrated circuits demand for careful designs, sensitivity on requested features, and precise characterization of test structures. DC-, AC-, and RF-properties of active and passive devices have to be measured including mean parameter values and parameter variations.

The ICMTS addresses these topics which are essential for circuit development and manufacturing. Since 1988 the ICMTS has presented the trends on the extraction of semiconductor manufacturing data and model parameters. Both are required to ensure future chip design and manufacturability. ICMTS has a wide international participation. To encourage this, the conference takes place in North America, Asia, and Europe. The conference is guided by an international steering committee and a technical committee which is equally shared among the three regions. The 2003 meeting was held in Monterey, California,

*continued on page 4*

### 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)

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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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## EDS ANNOUNCES ITS ARCHIVAL COLLECTION ON DVD (1954-2004)



Renuka P. Jindal

Technological changes are by far the most powerful in driving human behavior. Gone are the days when one could walk into a gigantic library with rows upon rows of bookcases with neatly stacked journals ready for easy access albeit by one person at a time. As I sit in the ornate Rose Reading Room of the New York Public Library on 42nd street in Manhattan writing this communication, the contrast is clear. I see bound periodicals and books stacked along the perimeter of the room and in the mezzanine apparently for ambiance. Very few readers are accessing them. However, of the forty 30-foot mahogany tables on the floor, six are dedicated exclusively for computer use with terminals and printers provided. The rest of the tables have reading aids such as lamps in an already well-lit hall, but in addition, electrical outlets mounted in gold circular faceplates along the centerline of the table. Coexisting with these electrical outlets are RJ45 LAN connectors ready for hook-up to individual laptops free-of-charge. The paradigm has evolved even further. Instead of centralizing the information in one place, the emphasis is to bring the information to the reader's desk via high-speed data lines. This mode of operation is inherently more efficient. However, it still requires membership in large organizations to utilize access via their bulk subscriptions to technical databases. So fundamental are these changes that if some piece of information is not available electronically, it is tacitly assumed that the information does not exist.

As past editor-in-chief of *IEEE Transactions on Electron Devices* I have observed this phenomenon unfold repeatedly. We, in the Electron Devices Society have been observing these changes as they have evolved and felt a strong need to improve information accessibility. While some of us carry membership in mega-corporations, academic and government institutions,

a significant number of us do not. We wanted to take the next step of empowering our members by providing them access to our technical information on demand, anytime, anywhere and at very little added cost. The DVD technology has matured at the right time to make this happen in a cost effective manner. However, even though the idea was sound, it took substantial effort to convince everyone to fund this project to generate a DVD. The actual implementation was complicated as well. Inclusion of legacy data was especially challenging since it involved procuring old paper copies of the publication, cutting out the pages, scanning them with 99.995% accuracy, rebinding them and returning them to the donor. It gives me great pleasure to announce the release of this invaluable collection of technical information that chronicles the history the Electron Devices Society and the field of electron devices.

This DVD includes all issues of *Transactions on Electron Devices* (1954-August 2004), *Electron Device Letters* (1980-August 2004), and all technical digests of the International Electron Devices Meeting (IEDM) (1955-2004). After about three years of effort and with help from all EDS volunteers and staff in locating past issues, I believe, we have finally been able to put together an excellent resource which should prove to be extremely valuable to our members.

This DVD provides 15 gigabytes of a complete listing of the technical content from the above three sources which, if printed double-sided, would add up to 127 reams of paper. However, this is not the main strength of this DVD. It offers many other features that are unique. This is indeed, what I call, "live information". Users can navigate easily across publications, issues, articles, subjects and authors. All articles are in searchable PDF format. The search function allows one to look through metadata, abstracts and full text of the article for the entire content. Also, one can search by keywords, which include author supplied keywords, IEEE index terms obtained from IEEE's Abstracting and Indexing Data-

base, index terms from INSPEC and from annual subject indices in the periodical. In addition, the DVD offers a subject index for easy browsing, as well as an author index, in which one can search using just the first two letters of the authors' last name or by full name. Author profiles provide a comprehensive sketch of every author in the digital library with pointers to all associated publications, biography, affiliations and other available data. This could prove to be invaluable at annual merit reviews. Also included are hyperlinked references and citations for all of the content. However, we did not stop here in anticipating the needs of our members. As you know, a strong synergy exists between electronic devices and solid-state circuits. To make this offering more powerful, we were able to negotiate with IEEE Solid-State Circuits Society to allow us to include most up-to-date information on papers from the *Journal of Solid-State Circuits*, the International Solid-State Circuits Conference, and the VLSI Circuits Symposium in this DVD. What this means to you as a user is that if any of our device papers refer to any circuit paper you can get all the information about that paper with a click of a button. However, full text from these circuit papers is still left out as SSCS intellectual property. Again, the best aspect about this DVD is the concept of having access to your digital library anytime, anywhere without the need of connectivity. The information is only a few mouse-clicks away. What used to take weeks and months to dig up past information on a research topic should take you only a few days to compile.

As you know that the Electron Devices Society recently celebrated its 50th anniversary. In this connection we published a 48 page booklet to commemorate this event. We are able to include this booklet on this DVD for your enjoyment. Also included are EDS newsletters from 1999-2004. Older copies of the newsletter from 1994 to 1998 could not be scanned in time for this DVD but are available on the EDS website at [www.ieee.org/eds/newsletter](http://www.ieee.org/eds/newsletter).

I am very proud that we in EDS

decided to debut this product for our members at a very affordable price of \$30. We hope that this will encourage other technical professionals to become members of the IEEE Electron Devices Society as well. It is also hoped that the minimal cost of acquisition will discourage the loaning of this DVD to others. Remember, this is your copy exclusively meant for your use. It should be viewed truly as a member benefit and your adherence to this concept will help us in keeping the price low and cost-effective production of future editions of this product. Please help us so we can help you by upholding this notion of individual subscription to this DVD. We continue to work to enhance the value of your EDS membership and I believe this

DVD is one such example of our sincere efforts in this direction. EDS members who wish to purchase this DVD, can visit 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>.

I would like to thank the volunteers and staff that have worked with me in getting this project off the ground and making sure that it is completed for distribution in time for our flagship conference, the IEDM, to be held in San Francisco in December 2004. Also, I would like to acknowledge all of you who dug through your old collections and donated them to us, so

that we could complete this project. Finally, I would like to thank Parity Computing for working with us in controlling production costs and doing a professional job.

We hope you enjoy using the first-ever EDS Archival Collection DVD. Please let me know how we can enhance the value of this product even further to you as an EDS member. Use the keywords "DVD feedback" as the subject of your email.

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## 2005 IEEE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS)

*(continued from page 1)*

and the 2004 meeting was held on Awaji Island, Japan. For 2005, ICMTS will be in Europe, this time the city of Leuven near Brussels in Belgium will host the meeting.

Leuven is often called the open air museum of the past. There is a wide range of places of interest: abbeys, churches, beguinages, the Old Market Square, the Treasury of Saint-Peter and so on. The first references to the town can be traced back as far as the 9th century. It was around the 11th-12th century that Leuven began to develop as an important trading centre. At this time the first town wall, churches, monasteries and abbeys were built. During the 15th century the university was founded, various industrial companies flourished and the main market square with its fine Gothic town hall was built. The town still owes much of its character to the numerous university college buildings dating from the 16th and 17th centuries, many of which were renovated in the 18th century. The build-

ing of paved roads, the canal in the 18th century and the expansion of the brewery created great impacts for trade and population growth.

The ICMTS provides a program of 10 sessions including a poster session. The program is set-up without parallel sessions, and there are many opportunities to have discussions and direct contacts between participants of industry and university and experts during the sessions, at the breaks and the evening events. The conference focuses on:

- Development of test structures for material characterization
- Device characterization, dimension metrology and lithography features
- Process characterization and control monitoring
- Device and circuit modelling from DC to RF
- Failure Analysis, reliability test structures, and yield enhancement
- Measurement methods and data analysis strategy

The tutorial short course, which will precede the conference will give the participants guidelines on test structure design, efficient and precise test methods, and state of the art data analysis. There will be an equipment exhibition for evaluation of the latest versions of measurement equipment, data analysis software, and other test structure related products.

For more information, please contact the conference secretary:

ICMTS 2005 Conference Secretariat, Ms. Danielle Vermetten, K.U. Leuven – ESAT-MICAS, Kasteelpark Arenberg 10, B-3001 Leuven, Belgium, e-mail: [icmts2005@esat.kuleuven.ac.be](mailto:icmts2005@esat.kuleuven.ac.be)

The General Chairman is Willy Sansen, K.U. Leuven, Belgium. In addition, general information may also be found on the ICMTS web site <http://www.see.ed.ac.uk/ICMTS> including the conference program. Whether you are interested in test structures or want to discuss with experts in Leuven, we are looking forward to meeting you at the conference.



# UPCOMING TECHNICAL MEETINGS

## 2005 IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE

*“Over 15 Years of Advancing Semiconductor Manufacturing Excellence”*

Now in its 16th year, ASMC, the Advanced Semiconductor Manufacturing Conference, is an international symposium for discussing methodologies and solutions for improving the commercial semiconductor manufacturing process. Sponsored by the IEEE Electron Devices Society (EDS), the IEEE Components, Packaging, and Manufacturing Technology Society (CPMT), and Semiconductor Equipment and Materials International (SEMI), ASMC provides device manufacturers, equipment and materials suppliers, and academics with unparalleled opportunities to expand their professional knowledge base and to network with industry colleagues from around the world. ASMC, for more than a decade, has been an efficient and rewarding forum for exchanging engineering lessons-learned, and for disseminating and absorbing novel, practical solutions to wafer fabrication manufacturing issues. The conference traditionally alternates between the U.S. and Europe; ASMC 2005 will be held at the ICM in Munich, Germany on 11-12 April 2005, in conjunction with SEMICON Europa, the international trade exposition organized by SEMI.

ASMC, through the efforts of a strong international committee representing leading semiconductor device manufacturers, semiconductor equipment and materials companies, and academia, is now the industry's oldest continuing conference centering on the advanced semiconductor manufacturing process. ASMC focuses on today's pressing manufacturing and productivity issues; as a result, ASMC has, since its inception, consistently grown in attendance, drawing speakers and attendees from throughout the world to hear peer-reviewed oral presentations and poster papers that squarely address the productivity and yield challenges in leading-edge semiconductor device fabrication.

ASMC 2005 follows a strong 2004 program, which featured over 90 technical papers, senior executive-level keynote speeches, and a high-powered panel dis-



Photo "Skyline and Alps" courtesy of Rudolf Sterflinger and the Munich Tourist Office

cussion on balancing IC fabrication profitability and technology. ASMC 2005 looks forward to presenting a similarly engaging agenda in Munich, continuing the tradition of peer-reviewed, non-commercial papers from the global semiconductor industry. The conference continues to emphasize practical information relevant to semiconductor fabrication, with an emphasis on collaborative work between device manufacturers, suppliers and academia.

The ASMC 2005 agenda will include presentations on advanced metrology, advanced processes, contamination free manufacturing, cost reduction, equipment reliability and productivity, factory automation, factory dynamics, industrial engineering, MEMS, discrete and power devices, photolithography (including immersion lithography), time-to-market, yield enhancement and modeling, and 300 mm manufacturing. Along with topic-specific morning and afternoon sessions, ASMC 2005 will feature a line-up of distinguished keynote speakers who will address important semiconductor applications and manufacturing issues, and the now-traditional annual semiconductor market forecast keynote address. And, once again, the ever-popular ASMC poster reception, sponsored annually by KLA-Tencor Corporation, will provide an ideal venue for networking between authors and conference attendees.

All technical papers presented at ASMC 2005 will be eligible to compete for the annual ASMC DuPont Photomasks Best Paper award. Infineon Technologies will partner with ASMC this year to sponsor the Best Student Paper award; both awards are based on the written quality of the paper and on the quality of the oral presentation.

ASMC returns in 2005 to Munich, Germany, one of the world's great cities and home to more than 4,000 high-tech companies. Located in this cosmopolitan city with a special charm of its own, the ICM (International Congress Centre Munich) is easy to reach from downtown Munich, and offers both state-of-the-art technology and professional services. The ICM is directly linked with the buildings of the New Munich Trade Fair Centre, site of SEMICON Europa. SEMICON Europa is a distinctive European forum directly matched to the challenges facing the European semiconductor industry. The exposition provides a great opportunity for efficient exchange of technological, manufacturing and business information between business partners in the semiconductor industry.

Who should attend ASMC 2005? Past attendees have included semiconductor professionals involved in all aspects of manufacturing, including automation, cost reduction, production control, process transfer, yield and cycle time improvement, preventive maintenance, line supervision, facilities fab design and operation, quality, and product management. For general and registration information on ASMC 2005, visit <http://www.semi.org/asmc>. Or contact: Ms. Margaret M. Kindling, SEMI Washington, DC ([mkindling@semi.org](mailto:mkindling@semi.org))

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# 2005 IEEE INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS (ISPSD)



The 17th International Symposium on Power Semiconductor Devices & ICs (ISPSD'05), sponsored by the IEEE Electron Devices Society, will be held May 22-26, 2005. It is a yearly international forum co-sponsored by IEEJ (Institute of Electrical Engineers of Japan) and alternates between Asia, Europe and North America for technical discussion in all areas of power semiconductor, power IC's, and their hybrid technologies and applications. The ISPSD has truly become the leading conference in the field of power semiconductor devices. This year's technical program will highlight advances in Power IC's, Integrated Power Devices & Power IC Processes, Power Discrete Devices and Modules, Materials & Packaging as well as Power Applications.

This year ISPSD'05 will be held at Fess Parker's DoubleTree Resort Santa Barbara which lies on the

West Coast of the United States, 92 miles (148 km) north of Los Angeles and 332 miles (534 km) south of San Francisco. It is the largest city and the seat of Santa Barbara County, which is famous for its beautiful beaches, most of which lie along a unique south-facing stretch of coastline. Santa Barbara offers a wide range of geography, from the forested mountains to the east, through the inland and valleys, and a particularly attractive coastline.

The ISPSD'05 will offer a short course on Sunday May 22nd, that will cover the areas of Low Voltage Devices, High Voltage Devices, Power IC's and Packaging. The Plenary Session will include talks by three distinguished speakers that cover important topics in low power portable, high power, and integrated circuit. The oral presentations and poster sessions will feature an excellent mix of both industrial and

academic activities from around the world covering many aspects of power semiconductors. Three Panel Discussions will be organized to discuss the areas of RF low voltage devices materials and technologies, high voltage devices and Power Integrated Circuits.

In the ISPSD'05 papers presented by young researchers (anyone born in or after 1974) and based on their own work, will be considered for the Charitat award.

The ISPSD05 General Chairman is Daniel M. Kinzer, VP Research and Development International Rectifier (email: dkinzer1@irf.com), and the Technical Program Chairman is Dr. T. Paul Chow, Rensselaer Polytechnic Institute (email: chowt@rpi.edu)

*Mohamed Darwish*  
ISPSD'05 Publicity Chairman  
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# 2005 IEEE INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM (IRPS)

Did you know that the current density in the wiring of integrated circuits is thousands of times greater than the current density inside the wires of your home or office? It is the constant scaling of electronic components and the addition of new materials that give rise to technically interesting topics that are the focus of the IEEE International Reliability Physics Symposium (IRPS) as it heads to Silicon Valley for its 43rd annual conference, April 17-21, 2005, at the San Jose Marriott in San Jose, California. For over 40 years, IRPS has been one of the leading conferences for engineers in the area of electronic component reliability.

Originally started in the early 1960's by the military and aerospace community, IRPS is now co-sponsored by the IEEE Reliability Society and the IEEE Electron Devices Society. This co-sponsored event has drawn participants from the United States, Europe, Asia and all other parts of the world. IRPS 2005 promotes the reliability and performance of integrated circuits and microelectronic assemblies through an improved understanding of failure mechanisms in the user's environment, while demonstrating latest state-of-the-art developments in electronic reliability.

The focus of the symposium is the 3-day plenary/parallel sessions that feature original work which identifies new microelectronic failure or degradation mechanisms, improves understanding of known failure mechanisms, demonstrates new or innovative analytical techniques, or demonstrates ways to build-in reliability. Specific areas to be addressed during the 2005 IRPS are reliability concerns associated with:

- Product Reliability and Burn-In
- Non-Volatile Memories
- Qualification Strategies
- Circuits
- Assembly and Packaging
- Failure Analysis
- MEMS



- Transistors
- Devices and Processing
- Interconnects
- Device Dielectrics
- ESD and Latch-Up
- Process Induced Damage

This year, approximately 150 technical papers and posters will be selected for presentation from more than 250 peer-reviewed abstracts received.

Other opportunities at the symposium include:

- A 2-day **tutorial program** featuring a set of bound notes from all tutorials. Attendees have the opportunity to learn a new area in some technical depth from an industry expert or brush up on the fundamentals with introductory tutorials. There are typically 10 -16 tutorials that are offered on topics ranging from electromigration to gate dielectric reliability to assembly/packaging reliability.

- **Evening session workshops** enhance the synergy of the symposium by affording the attendees an

opportunity to meet in informal groups to discuss key reliability physics topics with the guidance of experienced moderators. Some of the workshop topics are directly coupled to the tutorial program to allow more discussion on a particular topic.

- **Equipment demonstrations** held in parallel with tutorials and technical sessions are a unique aspect of this symposium. Manufacturers of state-of-the-art analytical and test equipment are on hand to demonstrate their products and systems to individuals and small groups. Attendees are encouraged to bring samples or questions for on-site analysis and discussion.

- **An evening poster session** has become an important part of the IRPS for authors and attendees

to discuss recent research and results in a very interactive environment.

- **Reliability Year-In-Review seminar.** This session, provides a summary of important work published from the previous year in a key reliability area. Industry experts serve as the "tour guide" and save you time by collecting and summarizing this information to bring you up-to-date in a particular area as efficiently as possible.

There are lots of opportunities to be involved in increasing your understanding of this technically important field. We look forward to seeing you in San Jose!

For further information, please visit the IRPS web site at [www.irps.org](http://www.irps.org) or contact: *Timothy A. Rost, IRPS 2005 General Chair, Tel: (972) 995-9035, Fax: (972) 995-1724, t-rost@ti.com*

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# SOCIETY NEWS

## EDS STANDING COMMITTEE REPORT - PUBLICATIONS

Since my last communication in October 2002 issue of the EDS Newsletter we have covered a lot of ground. Publications continue to be the core activity for EDS. The first item I want to report on is the EDS Archival Collection DVD. After a number of years of hard work and assistance from dedicated volunteers and staff we are nearing completion of this project. The DVD will consist of the entire compilation of the *Transactions on Electron Devices* (1954-August 2004), *Electron Device Letters* (1980-August 2004), and the International Electron Devices Meeting (1955-2004). To enhance the value of EDS membership, this DVD will be offered exclusively to its members. This product will be sold at a bargain price of US\$30 dollars to make it affordable for all members of the Electron Devices Society. For more details on this exciting product, I encourage you to read my additional article in this newsletter entitled "EDS Announces its Archival Collection on DVD (1954-2004)".

Another new product that will be made available to our members by the middle of next year is a new publication entitled *Journal of Display Technology*. This publication is jointly sponsored by EDS, OSA (Optical Society of America) and six other IEEE societies. This journal will be devoted to the timely dissemination of new results on all aspects of display technologies including basic science and engineering of devices, device design and fabrication, driver and interface electronics, system design, applications, and human-factor topics. The journal will be made available in both paper and electronic format and will be subject to

the standards of IEEE and OSA with a thorough independent review process. The first issue of the journal is scheduled for September 2005. For those interested in this new journal, please be sure to include it in your member renewal. Further details concerning the journal can be found in another article included in this issue of the Newsletter.

Our core publications, both the *Transactions on Electron Devices* (T-ED) and *Electron Device Letters* (EDL), continue to do very well. Paper circulation among members of these two publications continues to decline primarily since they are offered free through IEEE Xplore as part of EDS membership. However, we are seeing increased circulation through subscription packages via IEEE Xplore, as well as healthy revenue increases. The bottom line of both T-ED and EDL still are very healthy with increase in revenues every year and expense costs continually declining. In February of 2004, T-ED and EDL had their five-year review by TAB and were well received. Our turn-around time for T-ED was quoted as exemplary among IEEE Transactions. The Society is still awaiting the final report to be sent from the TAB Periodicals Committee. I would like to specially thank the reviewers in helping the editorial board ensure that the technical content of these publications is second to none. As I had mentioned in my last communication in October 2002, we are now tightening up the review process in connection with inadequate referencing of prior art. With the availability of the new DVD set, authors should find it easier to locate older material. Reviewers will be asked to pay

more attention to this aspect of the manuscript selection process.

A new adhoc committee of the EDS Publications Committee has been formed to review *Circuits & Devices Magazine* (C&D); Isik Kizilyalli is heading-up this group. The committee will be looking into items such as has C & D meeting the technical interest of the sponsoring societies in addition to having a sound financial future.

As you may know we had published a special issue of T-ED dedicated to Organic Electronics in August 1997. Since then, this technology is becoming more mainstream. Another adhoc committee led by Ananth Dodabalapur, with guidance from Doug Verret and Yuan Taur, is looking into how to integrate activity in this area with T-ED and EDL.

We are very pleased that over the past two years the Publications Committee has successfully taken on many projects and continues to work well. Steps taken to revamp it in 2002 by fully representing all the technical interest areas of the society, as well sponsored/co-sponsored publications, has proved to be very fruitful for the EDS. As always, we look forward to your input and would like to invite you to get more involved in the workings of the Electron Devices Society publication process by volunteering your time to these activities. Please do not hesitate to contact me at [r.jindal@ieee.org](mailto:r.jindal@ieee.org) with any suggestions and/or comments.

*Renuka P. Jindal*  
Vice-President of Publications  
University of Louisiana  
at Lafayette  
Lafayette, LA, USA



## EDS TECHNICAL COMMITTEE REPORT – TCAD



Enrico Sangiorgi

The Technology Computer Aided Design Technical Committee (TCADTC) was formed in 2000 and its first Chairman was Professor Mark Law, University of Florida. In 2004, Prof. Law resigned from the Chairman position to become EDS Vice-President of Technical Activities.

The committee now has 12 members representing a very wide spectrum of technical expertise in TCAD. The present members are:

Enrico Sangiorgi (University of Bologna) – Chair, Herb Bennett (National Institute of Standards and Technology, Gaithersburg, MD), Alain P. Claverie (CEMES/CNRS, Toulouse, France), Robert W. Dutton (Stanford University, Stanford, CA), Martin D. Giles (Intel Corporation, Hillsboro, OR), Masami Hane (NEC Corporation, Sagamihara, Japan), Karl Hess (University of Illinois at Urbana, Champaign, IL), John K. Lowell (Dallas, TX), Kenji Nishi (Kinki Univ. Tech. College, Mie, Japan), Shinji Odanaka (Osaka University, Osaka, Japan), Siegfried Selberherr (Technical University of Vienna, Wien, Austria), and Oleg V. Stoukatch (Tomsk Polytechnic University, Tomsk, Russia).

The TCADTC's primary responsibility is to identify and foster new technical trends and areas, and to serve the growing needs of the Electron Devices Society com-

munity in Modeling and Simulation of Process, Device, and Manufacturing for Integrated Circuits.

The committee achieves these goals by proposing special journal issues to cover important M&S topics, organizing or supporting panel sessions, special sessions, and short courses at major conferences.

We also attempt to coordinate with the Editors-in-Chief of the EDS journals closest to our technical interests, i.e., – *Transactions on Electron Devices*, *Electron Device Letters*, and with the major EDS Conferences (IEDM, VLSI Symp., etc.) to make sure EDS Journals and Conferences are fully covering the major technical achievements in the TCAD areas.

For 2005, the committee will continue to help the IEDM by providing suggestions for invited speakers in the Modeling & Simulation, and will look for closer connections with other EDS sponsored International Conferences, will continue to focus on identifying emerging trends in Computer Aided Design of electron devices and technologies, enhancing the bridge between device technology, device physics, and simulation.

Enrico Sangiorgi  
EDS TCAD Technical Committee Chair  
University of Bologna  
Bologna, Italy

## EDS SENIOR MEMBER PROGRAM

The Electron Devices Society established the EDS Senior Member Program to grant IEEE/EDS members the opportunity to elevate their IEEE membership grade to Senior Member. This is the highest IEEE grade for which an individual can apply and is the first step to becoming a Fellow of IEEE. If you have been in professional practice for 10 years, you may be eligible for Senior Membership.

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 your request, the IEEE Admission & Advancement Department will send a letter to your employer recogniz-

ing this new status as well. As part of the IEEE's Nominate-a-Senior-Member initiative, the nominating entity designed on the member's application form will receive US\$10 from IEEE. As an EDS member, we would appreciate it if you could indicate on your Senior Member application form that EDS is your nominating entity.

For more information concerning Senior Membership, please visit <http://www.ieee.org/seniormember>. To apply for Senior Member grade, please complete an application form, which is available at <http://www.ieee.org/organizations/rab/md/smelev.htm>. You can also request a

hard copy Senior Member packet via mail or fax by contacting IEEE Admissions and Advancements Department, 445 Hoes Lane, Piscataway, NJ 08854, USA, Fax: +1 732 981 0225.

We strongly encourage you to apply for IEEE Senior Membership to enhance your career. At the same time, you'll be helping EDS.

Thank you for supporting IEEE and EDS.

James B. Kuo  
EDS Vice-President  
of Membership  
National Taiwan University  
Taipei, Taiwan

## ANNOUNCEMENT OF THE EDS GRADUATE STUDENT FELLOWSHIP WINNERS FOR 2004

The Electron Devices Society Graduate Student Fellowship Program was designed to promote, recognize, and support graduate level study and research within the Electron Devices Society's field of interest: The field of interest for EDS is 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, micromechanics, tubes and other vacuum devices.

The society is concerned with research, development, design and manufacture related to the materials, processing, technology, and applications of such devices, and the scientific, technical and other activities that contribute to the advancement of this field.

The society proudly announces four 2004 EDS Graduate Student Fellowship winners. Brief biographies of the 2004 recipients appear below. Detailed articles about each Graduate Student Fellowship winner and his work will appear in forthcoming issues of the EDS Newsletter.



**David DiSanto** was born in 1973 in British Columbia, Canada. He received his bachelors 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** "Following his career as a technical director for live theatrical events, David John received the BASc 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** 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 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 Information Technology. His research interests include device physics, char-

acterization 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 refereed journals and conference proceedings. Martin is also a popular and a frequently used teacher in undergraduate education at KTH.



**HongYu Yu** was born in TianJin, China in 1976. He received the B.Eng. degree from Tsinghua University, Beijing, China, in 1999, and the M.A.Sc. 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 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 the NUS President Graduate Fellowship in 2002. He also received the University of Toronto Graduate Fellowship in 2000 and 2001.

*Ilesanmi Adesida  
EDS Vice-President of  
Educational Activities  
University of Illinois  
Urbana, IL, USA*

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

## ANNOUNCEMENT OF THE EDS REGION 9 OUTSTANDING STUDENT PAPER AWARD

The Region 9 Outstanding Student Paper Award was established in 2004 to promote, recognize, and support meritorious research achievement on the part of Region 9 (Latin America and the Caribbean) students, and their advisors, through the public recognition of their published work, within the Electron Devices Society's field of interest. The award will be given every two years.

For the first year of the award, there were two co-winners:



**Miguel Aleman-Arce** of the Center for Research and Advanced Studies of the IPN, Mexico City, Mexico for his paper, "The Integral Function Method: A New Method to

Determine the Nonlinear Harmonic Distortion". The co-authors of this paper were: Antonio Cerdeira, Magali Estrada, Denis Flandre, Bertrand Parvais, and Gonzalo Picun. Miguel's faculty advisor is Antonio Cerdiera.

Miguel A. Alemán-Arce received the Electronic Engineering degree in 1999 from the National Polytechnical Institute in Mexico. He is now a Ph.D. student at the Solid State Electronics Section, Department of Electrical Engineering, CINVESTAV-IPN in Mexico City. His current research interest is in the field of analysis and characterization of MOSFETs nonlinearities and harmonic distortion. He is an IEEE Student Member.



**Adeilton Cavalcante de Oliveira Jr.** of State University of Campinas, Campinas, Brazil for his paper, "Modeling and Simulation of Static Characteristics of a PMOS

Compatible Hot Wire Principle-Based Flow Micro Sensor". The co-authors of this paper were: Ioshiaki Doi, Jose A. Diniz, Jacobus W. Swart and Eliphaz W. Simoes. Adeilton's faculty advisor is Ioshiaki Doi.

Adeilton Cavalcante de Oliveira Júnior was born in João Pessoa, Paraíba, Brazil on August 28, 1977. He received the Bachelor's degree in electrical engineering from the Federal University of Paraíba (UFPB), Campina Grande, Paraíba, Brasil in 2001 and Master's degree in electrical engineering from the State University of Campinas (UNICAMP), Campinas, São Paulo, Brasil in 2003. He is currently pursuing the Ph.D. degree at State University of Campinas in the area of silicon micromachined flow sensors for use in biomedical instrumentation. His main research interests include modeling, simulation and fabrication of micromachined sensors and electronic instrumentation.

Both winning papers were published in the proceedings of the 18th International Symposium on Microelectronics Technology and Devices (SBMicro) held 8-11 September 2003 in Sao Paulo, Brazil. The recipients were awarded a certificate and given a subsidy of up to \$1,000 to receive the award at the International Caracas Conference on Devices, Circuits and Systems at the Barcelo Bavaro Convention Center in Punta Cana, Dominican Republic 3-5 November 2004. The EDS President, Hirsohi Iwai, presented the certificates to the winners at the Caracas Conference.

Brief biographies and photos of the co-authors of the paper, "The Integral Function Method: A New Method to Determine the Nonlinear Harmonic Distortion", follow:



**Antonio Cerdeira** was born in Havana, Cuba, in 1942. He received his M.Sc. degree in physics from Moscow State University, Russia, in 1966 and Ph.D. degree from the NW

Leningrad Polytechnic Institute, Russia, in 1977. Since 1966, has been engaged in research and teaching in the field of microelectronics, including design, technology, simulation and characterization. Titular Professor at the Universi-

ty of Havana from 1977 until 1994; since 1995, he is a Titular Professor at the Section of Solid-State Electronics, Department of Electrical Engineering, CINVESTAV-IPN, México, D.F. He has been head of research projects, lecturer, author, coauthor of more than a hundred technical papers and patents. His research interest at present is in the field of modeling and characterization of TFT and MOSFET, including the non-linear behavior of devices and circuits. Prof. Cerdeira is a Senior Member of the IEEE Electron Devices Society and EDS Distinguished Lecturer.



**Magali Estrada:** She 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 Sec-

tion/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.



**Denis Flandre** was born in Charleroi, Belgium, in 1964. He received the Electrical Engineer degree, the Ph.D. and the Post-doctoral thesis degree from the *U n i v e r s i t é catholique de Louvain, Louvain-la-Neuve, Belgium*, in 1986, 1990 and 1999, respectively. Since 2001, he is full-time Professor at UCL. Since 2003, he is Head of the UCL Microelectronics Laboratory, currently involved in the R&D of SOI MOS devices, digital and analog circuits, sensors and MEMS, for special applications and microsystems. He has authored or co-authored more than 250 technical papers or conference contributions. He holds 5 patents. He is an IEEE Senior member.



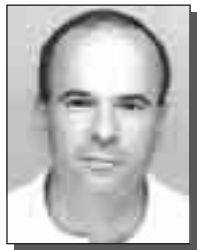
**Bertrand Parvais** received the electrical engineering degree from the *U n i v e r s i t é catholique de Louvain (U.C.L), Louvain-la-Neuve, Belgium*, in 2000.

He is currently finishing a Ph.D. dissertation at the Microwave Laboratory, UCL, in the field of RF integrated circuits.

His research interests include the nonlinear characterization of devices and the development of micro-electromechanical techniques for the design of RF circuits in Silicon-on-Insulator technology.

**Gonzalo Picun** - photo and bio not available

Brief biographies and photos of the co-authors of the paper, "Modeling and Simulation of Static Characteristics of a PMOS Compatible Hot Wire Principle-Based Flow Micro Sensor ", follow:



**José Alexandre Diniz** was born in Campinas, SP, Brazil, on July 09, 1964. He received the B.S. degree in physics, the M.Sc. degree in electrical engineering, and the Ph.D. degree in electrical engineering, all from the State University of Campinas (UNICAMP), Campinas, SP, Brazil, in 1988, 1992 and 1996, respectively. His doctoral thesis concerned thin and ultra-thin silicon oxynitride films formed by low energy nitrogen and nitric oxide ion implantation for enhanced MOS devices. Dr. Diniz worked in the Department of Semiconductors, Instruments and Photonics at UNICAMP as postdoctoral researcher from 1996 to 1998. He was with University of Florida, Gainesville, FL, USA, in 1998, as a Visiting Scientist, where he studied plasma etching of III-V compound semiconductors. Since January 1999, he has been working in Center of Semiconductor Components at UNICAMP as a Researcher. Also, since September 2002, he has been working in School of Electrical and Computer Engineering at UNICAMP as a Professor. His main interests are high density plasma ultra-thin film growing, thin film deposition and etching techniques, fabrication of solid-state micromechanical structures, high speed transistors and sensors.



**Ioshiaki Doi** received B.S. degree in physics and M.S. degree in solid state physics from the University of S. Paulo, S. Paulo-SP, Brazil, in 1970 and 1973, respectively, and Ph.D. degree in electrical engineering from the University of Tokyo, Tokyo, Japan, in 1977. In 1977, he joined the State University of Campinas (UNICAMP), Campinas-S.P., Brazil, where he is now a Professor in the School of Electrical and Computer Engineering (FEEC). His research interests include polycrys-

talline silicon and silicon-germanium material properties and device fabrication, new and innovative materials for electronic applications, rapid thermal processing, silicides, device, and microelectromechanical systems (MEMS).



**Jacobus W. Swart:** He received the B. Engineer and Dr. Engineer Degrees in 1975 and 1981 respectively, from the Polytechnic School, University of São Paulo, Brazil. Following, he worked at: K. U. Leuven, Belgium, 1982-83; CTI, Campinas, 1984; LSI-University of São Paulo, 1985-88, RTI, USA, 1991, and at State University of Campinas, since 1988, presently as Full Professor and Director of the Center for Semiconductor Components. Dr. Swart has published 40 papers in Journals and 130 full papers in Proceedings of Conferences. He has advised 30 Dr. and MSc. degree students. He is a Senior Member of IEEE, member of ECS, SBMicro and SBMO and has been president of SBMicro twice, 1988-90 and 1998-2000.



**Eliphaz Wagner Simões** was born in São Paulo, Brazil, in 1966. In 1990. Dr. Simões graduated in electrical engineering from the Fundação Armando Alvares Penteado (FAAP). He received his MS (1995) and Ph.D. (2000) from the University of São Paulo. Since 1991 he has been with the Laboratory of Integrated Systems (LSI), Department of Electrical Engineering, Polytechnic School, University of São Paulo. He has worked in the areas of microelectronics processes, microelectromechanical systems, microfluidic devices, and microfluidic simulations using different packages. Presently, he is Pos- Doc associated with the Flow Laboratory (IPTSP). He published more than 57 papers, mainly on microelectronics processes and microfluidic devices, in different journals and proceedings. His current interests are: microfluidic, simulations packages, flow actuation and control, flow measurement, and micromachining for different applications.



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

Kenji Anami  
Jean-Luc Autran  
John E. Ayers  
Martin Birk  
Farid Boussaid  
Manish B. Damle  
Vinay Gupta  
Lae Gu Kang  
Mak R. Kulkarni  
Gong-Ru Lin  
Susan M. Lord  
Charles F. Malcolm III  
Deb M. Newberry  
Nagaraj NS  
Philippe Paillet  
Zhiyu Pan\*  
Henryk M. Przewlocki\*  
Michael E. Read  
Norbert R. Seifert  
David C. Shaver  
Li Song\*  
Douglas W. Stout  
William P. Taylor  
Marek B. Turowski  
Chunyan Wang  
Wanjun Wang\*  
Qian Yu

\* = 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. In addition, 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>.

**ON-LINE ACCESS TO IEEE  
JOURNALS AVAILABLE  
TO EDS MEMBERS**

The Electron Devices Society continues to enhance the value of EDS membership. I am pleased to announce a new member benefit of on-line access to the International Electron Devices Meeting (IEDM) papers from the first technical digest in 1955 through and including 2004. Additionally, we have added the archival issues of both *Transactions on Electron Devices* (T-ED) and *Electron Device Letters* (EDL) to IEEE Xplore. As an EDS member you will now be able to access all articles of T-ED from 1954 to current and EDL from 1980 to current.

In addition to the above, the on-line delivery system, IEEE Xplore, provides IEEE members with the following benefits/capabilities:

- Online access to their IEEE personal subscriptions
- Full-text PDF image files for content, including all original charts, graphics, diagrams, photographs and illustrative material starting from 1988
- Full-text search allows you to search metadata fields and the associated full-text journal/transaction content from 1996 forward
- Links to references and cross linking between EDS publications and other IEEE publications is available in articles from 1996 through current
- Online available prior to the print equivalent
- Free and unlimited access to abstract/citation records
- Unlimited printing of bibliographic records and full-text documents
- Includes cover to cover material starting (starting in 2004) i.e., let

ters to editor, editorial boards, call for papers

As an IEEE and EDS member, you have FREE on-line access to the full articles of the following publications:

*Electron Device Letters* (1980 through current)

*Transactions on Electron Devices* (1954 through current)

*International Electron Devices Meeting* (1955 through 2004)

*EDS Newsletter*

*Transactions on Device and Materials Reliability*

*Journal of Lightwave Technology*

Free on-line access was a new member benefit beginning September 1st, 1998 (start of the 1999 IEEE membership cycle).

In addition to the on-line access to periodicals included with EDS membership, *Transactions on Semiconductor Manufacturing* and the *Journal of Microelectromechanical Systems* are available on-line to their respective member subscribers of the print version.

To use the Xplore system, you must establish an IEEE Web Account. This account is also used for renewing your IEEE membership online. If you need to establish an IEEE Web Account, please visit [www.ieee.org/web/accounts/](http://www.ieee.org/web/accounts/)

IEEE members can go to the Xplore site through the URL [www.ieeeexplore.ieee.org](http://www.ieeeexplore.ieee.org). We encourage all members of the Society to use this dynamic system.

*Renuka P. Jindal*  
*EDS Vice-President*  
*of Publications*  
*University of Louisiana*  
*at Lafayette*  
*Lafayette, LA, USA*

## WILLIAM R. CHERRY AWARD



Timothy J. Coutts

This award is named in honor of William R. Cherry, a founder of the photovoltaic community, and was instituted in 1980, shortly after his death. The purpose of the award, which is presented at each Photovoltaic Specialists Conference (PVSC), is to recognize engineers and scientists who have made significant contributions to the science and/or technology of PV energy conversion, with dissemination by substantial publications and presentations. The William R. Cherry award will be presented to Dr. Timothy J. Coutts at the 31st IEEE/EDS PVSC to be held at the Coronada Springs Resort, Orlando, between January 3rd and 7th, 2005.

Timothy Coutts has more than 30 years experience in photovoltaics. He has more than 200 publications in thin films, electro-optical properties of materials, semiconductor physics and modeling, thin film devices, and photovoltaics. He has also co-authored one book and co-edited the series "Current Topics in Photovoltaics" for Academic Press. He was the founding co-editor of the Elsevier journal Solar Cells. He is a Fellow of the AVS and the British Institute of Physics. He has also been a long-time instructor in the AVS short-course program. He has been active in several professional societies, including the AVS, IEEE, and the MRS. He is the Program Chair for the 31st IEEE PVSC and has been designated as the Program Chair for the next World PV Solar Energy Conference in Hawaii in 2006. He founded the series of conferences on "Ther-

mophotovoltaic Generation of Electricity", and he has served as organizer for all five of these scientific meetings.

Timothy J. Coutts is a Research Fellow at the National Renewable Energy Laboratory and is in the National Center for Photovoltaics. He has been with NREL(SERI) for more than 20 years. He holds adjunct professorships at the Colorado School of Mines and the University of Colorado and he regularly teaches graduate courses and serves as research advisor to graduate students. He received a B.Sc. in Applied Physics from the University of Wearside (1964) and a Ph.D. from the University of Northumbria (1968)

John D. Meakin  
Consultant  
Weybridge, VT, USA

# 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 1964 through August 2004
- + Electron Device Letters All issues from 1980 through August 2004
- + International Electron Devices Meeting All technical digests from 1966 through 2004

Collection also includes abstract pages for the publications listed below:

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

**Electron Devices Society 50<sup>th</sup> Anniversary Commemorative Booklet and EDS Newsletter (1988-2004), 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>.

# 2005 IEEE ELECTRON DEVICES SOCIETY GRADUATE STUDENT FELLOWSHIP CALL FOR NOMINATIONS

**Description:** One year fellowships awarded to promote, recognize, and support graduate level study and research within the Electron Devices Society's field of interest: The field of interest for EDS is 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, micromechanics, tubes and other vacuum devices.

The society is concerned with research, development, design, and manufacture related to the materials, processing, technology, and applications of such devices, and the scientific, technical and other activities that contribute to the advancement of this field.

At least one fellowship will be awarded to students in each of the following geographical regions every year: Americas, Europe/Middle East/Africa, and Asia & Pacific.

**Prize:** US\$5,000 to the student, US\$1,000 grant to the student's department, US\$1,000 grant to the student's faculty advisor in support of the student's project and a travel subsidy

of up to US\$3,000 to each recipient to attend the IEDM for presentation of award plaque. The EDS Newsletter will feature articles about the EDS Graduate Fellows and their work over the course of the next year.

**Eligibility:** Candidate must: be an IEEE EDS student member at the time of nomination; be pursuing a doctorate degree within the EDS field of interest on a full-time basis; and continue his/her studies at the current institution with the same faculty advisor for twelve months after receipt of award. Sponsor must be an IEEE EDS member. Previous award winners are ineligible.

**Basis for Judging:** Demonstration of his/her significant ability to perform independent research in the fields of electron devices and a proven history of academic excellence.

**Nomination Package:**

- Nominating letter by an EDS member
- Two-page (maximum) statement by the student describing his or her education and research interests and accomplishments
- One-page biographical sketch of the student (including students mailing address and email address)
- One copy of the student's under-

graduate and graduate transcripts/grades. Please provide an explanation of the grading system if different from the A-F format

- Two letters of recommendation from individuals familiar with the student's research and educational credentials

**Timetable:**

- Nomination packages will be due at the EDS Executive Office no later than May 15, 2005
- Recipients will be notified by July 15, 2005
- Monetary awards will be given by August 15, 2005
- Formal presentation of the awards will take place at the IEDM Awards Ceremony in December 2005.
- Nominations packages can be submitted by mail, fax or e-mail, but a hard copy must be received at the EDS Office.

**Send completed package to:**

IEEE Operations Center, EDS Executive Office, EDS Graduate Student Fellowship Program, 445 Hoes Lane, Piscataway, NJ 08854 USA

**For more information contact:** eds-fellowship@ieee.org or visit: <http://www.ieee.org/society/eds/education/fellowship.xml>

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## CALL FOR IEEE FELLOW NOMINATIONS

Nominations are being accepted for the 2006 class of IEEE Fellows. For the second year, nominations, references and endorsements may be submitted electronically. The deadline is 1 March 2005.

At its June 2003 meeting, the IEEE Board of Directors approved changes to the process for nominating and electing

IEEE members to Fellow grade. The change established a new nomination category for individual contributions, with the goal of increasing nominations for members in industry and encouraging nominations of application engineers or engineering practitioners who have made contributions of unusual

distinction to the profession.

The board also established a Fellow Nomination Resource Center to help nominators locate the required number of references to support a nomination.

To nominate an IEEE senior member or to learn more about the Fellow program, visit [www.ieee.org/fellows](http://www.ieee.org/fellows).

## SHIN-TSON WU NAMED EDITOR-IN-CHIEF OF JDT

Shin-Tson Wu will be the first Editor-in-Chief of the new *IEEE/OSA Journal of Display Technology* and formed his editorial board in the last quarter of 2004. Dr. Wu is the Provost-Distinguished Professor of Optics at the College of Optics and Photonics, University of Central Florida (UCF). Prior to joining UCF in 2001, Dr. Wu worked at Hughes Research Laboratories (Malibu, California) for 18 years. He received his PhD from the Center for Laser Studies, University of Southern California, and his BS in physics from National Taiwan University.

Dr. Wu's entire career has been devoted to liquid-crystal display science, technology, and electro-optics. His major contributions are in projection liquid-crystal displays, wide-view and fast-response liquid-crystal televisions, transmissive liquid-crystal displays for cell phones, and high

birefringence liquid crystals for tunable photonic devices. Several of his inventions are implemented in commercial products. His studies at UCF, concentrate in five areas: liquid-crystal displays, liquid-crystal materials, foveated imaging, bio-photonics, and optical communications. His research group consists of two professors, seven research scientists and thirteen PhD students.



**Dr. Wu** is a Fellow of the IEEE, SID, and OSA. He is a recipient of the IEEE Outstanding Engineer Award, SID Special Recognition Award, ERSO (Taiwan) Special Achievement Award, Hughes team achievement award, and Hughes Research Labs out-

standing paper award. Dr. Wu has co-authored two books: *Reflective Liquid Crystal Displays* (Wiley, 2001), and *Optics and Nonlinear Optics of Liquid Crystals* (World Scientific, 1993), four book chapters, over 200 journal papers, 60 invention disclosures, and 150 conference presentations.

Dr. Wu has been serving as a Technical Advisory Committee member for steering Taiwan's display industry for more than a decade. Most of Taiwan's display engineers benefit directly or indirectly from Prof. Wu's seminars or training courses. Dr. Wu is serving as a conference co-chair for the IEEE/LEOS (Display), CLEO (Display and Solid-State Lighting), and MRS (Liquid Crystal Materials) conferences.

For information concerning the Journal, see the article on the back page of this issue.

## EDS DISTINGUISHED LECTURER VISITS CZECH REPUBLIC

Associate Prof. Albert Wang visited the MTT/AP/ED Czechoslovakia Chapter on July 16, 2004 to give a Distinguished Lecture on Advanced ESD Protection Design for ICs." The lecture was organized by the Czechoslovakia Section Vice Chair, Prof. Jan Vobecky, at the Microelectronics Dept., Faculty of Electrical

Engineering, Czech Technical University in Prague. In spite of summer vacations, the lecture was attended by 57 engineers, with about 50 of them being from local design centers like ST Microelectronics, ASI-Centrum, On-Semiconductor, AMI Semiconductor, S3, etc. The lecture was continued by a business luncheon sponsored by ST Microelectronics, where possibilities of co-operation between industry and academia were productively discussed. As the lecture was greatly appreciated by industrial partners, it was suggested to organize more such events. Associate Prof. Albert Wang also met with MTT/AP/ED Chapter Chair, Associate Prof. Pavel Hazdra, from the Microelectronics Dept., Faculty of Electrical Engineering, Czech Technical University in Prague to discuss current activities of

the Chapter and the promoting of EDS membership. From the viewpoint of both the Section and Chapter, the visit of Albert Wang to Prague was very successful.

*Jan Vobecky  
Czech Technical University  
Prague, Czechoslovakia*



*Albert Wang makes DL at CTU in Prague.*



*EDS members and industrial partners at the business luncheon.*



# EDS DISTINGUISHED LECTURER PROGRAM - LECTURERS RESIDING IN ASIA & PACIFIC

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).

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-CMOS Image Sensor Design in the Aggressive Scaling Environment  
-Highly Scalable Non-Volatile Memory Structures  
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-Hetero-Material Gate Field-Effect Transistors (HMGFET's)  
-Subpicosecond Electrical Pulse Generation by

# REGIONAL AND CHAPTER NEWS

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

### EDS Distinguished Lecturer Visits ED Vancouver Chapter

- by Karim S. Karim



Dr. Liou (R) and Dr. Karim after the DL

Dr. Juin J. Liou, an IEEE EDS Distinguished Lecturer and a Vice-Chair of the EDS SRC/NAE, visited the newly established ED Vancouver Chapter in Vancouver, Canada on Sept. 10, 2004. During his visit, Dr. Liou gave a distinguished lecture on "Evolution and Recent Advances on RF/Microwave Semiconductor Devices." More than 50 people attended the 90-min talk held on the campus of Simon Fraser University (SFU) in Burnaby, a suburb of Vancouver. Following the DL, a dinner was arranged by the ED Vancouver Chapter Chair, Dr. Karim Karim. Four faculty members in the Engineering Science Dept. at SFU also attended the dinner. Future activities and needs of the ED Vancouver Chapter were discussed. Dr. Karim indicated that he would like to host 4 to 5 DLs each year and hoped that



Audience at the DL talk at Simon Fraser University in Burnaby

the funding from the IEEE could be increased to support these activities. To further enhance the Chapter visibility, Dr. Liou suggested the possibility of hosting an EDS sponsored international conference or an EDS AdCom meeting in Vancouver in the future.

~ **Arokia Nathan, Editor**

### ED South Brazil

-by Jacobus W. Swart

The 20th Symposium on Microelectronics Technology and Devices will be held on September 4 to 7 in Florianópolis, SC, Brazil. This symposium is co-sponsored by two Brazilian scientific societies, SBMicro (Brazilian Microelectronics Society) and SBC (Brazilian Computer Society), and the IEEE Electron Devices Society. The SBMicro Symposium is a forum dedicated to fabrication and modeling of microsystems, integrated circuits and devices, being held annually in Brazil. The goal of the symposium is to bring together researchers in the areas of processing, materials, characterization, modeling and TCAD of integrated circuits, optoelectronics and MEMS. This international conference offers a unique blend of microelectronics and serves as a major conference for the discussion of interdisciplinary research around the world.

In conjunction with SBMicro 2005, the 18th Symposium on Integrated Circuits and Systems Design (SBCCI) is held at the same venue. SBCCI is also sponsored by the same two Brazilian societies. The two symposia are held together since 2000, with a total attendance of about 300 participants and presentation of about 100 regular papers, in addition to invited and tutorial lectures. The two symposia together constitute an event that has been given a nickname in accordance with its location. This year it has been dubbed "Chip on the Reefs" (Porto de Galinhas, 2004). For next year it has received the nickname "Chip on the Island". The events in the previous years were dubbed Chip in Sampa (São Paulo, 2003), Chip in the Pampa (Porto Alegre, 2002), Brasília 2001 (Pirenópolis, 2001),

Chip in the Jungle (Manaus, 2000). Since 2002, The Electrochemical Society has published the proceedings of the SBMicro Symposium.

The location of the 2005 symposia is Florianópolis, the capital of the state of Santa Catarina, located on a paradise island in the southern region of Brazil. This tropical island contains some of the most beautiful beaches of Brazil with warm, green, clean waters.

Topics of interest include, but are not limited to, IC, optoelectronics and MEMS processing, novel materials and devices, reliability, technology CAD, displays, thermal effects and models, nanoelectronics, device characterization and modeling, sensors and actuators, package and technology roadmaps, packaging, engineering education.

Important deadlines are as follows: Submission: March 12th, 2005; Notification of Acceptance: May 9th, 2005; Camera-ready: May 16th, 2005. For more information see <http://www.sbmicro.org.br/sbmicro> and <http://www.sbc.org.br/sbcc>, and or contact the program co-chairs, Cor Claeys ([c.claeys@ieee.org](mailto:c.claeys@ieee.org)) and Jacobus W. Swart ([jacobus@ieee.org](mailto:jacobus@ieee.org)).

~ **Adelmo Ortiz-Conde, Editor**

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

### ED Novosibirsk State Technical University (NSTU) Student Branch

- by Vladimir A. Kolchuzhin

The 5th Siberian Russian Workshop and Tutorial EDM'2004 was organized and successfully held July 1-5, 2004 in NSTU Recreation Department 'Erlagol'. The total number of accepted papers was 70, and the total number of authors was 147.

The first EDM was organized and held in 2000 at Novosibirsk State Technical University, Novosibirsk, Russia. Now this meeting is organized by three Universities and one Research Institute and supported by IEEE EDS, IEEE SSCS, IEEE Russian Siberia Section, Russian Governmental Program 'Integration' and private organizations.



ED NSTU Student Branch Counselor Mr. Vladimir Kolchuzhin. NSTU Recreation Dept. 'Erlagol', EDM.

The ED NSTU Student Branch has provided the technical support for preparing the volume of proceedings. This volume is a hardcover book of 250 pages with illustrations. The Student Branch provided alot of help in organizing the successful work of the scientific sessions.

Traditionally, the topics of the Workshop are: simulation of microsystems and physical phenomena in semiconductor materials, modern technologies in telecommunications and industrial electronics. A session devoted to laser technologies and instruments for medicine and biology was held for the first time.

EDM is a main event of Student Branch activity each year. A number of Student Branch members participate in this meeting. It's reasonable for us to support and develop this tradition. Thus, the 6th International Workshop and Tutorial EDM 2005 will be organized next year. It's planned to extend this meeting and to become it more practical via inviting representatives from industry, business, research institutes and administration. One of the suggested main topics for the next EDM is 'Information Technologies in Electronics'.

Together with EDM, the 5th Anniversary of the ED NSTU Student Branch was celebrated. A historical essay was prepared by the first Student Branch Counselor, Dr., Assoc. Prof. Alexander Gridchin, and published in the 2004 EDM proceedings. During the past five years many people were involved in the activities of the Student Branch. We are thankful to all these people. We can believe that the ED NSTU Student Branch will maintain their originality and will receive a great success in educational, scientific and administrative work.

### MTT/EDCPMT/COM/SSC Novosibirsk

– by Viatcheslav P. Shuvalov

Efforts to develop the IEEE activities in the Siberia and Far East region have brought the establishment of the IEEE Russian Siberia Section in February, 2003.

The joint MTT/ED/CPMT/COM/SSC Novosibirsk chapter was one of the first to join the IEEE Russian Siberia Section. Now some chapter activity will be presented here as a part of the Section activity.

First of all, chapter representatives are participating in all Section meetings. They can receive a lot of useful information about IEEE resources and programs from reports of Section officers. These meetings are organized periodically, 5-6 times per year.

Secondly, the membership renewal for 2004 was organized with the aid of concentration banking due to the Section possibilities. This manner of renewal avoids the transferring of money and the paying of bank service fees.

Thirdly, the necessity to complete the L-50 form as a Section financial report has introduced more order into the chapter finances.

Unfortunately, decreasing the financial support has brought some decreasing of the chapter scientific activity. However, our chapter has provided the financial support for the 5th International Workshop and Tutorial on Electron Devices and Materials EDM'2004 (July 1-5, 2004) and 7th International Scientific-Technical Conference on Actual Problems of Electron Instrument Engineering APEIE-2004 (September 21-24, 2004), which were successfully held at Novosibirsk State Technical University, Novosibirsk, Russia.

Our chapter has financially supported the celebration of the 5th Anniversary of

the ED Novosibirsk State Technical University Student Branch. As well, chapter representative, Dr. Alexander Gridchin, has visited the IEEE Tomsk chapter and Student Branch and has participated in the IEEE technically supported conference SIBINFO-2004.

A summary of our chapter's activity was presented by chapter representative, Dr., Assoc. Prof. Alexander Gridchin at the EDS AdCom meeting in Madrid, Spain. As well, Dr. Alexander Gridchin presented his lecture at the EDS Spain Mini-Colloquia as part of EDS Distinguished Lecturers program.

Finally, our activity was presented to participants of the Region 8 Student Branch Congress 2004 (Passau, Germany) by the Siberian State University of Telecommunications and Informatics Student Branch Chair, Mr. Anton A. Kiselev.

The chapter membership count has been stable. There has been some decreasing of the ED, MTT and SSC members while the number of COM members has increased. We can increase the membership via establishing new chapters. The existence of the IEEE Russian Siberia Section allows us to extend our administrative possibilities.

~ Alexander V. Gridchin, Editor

### 17th Indium Phosphide and Related Materials Conference 8-12 May 2005, Glasgow, Scotland, UK

– by John H. Marsh

The organizers of the Indium Phosphide and Related Materials Conference are pleased to announce that Scotland has been chosen to host the 17th annual event. This conference will be held in the Thistle Hotel, Glasgow which offers an excellent, compact environment for this event. The Thistle Hotel is located in the city centre providing visitors to Glasgow with easy access to a wealth of hotels, restaurants, museums, galleries and shops.

The conference will continue to cover the latest developments in materials and devices for the optical communications and high-speed electronics industries. The decision to choose Scotland as the venue for this conference also reflects the extremely active research and development activity in UK universities and companies. A number of sponsorship and exhibition packages will also be available. Please contact the conference secretariat for further details. We hope



Officers of the Chapter Executive Committee in the IEEE Russian Siberia Section meeting (SibSUTI, Novosibirsk, Russia, January, 2004).



you will join us in Glasgow in 2005.

To register your interest in the conference, please refer to the website.

**ORGANISING COMMITTEE:**

**Conference Chair** John H. Marsh, Intense Photonics Ltd

**Programme Chair** Iain G. Thayne, University of Glasgow

**Local Arrangements Chair** A. Catrina Bryce, University of Glasgow

**Exhibition Chair** Chris Gracie, Scottish Optoelectronics Association

**Short Course Chair** Alwyn J. Seeds, University College London

**Publicity Chair** Steve Bland, IQE plc

**Golf Chair** Wilson Sibbett, University of St Andrews

**ABSTRACT DEADLINE:** 26 November 2004

Full details available on the website in due course.

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Email: [iprm2005@meetingmakers.co.uk](mailto:iprm2005@meetingmakers.co.uk)

Website: [www.IPRM2005.org](http://www.IPRM2005.org)

~ **Gady Golan, Editor**

## ED Poland

- by *Andrzej Napieralski*

After the 11th International Conference "MIXED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS" - MIXDES'2004", awarded papers have been published in the Polish Journal "Elektronika", sponsored by the IEEE ED Poland Chapter. Some of the awarded papers have also been sent for publication in the Poland "Microelectronics Reliability Journal".

The ED Poland Chapter is a co-organizer of the following edition of the MIXDES Conference Series. The 12th International Conference MIXDES 2005 will be held 22-25 June 2005 in Kraków, Poland. During the conference, a special session "Compact Models Standardization for Analog RF IC Applications", organized by Dr. Wladyslaw Grabinski, Freescale Geneva, Switzerland, is foreseen. The conference is extended one day (22nd of June), which will be designated for the set of free tutorials entitled "A glimpse into the future" closing the REASON (Research and Training for System on Chip Design) IST project of the EU Fifth Framework Programme.

During the conference, a joint meeting of the IEEE ED Poland Chapter and the Microelectronics Section of Electronics and Telecommunication Committee of the Polish Academy of Science will take place. More information about the conference can be found on the site <http://www.mixdes.org>.

~ **Andrzej Napieralski, Editor**

## Sixth International Vacuum Electronics Conference - IVEC 2005

- by: *Pierre Waller*

The sixth International Vacuum Electronics Conference IVEC 2005 will be held April 20-22, 2005 between the tulip fields and the North Sea shore, in the seaside resort of the Hotel Huis Ter Duin, Noordwijk, The Netherlands. Hosted by the European Space Agency and in technical co-sponsorship with IEEE-EDS, it will be organised by a European Program Committee, with the technical support of the international IEEE-EDS Technical Committee on Vacuum Devices.



*Seaside resort of the Hotel Huis Ter Duin, Noordwijk, The Netherlands. Site of IVEC2005*

IVEC has become the international landmark for all players in the field of Vacuum Electronics, drawing together representatives of academia, research institutes, industry, institutions and users. Being originally a merge between the US Power Tubes Conferences and the European Space Agency TWTA Workshops, IVEC has now expanded into a fully international conference, being held every second year in the US and in Europe and Asia alternatively every fourth year.

In what has now become customary, IVEC 2005 will open with a half-day plenary session addressing the various and widespread applications of Vacuum Electronics and discuss the future needs and requirements of its different users. The remaining two-and-a-half days will be dedicated to parallel oral and poster

technical sessions, focussing on the different applications, techniques and technologies. A special oral session dedicated to space applications and technologies is planned on the last day of the Conference.

The IVEC Conference is also the place to reward outstanding work in the field of Vacuum Electronics. The best IVEC Student Paper Award, together with the IVEC Award for Excellence in Vacuum Electronics will be presented at the Conference banquet, planned on the second evening. Please check the IVEC 2005 website for further information on these awards.

The Conference will cover all applications of Vacuum Electronics (telecom, particle accelerators, fusion plasmas, space, radars, electronic countermeasures, medical, industrial) as well as all types of devices (travelling wave tubes, klystrons, inductive output tubes, crossed field devices, gyrotrons, fast wave devices, free electron lasers, triodes, tetrodes, pentodes, switches...). Systems and sub-systems will be covered (microwave and mm-wave power modules, electronic power conditioner and supplies, linearisers...), together with the less conventional Vacuum Microelectronics Devices (including field emitters, cold cathodes, micromachined devices and techniques, mm-wave, displays, sensors...). Finally special attention will be given to analysis and computer modelling, advanced materials and fabrication techniques, thermal management and control, RF and HV breakdown, linearity, intermodulation and noise, measurement techniques, etc.

Papers on all these topics are sought and two-page abstracts shall be submitted to the ESA Conference Bureau. Please check the IVEC 2005 website for paper submission procedure, planning and updates.

For further information:

IVEC 2005 website: [www.congrex.nl/05a01](http://www.congrex.nl/05a01)

ESA Conference Bureau: [esa.conference.bureau@esa.int](mailto:esa.conference.bureau@esa.int)

## EDS/OED Colloquium by Prof. M. Jamal Deen

- by *Fouad Karouta*

On July 16th 2004, the ED Benelux Chapter organized a colloquium by Prof. Jamal Deen at the Technical University of Eindhoven, The Netherlands. EDS Distinguished Lecturer and IEEE Fellow Prof.

Deen, works for the ECE department at McMaster University in Hamilton.

This colloquium entitled, "Low Power RFICs for Transceiver Applications", dealt with the recent explosion in wireless communication services that opened the path for implementation of fully integrated mixed signal circuits, operating in the GHz range. This explosion has been accompanied by a significant increase in research activities in low-power radio-frequency integrated circuits (RFICs) for portable or wireless telecommunications applications. Wireless systems demand low-power RF front-end operation, since portable devices are expected to operate for extended periods of time before battery recharge. The low-cost benefits of using a CMOS process, along with ease of integration, lend themselves well to such applications. In this presentation, some recent work on several low-power RFIC building blocks (0.18mm standard CMOS technology), suitable for wireless and portable transceiver applications, was discussed. The design and performance of a 1.8V, 10GHz fully integrated monolithic CMOS voltage-controlled oscillator (VCO) with automatic amplitude amplitude control and temperature compensation as well as of an ultra-low power (40mW), low voltage (0.4V) VCO operating at 2.4GHz were presented. Next, the design and operating characteristics of a 12GHz wideband frequency doubler for future wireless applications was discussed. Mixers are important circuit blocks for transceivers, so a low-power 1.9GHz body-input mixer using a 0.8V supply was discussed. The design and performance characteristics of novel low noise amplifiers for the 2-3GHz band and higher frequencies was presented. Finally, new results on the on the effects of hot carrier degradation of integrated CMOS oscillators on its performance parameters - oscillation power, phase noise and frequency - and their evolution with stressing times was presented.

### Cat-CVD

—by Ruud Schropp

August 23-27, 2004, the faculty of physics and astronomy, surfaces, interfaces and devices group of Utrecht University, The Netherlands organized the 3rd International Conference on Hot-Wire CVD (Cat-CVD) Process, technically co-sponsored by the IEEE-EDS.

One-hundred and sixty scientists from 30 countries exchanged the latest news

on processes and applications involving Hot-Wire CVD. HWCVD gives approaches to many challenging issues that are encountered along the path dictated by Moore's law for the density of circuits on a chip, such as: high reliability of thin dielectrics, better step coverage, avoidance of plasma damage to low-k materi-



Opening of Cat-CVD by the chairman, Prof. Dr. R.E.I. Schropp

al, and independence of the underlying layers [Y. Akasaka, Osaka Univ.]. HWCVD can also be used to produce very large area devices (displays with TFT active matrices and thin film solar cells). It has now been proven that solar cells, made with a microcrystalline silicon layer, are totally stable for more than 5000 hours of light exposure [J. Andreu, Univ. Barcelona].

Since the HWCVD process is independent of the shape of the object to be coated, both on a macroscopic as well as a nanoscopic scale, many odd-shaped objects can be conformally coated. The technology can create hard, impenetrable coatings on tools, biopassive coatings on implantable medical devices, and it can provide surface modifications, e.g., to impart water resistance to fabric and paper [K. Gleason, MIT, Cambridge]. We have witnessed groundbreaking developments and numerous innovations in the use of HWCVD for the synthesis of carbon nanotubes [J.M. Bonard, Rolex S.A., Geneva; and A.M. Bonnot, LEP-ES-CNRS, Grenoble]. Among the family of nanotubes, single wall carbon nanotubes (SWNT) are the most promising material to bridge the gap between nanoelectronics and the emerging field of molecular electronics. Hot-Wire CVD can offer a self-assembling process which allows to anchor and in situ wire SWNTs at predetermined places by patterning a thin catalyst cobalt film.

Christine Richardson (Caltech) and Jirka Stradal (Utrecht University)

received awards for the best 'Marie Curie Early Stage Researcher' oral and poster presentations, respectively.

### EUROEM 2004

—by Jürgen Nitsch



Kimball Williams (right), the IEEE-EMCS President, presents an IEEE-Fellow Certificate to Jürgen Nitsch

More than 500 engineers and scientists from 40 countries attended the 2004 European Electromagnetics Symposium (EUROEM 2004), hosted by the Otto-von-Guericke-University Magdeburg, Germany, July 12-16.

The technical program consisted of 339 presentations in 45 technical sessions, workshops, 6 key note presentations and various side meetings. Next to the traditional topics, this symposium also featured some special topics sessions, including Wave Propagation, Radar Systems, Target Detection, Space Weather and Geomagnetic Storms. Alongside the symposium a technical exhibition took place with over 15 exhibitors from Europe and North America providing hands-on demonstrations and explanations of their products and services.

During the opening ceremony, Kimball Williams presented the election to the grade of an IEEE Fellow to Jürgen Nitsch (see Fig. 1). Also, Otto-von-Guericke-University honored Carl E. Baum by presenting an honorable Ph.D. degree.

During the symposium banquet, eight newly elected EMP Fellows and two best paper awards were presented. To recognize an outstanding paper in the field of Ultra-Wideband, Short-Pulse Electromagnetics a new award was initiated. The first recipients are J.S. Tyo, E.G. Farr and D.I. Lawry for the paper „Effects on Reflector Defocus on the Radiation Patterns of Impulse Radiating Antennas“.

~ Cora Salm, Editor

## ASIA & PACIFIC (REGION 10)

### ED/SSC Bangalore

- by Dr. P. R. Suresh



Ashok Kumar, MD, National Semiconductor, inaugurating the one-day workshop "Bridging technology and design in nanometer era"

The Bangalore chapter organized some successful technical events during the third quarter of 2004. All these events received an excellent response from the technical community.

The major event organized by the chapter was a one-day workshop on "Bridging technology and design in nanometer era" on 25 September 2004. The workshop covered various topics of VLSI, such as SoC design challenges in nanometer node, SoC platform architecture, device trends - challenges and limitations, Analog/RF integration challenges in SoCs, SoC designs with MEMS, and Analog design challenges in SoC era. The workshop was targeted at the professionals working in the VLSI field. About 100 participants from different industries in Bangalore attended this workshop. Speakers at this workshop included several recognized experts from industry and academia. The attendees of the workshop were highly appreciative of the technical content and usefulness of the workshop in their regular work. There were also several requests to conduct many such events for the benefit of the professionals and students.

The chapter co-sponsored the 8th VLSI Design and Test Workshops held at Mysore during August 26-28, 2004. The technical program of this workshop included several invited talks by industry and academia experts. In addition, more than 50 contributed papers were presented at this conference.

The third event was a seminar by Dr Chandu Visweswariah from IBM TJ

Watson Lab on First-Order Incremental Block-Based Statistical Timing Analysis on 18 August. This talk was well attended by about 50 people from industry and academia. In this presentation, Dr. Visweswariah discussed a canonical first order delay model for performing timing verification of digital integrated circuits.

### AP/ED Bombay Chapter

- by Dr. Mahesh Patil

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

1. Members of the Chapter presented talks on VLSI Design, Technology and Device Physics at a 3-day Training and Orientation Workshop on "VLSI Design and Technology" organized by the S.A.K. Engineering College, Mumbai and co-sponsored by the AP/ED Bombay Chapter. About 30 college teachers attended the Workshop.
2. On August 25, Prof. S.K. Koul, CARE, IIT Delhi gave a talk on "RF MEMS". He discussed a variety of technology and design issues related to RF MEMS.
3. Dr. Anand Krishnan, Texas Instruments, USA, presented a seminar on "Negative bias temperature instability in MOS transistors" on August 27. He discussed several reliability issues related to NBTI and their implications on circuit performance.
4. Report on the Nanotechnology Workshop at VNIT, Nagpur:

The IEEE AP/ED Bombay Chapter co-hosted the 2-day Nanotechnology Workshop held at Visweswarayya National Institute of Technology (VNIT), Nagpur on July 16 and 17, 2004. The workshop attracted over 200 participants from the Nagpur region. The speakers included EDS members, Prof. W.S. Khokle of VNIT, and Prof. A.N. Chandorkar, Prof. V. Ramgopal Rao, Prof. R.O. Dusane of IIT Bombay. Prof. Rajendra M. Patrikar of VNIT coordinated the technical program and the event. The workshop concluded with a panel discussion, chaired by Dr. Vilas K. Deshpande, Dean Academics of VNIT. Panelists included Dr. W.S. Khokle, Prof. R.O. Dusane, Prof. Ramgopal Rao, Prof. P.K. Rangole, and Prof. R.M. Patrikar. Panelists debated on the educational and training aspects required for nanotechnology research and came up with a few action items, including formation of cross-disciplinary research groups in various institutions for nanotechnology research.

### ED/MTT India

- by K. S. Chari

During the quarter July-September 2004, our chapter has pursued the following events:

- At the invitation of International Institute of Information Technology (IIIT) and ED/MTT India Chapter, Dr. P. June Min, Chairman, Intellect Inc, Korea delivered a talk on "Semiconductor Manufacturing-opportunities for India in Mega Fab Evolution" at the IIIT campus, Hyderabad on 16 September. The talk touched on the advances in semiconductor manufacturing; the influence of various design, process, and environmental issues; the essential elements of Mega Fab; commodity and special products; the factors defining the success of the manufacturing including the HR, infrastructure and support facilities; role of Governments in promotion of enterprises and downstream benefits flowing from manufacturing activities, etc. About 60 participants from industry, faculty and students participated in the deliberations after the talk. Shri Ajay Sawhney, IT Secretary to Government of Andhra Pradesh, coordinated the event. Dr. Min had earlier visited the Chapter on 19 July.

- A 2-day National Conference on Microwaves and Optoelectronics (NCMO-2004) was held at Babasaheb Ambedkar University, Aurangabad during the period 29 to 30 June. The event, held under the co-sponsorship of the chapter, also attracted co-sponsorship and funding from 8 other institutions including Ministry of Communications and Information Technology, University Grants Commission, Department of Science and Technology, etc. The conference was attended by 350 delegates from all over India. About 90 papers and 9 Keynote Addresses were delivered in the event covering the areas of Microwave Theory, Devices and Circuits; Microwave Frequency and Time Domain Measurements; Microwave Communication and Antennae, Microwave Measurements with Ferroelectrics, Ferrites and Super Conductors; Applications of Microwaves; Optoelectronics; Optical Materials and Characterization and Sensors, Instrumentation and Applications, etc. A Proceedings of the Workshop, with M.D. Shirsat, V.V. Nawarkhele, G.S. Raju and P.W. Khirade as Editors, was also brought out and distributed to the delegates. The Workshop, which was





Group photo of the India Council Ex-COM members at their meeting of 7 August at Mumbai

held at Departments of Physics and Computer Sciences, was coordinated by Prof. M.D. Shirsat, Convenor NCMO of the Department of Physics at the University.

- The IEEE India Council held its 2nd IC 2004 Ex-COM meeting at Mumbai on 7 August to discuss the India Council business matters, as well as reviewing the issues of the spreading of technical activities and the needs of the chapters attached to the Council. A range of matters of concern were discussed, including the membership fees, membership development and elevation of the members grades, synergy between Council and Chapters and Sections, reporting to IEEE HQ, the technical events targeted under the Council and Chapters, continuity and health of the Chapters, speedy receipt and disbursement of rebates, IEEE DL visits and Educational Activities, IEEE HQ and Region 10 matters, etc. Chapters attended the meeting and actively participated in these deliberations. The Council noted the very good performances displayed by its chapters.

- Continuing the membership drive, Chapter Chairs visited ST Microelectronics, Delhi, IIT Hyderabad and SV University Tirupati. Chairs also pursued the search at Hyderabad and Eluru for suitable schools to participate in the next round STAR effort of the chapter.

### REL/CPMT/ED Singapore

-by Dr. Kin Leong Pey

The Chapter organized the following ED-related technical talks during Jul-Sept. 2004:

- July 13, Professor Juin J. Liou (IEEE EDS distinguished lecturer), University of Central Florida, USA gave a talk on "Characterization and simulation of reliability of MOS devices".
- July 14, Professor Ananth Dodabalapur, University of Texas at Austin, USA gave a talk on "Finding applica-

tions for organic transistors".

- July 15, Mr Steve Groothuis of Micron Technology Texas LLC, USA gave a talk on "Advanced CAE simulations in the semiconductor industry".
- August 04, Dr Ahila Krishnamoorthy, Institute of Microelectronics, Singapore gave a talk on "Interfacial engineering to improve the reliability of Cu interconnects".

These technical talks were well attended by members, professionals and students.

Two IEDM video short courses were arranged in September 2004. Due to the overwhelming response, two separate viewing sessions were conducted for one of the courses.

- September 19 & 24 Course 1 - The Future of Semiconductor Manufacturing
- September 22 Course 2 - Silicon +: Augmented Silicon Technology

The Chapter organized and sponsored the 4th Workshop and IEEE EDS Mini-colloquium on NANometer CMOS Technology on July 12, 2004 in Singapore. Financial support was provided by the EDS DL Program and Subcommittee for Regions/Chapters, as well as the School of Electrical & Electronic Engineering at Nanyang Technological University. There were four invited DL speakers from overseas and one from the local Chapter. The Workshop received an enthusiastic response with more than 100 attendees from the local industries and academic institutions. They showed deep interests in the invited talks, which covered a wide range of important topics of current and future technologies. The 4th WIMNACT-Singapore has been another successful event and again exhibits the Chapter's contribution to EDS activities following the 3rd WIMNACT-Singapore, which was organized by the Chapter in October 2003.

In July 2004, for the first time in its history, IPFA took place outside Singapore, in Hsinchu, the high tech centre of Taiwan. It was organized by the IEEE ED Taipei Chapter in co-operation with the IEEE Reliability/CPMT/ED Singapore Chapter. In keeping with its traditional format, it comprised tutorials and an equipment exhibition, as well as the main symposium. Thanks to its location, over 30 out of the total of 66 submitted papers were from Taiwan. TSMC, the world's most successful IC



IPFA'04 Banquet

foundry, was a notable contributor. Among the highlights of the conference were the two keynote addresses by T P Ma of Yale and Jack Sun of TSMC. There were also nine invited papers. The "hot" topic of IPFA 2004 was performance and reliability of high-K gate dielectrics.

The 12th IPFA will be held 27 June to 1 July 2005 in its traditional home of Singapore. The first call for papers was distributed at IPFA in July and the organizing committee is busy making preparations for a successful conference. The conference will include tutorials aimed primarily at younger Singapore engineers, an equipment exhibition and, of course, the symposium itself. There are more challenges than ever for failure analysis in integrated circuits. New materials are being introduced at an unprecedented rate and, of course, feature sizes get ever smaller. We live in exciting times and IPFA 2005 is expected to reflect that excitement.

A short course on "Integration of Copper with Low-k Dielectrics", by Dr. Jeff Gambino, IBM, has been planned on 25 October 2004. We hope that this one-day short course will benefit local wafer fabrication industry, especially those new engineers who just joined the wafer fabs.

~ Xing Zhou, Editor

### ED/SSC Seoul

- by Taegeun Park:

As a part of its annual support of conferences, the Seoul Chapter has sponsored the Spring Conference of IEEK SoC Design Group, held at New Millennium Hall, Konkuk University on May 15, 2004 this year. The Chapter donated \$300 for the best paper awards. The Seoul Chapter presented a "Best Student Paper Award" to recognize outstanding student authors, who published high quality papers in



IEEE EDS and SSCS journals. Two student authors (one from EDS and one from SSCS) have been selected for the prize of \$200.

The Seoul Chapter supported AP-ASIC 2004 with the SSCS Tokyo Chapter and SSCS Taipei Chapter. The biennial conference was held at Fukuoka International Congress Center, Fukuoka, Japan, during Aug. 4-5, 2004. Among the 196 papers submitted, 88 papers were selected for regular presentation. Thirty-one Korean contributed papers were presented. The activities of the chapter for AP-ASIC 2004 are: Paper Promotion, Organization of the Korean Technical Program Committee, and the selection of 6 chair persons from Korea for regular sessions. During the conference, Dr. Ki Won Lee, Executive Vice President, Samsung Electronics, presented a talk entitled "SoC R&D Trend for Future Digital Life," on Aug. 5, 2004.

The IEEE Seoul Chapter holds a chapter meeting on a bimonthly basis. We also make an effort to promote membership by opening the membership development desk on local meetings.

## ED Kansai

- by *Hiroyuki Sakai*

The ED Kansai Chapter held the second International Meeting for Future of Electron Devices, Kansai (2004 MFEDK) at Katsura Hall located in the new campus of Kyoto University, Kyoto, Japan, July 26-28, 2004. This year, Prof. Yoshio Nishi, General Chair of IMFEDK from Stanford University, Prof. Hiroyuki Matsunami, emeritus at Kyoto University, and Prof. James B. Kuo from National Taiwan University delivered the keynote speech concerning nano-electronics, wide-gap semiconductors and low-voltage CMOS LSIs, respectively. We had four oral sessions: silicon process and emerging devices, characterization and test-



*Prof. Yoshio Nishi, Prof. Hiroyuki Matsunami and Prof. James B. Kuo at the 2004 IMFEDK, 26 July 2004, Kyoto, Japan*

ing technologies, modeling and device simulation, compound semiconductors. There was also one poster session. In addition, three tutorial lectures on MEMS/Bio technologies were provided prior to the plenary meeting. Forty-nine papers, including seven invited ones, were presented followed by active discussions in a wonderful atmosphere with brand new facilities. The number of the attendees was about 200. It was a great opportunity for discussions and exchanges of various viewpoints of the participants with different backgrounds, which was the main purpose of holding the meeting in Kansai.

Five papers were selected for the IMFEDK Awards. Dr. Daisuke Ueda, Chair of ED Kansai Chapter and Steering Committee Chair of 2004 IMFEDK, honored Mr. Fujii (SANYO Electric) for the Grand Award, Mr. Kaibara (Matsushita Electric Industrial) for the Best Paper Award, Mr. Nakamori (Kansai Univ.), Mr. Iikawa (Osaka Prefecture Univ.) and Kilhan Kim (Yonsei Univ.) for the Student Award with award of merits at the end of the meeting. The next conference will be held April 11-13 at Kyoto University Clock Tower Centennial Hall, Kyoto, Japan. Further information is available at the conference website (<http://www.imfedk.org>).

~ **Hisayo S. Momose, Editor**

## ED Taipei

- by *Steve Chung*

The ED Taipei Chapter hosted the 11th IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA) during July 5-8, 2004. The purpose of the conference is to bring up an excellent opportunity for experienced as well as new engineers, students, to broaden their technical knowledge in both reliability and failure analysis techniques. To extend the scope and to meet the needs for the fast growing semiconductor industry in the Asia-Pacific region, the 2004 IPFA was held in Taiwan for the first time.

IPFA is organized by the IEEE ED Taipei Chapter, IEEE Taipei Section, and National Chiao Tung University with cooperation support from the IEEE Reliability/CPMT/ED Singapore Chapter, and technically co-sponsored by the IEEE Electron Devices Society, IEEE Reliability Society, and the National Science Council, Taiwan. The conference was held at Hsinchu which is the center of advanced

integrated circuit manufacturing in Taiwan and is well known as the "Taiwan Silicon Valley".

The symposium included a one-day tutorial, 3 days of technical paper presentations, and concurrently with a 20-booth exhibition worldwide. A one-day tutorial, was held on Monday, 5 July covering four topics in two parallel sessions. The topics were: "VLSI Device Reliability" by Dr. Guido Groeseneken; "Applications of Materials Analysis and Failure Analysis Techniques in Various Industries" by Dr. Yong-Fen Hsieh; "High-K Gate Stack Technology and Reliability" by Prof. Dim-Lee Kwong; and "Electrostatic Discharge (ESD) Protection for Microchips" by Prof. Juin J. Liou.



*Prof. Steve Chung, Technical Program Committee Chair (left) and Prof. K. L. Pey, Symposium Co-Chair, at the exhibit area of 2004 IPFA.*

For the technical sessions held during 6-8 July, 67 high quality papers (out of 120 submissions from worldwide) were accepted for presentations and 8 invited talks, along with one outstanding exchange paper contributed from the 2003 ISTFA were organized. Two distinguished keynote speakers were invited for presentation in the plenary session. Prof. T. P. Ma of Yale University gave a talk on "Opportunities and Challenges for High-k Gate Dielectrics" and Dr. Jack Sun of TSMC addressed on "Technology and Reliability Challenges: a Foundry Perspective" and received enormous positive feedbacks from the audiences. The symposium attracted a total of 213 participants, in which around 70% are from the industry and 30% from the university or research units. For your information, the next IPFA will be held in Singapore in July 2005 and will be hosted by the IEEE Reliability/CPMT/ED Singapore Chapter.

~ **Hei Wong, Editor**

# IEEE ELECTRON DEVICES SOCIETY MEETINGS CALENDAR FOR 2005 (AS OF NOVEMBER 4, 2004)

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

January 3 - 7, 2005, \* **IEEE Photovoltaic Specialists Conference**, Location: Disney's Coronado Springs Resort, Lake Buena Vista, FL, USA, Contact: Americo Forestieri, E-mail: moeforestieri@att.net Deadline: 7/9/04 www: <http://www.ieee.org/pvsc>

January 3 - 7, 2005, T **International Conference on VLSI Design** Location: Taj Bengal, Kolkata (Calcutta), India, Contact: Partha Das, Interra Systems (I) Pvt. Ltd., E-Mail: ppd@interrasystems.com, Deadline: 7/10/04 www: <http://www.isical.ac.in/~vlsi2005>

February 2 - 5, 2005, T **Spanish Conference on Electron Devices** Location: Hotel Imperial Torracó, Tarragona, Spain, Contact: Josep Pallares, University Rovira, E-Mail: jpallare@etse.urv.es Deadline: 10/1/04 www: <http://cde05.etse.urv.es/>

February 6 - 10, 2005, T **IEEE International Solid-State Circuits Conference** Location: San Francisco Marriott Hotel, San Francisco, CA, USA, Contact: Anne O'Neill, IEEE Solid-State Circuits Society, E-Mail: sscs@ieee.org, Deadline: 9/20/04 www: <http://www.isscc.org/isscc/>

March 15 - 17, 2005, T **National Radio Science Conference**, Location: Arab Academy of Science, Tech & Maritime Transport, Cairo, Egypt, Contact: Ibrahim Salem, Academy of Scientific Res & Tech, Dept. of Scientific Societies & Int'l Unions, E-Mail: ia.salem@ieee.org Deadline: 10/15/04 www: <http://www.cairoaast.edu/conference.htm>

March 21 - 27, 2005, T **International Scientific & Practical Conference of Students, Post Graduates & Young Scientists "Modern Technique & Technology"**, Location: Tomsk Polytechnic University, Tomsk, Russia, Contact: Lyudmila Zolnikova, Tomsk Polytechnic University, E-Mail: mtt\_eng@tpu.ru Deadline: Not Available www: <http://www.mtt.tpu.ru/>

March 28 - 30, 2005, T **IEEE International Symposium on Quality Electronic Design**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Ali Iranmanesh, E-Mail: alii@isqed.org Deadline: 9/30/04 www: <http://www.isqed.org/>

April 4 - 7, 2005, @ **IEEE International Conference on Microelectronic Test Structures**, Location: Katholieke Universiteit Leuven, Leuven, Belgium, Contact: Danielle Vermetten, Katholieke Universiteit Leuven, E-Mail: icmts2005@esat.kuleuven.ac.be Deadline: 9/14/04 www: <http://www.see.ed.ac.uk/ICMTS>

April 7 - 8, 2005, T **Workshop on Ultimate Integration of Silicon Devices** Location: Oratorio San Filippo, Bologna, Italy, Contact: Nicola Barin, University of Ferrara Via Saragat, E-Mail: nbarin@ing.unife.it Deadline: Not Available www: <http://www.aces.it/ulis2005>

April 7 - 8, 2005, T **IEEE Wireless and Microwave Technology Conference**, Location: Marriott Suites Sand Key, Clearwater Beach, FL, USA, Contact: Kenneth O'Connor, Raytheon Company E-Mail: kenoconnor@ieee.org Deadline: 12/15/04 www: <http://www.wamicon.org/>

April 11 - 12, 2005, \* **IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop**, Location: International Congress Center (ICM), Munich, Germany, Contact: Margaret Kindling, SEMI, E-Mail: mkindling@semi.org Deadline: Not Available www: <http://www.semi.org/asmc>

April 17 - 21, 2005, \* **IEEE International Reliability Physics Symposium**, Location: San Jose Marriott/San Jose Convention Center, San Jose, CA, USA, Contact: Timothy Rost, Texas Instruments, E-Mail: t-rost@ti.com Deadline: 10/8/04 www: <http://www.irps.org/>

April 18 - 19, 2005, T **IEEE Sarnoff Symposium on Advances in Wired and Wireless Communications**, Location: Nassau Inn, Princeton, NJ, USA, Contact: Gerhard Franz, 5 Stanton Court, E-Mail: sarnoff2005@agfranz.com Deadline: 10/29/04 www: <http://www.sarnoffsymposium.org>

April 20 - 22, 2005, @ **International Vacuum Electronics Conference**, Location: Hotel Huis Ter Duin, Noordwijk aan Zee, The Netherlands, Contact: Gonnie Elfering, E-Mail: ESA.Conference.Bureau@esa.int Deadline: Not Available www: [www.congrex.nl/05a01](http://www.congrex.nl/05a01)

April 25 - 27, 2005, T **VLSI-TSA International Symposium on VLSI Technology**, Location: Ambassador Hotel Hsinchu, Hsinchu, Taiwan, Contact: Lewis Terman, IBM T.J. Watson Research Center, E-Mail: terman@us.ibm.com Deadline: 10/15/04 www: <http://vlsitsa.itri.org.tw/>

April 27 - 29, 2005, T **VLSI-TSA International Symposium on VLSI Design, Automation & Test**, Location: Ambassador Hotel Hsinchu, Hsinchu, Taiwan, Contact: Lewis Terman, IBM T.J. Watson Research Center, E-Mail: terman@us.ibm.com Deadline: 10/15/04 www: <http://vlsitsa.itri.org.tw/>

May 3 - 3, 2005, T **Workshop on Photonics & Its Applications**, Location: National Institute of Laser Enhanced Sciences, Cairo, Egypt, Contact: Ibrahim Salem, Academy of Scientific Res & Tech, E-Mail: ia.salem@ieee.org Deadline: Not Available www: Not Available

May 8 - 12, 2005, T **International Conference on Modeling and Simulation of Microsystems**, Location: Anaheim Marriott Convention Center, Anaheim, CA, USA, Contact: Sarah Wenning, Applied Computational Research Society, E-Mail: wenning@dnai.com Deadline: 11/19/04 www: <http://www.nsti.org>

May 8 - 12, 2005, @ **IEEE International Conference on Indium Phosphide and Related Materials**, Location: Thistle Hotel, Glasgow, Scotland, Contact: Conf Mgt Group LEOS, IEEE, E-Mail: leosconferences@ieee.org Deadline: Not Available www: <http://www.iprm05.org/>

May 8 - 12, 2005, T **Nanotechnology Conference and Trade Show**, Location: Anaheim Marriott Convention Center, Anaheim, CA, USA, Contact: Sarah Wenning, Applied Computational Research Society, E-Mail: wenning@dnai.com Deadline: 11/19/04 www: <http://www.nanotech2005.com>

May 15 - 20, 2005, T **Symposium on ULSI Process Integration**, Location: Convention Center of Quebec City, Quebec City, Canada, Contact: Cor Claeys, IMEC, E-Mail: c.claeys@ieee.org Deadline: 12/1/04 www: <http://www.electrochem.org/meetings/future/207/meeting.htm>

May 22 - 26, 2005, @ **IEEE International Symposium on Power Semiconductor Devices & Integrated Circuits**, Location: Fess Parker's Double Tree Resort, Santa Barbara, CA, USA, Contact: Paul Chow, Rensselaer Polytechnic Institute, E-Mail: chowt@rpi.edu Deadline: 11/1/04 www: <http://www.ecse.rpi.edu/conf/ISPSD2005>

June 5 - 8, 2005, \* **IEEE International Interconnect Technology Conference**, Location: Hyatt Regency at San Francisco Airport, Burlingame, CA, USA, Contact: Wendy Walker, Widerkehr & Associates, E-Mail: wendyw@widerkehr.com Deadline: Not Available www: <http://www.ieee.org/conference/iitc>

June 5 - 9, 2005, @ **TRANSDUCERS - International Conference on Solid-State Sensors, Actuators and Microsystems**, Location: Convention & Exhibition Center (COEX), Seoul, Korea, Contact: Hyangmi Kim, 603 Samchang Plaza, 173 Dohwa-dong, Mapo-gu, Seoul, E-Mail: info@transducers05.org Deadline: 12/3/04 www: <http://www.transducers05.org>

June 6 - 9, 2005, T **International Conference on Unsolved Problems of Noise** Location: Hotel Costa Brada, Gallipoli (Lecce), Italy, Contact: Lino Reggiani, Dipartimento di Ingegneria dell' Innovazione, E-Mail: lino.reggiani@unile.it Deadline: 12/15/04 www: <http://upon4.unile.it/>

June 8 - 11, 2005, \* **IEEE Workshop on Charge-Coupled Devices & Advanced Image Sensors**, Location: Karuizawa Prince Hotel, Karuizawa-cho, Nagano, Japan, Contact: Nobukazu Teranishi, Matsushita Electric Industrial Co., Ltd., Kyoto, Japan 601-8413, E-Mail: teranishi.nobukazu@jp.panasonic.com Deadline: Not Available www: Not Available

June 12 - 13, 2005, @ **IEEE Silicon Nanoelectronics Workshop**, Location: Rihga Royal Hotel, Kyoto, Japan, Contact: Michiharu Tabe, Shizuoka University, E-Mail: romtabe@rie.shizuoka.ac.jp Deadline: Not Available www: <http://www.vlsi.iis.u-tokyo.ac.jp/si-nano>

June 14 - 16, 2005, @ **Symposium on VLSI Technology**, Location: Kyoto, Japan Contact: Phyllis Mahoney, Widerkehr & Associates, E-Mail: phyllism@widerkehr.com Deadline: 1/7/05 www: <http://www.vlisisymposium.org>

June 16 - 18, 2005, T **Symposium on VLSI Circuits**, Location: Kyoto, Japan Contact: Phyllis Mahoney, Widerkehr & Associates, E-Mail: phyllism@widerkehr.com Deadline: 1/7/05 www: <http://www.vlisisymposium.org>

June 22 - 24, 2005, T **Conference on Insulating Films on Semiconductors**, Location: Provinciehuis, Leuven, Belgium Contact: Guido Groeseneken, IMEC, E-Mail: guido.groeseneken@imec.be Deadline: 1/21/05 www: <http://www.imec.be/infos>

June 23 - 25, 2005, T **International Conference on Mixed Design of Integrated Circuits and Systems**, Location: Hotel Pegaz, Krakow, Poland, Contact: Mariusz Orlikowski, University of Lodz, E-Mail: mixdes2005@dmc.p.lodz.pl Deadline: 2/28/05 www: <http://www.mixdes.org>

June 27 - July 1, 2005, T **IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits**, Location: Shangri-La's Rasa Sentosa Resort, Singapore, Contact: Jasmine Leong, E-Mail: ipfa@pacific.net.sg Deadline: 2/9/05 www: [www.ieee.org/ipfa](http://www.ieee.org/ipfa)

July 11 - 15, 2005, T **IEEE Conference on Nanotechnology**, Location: Nagoya Congress Center, Nagoya, Japan, Contact: Fumihito Arai, Nagoya University, E-Mail: arai@mein.nagoya-u.ac.jp Deadline: 5/13/05 www: <http://www.mein.nagoya-u.ac.jp/IEEE-NANO/IEEE-NANO-2005>

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, Chinese Institute of Electronics, E-Mail: mqzhou@public.bta.net.cn Deadline: 3/31/05 www: <http://www.cie-china.org/ieee2005>

August 18 - 22, 2005, T **International Conference on Noise in Physical Systems and 1/F Fluctuations**, Location: Historical Building of Salamanca University, Salamanca, Spain, Contact: Javier Mateos, Universidad de Salamanca, E-Mail: javierm@usal.es Deadline: 12/1/04 www: <http://www.usal.es/icnf>

August 28 - September 2, 2005, T **International Conference on Nitride Semiconductors**, Location: Congress Center Bremen, Contact: Carsten Kruse, University of Bremen, E-Mail: secretary@icns6.org Deadline: 3/11/05 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 Eminece, Tokyo, Japan, Contact: Nobuyuki Sano, E-Mail: sano@esys.tsukuba.ac.jp Deadline: 3/1/05 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-JFSC, Florianopolis, Brazil Contact: Jacobus Swart, State University of Campinas, E-Mail: jacobus@led.unicamp.br Deadline: 3/12/05 www: [www.sbmicro.org.br/sbmicro](http://www.sbmicro.org.br/sbmicro)

September 12 - 16, 2005, T **International Conference on Electromagnetics in Advanced Applications**, Location: Turin, Italy, Contact: Roberto Graglia, Politecnico do Torino, E-Mail: graglia@polito.it Deadline: Not Available www: Not Available

September 18 - 21, 2005, T **IEEE Custom Integrated Circuits Conference**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Melissa Widerkehr, Widerkehr & Associates, E-Mail: melissaw@widerkehr.com Deadline: Not Available www: <http://www.ieee-cicc.org>

November 6 - 10, 2005, T **IEEE International Conference on Computer Aided Design**, Location: Doubletree Hotel, San Jose, CA, USA, Contact: Kathy MacLennan, MP Associates, Inc., E-Mail: kathy@mpassociates.com Deadline: Not Available www: <http://www.iccad.com>

December 5 - 7, 2005, \* **IEEE International Electron Devices Meeting**, Location: Washington Hilton & Towers Hotel, Washington, DC, USA, Contact: Phyllis Mahoney, Widerkehr & Associates, 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, Novosibirsk State Technical University, E-Mail: ieeeensk@yandex.ru Deadline: Not Available www: <http://iee.sibsutis.ru/conf/memia05>

December 13 - 15, 2005, T **International Conference on Microelectronics**, Location: Sarena Hotel, Islamabad, Pakistan, Contact: Muid Mufti, University of Engineering & Technology, E-Mail: muid@uettaxila.edu.pk Deadline: 7/1/05 www: <http://vlsi.uwaterloo.ca/~icm/>

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

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

## INAUGURAL ISSUE OF JOURNAL OF DISPLAY TECHNOLOGY

Jointly sponsored by EDS, six other IEEE Societies, and the Optical Society of America, the *Journal of Display Technology* (JDT) is a new archival journal devoted to the timely dissemination of new results and discussions in all aspects of display technologies, from understanding the basic science and engineering of devices, to device design and fabrication, to system design, applications, and human-factors topics. Clearly, these topics span many disciplines, and this journal will bridge, for the first time, these multidisciplinary themes. Papers are solicited in all areas of display technology including:

- Display systems and engineering
- Materials and components
- Optical design
- Lighting technologies
- Display drivers and interfaces
- Display packaging
- Manufacturing technology
- Reliability and testing
- Applications

Shin-Tson Wu will be the first Editor-in-Chief of the new *IEEE/OSA Journal of Display Technology* and formed his editorial board in the last quarter of 2004. Dr. Wu's photo and bio are included in a separate article in the Society News Section of this issue.

The inaugural issue of the *JDT* is scheduled for September 2005. The

mid-year introduction in 2005 will be followed by quarterly publication in 2006. The member prices for the introductory year will be \$13 for

tion rates will be adjusted. A wide circulation is assured because approximately 900 libraries worldwide subscribe to IEEE periodical packages that will contain the *IEEE/OSA Journal of Display Technology*. Additionally, OSA will include *JDT* as an offering in its top-ranked Optics InfoBase.

Manuscripts can be submitted electronically for peer review through IEEE's Manuscript Central starting 1 November 2004 or, before then, by submitting via e-mail the entire paper (text, abstract, keywords, references, figures, and author biographies) in a single Word or .pdf file, along with a cover letter containing author contact information, to Linda Matarazzo, Manager, IEEE LEOS Editorial Office, l.matarazzo@ieee.org (phone +1 732 562 3910; fax +1 732 981 1138).

The *JDT* will utilize "rapid-posting," that is, as soon as an article is edited for publication, the staff-formatted version will be posted in *Xplore*®. When *JDT* is printed, the version with page numbers and issue ID suitable for citation referencing will replace the earlier online pre-print copy.

EDS' participation in this new journal is part of its continuing effort to enhance the value of EDS membership. We hope that you will take advantage of this new EDS member benefit.



online, \$14 for print, and \$17 for both in 2005, reflecting just two issues printed in the launch year. Subscriptions will be available during the 2005 renewal period this fall. In 2006, when four issues will be printed, subscrip-