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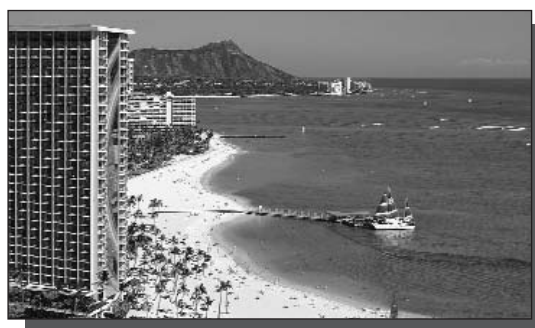
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2008 IEEE SYMPOSIUM ON VLSI TECHNOLOGY



Hilton Hawaiian Village, Honolulu, Hawaii

The 28th Annual IEEE Symposium on VLSI Technology will be held June 17-19, 2008, at the Hilton Hawaiian Village in Honolulu, Hawaii. The VLSI Technology Symposium is jointly sponsored by the IEEE Electron Devices Society (EDS) and the Japan Society of Applied Physics (JSAP).

The VLSI Symposium is well recognized as one of the premiere conferences on semiconductor technology, and research results presented at the conference represent a broad spectrum of VLSI technology topics, including:

- New concepts and breakthroughs in VLSI devices and processes
- New functional devices including quantum effect devices with possible VLSI implementation
- Materials innovation for MOSFET and interconnect in VLSI
- Advanced lithography and fine patterning technologies for high density VLSI
- Process/Device modeling of VLSI devices
- Packaging and reliability of VLSI devices
- Theories and fundamentals related to the above devices
- New concepts and technologies for VLSI manufacturing
- Manufacturing/process technology to address variability

In addition to the innovative technical work presented at the conference, a one-day short course on "Logic Technologies for Transitioning from 32nm to 22nm Node" will be offered on the day

(continued on page 6)

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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EDS AdCom Elected Members-at-Large

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

2008	Term	2009	Term	2010	Term
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S. Tyagi	(1)				

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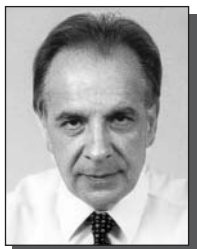
Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. The e-mail addresses of these individuals are listed on this page. Whenever possible, e-mail is the preferred form of submission.

Newsletter Deadlines

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

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.

MESSAGE FROM THE EDS NEWSLETTER EDITOR-IN-CHIEF



Ninoslav D.
Stojadinovic

I am writing this message after a lapse of more than a year. It is sometimes astonishing to see how quickly time goes by. As professionals, all of us are very busy in our work. I hope that this issue comes at a very prosperous time in your career.

I would like to take this opportunity to thank three outgoing Regional Editors for outstanding service to the Newsletter and Electron Devices community. They are Sunit Tyagi (Regions 5 & 6 – Southwestern and Western USA), Alexander Gridchin (Region 8 – Eastern Europe and the former Soviet Union), and Andrzej Napieralski (Region 8 – Scandinavia and Central Europe). Their outstanding voluntary contributions for the past six years, as regional editors, are exemplary to the rest of us. Replacing them on the Newsletter Editorial Staff are Samar Saha, Tomislav Suligoj and Zygmunt Ciota, respectively, whose biographies follow. It is my pleasure to welcome them as new editors for the *EDS Newsletter*.

Samar Saha received the M.S.



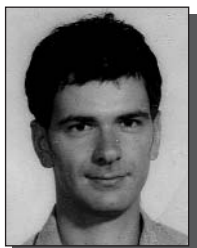
degree in Engineering Management from Stanford University, Stanford, CA, USA and the Ph.D. degree in Physics from Gauhati University, Guwahati, India.

He was an Assistant Professor with the Electrical Engineering Department, Southern Illinois University, Carbondale, IL, and Auburn University, Auburn, AL. Since 1984 he has worked in various positions with the National Semiconductor, LSI Logic, Texas Instruments, Philips Semiconduc-

tors, Silicon Storage Technology, and Synopsys. He is, currently, a member of the Technical Staff with the DSM Solutions and an Adjunct Professor with the Electrical Engineering Department, Santa Clara University, Santa Clara, CA. His research interests include nanoscale device and process architecture, Technology CAD, Compact modeling, and TCAD and R&D management. He has authored more than 70 research papers and holds four US patents.

Dr. Saha is a Senior Member of IEEE and Distinguished Lecturer of Electron Devices Society (EDS). He was a guest Editor of the Special Issue of the *IEEE Transactions on Electron Devices* on "Advanced Compact Models and 45-nm Modeling Challenges." He is the Editor-In-Chief of IEEE QuestEDS, an EDS representative to the Editorial steering committee of *IEEE Transactions on Semiconductor Manufacturing*, the Chair of IEEE EDS Compact Modeling Technical Committee, the Chair of EDS SRC-NAW, a member of EDS publications committee, an EDS representative to the Council of Electronic Design Automation, and the Chair of IEEE EDS Santa Clara Valley chapter.

Tomislav Suligoj was born in Zagreb, Croatia in 1972. He received the B.S., M.S. and Ph.D. degrees from the Faculty of Electrical Engineering and Computing, University of Zagreb, in 1995, 1998 and 2001, respectively.



In 2000-2001 he was a Visiting Fulbright Scholar at the Device Research Laboratory, Department of Electrical Engineering, University of California, Los Angeles (UCLA). From Spring 2002 to Summer 2003, he was a

Visiting Scholar at the Department of Electrical and Electronic Engineering, Hong Kong University of Science and Technology, where he conducted the research and taught. From Fall 2003, he has been with the Faculty of Electrical Engineering and Computing, University of Zagreb, where he is currently an Assistant Professor. He has been teaching the undergraduate and graduate courses in the field of Microelectronics, Semiconductor Fabrication, and IC Design. His research interests include the development of the novel high-performance Si/SiGe devices. His current research is focused on simulation, optimization, fabrication and electrical characterization of ultra small vertical and pillar-like MOSFETs and advanced silicon-based bipolar transistor structures. He has published more than 40 papers in technical journals and conferences in the area of electron devices and holds two patents.

Dr. Suligoj received the Chancellor's Award for Undergraduate work and two Faculty Medals for the outstanding Master and Ph.D. Theses. He was awarded the Fulbright scholarship in 1999 and received the Young Investigator Award by the Association of the University professors in 2003 and the Young Scientist Award from the Croatian Academy of Engineering in 2006.

Zygmunt Ciota was born in Gryfice, Poland, on February 21, 1949. He received the M.Sc., Ph.D. and D.Sc. degrees from Technical University of Lodz in 1973, 1984 and 1996 respectively. Since 1973 until 1979 he was



(continued on page 16)

UPCOMING TECHNICAL MEETINGS

2008 IEEE INTERNATIONAL INTERCONNECT TECHNOLOGY CONFERENCE (IITC)

TO FOCUS ON 3-D TECHNOLOGIES, UNIT PROCESSES AND PROCESS MODELING

As it enters its second decade, the EDS-sponsored IEEE International Interconnect Technology Conference remains the world's premier forum dedicated to the advancement of interconnect solutions. But the 11th annual edition, to be held June 1-4 in Burlingame, CA, marks a break with the past. This year's program will feature an entire session dedicated to 3-D structures and techniques, along with other new sessions devoted to process modeling studies and to in-depth explorations of back-end unit processes and materials. These will include detailed presentations on specific topics such as CMP, copper plating, patterning, etching and all other unit processes associated with interconnect technology, incorporating discussion of relevant and specific manufacturing issues.

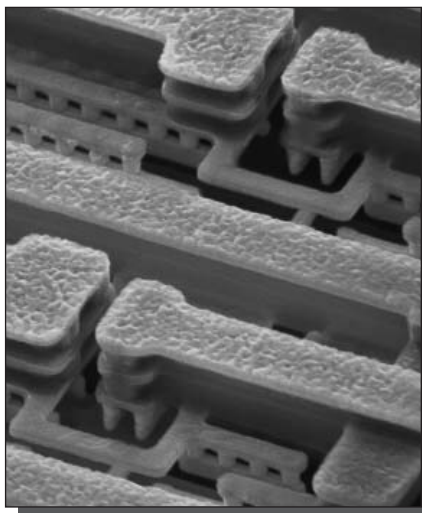
While the IITC has featured presentations in these areas in the past, these topics will assume a larger and more prominent role beginning this year, in keeping with the changing interconnect developments and requirements of the semiconductor and photonics industries. There also will be many presentations describing state-of-the-art integration techniques.

In addition, true to the word "International" in its name, the IITC will begin rotating among locations in Asia, Europe and the U.S., beginning with the 2009 conference.

IITC 2008 will be held June 2-4 at the San Francisco Airport Hyatt Regency Hotel, conveniently located 20 minutes from both Silicon Valley and downtown San Francisco. It will be preceded by a Short Course on leading-edge interconnect technology on Sunday, June 1. The IITC is the world's leading forum where professionals in semiconductor processing, interconnect design, academia and equipment development gather, to present, discuss and debate exciting

new science and technology through oral and poster presentations, exhibits and supplier seminars.

"Three-dimensional interconnect architectures may represent one way we can achieve the performance and circuit-density advantages of scaling without actually having to shrink



transistors," said Dr. Michael Shapiro, IITC 2008 Publicity Chair and Senior Technical Staff Member/Chief Engineer for 3D Development at IBM. "We have had 3-D papers at IITC previously, but they were scattered throughout the program. This year, we will have at least one whole session devoted to 3-D, along with two invited speakers addressing important aspects of the topic, and our desire is to attract papers focusing on 3-D silicon processes as opposed to packaging."

"Besides the 3-D area, IITC 2008 will offer new presentations that hone into the details of individual unit processes and materials, including CMP, copper plating, CVD, metrology and so on. For example, instead of a presentation offering an overview of how copper lines are

integrated into a wiring structure, a presentation might actually describe the chemistry behind the copper plating process. This level of detail will provide IITC attendees with the knowledge they need to advance the state-of-the-art in interconnect, which is the conference's entire purpose," Shapiro said.

Presentations

Oral and poster presentations at IITC 2008 will include the following topics:

3D Processes and Integration

- Materials, process integration, 3D with memory, interactions with packaging, reliability

Materials and Unit Processes

- Dielectric materials (low k, high k, ARCs, etc.) and associated deposition processes (vapor deposition, CVD, spin-on, etc.)
- Metal deposition processes/equipment (PVD, CVD, ALD, electroplating, etc.) planarization processes for dielectrics and metals, equipment and metrology issues. Alternative planarization techniques
- Interconnect specific patterning processes (lithography, etch, etc.) including wet/dry strip and cleaning
- Novel or improved tools for metrology and characterization applicable to interconnect

Process Integration

- Multilevel interconnect processes, clustered processes, novel interconnect structures, contact/via integration, metal barrier and materials interface issues, etc.
- Integration processes and issues specific to logic or memory
- Papers on novel non-volatile, interconnect embedded memories (PCM, resistive, etc.)

Process Modeling

- CMP, metal/dielectric deposition and etching processes, PVD, CVD, electroplating, etc.

Reliability

- Metal electromigration and stress voiding, dielectric integrity and mechanical stability, thermal effects, passivation issues, interconnect reliability prediction/modeling.

Interconnect Systems

- Interconnect performance modeling and high frequency characterization
- Interconnect system integration, novel architectures and advanced interconnect concepts (optical, superconductors, etc.).

System-in-a-Package

- Advanced packaging concepts (flip-chip, chip-on-chip, MCM, etc.)
- Novel IC interconnect - package architectures, interactions with Cu/low k, wafer level packaging, etc.

System-on-a-Chip

- Interconnect, design and processing of SOC, embedded memory processing, materials and integration, RF and high frequency passive components, MEMs and CMOS combinations, noise and cross-talk issues.
- Trade-offs between embedded memory and 3D

Novel Materials and Concepts

- Advanced interconnect concepts, optical interconnect, superconductors, nanotechnology-based interconnects, etc.

Short Course

The popular IITC Short Course on Sunday, June 1, will provide a unique venue for learning and professional interaction. It will address advanced interconnect process, design and reliability issues. Attendees benefit from a combination of tutorials on interconnect fundamentals, briefings on the latest interconnect technology advances, and direct interaction with experts actively working in the field.

Supplier Exhibits and Seminars

Supplier exhibits and seminars are included as an integral part of the IITC technical program and will be held on the first and second days of the conference. These exhibits and seminars offer additional learning and networking opportunities, and provide alternative forums to address

specific technological challenges.

Late-News Papers:

A limited number of papers reporting the latest breakthroughs may be accepted as late news papers. The deadline for receipt of submissions is April 11, 2008

The IITC conference website is <http://www.ieee.org/conference/iitc>. For additional information and inquiries regarding supplier exhibits and seminars, please contact Wendy Walker, IITC Administrator at +1 301-527-0900 Ext. 104, Fax: +1-301-527-0994, or email: iitc@his.com.

General Co-Chairs of IITC 2008: Gary Ray, Intel Corporation, Santa Clara, CA; Kuniko Kikut, NEC Electronics Corporation, Kanagawa, Japan; Ivo Raaijmakers, ASM International, Bilthoven, The Netherlands.

*Michael Shapiro
2008 IITC Publicity Chair
IBM
Austin, TX, USA*

2008 IEEE INTERNATIONAL INTERDISCIPLINARY INTERSOCIETY CONFERENCE ON PORTABLE INFORMATION DEVICES (PORTABLE)

The Second IEEE International Interdisciplinary Intersociety Conference on Portable Information Devices (PORTABLE'2008) will be held in Jyväskylä, Finland, August 10-14, 2008. Over the past decade, progress in Portable Information Devices (PIDs) have revolutionized the telecommunications, information engineering, and entertainment systems of this decade and have become an essential part of

our everyday life, business and culture. PIDs make possible vastly enhanced lifestyles - from basics such as reading, note taking, or listening to music, to crunching numbers, watching videos, and following news and sports events while on the go. Today's PIDs include cellular phones, personal digital assistants, medical devices, intelligent clothing and iPods. Wearable computers will most likely become PIDs in the foreseeable future. Some devices provide built-in organizers for shopping lists, scheduling and appointments, phone numbers, address book, customer contacts, even games and video display. Hardware and software, both electrical and non-electrical (e.g., materials, mechanical, thermal, environmental, etc.), are equally important in the design, use and reliability of these devices which should be easy to han-

dle and operate, and last a long time.

Like the first PORTABLE'2007 Conference that was held in Orlando, Florida, March 2007, and was a great success, PORTABLE'2008 will bring together 150-200 electrical, materials, mechanical, optical, reliability, industrial and manufacturing engineers and business leaders involved in various



Agora building, the site for Portable 2008 Conference, seen from Lake Jyväsjärvi, one of the lakes in the city area



Alba bridge connection to Agora, Portable 2008 Conference site on the Ylistö Campus of the University of Jyväskylä

types of PIDs, to address and discuss the state-of-the-art, challenges, attributes and pitfalls in PID related areas of engineering and applied science. Like PORTABLE'2007, PORTABLE'2008 is an intersociety event sponsored by the IEEE Vehicular Technology Society (VTS), IEEE Components Packaging and Manufacturing Technology (CPMT) Society, IEEE Electron Devices Society (EDS), and the IEEE Systems, Man, and Cybernetics Society (SMCS). PORTABLE 2008 is technically co-sponsored by the Nokia Corp., University of California at Santa Cruz (UCSC), the

University of Maryland at College Park (UMD), the IEEE Engineering in Medicine and Biology Society (EMBS) and IEEE Women in Engineering Society (WES).

PORTABLE'2008 is a three day event that includes technical papers, eight half-day tutorials (short courses), key-note presentations and invited talks, state-of-the-art- and business-related panel discussions and technology exhibits/demonstrations.

A Technical Committee on the Portable Information Devices has been formed by the IEEE VTS. We are invit-

ing all those who are interested in this area of the technology and feel that they could contribute to the activities of such a committee.

We look forward to seeing you in Jyväskylä, Finland, on August 10 – 14, 2008. For complete program information contact Dr. E. Suhir at suhire@aol.com or visit the conference web site at: www.portable2008.com.

*Ephraim Suhir,
2008 General Co-Chair,
University of California
Santa Cruz, CA*

2008 IEEE SYMPOSIUM ON VLSI TECHNOLOGY

(continued from page 1)

preceding the conference, Monday, June 16th. This short course offers an excellent opportunity for attendees to learn about the latest advances in semiconductor device and process technologies from a series of tutorials presented by industry experts.

Also preceding the conference is a satellite workshop on Silicon Nanoelectronics, which will be held at the Hilton Hawaiian Village on June 15-16. This workshop is sponsored by the Electron Devices Society and covers all aspects of silicon-based information. Visit the website <http://www.fulton.asu.edu/~nano/SNW.htm>.

One of the unique strengths of the VLSI Technology Symposium is its association with the Symposium on VLSI Circuits, which is held each year at the same location during the same week. The 2008 Symposium on VLSI Circuits will also be held at the Hilton Hawaiian Village on June 18-20, with a circuits-related short course offered on June 17. In addition, a joint "Rump Session" on a topic of interest to both technologists and circuit designers will be held. This joint session will complement two additional rump sessions held the same evening on key issues of interest to the VLSI technical community.

Among other unique features that differentiate the Symposium on VLSI Technology are its spirit of international collaboration and emphasis on creating an informal atmosphere

where new ideas and technology directions can be debated and discussed. The location of the VLSI Symposium typically alternates between the United States and Japan, giving it a true international setting. Close to 800 participants from around the world attended the 2007 Technology Symposium in scenic Kyoto, Japan.

The 2008 venue in Honolulu, Hawaii also offers many scenic and cultural attractions. Travel to the other surrounding Hawaiian islands, each of which offers a unique setting and flavor, is also relatively easy. A luau banquet hosted by the Symposia offers attendees an opportunity to further experience Polynesian food and culture. The Hilton Hawaiian Village hotel, located on world-famous Waikiki Beach, is a world-class facility that offers a wide range of recreational opportunities. The Hotel is easily accessible by taxi from nearby Honolulu International Airport.

For further information, please visit our conference web site at <http://www.vlsisymposium.org>, or contact the following conference secretariats:

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We cordially invite you to attend the 2008 Symposium on VLSI Technology to learn about recent state-of-the-art advancements in semiconductor technology and take advantage of the many opportunities for technical and cultural interactions offered by the Symposium.

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UCLA*

*Symposium Co-Chairman,
Tohru Mogami,
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*Program Chairman,
Charles Dennison,
Ovonyx, Inc.*

*Program Co-Chairman,
Masaaki Niwa,
Matsushita Electric Ind, Co., Ltd*

SOCIETY NEWS

DECEMBER 2007 ADCom MEETING SUMMARY



John K. Lowell

Hilton Hotel in conjunction with the International Electron Devices Meeting (IEDM).

Executive Reports

Recognizing outgoing members of the EDS roster, Ade passed out "Debt of Gratitude" certificates to Cary Yang (Fellows Chair), John Lowell (Newsletter Oversight Chair), Leda Lunardi (JLT Representative) and Paul Yu (NAW SRC Chair). Also recognized were IEEE USA representatives Rick Dill and Agis Iliadis, and Distinguished Lecturers Yuhua Cheng, Jamal Deen, Agis Iliadis, James Kuo, and Juin Liou. Cor Claey's received a pin as the incoming EDS President and Ade received a Jr. Past President pin. Receiving recognition awards from the IEEE EDS office were Laura Riello (17 years of service) and William Van Der Vort (Herz Award). Outgoing officers Ade Adesida and John Lowell also received certificates.

With the 2008 Ex-Officio appointments approved, Ade's introductory address discussed TAB actions from the June 2007 meeting, where two actions, the formation of an IEEE Committee on Earth Observations, and the postponement of the formation of Biometrics Council, were approved for 2008. TAB also conducted a strategy session on the issue, "How can IEEE Technical Activities and the IEEE TAB provide support to early career development". A TAB committee will define a plan on this issue for their November 2007 meeting. In reviewing the November 2007 TAB meeting, Ade announced the official formation of the Biometrics Council, follow-ups to the career devel-

opment strategy session in June, and a resolution on the topic of how technical societies can assist technical societies and councils on membership value.

Treasurer, Steve Parke reported that EDS will generate a final 2007 surplus of about \$300K [Note: All finances given in \$US] bringing the expected EDS reserves to \$6.4M. However, this does not include investment income so the final amount will be higher. Conference income in 2007 closed down at \$320K, and Book Broker profits were \$1.1M. This year, EDS was charged \$1.2K in IEEE overhead costs under the new infrastructure model which Steve reviewed. EDS membership fees will increase by \$1 in 2009, AdCom previously approved increases in the subscription costs to T-ED (\$4) and EDL of (\$2) starting in 2009. AdCom approved increases in page counts in 2009 for EDL and T-ED by 100 and 200 pages, respectively.

Cor Claey's, EDS incoming President, in his ExCom report, outlined the new IEEE Indirect Infrastructure model, a proposal to give all EDS Chapters an EDS banner, increased chapter growth, changing the term of office for all ex-officio members from 2 to 3 years, the launch of QuestEDS, new ideas for increasing EDS member benefits, the 2007 GOLD lecture, and that the Spring 2008 AdCom meeting will be in Athens, Greece. Also discussed were a proposed EDS 'Pioneers' website, a new journal called "EDS Express", changes in conference registration rates, the status of the EDS Strategic Plan, a focused Membership Survey, and a plan to encourage delinquent conferences to close their books financially.

EDS Executive Director, Bill Van Der Vort, listed his group's projects completed since the June 2007 meeting. The office's list of projects include working with the EdCom to develop a brochure for the EDS Education Award for distribution at IEDM, coordinating with the Technical Activities V-P and IEEE to compose a member survey to



Ilesanmi 'Ade' Adesida (left), receiving a gift of appreciation for his services as EDS President for 2006 & 2007 from Hiroshi Iwai, EDS Jr. Past President

focus on emerging and waning technical areas, becoming familiar with the new IEEE Membership fulfillment system, leading an EDS office-wide effort to determine requirements for society websites and developing a plan to implement the determined solution, continue working with the Regions/Chapters and Membership VPs to increase EDS presence in China and India focusing on chapters and colloquia, continue the EDS Expert Now initiative, revitalization of the Chapters Partners program, and solicitation of EDS Fellows to become Distinguished Lecturers. In addition, Bill discussed the development of a new chapter finance report to consolidate and summarize EDS expenses relating to the Distinguished Lecturers (DL) program and mini-colloquia, obtained design and cost estimates for an EDS banner, researching the possibilities of converting short course videotapes to CD/DVD possibly offering them as a member benefit, implementation of the Masters Student Fellowship program with the inaugural award being presented at IEDM, and working with the VPs of Education and Regions/Chapters to determine programs to reach out to non-members especially to college students and college-bound individuals. The Executive Office has also been busy with other adhoc efforts by joining with the IRPS committee, and IEEE staff to digitize the legacy years of both

the IRPS Proceedings (1970-87), and the VLSI Technology Symposium (1981-87) and add them to IEEE *Xplore*, working on an IEEE-wide initiative to follow-up with conferences to obtain an *Xplore*-compliant CD of their Proceedings to post them to *Xplore*, obtained approval from IEDM to hold a lecture for GOLD members at this year's meeting, collaborating with the VP of Meetings to obtain data showing meetings from a regional and topical perspective to evaluate new meeting requests, work with the VPs of Meetings and Technical Activities to obtain approvals for four new conferences requesting technical co-sponsorship, evaluated possible establishment of EDS rates for conference registrations that would be lower than IEEE rates, implemented a process for all EDL, T-ED and T-DMR editors to have 3-year terms, and added enhancements to the EDL and T-ED manuscript system to avoid editor assignment overloading. Other publication-related projects include defining the specifications and verification for EDL manuscripts being entered and reviewed using IEEE Manuscript Central, and adding a new electronic service for EDS members called QuestEDS which facilitates the electronic submission of technical questions.

Vice-President Reports

Regions/Chapters V-P, Juin Liou, reported the addition of 12 new chapters in 2007 bringing current total to 141. Prospects for new chapters in 2008 include Italy, Mexico, Moldova, UAE, Germany, Peru, Turkey, India, China, Belarus, Argentina, and Brazil. Juin announced ED Santa Clara (CA, USA) is the EDS "Chapter-of-the-Year" for 2007. A motion to provide (on request) an EDS banner including the IEEE & EDS logos to each chapter was

passed. The total cost to produce the chapter banners is estimated at \$5,870 (which includes shipping). **Membership V-P, Albert Wang**, showed that in July 2007, EDS membership stands at 10,036 members as of 7/31/07, from a 10,780 total in December 2006. Of these, 6,109 are regular members, 3,192 are permanent members, 714 are students, and 21 remain affiliate members. The demographics are shown in the chart below:

Albert remarked that EDS membership is down by 6.3% from 2006 which is in stark contrast to IEEE membership which is up by 2%. Still society membership in general is down by 1.6% overall. Albert reviewed his group's continued efforts at recruitment such as conference onsite credit vouchers, direct mailing programs, Membership Fee Subsidy Program expansion, a focused TIP profile mailing, and material for DL promotion. Also addressed were recent EDS meetings and mini-colloquia in India and China. In the next year, the Membership Committee plans to meet challenges including the negative membership trends in Regions 1-6, and 8, and keep the momentum for membership building in Regions 9 and 10. They are also looking at new chapter-based initiatives for membership, a revised EDS conference registration plan to give EDS members a lower rate than IEEE members, and increased attention to student members. There were several discussions regarding what EDS would do if membership falls below 8000, leveraging chapter increase with member increase, and the potential state of IEEE if technical membership becomes passé.

The agenda by **Renuka Jindal, Publications V-P**, included increased *Xplore* downloads, the increasing

financial contributions of T-ED & EDL, T-ED & EDL impact factors, and decreasing publication expenses. Many AdCom members expressed concern that many authors choose where to place their papers based on the impact factor of journals. EDS must maintain high impact factors to remain attractive to keep the quality high. Winners of the 2006 Rappaport Award are William Lau (Harvard), and (from Univ. Wurzburg, Germany) David Hartmann, Lukas Worschech, and Alfred Forchel. Recipients of the Smith Award for 2006 are (from IBM Microelectronics.) Marwen Khater, David Ahlgren, & Greg Freeman, (from Georgia Inst. Of Technology) John Cressler, Yuan Lu & Ramkumar Krithivasan, and (from Korea University) Jae-Sung Rieh. Renuka remarked that the 2007 Nobel Physics Laureates Peter Gruenberg and Albert Fert were T-ED authors in April 2000 and May 2007, respectively. A proposal to start a new journal called EDS Express was tabled. AdCom felt that there was too much risk in trading off speed of publication for quality. Renuka also reviewed progress with QuestEDS the on-line feedback initiative started this year. To date, 14 responses are received, and 12 replies have been posted. He also made a motion to extend the terms of all standing and technical committee members to three years from two to reduce the workload of the EDS volunteers and Office and to be consistent with the terms of publication editors. The vote was postponed since the change affects the Constitution and Bylaws and it would have been necessary to advise AdCom two weeks before the meeting.

Paul Yu, Education V-P, announced the 2007 EDS Graduate Student Fellowship award winners: Kah-Wee Ang (National Univ. of Singapore); Danijel Dankovic (Univ. of Nis, Serbia); Too-Hung Hou (Cornell Univ., Ithaca, NY); and Chen Yang (Tsinghua Univ., Beijing, China). Winners of the 2007 EDS Master Student Fellowship are: Anuj Madan; Ovidiu Profirescu; Andrew Warren; Li Wei; and Xu Zhao. Paul recognized Distinguished Lecturers who have served for five years or longer, and reviewed the new procedure for chapter funding of mini-collo-

IEEE Region	Count	% of Total
1-6 (United States)	5516	55
7 (Canada)	170	1.7
8 (Europe, Middle East, & Africa)	1,819	18.1
9 (Latin America)	144	1.4
10 (Asia Pacific)	2,287	23.8
Total	10,036	100

EDS Membership Demographics (as of 7/31/07)

quia. In closing, he proposed a motion to fund two new IEEE Expert Now modules at a cost of \$40K which was approved. **Meetings V-P, Jon Can-delaria** got approval for all EDS repeat meetings in 2009 (with two exceptions). EDS supported 158 meetings this year including 26 financially sponsored meetings, 132 that were technically co-sponsored, and none with cooperative support. Jon emphasized that for the period 2001-2006 EDS paid almost \$20K in late fees for conferences that did not close their books on time. He proposed a plan to warn delinquent meetings that they could lose EDS sponsorship if their fiscal irresponsibility continues. In support of the EDS Strategic Plan, the meetings group is developing a database of meetings to explore their calendar, thematic and geographic similarities, and looking to increasingly include new and emerging topics at meetings. **Technical Activities V-P, April Brown**, indicated that she is trying to energize dormant technical committees by having each take on a minimum of two activities a year for which they are responsible. Her group has also been working with IEEE Corporate on developing a survey to be distributed early next year looking at new technical areas and less popular ones in particular. The suggestion was made to include individuals from groups outside EDS such as MRS or APS, and non-EDS members attending IEDM in the survey. To do this would require an increase in the survey budget, so an additional \$25K was approved. **Awards V-P, Al MacRae** presented his annual list of EDS members recognized with major IEEE and EDS awards in 2007, as summarized below.

Also on Al's agenda was a new award for the Best Student Paper at the IRPS meeting. The cost of the recognition (\$500) will be paid by the conference, and the creation of the award was approved by AdCom. Cary Yang announced that Meyya Meyyappan from NASA (Ames) is the 2007 recipient of the EDS Education Award. On the Fellows side, Cary stated that from 56 nominations received, 19 were promoted to Fellow grade (with 14 additional EDS members elected Fellows by other societies).

Award	Recipient/Affiliation
IEEE Medal of Honor	Gordon Moore (Intel)
IEEE Frederick Phillips Award	Gilbert Declerck (IMEC, Belgium)
IEEE Robert Noyce Medal	Paul Grey (UC-Berkeley)
IEEE David Sarnoff Award	James Coleman (Illinois)
IEEE Daniel Noble Award	James Daughton (NVE Corp.), Stuart Parkin (IBM Almaden) & Saied Tehrani (Freescale)
IEEE Judith Resnik Award	Meyya Meyyappan (NASA Ames)
IEEE Leon Kirchmayer Award	Supriyo Dutta (Purdue)
EDS J.J. Ebers Award	Stephen Pearton (Univ. Florida)
EDS Distinguished Service Award	Richard Muller (UC-Berkeley)
EDS Education Award	Meyya Meyyappan (NASA Ames)

EDS Recipients of IEEE and EDS Awards for 2007

Chair Reports

H. S. Philip Wong, Chair of the 2007 IEDM, expects almost 1700 attendees, and reports that the short courses were again well attended. The financials also look good with an expected surplus of ~\$95K to ED. This year there is more emphasis on nanotechnology and emerging device applications than in years past. There was additional discussion on a proposed fee increase for 2008's meeting, reaching out to potential authors, diversity, and recognizing GOLD attendees. EDL Editor-in-Chief, Yuan Taur, says that paper acceptance held again at 40%. The 314 papers published this year are 13% higher than last year's numbers.

Technical Committee (TC) and Publication Reports

Following reports from Regions/ Chapters Officers, Durga Misra (NA West), Jacobus Swart (Latin America), and Xing Zhou (Asia & Pacific), AdCom

was addressed by Samar Saha, Chair of the Compact Modeling Technical Committee. Samar's group has been actively involved in two major meetings this year, and a special issue of T-ED is in the works. Their proposed journal on compact modeling remains on hold. Chair, Enrico Sangiorgi of the TCAD TC, discussed the recent T-ED issue on simulation and modeling of nanostructure devices. Bob Doering, leader of the Semiconductor Manufacturing TC, discussed the work of his group in contributing to publications and conferences in 2007, particularly, ISSM and the International Conference on Frontiers of Characterization and Metrology for Nanoelectronics. He also noted 2007 as the 10th anniversary of the International Technology Roadmap for Semiconductors (ITRS). Division I Director, Steve Hillenius then presented a summary of IEEE action on strategic objectives and membership. IEEE is considering a number of

**The 2007 IEEE Eric Herz
Outstanding Staff
Member Award was
presented to
EDS Executive Director**

William Van Der Vort

**" for leadership, management,
and strategic planning..."**



Motion	Action
Approval of Minutes from June AdCom 2007	Passed
Approval of Ex-Officio Appointments for 2008	Passed
Approve additional \$25K for Membership Survey	Passed
Accept '09 T-ED & EDL Page Counts and Prices	Passed
Approve distribution of requested EDS banners	Passed
Approval of 2009 EDS repeat meetings with exception	Passed
Approval of two new Expert Now Modules (\$40K)	Passed
Approval of New IRPS Best Student Paper Award	Passed
Approval of Gold Lecture at IEDM for 2008 (\$10K)	Passed

Summary of EDS AdCom Motions– December 2007

models for membership options to best maximize their market share. At present a tier model or “a la carte” model is preferred. James Kuo offered a presentation on “Microelectronics in the Orient” looking at the rise of semi manufacturing in that area and the potential for member recruitment. A summary of GOLD activities by Ravi Todi looked at advances made in 2007 with online seminars, conference inclusions, and new online games. This year the first GOLD conference was held at the IEDM 2007. In the future, EDS plans to increase GOLD participation in EDS conferences and

recruit GOLD sub-committee members. *T-ED*, Editor-in-Chief, Doug Verret, reported his publication’s statistics and reported on special issues on spintronics, nanoelectronics devices, power management, and SiC technology. Speaking for *T-SM*, Duane Boning addressed his TC’s involvement with moving to Manuscript Central, conferences, and the selection of a T-SM Best Paper in 2007.

Closing and AdCom Actions Summary

For 2008, your elected EDS officers are:

President, Cor Claeys; President-Elect, Renuka Jindal; Treasurer, Stephen Parke; and Secretary, James Merz. Re-elected AdCom members include J. N. Burghartz (Inst. Of Microelectronics, Stuttgart, Germany), Mansun Chan (Hong Kong Univ. of Science & Technology), Shuji Ikeda (Advanced Technology Development, Austin, TX), Jeffrey Welser (IBM Almaden Research Center, San Jose, CA) and Rebecca Nikolic (Livermore Natl. Laboratory, Livermore, CA). Newly-elected AdCom members are Tian-Ling Ren (Tsinghua University, Beijing, China), and Ravi Todi (IBM, Hopewell Junction, NY).

The next meeting of EDS AdCom will be on Sunday, June 1, 2008, at the Divani Caravel Hotel in Athens, Greece.

In closing as I step down as Secretary after ten glorious years, I would like to express my deepest appreciation to all the EDS officers, EDS Executive Office staff, AdCom members, Committee chairs and members, and to the membership whom I have served.

*John K. Lowell
EDS Secretary
Dallas, TX, USA*

SUMMARY OF CHANGES TO THE EDS CONSTITUTION & BYLAWS

On 14 January 2008, via e-mail vote, the EDS Administrative Committee (AdCom) approved changes to the EDS Constitution & Bylaws. These amendments were then approved in January 2008 by the Chair of the IEEE Technical Activities Board (TAB) and later at the IEEE Technical Activities Board meeting in February 2008. The changes will take effect 30 days following their publication in this copy of the Newsletter (distributed to all EDS members), unless objections are received from at least 5% of the EDS membership. The following is a summary of the changes:

- *Technical Committee Members shall be appointed for a three year term instead of a two year term.*
- *Standing Committee Members (including joint Publication Committee Representatives and IEEE Council/Committee Representatives) shall be appointed for a three year term instead of a two year term.*

The complete EDS Constitution and Bylaws may be obtained from the EDS Executive Office or on the web at www.ieee.org/eds/ (click on Administrative Committee).

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

REPORT ON THE FIRST EDS GOLD EVENT



Ravi M. Todi

On Sunday, December 9, 2007, the Electron Devices Society hosted its first-ever GOLD event in conjunction with the IEEE International Electron Devices Meeting (IEDM) at the Washington Hilton and Towers Hotel. The theme of the event was career development and networking, which was well attended by many GOLD members and students, along with numerous EDS AdCom members. It began with an invited seminar by Mary Ann Boop, Manager for Career Development at IBM, who presented a seminar entitled *Career Development: Imagine the Possibilities*. Mary Ann talked about how to approach career development, whether you are tenured in your profession and want to continue to grow

in your field of expertise, or you want to change your career path but don't know how to start, or you're fresh out of college and are just beginning your career journey. The discussions included how to use mentoring as a means to develop your career, no matter whether you work in a small company or large corporation. She pointed out, how leveraging many relationships throughout your career is instrumental in helping you progress along a career path; develop new expertise and skills - or just using a network to "socialize" within the company.

The seminar was followed by a panel discussion. The panel included the following EDS AdCom members:

- Paul Yu – EDS Vice-President of Educational Activities
- Renuka Jindal – EDS Vice-President of Publications
- Rebecca Nikolic – Elected AdCom Member

- Douglas Verret – Editor-in-Chief, Transactions on Electron Devices
- Jon Candelaria – EDS Vice-President of Meetings

The panelists represented a good mix of different career options. Paul is a professor at the University of California at San Diego and was department chair for several years. Renuka is a professor at the University of Louisiana at Lafayette and had spent the majority of his career at Bell Labs. Rebecca is with Lawrence Livermore National Laboratory. Doug is with Texas Instruments and Jon is working for Motorola. Each of the panelists talked about the changes in their career and gave an insight on the pros and cons of a career option from their experience. They also answered questions from the audience. The event was followed by a networking reception followed by a dinner. At the networking reception young engineers and students got an opportunity to interact with EDS AdCom members.

With the initial feedback that I received during and after the event, I am confident that this was a great success and we do intend to enhance this program for this coming year. If you attended this program and have any suggestions and/or comments, please do not hesitate to contact me at rtodi@ieee.org.

Ravi M. Todi
IEEE GOLD Committee
Representative
IBM Semiconductor Research and
Development Center
East Fishkill, NY, USA



EDS GOLD Event attendees enjoying dinner and networking after the seminar

EDS REGIONS 1-3 & 7 CHAPTERS MEETING SUMMARY

On December 9, 2007, on the sideline of IEDM 2007, the EDS North America East, Regions 1-3 & 7 Sub-Committee held its biannual Chapters Meeting. It was presided over by EDS V-P of Regions/Chapters, Juin Liou and the EDS Subcommittee for

Regions and Chapters (SRC) North America East Chair, Durga Misra. EDS President, Ilesanmi Adesida, EDS President-Elect Cor Claeys and EDS Executive Director, William F. Van Der Vort attended the meeting. The Regions 1-3 & 7 SRC Vice-Chairs,

Murty Polavarapu and Karim Karim were also present at the meeting.

The meeting was started with a welcome address and an opening remark by Durga Misra, SRC Chair of Regions 1-3 & 7. Durga gave an overview and mentioned that the total number of

EDS Chapters in the North America East is 27 out of which 17 are joint chapters; a new ED/SSC joint chapter under the IEEE New York Section was formed in November 2007 and the Orlando Chapter became an independent EDS chapter from a previously joint chapter with Components, Packaging, and Manufacturing Technology (CPMT); in 2007 twenty DL talks and one mini-colloquium was held in the regions. Because of joint efforts between the chapters in Regions 1-3 & 7 and Region 10, at least one new chapter was formed in Region 10.

The meeting was then addressed by Juin J. Liou. He announced the 2007 EDS Chapter of The Year Award was presented to the ED Santa Clara Valley Chapter, for an outstanding record of sustained chapter activities that contribute substantially to the vitality of the Electron Devices Society. He also talked about the history of EDS chapters, chapter statistics, chapter subsidies, new chapters and potential new chapters. The 2007 Santa Clara Valley ED Chapter Chair, Philippe Jansen, then discussed the "Chapter of the Year" award winning activities from July 1, 2006 to June 30, 2007. During this period they organized 11 technical meetings with a wide range of topics covered by distinguished speakers, including 2 ED Distinguished Lecturers with a total attendance of 669 and an average attendance of 61 per meeting. They also organized a full-day symposium on Manufacturing High-K/Metal Gates, Chaired by Jeff Watt, past chair (2006) where talks from 10 experts in the field of High-K/Metal Gates were presented to an audience of more than 150 people. This event received wide press coverage from EE Times to Semiconductor International. The ED Chapter also co-sponsored the 2007 Electronic Materials Symposium with The Minerals, Metals and Materials Society (TMS), a full-day program with talks from 8 outstanding authorities in their fields. The Santa Clara Valley ED Chapter organized a Mini-Colloquium with Santa Clara University SB on Next Generation Devices, which was Chaired by Samar Saha, Vice-Chaired and hosted by Prof. Cary

Yang, Santa Clara University. Talks from 5 ED Distinguished Lecturers and industry experts in the field were presented along with poster presentations by graduating students of Santa Clara University. There were 87 attendees for this Mini-Colloquium. Most presentations were ready for downloading after the event from their website.

The Mid-Hudson ED Chapter Chair, Fernando Guarin, described their chapter activities and the 2007 Mini-Colloquium that they organized prior to IEDM 2007. Murty Polavarapu then outlined the activities of ED Washington & Northern Virginia followed by Slavica Malobabic, Chapter Chair of the ED Orlando Chapter. The activities of the North Jersey Chapter, Ottawa Chapter and Vancouver

Chapter were presented by Durga Misra, Ihsan Erdin and Bonnie Gray, respectively. The Chapter Chair of the newly formed ED/SSC New York Chapter, Ioannis (John) Kymissis, outlined the planned activities for 2008. The presentations were followed by general discussions to improve member benefits to EDS chapters. At the completion of the Chapters meeting a group photograph was taken by all the active participants. The organizational effort of Joyce Lombardini, EDS Business Coordinator was highly appreciated.

*Durga Misra
SRC Chair, Regions 1-3 & 7
New Jersey Institute of Technology
Newark, New Jersey, USA*



Juin J. Liou, EDS Vice-President of Regions/Chapters, speaking on Chapter activities in the regions.



Standing L to R: Fernando Guarin, Paul Siqueira, Ihsan Erdin, Bonnie Gray, Philippe Jansen, Slavica Malobabic, John Kymissis and Ranjeet Pancholy; Seating L to R: Karim Karim, Juin Liou, Durga Misra, Jayasinha Prasad and Murty Polavarapu

2007 EDS CHAPTER OF THE YEAR AWARD

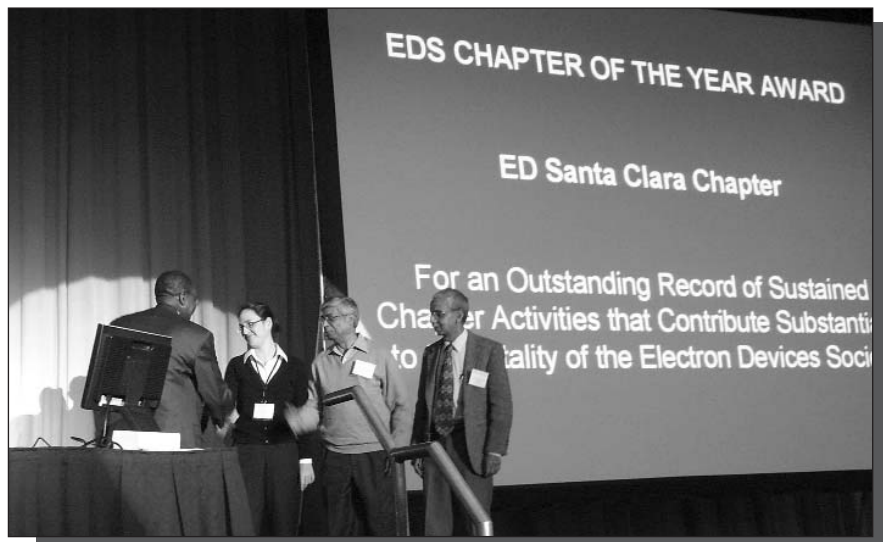
The EDS Chapter of the Year Award is presented annually to recognize an EDS Chapter for the quality and quantity of the activities and programs implemented during the prior July-June period.

On December 10, 2007, at the IEDM held in Washington, D.C., the ED Santa Clara Chapter received the EDS Chapter of the Year Award, which included a certificate and check for \$1,000. The award was received by representatives

of the chapter on behalf of Philippe Jansen, Chapter Chair.

The ED Santa Clara Chapter has been extremely active to stimulate the growth of the Society and to increase the membership value. Over the years the Chapter has recognized well attended symposiums, short courses, distinguished lectures, and mini-colloquia (WIMNACT series). In the past year, the Chapter sponsored and held 11 technical meetings, two symposiums, and a mini-colloquium consisting of 6 talks. There is a strong industrial involvement in the Chapter's activities as reflected in the composition of the Chapters Executive Committee and the speakers of the seminars. I want to congratulate the Chapter and its officers for providing the exemplary contributions and enhanced values to the members of the Electron Devices Society.

*Juin J. Liou
EDS Vice-President of
Regions/Chapters
University of Central Florida
Orlando, FL , USA*



EDS President, Ilesanmi Adesida (left) presenting the 2007 EDS Chapter of the Year Award to members of the ED Santa Clara Chapter, (left to right) Rebecca Nikolic, Chapter Partner, Jayasimha Prasad, Chapter Vice-Chair and Ranjeet Pancholy, Chapter Past-Chair

PVSC WILLIAM R. CHERRY AWARD WINNER



**Professor
Masafumi
Yamaguchi**

will be presented with the William R. Cherry Award at the 33rd Photovoltaic Specialists Conference, being held in

San Diego, California, May 12-16, 2008. Dr. Yamaguchi has made substantial contributions to R&D of photovoltaic technology as a member of the International Energy Agency/Photovoltaic Power System Task II, as a member of the New Sunshine Program Promotion Committee of the Ministry of Economy, International Trade and Industry, and as a Chairman

of Super High-Efficiency Solar Cell Committee of the New Energy and Industrial Technology Development Organization (NEDO).

He has published more than 250 original journal papers and presented at more than 300 International Conferences. Dr. Yamaguchi's research has been recognized by many awards including recently the Best Technical Report Award for contributions to "Next Generation Photovoltaic Technologies" in 2001, the Best Paper Awards at the PVSEC-12 in 2001, WCPEC-3 in 2003, PVSEC-14 in 2004 and in 2005 at the 20th EU-PVSEC and PVSEC-15. Dr. Yamaguchi has been a major force in fostering international cooperation and has served on various committees of the European, Asian,

American and World Photovoltaic Conferences.

This award is named in honor of William R. Cherry, a founder of the photovoltaic community. In the 1950's, he was instrumental in establishing solar cells as the ideal power source for space satellites and for recognizing, advocating, and nurturing the use of photovoltaic systems for terrestrial applications. The William R. Cherry award was instituted in 1980, shortly after his death. The purpose of the award is to recognize engineers and scientists who devote a part of their professional life to the advancement of the technology of photovoltaic energy conversion.

*John D. Meakin
Consultant
Weybridge, VT, USA*

EDS PUBLICATIONS COMMITTEE REPORT



Renuka P. Jindal

Do you have a technical question that you want an answer for? Does the answer have to be quick, reliable and complete given by global experts? Do you not want to pay for this answer? Do you think all this is wishful thinking? Well, as an Electron Devices Society (EDS) member, your wish has been granted. In October 2007, EDS launched a new member service called QuestEDS. To get the answer to your question all you need is your EDS membership number and access to the web. Please visit the URL <http://www.ieee.org/portal/pages/society/eds/membership/QuestEDS.html> and with a few clicks of the mouse your part is done. You will receive an immediate email response stating that your question has been received. In 14 days or earlier you will receive another email informing you that your answer has been posted on the web. What is the catch? The technical question has to be in the Field-of-Interest (FOI) of EDS and for our student members, not a request for help on a take-home assignment or exam. What happens behind the scene? This service is made possible by our dedicated volunteers such as editor-in-chief, Dr. Samar Saha, who fields the question and EDS staff member, Laura Riello, in our EDS office in Piscataway, who does all the housekeeping. And of course, a critical contribution comes from your colleagues on the other side of the globe or perhaps even next door to you who act as "reviewers" when they provide a possible answer to this question. Based on input from technical experts, the EIC composes an answer to the question. This answer is then posted on the web site within 14 days. All questions and answers are

accessible to EDS members only, with no indication as to who asked and who answered the question. Please advertise this new member benefit to fellow members and make good use of this free service.

Like QuestEDS, fruits of information age technologies continue to be harvested. An electronic archive of all of our flagship publications and conferences including the *Transactions on Electron Devices* (T-ED), *Electron Device Letters* (EDL) and International Electron Devices Meeting (IEDM) are available to EDS members. This two-DVD collection, one of them being the archival DVD, is kept current on an annual basis. While the incremental update DVD is produced each year, please purchase your copy of the archival DVD while supplies last. Visit the web site <http://shop.ieee.org/store/> for details on how to purchase and/or subscribe to these exciting products. This reference material is also available to EDS members on-line free-of-charge through IEEE Xplore (<http://ieeexplore.ieee.org/Xplore/guesthome.jsp>). We continue to make progress on a DVD version of the short-courses that were presented in the past at the IEDM. If you can help in providing some technical expertise to develop this into a high-quality low-cost product, please contact me.

Our flagship publications, T-ED and EDL, continue to morph as the electronic-age unfolds and contribute the largest line-item on the EDS budget. Effective January 1, 2008, we started processing all submissions to *Electron Device Letters* using IEEE's web-based "Manuscript Central Author Submission and Peer Review System." To submit manuscripts using this system, please visit <http://mc.manuscriptcentral.com/edl>. In accordance with this new system, please DO NOT send manuscripts directly to the Editor-in-Chief or to the Publications Office. Your submitted manuscript will now be accessed via the Man-

uscript Central. We welcome any suggestions you may have to make this system more user-friendly, efficient and versatile. T-ED will switch to Manuscript Central at a later date after we have had a first-hand experience with the system. Paper subscriptions to both T-ED and EDL continue to decline, being replaced by institutional electronic subscriptions (IEL). The number of WEB hits on IEEE XPLORE for T-ED grew by 18% last year reaching an all time high of close to 1 Million in 2006. EDL WEB hits leveled-off at 400,000 although the impact factor continues to increase. In our editorial board meeting last December in Washington D.C., we set an aggressive goal of doubling the impact factors of T-ED and EDL over the next 10 years. Currently the average processing time stands at 8 months for T-ED and 4 months for EDL. By tightening up the manuscript handling process, we have decided to attempt to shave-off 2-weeks in processing time for EDL. Also, we are currently evaluating the need for a faster turn-around web based publication with a possible name of EDS Express. Another service that continues to be on the back-burner is electronic delivery of a table of contents for EDS publications.

As you can see, publication activity continues to be vibrant benefiting from the technology explosion that is shaking the publication world. I encourage you to become part of this exciting phase by getting directly involved in these activities. We in the Electron Devices Society are looking for enthusiastic and dedicated volunteers to carry us into the exciting future. Please do not hesitate to contact me at r.jindal@ieee.org.

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

EDS VLSI TECHNOLOGY AND CIRCUITS TECHNICAL COMMITTEE REPORT



Bin Zhao

As the implementation of very-large-scale integrated circuits for various digital, analog/RF, and memory functions with the most advanced devices and process technologies is critical for modern electronics, VLSI has been a key technical field for IEEE/EDS. The IEEE/EDS VLSI Technology and Circuits Committee has been focusing its activities on identifying new technical trends, fostering emerging concepts, and serving the various technical needs in VLSI technology and circuits. Recent work accomplished by the committee and its members include:

- A special issue on "Device Technologies and Circuit Techniques for Power Management" of *IEEE Transactions on Electron Devices* published in January 2008
- Chaired the Technical Working Group of "Emerging Research Devices" for the International Technology Roadmap for Semiconductors (ITRS) – released in January 2008
- Chaired the Technical Working Group of "Process Integration, Devices, and Structures" for ITRS – released in January 2008
- Co-chaired the Technical Working Group of "RF and Analog/Mixed-Signal IC Technologies for Wireless Communications" for ITRS – released in January 2008
- Organized the IEDM Short Course

"Emerging Nanotechnology and Nanoelectronics" in December 2007

- Workshops on "Emerging Research Devices" held in April, July, September, and November 2007
- Co-chaired the 7th International Conference on ASIC, October 2007
- Co-chaired and organized the 1st IEEE International Workshop on Electron Devices and Semiconductor Technology in June 2007
- Workshop on Compact Modeling held in May 2007

In 2008, we continue to work with the ITRS Technical Working Groups of "Emerging Research Devices," "Process Integration, Devices, and Structures," "RF and Analog/Mixed-Signal Technologies for Wireless Communications," for the ITRS 2008 update. The committee has planned to organize workshops/panel sessions in several VLSI areas of growing importance and the topics include: "Materials, Devices, and Circuits for Flexible Electronics," "Technology Options for 32nm Node and Beyond," "Emerging Technology for RF IC Applications," "Analog and RF Measurement Techniques for Novel Devices," "Variability Control in Advanced Technology." The topics planned by the Committee for special journal issues include: "Non-Volatile Memory Technologies," "Advanced Gate Stack," "Devices and Circuits for Green Electronics," "Information Processing Technology and Circuit Architectures beyond CMOS," "Non-classical CMOS Device Design and Related Circuit Concepts."

The VLSI Committee currently has twenty-two committee members: Ille-

sanmi Adesida (University of Illinois), Joe Brewer (University of Florida), Robert Chau (Intel), Steve Chung (National Chiao Tung University), Jamal Deen (McMaster University), James Hutchby (SRC), Shuji Ikeda (ATDF), Hiroshi Iwai (Tokyo Institute of Technology), Seiichiro Kawamura (Selete), Kinam Kim (Samsung), Yanhe Li (Tsinghua University), Akira Matsuzawa (Tokyo Institute of Technology), Kin-Leong Pey (Nanyang Technological University), Huiling Shang (IBM), Roland Thewes (Qimonda), Albert Wang (UC Riverside), Jeffery Welsch (IBM), Reinout Woltjer (NXP), Patrick Yue (UC Santa Barbara), Bin Yu (NASA Ames Research Center), Peter Zeitzoff (Freescale), and myself. The committee continues to have a good geographical representation worldwide and a very wide spectrum of technical expertise in VLSI technology, devices and circuits.

This year is the 10th year anniversary for the IEEE/EDS VLSI Committee. I would like to take this opportunity to thank all the committee members/chairs for their vital contributions to the Committee's activities in the past decade. The VLSI Committee looks forward to continuing its mission to promote VLSI technical activities globally along with the rapid evolution of VLSI technologies and circuits in the next 10 years.

Bin Zhao

EDS VLSI Technology and Circuits
Committee Chair
Freescale Semiconductor
Irvine, CA, USA

2008 EDS J.J. EBERS AWARD CALL FOR NOMINATIONS

The IEEE Electron Devices Society invites the submission of nominations for the 2008 J.J. Ebers Award. This award is presented annually for outstanding technical contributions to electron devices. The recipient(s) is awarded a certificate and a check for \$5,000, presented in December at the International Electron Devices Meeting (IEDM).

Nomination forms can be requested from the EDS Executive Office (see contact information on page 2) or is available on the web at www.ieee.org/eds/. The deadline for the submission of nominations for the 2008 award is 1 July.

2007 EDS J.J. EBERS AWARD WINNER

The 2007 J.J. Ebers Award, the prestigious Electron Devices Society award for outstanding technical Contributions to electron devices, was presented to Dr. Stephen J. Pearton of University of Florida, Gainesville, FL, at the International Electron Devices Meeting in Washington, DC, on December 10, 2007. This award recognizes Dr. Pearton "for developing advanced compound-semiconductor processing techniques, and clarifying the roles of defects and impurities in compound-semiconductor devices".

Steve Pearton was born in Hobart, Tasmania, the southern-most State of Australia. He received his B.S. degree in Physics from University of Tasmania in 1978 and carried out his Ph.D work at the AAEC near Sydney. He moved to the US in 1982 and spent a year as a postdoc at the University of California at Berkeley prior to joining AT&T Bell Laboratories in Murray Hill, NJ, as a Member of Technical Staff working on high speed compound semiconductor electronics. After a decade at Bell Labs, he joined the University of Florida in 1994 where he is a Distinguished Professor and Alumni Chair in the Department of Materials Science and Engineering.

Dr. Pearton has been a key figure in developing processing techniques used in compound semiconductor electronics and photonics. At Bell Labs he developed the use of ion implanta-



Dr. Steven J. Pearton, winner of the 2007 EDS J.J. Ebers Award.

tion in successive generations of GaAs MESFETs, AlGaAs/GaAs and InP/InGaAs HBTs and HEMTs for both device doping and inter-device isolation. The latter is unique to compound semiconductors and simplifies the processing relative to Si where junction, trench or dielectric isolation is needed. Specialized annealing procedures were developed for implanted dopant activation in these materials due to preferential loss of the group V element. He also developed Ohmic and Schottky contact technologies for these devices and most of the standard dry etching processes used for selective and non-selective patterning of the device technologies mentioned above, in addition to those for long wavelength laser diodes used for optical communication systems. These range from low damage etches of a few thousand angstroms to through-wafers processes that involve etching hundred of microns. All the device technologies were developed for use in the AT&T

phone system, but have now spread to many different applications. Most companies that manufacture microwave GaAs chips used in cell-phones and radar systems use fabrication processes initially developed by Pearton and colleagues at Bell Labs.

At UF, Dr. Pearton has primarily focused on fabrication processes for blue/green/UV GaN-based LEDs, laser diodes and power electronics. The LEDs are used in displays, automotive lighting and general illumination when combined with phosphors, while the lasers form the backbone of the new HD-DVD and Blue-Ray DVD formats. GaN HEMT power amplifiers have recently been commercialized for use in rf transmission signal processing systems.

Steve has published over 1000 publications and given over 240 invited talks. He is an IEEE Fellow. He lives in Gainesville, FL with his wife Cammy (also a Bell Labs alumnus and now Associate Dean of the College of Engineering at UF) and his 8-year old son, Max. They attend many of the Gator sports including football and baseball and enjoy Florida's beaches. He also likes to keep updated with the world champion Australia cricket team.

Louis C. Parrillo
EDS J.J. Ebers Award Chair
Spanion, Inc.
Sunnyvale, CA, USA

MESSAGE FROM THE EDS NEWSLETTER EDITOR-IN-CHIEF

(continued from page 3)

employed in the industrial enterprises. Since 1979 until now he is with the Technical University of Lodz, working at the Institute of Electronics until December 1996, and next he joined the Department of Microelectronics and Computer Science. He is the author or co-author of over 100 scientific publications. Z. Ciota was the head of 7 grants of the Polish Committee of Scientific Research, and he was also the participant of 11 international projects, concerning education and research. He is inter-

ested in VLSI design of mixed digital-analog systems, microsystems, computer-aided modeling of semiconductor devices and signal processing.

Some chosen memberships: Member of IEEE, Member of IMAPS - Poland Chapter; Secretary of the Section of Microelectronics of the Committee of Electronics and Telecommunication of the Polish Academy of Sciences; Member of Section of Signals, Electronic Circuits and Systems of the Committee of

Electronics and Telecommunication of the Polish Academy of Sciences.

Once again, I thank the outgoing editors for their dedicated service to the Newsletter and welcome the new editors and wish them all success. Please contact your respective Regional Editor directly with news items.

Ninoslav D. Stojadinovic
EDS Newsletter Editor-in-Chief
University of Nis
Serbia

2007 EDS DISTINGUISHED SERVICE AWARD WINNER



*Richard S. Muller (Right) accepting the 2007 EDS
Distinguished Service Award from Ilesanmi
Adesida, EDS President*

The IEEE Electron Devices Society is extremely proud of the services that it provides to its members. Its members generate the premier new developments in the field of electron devices and share these results with their peers and the world at large by publishing their papers in EDS journals and presenting results in its meetings. This is a global activity that is effective because of the efforts of numerous volunteers. Many of these volunteers labor in relative obscurity, with their only reward being the satisfaction that they receive in being an important part of a successful organization, namely of the IEEE Electron Devices Society. They should be thanked. The 2007 EDS Distinguished Service Award was presented to Richard S. Muller at the IEEE International Electron Devices Meeting in Washington, D.C., on December 10, 2007.

Richard S. Muller spent his boyhood just across the Hudson River from New York City in Union City, NJ. He commuted to adjacent Hoboken to earn the degree of Mechanical Engineer at Stevens Institute of Technology in 1955. Armed with employment and a

fellowship from Hughes Aircraft Co., he moved to LA and entered the California Institute of Technology as an MS candidate in EE. Inspired at Caltech by Prof. R.D. Middlebrook in the then new EE discipline of solidstate electronics, he moonlighted from his job as a circuit designer at Hughes to teach a graduate course in the evening program at USC. This teaching experience, coupled with his gathering awareness of opportunities and challenges brought about by the newly invented planar IC process, convinced Muller to enter NSF competition and win a fellowship that enabled his PhD research at Caltech under the direction of Professor Middlebrook. When he finished his doctorate in 1962, Muller found the enthusiastic, inspired group in EE at Berkeley led by Don Pederson and Tom Everhart to provide an ideal environment for creative teaching and research.

Pederson and Everhart had opened one of the earliest university research programs in integrated circuits, then in their infancy. Dr. Muller's concentration on the physics of IC devices formed the basis for his collaboration with HP researcher Ted Kamins (Muller's first doctoral student) to produce "Device Electronics for Integrated Circuits" published first in 1977. Still being sold (in its 3rd edition revised with Dr. Mansun Chan), the book has topped 60,000 copies in sales of the English edition and it also is in print in both old and new Chinese, as well as in Spanish, Italian, and Russian. In the late 1970s, Muller began research in the area now known as MEMS and, together with Professor R.M. White he founded the Berkeley Sensor & Actuator Center in 1986. In the early 1990s, he wrote the proposal to establish the IEEE/ASME Journal of Microelectromechanical

Systems (JMEMS), and has served as its Editor-in-Chief since 1998.

Elected a member of the US National Academy of Engineering and an IEEE Life Fellow, Muller was awarded the IEEE Brunetti Award (1998 with R.T. Howe) for the first demonstration of polycrystalline silicon micromachining. He also received a career MEMS Award at Transducers '97, a Fulbright Professorship at TU Munich (1982-3), and a von Humboldt Research Professorship at TU Berlin (1994-5). Other Awards include the Berkeley Citation, the IEEE Millennium Medal, and the Renaissance Award from Stevens Institute of Technology. He has been a member of the National Materials Advisory Board and served on several National Research Council study panels as well as chairing a 1997 panel for which he acted as editor of a widely distributed report on the promises and challenges of MEMS. Professor Muller serves as a liaison officer between the NAE and NRC and has been Chair of an advisory panel for the Helmholtz Foundation. He is Secretary on the governing board for the Transducer Research Foundation, and served on the Board of Trustees of Stevens Institute of Technology from 1997 to 2006. Richard's professional career has been strongly helped by his wife, Joyce who handled administrative matters for IEEE/ASME JMEMS for many years. Her death in 2006 ended nearly 49 years of marriage. Joyce survives in the memory of many professionals and in the hearts of her two sons, four grandchildren and loving husband.

*Frederick H. Dill
EDS Distinguished Service
Award Chair
Hitachi Global Storage
Technologies
San Jose, CA, USA*

2007 EDS EDUCATION AWARD WINNER



Meyya Meyyappan, winner of the 2007 EDS Education Award

The EDS Education Award recognizes an IEEE/EDS Member from an academic, industrial, or government organization with distinguished contributions to education within the fields of interest of the IEEE Electron Devices Society. The 2007 award was presented to Meyya Meyyappan of NASA Ames Research Center, Moffett Field, CA, at the International Electron Devices Meeting in Washington, DC, on December 10, 2007. The award cites Dr. Meyyappan "For promoting nanotechnology education to university and high school students".

Meyya Meyyappan is Chief Scientist for Exploration Technology at NASA Ames Research Center in Moffett Field, CA. Until 2006 he was the Director for the Center for Nanotechnology at NASA Ames, where he led a group of over 60 scientists working on various aspects of nanotechnology. He is a founding member of the Interagency Working Group on Nanotechnology established by the Office of Science Technology Policy, which was responsible for formulating the US National Nanotechnology Initiative.

He received his Ph.D. from Clarkson University in 1984. His earliest EDS-related contributions include modeling of heterostructure bipolar transistors and high electron mobility transistors in III-V systems and developing damage-free etch processes for III-V device fabrication. His current research includes carbon nanotubes and inorganic nanowires and their applications in sensors, instrumentation, and nanoelectronics. In all these fields, he has published over 175 articles in peer-reviewed journals and given over 200 invited/keynote/plenary talks and invited seminars across the world. Since

1997, Dr. Meyyappan has been involved in nanotechnology education and training for university and high school students through establishing research internship programs at NASA Ames, which has had over 100 students each. He developed an introductory course on Nanoscale Science and Technology and taught it to engineering and science students at Santa Clara University for three years starting in 2002. He has made this course material available to over 30 universities across the world, which is currently available from the web portal hosted by the Northwestern University's Nanotechnology Center for Teaching and Learning and downloaded 24,000 times in the first six months. He has taught over 25 continuing education short courses around the globe based on these materials as well as on carbon nanotubes. These courses were sponsored by NATO, IEEE, MRS, and Nanoscience and Technology Institute. He has given numerous lectures, both live and via video, at high schools and community colleges to raise awareness about this emerging field.

Dr. Meyyappan is a Fellow of the IEEE, the Electrochemical Society, AVS, and the California Council on Nanotechnology. For his contributions and leadership in nanotechnology, he has received numerous awards including a Presidential Meritorious Award, NASA's Outstanding Leadership Medal, Arthur Flemming Award given by the Arthur Flemming Foundation and the George Washington University, and the 2008 IEEE Judith Resnick Award. For his educational contributions, he has received an Outstanding Recognition Award from the NASA Office of Education and the Engineer of the Year Award (2004) by the San Francisco Section of the American Institute of Aeronautics and Astronautics (AIAA). Dr. Meyyappan is the immediate past President of the IEEE Nanotechnology Council (2006-2007) and served as Distinguished Lecturer of Nanotechnology for both IEEE-NTC and ASME. He has been a member of EDS for about 25 years.

Meyya lives in San Jose, California, with his wife, Debbie, who is an artist

and brings some much-needed balance to his life.

*Cary Y. Yang
EDS Education Award Chair
Santa Clara University
Santa Clara, CA, USA*

2008 EDS EDUCATION AWARD - CALL FOR NOMINATIONS

The IEEE Electron Devices Society invites the submission of nominations for the 2008 Education Award. This award is presented annually by EDS to honor an individual(s) with distinguished contributions to education within the fields of interest of the IEEE Electron Devices Society. The recipient is awarded a certificate and a check for \$2,500, presented at the International Electron Devices Meeting (IEDM).

Nomination forms can be found on the EDS web site at <http://www.ieee.org/eds> or can be requested from the EDS Executive Office via:

Telephone: (732) 562-3927
Fax: (732) 235-1626
E-Mail: l.riello@ieee.org

The **completed** nomination form should be sent to:

IEEE Operations Center
Attn: Laura Riello
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
USA

The deadline for the submission of nominations for the 2008 award is 1 September 2008.

"CELEBRATING 25 YEARS OF THE IEEE/OSA JOURNAL OF LIGHTWAVE TECHNOLOGY"

by Alan Willner (USC) and Connie Chung-Husnain (UC Berkeley)

"If you want to be incrementally better: Be competitive. If you want to be exponentially better: Be cooperative." Anon.

As of the December 2007 publication issue, the *IEEE/OSA Journal of Lightwave Technology* celebrated its 25th anniversary. We, as a past and present Editor-in-Chief, heartily congratulate all of JLT's authors, readers, editors, and reviewers on this milestone achievement!!

The journal has thrived over the past 25 years and has produced some of the most seminal contributions in lightwave technology. Many key scholarly articles can be found in individual manuscripts as well as in targeted special issues. Dating back to 1983, JLT has enjoyed the insightful leadership of some extremely distinguished individuals, namely Tom Giallorenzi ('83-'88), Don Keck ('89-'94), and Rod Alferness ('95-'00). We have all strived to maintain the extremely high standards of quality that are the cornerstone of our community. We have grown dramatically over the years and now publish

~5,000 pages annually. Additionally, we are highly international, with approximately 75% of the manuscript submissions and 66% of the Editors originating from countries outside the U.S.

We are a "big tent" in terms of diverse topics, constituents, and geography, and our journal occupies a unique position among the technical societies. It was recognized from the beginning that lightwave technology is a multidisciplinary field. Therefore, through the efforts of many wise individuals such as Henry Kressel, the journal was formed by a collection of seven IEEE technical societies (AES: Aerospace and Electronic Systems, ComSoc: Communications Society, ED: Electron Devices, IM: Instrumentation and Measurements, LEOS: Laser and Electro-Optics Society, MTT: Microwave Theory and Techniques, and UFFC: Ultrasonics, Ferroelectrics, and Frequency Control) and the Optical Society of America (OSA). This cooperation/collaboration is a tremendous asset in terms of capturing emerging topics. In addition to the 12 regular monthly publication issues, we annually produce several special issues. It should be emphasized that the scope of JLT is quite broad, and

we are uniquely situated to sponsor multi-disciplinary Special Issues that cover technologies related to any of our eight sponsoring societies.

JLT is governed by Coordinating and Steering Committees that: (i) have representation from each of the sponsoring societies, and (ii) meet regularly to discuss strategic and budgetary matters. The committee members are leading figures that take their professional responsibility quite seriously, and the current Chair of both committees is John Lee, a master at predicting page budgets. Primary publishing of JLT is expertly handled by the IEEE LEOS publications staff, and we extend our deepest appreciation to Douglas Hargis and Linda Matarazzo for their tireless efforts and good cheer!

We want to call your attention to the upcoming Special Issue on the 25th Anniversary of JLT that will appear in mid-2008. The papers are historical perspectives concerning various technologies that have had great impact, and the list of authors is a veritable "Who's Who" from our community.

If you haven't been a participant in JLT, come join us. If you have been involved, "three cheers for us!"

32 EDS MEMBERS ELECTED TO THE IEEE GRADE OF FELLOW EFFECTIVE 1 JANUARY 2008

Akintunde Akinwande, Massachusetts Institute of Technology, Cambridge, MA, USA
for contributions to the development of digital self-aligned gate technology and vacuum microelectronic devices

Kenji Anami, Semiconductor Industry Research Institute Japan (SIRIJ), Chiyoda-ku, Tokyo, Japan
for invention of the divided word line structure for high-speed, low-power logic and memory

Colombo Bolognesi, Swiss Federal Institute of Technology (ETHZ), Zurich, Switzerland
for contributions to millimeter-wave antimonide-based heterojunction bipolar transistors

John Booske, University of Wisconsin – Madison, Madison, WI, USA
for contributions to vacuum electronics and microwave processing of materials

Joe Brewer, (Self-Employed), Melrose, FL, USA
for contributions to nonvolatile memory integrated circuit technology and digital signal

Timothy Brunner, IBM Semiconductor Research and Development Center, Ridgefield, CT, USA
for contributions to optical lithography methods used to pattern integrated circuits

Stephen Campbell, University of Minnesota,
Minneapolis, MN, USA
for contributions to deeply scaled CMOS devices

Carlos Diaz, Taiwan Semiconductor Manufacturing Co.
(TSMC), Hsinchu, Taiwan, China
*for contributions to deep sub-micron foundry CMOS
technology*

Gary Fedder, Carnegie Mellon University, Pittsburgh,
PA, USA
*for contributions to integrated micro-electro-mechanical-
system processes and design methodologies*

Michael Fu, University of Maryland, College Park, MD, USA
*for contributions to stochastic gradient estimation and
simulation optimization*

Robert Gao, University of Massachusetts, Amherst,
MA, USA
*for contributions to condition monitoring and health
diagnosis of machines through sensing methodologies*

Fernando Guarin, IBM Microelectronics, Hopewell
Junction, NY, USA
for contributions to semiconductor materials and reliability

Hiroki Hamada, Sanyo Electric Co., Ltd., Hirakata-City,
Osaka, Japan
*for contributions to red semiconductor laser diodes and
polycrystalline silicon thin-film transistors*

Gregg Higashi, Intel Corporation, Santa Clara,
CA, USA
for contributions to wet chemical processing of silicon

Minghwei Hong, National Tsing Hua University,
Hsinchu, Taiwan
*for contributions to III-V semiconductor MOSFET transis-
tors*

Harold Hosack, Semiconductor Research Corporation,
Durham, NC, USA
for contributions to resonant tunneling and imaging devices

Judy Hoyt, Massachusetts Institute of Technology, Cam-
bridge, MA, USA
*for contributions to silicon-based heterostructure devices
and technology*

Eishi Ibe, Hitachi Ltd., Yokohama, Kanagawa, Japan
*for contributions to neutron-induced soft-error analysis
for semiconductor memory devices*

Ming-Dou Ker, National Chiao Tung University,
Hsinchu, Taiwan
*for contributions to electrostatic protection in integrated cir-
cuits, and performance optimization of VLSI micro-systems*

Rakesh Kumar, Technology Connexions, Inc., Poway,

CA, USA
for entrepreneurial leadership in the field of integrated circuits

Sani Nassif, IBM, Austin, TX, USA
*for contributions to semiconductor manufacturing
processes*

Susumu Noda, Kyoto University, Kyoto, Japan
for contributions to photonic crystals and nanophotonics

Donggun Park, Samsung Electronics, Yongin,
Gyeonggi-Do, Korea
*for contributions to nano-scale CMOS development for
memories*

Massimo Rudan, University of Bologna, Bologna, Italy
*for contributions to theory and modeling of current trans-
port in semiconductor devices*

David Shaver, MIT Lincoln Laboratory, Lexington, MA, USA
*for leadership in semiconductor microlithography and
microfabrication technology*

Jyuo-Min Shyu, Industrial Technology Research
Institute (ITRI), Hsinchu, Taiwan
for leadership in the microelectronics industry

Michael Simpson, University of Tennessee, Oak Ridge,
TN, USA
*for contributions to nanotechnology in engineered
devices and biology*

Gregory Timp, University of Illinois at
Urbana-Champaign, Urbana, IL, USA
*for contributions to the design, fabrication and
characterization of nanometer-scale transistors*

Hsing-Huang Tseng, SEMATECH, Austin, TX, USA
*for contributions to CMOS ultra-thin gate stack
technology*

Daisuke Ueda, Matsushita Electric Industrial Co. Ltd.,
Osaka, Japan
*for contributions to power-saving semiconductor devices
and circuits*

Kit Lai Paul Yu, University of California, San Diego,
La Jolla, CA, USA
*for contributions to semiconductor waveguide modula-
tors and detectors*

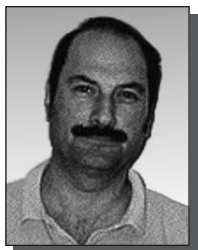
Bin Zhao, Freescale Semiconductor, Irvine,
CA, USA
*for contributions to interconnect technology
for integrated circuits*

Cary Y. Yang
2007 EDS Fellows Chair
Santa Clara University
Santa Clara, CA, USA

STATUS REPORT FROM THE 2007 MASTERS STUDENT FELLOWSHIP WINNERS



Paul K.L. Yu



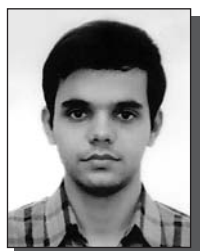
Agis Iliadis



Ovidiu Profirescu

The IEEE EDS approved the establishment of the Electron Devices Society Masters Student Fellowship Program. The Program is designed to promote, recognize, and support Masters level study and research within the Electron Devices Society's Fields of Interest.

In July 2007, EDS announced the winners of the 2007 Fellowships'. The five winners were: Anuj Madan, Georgia Institute of Technology; Ovidiu Profirescu, University Politehnica of Bucharest; Andrew Warren, University of Central Florida; Li Wei, Nanyang Technological University; Xu Zhao, Massachusetts Institute of Technology. The winners are pursuing distinctly different research topics in electron devices for their Masters degrees. The following are brief progress reports provided by the award winners.



Anuj Madan

Anuj Madan is currently investigating the low frequency noise behavior of strained SiGe MOD-FETs and SOI CMOS technologies. He is evaluating the potential of advanced FETs

for mixed signal and RF applications especially in extreme environments. For practical modeling purposes, understanding low frequency noise and its bias dependence in both linear and saturation region is important, which is up-converted to phase noise especially in oscillators and mixers.



Andrew Warren

Andrew Warren is continuing to pursue his M.S. and Ph.D. degrees in Materials Science at the University of Central Florida. In terms of research, he is currently investigating the classical (resistivity) size effect in copper. Various X-ray characterization methods are being employed at the Stanford Synchrotron Radiation Lab in hopes of correlating resistivity in copper thin films and lines to their structural and crystallographic properties such as grain size and surface roughness.



Li Wei

Since I was nominated for the Electron Devices Society Masters Student Fellowship Program I continued my work on positive CMOS LDO regulators at Catalyst Semiconductor Romania. I am now doing research for the final Masters project at Catalyst Semiconductor Inc. located in Santa Clara, USA. My M.S. final paper will be also in CMOS LDOs. I attended the 2007 International Semiconductor Conference in Sinaia, Romania where I presented the paper "NOISE IN CMOS LDOs". In October 2007 I started my Ph.D. degree at the University Politehnica of Bucharest in the microelectronics field. I continued teaching Electron Devices and Circuits laboratories and since October 2007 I started teaching TCAD classes also.

After I fulfilled the academic requirements as a Master of Engineering student, I decided to pursue my interest in Microelectronics in a more advanced level, and with the

help of my supervisor, Professor Tan Cher Ming, I converted to a Ph.D. student. The academic achievement during my Masters study helped me pass the Ph.D. confirmation examination without much difficulty and gain my Ph.D. candidate status. Now, I still have my research focus on Interconnect Electromigration simulation. We are developing a holistic numerical modeling for interconnect electromigration and the time to failure prediction. We have several papers about our methodology in the process of publication.



Xu Zhao

In the last decade, research in trying to improve the high frequency and high power performance of AIGaN/GaN HEMTs has exploded and significant progress has been made. However, it is still far below theoretical prediction. To compete with state-of-the-art power devices using GaAs and SiC, we have to continue pushing it to the limit. There are several issues to be resolved in these devices: lower electron velocity than expected, high parasitic resistances and capacitances, reliability, and others. Currently I am working on new device structures to solve these issues, conducting both device simulation and fabrication.

The IEEE EDS is proud to support Engineering Education in Electron Devices world wide.

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

Agis A. Iliadis
2007 EDS Chair Graduate Student Fellowships
University of Maryland
College Park, MD, USA



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>

EDS DISTINGUISHED LECTURER VISITS THE ED PEKING UNIVERSITY STUDENT CHAPTER

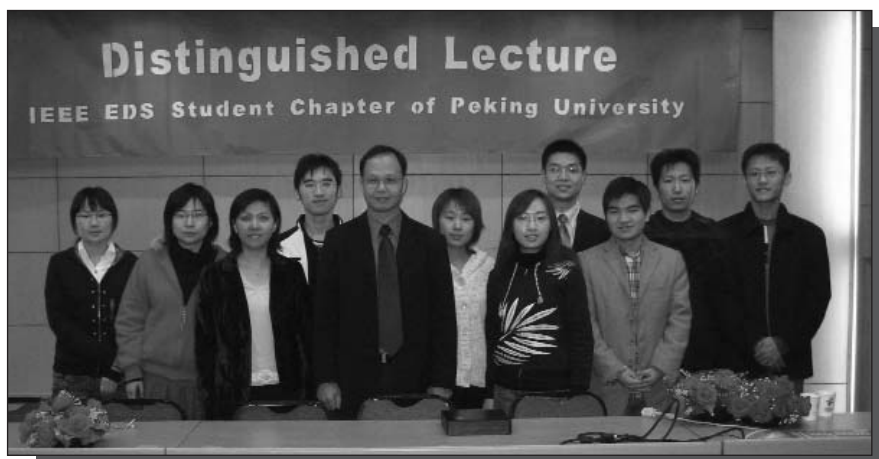
- by Chen Li

The ED Peking University (PKU) Student Chapter held many activities to attract student interest in EDS since its establishment in March 2007. Details of these activities can be found on the Chapter's website at <http://www.ime.pku.edu.cn/soi/edpku>. Particularly, the Chapter has organized two DL lectures. On October 22, 2007, Prof. Juin J. Liou, the IEEE EDS Vice-President of Regions/Chapters, visited the Chapter to promote chapter activities. During his stay, Prof. Liou gave a DL talk entitled "Electrostatic Discharge (ESD) Protection for RF IC's", for the Chapter members and researchers of the Institute of Microelectronics, PKU. About 90 students and researchers attended the talk. Afterwards, Prof. Ru Huang, the Chapter Advisor, Mr. Chen Li, Chapter Chair, and Mr. Runsheng Wang, Vice Chapter Chair had a useful discussion with Prof. Liou about the future development of the Chapter. On December 27, 2007, Dr. Bin Yu, EDS Distinguished Lecturer, visited the Chapter and gave an excellent talk entitled "Self-Assembled Low-Dimensional Nanomaterials for Non-volatile Information Storage". In the talk, he presented a prototype of memory technology based on bot-

tom-up self-assembled one-dimensional phase-change chalcogenide nanowires. This technique demonstrates a great reduction on the programming energy and the potential memory scalability for future generation nonvolatile information storage. There were about 70 attendees, and later on, Dr. Yu had a discussion with our members and some of the students to share his research experience.

It is worth noting that a big international event: the IEEE 9th International Conference on Solid-State and

Integrated Circuit Technology (ICSICT), will be held in Beijing, October 20-23, 2008. The ICSICT is one of the biggest and the most important conferences in Asia and will be hosted by Peking University. The ED PKU Student Chapter will participate in this important event by providing student helpers. The paper submission deadline for the conference is May 31, 2008. You may take this opportunity to visit the new Beijing after the Olympic Games. Further information can be found at <http://www.ime.pku.edu.cn/icsict/>.



Prof. J. J. Liou (5th from the left) pictured with Prof. Ru Huang (3rd from the left), Chapter Advisor, Mr. Chen Li (4th from the right), Chapter Chair, and Mr. Runsheng Wang (4th from the left), Chapter Vice-Chair and some other members of the ED Peking University Student Chapter

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

Arjen Boogaard	Anand Inani	Chang Woo Oh*	Hong Wang
Meng-Hsueh Chiang*	Anil Kottantharayil	Luis Palafox	Min Yang
Dennis Ferguson	Jeong Lee*	Mulpuri Rao	Wen Kuan Yeh*
Richard Ferrant	Yasuhiro Matsumoto	Robert Suaya	Evan Yu
David Gulbransen	Ahmed Morshed	David Walker	Lianzhong 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>.

EDS SOUTH-ASIA CHAPTERS' MEETING

- by M.K. Radhakrishnan

The 5th Electron Devices Society South-Asia Chapters Meeting – joint meeting of Chapter Chairs and representatives from the EDS Chapters in South Asia region and Chapter Partners - was held in Hyderabad on January 8, 2008, in conjunction with the 21st IEEE VLSI Design Conference. The meeting was hosted by the local IEEE Hyderabad Section. Most of the EDS Chapters in the South Asia region were represented at the meeting. EDS President-Elect and Chapter Partner for many Chapters in the region, Renuka Jindal, presided over the meeting. He described various activities and future plans of the Electron Devices Society, especially in the region, and congratulated the Chapters for the excellent performance in yester years. Over the last 6 years, the number of EDS Chapters has tripled from 3 to 9, including 2 student Chapters, one in Mysore and the other in National Institute of Science and Technology (NIST) in Bhubaneswar. Another EDS chapter in Nepal is in the final stages of formation.

The status of various EDS activities by the Chapters was reviewed and a closer collaboration in terms of arrangement of Distinguished Lectures and other events was emphasized. The latter is especially beneficial for new chapters as they ramp-up their activities. All the Chapters had a very active year in 2007 and some of the joint activities were excellent to reach out to the members. Bangalore Chapter successfully hosted an IEEE International Symposium on the Physics & Failure Analysis of Integrated Circuits (IPFA2007), which was supported by Bombay Chapter. Also, the Bombay Chapter hosted the International Workshop on the Physics of Semiconductor Devices (IWPSD 2007). Both conferences have high visibility and were technically co-sponsored by EDS. The Calcutta and Delhi Chapters orga-



From left : P. R. Suresh (EDS, Bangalore), Sunit Tyagi (Chapter Partner) M.K. Radhakrishnan (Chapter Partner), Renuka Jindal (EDS President-Elect), C. Sarkar (EDS, Calcutta), Ramgopal Rao (Chapter Partner & Bombay Chapter), Anisul Haque (Bangladesh Chapter), M. B. Srinivas (IEEE Hyderabad Section)



DL session held at IEEE Hyderabad Section in conjunction with the EDS South-Asia Chapters meeting

nized DL mini-colloquia individually and Calcutta Chapter organized many activities at various locations in the north-east region of India. The Bangladesh Chapter organized a student paper contest and mini-colloquia. Two new Chapters – Bhubaneswar and NIST Student Chapter – formed are being guided by the Calcutta Chapter. SJCE Student Chapter in Mysore, which has a healthy member strength of 100 EDS student members, was applauded at the meeting for organizing various activities regularly.

The evening session of the full day event had two Distinguished Lectures. The first talk entitled "From Millibits to Terrabits and Beyond – Over 60 years of Innovation" was given by Renuka Jindal. The second talk entitled "Nanoelectronic Devices – Analysis Challenges" was given by M.K. Radhakrishnan. The talks were well attended by more than 60 people

comprising of IEEE members, students and faculty from various educational institutions and Scientists from different organizations. After the talks there was a student interaction session during which the enthusiasm of the younger generation in the field of micro and nano-electronics was clearly visible. It was felt that such public presentations go a long way in attracting new talents to the field.



Students interacting with EDS President-Elect, Renuka Jindal after the DL

REGIONAL AND CHAPTER NEWS

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

ED/CPMT Orlando

- by Slavica Malobabic

On October 30th, more than a hundred graduate students and professors attended Dr. Jim Vinson's talk on his approach to provide robust electrostatic discharge (ESD) protection in a foundry process without the use of TCAD. The technical seminar, entitled "Electrostatic Discharge Protection Design in Foundry Processes," was organized by the ED/CPMT Chapter and the School of Electrical Engineering and Computer Science at the University of Central Florida (UCF) in Orlando. Dr. Vinson is with Intersil Corporation, Palm Bay, Florida. He is currently the Senior Manager of the Corporate Process Reliability Group at Intersil. His group is responsible for all wearout reliability evaluations of internal and foundry processes for Intersil. He is the ESD/EOS expert within Intersil and manages the ESD development team for all of Intersil processes. He has two patents and has published a book entitled "ESD Design and Analysis Handbook", in addition to numerous journal/conference papers in the areas of reliability, ESD, and EOS.

For additional information contact Slavica Malobabic at ED Orlando Chapter Chair at smalobabic@ieee.org.

RFIC 2008

- by Noriharu Suematsu

This year, the IEEE Radio Frequency Integrated Circuits (RFIC) Symposium will be held in Atlanta, Georgia, (www.RFIC2007.org) June 15-17, 2008, in conjunction with the IEEE MTT-S International Microwave Symposium. It opens Microwave Week 2008, the largest world-wide RF/Microwave meeting of the year.

The RFIC Symposium brings focus to the technical accomplishments in RF systems, circuit, device and packaging technologies for mobile phones, wireless communication systems, broadband access modems, radar systems and intelligent transport systems.

The RFIC Symposium continues to build upon its heritage as one of the foremost IEEE technical conferences dedicated to the latest innovations in RFIC development of wireless and wire line communication IC's, with an exciting technical program. Running in conjunction with the International Microwave Symposium and Exhibit, the RFIC Symposium adds to the excitement of the microwave week with three days focused exclusively on RFIC technology and innovation.

The activity of the RFIC technologies becomes stronger than ever and the number of submitted papers is at the highest level. Our Technical Program Committee has carefully reviewed and selects excellent papers which cover the whole technical fields of RFIC technology. The symposium will feature several work-

shops and tutorials on Sunday, June 15th. In addition, the oral sessions, the Interactive Forum, and the panel sessions will be given on Monday and Tuesday, covering nearly all facets of RFIC technology.

A Plenary Session will be held on Sunday evening, with keynote addresses given by two renowned industry leaders. The first speaker, Robert Van Buskirk, President of the Multi-market Products Group at RFMD will present a talk entitled "Best of Both Worlds: Multi-market Diversity Embedded in a Scale RF Semiconductor Business." The second speaker, Dr. Zol Cendes, Chairman of Ansoft, will discuss "First Pass System Success – When First Pass Silicon Success is Not Enough." The three best student paper awards will also be presented in the Plenary Session. The highly anticipated RFIC Reception will follow immediately after the Plenary Session, providing a relaxing time for all to mingle with old friends and catch up on the latest news.

On behalf of the RFIC Technical Program Committee, we look forward to seeing you at the 2008 RFIC Symposium in Atlanta: Jenshan Lin, RFIC General Chair and Tina Quach & Yann Deval, RFIC Technical Program Chairs.

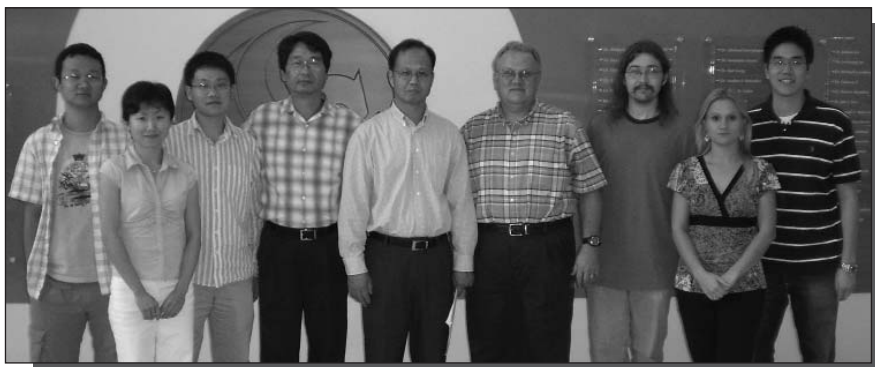
~ Ibrahim M. Abdel-Motaleb,
Editor

EUROPE, MIDDLE EAST & AFRICA (REGION 8)

ED Poland

- by Andrzej Napieralski

On December 10, 2007, a joint meeting of the Microelectronics Section of Electronics and Telecommunication Committee of the Polish Academy of Science and the ED Poland Chapter took place in Łódź, Poland. The meeting started with a presentation by Dr. Przemysław Sekalski, entitled "Using Piezoelectric and Magnetostrictive Elements in Very Low Temperatures". The meeting was also an opportunity to discuss the ongoing chapter chair election process.



Some of the student attendees of the talk with (4th from left), Dr. Yuan, Dr. Liou, and Dr. Vinson

During the meeting an interesting suggestion was given by Prof. Andrzej Napieralski. He noticed that the two institutions, the Microelectronics Section of Electronics and Telecommunication Committee of Polish Academy of Science and Poland Section of IEEE ED Chapter have very common goals, and it could be desirable to join their forces. Being the chair of both of the institutions, he proposed to invite all ED Chapter members to the Microelectronics Section. He also encouraged all non-IEEE members to join the chapter. At the next meeting, the Microelectronics Section nominations will be presented to new members.

The chapter chair election process has been completed. The only candidates proposed by the chapter members were:

- Prof. Andrzej Napieralski (Technical University of Lodz, Poland) as Chapter Chair
- Prof. Janusz Zarebski (Gdynia Maritime University, Poland) as Chapter Vice-Chair
- Dr. Mariusz Orlikowski (Technical University of Lodz, Poland) as Chapter Secretary/Treasurer

All the candidates were positively accepted by the chapter members.

The Polish ED Chapter is co-organizing the 15th International Conference MIXDES 2008 "Mixed Design of Integrated Circuits and Systems", which will be held June 19-21, 2008 in Poznan, Poland. During the conference two special sessions are planned:

- "Compact Modeling and Characterization of Nano CMOS Technologies" organized by Dr. Daniel Tomaszewski (Institute of Electron Technology, POLAND) and Dr. Wladyslaw Grabinski (GMC, Switzerland)
- "Coordinated Accelerator Research in Europe" organized by Dr. Mariusz Grecki (Technical University of Lodz, Poland)

For the opening, the following presentations are planned:

- "High Performance Computing in Nanoscale Electro-Thermal Modeling and Simulations" - Prof. Adam W. Skorek (University of Quebec at Trois-Rivières, Canada and Bialystok Technical University, Poland)

- "The HiSIM Compact Model Family for Integrated Devices Containing a Surface-potential MOSFET Core" - H.J. Mattausch, M. Miura-Mattausch, N. Sadachika, M. Miyake, D. Navarro (Hiroshima University, Japan)

During the conference, the meetings of the ED Poland Chapter and the Microelectronics Section of the Electronics and Telecommunication Committee, Polish Academy of Sciences, will take place.

More information about the conference can be found at the web site <http://www.mixdes.org>.

NCMCS 2007 Conference

- by Andrzej Napieralski

The annual National Conference of Microelectronics and Computer Science took place September 21-23, 2007, in Mikorzyn, Poland. The event was organized by the Department of Microelectronic and Computer Science (DMCS), Technical University of Lodz, Poland.

The Conference was attended by over 40 scientists, mostly from Technical University of Lodz, but also from Deutsches Elektronensynchrotron DESY (Hamburg, Germany), AGH University of Science and Technology (Kraków, Poland) and Maritime University (Gdynia, Poland).

The Conference had more than 30 papers, presented in two oral sessions and the conference proceedings

(186 pages, ISBN 83-9222632-5-1) were published by the Department of Microelectronics and Computer Science, Technical University of Lodz.

During the conference, a soccer match took place: DMCS vs. Rest of the World. The score was 6:4 for DMCS

OWD 2007 Workshop

- by Andrzej Napieralski

The 9th International Ph.D. Students' Workshop OWD'2007, took place in Wisla, October 20-23, 2007. The Workshop is a periodic scientific conference organized since 1999 by the Electrical Engineering Faculty of Silesian University of Technology, Poland.

The main aim of the conference is to give an opportunity to integrate and exchange ideas for young researchers. Over the years, the workshop had obtained international status. This year, alongside Polish researchers from various universities, the presentations have been delivered by candidates for a doctor's degree from Slovakia, Czech Republic, Lithuania, Ukraine, Belarus and Hungary. During the seminars Ph.D. students give presentations regarding their achievements in such areas as electronics, computer science, control theory, robotics and mechatronics.

The organizers are awarding special prizes to the authors of distinguished papers. This year's IEEE ED Polish Chapter Best Paper Award was presented to Lukasz Sajewski (Technical University of Bialystok, Poland)



DMCS vs. Rest of the World match (Prof. Andrzej Napieralski, IEEE ED Poland Chapter Chair, in the middle)



PWD 2007 Awarded authors



OWD'2007 participants

for the presentation "Computation of positive realizations of singular MIMO hybrid linear systems with one delay in state and input vectors".

Some of the papers have also been awarded by The Institution of Engineering and Technology (IET) and by Deans of Faculties of Electrical Engineering. Each year the OWD'2007 workshop is growing. This year 94 participants from 28 universities took part in the workshop listening to the 72 paper presentations. The organizers invite all Ph.D. Students to participate in the Workshop next year.

~ Zygmunt Ciota, Editor

ASIA & PACIFIC (REGION 10)

ED Japan

- by Atsushi Kurobe

On November 9, 2007, the International Symposium on Advanced Si-based Nanodevices (ISASN) was held at Toranomom Pastoral, Tokyo, and was sponsored by the ED Japan Chapter together with the "Ultimately Integrated Devices and Systems" Research Committee (165 Committee) of the Japan Society for the Pro-

motion of Science. The aim of the Symposium was to discuss the scaling-related issues and their possible solution techniques. Eight distinguished speakers were invited from Japan and from abroad, and covered such topics as the variation of nanodevices, Si and SiGe nanowires, and III-V MOSFETs. All the speakers engaged in lively and fruitful discussions with the audience. The Symposium attracted more than 100 people, and was a great success.

The ED Japan Chapter also organized three DL meetings in November, 2007. The first one was the DL lecture on November 19 by Prof. Mitiko Miura-Mattausch of Hiroshima University, held at the Suzukakedai

Campus of Tokyo Institute of Technology, Yokohama. Prof. Miura is one of the authorities in the field of MOSFET device modeling. Her talk entitled "Basics and applications of compact modeling for circuit design" was very enlightening, and was attended by 70 people.

On November 28, 2007, a second DL meeting was held at the Ookayama Campus of Tokyo Institute of Technology, Tokyo. Three Japanese DLs, all from Tokyo Institute of Technology, gave presentations on novel interesting technologies. Prof. Yasuyuki Miyamoto talked about high mobility transistors using electron launching in heterostructures. The title of his talk was "Gate controlled hot-electron transistors." Prof. Sunri Oda lectured on "Silicon nanocrystal devices." In his talk, single electron devices and their quantum effects were detailed with regard to future memory devices. Prof. Kazuya Masu gave a presentation on GHz interconnect technology in Si ULSI in order to achieve high speed and low power consumption for global interconnect. The title was



International Symposium on Advanced Si-based Nanodevices (ISASN) on November 9, 2007. The Symposium was held at Toranomom Pastoral, Tokyo, Japan



Prof. Miura (front row center) and the audience at the DL meeting on November 19, 2007

"Wiring technologies for on-chip transmission line." Each lecture was followed by fruitful discussions between the lecturer and the audience. The meeting offered the more than 20 attendees the opportunity to get grips with interesting recent research activities.

The third DL meeting was held on November 29, 2007. A talk entitled "Nanoelectronic devices based on silicon MOS structures" was given by Prof. C. K. Sarkar of Jadavpur University, Kolkata, India, at the Suzukakedai Campus of Tokyo Institute of Technology, Yokohama. His talk focused on the performance of nanocrystallites and nanotubes with embedded gate oxides having different dielectric constants of submicron MOS. The meeting was very successful with 20 participants.

In addition, in the latter half of the year from July 2007 to December 2007, the ED Japan Chapter held 6 joint technical meetings with the Japan Society of Applied Physics, the Institute of Electronics, Information and Communication Engineers, etc.

ED Kansai

- by Michinori Nishihara

The 7th Kansai Colloquium Electron Devices Workshop was successfully held at the Kansai University Centenary Memorial Hall, Osaka, Japan, October 19, 2007, with 42 participants. The program was divided into three sections, Compound Semiconductor/Bio Device Technology, Silicon LSI Technology/Simulation and MEMS/Photo-Device Technology. There were four specially selected papers from each section to cover the most recent and advanced areas of the technologies. The Award Committee selected one paper for the 7th MFSK (Message From Spirited Kansai) Award. The winner was Mr. Yasuhiro Uemoto for his paper titled "A Normally-off AlGaIn/GaN Transistor with $R_{onA}=2.6m_cm2$ and $BV_{ds}=640V$ Using Conductivity Modulation". The Award Committee also selected one paper for the MFSK Chapter of the Year Award. The winning paper by Dr. Taichiro Morimune, was titled "Frequency Response Properties of Organic Photo-Detectors as Opto-Electrical Conversion Devices".



The winners of the 7th MFSK Award and "The Chapter of the Year" at the 7th Kansai Colloquium Electron Devices Workshop: Mr. Uemoto (left), Dr. Morimune (center) and the Chairperson Prof. Omura

Both winners were honored with a memorial wall plaque engraved with their name.

The ED Kansai Chapter also held a Distinguished Lecturer Meeting on November 19, 2007, at Osaka University Nakanoshima Center, Osaka, Japan. Prof. Kazuya Masu, who is famous for his research contribution in Interconnect Technology, gave an interesting lecture on the most recent research topics on LSI Interconnect Technologies to 15 motivated attendees. His lecture covers a wide range of LSI interconnect technologies such as 3D interconnect, wireless and GHz interconnect. Prof. Masu is also very keen in promoting educational motivation for EE students and proposed very interesting and inspirational ideas.

ED Korea

- by Hyungcheol Shin

The 7th RF Integrated Circuit Technology Workshop was held at Jeju, Korea, September 13-15, 2007. Here, the IEEE ED Korea Chapter presented the 'Best Paper Award' to the paper entitled "A CMOS Frequency Synthesizer with Linearized Coarse Tuned VCO for Quad-Band Multi-Standard Mobile Broadcasting Tuners", written by Jaewook Shin, Jongsik Kim, Seungsoo Kim, Jeongki Choi, Namheung Kim, and Hunchol Shin from Kwangwoon University.

We also invited Dr. Bin Yu who is an EDS Distinguished Lecturer and arranged a seminar on the topic of Nanotechnology. Dr. Bin Yu received his Ph.D. degree in Electrical Engineering from the University of Cali-



Jaewook Shin from Kwangwoon University, received the 'Best Paper Award' for the paper entitled "A CMOS Frequency Synthesizer with Linearized Coarse Tuned VCO for Quad-Band Multi-Standard Mobile Broadcasting Tuners", from the IEEE ED Korea Chapter

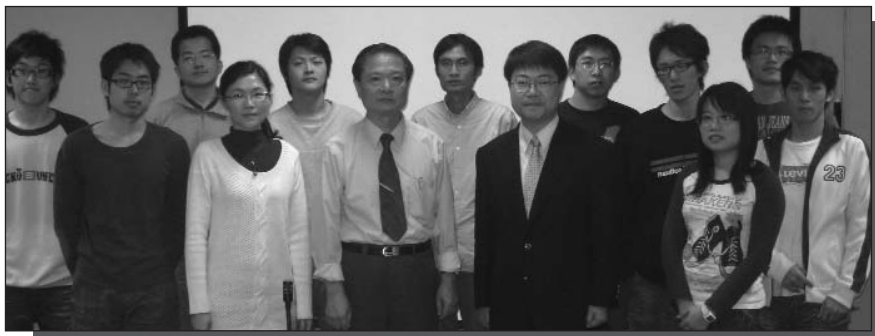
fornia at Berkeley. Currently, he is a Principle Investigator leading the Nanoelectronics Research Program at UARC, NASA Ames Research Center, Mountain View, California. The seminar was held in Seoul National University, December 26, 2007. The title of the seminar was "Nanotechnology: Successor to CMOS?"

~ Kazuo Tsutsui, Editor

ED Taipei

- by Steve Chung

The ED Taipei Chapter held two DL talks in the 4th quarter of 2007. On November 1, 2007, Prof. Chandan Sarkar gave a talk on "Improvement of the Characteristics of Deep Submicron CMOS Devices with Halo Implantation and High-k Dielectric". This talk focused on the scaling issues of CMOS technology. Because of the Short-Channel Effects (SCE), it becomes a challenging task to further scale down the CMOS devices. Prof. Sarkar presented the possible schemes to improve the SCE effects using channel engineering and high-k dielectric. About 30 graduate students of local universities and several engineers from the Science Park attended the talk. Another DL talk was held on December 20, 2007. Prof. Takao Someya of the University of Tokyo was invited to give a lecture entitled "Organic Transistors - Toward Ambient Electronics". In his talk, Prof. Someya addressed the recent progress and future prospects of organic transistor-based flexible, large-area sensors and actuators. The future prospect of organic transistors in ambi-



The speaker, Prof. T. Someya (3rd from the right) with the Chapter Chair, Prof. Steve Chung (4th), Prof. H. W. Zan (5th) and some attendees

ent electronics was also discussed. Prof. Someya further demonstrated a "large-area sensor array" thin film made by his group. This achievement was featured in Time Magazine as one of the "Best Inventions of 2005" in the issue published on 21 November 2005. The talk was attended by 40 participants including students and professors from the local universities.

The forthcoming important event of the Chapter is the International Symposium on VLSI Technology, Systems, and Applications (VLSI-TSA). VLSI-TSA is co-sponsored by IEEE and EDS and will be held April 21-23, 2008, at the Ambassador Hotel, Hsinchu. The VLSI-TSA was split into two symposiums: VLSI-TSA and VLSI-DAT and have become annual events since 2006. VLSI-TSA still keeps its tradition by focusing on semiconductor manufacturing and VLSI technology whereas VLSI-DAT focuses on circuits and systems design. It is worthwhile for our members to join the VLSI-TSA technical programs and the post-conference technical and cultural tours to visit the most important and vibrant Hsinchu Science Park, which is considered as the heart of the world's semiconductor and information manufacturing base. The paper selection process of VLSI-TSA was conducted by 25 key members of the technical committee in a meeting held in Washington, D.C., during the 2007 IEDM. Registration information for the 2008 VLSI-TSA can be found on the conference website at <http://vlsitsa.itri.org.tw/2008>.

EDSSC 2007

- by Wen-Kuan Yeh

The 3rd IEEE International Conference on Electron Devices and Solid-

State Circuits (EDSSC 2007) was held at Tayih Landis Hotel in Tainan, Taiwan during December 20-22, 2007. The Conference was organized by Southern Taiwan University and EDS Tainan Chapter with technical co-sponsorship from EDS.

The event attracted more than 400 people worldwide. The three-day technical program is highlighted by four keynote speeches given by our most honorable guests Prof. Ilesanmi Adesida from University of Illinois (EDS President), Prof. S. C. Lee (President of National Taiwan University, Taiwan), Prof. C. Y. Wu (President of National Chiao Tung University, Taiwan), and Dr. S. W. Sun (CEO of UMC, Taiwan). The technical program consists of 15 invited talks, 110 oral papers, and 159 poster papers addressing the current state of the art in the topics relevant to electron devices, microfabrication processes, and solid-state circuits. To encourage the participation of young members, the conference held best student paper competitions for both orally presented papers and poster papers. The best oral paper in electron devices was given to Hsien-Chang Lin of National Cheng-Kuang University, Taiwan ("InGaP/InGaAs MOS-PHEMT with Liquid Phase Oxidized InGaP Gate Insulator") and the best oral paper in solid-state circuits was given to Wing-Sham Tam of City University of Hong Kong, Hong Kong ("High-Performance Resistance Sub-1V Bandgap Reference Circuit Based on Piecewise Compensation"). Wei Bian of Peking University ("Complicated Subthreshold Behavior of Undoped Cylindrical Surrounding-Gate MOSFETs") and Xinyi Tang of National University of

Singapore, Singapore ("A 180o Phase-Shifter With Small Phase Error for Broadband Applications") were awarded with the best poster paper in electron devices and solid-state circuits, respectively. At the EDSSC banquet, a brief ceremony to inaugurate the formation of EDS Tainan Chapter was held and witnessed by several EDS officers including Dr. Ilesanmi Adesida (EDS President), Dr. Paul Yu (EDS Vice-President of Educational Activities), and Dr. Juin J. Liou (EDS Vice-President of Regions/Chapters).

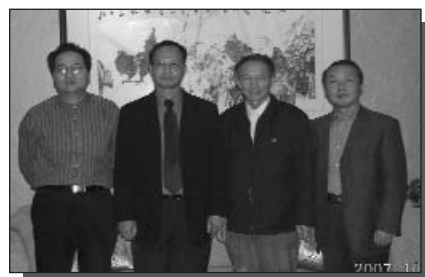
The next EDSSC will be held in Hong Kong in December 2008. Please visit the conference website at http://www.ee.ust.hk/ieee_eds/edssc/index.html for further information.

ED Xian

- by Yimen Zhang

Prof. Juin J. Liou visited the ED Xian Chapter October 22-25, 2007, and delivered a distinguished lecture entitled "Advanced Electrostatic Discharge (ESD) Protection Solutions in BiCMOS/CMOS Technologies". The DL talk was attended by more than 80 local professionals and students. This excellent lecture covered various aspects of ESD. Before the talk, Prof. Liou met with local EDS members, professors of Xidian University, and leaders from the National Base of Integrated Circuit Design in Xian, to discuss chapter activities and research collaborations. Prof. Liou also visited the research facilities at Xidian University and met with Prof. Yue Hao (Vice President of Xidian University) and Prof. Yuming Zhang (Vice Dean of the Microelectronics School of Xidian University).

~ Hei Wong, Editor



From left to right: Prof. Yuming Zhang (Vice Dean, School of Microelectronics, Xidian University), Prof. Juin J. Liou, and Prof. Yimen Zhang (ED Xian Chapter Chair)

ED/MTT India

- by K. S. Chari

The chapter has taken active initiatives in the following events held since last reporting:

- A Student Technical Meeting - National Festive of Science and Engineering Schools (NFSES-2007) - bringing together Science and Engineering students from various colleges - was organized by the Chapter in association with Department of Electronics and Communication Engineering, Muthayammal Engineering College, Rasipuram, Tamil Nadu on October 7, 2007. Theme paper presentations and hardware project demo/exhibition were held during the event. Student scholars from various areas took part and presented their Papers and Exhibits on VLSI, DSP and Micro-controller systems; Embedded and Communication systems; Medical, Instrumentation and Control Systems. Over 120 scholars participated at the forum and presented views and demos on the local/global needs and challenges. A record number of 70 hardware electronic and engineering projects were received and 32 were presented. Out of 200 Technical Papers received, 50 shortlisted ones were presented. A panel of experts headed by Dr. Chari, Sr. Director, DIT, judged the hardware projects. Over 16 Prizes were awarded for the first, second and third places in the categories of Paper Presentation and Hardware Contest; and several consolation prizes for the innovative and original hardware ideas. The Chapter had sponsored about 10 consolation prizes for the innovative projects in hardware contest. The first prizes in hardware contest and paper presentations were won respectively by J. Senthil Kumar and S. Ramesh Raja of VSB Engg College Karur and Ms. Punitha T. and Sridevi S. of Asan Memorial College of Engg. and Technology Chennai. NFSES provided an excellent forum for students and scholars from various Institutions to interact with each other and share their technical knowledge. The meeting concluded with bringing to open

many promising ideas and prototype applications in several fields. Dr. A.P. Kapilan, Principal, Chettinad College of Engineering and Technology, Karur inaugurated the event. Mr. Manikandan, CEO, Computer India, addressed the gathering. Dr. Chari gave the valedictory address. Dr. M. Madheswarn, Principal; Prof. P. Prakasam and Mrs. S. Nirmala with other staff coordinated organization of the meeting.

- The Chapter co-sponsored the International Conference on Microwaves and Optoelectronics (ICMO 2007) held at Dr. BAM University, Aurangabad, December 17-20, 2007. The event featured pre-conference tutorials for research workers. Technical papers were in the areas of Microwave Theory and Measurements, Microwave Dielectric Measurements, Antennas and Radar techniques, Microwave Photonics, Microwave Remote sensing, Simulation of Molecular Dynamics, Optical Fiber components and devices, Optical sensors and Instrumentation, Conducting Polymers and CNT for Optoelectronics and Biological, Biomedical and Agriculture applications of Microwaves and Optoelectronics. About 8 plenary talks, 14 invited talks, 106 technical papers and 60 poster papers in the above mentioned areas are presented by national and international authors. A keynote address on "Nano Wires based Sensor Array" was delivered by Prof. Ashok Mulachandani, University of California, USA. Over 500 attendees attended the meeting. Chapter had sponsored over 5 prizes and certificate of merit for best papers in poster sessions. BAM University organized the event. Prof. S.C. Mehrotra, Chairman ICMO, coordinated the meeting with the advisory committee, faculty and staff.
- The Chapter has also taken advance steps to co-sponsor the student technical festive - SPARX 2008 slated for January 25, 2008, at ISM University, Dhanbad. The Chapter also agreed to award 4 prizes with certificates for the winning entries in a hardware contest



A section of the student audience at the NFSES-2007 meeting at REC, Rasipuram, Tamil Nadu



A section of the audience at IMO 2007, held at BAM University, Aurangabad



Concluding session of the NFSES 2007 meeting

and paper presentations at the student festive.

- The Chapter Chair has periodically interacted with the STAR student program at Eluru. K.M.M.C.G.H. The School had conducted a science poster session and elocution competition on the theme "Consumption of Electricity". Srilakshmi and Ms. P. Sai Leela respectively, won the 1st prizes in the 80+ STAR student community.
- The Chapter executive, after completing their term and serving the chapter for a long time, has stepped down from office with a sense of satisfaction and leaving much strengthened chapter activities and footprint across the country. A motion set in earlier to separate the joint chapter to individual chapters has reached final stages. The Chapter executive thanks all members who have contributed to chapter activities.

ED Malaysia

- by Badariah Bais & Sahbudin Shaari

The 2007 IEEE Regional Symposium on Microelectronics (RSM2007) was held at Paradise Sandy Beach Resort, Malaysia, December 3-6, 2007. This is the sixth symposium organized by the Electron Devices Malaysia Chapter, a continuation from the series of symposium previously known as National Symposium Microelectronics (NSM). In this symposium, more than 150 abstracts were received but only 134 papers were shortlisted and accepted for publication in the RSM2007 proceedings. The main scope of the symposium covers all aspects of the semiconductor technology from materials issues and device fabrication, MEMS technology, IC design and testing, reliability and failure analysis, manufacturing and system applications.

There were three invited speakers for plenary sessions talking on various subjects including nano-electronics, display technology, heterostructure and nanodevices. The first keynote paper titled "New Insights on Ballistic versus Scattering-Limited Transport in Modeling a Nanoscale MOSFET" was presented by Prof. Vijay K. Arora, who is also a Distinguished Lecturer of IEEE. The second keynote paper titled "Display Technology – The Korean Experience" was presented by Prof. Dr. Jong Duk Lee from Seoul National University, Korea. The third keynote paper titled "ZnO Nanorods, Heterostructures and Nanodevices" was presented by Dr Gyu-Chul Yi from Pohang University of Science and Technology, Korea. There were more than 100 participants from Malaysia,

Singapore, Indonesia and India attended the 3-day symposium.

The opening ceremony was held during the Symposium Banquet on the first day of the symposium. We were honored to have the Vice-Chancellor of Universiti Malaysia Perlis (UniMAP), to officiate the opening ceremony. During the closing ceremony, three best student awards (Best Student Paper, Best Student Presenter and Best Student Merit Paper) were given out as appreciation to those involved in the symposium.

The main sponsors of the symposium were Universiti Malaysia Perlis (UniMAP) with exhibition held by Path-1 Technologies Sdn. Bhd., Kriptic Devices (M) Sdn. Bhd., Galaxy Group of Company and Novania Sdn. Bhd. The symposium was also organized in cooperation with the Institute of Microengineering and Nanoelectronics (IMEN) of Universiti Kebangsaan Malaysia and Universiti Malaysia Perlis.

For more information, please contact Prof. Dr. Sahbudin Shaari, Institute of Microengineering and Nanoelectronics (IMEN), Universiti Kebangsaan Malaysia. Tel: +603-89216308, Fax: 603-89259080, E-mail: sahbudin@vlsi.eng.ukm.my. Web-site: <http://www.ukm.my/~imen>.

AP/EDS/MTT Penang

- by Richard Keating

The AP/ED/MTT Penang Chapter was fortunate to have 4 excellent presentations over the last quarter.

On October 31, 2007, the chapter had two speakers on RF design: "Nonlinearity of CMOS Active Inductor-Based Oscillators", by Mr.



Mr. Prakash Chacko (right), is being presented with our chapter's token of appreciation by Richard Keating, Chapter Chairman



Prof. Georg Boeck presenting to a full auditorium in the Penang Skills Development Corporation

Ler Chun Lee, University Technology of Malaysia / Silterra Malaysia, and "Two Stage Integrated Class-F RF Power Amplifier", by Mr. Huang Min Zhe, University Technology of Malaysia / Silterra Malaysia. Both were very well received and showed again how much engineering talent exists in the industries of Penang and Kulim.

On December 7th we had our final presentations for the year, which was a half-day seminar featuring two very experienced researchers in the field of RF communication. The first was delivered by Mr. Prakash Chacko, Distinguished Member of the Technical Staff of Motorola on "Software-Defined Radio" – the holy grail of RF hardware. The second was delivered by Prof. Georg Boeck, Head of Microwave Engineering Lab, TU Berlin, and IEEE Distinguished Microwave Lecturer. Prof. Boeck spoke on the "Design of RF-CMOS Integrated Circuits for Wireless Communications".

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



Participants of RSM2007

REL/CPMT/ED Singapore

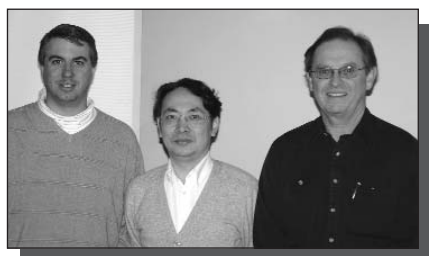
- by Alastair Trigg

On October 30th the chapter organized a technical talk on "Thermal Microsystems for Electronics Thermal Management across Multiple Scales" by Professor Suresh V. Garimella, Director of NSF Cooling Technologies Research Center at Purdue University.

Xing Zhou, our chapter committee member, was invited by the ED Toronto and Rochester chapters to give two DL talks on "Unified Compact Modeling of Emerging Multiple-Gate MOSFETs," on December 5th and 20th at the University of Toronto and Rochester Institute of Technology, respectively.



Prof. Xing Zhou with ED Toronto Chapter Chair, Prof. Emanuel Istrate (left) after the DL talk at the University of Toronto



Prof. Xing Zhou with ED Rochester Chapter Chair, Prof. Sean Rommel (left) and Prof. Robert Bowman (right) after the DL talk at Rochester Institute of Technology



Dr. Ralf Plieninger giving a keynote address at EPTC 2007

The 9th Electronics Packaging Technology Conference (EPTC 2007) was held December 10-12 and was a great success. Seventy-five papers were presented in 34 oral and 1 poster session, and six short courses were held on Monday before the main conference. Dr. Ralf Plieninger, Senior Director, Packaging at Infineon and Prof Herbert Reichl, Director of the Fraunhofer Institute for Reliability and Microintegration, gave two excellent keynote presentations. There were two luncheon talks, including one by Rao Tummala, and seven invited talks. At the VIP dinner, IEEE REL/CPMT/ED Singapore Chapter awards were presented to outstanding students from Nanyang Technological University and Temasek Polytechnic.

The Chapter's other flagship conference, the International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA 2008) will be held in Singapore July 7-11, 2008. The call for papers is available at <http://ewh.ieee.org/reg/10/ipfa/>. The deadline for abstracts was **January 18, 2008**. In 2008, IPFA will be holding its first Photo Contest – the Art of Failure Analysis 2008. In addition to the popular IPFA equipment exhibition, there will an additional opportunity for company promotion through sponsorship packages. Information on all aspects of IPFA is available on the website.

ED SJCE Student Branch

- by P. M. Pavan

With the endless pursuits of the zealous students, the ED SJCE Student Branch Chapter, yet again came out with flying colors organizing a series of workshops and talks, thus standing true to the words 'Redefining Technicality'. The ED SJCE, which has always strived to hone the technical skills of the students, has now proved to be a forum to celebrate the vitality of technology. The major events held this semester were:

Workshop on Basic Electronic Circuits:

The workshop on Basic Electronic circuits was conducted. The main aim of this workshop was to introduce the inquisitive students of the

circuit branches to Hobby circuits which would not only help the students to experience the practical implementation of their theoretical knowledge but also help them to explore the various possibilities to build more efficient circuits.

Workshop on Microcontroller 8051:

With Embedded Systems gaining a huge momentum in the present world, it was the perfect time to hold a workshop on 8051 to encourage students to take up hardware programming. The workshop had to cover the instruction set, the different addressing modes and the other important aspects of the microcontroller.

As a prerequisite to this, a course on logic design was conducted by the chapter. It was made appealing and easily gettable for the students by first showing them the practicality and the importance of the subject. This course was conducted keeping in mind the basic requirement to know a few things about logic design in order to understand the working of microprocessors and microcontrollers. The successful completion of this course paved the path to start the microcontroller workshop.

The workshop mainly dealt with the functioning of the microcontroller and its applications. The detailed architecture was studied and programming techniques were discussed. This eventually led to the distribution of some mini projects, involving programming of the microcontroller and some of its practical applications. Various aspects about the development of microcontrollers, its fine tuning and the advancement made in the field were discussed. The workshop was educative and ensured an interactive and lively crowd.

Thus the chapter aims at fueling the students to come up with innovative concepts beating the conventional ones. The chapter plans to conduct a series of technical events in the future. Encountering new frontiers each year, the chapter gets stronger, infusing vibrant aspirations and spirits among the students, thus trying to groom them and aid them to thrive in this technically challenging world.

~ Xing Zhou, Editor

EDS MEETINGS CALENDAR

(AS OF FEBRUARY 26, 2008)

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!

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 18 - 18, 2008, T **IEEE Workshop on Microelectronics and Electron Devices**, Location: Boise Centre on the Grove, Boise, ID, USA, Contact: Nirmal Ramaswamy, E-Mail: dramaswamy@micron.com, Deadline: 2/15/08, www: www.ewh.ieee.org/r6/boise/wmed2008/cfp.htm

April 21 - 24, 2008, T **International Conference on Microwave and Millimeter Wave Technology**, Location: Nanjing, China, Contact: Guang-Qi Yang, E-Mail: gq.yang@seu.edu.cn, Deadline: 1/20/08, www: www.icmmt2008.org

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: rnadell@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 - May 1, 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>

April 28 - 30, 2008, T **International Caribbean Conference on Devices, Circuits and Systems**, Location: Hotel Presidente Intercontinental, Cancun, Mexico, Contact: Jesus Finol, E-Mail: jlfinol@ieee.org, Deadline: 1/18/08, www: www.iccdcs.eecs.ucf.edu

April 28 - 30, 2008, T **IEEE Sarnoff Symposium on Advances in Wired and Wireless Communications**, Location: Nassau Inn, Princeton, NJ, USA, Contact: Ashutosh Dutta, E-Mail: adutta@telcordia.com, Deadline: 12/21/07, www: www.sarnoffsymposium.org

May 1, 2008, T **World Thermophotovoltaic Generation of Electricity Conference**, Location: Palm Beach, FL, Contact: Carlos Algora, E-Mail: algora@ies-def.upm.es, Deadline: Not Available, www: Not Available

May 5 - 7, 2008, * **IEEE/SEMI Advanced Semiconductor Manufacturing Conference**, Location: Hyatt Regency Cambridge, Cambridge, MA, USA, Contact: Margaret Kindling, E-Mail: mkindling@semi.org, Deadline: Not Available, www: www.semi.org/asmc2008

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: 1/4/08, 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: yljjiang@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 - 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/ispsd08

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@freescall.com, Deadline: 1/23/08, www: www.ewh.ieee.org/soc/eds/nvsmw

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

May 19 - 21, 2008, T **International Conference on Microwaves, Radar and Wireless Communication**, Location: Wrocław University of Technology, Wrocław, Poland, Contact: Edward Sedek, E-Mail: sedek@pit.edu.pl, Deadline: 1/3/08, www: www.mikon-2008.pl

May 21 - 24, 2008, T **International Conference on Perspective Technologies and Methods in MEMS Design**, Location: Lviv Polytechnic National University, Lviv, Ukraine, Contact: Mykola Pereyma, E-Mail: memtech@polynet.lviv.ua, Deadline: 2/15/08, www: www.lp.edu.ua/institute/ikn/cad/memtech

May 22 - 23, 2008, T **IEEE International Meeting for Future of Electron Devices, Kansai**, Location: Osaka University Nakanoshima Center, Osaka, Japan, Contact: Toshimasa Matsuoka, E-Mail: matsuoka@eei.eng.osaka-u.ac.jp, Deadline: Not Available, www: www.imfedk.org

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

May 27 - 30, 2008, T **International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication**, Location: Hilton Portland and Executive Tower, Portland, OR, USA, Contact: Steven Brueck, E-Mail: eipbn08@comcast.net, Deadline: 1/11/08, www: www.eipbn.org

June 1 - 5, 2008, T **Nanotechnology Conference and Trade Show**, Location: Hynes Convention Center, Boston, MA, USA, Contact: Sarah Wenning, E-Mail: wenning@nsti.org, Deadline: 12/6/07, www: <http://www.nsti.org/Nanotech2008/>

June 1 - 4, 2008, * **IEEE International Interconnect Technology Conference**, Location: Hyatt Regency at San Francisco Airport, Burlingame, CA, USA, Contact: Wendy Walker, E-Mail: iitc@his.com, Deadline: 2/1/08, www: <http://www.ieee.org/conference/iitc>

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 Convergence Center, Monterey, CA, USA, Contact: Susan Felch, E-Mail: susan_felch@amat.com, Deadline: 12/15/07, www: <http://www.iit2008.com/>

June 15 - 16, 2008, @ **IEEE Silicon Nanoelectronics Workshop**, Location: Hilton Hawaiian Village, Honolulu, HI, USA, Contact: Asen Asenov, E-Mail: a.asenov@elec.gla.ac.uk, Deadline: 3/15/08, www: <http://www.fulton.asu.edu/%7Enano/SNW.htm>

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 Vil-

lage, 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: mariuszo@dmcs.p.lodz.pl, Deadline: 2/29/08, www: <http://www.mixdes.org>

June 22 - 25, 2008, T **International Workshop on Low Temperature Electronics**, Location: Romantik Berg-und Jagdhotel Gabelbach, Ilmenau, Germany, Contact: Bruno Leone, E-Mail: bruno.leone@esa.int, Deadline: Not Available, www: www.wolte8.edu

June 23 - 25, 2008, T **Device Research Conference**, Location: University of California, Santa Barbara, CA, USA, Contact: Steve Koester, E-Mail: skoester@us.ibm.com, Deadline: Not Available, www: www.device-researchconference.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: ieensk@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: djjleap@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: Grand Copthorne Waterfront Hotel, Singapore, China, Contact: Chih-Hang Tung, E-Mail: chih-hang@ime.a-star.edu.sg, Deadline: 1/18/08, www: <http://ewh.ieee.org/reg/10/ipfa/>

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/micronano/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 3 - 8, 2008, T **IEEE International Conference on Molecular Beam Epitaxy**, Location: University of British Columbia, Vancouver, BC, Canada, Contact: Tom Tiedje, E-Mail: tiedje@phas.ubc.ca, Deadline: 4/1/08, www: www.mbe2008.ca

August 4 - 6, 2008, T **International Symposium on Low-Power Electronics and Design**, Location: Bangalore, India, Contact: Vijaykrishnan Narayanan, E-Mail: vijay@cse.psu.edu, Deadline: Not Available, www: www.islpd.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.ewh.ieee.org/r5/fort_worth/nano2008.html

August 18 - 22, 2008, * **IEEE International Conference on Portable Information Devices**, Location: University of Jyväskylä Convention Center, Jyväskylä, Finland, Contact: Ephraim Suhir, E-Mail: suhire@aol.com, Deadline: 3/15/08, www: www.portable2008.com

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 4 - 8, 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.sbmi-cro.org.br/sbmi-cro

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 Semicon-**

ductor 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: Edingburgh 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: melisaw@widerkehr.com, Deadline: Not Available, www: <http://www.ieee-cicc.org>

September 22 - 25, 2008, T **IEEE International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory**, Location: Tbilisi State University, Tbilisi, Ukraine, Contact: Mykhalyo Andriychuk, E-Mail: andr@iapmm.lviv.ua, Deadline: 8/1/08, www: www.ewh.ieee.org/soc/cpmt/ukraine

September 22 - 24, 2008, T **International Symposium on Ultra Clean Processing of Silicon Surfaces**, Location: Oud Sint-Jan Conference Center, Bruges, Belgium, Contact: Professional Conference Organizer MOMENTUM, E-Mail: ucps@momentum-pco.be, Deadline: 3/31/08, www: <http://ucps.org/>

September 23 - 26, 2008, T **International Conference on Solid-State Devices and Materials**, Location: Tsukuba International Congress Center, Ibaraki, Japan, Contact: Naomi Kutsuna, E-Mail: ssdm@intergroup.co.jp, Deadline: 5/8/08, www: www.ssdm.jp

September 24 - 25, 2008, T **International Conference on Actual Problems of Electron Device Engineering**, Location: Saratov State Technical University, Saratov, Russia, Contact: Natalia Akafieva, E-Mail: alexm@sstu.ru, Deadline: 6/1/08, www: http://www.apede2008.sstu.ru/srmain_eng.html

September 26 - 28, 2008, T **International Symposium on Advanced Gate Stack Technology**, Contact: Cassandra Muse, E-Mail: cassandra.muse@sematech.org, Deadline: Not Available, www: Not Available

September 30 - October 3, 2008, T **International Conference on Advanced Thermal Processing of Semiconductors**, Location: The Platinum Hotel & Spa, Las Vegas, NV, USA, Contact: Bo Lojek, E-Mail: blojek@atmel.com, Deadline: 5/31/08, www: www.ieee-rtip.org

October 3 - 6, 2008, T **International Forum on Strategic Technology**, Location: Mongolia, Contact: Tuul Davaa, E-Mail: intrel@must.edu.mn, Deadline: Not Available, www: Not Available

October 6 - 9, 2008, * **IEEE International SOI Conference**, Location: Mohonk Mountain House, New Paltz, NY, USA, Contact: Bobbi Armbruster, E-Mail: bobbi@bacmnc.com, Deadline: 5/2/08, www: www.soi-conference.org

October 12 - 16, 2008, * **IEEE International Integrated Reliability Workshop**, Location: Stanford Sierra Conference Center, South Lake Tahoe, CA, USA, Contact: Roy and Becky Walker, E-Mail: roy@sar101.com, Deadline: 7/11/08, www: <http://www.iirw.org>

October 12 - 15, 2008, * **IEEE Compound Semiconductor IC Symposium**, Location: Monterey Portola Plaza, Monterey, CA, USA, Contact: Mohammad Madihian, E-Mail: madih@mve.biglobe.ne.jp, Deadline: Not Available, www: www.csics.org

October 12 - 16, 2008, T **International Conference on Advanced Semiconductor Devices and Microsystems**, Location: Smolenice Castle, Smolenice, Slovak Republic, Contact: Jozef Osvald, E-Mail: elekosva@savba.sk, Deadline: 4/15/08, www: Not Available

October 12 - 12, 2008, T **Reliability of Compound Semiconductors Workshop**, Location: Portola Plaza Hotel, Monterey, CA, USA, Contact: Anthony Immorlica, E-Mail: anthony.a.immorlica@baesystems.com, Deadline: 8/4/08, www: www.jedec.org/home/gaas

October 13 - 15, 2008, * **International Semiconductor Conference**, Location: Sinia Hotel, Siniaia, Romania, Contact: Cristina Buiculescu, E-Mail: cas@imt.ro, Deadline: 6/1/08, www: www.imt.ro/CAS

October 13 - 16, 2008, @ **IEEE Bipolar/BiCMOS Circuits and Technology Meeting**, Location: Monterey Portola Plaza, Monterey, CA, USA, Contact: Janice Jopke, E-Mail: ccs@mn.rr.com, Deadline: 3/17/08, www: www.ieee-bctm.org

October 13 - 15, 2008, T **IFIP International Conference on Very Large Scale Integration**, Location: Democritus University of Thrace, Rhode Island, Greece, Contact: Dimitrios Soudris, E-Mail: dsoudres@ee.duth.gr, Deadline: 3/28/08, www: <http://vlsi.ee.duth.gr/vlsisoc2008/>

October 20 - 23, 2008, T **International Conference on Solid-State & Integrated Circuits Technology**, Location: Beijing, China, Contact: Yang-Yuan Wang, E-Mail:

yyw@ime.pku.edu.cn, Deadline: 5/31/08, www: www.ime.pku.edu.cn/icsict

October 26 - 29, 2008, T **IEEE International Conference on Sensors**, Location: Grand Hotel Tiziano e dei Congressi, Lecce, Italy, Deadline: 4/11/08, www: www.ieee-sensors2008.org

October 27 - 30, 2008, T **International Microprocesses and Nanotechnology Conference**, Location: JAL Resort Sea Hawk, Japan, Contact: Hiroaki Masuko, E-Mail: secretariat@imnc.jp, Deadline: Not Available, www: www.imnc.jp

October 27 - 29, 2008, T **IEEE European Microwave Integrated Circuits Conference**, Location: RAI Congress Centre, Amsterdam, The Netherlands, Contact: Frank Van Vliet, E-Mail: frank.vanvliet@tno.nl, Deadline: 2/24/08, www: www.eumw2008.com

November 5 - 7, 2008, T **Dielectric Thin Films for Future ULSI Devices: Science and Technology**, Location: Tokyo Institute of Technology, Meguro-ku, Japan, Contact: Jiro Yugami, E-Mail: yugami.jiro@renesas.com, Deadline: 7/25/08, www: home.hiroshima-u.ac.jp/iwdf

November 10 - 13, 2008, T **IEEE International Conference on Computer Aided Design**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Kathy Embler, E-Mail: kathy@dac.com, Deadline: 4/14/08, www: www.iccad.com

December 8 - 10, 2008, T **International Conference on Field-Programmable Technology**, Location: Grand Formosa Regent, Taipei, Taiwan, Contact: Wai-Kei Mak, E-Mail: wkmak@cs.nthu.edu.tw, Deadline: Not Available, www: www.icfpt.org

December 11 - 13, 2008, * **IEEE Semiconductor Interface Specialists Conference**, Location: Catamaran Hotel Resort, San Diego, CA, USA, Contact: Martin Frank, E-Mail: mmfrank@us.ibm.com, Deadline: Not Available, www: www.ieeesisc.org

December 14 - 16, 2008, T **International Conference on Microelectronics**, Location: Millennium Hotel, Sharjah, United Arab Emirates, Contact: Mohab Anis, E-Mail: manis@vlsi.uwaterloo.ca, Deadline: Not Available, www: www.ieee-icm.com

December 15 - 17, 2008, * **IEEE International Electron Devices Meeting**, Location: Hilton San Francisco and Towers, San Francisco, CA, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: <http://www.ieee.org/conference/iedm>

REPORT ON EDS MID-HUDSON MINI-COLLOQUIUM



Ravi M. Todi

The Electron Devices Society chapter at Mid-Hudson in New York organized a mini-colloquium on December 9, 2007, at the IBM facility in East Fishkill, New York. The colloquium was co-sponsored by the IEEE Electron Devices Society, the EDS chapter of the Mid-Hudson Section and the IBM Semiconductor Research and Development Center. The event began with a small welcome note by Lisa Shay, Chair of IEEE Mid-Hudson section. Professor Hiroshi Iwai from Tokyo Institute of Technology, Japan, was the first speaker at the colloquium. His talk focused on high-k and nano-wires aiming 2020 and beyond. Subramanian Iyer, Distinguished Engineer and Chief Technologist for the Semiconductor Research and Development Center, IBM, presented a very interesting talk entitled "Beyond Scaling – Teaching the Old Dog some New Tricks!" This was followed by a brief coffee break.

The post coffee session included three talks and the first one

was given by Professor Juin Liou of the University of Central Florida, Orlando. He discussed Electrostatic discharge (ESD) protection technologies for BiCMOS/CMOS. Cor Claeys from IMEC, Belgium, presented a talk on processing and defect control of advanced Germanium devices. The last talk of the colloquium was given by Professor Paul Yu, of the University of California at San Diego. Paul's talk was based on electroabsorption modulator for transparent analog

fiber link. For the first time this entire colloquium was broadcast live on a web cast. A total of 182 people attended the colloquium in person or through the web cast. Ravi Todi, co-chair for the colloquium, and Fernando Guarin, ED Mid-Hudson Chapter Chair, thanked the attendees and the guest speakers just before breaking for lunch. At the luncheon the attendees had an opportunity to interact with the speakers while enjoying their meal.



From left to right: Hiroshi Iwai, Juin Liou, Cor Claeys, Subramanian Iyer, Lisa Shay, Fernando Guarin and Paul Yu