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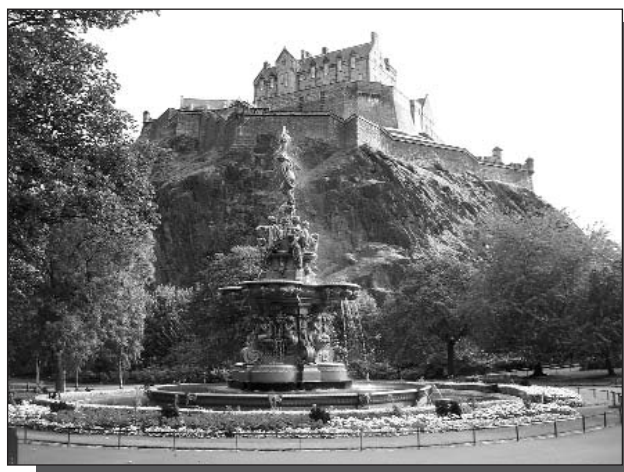
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2008 IEEE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS)

The 2008 IEEE International Conference on Microelectronic Test Structures (ICMTS) will be held in the University of Edinburgh, which recently celebrated its 400th anniversary. This meeting is the 21st anniversary of the ICMTS and the second time the conference has visited Edinburgh. The conference is sponsored by the IEEE Electron Devices Society in cooperation with the University of Edinburgh and the Scottish Microelectronics Centre and technically co-sponsored by the IEEE Solid State Circuits Society.



Sandra Wallon

The first ICMTS was held in Long Beach in 1988, and since then has cycled between Europe, North America, and Asia. The purpose of the meeting is to bring together designers and users of test structures to discuss recent developments and future directions. To this end the conference will be held on March 25-27, 2008 and will be preceded by a one-day Tutorial Short Course on Microelectronic Test Structures on March 24, 2008. There will also be an equipment exhibition relating to test structure measurements. The topics addressed at ICMTS include:

(continued on page 10)

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

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

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CONTRIBUTIONS WELCOME

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

Newsletter Deadlines

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

The EDS Newsletter archive can be found on the Society web site at <https://www.ieee.org/portal/pages/society/eds/pubs/newsletters/newsletter.html>. The archive contains issues from July 1994 to the present.

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EDS REGION 9 CHAPTERS MEETING SUMMARY

On September 8, amidst the celebration of Brazil's Independence Day, and immediately after SBMicro 2007, EDS Region 9 held its one-day biennial Chapters Meeting. It was presided over by EDS President-Elect Cor L. Claeys, EDS VP of Regions/Chapters Juin Liou, EDS Region 9 SRC Chair Magali Estrada del Cueto and EDS Executive Director William F. Van Der Vort.

An overview of IEEE EDS services and statistics, in particular those related to publications and membership, was given by Cor Claeys, who mentioned, among other things, that EDS has 11,219 members worldwide, and 139 EDS Chapters. He also pointed out that the maximum subsidy to 'EDS only' chapters for next year will again be raised from \$1,000 to \$1,500.

Juin Liou talked about worldwide EDS chapter number trends. At present, Region 10 (Asia) is growing faster than the rest: its number of chapters more than doubled from 2001 to present. He also mentioned that the number of subsidies awarded to chapters almost doubled from 1996 to 2007, while the average amount per subsidy more than tripled. Juin estimates that there are 46 potential new chapters in the 10 EDS regions.

Present membership in Region 9 and current plans for activities were outlined by Magali Estrada. Our region, with a membership of 168, has, in Brazil, chapters in Recife, Brasilia, Rio de Janeiro, South Brazil (Sao Paulo and Campinas) and the Universidad Estadual de Campinas (Student Branch), while in Mexico it has chapters in Mexico City, Puebla, Cinvestav-IPN (Student Branch), Universidad Cristóbal Colón (Student Branch), Universidad del Sol (Student Branch), Universidad Veracruzana (Student Branch). Caracas, Venezuela, has one chapter (CAS/ED/PEL). In total, Region 9 has twelve chapters, and there are two more in the process of formation, one in Buenos Aires, Argentina, and another one in Lima, Perú. Chapter Chairs from 11 of the 12 current Region 9 chapters attended the meeting, and also the representatives from Lima and Buenos Aires. Prof. Magali Estrada also reminded the audience



The Biennial Chapters Meeting in Rio de Janeiro brought together chapter representatives from all over Latin America, as well as AdCom members, including EDS President-Elect Cor Claeys (center)

that IEEE EDS supports two yearly symposiums in the region: the Symposium on Microelectronics Technology and Devices (SBMicro), held in Brazil, and the International Conference on Electrical and Electronics Engineering (ICEEE). The Society also supports the biennial International Caribbean Conference on Devices, Circuits and Systems (ICCDSCS).

Chapter activities, plans and concerns, were explained to the audience by the Chapter Chairs of the region. The chapters held thirty DL lectures in two years, which covered topics as diverse as solid state lighting, nano-scale devices and nano-technology, including TMOS, SOI MOSFET's, nanomems and strain engineering. Other subjects included integrated biosensors, plastic microelectronics, MOSFET breakdown physics, electrostatic discharge protection (ESD), quantum transport, SOI technology, and electron device simulation. Some chapters reported a participation in local events such as colloquia and symposia, and also the organization of short courses.

Increasing the number of invited lecturers to the region is among the plans of the chapters. Chapters also expect to increase membership by actions such as visiting nearby universities, and by strengthening links with existing EDS/Chapter members. Region 9 also expects to increase the number of its DL's above its present count of seven.

The importance of improving/creating chapter web pages was also point-

ed out by chapter representatives, as a means to intensify communication. This could also help to increase technical collaboration between chapters that can be as far apart as 5,000 miles (Mexico City-Buenos Aires).

The organizational efforts of Jacobus Swart (South Brazil Chapter), Fran Urbaniak and Bill Van Der Vort (IEEE EDS) are duly appreciated, as well as the interest of the attendees, who preferred the EDS Region 9 meeting over the attractive Copacabana beach full of cheerful people celebrating the national day!

*Rodolfo Quintero
ED Mexico Chapter Chair
Mexico City, Mexico*



Organizers of the 2007 EDS Region 9 Chapters Meeting, (from left) Magali Estrada del Cueto, Chair of EDS Subcommittee for Regions/Chapters (SRC) for Region 9, Juin Liou, EDS Vice-President of Regions/Chapters, and William Van Der Vort, EDS Executive Director

UPCOMING TECHNICAL MEETINGS

2008 IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE (PVSC)

The 33rd IEEE Photovoltaic Specialists Conference will be held at the Manchester Grand Hyatt Hotel in San Diego, May 11–16, 2008. The world's leaders in photovoltaics will be attending and presenting the latest information on photovoltaic research and applications. More information regarding this exciting conference can be found at <http://www.33pvsc.org>.

The conference is sponsored by the IEEE Electron Devices Society. The conference chair is Dr. Timothy J. Coutts of the National Renewable Energy Laboratory, Golden, Colorado. The program chair is Dr. Timothy J. Anderson of the University of Florida in Gainesville, Florida.

Historically, the mission of the Photovoltaic Specialists Conference has been to present groundbreaking research papers on all aspects of PV-relevant materials, devices, systems and applications. A very strong technical program that will encompass

seven programmatic areas covering topics in novel materials and devices, thin-film cells made from CIGS and CdTe and emerging semiconductors, crystalline and amorphous silicon, III-V cells, concentrator devices and systems, and module and system experience including reliability studies. It is expected that the increased interest in the field of photovoltaics will lead to greatly increased attendance. The deadline for electronic abstract submission is December 10, 2007. Contributing authors will be notified of the acceptance of their papers following the meeting of the Program Committee in the third week of January, 2008.

The Technical Program will be complemented by six tutorials to be presented on Sunday, May 11. These tutorials will be taught by experts in their fields and will be valuable to newcomers to the field of photovoltaics, as well as to seasoned vet-

erans who wish to learn about recent trends. It is also expected that the conference industrial exhibition will be substantially larger than in recent years because of the greatly increased level of interest in photovoltaics in the USA.

A vigorous auxiliary program will include daily meetings, seminars, and panel discussions on topics beyond the scope of the technical program. It is hoped that this auxiliary program will attract many people to the conference who may not normally attend the technical program.

The IEEE William R. Cherry Award is presented at each IEEE Photovoltaic Specialists Conference and recognizes those who have made outstanding contributions to the advancement of photovoltaic science and technology. This award is named in honor of William R. Cherry, a founder of the photovoltaic community.

San Diego is located in a beautiful area of southern California. With a prime waterfront location offering a resort-like setting with shopping, entertainment and dining at Sea-port Village, the Manchester Grand Hyatt San Diego has easy access to the San Diego Zoo, Sea World, golf courses, tennis and beaches. It's only three miles from the San Diego International Airport and the trolley to Mexico stops directly across the street.



Manchester Grand Hyatt, San Diego, California

*Jeffrey L. Gray
2008 PVSC Publicity Chair
Purdue University
West Lafayette, Indiana, USA*

2008 IEEE INTERNATIONAL VACUUM ELECTRONICS CONFERENCE (IVEC)

The Ninth IEEE International Vacuum Electronics Conference (IVEC 2008) is returning to the picturesque and historic city of Monterey, California on April 22-24, 2008. The meeting will be held at the Portola Plaza Hotel under the sponsorship of the IEEE Electron Devices Society (EDS). Dr. Baruch Levush of the U.S. Naval Research Laboratory will serve as the General Chair, and Dr. Carol L. Kory of Calabazas Creek Research and the Analex Corporation will serve as the Technical Program Chair. Oversight of the conference is provided by the EDS Technical Committee on Vacuum Devices, an international committee chaired by Dr. Dan M. Goebel of the Jet Propulsion Laboratory.

Since its inception in 2000, IVEC has become the premier international venue for presentations in the field of vacuum electronics. IVEC 2008 continues this tradition, providing a forum for the presentation and discussion of vacuum device technology, computational modeling and analysis, vacuum micro- and nano-electronics, and applications. A highlight of the meeting will be the presentation of the IVEC Award for Excellence in Vacuum Electronics, given at the conference banquet. Complete details about the meeting and this award can be found on the conference web site at <http://ivec2008.org>.

Plenary talks will provide insights into the broad spectrum of scientific issues and applications that are driving the current directions in vacuum electronics research. In particular, a number of topical scientific and commercial applications will be highlighted, including digital broadcasting, high data-rate communications, medical applications, and RF accelerator technology for high energy physics.

Contributed presentations will span the range from UHF to THz frequencies and will cover a wide range of device types, including traveling-wave tubes, klystrons, multiple-beam devices, inductive output tubes, crossed-field devices, fast-wave devices, free electron lasers, pulse compression devices, high pulsed power devices, plasma filled amplifiers, triodes, tetrodes, pen-



Monterey, California Coastline

todes, and switches. In the area of vacuum micro- and nano-electronics, the conference will include papers on microwave, millimeter-wave, and THz devices, displays, sensors, field emitter arrays, and novel fabrication techniques. In addition to discrete devices, IVEC 2008 will also feature technical sessions on subsystems and systems, including component parts such as electron guns and collectors, microwave power modules, electronic power conditioners, modulators, power supplies, linearizers, amplifier/antenna coupling, device and subsystem integration, and reliability. Theory development and supporting technologies will be represented by sessions on numerical simulation and modeling, novel materials, electron emission, RF and high voltage breakdown, linearity,

intermodulation, noise, measurement techniques, and thermal control.

Developers of systems will find that IVEC provides a unique snapshot into the current state-of-the-art in vacuum electronic devices. These devices continue to provide unmatched power and performance for advanced electromagnetic systems, particularly in the challenging frequency regimes of millimeter-wave and THz electronics.

Two-page abstracts for IVEC 2008 should be submitted electronically to Mr. Ralph Nadell of Palisades Convention Management at Rnadell@pmc411.com by January 4, 2008. Information on the preparation and submission of the abstracts can be found on the conference web site.

The IVEC 2008 conference is organized by a Program Committee made up of representatives of government, industry and university researchers. Members of the 2008 program committee are listed below.

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2008 IVEC Publicity Co-Chair
Naval Research Laboratory
Washington, DC, USA

Yehuda Goren
2008 IVEC Publicity Co-Chair
Teledyne Electronic Technologies
Rancho Cordova, CA, USA

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	Dr. John Petillo, SAIC
Meeting Arrangements:	Mr. Ralph Nadell, Palisades Convention Management

2008 IVEC Organizing Committee

2008 IEEE INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTORS AND ICs (ISPSD)

The IEEE International Symposium on Power Semiconductors and ICs (ISPSD) is the premier forum for technical discussion in all areas of power semiconductor devices, power integrated circuits, their hybrid technologies, and applications. This field is growing rapidly due to the accelerating interest in energy efficiency and the ever-increasing power conversion demands of portable electronic devices.

The ISPSD attendance is generally close to 400, with authors and conference participants coming from all over the world. The conference location rotates on a three-year cycle among North America, Europe, and Asia. For example, the prior three years' venues were: Santa Barbara, California, USA; Naples, Italy; Jeju Island, Korea. For 2008, the conference returns to the USA, and will be held in Orlando, Florida. Each of the international regions is well-represented by authors, attendees, and members of the organizing committee. The conference also features a good mix of representatives from industry, academia, and government institutions.

The topics presented at ISPSD cover the entire spectrum of power semiconductor technologies, including processes (crystal growth, doping technology, lifetime control, passivation), materials (silicon, GaAs, SiC, GaN, diamond), CAD (device and circuit simulation, layout, verification), power devices (device physics,

modeling, switching, RF power, safe-operating area), power integrated circuits (isolation techniques, circuit design, hybrids, ESD, latch-up), packaging (stress, thermal performance), and applications (automotive, telecommunication, displays, power supply, motor control, battery management).

The 25th annual ISPSD will be held May 18–22, 2008, at the Wyndham Orlando Resort in Orlando, Florida, USA. Orlando is one of the world's premier travel destinations, hosting more than 50 million visitors every year. It is a safe, vibrant, modern city with excellent museums, performing arts, hotels, and restaurants. Orlando boasts the highest concentration of theme parks in the world, including Walt Disney World, Universal Studios, Sea World, and several water parks. Moreover, it is within driving distance of some of Florida's most beautiful and well-known beaches, including Daytona Beach. For the convenience of attendees and their families, the conference will provide a free shuttle service between the Wyndham Resort and Walt Disney World.

ISPSD 2008 will include four days of technical sessions (Monday through Thursday), comprising several topic-specific oral presentation sessions and an extensive poster session. In addition, a one-day short-course session will be offered on the Sunday before the conference, providing an excellent tutorial for those who

are new to the power semiconductor field, and a good update for those who are already involved in this area. The conference will also provide many opportunities for participants to have informal discussions, including daily coffee breaks, a wine and cheese reception, a conference banquet, and an evening of local entertainment.

More information and registration for the 2008 ISPSD can be found online at the conference web site: www.ecse.rpi.edu/conf/ispsd08, or by contacting the General Chair, Professor Paul Chow, at chowt@rpi.edu. Prospective authors can submit abstracts via this web site. The deadline for submission of the abstract was November 11, 2007. Hotel and conference registration will also be available through the web site.

*Don Disney
2008 ISPSD Publications Chair
Advanced Analogic
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Wyndham Orlando Resort

SOCIETY NEWS

EDS MEETINGS COMMITTEE REPORT



Jon J. Candelaria

Technical meetings, conferences, and symposia sponsored by the Electron Devices Society are at the core of the value being delivered to our IEEE EDS membership as well as to the technical community at large.

Given this importance of the technical conferences and meetings the EDS Meetings Committee is made up of members from the leadership of the EDS including the Vice-President of Technical Activities, the Vice-President of Regions/Chapters, and the Society Treasurer. In addition, the committee receives outstanding support from the EDS Executive Director's Office. The primary purpose of the Committee is to develop and execute a strategic plan which includes guidance and oversight for existing and newly-created conferences, meetings, and symposia around the world, especially in those regions with newly developing technology-based economies, which seek support from the Electron Devices Society. In addition, we also take a proactive role and work with other IEEE Societies, the IEEE New Technology Directions Committee, and in some cases even technical Societies outside of the IEEE to identifying these emerging areas of interest and provide the support needed to help establish the appropriate forums to address them. This strategic plan encourages fiscal responsibility, continuous improvement, alignment across the meetings and with the core values and goals of the EDS and IEEE, and helps to ensure that they continue to deliver the tremendous technical value our Society's members have come to expect and appreciate over the past several decades of our existence.

Starting in 2008, EDS will financially sponsor or co-sponsor 26 meetings and will be technical sponsor or co-sponsor for another 132, for a total of 158. This total number is up about 10% over last year and is up over 50% within the last 10 years! As a key part of our global strategy to continuously improve services to all of our members and prospective members, we are supporting our historically U.S.-only based conferences which are now rotating their events through other countries, as well as encouraging the development of new meetings in under-served regions of the world. This enhanced strategy also includes exploring new ways to more directly involve and recruit new student members into our global meeting processes.

In terms of attendance, the International Electron Devices Meeting (IEDM) is the largest EDS meeting with as many as 2000 attendees, and then there are workshops or regional meetings with as few as 40-50 or less in attendance. They are all important to bring together audiences around the world to share the latest technical results as well as emerging economic drivers for the research and development of these technologies.

The EDS support falls into two categories: ones where the EDS is the primary sponsor or co-sponsor (with another IEEE Society or another professional society) for which we share financial responsibility, and ones where EDS is just a technical co-sponsor (with another IEEE Society or another professional society). In the former cases, EDS usually provides a financial advance to assist with meeting organization and planning and also provides a financial backstop for the meeting and liability insurance. In return, EDS expects the advance to be repaid and to receive any budget surplus from these conferences which then goes back to support such meetings in the future. This return of budget surplus is one

of our major revenues streams, and for an average calendar year, this typically amounts to approximately \$350,000 or more.

Technical sponsorship refers to meetings that the EDS has determined align with the technical scope of the Society and allows for the use of the IEEE and EDS logos, advance notices in calendars and official lists of EDS and IEEE meetings. These types of meetings again are deemed to be of technical interest to the membership with typically some membership involvement, but the EDS would not have any financial liability or stake in these types of meetings.

For an established EDS sponsored or co-sponsored meeting, plans for the meeting's next occurrence and their proposed budget is reviewed by the Executive Office, the Vice-President for Meetings, and the Treasurer. EDS repeat meetings scheduled for 2009 will be approved at the 2007 December AdCom Meeting held at the IEDM. Repeat occurrences of meetings that receive technical co-sponsorship only are approved on the same schedule. Proposed new meetings with or without financial involvement are required to provide organizational information and plans to the EDS Executive Office (contact Joyce Lombardini, j.lombardini@ieee.org) and this information is reviewed by the Meetings Committee members and relevant EDS Technical Committees to determine what, if any, EDS involvement should occur.

We welcome your comments and suggestions for continuously improving the operations of the Meetings Committee and in turn we pledge to continue to provide a valuable service to our EDS membership.

*Jon J. Candelaria
EDS Vice-President of Meetings
Motorola Labs
Tempe, AZ, USA*

EDS PHOTOVOLTAIC DEVICES COMMITTEE REPORT



Dennis J. Flood

One of the most dramatic, if not significant, bellwethers of current and emerging photovoltaic R&D and commercialization activities took place in Milan, Italy, September 3-7, 2007.

The occasion was the 22nd European Photovoltaic Solar Energy Conference (EU-PSEC) and Exhibition. The largest such conference in the history of the series in Europe and larger by far than any of either the IEEE Photovoltaic Specialists Conferences (PVSC) in the U.S and the Photovoltaic Science and Engineering Conferences (PVSEC) in Japan/Asia, the meeting attracted over 3000 regis-

trants and 500 companies to exhibit at the venue. Among the technical highlights: predictions of a limiting efficiency for Si-based tandem/quantum dot solar cells of 74% by Martin Green from the University of New South Wales; data from Spectrolab in the U.S. showing a 40.7% efficient concentrator cell in a GaInP/GaInAs/Ge monolithic multijunction configuration; a record 22.3% efficient, 100 sq.cm silicon-based cell from Sanyo; thin film cell efficiencies (CIGS on 100sq.cm substrates) at 12.4%; and reports of commercial system deployments worldwide exceeding 1.7GW in 2006, up from 1.4GW in 2005. Growth in the industry is expected to be similarly constrained by a shortage of silicon feedstock supply at least through 2008. Representatives of the polysilicon supply

industry predict expansion plans currently announced will bring the available supply of polysilicon feedstock material to over 100,000 tonnes by 2010, compared to 36,000 tonnes in 2006. About half the total was sold to the solar industry in 2006. Estimates vary, but the projected available supply in 2010 would be enough to produce about 8GW of solar panels that year.

The next major conference, the 17th PVSEC, will be in Fukuoka, Japan, December 3-7, 2007. The 33rd IEEE PVSC will be held in San Diego, May 11-16, 2008.

Dennis J. Flood
EDS Photovoltaic Devices
Technical Committee Chair
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Obertin, OH, USA

EDS SENIOR MEMBER PROGRAM



Albert Z.H. Wang

The Electron Devices Society established the EDS Senior Member Program to both complement and enhance the IEEE's Nominate-a-Senior-Member Initiative and make IEEE/EDS mem-

bers aware of the opportunity and encourage them 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 an engraved wood and bronze plaque and a credit certificate for US\$25 to be used towards a new IEEE society membership. Upon your request, the IEEE Admission & Advancement Depart-

ment will send a letter to your employer recognizing this new status as well. The URL to request this letter is http://www.ieee.org/organizations/rab/md/empl_notification_form.html

As part of the IEEE's Nominate-a-Senior-Member Initiative, the nominating entity designated on the member's application form will receive US\$10 from IEEE for each application approved for Senior Member grade when there are at least five approved applications. As an EDS member, we would appreciate it if you could indicate on your Senior Member application form that EDS is your nominating entity.

Please be aware that even if you decide to list EDS as your nominating entity, you still need to have an IEEE member nominate you along with two other references. Your nominator and your references all must be active IEEE members holding Senior Member, Fellow or Honorary Member grade.

For more information concerning Senior Membership, please visit <http://www.ieee.org/web/membership/senior-members/requirements.html>. 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, Attn: Denise Howard, 445 Hoes Lane, Piscataway, NJ 08854, USA, Fax: +1 732 463 9359, Email: d.howard@ieee.org.

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.

Albert Z.H. Wang
EDS Vice-President of Membership
University of California
Riverside, CA, USA

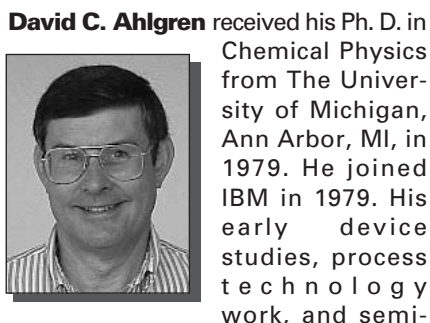
2006 GEORGE E. SMITH AWARD



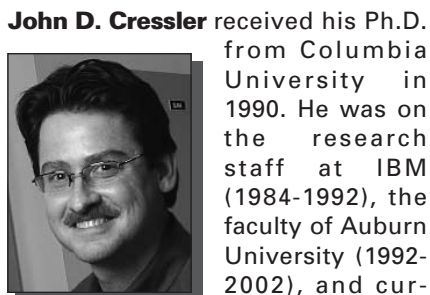
Renuka P. Jindal

A high priority of the Electron Devices Society is to recognize and enhance the quality of papers published in EDS archival literature. The George E. Smith Award was established in 2002

to recognize the best paper appearing in a fast turnaround archival publication of EDS, targeted to *IEEE Electron Device Letters*. Among other criteria including technical excellence, an important metric for selection for the award is comprehensive and impartial referencing of prior art. The paper winning the 2006 George E. Smith Award was selected from among 278 manuscripts that were published in 2006. The article is entitled "Half-Terahertz Operation of SiGe HBTs". This paper appeared in the July, 2006 issue of *Electron Device Letters* and was authored by John Cressler, Ramkumar Krithivasan, Yuan Lu, Jae-Sung Rieh, Marwan H. Khater, David Ahlgren and Greg Freeman. The award will be presented in the plenary session of the International Electron Devices Meeting to be held on December 10, 2007 in Washington, DC. In addition to the award certificate, the authors will receive a check for \$2,500. On behalf of the Electron Devices Society I would like to congratulate the authors for this achievement. Brief biographies of the authors follow.

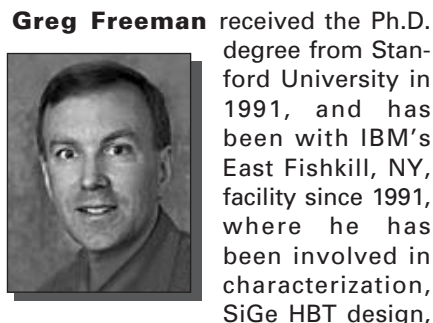


David C. Ahlgren received his Ph.D. in Chemical Physics from The University of Michigan, Ann Arbor, MI, in 1979. He joined IBM in 1979. His early device studies, process technology work, and semiconductor production experience has lead him into his role in the Advanced Semiconductor Technology Center as a Senior Engineer in device and process development of high performance Si/SiGe BiCMOS technology and its introduction into manufacturing. He has spent the past 8 years as Senior Engineering Manager of SiGe Advanced BiCMOS Technology Development, and is currently managing a CMOS and BiCMOS compact modeling team in IBM's ISDA joint development program.

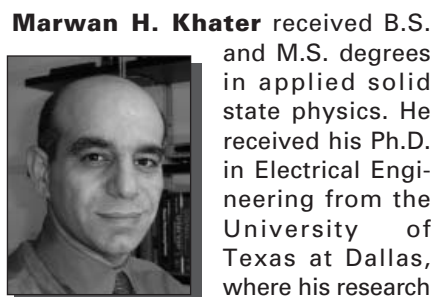


John D. Cressler received his Ph.D. from Columbia University in 1990. He was on the research staff at IBM (1984-1992), the faculty of Auburn University (1992-2002), and currently is Ken Byers Professor at Georgia Tech (2002-pre-

sent). His research centers on silicon-based heterostructure devices and circuits, and he has published over 350 papers and two books in this area.



Greg Freeman received the Ph.D. degree from Stanford University in 1991, and has been with IBM's East Fishkill, NY, facility since 1991, where he has been involved in characterization, SiGe HBT design, and SOI CMOS technology development. Currently he is manager of the 45 nm SOI CMOS device design department at IBM.



Marwan H. Khater received B.S. and M.S. degrees in applied solid state physics. He received his Ph.D. in Electrical Engineering from the University of Texas at Dallas, where his research work focused on low temperature plasmas for microelectronics processing. He has been with IBM since 2000, where he worked on development of Silicon-Germanium bipolar transistor technology. Currently he is working at

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

Robert Ashton	Carl Debono	Anisul Haque	Arjun Kar-Roy	Andrei Sazonov*	Balasubramanian
Jacques Beauvais	Michael Fischer	Teo Tee Hui	K. Likharev	Shinichi Shikata	Vengatesan
Luciano Boglione	Cesar D. Funes	Malin Jacobs	Herve Morel	Keisuke Shinohara	Fu-Cheng Wang*
Jiankang Bu*	Andrew Gough	Jiyoung Kim	Khine Nyunt	Thomas B. Smith	Huikai Xie
Bruce Colpitts	Kyung Han*	John Rogers	Koneru Ramakrishna		Chen-Cheng 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. Upon request, a letter will be sent to employers, recognizing this new status.

For more information on senior member status, visit <http://www.ieee.org/web/membership/senior-members/status.html>. To apply for senior member status, fill out an application at <http://www.ieee.org/organizations/rab/md/smelev.htm>.

IBM T. J. Watson Research Center on development of FinFET devices for next-generation CMOS technology.

Ramkumar Krithivasan received the B.S. from Indian Institute of Technology, Madras in 2000, the M.S. from Auburn University in 2002, and Ph.D. from Georgia Tech in 2007.



He is currently with Freescale Semiconductor, Lake Zurich, IL. His expertise is in the area of SiGe and RFCMOS high-speed analog/RF circuit design for broadband communications systems, radiation effects in SiGe devices and circuits, cryogenic elec-

tronics, and high-speed SiGe circuit design for extreme environments.

Yuan Lu received the B.S. degree in physics from the Peking University, Beijing, China, in 1998, the M.S. degree from the Chinese Academy of Sciences, Beijing, China, in 2001, and the M.S. and Ph.D.



degrees in electrical and computer engineering from the Georgia Institute of Technology, Atlanta, GA, in 2004 and 2007, respectively. Since 2007, he has been with Marvell Semiconductor, Santa Clara, CA, as a senior design engineer working on RFICs for WLAN products.

Jae-Sung Rieh received B.S. and M.S. degrees from Seoul National University, and Ph.D. degree from the University of Michigan. In 1999, he joined IBM, where he was involved in the development of high-speed SiGe HBT technologies. Since 2004, he has been with the School of Electrical Engineering, Korea University, as an assistant professor.



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

2008 IEEE INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES (ICMTS)

(continued from page 1)

- Material and Process Characterization
- Replicated Feature Metrology
- Manufacturing of Integrated Circuits
- Reliability and Product Failure Analysis
- Nanotechnology, Displays, MEMS, Sensors, and Emerging Devices
- Device and Circuit Modelling
- Technology R&D, Yield Enhancement, Integration, and Production Process Control
- Test Structure Measurement Utilization Strategy

The conference will be held at the Appleton Tower in the University of Edinburgh, which is located close to the heart of Scotland's capital city. With its stunning Georgian and Victorian architecture, and winding medieval streets, it's easy to see why Edinburgh has been listed as a World Heritage Site. Edinburgh has one of the most beautiful cityscapes in the world with the famous castle perched atop the crags of an ancient volcano dominating the urban skyline. At the opposite end of "The Royal Mile" lies the Palace of Holyrood, the Queen's

official residence in Scotland. It contains historic apartments where Mary, Queen of Scots lived.

The capital is bustling with arts, culture, sports and attractions and is famous for playing host to the World's largest arts festival. The city is the birthplace of James Clerk Maxwell, Sir Arthur Conan Doyle, author of the Sherlock Holmes novels and Alexander Graham Bell, inventor of the telephone. After dark, Edinburgh has a lively nightlife with stylish bars and pubs, restaurants, clubs and live entertainment to rival any European City.

The National Gallery of Scotland with an extensive collection of old masters, adjoins Princes Street Gardens in the City centre which boasts the World's oldest floral clock. A fifteen minutes walk away are the Scottish National Gallery of Modern Art and the Dean Gallery with their fine modern collections. The City centre also hosts the National Museum of Scotland. The collections in the landmark Museum of Scotland building tell the story of Scotland, its land, its people and culture. The Royal Museum building, with its magnificent

glass ceiling, houses international collections covering nature to art, culture to science. Edinburgh is within easy reach of the Scottish countryside, offering lochs and mountains, the East Lothian and Fife coasts and the home of golf, St Andrews.

Nonetheless we expect a high attendance at our plenary and poster sessions, dealing with the hot topics in the characterization of modern microtechnologies. Experts will exchange the latest progress in topics like variability, test chips for fast process yield ramp-up, and 3-D integration. Our full program will be available shortly on the ICMTS web page: www.see.ed.ac.uk/ICMTS/.

We are looking forward to welcoming you to Edinburgh

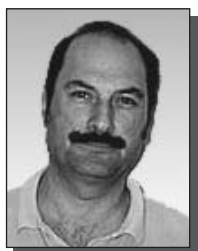
Anthony Walton
2008 ICMTS General Chair
University of Edinburgh
Edinburgh, UK

Jurriaan Schmitz
2008 ICMTS Technical Chair
University of Twente
The Netherlands

2007 EDS PH.D. STUDENT FELLOWSHIP WINNERS



Paul K.L. Yu



Agis Iliadis

The Electron Devices Society Ph.D. Student Fellowship Program was designed to promote, recognize, and support Ph.D. level study and research within the Electron Devices Society's field of interest. The field of interest for EDS is all aspects of engineering, physics, theory, experiment and simulation of electron and ion devices involving insulators, metals, organic materials, plasmas, semiconductors, quantum-effect materials, vacuum, and emerging materials. Specific applications of these devices include bioelectronics, biomedical, computation, communications, displays, electro and micro mechanics, imaging, micro actuators, optical, photovoltaics, power, sensors and signal processing.

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

EDS proudly announces four 2007 EDS Ph.D. Student Fellowship winners. Brief biographies of the 2007 recipients appear below. Detailed articles about each Ph.D. Student Fellowship winner and their work will appear in forthcoming issues of the EDS Newsletter.

Danijel Danković was born in Leskovac, Serbia, on 28 June 1976. He is married to Marija, and they have a son Milan, 7 years old, and daughter Lana, 2 months old.



He received the B.S. and M.S. degrees in Electrical Engineering from the University of Niš, in 2001 and 2006, respectively. At the moment he is engaged as research and teaching assistant and is pursuing a Ph.D. degree in the field of Nanotechnologies and Microsystems at the Faculty of Electronic Engineering, University of Niš. His research is focused on negative bias temperature instability (NBTI) in p-channel power VDMOS transistors. He has been awarded several times for his scientific results, and has authored 6 refereed journal papers and 17 conference papers. Danijel has been a Student Member of IEEE EDS since 1998, and is now the Chair of University of Niš ED/SSC Student Branch Chapter.

Tuo-Hung Hou was born in Chia-Yi, Taiwan, in 1975. He received B.S. and M.S. in electronic engineering from National Chiao Tung University, Taiwan in 1996 and 1998, respectively. He



is currently pursuing his Ph.D. degree under the guidance of Professor Edwin C. Kan in the School of Electrical and Computer Engineering, Cornell University, Ithaca, NY. From 1998 to 2000, he served as a Second Lieutenant in the Army, Taiwan, R.O.C. In April 2000, he joined Taiwan Semiconductor Manufacturing Company (TSMC). From 2001 to 2003, he was also a TSMC assignee at International SEMATECH, Austin, TX. During his tenure with TSMC, he has contributed to several key front-end processes such as spike annealing, high-K / metal gate stack through atomic layer chemical deposition, and reliability improvement of ultra-thin gate oxide. His current research centers on the nonvolatile-charge-

based floating-gate structures in integration with nanocrystals, fullerenes, and carbon nanotubes. Tuo-Hung Hou has authored or co-authored more than 20 technical papers and held 7 U.S. patents.

Chen Yang received his B. Eng degree in Electronic Science and Technology from Tsinghua University, Beijing, China in 2003. He is currently pursuing a Ph.D. degree in microelectronics



at Tsinghua University, under the guidance of Prof. Li-Tian Liu, Prof. Tian-Ling Ren and his co-advisor Prof. Albert Wang from the University of California, Riverside. His research work is on high-performance on-chip RFIC devices, with focus on novel magnetic passive inductors and transformers. In 2006, he established the EDS Tsinghua University Student Branch Chapter and served as the Chair up to the present. He worked as the secretary for the 2007 International Workshop on Electron Devices and Semiconductor Technology (IEDST). He received the Best Student Paper Award from International Semiconductor Technology Conference (ISTC) in 2007, and the First Place Award of 1st Agilent Cup Semiconductor Manufacturing Technology Contest, held by the Ministry of Education of China and Agilent Technologies in 2005.

Kah-Wee Ang received the B.Eng (first class honors) degree from the Nanyang Technological University and the S. M. degree from the National University of Singapore,



under a Singapore-MIT Alliance program. He is currently working towards the Ph.D. degree in electrical engineering at the National University of Singapore. His research interests are related to semiconductor devices and electronic materials, with a particular focus on front-end issues in CMOS device technology. His doctoral thesis work encompasses design, process development and

experimental device fabrication of novel strained transistors formed on both bulk and silicon-on-insulator substrates, carrier transport characterization and hot carrier reliability studies of strained transistors, calculations of electronic band structures in strained-silicon, as well as lattice strain analysis. He has already published more than 25 papers at premier journals and conferences.

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

Agis Iliadis
EDS PhD & Masters Student
Fellowship Chair
University of Maryland
College Park, MD, USA

2006 EDS PAUL RAPPAPORT AWARD



Renuka P. Jindal

A high priority of the Electron Devices Society is to recognize and enhance the quality of papers published in EDS archival literature. Every year, the Society confers its prestigious

Paul Rappaport Award to the best paper published in the *IEEE Transactions on Electron Devices*. Among other criteria including technical excellence, an important metric for selection for the award is comprehensive and impartial referencing of prior art. The winning paper was selected from among 350 manuscripts that were published in 2006. The article is entitled, "Cascaded Quantum Wires and Integrated Design for Complex Logic Functions: Nanoelectronic Full Adder". This paper was published in the May, 2006 issue of the *IEEE Transactions on Electron Devices*, and was authored by Billy Lau, David Hartmann, Lukas Worschech, and Alfred Forchel. The award will be presented in the plenary session of the International Electron Devices Meeting to be held on December 10, 2007, in Washington, DC. In addition to the award certificate,

the authors will receive a check for \$2,500. On behalf of the Electron Devices Society I would like to congratulate the authors for this achievement. Brief biographies of the authors are given below.

Alfred Forchel was born in Stuttgart, Germany, in 1952. He received his Ph.D. degree and his Dr. habil. degree in physics from the University of Stuttgart, in 1982 and 1988, respectively. In 1990, he became a Full Professor in physics at the University of Würzburg, where he is also responsible for the microstructure laboratory.



David Hartmann was born in Bünden, Germany, in 1976. He received his Diploma degree in Physics from the University of Würzburg, Germany. He is currently working toward Ph.D. degree in the Nanoelectronics Group of the Technical Physics Department at the same university.



Billy Lau was born in Hong Kong, in 1984. After being a member of the Nanoelectronics Group with the Department of Technical Physics at the University of Würzburg, he is now pursuing a degree in Engineering Science concentrating in microfluidic technology. He is currently a doctorate student at Harvard University.



Lukas Worschech was born in Würzburg, Germany, in 1967. After his Ph.D. degree he joined the department of Technical Physics at the University of Würzburg. In 2002, he habilitated with studies on semiconductor nanostructures and is currently responsible for the Nanoelectronics group at the same department.

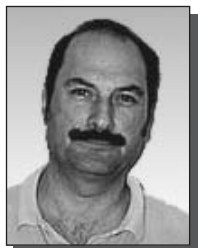


Renuka P. Jindal
EDS Vice-President of Publications
University of Louisiana at Lafayette
Lafayette, LA, USA

2007 EDS MASTERS STUDENT FELLOWSHIP WINNERS



Paul K.L. Yu



Agis Iliadis

The Electron Devices Society Masters Student Fellowship Program was designed to promote, recognize, and support Masters level study and research within the Electron Devices Society's field of interest. The field of interest for EDS is all aspects of engineering, physics, theory, experiment and simulation of electron and ion devices involving insulators, metals, organic materials, plasmas, semiconductors, quantum-effect materials, vacuum, and emerging materials. Specific applications of these devices include bioelectronics, biomedical, computation, communications, displays, electro and micro mechanics, imaging, micro actuators, optical, photovoltaics, power, sensors and signal processing.

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

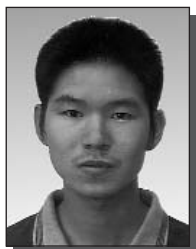
EDS proudly announces five 2007 EDS Masters Student Fellowship winners. Brief biographies of the 2007 recipients appear below. Detailed articles about each Masters Student Fellowship winner and their work will appear in forthcoming issues of the EDS Newsletter.

Li Wei received the B.Eng (1st class, hons.) degree from the School of Electrical and Electronic Engineering at Nanyang Technological University (NTU) in 2005 under Government-link-company (GLC) scholarship



of Singapore Government. After graduation, he was awarded SSMC-NTU scholarship for the master level study at NTU and started the collaboration research project with the reliability department of Systems on Silicon Manufacturing Co. Pte. Ltd (SSMC). His research interests include interconnect reliability, Electromigration simulation and Finite element analysis. Since April 2007, He has been converted to a Ph.D candidate and continues his research at NTU.

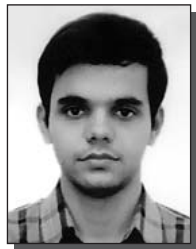
Xu Zhao was born in Dalian, China in 1982. He received the B.S. degree in Electrical Engineering from Tsinghua University, Beijing, China in 2005. From July 2004 to June 2005, he was an UROP student modeling carbon



nanotube field effect transistors and RF MEMS switches. From September 2005 to September 2006, he worked on Bismuth and BiSb nanowires for thermoelectric applications. In October 2006, he joined the wide gap semiconductor materials and devices group as a research assistant at MIT, supervised by professor Tomas Palacios. He is currently interested in new device structures to improve the high frequency performance of

GaN HEMTs. He was the recipient of the Tsinghua University first prize national fellowship and authored or co-authored 7 papers on international journals and conferences.

Anuj Madan received the B.E. with Honors in electronics and electrical communication engineering from Punjab Engineering College, India in 2006. He is currently a graduate student in the SiGe



Devices and Circuits Group at Georgia Institute of Technology (Georgia Tech), Atlanta, GA. Anuj's research interests are in the physics of silicon-based heterostructure transistors, including both strained silicon CMOS and SiGe MODFETs. In the summer of 2007, he worked on NAND flash development at Sandisk Corporation, Milpitas, CA. His undergraduate research was focused on strain engineering in advanced CMOS and process variations in multi-gate devices. He has published seven papers in IEEE journals and conferences.

Ovidiu Profirescu was born in Bucharest, Romania. He graduated University Politehnica of Bucharest, Romania, Faculty of Electronics, Telecommunications and Information



Technology, Microelectronics Department in 2006. In 2006 he started a 1.5 years Masters Study in University Politehnica of Bucharest called Advanced Micro-

electronics in collaboration with Infineon Technologies AG. Since 2001 he has worked at EDIL Microelectronics and Nanoelectronics R&D Centre of Excellence on International Projects. Since July 2005 he worked at Catalyst Semiconductor Romania as a design engineer doing layout, testing, measurements with many types of industry standard lab equipment, and electrical design. Since October 2006 he is full-time assistant professor at University Politehnica of Bucharest, teaching Electronic Devices and Circuits laboratories to second and third year students.

Andrew Warren graduated with a B.S. in Physics from the University of Central Florida (UCF) in 2004 and then accepted a position at the Hitachi Global Storage Technologies' Materials Characterization Lab in San Jose, Ca. The work involved structural characterization of magnetic storage media by various x-ray techniques. Andrew returned to UCF in 2006, and is presently pursuing M.S. and PhD. degrees in Materials Science. Current research interests include Pt-



Ru binary alloy thin films for work function tuning; the classical (resistivity) size effect in Cu; amorphous magnetic alloys; and materials characterization, specifically electron microscopy, X-ray and synchrotron X-ray scattering.

*Paul K.L. Yu
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*Agis Iliadis
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College Park, MD, USA*

EDS DISTINGUISHED LECTURER VISITS INDIAN INSTITUTE OF SCIENCE, BANGALORE

EDS Distinguished Lecturer, Dr. Jayasimha Prasad, visited the Department of Electrical Communication Engineering at the Indian Institute of Science, Bangalore, India, on August 20, 2007, to deliver a lecture on SiGe HBT Technology. This talk was arranged by the IEEE ED/SSC Bangalore Chapter and was hosted by Prof. Navakant Bhat of IISc.

Prasad described that though GaAs HBTs came into existence first, SiGe HBT technology is now very mature and is competing with III-V technology in performance, integration and cost. SiGe HBT technology is now available in many foundries. By incorporating Ge in the base, the current gain, Early voltage, F_t and F_{max} of the transistor is enhanced. The great leverage of a silicon-based HBT

process is that it is relatively easy to combine it with CMOS to develop BiCMOS processes which can take advantage of the high speed capabilities of the bipolar and the high integration levels of CMOS. Production SiGe processes today have a F_t/F_{max} of 300/350GHz with 3.3ps gate delay. On the other hand, InP/InGaAs HBTs have a F_t/F_{max} of 400/450GHz with a gate delay of 1.9ps. The SiGe process today has an impressive F_t BVCEO product of 500GHzV. Later, Prasad compared the performance of static and dynamic dividers, oscillators and digital communication circuits in both GaAs and SiGe HBT technology. The talk was well received by both students and faculty.

Prof. Navakant Bhat gave an overview of the new Nanoelectronics/VLSI Lab (funded by the Government of India) to Prasad. The facility will be fully functional in two years. Prasad was given a tour of the Microelectronics Lab where students are pursuing research in CMOS and MEMS.



Dr. Jayasimha Prasad giving a talk on SiGe HBT

*Navakant Bhat
Indian Institute of Science
Bangalore, India*



2008 IEEE ELECTRON DEVICES SOCIETY PH.D. STUDENT FELLOWSHIP CALL FOR NOMINATIONS

Description: One year fellowships awarded to promote, recognize, and support Ph.D. level study and research within the Electron Devices Society's field of interest: The field of interest for EDS is all aspects of engineering, physics, theory, experiment and simulation of electron and ion devices involving insulators, metals, organic materials, plasmas, semiconductors, quantum-effect materials, vacuum, and emerging materials. Specific applications of these devices include bioelectronics, biomedical, computation, communications, displays, electro and micro mechanics, imaging, micro actuators, optical, photovoltaics, power, sensors and signal processing. Five fellowships will be awarded, with the intention of at least one fellowship being given to eligible students in each of the following geographical regions every year: Americas, Europe/Middle East/Africa, and Asia & Pacific. Only one candidate can win per educational institution.

Prize: US\$7,000 to the student 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 Ph.D. 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 student's 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. Letters of recommendation can not be from the nominator.

Timetable:

- Nomination packages are due at the EDS Executive Office no later than May 15, 2008
- Recipients will be notified by July 15, 2008
- Monetary awards will be given by August 15, 2008
- Formal presentation of the awards will take place at the IEDM Awards Ceremony in December 2008.
- Nomination 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 Ph.D. Student Fellowship Program
445 Hoes Lane, Piscataway, NJ 08854 USA

For more information contact:

edsfellowship@ieee.org
or visit: edsfellowship@ieee.org or visit:
<http://www.ieee.org/society/eds/education/fellowship.xml>



2008 IEEE EDS MASTERS STUDENT FELLOWSHIP FINAL CALL FOR NOMINATIONS

At the December 2005 EDS Administrative Committee Meeting, EDS approved a Masters level student Fellowship Program.

Description: One-year fellowships awarded to promote, recognize, and support graduate Masters level study and research within the Electron Devices Society's field of interest: all aspects of engineering, physics, theory, experiment and simulation of electron and ion devices involving insulators, metals, organic materials, plasmas, semiconductors, quantum-effect materials, vacuum, and emerging materials. Specific applications of these devices include bioelectronics, biomedical, computation, communications, displays, electro and micro mechanics, imaging, micro actuators, optical, photovoltaics, power, sensors and signal processing. Five fellowships will be awarded, with the intention of at least one fellowship being given to eligible students in each of the following geographical regions every year: Americas, Europe/Mid-East/Africa, Asia & Pacific. Only one candidate can win per educational institution.

Prize: US\$2,000 and a certificate to the student, to be presented by the Dean or Department head of the student's enrolled graduate program.

Eligibility: Candidate must: be an IEEE EDS student member at the time of nomination; be accepted into a graduate program or within the first year of study in a graduate program in an EDS field of interest on a full-time basis; and continue his/her studies at a graduate education institution. Nominator must be an IEEE EDS member and preferably be serving as the candidate's mentor or faculty advisor. Previous award winners are ineligible.

Basis for Judging: Demonstration of his/her significant ability to perform research in the fields of electron devices and proven history of academic excellence in engineering and/or physics as well as involved in undergraduate research and/or supervised project.

Nomination Package:

- Nominating letter by an EDS member who served as candidate's mentor or faculty advisor.
- 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 student's mailing address and e-mail address)
- One copy of the student's transcripts/grades
- A letter of recommendation from an individual familiar with the student's research and educational credentials. Letters of recommendation cannot be from the nominator.

Timetable:

- \Nomination packages are due at the EDS Executive Office no later than March 15, 2008
- Recipients will be notified by May 15, 2008
- Monetary awards will be presented by the Dean or Department Chair of the recipient's graduate program at the beginning of the next academic term.
- Nomination 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 Masters Student Fellowship Program
445 Hoes Lane, Piscataway, NJ 08854 USA

For more information contact:

edsfellowship@ieee.org
or visit: edsfellowship@ieee.org or visit:
<http://www.ieee.org/society/eds/education/fellowship.xml>



**2006-2007 IEEE ELECTRON
DEVICES SOCIETY
REGION 9 BIENNIAL
OUTSTANDING STUDENT
PAPER AWARD
CALL FOR NOMINATIONS**



Description: Awarded 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: 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.

Prize: A distinction will be conferred in the form of an Award certificate bestowed upon the most outstanding Student Paper nominated for the two-year period. The prize will be presented at either the International Caribbean Conference on Devices, Circuits and Systems (ICCDCS) or the Symposium on Microelectronics Technology and Devices (SBMicro). In addition to the recognition certificate, the recipient will receive a subsidy of up to \$1,500 to attend either of the conferences above, where the award is to be presented. There will be a formal announcement of the winner in a future issue of the EDS Newsletter.

Eligibility: Nominee must be an IEEE EDS student member at the time of nomination, be enrolled at a higher education institution located in Region 9. In the case of a co-authored paper, only eligible co-authors may be nominated. Papers should be written in English on an electron devices related topic. Papers should have been published, in full-feature form, during 2006-2007 in an internationally recognized IEEE sponsored journal or conference in the field of electron devices related topics. Statements by the student and by the faculty advisor should accompany the nomination. Nominator must be an IEEE EDS member. Previous winners of this award are ineligible.

Basis for Judging: Demonstration of Nominee's significant ability to perform outstanding research and report its results in the field of electron devices. Papers will be judged on: technical content merit, originality, structure, clarity of composition, writing skills, overall presentation. These criteria will be weighted by the assessment of the nominee's personal contribution and the linkage of the nominated work to the nominee's career plans.

Nomination Package:

- Nominating letter by an EDS member (it may be the faculty advisor)
- A brief one-page (maximum) biographical sketch of the student
- 1000 words (maximum) statement by the nominated student describing the significance and repercussion of the nominated work within the wider scope of the nominee's career plans
- 400 words (maximum) statement by the faculty advisor under whose guidance the nominated work was carried out. It should unmistakably state the faculty advisor's support of the nomination, and clearly explain the extent of the nominated student's contribution, as well as its relevance for the overall success of the reported work.
- A copy of the published paper

Timetable:

- \Nomination packages are due at the EDS Executive Office no later than 15 February 2008.
- Nomination packages can be submitted by mail, fax or e-mail, but a hard copy must be received at the EDS Office
- \Winners will be notified by 15 March 2008.

β Recipients may choose to have the formal presentation of the award at either one of the conferences: ICCDCS 2008, 28-30 April 2008, Cancun, Mexico, or SBMicro, 1-4 September 2008, Gramado, Brazil.

Send completed package to:

IEEE Operations Center
EDS Executive Office
EDS R9 Outstanding Student Paper Award
445 Hoes Lane, Piscataway, NJ 08854 USA

For more information contact:

Laura Riello, EDS Executive Office
l.riello@ieee.org or 732-562-3927

TRANSACTIONS ON SEMICONDUCTOR MANUFACTURING 2006 BEST PAPER AWARD PRESENTED

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

The Editorial Staff is pleased to announce that the paper entitled "Model-Based Design Analysis and Yield Optimization," by Tobias Pfingsten, Daniel J. L. Herrmann, and Carl Edward Rasmussen has been recognized as the best paper published in the 2006 Transactions. This paper, which appeared in the November issue, has been chosen for its contribution of an alternative sampling and modeling approach for statistical analysis and yield improvement of device and structure designs. As process and device variation continues to grow in importance, methods are needed in integrated circuits and emerging technologies such as MEMS to better understand and address this variation. In this year's best paper, an efficient Bayesian approach with a Gaussian process prior is used to improve upon a more conventional Monte Carlo sampling scheme. The approach is demonstrated for a MEMS accelerometer design, and reduces the number of simulation runs required for statistical analysis and optimization.

Tobias Pfingsten received the Diploma in physics from the University of Münster, Münster, Germany in 2003. He is currently working towards the Ph.D. degree in cooperation with the Max Planck Institute for Biological Cybernetics, Tübingen, Germany.



He is now with Robert Bosch GmbH, Stuttgart, Germany, in Corporate Research and Advance Engineering, Microsystem Technologies. His research interests include machine learning and Bayesian inference, particularly their application to problems in manufacturing and engineering.

Daniel J. L. Herrmann received the Diploma in physics from the University of Tübingen, Tübingen, Germany, and the Ph.D. in physics from the University of Nijmegen, The Netherlands, in 2000. In 2000, he was a Postdoctoral Researcher at the Technical University of Berlin, Berlin, Germany, and a Research Fellow at the Max Planck Institute for Biological Cybernetics, Tübingen, from 2000 to 2002. He has worked in the field of quasicrystals and on the application of kernel methods and Gaussian process models to industrial problems. Currently, he is a Scientist at the Department



of Microsystem Technologies, Corporate Sector Research, Robert Bosch GmbH, Germany, where he develops methods and tools for the design process of Microsystems and semiconductor production.

Carl Edward Rasmussen received the M.S. degree in engineering from the Technical University of Denmark and the Ph.D. degree in computer science from the University of Toronto, Toronto, Ontario, Canada, in 1996. In 1997, he was a Postdoctoral Researcher at the Technical University of Denmark, and a Senior Research Fellow at the Gatsby Computational Neuroscience Unit, University College, London, U.K., from 2000 to 2002. Currently, he is a Junior Research Group Leader in the Department of Empirical Inference for Machine Learning and Perception, Max Planck Institute for Biological Cybernetics, Tübingen, Germany, where he does research on Bayesian inference and machine learning. He has worked extensively on Gaussian process models and recently coauthored the book, *Gaussian Processes for Machine Learning* (MIT Press, 2006).



*Duane Boning
T-SM Editor-in-Chief
MIT
Cambridge, MA, USA*

CALL FOR FELLOW NOMINATIONS

Nominations are being accepted for the IEEE Fellows class of 2009. The rank of IEEE Fellow is the institute's highest member grade, bestowed on senior members who have contributed "to the advancement or application of engineering, science, and technology."

The deadline for nominations is 1 March 2008. Senior members can be nominated in one of four categories: research engineer/scientist, educator, technical leader, or the recently added category of application engineer/practitioner.

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

NADE – NANOELECTRONIC DEVICES PRESENT AND PERSPECTIVE

IEEE EDS/SSCS MINI-COLLOQUIUM
14 OCTOBER 2007, SINAIA, ROMANIA

The IEEE EDS/SSCS Mini-Colloquium (MQ) – NADE – Nanoelectronic Devices, Present and Perspective was successfully held at the Sinaia Hotel, Sinaia, Romania, on 14 October 2007. It was part of an important IEEE event: the IEEE Region 8 Committee Meeting held at the Novotel Hotel in Bucharest on 12-13 October and CAS, the 30th IEEE International Semiconductor Conference held in Sinaia on 15-17 October.

Eleven Distinguished speakers presented talks about the past, present and future of Devices and ICs. A panel session on Nanoelectronic Devices in 2015 ended the Mini-Colloquium.

The past was presented by the Emeritus Professor Arjun Saxena of Rensselaer University, USA, who worked in the Noyce group at Fairchild for the invention of IC. His talk was on Fundamentals of the Invention and Impact on Future Developments of Integrated Circuits and Nano-optoelectronic Devices.

The present and future was presented by:

- Professor Anthony Walton of the University of Edinburgh, UK: Post processing CMOS wafers with micro and nanotechnologies.
- Professor Monuko du Plessis of the University of Pretoria, South Africa: Integrated Nano-explosive Devices Using Nano-porous Silicon.
- Professor Chih-Tang Sah, University of Florida, US who "apprenticed with Shockley" at Bell Labs, presented for the first time his Bipolar Theory of MOS Field-Effect Transistors and Experiments, coauthor

Professor Bin B. Jie of Peking University, China. Chih-Tang Sah talk was teleconferenced from Florida

- Dr. Andreas Wild of Technology Solutions Organization EMEA, Freescale, France: "More Moore" versus "More than Moore": Status and Perspective
- Dr. Meyya Meyyappan of NASA Ames Research Center for Nanotechnology, US: The Role of Nanotechnology in Shaping Nanoelectronics: An Overview.
- Dr. Daniel Foty of Gilgamesh Associates, US: Electron Devices in Nanoelectronic Circuits and Systems: Problems and Prospects.
- Professor Rajendra Singh of Clemson University, US, ED Romania charter Partner: Challenges and Opportunities in the Fields of Information Processing & Clean; Energy Conversation in the Nano World of the 21st Century.
- Thomas Watteyene, PhD student at INSA, France Telecom R&D: WiFly: Demonstrating Energy-Efficient Self-Organization Protocols for Wireless Sensor Networks.
- Dr. Jacob Baal-Schem, IEEE Region 8 History Coordinator, Israel: E-Living: Life in the Nanotechnology Era.

At the end Jean-Gabriel Remi, the IEEE Region 8 Director, France gave a talk on IEEE Technical Activities in Region 8.

The panel was chaired by Professor Marcel D. Profirescu of the University Politehnica of Bucharest, Romania, the organizer of the NADE Mini-Colloquium and three speakers addressed the

attendees, the NADE lecturers:

- Dr Rick Chandler of BT Global Services, UK: Nano-electronic interfaces to a Ubiquitous computing world; From Smart Dust to Intelligent Walls.
- Professor Adrian Ionescu of EPFL Lausanne, Switzerland.
- Dr. Ralf Neurohr of Tech.-Wiss. Buro, Germany: The Future of Nanoelectronics: A road towards Nano-Bio-Electronics?

There were about 100 attendees from universities, industry, software companies and chip design houses who actively participated with questions and comments, one third of them being students.

The MQ was sponsored by the IEEE ED and SSC Societies and EDIL Micro and Nanoelectronics R&D Center of Excellence and co-sponsored by EDIL Hi-Tech S.R.L and the Institute of Microtechnology who organized the CAS conference and also helped logistically NADE.

The 500 page volume of abstracts, speakers' bios and slides were handed to both the speakers and the attendees along with a CD-Rom. These are available on request to those who could not attend NADE.

In conclusion, NADE was a great success and it is envisioned to be the first in a series of Nanoelectronic Devices and ICs to be held all over the world in the future.

*Marcel D. Profirescu
ED/SSC Romania Chapter Chair
University Politehnica of Bucharest,
Romania*



EDS DISTINGUISHED LECTURERS PARTICIPATE IN THE 13TH WIMNACT JOINTLY HELD IN HONG KONG AND SINGAPORE

The 13th Workshop and IEEE EDS Mini-colloquium on NANometer CMOS Technology (WIMNACT) was a special event jointly organized by the ED/SSC Hong Kong and Rel/CPMP/ED Singapore Chapters, successfully held on July 23 and 25, 2007 in Hong Kong and Singapore, respectively. The two mini-colloquia are co-sponsored by the EDS Distinguished Lecturer (DL) Program and the two Chapters. This was the 2nd WIMNACT held in Hong Kong and the 5th in Singapore. The Hong Kong workshop was opened by the Chapter Vice Chair, Dr. K. P. Pun, and attended by more than 40 participants. The Singapore workshop, with more than 70 participants, started

with a welcome address by the Chapter Chair, Dr. Alastair Trigg, followed by an Introduction to EEE Microelectronics Center, co-organizer of the workshop, by the Director, Prof. Kin-Leong Pey.

Prof. Juin Liou from Univ. of Central Florida and Prof. Ramgopal Rao from IIT-Bombay traveled to both cities and gave DL talks on "On-Chip Spiral Inductors in CMOS Technology for RF Applications" and "Device Design and Optimization Challenges for Nano-scale Multi-gate MOSFETs", respectively. Prof. Mansun Chan of HKUST talked on "Application of Integrated Circuit Technology for Biological Material Analysis" at both workshops. DLs from Singapore also

presented their talks in both cities, with travel supported by the Singapore Chapter. They are Prof. Kin-Leong Pey and Prof. Xing Zhou from Nanyang Technological Univ. and Mr. Chih-Hang Tung from Institute of Microelectronics, with the respective topics on "Silicided Hyper-shallow p+/n- Junctions Formed by Pulsed Laser Annealing for Nanoelectronic Devices", "Unified Compact Modeling of Emerging Multiple-Gate MOSFETs", and "Advanced Transmission Electron Microscopy for Nano-electronics Device and Process Analysis". Prof. Steve Chung of National Chiao Tung Univ. from Taiwan attended the Hong Kong workshop and gave the talk on "Channel Mobility Enhancing Schemes and Reliability Issues for Strained CMOS Technologies". Prof. Philip Wong of Stanford Univ., who was visiting Hong Kong, also gave a DL talk on "Carbon Nanotube Transistor Compact Model" at the Hong Kong workshop. Prof. Vijay Arora of Wilkes Univ., who is visiting Universiti Teknologi Malaysia, attended the workshop in Singapore and gave the talk on "Physics-Based Models for Performance Evaluation of a Nanoscale MOSFET".

This joint mini-colloquia, although a first attempt, was very successful as well as economical due to shared travel funds. As the well-established WIMNACT series especially for Region 10, the SRC-AP would like to initiate and co-sponsor similar events for the region in the future. Complete information on the 13th WIMNACT, including the past history of WIMNACTs, can be found at the website:

<http://www.ntu.edu.sg/eee/eee6/conf/WIMNACT07.htm>

*Xing Zhou, Organizer
and SRC-AP Chair*

*Alastair Trigg, Rel/CPMT/ED
Singapore Chapter Chair*

*Aaron Ho, ED/SSC Hong Kong
Chapter Chair*



DL speakers (*) and session chairs at WIMNACT-Hong Kong. From left to right: Peter Lai, Hei Wong, Mansun Chan*, Xing Zhou*, Ramgopal Rao*, Juin Liou*, Kin-Leong Pey*, Chih-Hang Tung*, P. K. Pun, and K. N. Leung



DL speakers at WIMNACT-Singapore. From left to right: Xing Zhou, Kin-Leong Pey, Vijay Arora, Juin Liou, Mansun Chan, Ramgopal Rao, Chih-Hang Tung

**Update now
available**

EDS ARCHIVAL COLLECTION On DVD

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

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

Collection also includes abstract pages for the publications listed below:

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

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

As a member of EDS, you can purchase this amazing collection for just \$30, (student members can purchase for \$9.95) by just visiting the IEEE Online Store at <http://shop.ieee.org>. 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>.

Additionally, an update of the archive can be purchased as an annual subscription through your IEEE member renewal bill for an additional \$30 (students \$15). The EDS DVD Update Package is fully compatible with the EDS Archival Collection DVD and includes all the articles of T-ED, EDL and the IEDM from 2004 to the latest full year. Since the DVD Update Package is only produced once a year, you can purchase the previous year's version via the IEEE store at: <http://shop.ieee.org>.

REGIONAL AND CHAPTER NEWS

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

ED Argentina (being formed)

- by Sergio D. Baron

Argentina's EDS chapter in formation successfully started its activities with a conference by one of the Society's distinguished lecturers. On August 14th, Dr. Enrique Miranda, who is an EDS Distinguished Lecturer and a Professor with the Escola Técnica Superior d'Enginyeria, Universitat Autònoma de Barcelona, Spain, UAB, gave a talk entitled, "Gate Oxide Breakdown in MOS Structures: Physical Model and Applications". The event took place at IEEE Argentina's headquarters in Buenos Aires.

The large audience actively followed the words of Dr. Miranda, who presented a comprehensive and up-to-date description of the physical models of breakdown current and the post-breakdown conduction in MOS structures. An emphasis was put on Professor Miranda's own complete analytical model that describes these phenomena. To finish, a broad panorama of applications of these properties was presented.

The question and answer session demonstrated both a knowledgeable audience and the specialized academic formation of the assistants.

This event was very helpful for the formation of Argentina's EDS chapter and even a petition signature was collected at that time!



Dr. Miranda and attendees of the August 14th,
EDS DL

ED South Brazil

- by João Antônio Martino and
Marcelo Antonio Pavanello

The chapter activities during August-September were focused in supporting the organization of the 22nd Symposium on Microelectronics Technology and Devices – SBMicro 2007, held in Rio de Janeiro, Brazil, on September 3-6, 2007. This symposium was organized by two Brazilian scientific societies: SBMicro (Brazilian Microelectronics Society) and SBC (Brazilian Computer Society) and was technically co-sponsored by the IEEE Electron Devices Society. During this event, the EDS Region 9 Chapters Meeting was held and several tutorial presentations and invited seminars were given by four EDS Distinguished Lecturers: Sorin Cristoloveanu (IMEP-Minatec, France), "Multiple Gates for SOI MOSFETs: Two, Three or Four?" and "SOI Technology: Device Physics and Characterization"; Cor Claeys, (IMEC, Belgium), "Physical Characterization and Reliability Aspects of MuGFETs" and "Impact of Strain Engineering on Device Performance"; Jamal Deen, (McMaster University, Canada), "Noise in Advanced Electronic

Devices and Circuits" and "Highly Sensitive, Low-cost Integrated Biosensors"; and Juin J. Liou, (University of Central Florida, USA), "Advanced ESD Protection Solutions in CMOS/BiCMOS Technologies". These seminars were attended by over 50 people, many of them members of the chapter, while others traveled from various regions of Brazil, Latin America, the USA and Europe. Besides giving the seminars, some of these Distinguished Lecturers also attended the EDS Region 9 Chapters Meeting and had many discussions with the participants during the four days of the symposium.

Also in September the chapter promoted two Distinguished Lecturer presentations at the University of Sao Paulo, both on September 12th: "Organic Semiconductor Devices", by Magali Estrada del Cueto and "Models for Doped Symmetric Double-Gate Transistors", by Antonio Cerdeira Altuzarra, both lecturers from CINVESTAV, Mexico. These presentations were attended by several undergraduate and graduate students in the field of Electron Devices as well as some EDS members.



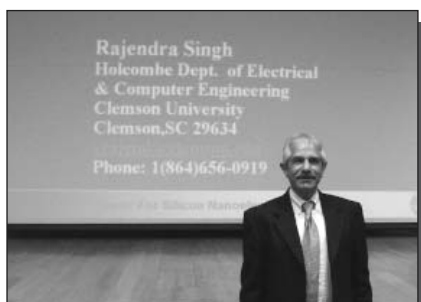
SBMicro Conference Welcome Reception

ED Puebla

- by *Claudia Reyes-Betanzo*

The technical chapters of the IEEE Puebla Section, the Electron Devices Society and the Circuits and Systems Society, successfully organized the "First Seminar on Nanoelectronics and Advanced Design 2007" at INAOE in Tonantizintla, Puebla. This seminar consisted of six lectures held September 12-14, 2007. The ED Puebla Chapter contributed two talks about nanotechnology. On September 12, EDS Distinguished Lecturer, Prof. Rajendra Singh from Clemson University, presented the talk "Nanotechnology and Pathways to Green Energy Conversion", and on September 13, Dr. Francisco J. García Sánchez, EDS Distinguished Lecturer from Simón Bolívar University in Caracas, Venezuela, gave a talk titled "From Microelectronics to Nanoelectronics: A View of Electron Devices Evolution". The seminar was attended by 110 participants from Puebla and nearby Veracruz, Mexico City and Toluca. An enthusiastic group from the IEEE Student Branch from the University of Veracruz was very pleased with the high level of these lectures.

~ **Jacobus W. Swart, Editor**



EDS Distinguished Lecturer Prof. Rajendra Singh



EDS Distinguished Lecturer
Dr. Francisco J. García Sánchez



Dr. Francisco J. García Sánchez with the IEEE Student Branch from Veracruz



Invited speakers and organizers of the seminar (from left to right), Dr. Arturo Sarmiento, CAS Puebla Chairman, Prof. Krishnendu Chakrabarty, EDS DL Prof. Rajendra Singh, Dr. Mauricio Terrones, EDS DL Dr. Francisco J. García Sánchez, Dr. Claudia Reyes Betanzo, EDS Puebla Chariman, and Dr. Roberto Murphy

EUROPE, MIDDLE EAST & AFRICA (REGION 8)

ED Novosibirsk State Technical University (NSTU) Student Branch

- by *Artem S. Yakovlev*

The 8th International Workshop and Tutorials EDM'2007 was organized and successfully held July 1-5, 2007, in the NSTU Conference Center 'Erlagol' in the Altay Mountains. The number of accepted papers was 103, from a total

number of 186 authors. All accepted papers were published in the volume of Proceedings which was issued in Novosibirsk and distributed through the participants of EDM'2007 and via the IEEE Conference Publications Program. Two tutorials were included in the program of EDM'2007 and were also published in the volume of Proceedings. The tutorial topics were 'New Life of Old Effect: Impact of Piezoresistivity on Physics and Technology' and 'Experimental Semiconductor Nanoelectronics in the Institute of Semiconductor Physics SB RAS'.



Working moment of EDM: discussion of the work of session with EDM'2007 Chair, Professor Victor Gridchin

The ED NSTU Student Branch has provided the technical support for preparing the volume of Proceedings in a hardcover book of more than 380 pages with illustrations. For 2008, we are planning to issue the volume of Proceedings containing colored illustrations.

As well, the great work during the EDM'2007 was performed for organizing the sessions, accommodation of participants and the program of relaxation. This year a delegation from the Republic of South Korea, led by Professor Jong Hwa Lee from Ulsan University of Technology participated in EDM'2007. A total of 6 persons, including 3 professors and 3 Ph.D. students, presented their work at EDM'2007. We are especially thankful to EDM'2007 Chair, Professor Victor Gridchin, for establishing this kind of scientific co-operation and to Professor Jong Hwa Lee for his agreement to be a leader of the Korean delegation. We hope to continue this type of co-operation and to invite delegations from China and Japan as well, to the next EDM.

The web site of EDM'2007 was renewed and placed on the EDM constant site <http://www.nstu.ru/edm>. The design of the online application form was significantly improved. For 2008, we are planning to develop and start the system of online uploading of full-text papers submitted to the EDM Program Committee. For this aim the 'Specimen for Preparing the Papers' was already developed and will be placed on the EDM web site indicated above.

The main topics of EDM'2007 were: Materials and Technologies for Micro-

and Nanoelectronics, Modeling and Measuring of Microelectronic Devices, Medical and Industrial Electronics, Standards, Investigations and Applications of Radio and Telecommunications and, at least, Ultrasonic Devices: Physics, Technology, Applications. We are glad to indicate that all presentations in the session devoted to nanotechnologies were only made in English. For 2008, we are planning to repeat this positive experience with a session devoted to advances in radio and telecommunications.

EDM is traditionally a meeting of young specialists from various Universities and Research Institutes. We are especially thankful to our colleagues from the Moscow Institute of Electronic Engineering and St. Petersburg University of Electrical Engineering LETI, who have submitted their reports but not visited EDM because of technical reasons. This year EDM'2007 has received special financial support from the Russian Foundation for Basic Research (RFBR). This successful experience as well as other advances reported here, testify that now EDM is a powerful scientific event in Russia and has an international resonance. Support from IEEE makes this event even more significant.

The 9th International Workshop and Tutorials on Electron Devices and Materials EDM'2008 will be organized July 1-5, 2008, in Novosibirsk State Technical University. All interested persons are welcome to contact us. For participation, each applicant should complete the online application form and submit an abstract. The deadline for completing application forms and sending abstracts is March 10, 2008. If you have any questions, please contact the EDM'2008 Vice-chair, Associate Prof. Alexander Gridchin, via edm-services@yandex.ru.

- Alexander V. Gridchin, Editor

MOW 2007

- Tibor Berceli

The Mobile-Optical-Wireless (MOW) conference week was held in Budapest, Hungary from 14-18 May, 2007. It was organized in cooperation with the IEEE AP/COM/ED/MTT Hungary Chapter, the European Microwave Association, the

URSI Hungarian National Committee, as well as the Budapest University of Technology and Economics, the Hungarian Academy of Sciences and the Scientific Society for Telecommunications and Informatics.

The MOW conference week was composed of 5 different meetings: the 12th Colloquium on Microwave Communications (Microcoll), the 7th Mediterranean Microwave Symposium (MMS), the 18th International Electromagnetic Fields and Materials (EMFM) conferences, as well as an optical communications Workshop and Summer School.

The main part of the conference week was the joint organization of two conferences: the Microcoll and the Mediterranean Microwave Symposium. In the program of the 3-day parallel held conferences, there were 130 papers including 19 invited talks with attendees from 32 countries.

The participants could listen to an interesting and high level program which was even enhanced by the invited speakers. Among them were 10 IEEE Distinguished Lecturers; 2 each from the Antennas and Propagation Society, the Communications Society, the Electron Devices Society and 4 from the Microwave Theory and Techniques Society. Some of the distinguished lecturers came to the conference from the USA, only for a single day, to present their talk.

The papers have been published in a joint Proceeding's Book of the two conferences. The details of the program can be seen on the web site: www.diamond-congress.hu/mow2007

The best contributed papers will be published in an extended form in the Proceedings of the European Microwave Association.

The European Microwave Association gave 3 Awards to the best young scientist's papers. The First Prize was shared by Anne-Laure Billabert from France and Yifei Li from the USA. Third Prize was given to Olena Boryskina from the Ukraine.

The conference site was located at the new Europa Conference Center, in the hilly area of Budapest. The social program consisted of a Wel-

come Party and a Banquet. The banquet was held outside of the city and included a horse show, a dinner with live gypsy music, a folk dance and a bon fire. The participants enjoyed both the technical and the social programs.

AP/COM/ED/MTT Hungary

- Tibor Berceli

We present the main topics of our activity for the period of January 1, 2006 to August 31, 2007. The AP/COM/ED/MTT Hungary Chapter organized several meetings inviting well-known experts to present new results on up-to-date subjects. We also participated in the organization of a Workshop and a Focused Session at two conferences sponsored by IEEE. Finally we organized the MOW conference week in May, 2007.

- 1.) We had a technical meeting on "Microwave measurement problems" conducted by Tamas Banky, our student member. Fifteen people participated in it and contributed to the framework of round-table discussions. It was held February 15, 2006.
- 2.) We had an invited Electron Devices Society distinguished lecturer's visit on May 31, 2006. Professor Vijay K. Arora from USA presented a lecture entitled "Quantum Nano-Engineering". The lecture was attended by 13 people.
- 3.) We participated in the organization of the Workshop on "New optical approaches for microwave, high-speed signal transmission" in the framework of the IEEE MTT-S International Microwave Symposium. Tibor Berceli IEEE Fellow gave a lecture entitled, "Combined Optical-Wireless Indoor Communications System". The Workshop was held in San Francisco, California, June 16, 2006 and was attended by about 24 people.
- 4.) We had an invited Communications Society distinguished lecturer's visit on June 21, 2006.

Professor Abbas Jamalipour from Sydney, Australia presented a lecture entitled "Future Mobile Communications toward Broadband Wireless IP". The lecture was attended by 28 people.

- 5.) We participated in the organization of the Focused Session on "Microwave Generation by Optical Techniques" in the framework of the European Microwave Conference. Tibor Berceli, IEEE Fellow, gave a lecture entitled, "Microwave Generation by Optical Techniques – A Review". The Focused Session was held in Manchester, England September 14, 2006, and was attended by about 60 people.
- 6.) We had an invited Electron Devices Society distinguished lecturer's visit on August 31, 2006. Professor Juin J. Liou, from Florida, USA, presented a lecture entitled "Recent Advances in MOS Devices for RF Applications". The lecture was attended by 16 people.
- 7.) We had an invited lecturer's visit from the Sydney University, Australia on September 25, 2006. Professor Robert Minasian presented a lecture entitled "Photonic Signal Processing of Microwave Signals". The lecture was attended by 13 people.
- 8.) We had a meeting for the 12th Microcoll Conference Organizing Committee on October 25, 2006. The meeting was conducted by Tibor Berceli, Chairman of the Technical Program Committee. The meeting was attended by 25 people.
- 9.) We had an invited distinguished lecturer's visit from the Microwave Theory and Techniques Society on October 26, 2006. Professor Georg Boeck from Berlin, Germany presented a lecture entitled "Design of RF CMOS Integrated Circuits". The lecture was attended by 17 people.

10.) We had a social meeting on the occasion of Christmas on December 21, 2006. It was attended by 32 people.

11.) The total number of the Chapter members has grown from 184 up to 191 which means 4% increase.

12.) In 2006 we began the organization of two conferences to be held in 2007: the 7th Mediterranean Microwave Symposium and the 12th Microcoll. We composed the Call for papers and distributed 600 copies to many conferences like MIKON, IMS, EuMW, MMS that were being held in 2006. The beginning of 2007 kept us very busy with the organization of these conferences in the framework of the MOW (Mobile-Optical-Wireless) conference week, which was held in Budapest in May, 2007. The detailed report on this event is included in this section of the Newsletter.

~ **Andrzej Napieralski, Editor**

ED Spain

- by Josep Palares

The V Postgraduate Student Meeting on Electronic Engineering (formerly called NEPHOS Workshop), organized by the Universitat Rovira i Virgili (URV, Tarragona, Spain) was held on July 5-6 in Tarragona.

The Postgraduate Student Meeting on Electronic Engineering has been held since 2003. It consists of two days of (a total of six) plenary talks given by invited prestigious researchers (from different countries) and poster presentations by Ph.D. students. The plenary talks, especially devoted to Ph.D. students, address different topics in nano-electronics and photonics. There are two Best Poster Awards: one for the category of Ph.D. Students in their first two years, and another one for Ph.D. students in their last years.

This year, two invited talks were given by EDS Distinguished Lecturers. Firstly, Prof. Mikael Östling (KTH, Kista, Sweden), Chair of the IEEE EDS Region 8 Subcommittee for Regions/Chapters, presented an

overview of critical integration issues for future generation MOS-FETs towards 10 nm gate length. His talk was entitled "Critical technology issues for deca-nanometer MOS". In addition, Prof. Magali Estrada (CINVESTAV, Mexico) dealt with the state of the art and the recent advances in Organic Semiconductor Devices. The other invited talks were given by international researchers: Dr. T. Perova (University of Dublin, Trinity College, Ireland) explained their results in design, fabrication and characterisation of ordinary and tunable photonic structures based on silicon for optical interconnects; Dr. M. Decarli (ITC-irst, Trento, Italy) presented a technological approach to BioMEMS (overview and prospects); Prof. C. Lucat (CNRS, Bordeaux, France) dealt with screenprinting technology for Mems applications; and finally, Dr. C. Zwingmann (University of Bremen, Germany) explained the potential and design of new high resolution multinuclear NMR approaches in metabonomics for clinical research and diagnosis.

~ **Cora Salm, Editor**

ASIA & PACIFIC (REGION 10)

ED Japan

- by **Atsushi Kurobe**

On July 12, 2007, the ED Japan Chapter organized a technical meeting entitled "Possibility of controlling variations in semiconductor device behaviors: How do we model the variations?" which was held at Hiroshima University, Hiroshima, Japan. Recently, the "variation control" is one of the hottest R&D issues of semiconductor devices, and the meeting offered the attendees the opportunity to obtain the latest information. Six speakers gave presentations on their topics from the viewpoint of either the device development or the circuit design.

Firstly, Prof. Mitiko Mattausch-Miura of Hiroshima Univ. gave a DL lecture to summarize the current status of the circuit variation analysis and its future applications. The title of



More than 100 people attended the ED Japan Chapter technical meeting held at Hiroshima Univ. on July 12, 2007. Six speakers including Prof. Miura, an EDS DL, gave presentations on the latest developments in device modeling

her talk was "Status of device modeling technology: Toward analyzing and predicting the variations among integrated circuits."

From the device development point of view, three talks were given. Dr. Ken-ichiro Sonoda of Renesas Technology gave a presentation on "Statistical analysis and modeling of Random Telegraph Signal (RTS) in small-geometry MOSFETs." Dr. Tetsumi Tanamoto of Toshiba discussed the quantum effect in future MOSFETs in a talk entitled "Fluctuation of ballistic conduction current caused by electron traps in the Kondo regime." An interesting talk on "A methodology to optimize device structures using TCAD" was given by Dr. Koichi Fukuda of Oki Electric Industry.

In the latter half of the meeting, Prof. Hans Juergen Mattausch of Hiroshima University discussed the latest results of variation analysis from the circuit designer's viewpoint in a presentation entitled "Circuit-variation analysis based on device/process variations." Dr. Yoshihisa Iino of Silvaco Japan gave a talk on "An EDA platform linking 'variation' and 'computer simulation.'"

All the speakers engaged in lively and fruitful discussions with the audi-

ence. This meeting, which was attended by more than 100 people, was very beneficial for chapter members and was a great success.

~ **Kasui Tsutsui, Editor**

ED Xian

- by **Yimen Zhang**

Dr. Yuhua Cheng visited the ED Xian Chapter September 20-23, 2007, and delivered a Distinguished Lecturer talk at Xidian University, Xian, China. The DL talk, entitled, "An Overview of MOSFET Device Behavior and Modeling for Mixed-signal/RF IC Design", was attended by more than 70 local professionals and students. In this excellent lecture, various aspects such as CMOS technology trends, device behavior of RF CMOS, challenges of



Dr. Yuhua Cheng (left 3) visited the Xian Chapter and is pictured with Prof. Yuming Zhang (Left 2) and Prof. Yimen Zhang (Left 4, Chapter Chair)

device modeling, device figures of merits, and model validations, were discussed. As a chapter partner, Dr. Cheng also met the local EDS members and professors of Xidian University to discuss the Chapter's activities, research area and issues regarding future collaboration. Prof. Yiqi Zhuang, Dean of the School of Microelectronics, and Prof. Yuming Zhang, Deputy Dean of the School and Chapter Chair of ED Xian Chapter, attended the meeting.

~ **Hei Wong, Editor**

ED/SSC Bangalore

- by P.R. Suresh

The chapter organized the 14th International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA) in July 2007, at Bangalore (<http://www.ieee.org/ipfa>). The conference was held July 11-13 and during the conference, 31 regular papers, 12 invited papers and 23 poster papers were presented. About 150 people attended the IPFA and the tutorials that were organized in conjunction with the conference.

Dr. Bipul Paul of Toshiba, USA, gave a talk on "Transiting from Si to non-Si: Prospects and Challenges" on 27 July. In this talk, the technological prospects and challenges of nanowire and carbon nanotube FETs were discussed. It was shown that while parasitic capacitances will be the major limiting factor in achieving the overwhelming intrinsic performance of these devices, the insensitivity to many process parameters variation will surely make these devices very attractive over conventional MOSFET towards the scaling limit.

ED Bangladesh

- by Anisul Haque

The ED Bangladesh Chapter arranged a technical talk under the EDS Distinguished Lecturer Program. Prof. Muhammad Ashraf Alam of Purdue University, gave a DL talk at BUET on July 31. The title of his talk was *Frontiers of Computational Nanoelectronics: A Bottom-up Perspective*. The talk was attended by nearly 100 IEEE members and guests. Prof. A. M. M. Safiullah, Vice Chancellor, BUET, also attended.

ED/MTT India

- by Kandala Chari

The Chapter had the following events since last reporting:

- A three-day workshop on Analog and RF Design held at Birla Institute of Technology and Science, Pilani from March 16-18, 2007, was jointly co-sponsored by the Chapter and Genesis Microchip (India) Pvt. Ltd. The Workshop drew 20 participants from Infineon Technologies, Wipro Technologies, TES PV Electronic Solutions, Analog Devices, Silicon Capital, C-DAC Hyderabad and ST Microelectronics. The speakers were Prof. L.K. Maheshwari, Vice chancellor, BITS; Dr. Chandrashekhar, Director CEERI Pilani; Prof. Shanthi Pavan from IIT, Madras, Dr. Kaushik Saha and Mr. Nitin Bansal from ST Microelectronics; Dr. Shubhash Mukherjee from Texas Instruments and Mr. Praksah Easwaran from Cosmic circuits. Dr. (Mrs.) Anu Gupta and Dr. Rajnish Sharma - faculty from BITS also delivered some key lectures during the workshop. Emphasis was laid on imparting hands-on experience to the participants on a variety of design tools like Mentor Graphics and Cadence. Participants were awarded a certificate of participation. Dr. (Mrs.) Anu Gupta and Dr. Rajnish Sharma of EEE group of BITS, Pilani, coordinated the event.
- Chapter Chair delivered on May 3, 2007, an invited lecture on "Semiconductor IP law- Registration Issues" at the Staff Development Programme on Challenges and

Opportunities in Technical Education, held from April 23 – May 7 at RKN Engineering College, Nagpur, under AICTE sponsorship. About 60 faculty members from various engineering colleges attended the meeting. The Chapter Chair also addressed the M Tech VLSI students of VNIT Nagpur, wherein various design and test, validation and inspection, design evaluation aspects of semiconductor ICs were touched. He also addressed the Orientation Programme of Women Scientists organized by the DST Delhi.

- The chapter also played a facilitating role in the International Conference Smart Cards Expo 2007, featuring both Conference and Exhibition of products in the area. Co-located with the conference were the related e-security Expo, RF ID Expo2007, and India Mobile Forum. Over 200 international and national delegates attended the technical deliberations and exhibitions, which drew a huge attendance of many thousands. Mr. S. Swaran, Electronics Today, coordinated the event held at Pragati Maidan, New Delhi.
- The Chapter Chair reviewed the STAR efforts at KGMGH School at Eluru (AP) twice with participating students, teachers and School Head. New students were enrolled, feedback from students ascertained and future program actions identified. The program received praise on utility from stakeholders.



A section of audience at the Workshop on Analog and RF Design held at BITS Pilani, March 16-18, 2007



Faculty attending the Staff Development Program addressed by the ED/MTT India Chapter Chair on May 3, 2007, at RKNE College, Nagpur

The ED/MTT India Chapter is looking for active volunteers who could contribute to various efforts taken up across the country and also serve in various positions of the Chapter. Individuals interested may contact the Chapter Chair, Kandala Chari.

IPFA 2007

- by M. K. Radhakrishnan

The 14th International Symposium on the Physical and Failure Analysis of Integrated Circuits 2007, IPFA 2007, was held at the J N Tata Auditorium, Indian Institute of Science, Bangalore, India, July 11-13, 2007. The conference was organized by the IEEE ED/SSC Bangalore Chapter along with IEEE Rel/CPMT/ED Singapore and IEEE ED/AP Bombay Chapters. IPFA is technically co-sponsored by EDS and the Reliability Society.

The three day conference included a one day Tutorial and two Symposia with Plenary Sessions comprising of

invited papers and parallel sessions with contributed oral and postal papers. The two Keynote speakers were Guido Groeseneken from IMEC, Belgium and Sunit Tyagi from Intel, India. There were 9 invited speakers: M. A. Alam, Purdue, USA; Rino Choi, Sematech, USA; Tung Chih Hang, IME, Singapore; S. S. Iyer, IBM, USA; Chandra Mouli, Micron, USA; Prasad Chaparala, NS, USA; Ingrid De Wolf, IMEC, Belgium; M. Natarajan, Silterra, Malaysia and K. Ahmed, Applied Materials, USA. Also, the Best Papers from ISTFA06 and ESREF06 were presented in the Best paper exchange program.

The tutorials on the first day were held in two parallel sessions and had large attendance from academia and industry. Tutorials were: MEMS Reliability and Failure Analysis by Ingrid De Wolf, CMOS; Scaling into Nanometer Regime by S.S. Iyer of IBM; Digital Device and Circuit Reliability by M. A.

Alam of Purdue University; Effect of Reliability Mechanisms in Analog Mixed Signal Applications by Prasad Chaparala of NS; ESD Protection in Devices by M. Natarajan of Silterra; Advanced Failure Analysis and Failure Mechanisms tutorial by M. K. Radhakrishnan and Tung Chih Hang.

A total of about 180 people attended the Symposium with an average of about 40 for each tutorial. Apart from the Symposium and Tutorial, the conference also had an equipment exhibition in which 16 vendors participated.

As part of IPFA's move around Asia, from its Singapore origin, the conference in Bangalore, India, was a great success and has shown how it can blend into the design community.

AP/ED/MTT Penang

- by Richard Keating

The AP/ED/MTT Penang Chapter was fortunate to have two excellent presentations over the last quarter. On July 10th, Prof. Boon S. Ooi, from the Electrical and Computer Engineering Department, Lehigh University, Bethlehem, Pennsylvania, USA, presented



Professor Boon S. Ooi presenting his research on Quantum-dot Lasers



From Left to Right: Harish (OC), Deepak (OC), Tung Chih Hang (IPFA Board), Ben Kazer (TPSC), M.K. Radhakrishnan (IPFA Board), Guido Groeseneken (TPSC & Keynote), PVS Subrahmaniam (Gen Chair), P R Suresh (OC), Gan Chee Lip (TPSC & OC), Navakant Bhat (OC), Anil K. (TPSC), M. A. Alam (TPSC), Souvik Mahapatra (Tech Chair), Sankara Reddy (OC), .S .S Iyer (TPSC), M. Natarajan (TPSC), Padmini (Secretariat), Dwarakanath (Secretariat)



Professor Ken-ya Hahimoto in Penang

a talk on "Photonic integrated circuits and ultra-broadband semiconductor quantum-dot lasers". Professor Ooi is an excellent presenter and his paper was very well received.

On July 19th, Prof. Ken-ya Hashimoto, an EDS DL from the Graduate School of Engineering, Dept. Electrical and Electronic Engineering, Chiba University, Japan, presented a talk on "Acoustical Wave Devices". Professor Ken-ya gave an excellent overview of the technical and the economic status of SAW devices, particularly for the cell phone industry.

We would like to thank PSDC and Motorola for their support of our Chapter.

ED SJCE Student Branch

- by P. M. Pavan

The Chapter conducted the following events this quarter:

A talk was conducted by the student chapter which was hosted by Dr. Partha Ray (Director, National Semiconductors). The topic was "Fundamental of Quantum Electron Devices" in which a detailed explanation was given on the working of semiconductor devices based on the concept of "Quantum Mechanics". The talk started with a brief introduction of the semiconductor industry, followed by explanations on the wave nature of electrons and based on the similar concept, explanations on the "diode as a quantum Mechanical device".

A Workshop was conducted for the students on 8051 μ controller, in which they were taught about the subject regarding the practical aspect of it. At the end of the course the students are expected to come out with a project regarding the same.

A visit to the "Fabrication Lab" in the ECE Department of the Indian Institute of Science, Bangalore, was made by the students in which they were guided by Dr. Navakanta Bhat (Prof. ECE Dept IISc), who explained the detailed working procedure of the Fabrication process.

REL/CPMT/ED Singapore

- by Alastair Trigg

In July, the Rel/CPMT/ED Singapore Chapter and ED/SSC Hong Kong Chapter jointly organized the 13th

Workshop and IEEE EDS Mini-colloquium on NANometer CMOS Technology (WIMNACT) in Hong Kong on 23 July and Singapore on the 25th. The workshops were co-sponsored by the EDS Distinguished Lecturer (DL) Program. DLs from Singapore, Hong Kong, USA, and India presented talks at the Singapore workshop. This first attempt at organizing joint mini-colloquia proved very successful, attracting 70 people in Singapore and was an efficient use of travel funds.

Following the workshop, Prof. Juin Liou gave a one-day short course on "Electrostatic Discharge (ESD) Protection in BiCMOS/CMOS Technology" on 26 July. Earlier on 27 June, Prof. Mansun Chan came to Singapore and gave a DL talk on "IC Industry in China: Challenges and Opportunities".

This year, the Chapter's flagship conference on failure analysis, the International Symposium on the Physical and Failure Analysis of Integrated Circuits 2007, was held on July 11-13 in Banga-

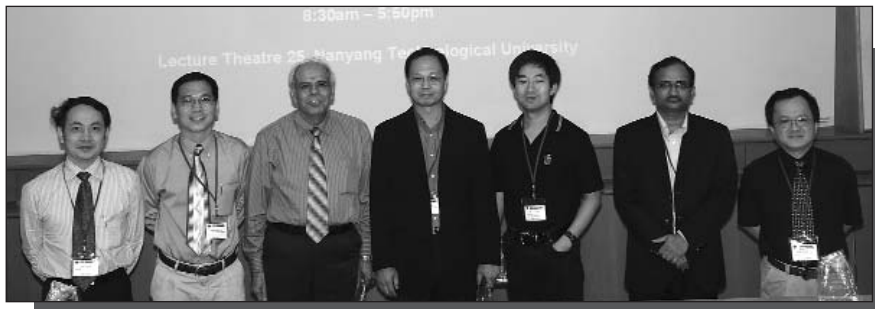
lore, India. It was organized by the IEEE ED/SSC Bangalore Chapter and co-sponsored by the IEEE Rel/CPMT/ED Singapore Chapter. Full details can be found at: <http://ewh.ieee.org/reg/10/ipfa/html/2007/index.htm>.

IPFA 2008 will be held in Singapore from July 7-11, 2008. The call for papers is available at <http://www.ewh.ieee.org/soc/cpmt/singapore/>.

The Chapter's packaging conference, the 9th Electronics Packaging Technology Conference (EPTC 2007) will be held in Singapore from 10-12 December. Full details of EPTC can be found at the website: <http://eptc2007.conf.org/>.

Mr. Li Wei, a student from the School of Electrical and Electronic Engineering, Nanyang Technological University (NTU) in Singapore, won an inaugural prestigious 2007 IEEE Electron Devices Society Masters Student Fellowship. Only five awards, each worth US\$2000, are given worldwide each year.

~ Xing Zhou, Editor



DL speakers at the 13th WIMNACT-Singapore. From left to right: Xing Zhou, Kin-Leong Pey, Vijay Arora, Juin Liou, Mansun Chan, Ramgopal Rao, Chih-Hang Tung



Dr. Partha Ray giving a talk on Fundamentals of Quantum Electron Devices, at the ED SJCE Student Branch Chapter



From left: A/Prof Yeo Kiat Seng, A/Prof Tan Cher Ming (supervisor), Li Wei, and A/P Pey Kin Leong (nominator)

EDS MEETINGS CALENDAR

(AS OF NOVEMBER 7, 2007)

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

January 4 - 8, 2008, T **International Conference on VLSI Design**, Location: HICC, Hyderabad, India, Contact: VLSI Secretariat, E-Mail: secretary@vlsiconference.com, Deadline: 7/23/07, www: www.vlsiconference.com/vlsi2008

January 22 - 24, 2008, T **IEEE Radio and Wireless Symposium**, Location: Long Beach Convention Center, Orlando, FL, USA, Contact: Tom Weller, E-Mail: weller@eng.usf.edu, Deadline: 7/13/07, www: <http://rawcon.org/index.html>

January 22 - 24, 2008, T **IEEE Wireless and Microwave Technology Conference**, Location: Long Beach Convention Center, Orlando, FL, USA, Contact: Aly Fathy, E-Mail: fathy@ece.utk.edu, Deadline: 7/20/07, www: <http://rawcon.org/index.html>

February 3 - 7, 2008, T **IEEE International Solid-State Circuits Conference**, Location: San Francisco Marriott, San Francisco, CA, USA, Contact: Diane Melton, E-Mail: isscc@courtesyassoc.com, Deadline: 9/17/07, www: www.isscc.org/isscc

February 25 - 29, 2008, T **International Conference on Nanoscience and Nanotechnology**, Location: Melbourne Convention Centre, Melbourne, Australia, Contact: Paul Mulvaney, E-Mail: mulvaney@unimelb.edu.au, Deadline: 9/21/07, www: <http://www.ausnano.net/>

March 12 - 14, 2008, T **Workshop on Ultimate Integration of Silicon Devices**, Location: Palazzo Antonini, Udine, Italy, Contact: Luca Selmi, E-Mail: luca.selmi@uniud.it, Deadline: 1/18/08, www: <http://www.ulis-conference.org/2008/index.html>

March 15 - 17, 2008, T **International Semiconductor Technology Conference**, Location: Holiday Inn Pudong Shanghai China, Shanghai, China, Contact: Beibei Li, E-Mail: emmaxu@ecsasia.org, Deadline: 10/15/07, www: www.ecsistc.org

March 17 - 19, 2008, 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: 9/30/07, www: <http://www.isqed.org/>

March 24 - 28, 2008, T **International Scientific & Practical Conference of Students, Post Graduates & Young Scientists "Modern Technique & Technology"**, Location: Tomsk Polytechnic University, Tomsk, Russia, Contact: Lyudmila Zolnikova, E-Mail: mtt_eng@tpu.ru, Deadline: 2/15/08, www: www.tpu.ru/files/event/ctt-eng.doc

March 24 - 27, 2008, T **IEEE International Nanoelectronics Conference**, Location: Riverfront Business Hotel, Shanghai, China, Contact: Cher Tan, E-Mail: ecmtan@ntu.edu.sg, Deadline: 9/18/07, www: www.ieeenec.org

April 16 - 17, 2008, T **IEEE International Conference on RFID**, Location: The Venetian, Las Vegas, NV, USA, Contact: Dilip Kotak, E-Mail: dilip.kotak@shaw.ca, Deadline: 11/21/07, www: www.ieee-rfid.org/2008

April 21 - 24, 2008, T **International Conference on Microwave and Millimeter Wave Technology**, Location: Nanjing, China, Contact: Wei Hong, E-Mail: weihong@seu.edu.cn, Deadline: Not Available, www: Not Available

April 21 - 23, 2008, T **International Symposium on VLSI Technology, Systems and Applications**, Location: Ambassador Hotel Hsinchu, Hsinchu, Taiwan, Contact: Clara Wu, E-Mail: clara@itri.org.tw, Deadline: 10/15/07, www: <http://vlsitsa.itri.org.tw/2008/general>

April 22 - 24, 2008, @ **IEEE International Vacuum Electronics Conference**, Location: Portola Plaza Hotel, Monterey, CA, USA, Contact: Ralph Nadell, E-Mail: madell@pcm411.com, Deadline: Not Available, www: <http://www.ivec2008.org/>

April 23 - 25, 2008, T **International Symposium on VLSI Design, Automation and Test**, Location: The Ambassador Hotel-Hsinchu, Hsinchu, Taiwan, Contact: Elodie Ho, E-Mail: elodieho@itri.org.tw, Deadline: 10/15/07, www: <http://vlsidat.itri.org.tw/2008/General/>

April 27, 2008, * **IEEE International Reliability Physics Symposium**, Location: Hyatt Regency Phoenix at Civic Center, Phoenix, AZ, USA,

Contact: John Suehle, E-Mail: john.suehle@nist.gov, Deadline: 10/1/07, www: <http://www.irps.org>

May 11 - 16, 2008, * **IEEE Photovoltaic Specialists Conference**, Location: Manchester Grand Hyatt, San Diego, CA, USA, Contact: Americo Forestieri, E-Mail: pvsc@wowway.com, Deadline: 12/10/07, www: www.33pvsc.org

May 11 - 14, 2008, * **International Conference on Microelectronics**, Location: University of Nis, Nis, Serbia & Montenegro, Contact: Ivica Manic, E-Mail: ivica@elfak.ni.ac.yu, Deadline: 10/20/07, www: <http://miel.elfak.ni.ac.yu>

May 12 - 15, 2008, T **International Electrostatic Discharge Workshop**, Location: Port d'Albret, Plage, France, Contact: Lisa Pimpinella, E-Mail: info@esda.org, Deadline: 11/26/07, www: <http://www.esda.org>

May 15 - 16, 2008, T **International Workshop on Junction Technology**, Location: Hotel Equatorial, Shanghai, China, Contact: Yu-Long Jiang, E-Mail: ylijiang@fudan.edu.cn, Deadline: 1/15/08, www: www.iwjt2008.com

May 18 - 23, 2008, T **International Symposium on Dielectrics for Nanosystems: Materials Science, Processing Reliability & Manufacturing**, Location: Phoenix, AZ, USA, Contact: Amir Zaman, E-Mail: amir.zaman@electrochem.org, Deadline: Not Available, www: <http://www.electrochem.org/index.htm>

May 18 - 21, 2008, * **IEEE Non-Volatile Semiconductor Memory Workshop**, Location: Club Med Opio, France, Contact: Richard Eguchi, E-Mail: richard.eguchi@freescale.com, Deadline: 1/23/08, www: <http://www.ewh.ieee.org/soc/eds/nvsmw/>

May 18 - 21, 2008, T **International Conference on Memory Technology and Design**, Location: VVF "La Badine", Giens, France, Contact: Richard Eguchi, E-Mail: richard.eguchi@freescale.com, Deadline: 1/23/08, www: www.ewh.ieee.org/soc/eds/nvsmw

May 18 - 22, 2008, @ **IEEE International Symposium on Power Semiconductor Devices & Integrated Circuits**, Location: Wyndham Orlando Resort, Orlando, FL, USA, Contact: Don Disney, E-Mail: ddisney@analog-ictech.com, Deadline: 11/11/07, www: www.ecse.rpi.edu/conf/ispd08

May 21 - 23, 2008, T **International Conference on Microwaves, Radar and Wireless Communication**, Location: Poznan, Poland, Contact: Edward Sedek, E-Mail: sedek@pit.edu.pl, Deadline: 1/5/08, www: www.irs.edu.pl/irs2008.html

May 24 - 27, 2008, @ **International Conference on Microelectronic Test Structures**, Location: University of Edinburgh, Edinburgh, United Kingdom, Contact: Les Haworth, E-Mail: Les.Haworth@ee.ed.ac.uk, Deadline: 9/14/07, www: http://www.see.ed.ac.uk/ICMTS/

May 25 - 29, 2008, @ **International Conference on Indium Phosphide and Related Materials**, Location: Palais des congres Versailles, Versailles, France, Contact: Beatrice Valdayron, E-Mail: beatrice.valdayron@see.asso.fr, Deadline: Not Available, www: http://www.ieee.org/portals/site/leos/

May 27 - 31, 2008, T **International Power Modulator Symposium**, Location: Mandalay, Bay Resort & Casino, Las Vegas, NV, USA, Contact: Teresa Stewart, E-Mail: tstewart@cavs.msstate.edu, Deadline: Not Available, www: www.cavs.msstate.edu/pmc2008

June 2 - 6, 2008, T **International Conference on Unsolved Problems of Noise**, Location: Lyon, France, Contact: Lino Reggiani, E-Mail: lino.reggiani@unile.it, Deadline: Not Available, www: Not Available

June 8 - 13, 2008, T **International Conference on Ion Implantation Technology**, Location: Monterey Conference Center, Monterey, CA, USA, Contact: Susan Felch, E-Mail: susan_felch@amat.com, Deadline: 12/15/07, www: http://www.iit2008.com/

June 15 - 17, 2008, T **IEEE Radio Frequency Integrated Circuits Symposium**, Location: George World Congress Center, Atlanta, GA, USA, Contact: Jenshan Lin, E-Mail: jenshan@ieee.org, Deadline: 1/3/08, www: www.rfic2008.org

June 17 - 19, 2008, @ **IEEE Symposium on VLSI Technology**, Location: Hilton Hawaiian Village, Honolulu, HI, USA, Contact: Phyllis Mahoney,

E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: www.vlsisymposium.org

June 18 - 20, 2008, T **IEEE Symposium on VLSI Circuits**, Location: Hilton Hawaiian Village, Honolulu, HI, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: www.vlsisymposium.org

June 19 - 21, 2008, T **International MIXDES Conference**, Location: Poznan, Poland, Contact: Mariusz Orlikowski, E-Mail: mariusz-zo@dmcs.p.lodz.pl, Deadline: 2/29/08, www: http://www.mixdes.org

July 2008, T **Conference on Optoelectronic and Microelectronic Materials & Devices**, Location: Sidney, Australia, Contact: Chennupati Jagadish, E-Mail: chennupati.jagadish@anu.edu.au, Deadline: Not Available, www: Not Available

July 1 - 5, 2008, T **International Siberian Workshop and Tutorial on Electron Devices and Materials**, Location: Novosibirsk State Technical University, Novosibirsk, Russia, Contact: Alexander Gridchin, E-Mail: ieeensk@yandex.ru, Deadline: 3/15/08, www: http://www.nstu.ru/edm

July 6 - 11, 2008, T **International Conference on High-Power Particle Beams**, Location: Inst. Of Fluid Physics China Academy of Eng. Phys., Xian, China, Contact: JianJun Deng, E-Mail: djileap@my-public.sc.cninfo.net, Deadline: 2/29/08, www: http://ifp.caep.ac.cn/beams2008/

July 7 - 11, 2008, T **IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits**, Location: Singapore, China, Contact: Tung Chih-Hang, E-Mail: chih-hang@ime.a-star.edu.sg, Deadline: Not Available, www: Not Available

July 13 - 16, 2008, T **University/Government/Industry Microelectronics Symposium**, Location: University of Louisville, Louisville, KY, USA, Contact: Kevin Walsh, E-Mail: walsh@louisville.edu or walsh@ieee.org, Deadline: Not Available, www: www.louisville.edu/micro-nano/UGIM2008

July 21 - 25, 2008, T **European Electromagnetics Conference**, Location: Swiss Federal Inst. Of Technology, Lausanne, Switzerland, Contact: Farhad Rachidi, E-Mail: farhad.rachidi@epfl.ch, Deadline: 1/31/08, www: www.euroem.org

July 27 - August 1, 2008, T **International Conference on the Physics of Semiconductors**

Location: Rio de Janeiro, Brazil, Contact: ICPS, E-Mail: icps2008@cetuc.puc-rio.br, Deadline: 3/1/08, www: www.icps2008.org

August 5 - 7, 2008, T **Lester Eastman Biennial Conference on High Performance Devices**, Location: University of Delaware, Newark, DE, USA, Contact: Michael Shur, E-Mail: shurm@rpi.edu, Deadline: 5/1/08, www: http://nina.ecse.rpi.edu/shur/EastmanConference/

August 18 - 21, 2008, T **IEEE Conference on Nanotechnology**, Location: Sheraton Hotel & Arlington Convention Center, Arlington, TX, USA, Contact: Supriyo Bandyopadhyay, E-Mail: sbandy@vcu.edu, Deadline: 11/16/07, www: http://www.ehw.ieee.org/r5/fort_worth/nano2008.html

August 20 - 24, 2008, T **International Conference on Hot-Wire (Cat-CVD) Process**, Location: MIT, Cambridge, MA, USA, Contact: Karen Gleason, E-Mail: kkgleasn@mit.edu, Deadline: 1/15/08, www: http://web.mit.edu/hwcvd5/

September 1 - 4, 2008, T **Symposium on Microelectronics Technology & Devices**, Location: Rio Othon Palace, Gramado, Brazil, Contact: Jacobus Swart, E-Mail: jacobus@fee.uni-camp.br, Deadline: 3/19/08, www: www.sbmicro.org.br/sbmicro

September 7 - 11, 2008, T **Electrical Overstress/Electrostatic Discharge Symposium**, Location: Westin La Paloma, Tucson, AZ, USA, Contact: Lisa Pimpinella, E-Mail: info@esda.org, Deadline: 1/11/08, www: http://www.esda.org/index.htm

September 9 - 11, 2008, @ **International Conference on Simulation of Semiconductor Processes and Devices**, Location: Yumoto Fujiya Hotel, Hakone-machi, Japan, Contact: Kazuya Matsuzawa, E-Mail: kazuya.matsuzawa@toshiba.co.jp, Deadline: 3/1/08, www: http://www6.eie.eng.osaka-u.ac.jp/sispad/2008/

September 15 - 19, 2008, T **European Solid-State Device Research Conference**, Location: Edinburgh International Conference Centre, Scotland, Contact: Giorgio Baccarani, E-Mail: gbaccarani@deis.unibo.it, Deadline: Not Available, www: http://www.essderc.org/en/page/home.aspx

September 21 - 24, 2008, T **IEEE Custom Integrated Circuits Conference**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Melissa Widerkehr, E-Mail: melissaw@widerkehr.com, Deadline: Not Available, www: http://www.ieee-cicc.org



IEEE MENTORING CONNECTIONTM PROGRAM SEEKS MEMBERS TO MENTOR YOUNG PROFESSIONALS

One of the top IEEE Societies with young professional members includes the IEEE Electron Devices Society. Many of these members would appreciate the opportunity to have an "online" mentor to help guide them in their career planning and professional development. Mentor participation in the IEEE Mentoring Connection Program is open to all IEEE members above the grade of Student Member. Gary Hinkle, a mentor in the program, says "Helping young engineers develop in their careers is very rewarding. Working with some of

these individuals has proven to be quite a challenge, because of the diversity among those seeking mentors. I'm glad to be contributing to this program."

The program enables the mentee to select their mentoring partner online from a list of individuals who have volunteered to serve as mentors. After mentors are identified as a potential match, they are contacted and asked to begin establishing a relationship. Interested members can visit <http://www.ieee.org/web/membership/mentoring/index.html> for information on the roles and respon-

sibilities of each mentoring partner, including additional program information and a FAQ page. Potential mentors are asked to review the time and effort commitment to the program necessary to ensure a successful mentoring partnership. To access the IEEE Mentoring Connection site, please go to <http://www.mentoring-connection.com> and use the Group ID "IEEE2006" to enter. Once you enter the site, you will need to set your own user id and password.

If you have any questions, please contact Cathy Downer, Regional Activities, at c.downer@ieee.org.