IEEE
ELECTRON DEVICES SOCIETY
Newsletter

JULY 2009 VOL. 16, NO. 3 ISSN: 1074 1879 EDITOR-IN-CHIEF: NINOSLAV D. STOJADINOVIC

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IEEE
Celebrating 125 Years
of Engineering the Future

2009 IEEE International SOI Conference

Courtesy of California Travel & Tourism Commission – C. Heeb

Full Moon over Golden Gate Bridge, San Francisco

The premier conference dedicated to current trends in Silicon-On-Insulator technology will be held in Foster City, California, U.S.A., at the Crowne Plaza Hotel within Silicon Valley's high technology region. It will run October 6–8, 2009, preceded by a one-day tutorial Short Course on Monday, October 5th and will also feature a half-day educational class focusing on the fundamentals of SOI technology.

The conference was established with the support of IEEE to provide a forum for open discussion in all areas of silicon-on-insulator technologies and their applications. Ever increasing demand and advances in this technology make it essential to meet to discuss new gains and accomplishments, as well as to consider the new developments introduced in original papers presented at the conference.

Short Course

Once again, the popular One-Day Tutorial Short Course will be offered preceding the 2009 SOI International Conference. Tutorial Short Course instructors have many years of experience in the field

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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

ELECTRON DEVICES SOCIETY

EDS AdCom
Elected Members-at-Large
Elected for a three-year term (maximum two terms) with 'full' voting privileges

2009	Term	2010	Term	2011	Term
S. S. Chung	(2)	J. N. Burghartz	(2)	G. Baccarani	(2)
R. Huang	(1)	M. J. Chan	(2)	M. Jamal Deen	(2)
R. P Jindal	(1)	S. Ikeda	(2)	S. Deleonibus	(1)
M. Lundstrom	(2)	R. J. Nikolic	(2)	F. Guarin	(1)
H. S. Momose	(1)	J. J. Wesler	(2)	S. Saha	(1)
A. Z. H. Wang	(2)	T.-L. Ren	(1)	H. Shang	(2)
X. Zhou	(2)	R. M. Todi	(1)	J. W. Swart	(2)
				P. K. L. Yu	(1)

NEWSLETTER EDITORIAL STAFF

CONTRIBUTIONS WELCOME

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

Newsletter Deadlines

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

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.

IEEE Electron Devices Society Newsletter (ISSN 1074 1879) is published quarterly by the Electron Devices Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. Printed in the U.S.A. One dollar ($1.00) per member per year is included in the Society fee for each member of the Electron Devices Society. Periodicals postage paid at New York, NY and at additional mailing offices. Postmaster: Send address changes to IEEE Electron Devices Society Newsletter, IEEE, 445 Hoes Lane, Piscataway, NJ 08855.

Welcome Christopher Jannuzzi – New EDS Executive Director

Please join me in welcoming Christopher Jannuzzi as the new Executive Director of Electron Devices Society. As you all know, Bill Van Der Vort decided to retire at the end of June. Chris joined us on April 20th and has a few months overlap with Bill for the transition.

Christopher Jannuzzi

Chris joins the IEEE after a career at the College Board, a not-for-profit membership association composed of more than 5,600 high schools, colleges, universities, and other educational organizations. Chris began his career at the College Board in the software development group where he managed the design and implementation of an electronic college application system called ExPAN. As the technology department grew, Chris became director of product development and helped lead the organization's effort to transform their software products into the online tools that would eventually become collegeboard.com. Today, the site is the industry leader, accessed by millions of students, parents, and education professionals each month.

Although his early career was centered on technology development, Chris was increasingly drawn to the policy aspects of education systems and began work on a Masters in organization leadership at Columbia University's Teachers College. He completed his degree in 2006. Soon after, he became senior director of the College Board's membership division, managing their major national conference, Forum, and engaging members in the life and work of the organization.

Chris is extremely excited about joining the IEEE. He is looking forward to being part of a new group of colleagues and to facing the challenges and opportunities ahead.

Chris received an undergraduate degree in German literature from New York University. A native New Yorker, Chris shocked his Brooklyn-based extended family by relocating to the Jersey Shore where he lives with his wife Elizabeth and their three young children. He loves to sail, ski, and play music, but freely admits he's adept at none of these activities.

We will all miss Bill who for more than 3 decades has been the driving force behind the Electron Devices Society. Most of us are somewhat reluctant to change, but change also offers opportunity. This is the great task before Chris and EDS, but I am fully convinced that with the support of the volunteers and staff we will make this transition as smooth as possible and be ready for the challenges that the Society will face in the coming decade.

Cor Claeys
EDS President
IMEC
Leuven, Belgium

2009 IEEE International SOI Conference

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of silicon-on-insulator technology. The course is intended to educate attendees in details about current trends and issues in the SOI industry. The 2009 tutorial Short Course is entitled "Ultra-Thin SOI Devices: The Way to the Future" and will present a comprehensive overview that will highlight different ways that will be explored to address future process nodes at and beyond 22nm. Participants will receive copies of all visual presentations. The focus topics will cover the following:

- Ultra-thin single-gate fully-depleted devices
- Ultra-thin multi-gate fully-depleted devices with or without back gate biasing
- FinFET
- Process Description for the different devices
- Devices Physics
- Spice Modeling
- Logic and Memory Design

Technical Program

The 35th annual IEEE International SOI Conference will begin with a half-day plenary session followed by two days of oral sessions, a poster session, and a late news session. In addition, two Best Paper Awards will be presented at the conference; one for the best oral presentation and one for the best student presentation.

The 2009 SOI Conference seeks papers on a wide range of SOI technology including:

- SOI Device Physics and Modeling
- SOI Material Science, Characterization, and Manufacture
- Process Integration and Manufacturability of SOI Devices and Circuits

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Upcoming Technical Meetings

2009 IEEE Bipolar/BiCMOS Circuits and Technology Meeting (BCTM)

The 2009 IEEE Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) will be held October 12–14, 2009, at the Capri Palace Hotel & Spa on the picturesque island of Capri, Italy. It includes a one day short course followed by two days of conference.

Anyone interested in leading edge processes, devices, and circuits used in state of the art telecommunication systems and power control systems will not want to miss this conference. Bipolar and BiCMOS technologies, particularly SiGe HBT BiCMOS technologies, continue to play a key role in these systems.

Papers covering the design, performance, fabrication, testing, modeling, and application of bipolar and BiCMOS integrated circuits, bipolar phenomena, and discrete bipolar devices will be presented.

Situated off the coast of Italy, Capri is easily accessible by a combination of taxi and ferry from the Naples airport. A favorite resort destination since the Roman Empire, Capri offers numerous attractions including the Blue Grotto, Marina Grande, Farglioni, Villa Jovis, along with wonderful restaurants, hotels, galleries, and shops.

The conference starts with a one day short course followed by two full days of contributed and invited papers including a special session on Emerging Technologies. On Tuesday evening, the Gala Dinner will be organized by the Capri Palace restaurant, the only restaurant on Capri which boasts a Michelin star for specializing in Mediterranean cuisine interpreted with great originality.

Capri Palace, Capri, Italy

We are fortunate to have Dr. Thomas Skotnicki from ST Micro as this year's keynote speaker. Dr. Skotnicki will discuss "The future of Silicon with other Materials." This is a great opportunity to meet Dr. Skotnicki and learn about the latest tends in advanced Silicon process technologies.

The short course features three renowned experts on "RF and mm-wave applications: design, devices, characterization." Short course invited talks include: "From mm-wave measurement to design," Marcel Tutt (Freescale), "Electronic beam forming/phased arrays," Hossein Hashemi (University of Southern California), and "RF MEMS: technologies, modelling, reliability," David Howard (Jazz Semiconductor).

Two days of technical paper sessions, a luncheon with guest speaker, exhibits, and the evening banquet roll out the program. Booths feature the latest products of interest to the bipolar community. The banquet will be held at the Capri Palace restaurant where you will be able to connect with your colleagues and make new acquaintances. We look forward to welcoming you at BCTM 2009. Find full details and registration information for the conference on the BCTM web page (http://www.ieee-bctm.org/).

See you in Capri!

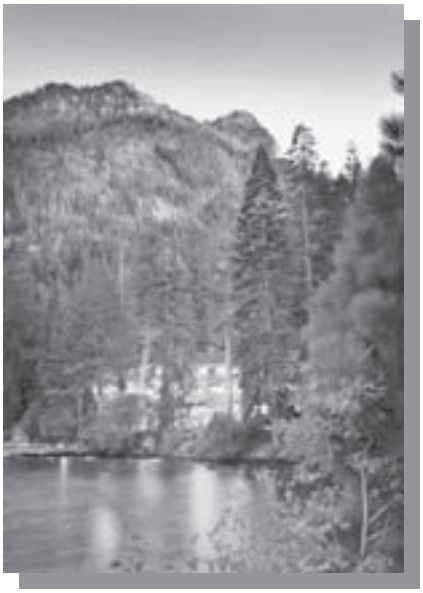
Frank Thiel
2009 BCTM General Chair
Zarlink Semiconductor
Austin, TX, USA

2009 IEEE International Integrated Reliability Workshop (IIRW)

The 2009 IEEE International Integrated Reliability Workshop (IIRW), sponsored by the IEEE Reliability Society and the IEEE Electron Devices Society, will be held at the Stanford Sierra Conference Center on the shore of Fallen Leaf Lake near South Lake Tahoe, California, October 18–22, 2009 (yes, we really start on Sunday). This workshop provides a unique forum for open and frank discussions of all areas of reliability research and technology for present and future semiconductor applications.

Hot reliability topics for the workshop include: high-κ and nitrided SiO2 gate dielectrics, transistor reliability including hot carriers and NBTI/PBTI, Cu interconnects and low-κ dielectrics, product reliability and burn-in strategy, impact of transistor degradation on circuit reliability, reliability modeling and simulation, SiGe and strained Si, III-V, SOI, optoelectronics, single event upsets, reliability assessment of novel devices, organic electronics, emerging memory technologies and future "nano"-technologies. The complete Call for Papers can be found at www.iirw.org. Please submit your abstract to the Technical Program Chair, Chad Young, SEMATECH, (Chadwin.Young@sematech.org) before the submission deadline of July 17, 2009. Expanded versions of select workshop manuscripts will be published in an IIRW Special Proceedings Issue of *IEEE Transactions on Device and Materials Reliability (T-DMR)*, June 2010.

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



Vance Fox Photography

The main lodge at the Stanford Sierra Conference Center. The center provides lodging, meals and meeting facilities as well as excellent recreation including hiking in the Desolation Wilderness and boating on Fallen Leaf Lake

Located just a short scenic drive (less than two hours) from Reno, the Stanford Sierra Conference Center is located on Fallen Leaf Lake, 6000 ft high in the Sierra Mountains. All cabins, nestled amid the pines and cedars along the shoreline, have decks and breath-taking views of the lake and surrounding peaks (don't worry, the cabins also have warm beds and hot showers; phone booths are available in the lodge). This peaceful setting, free from the distractions and annoyances of modern life, presents a terrific opportunity to get to know your colleagues, including internationally renowned experts. This is an opportunity not usually available at bigger, more hectic conferences. Instead of watching TV, participants spend their evenings at informal poster sessions, discussion groups, and special interest groups, all with refreshments provided to stimulate discussions.

One unique aspect of the workshop is the opportunity for every attendee to present a poster of his or her own research, no matter what state it is in. Just arrange for space when you register or bring last-minute results in your briefcase or backpack. Your ideas will be accommodated. This is a great way to share that new project you are working on and to get world-class feedback.

Another distinction of the IIRW is the moderated **Discussion Groups** that are held in the evenings, organized this year by Andrew Turner of IBM. Following up on the Discussion Groups there are also the **Special Interest Group meetings**, which are composed of small groups of attendees who often continue their conversations and collaborations even after they leave the workshop.

Yet another advantage of attending the IIRW is the extensive collection of **Tutorials**, presented by leading experts and included at no additional cost. This year the tutorials are jointly organized by Andreas Martin of Infineon and John Suehle of NIST and cover diverse reliability issues related to design, automotive, fWLR, metallization, ESD, high-κ, and NBTI. Tutorials are designed to be beneficial to newcomers as well as experienced members of the reliability community.

Last, but certainly not least, attendees have Wednesday afternoon off to enjoy activities such as hiking (with the annual trek to the top of Mt. Tallac as a favorite goal), volleyball, canoeing or sailing, biking,

walking, or just conversing by the lake, all in the fresh clean mountain air. This free afternoon is a great way not only to network, but also to build long-lasting friendships.

Additional information about the workshop is available on the IIRW website at www.iirw.org, or by contacting GuoqiaoTao of NXP, 2009 IIRW General Chair, (guoqiao.tao@nxp.com). Note: If you want to take part in this event, please register early as space at the Stanford Sierra Conference Center is limited to roughly 120 attendees and the workshop has sold out in the past.

On behalf of the 2009 International Integrated Reliability Workshop Committee, I look forward to meeting you in Lake Tahoe!

Tibor Grasser
2009 IIRW Communications Chair
Institute for Microelectronics, TU-Wien
Wien, Austria

The 2009 IEEE Compound Semiconductor IC Symposium (CSICS)

We cordially invite you to the 2009 IEEE Compound Semiconductor IC Symposium (CSICS) being held October 11–14, in beautiful Greensboro, North Carolina. Over the last 31 years the Symposium has been and continues to be the preeminent international forum in which advances in semiconductor circuit and device technology are presented, debated, and discussed. The scope of the Symposium encompasses devices and circuits in GaAs, SiGe, InP, GaN, and InSb as well as RF/mm-wave and high-speed digital CMOS to provide a truly comprehensive conference. This is the ideal forum for presentation of the latest results in microwave/mm-wave, high-speed digital, analog, mixed mode, and optoelectronic integrated circuits.

The 2009 CSIC Symposium is comprised of a full 3-day technical program, 2 short courses, a primer course, and a technology exhibition. The technical program consists of approximately 60 high quality state-of-the-art technical papers, 4 panel sessions, and an Industry Exhibit. The Symposium will also offer the popular annual introductory level primer course on "Basics of Compound Semiconductor ICs." This year the Symposium will feature approximately 15 invited papers on a wide range of important topics encompassing device engineering to circuit application using advanced compound and other related semiconductor technologies. In addition, the Symposium will continue the tradition of including important "late breaking news" papers.

The technology exhibition will be held on Monday and Tuesday. The exhibition will feature informative and interesting displays with corporate representatives on hand. The list of exhibitors can be found in the CSICS advance program which will be published and distributed in late June.

To complement the Symposium, there are several social events which include the Sunday Evening CSICS Opening Reception, the Monday CSICS Exhibition Opening Reception, the CSICS Tuesday evening theme party, and the CSICS Exhibition Luncheon on Tuesday. Breakfasts and coffee breaks will also be served on Monday, Tuesday, and Wednesday.

The Symposium will be held in the Sheraton Greensboro Hotel and Joseph S. Koury Convention Center adjacent to the Four Seasons Town Centre Shopping Mall. Situated in the Piedmont region of central North Carolina, Greensboro is part

Photos by Dan Routh Photography & Greensboro NC Convention and Visitors Bureau

of a thriving metropolitan area featuring a rich array of historic and cultural points of interest, as well as world class museums, a diverse arts community, and recreational activities. Named after Major General Nathanael Greene, Greensboro is the home of the Guilford Courthouse National Military Park commemorating the famous Battle of Guilford Courthouse. As a major textile headquarters and transportation hub in the 19th century and a flourishing industrial center in the 20th century, Greensboro enjoys bountiful prosperity, a fact that is reflected in the grandness of many of its commercial and civic buildings and the beauty of its public gardens.

For registration and further information please visit the CSICS website at http://www.csics.org. Further questions may be addressed to the Symposium Chair: Marko Sokolich, Phone: +1 (310) 317-5148, E-mail: msokolich@hrl.com.

We hope you can attend, 2009 IEEE CSICS Organizing Committee.

Douglas S. McPherson
2009 CSICS Publicity Chair
Zarlink Semiconductor Inc.
Ottawa, Ontario, Canada

2009 IEEE International SOI Conference

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- SOI Design Infrastructure
- SOI Circuit Applications (high-performance MPU, SRAM, ASIC, low power, high-voltage, RF, analog, mixed mode)
- Planar, Double, and Multiple Gate SOI Device Structures
- Novel SOI Structures, Circuits, and Applications (displays, microactuators, MEMS, microsensors, novel memories)
- 3D-SOI Integration (memory and MPU applications)
- SOI Optoelectronics (silicon photonics, waveguides, integration of III-V)
- SOI Reliability Issues (hot-carrier effects, radiation effects, high-temperature effects)
- Engineered Materials and Substrates

Conference Banquet

The 2009 SOI Conference banquet will offer a presentation from the National Aeronautics and Space Administration (NASA) with a focus on its history, the status of ongoing projects, and its future. The banquet will be held in the evening on Tuesday, October 6th.

Evening Panel Discussion and Fundamentals Class

Participants are free on Wednesday afternoon to explore California's diverse bay area, get a little work done, or just relax. An evening panel session where attendees are encouraged to share their opinions and expertise will round off Wednesday evening. This year's topic is "Issues and Opportunities in Circuit Design: Bulk vs PDSOI vs FDSOI."

Also on Wednesday afternoon, the conference is offering an optional, intermediate-level class intended for individuals from a variety of fields including circuit design, material scientists/engineering, process technology, modeling, and device design. The 2009, 3rd annual, SOI fundamentals class will provide attendees a better understanding of the basics on SOI device design covering the key differences between Partially Depleted (PD-SOI) and Fully Depleted (FD-SOI) device operation, and SOI circuit design covering the essentials of analog applications. The educational classes consist of two 90 minute lectures, given by world recognized experts in their respective areas.

Abstracts for the 2009 SOI Conference were due to the conference manager by May 1, 2009. Late news papers with exceptional merit will be considered for the Late News session if submitted on or before August 24, 2009, by e-mail ONLY to soipaper@bacminc.com in PDF format.

For registration forms and additional information, please go to the conference web site www.soiconference.org, or contact the 2009 IEEE International SOI Conference at 578 Washington Blvd., #350, Marina del Rey, CA 90292, Phone: +1 (310) 305-7885; Fax: +1 (310) 305-1038; E-mail: bobbi@bacminc.com.

Mario M. Pelella
2009 SOI General Chair
tau-Metrix, Inc.
Santa Clara, CA, USA

Society News

EDS President's Message

Cor L. Claeys
EDS President

On January 1, 2008 when I became President, I had the feeling that there was ample time to steer the Society in the appropriate direction to face the new challenges that were coming ahead. Now that I have to report on the status of the Society, I realize that time is passing very quickly. However, good progress has been made and there is a clear view on the direction to go to make our Society stronger and highly visible within the IEEE. Crucial elements are the continuous increase in membership benefits and the strong active involvement of our total pool of volunteers. The Strategic Committee, consisting of the President, President-Elect, Junior and Senior Past Presidents and the Executive Director, is responsible for the overall vision and strategy of the Society, for lining up with the general IEEE goals and to determine possible initiatives and tools to enable the implementation of the strategy. However, the real implementation is based on the support of administrative bodies such as the ExCom and AdCom and the help of the volunteers. The AdCom meetings are therefore considered as important meetings for the efficient operation of the Society and the right forum where the members can have their impact. A volunteer is not somebody willing to work for the Society, but rather being part of it.

The large variety of society driven application fields (e.g., health and wellness, infotainment, transport and mobility, ambient intelligence, energy and environment, communication) need engineers with a strong multidisciplinary training mastering besides electronics, with such fields like bioengineering, chemistry, material science, etc. The updated field of interest of the Society has broadened our scope so that more professionals should be able to consider Electron Devices as their home Society. However, this is not reflected in the membership where compared to 2007 we have experienced a growth in 2008 of only 2%. A main reason is of course the economic situation making IEEE membership expensive, especially in non US-Regions like South America, Asia and Eastern Europe. The semiconductor industry is still in the down cycle and even academic institutions are facing a reduction of their budgets. It is therefore essential to come up with new ideas for membership benefits. Last year, EDS initiated QuestEDS. The on-line feedback system allowing members to ask technical questions. However, we have the impression that not sufficient people are aware of it. The fact that even IEEE is considering a similar initiative is a strong indication that we are taking the right type of actions. EDS is very open to and welcomes new initiatives and suggestions from individual members.

The Globalization strategy, initiated several years ago, resulted in the active participation of more non-USA members in the different administrative and technical committees. The mid-term executive and administrative committee meetings are always organized outside the US. In 2008, the meeting was held in Athens, Greece. This year it was held at the end of May in Mumbai, along with a Region 10 (Asia & Pacific) Chapters meeting and a number of Mini-Colloquia organized in India, Nepal and Bangladesh. There has been a strong chapter growth in Region 10, especially in countries like China and India. Both countries are important because of their increasing activities in the field of semiconductor research and manufacturing. There is also a strong focus on forming new Chapters in Region 9 (Latin America). In 2008, a chapter was formed in Colombia and this year the action is in Argentina. The Region 9 Chapters Meeting is scheduled to take place in November 2009 in Buenos Aires, Argentina. Additional initiatives are taking place in the other Regions. It is very positive that amongst the new chapters there are also several EDS Student Chapters. Students are the potential for the future and the source of innovative ideas.

We all know that the number of Chapters is important, but more essential is the degree to which these Chapters are active and serving the members. The Chapters are the heart of the Society and drive membership growth. In 2008, the EDS Chapter of the Year Award, for an outstanding record of sustained chapter activities that contribute substantially to the vitality of the Electron Devices Society, was given to the ED Orlando Chapter. Last year an initiative was started that on request all chapters can receive an EDS banner. In 2008, there was also again a strong increase in the use of the Distinguished Lecture (DL) program and 20 Mini-Colloquia (MQ) were organized in different parts of the world. Our 123 DLs make about 200 presentations annually. Although for 2009 the budgets for DLs, MQs and chapter

subsidies have been increased, the request for support is much larger than expected.

Within the Society, the Conferences and Workshops have always been one of the success stories. In 2008, EDS supported 134 conferences, including 23 financially sponsored ones. The Vice Presidents of Meetings and Technical Activities are continuing efforts to obtain and make better use of the IEEE Conference data base to get to a better view on the topics covered, the geographical distribution, the meeting calendars and the success of the meetings. An important tool will be the survey that was organized in 2008 and which is now under study by all Vice-Presidents. They will work out a strategy to optimize the offer of conferences and to avoid too much overlap and/or overkill. Since late 2008, we are facing an economic downturn, also impacting the number of attendees at the conferences and their finances. This is a general trend, not only influencing EDS. The need for the mentioned conference data is therefore becoming even more important.

The importance of education within the Society is illustrated by the Fellowship Programs, available to both Graduate and Master Students, and the Education Award. We strongly encourage more students to apply for fellowships. The Society also has to establish strong interactions with the industrial community and the engineers in the field. Initiatives are therefore initiated to also better serve these members by organizing the appropriate type of events, to have them well represented in the different committees and to better inform them on their eligibility to be nominated for several of the existing awards. Recent interactions with industry have clearly pointed out that several of the Society benefits are very relevant to them, but not always well known. Actions have been taken to increase the awareness of membership benefits.

There has been a strong focus towards the Graduates of the Last Decade (GOLD) members, and IEEE EDS is playing a leading role. Initiatives have been started up to increase the representation and visibility of GOLD members in all the Society committees. The GOLD committee will have 20 members in total. The successful start at IEDM in 2007 of a GOLD Lecture linked to an EDS conference, has been repeated in 2008 and will be continued. For 2009, there was a special GOLD event during the mid-term meeting in Mumbai and a GOLD lecture is scheduled during IEDM in Baltimore. This year the new Early Career Award for GOLD members will be given for the first time. To increase the involvement of GOLD members in the DL program, actions are on going to appoint GOLD Ambassadors in the different regions.

At the publication level, our flagship publications, *IEEE Transactions on Electron Devices* (T-ED), and *IEEE Electron Device Letters* (EDL), are doing very well and have good turnaround times. The complete review process from 'submission to publication' is happening electronically for EDL and the plans are in place to do the same for T-ED. More proceedings of EDS sponsored conferences have become accessible via IEEE Xplore and an effort is being taken to also have proceedings from previous years electronically accessible. In 2009, Samar Sahar became the Vice-President for Publications and will together with his team continue to optimize procedures and to work out new initiatives.

Electron Devices is a great Society with enthusiastic volunteers and professional staff members. I am very confident that together we will achieve our goals and be able to face the coming challenges. As reported in another contribution in this Newsletter, our Executive Director, Bill Van Der Vort, retired at the end of June and is replaced by Chris Jannuzzi. We will do whatever possible to make this transition as smooth as possible with a minor impact on the volunteers. Although the Society lost money in 2008 due to the situation on the stock market reducing its reserves, it is still in a healthy financial condition. However, a serious challenge will be the budget control for 2010, where we have to follow the general IEEE financial rules. These rules are of course for all societies. As already mentioned a year ago, the Society is there for its members and all possible comments and suggestions that you may have will be discussed and taken into consideration. We are looking to your active involvement to make EDS stronger and even more unique. Let's go jointly for the changes to pave the future.

Cor Claeys
EDS President
IMEC
Leuven, Belgium

Announcement of Newly Elected AdCom Members

Ilesanmi Adesida
EDS Jr. Past President

On December 14, 2008, the EDS AdCom held its annual election of officers and members–at-large. The following are the results of the election and brief biographies of the individuals elected.

I. Officers

The following individuals were elected as officers for a one-year term beginning 1/1/2009:

Stephen A. Parke (Treasurer) Dr. Parke received the AA degree from Olivet Nazarene University in 1980 and the BS and MS degrees in electrical engineering from Purdue University in 1984. In 1984, he joined IBM Microelectronics Division in Essex Junction, VT, where he worked in advanced DRAM process and silicon device design on IBM's 4MB, 16Mb, and 64Mb DRAM designs. In 1989, he was awarded an IBM Ph.D. Fellowship, and joined the UC Berkeley Device Research group. In 1993, he received his Ph.D. and joined the IBM Semiconductor R&D Center in Fishkill, NY where he worked in the Triad 256Mb DRAM process development alliance between IBM, Toshiba, and Infineon. In 1996, he joined the Electrical Engineering faculty of Boise State University at the inception of its new College of Engineering. He helped lead the development of the ECE Department at BSU over its first ten years. Dr. Parke also founded and directed the Idaho Microfabrication Lab at BSU. In 2006, Dr. Parke joined Tennessee Tech University as ECE Professor and Chair. Dr. Parke's research is in the areas of double-gated nanoscale SOI transistors, Ultra-Low-Power and non-volatile memories. He holds twelve US patents. He has published and/or presented 40 papers. He is also active in the IEEE Electron Devices Society, currently serving as the Treasurer. He received the IEEE Millennium Medal in 2000 for his service.

James L. Merz (Secretary) Dr. Merz received the B.S. degree in Physics from the University of Notre Dame in 1959, and attended the University of Göttingen, Germany, 1959-60. He received his M.A. degree in 1961 and Ph.D. in Applied Physics in 1967 from Harvard. He joined Bell Laboratories in 1966, and in 1978 moved to UCSB as a Professor of Electrical Engineering. He was appointed Department Chair in 1982, Associate Dean for Research for Engineering from 1984 to 1986, and Associate Vice Chancellor from January to September, 1988. He was Director of the Center for Quantized Electronic Structures (QUEST), a NSF Science and Technology Center, from 1989 until he moved to Notre Dame in 1994, where he served as VP for Graduate Studies and Research from 1996 to 2001. He also served as Interim Dean of Engineering, July 2006 to January 2008.

Dr. Merz was awarded an Honorary Doctorate by Linköping University, Sweden, in 1993. He is a Fellow of the APS, IEEE, MRS, and AAAS. He was awarded the IEEE Third Millennium Medal in 2000, and received an Alexander von Humboldt Award to carry out research in Germany in 2002. He served for five years as Secretary of the Electron Device Society of the IEEE and a member of its Executive Committee, and resumed that duty in December 2007. He is currently a member of the Board of Directors of the Tyndall National Institute in Cork, Ireland.

II. Adcom Members-At-Large

A total of eight persons were elected to three-year terms (2009–2011) as members-at-large of the EDS AdCom. Four of the eight individuals were re-elected for a second term, while the other four were first-time electees. The backgrounds of the electees span a wide range of professional and technical interests.

A. Second Term Electees:

Giorgio Baccarani received his Dr. Ing. degree in Electrical Engineering in 1967 and his Dr. degree in Physics in 1969, both from the University of Bologna, Italy, where he is now professor of Digital Electronics. He is also Director of the Research Center on Electronic Systems (ARCES). G.B. has devoted his research work to various aspects of Microelectronics, including processing technology, device physics and characterization, current transport in semiconductor materials and devices, sub-micron MOSFET optimization and design, numerical analysis of semiconductor devices. He has authored or coauthored about 200 papers, and his activity is the result of an extensive cooperation with national and European Industries, and with a number of research Institutions in Italy and abroad. He is a Fellow of the IEEE.

M. Jamal Deen (Fellow '03) was born in Georgetown, Guyana. He is Professor of Electrical and Computer Engineering and Senior Canada Research Chair in InformationTechnology, McMaster University, Canada. Dr. Deen completed his PhD degree from Case Western Reserve University in 1985, where he held both a Fulbright-Laspau Scholarship and an American Vacuum Society Scholarship. He is a Distinguished Lecturer of the IEEE EDS; was awarded the 2002 Callinan Award from the Electrochemical Society, a Humboldt Research Award in 2006 and the Eadie Medal from the Royal Society of Canada in 2008. Dr. Deen is currently an Editor of *IEEE Transactions on Electron Devices* and Executive Editor of *Fluctuations and Noise Letters*. He has been an elected Fellow of seven national academies and professional societies including the Royal Society of Canada, the Electrochemical Society and the American Physical Society.

Huiling Shang received her Ph.D. degree in Electrical Engineering from Lehigh University, Bethlehem,Pennsylvania, in 2001. She has been working in the silicon technology department at IBM T. J. Watson Research Center as a research staff member since her graduation. Her current research focuses on the novel material fabrication and device structures for 32nm node and beyond. Her research interests include strained Germanium and strained Silicon Germanium channel CMOS device design and integration; transport physics in ultra thin SOI device and FinFET device technologies. Dr. Shang is a member of IEEE Electron Devices Society and Sigma Xi Honorary (scientific research) Society.

Jacobus W. Swart received the B. Engineer and Dr. Engineer Degrees in 1975 and 1981 respectively, from the Polytechnic School, University of São Paulo, Brazil. Following, he worked at: K. U. Leuven, Belgium, 1982–83; CTI, Campinas, 1984; LSI-University of São Paulo, 1985–88, RTI, USA, 1991, The School of Electrical and Computer Engineering, State University of Campinas, since 1988, presently as Full Professor. Since 2007 he is on leave from the University to serve as general director of CTI, a national research center. Dr. Swart has published 60 papers in Journals and about 170 full papers in Proceedings of Conferences. He has advised 38 Dr. and MSc. degree students. He is a Senior Member of IEEE, member of ECS, SBMicro, SBMO and SBPC and has been president of SBMicro twice, 1988–90 and 1998–2000. He was the founder and first Chair of the ED South Brazil Chapter, as well as an EDS Distinguished Lecturer since 2004.

B. First-Time Electees:

Simon Deleonibus received the MSc in Physics and PhD degrees in Applied Physics from Paris University in 1979 and 1982 respectively. He joined Thomson Semiconductors (Grenoble) in 1981 as a process integration engineer. He joined LETI (CEA) in 1986 as expert on CMOS and Flash memories integration. From 1996 to 2008, he directed the Ultimate CMOS project and the Electronic Nanodevices Laboratory (60 researchers), leading several industrial, National and European projects. He is now Chief Scientist of LETI-Silicon Technologies (850 researchers). He has published more than 500 papers (conferences and journals; 50 invited) and owns 30 patents; Editor of 1 book (WSPC). Author of 6 book chapters. Dr. Deleonibus is an editor for *IEEE Transactions on Electron Devices*. He is also a member of the international conference program committees for the IEDM, VLSI Tech Symposium, and ESSDERC. Member of the ITRS. Member of Board of Directors of Nanosciences Foundation and Engineering Panel of European Research Council. IEEE Fellow; French CEA Research Director; IEEE Distinguished Lecturer; "Chevalier de l'Ordre National du Mérite" by French Presidence Decree; Recipient of the "2005 Grand Prix de l'Académie des Technologies". Co-recipient of 7 Best Papers Awards.

Fernando Guarin is a Senior Engineer/Scientist at the IBM Microelectronics Semiconductor Research Development Center SRDC in East Fishkill, New York. He earned his BSEE from the "Pontificia Universidad Javeriana", in Bogotá, Colombia, the MSEE degree from the University of Arizona, and a Ph.D. in Electrical Engineering from Columbia University. He has been actively working in microelectronic reliability for over 29 years. From 1980 until 1988 he was a member of the Military and Aerospace Operations division of National Semiconductor Corporation where he held positions both in engineering and management. In 1988 he joined the IBM microelectronics division where he has worked in the reliability physics and modeling of Advanced Silicon Bipolar, CMOS and Silicon Germanium BiCMOS technologies. He has been the team leader for the qualification of several of IBM's deep submicron CMOS and SiGe technologies.

Dr. Guarin is a Fellow and Distinguished Lecturer of the IEEE, and was a founding member and first President of the Society of Hispanic Professional Engineers SHPE for the Mid-Hudson Valley New York Region.

Samar K. Saha received the M.S degree in Engineering Management from Stanford University, USA and the Ph. D. degree in Physics from Gauhati University, India. Currently, he is the Director of Design Technology at Silterra USA and an Adjunct Professor in Electrical Engineering at Santa Clara University, CA. Since 1984 he has worked in various positions for National Semiconductor, LSI Logic, Texas Instruments, Philips Semiconductors, Silicon Storage Technology, Synopsys, and DSM Solutions. Dr. Saha is a senior member of IEEE and Distinguished Lecturer of Electron Devices Society (EDS). He is the Vice-President of EDS Publications and Editor-In-Chief of *IEEE QuestEDS*. He has served as the guest-editor of *IEEE Transactions on Electron Devices* Special Issues, Regions 5 & 6 EDS Newsletter Editor, and Chair of EDS Compact Modeling Technical Committee, SRC-NAW and ED Santa Clara Valley Chapter.

Paul K.L. Yu (Fellow '08) received his Ph.D. in Applied Physics in 1983 from the California Institute of Technology. He is Professor of Electrical and Computer Engineering at the University of California, San Diego where he is presently Associate Vice Chancellor for Research Initiatives. His current research area is compound semiconductor materials and devices for microwave photonic and photovoltaic applications. He is IEEE EDS Vice President for Educational Activities; an IEEE EDS Distinguished Lecturer; and an Editor of *IEEE Electron Device Letters*. He has been elected a Fellow of the Optical Society of America (OSA), the International Society for Optical Engineering (SPIE).

Ilesanmi Adesida
EDS Chair of Nominations and Elections
University of Illinois
Urbana, IL, USA

Call for Nominations – EDS AdCom Members-at-Large

The Electron Devices Society of the IEEE invites the submission of nominations for election to its Administrative Committee (AdCom). Presently, the AdCom meets twice per year and is composed of 22 members. Seven members will be elected this year for a term of three years, and a maximum of two consecutive terms is allowed. In 2009, the election will be held after the AdCom meeting on Sunday, 6 December. Electees begin their term in office on 1 January 2010. For your information, the nominees do not need to attend the AdCom Meeting/Election to run.

Nominees are being sought to fill the slate of candidates. Nominees may be self-nominated, or may be nominated by another person; in the latter case, the nominee must have been contacted and have agreed to serve if elected. Any member of EDS in good standing is eligible to be nominated. *The nominees do not need to attend the AdCom Meeting/Election to run. On the other hand, if elected, the nominees are expected to attend the two AdCom meetings a year. In general, the travel and accommodation costs to attend these meetings are borne by the elected member.*

New Requirement for 2009! All nominees must be endorsed by one 'full' voting member, i.e., one of the four officers (President, President-Elect, Treasurer or Secretary), the Jr. or Sr. Past President or one of the 22 current AdCom Members-at-Large.

Please send your nominee's name, address, endorsement letter and supporting information to the EDS Executive Office Sr. Administrator, Laura J. Riello, IEEE, 445 Hoes Lane, Piscataway, NJ 08854, Fax: 732-235-1626, E-mail: l.riello@ieee.org, in time to be received by the deadline of **15 October 2009**. It is very desirable that submissions include a biographical summary in a standard two-page format. The EDS Executive Office can provide you with an example of the format. If you have any questions regarding the nomination requirements or process, feel free to contact Laura Riello (l.riello@ieee.org).

Ilesanmi Adesida
EDS Chair of Nominations and Elections
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EDS Administrative Committee Election Process

The Members-at-Large (MAL) of the EDS AdCom are elected for staggered three-year terms, with a maximum of two consecutive terms. The 1993 Constitution and Bylaws changes mandated increasing the number of elected MAL from 18 to 22, and required that there be at least two members from both IEEE Region 8 (Europe, Middle East & Africa) and Region 10 (Asia & Pacific). In 2003, EDS made changes to its Constitution and Bylaws to require that at least one elected AdCom member is a Graduate of the Last Decade (GOLD member). A GOLD member is defined by IEEE as a member who graduated with his/her first professional degree within the last ten years. It is also required that there are at least 1.5 candidates for each opening. In 2009, seven positions will be filled.

The election procedure begins with the announcement and Call for Nominations in the *EDS Newsletter*. The slate of nominees is developed by the EDS Nominations Committee and includes the non-Committee and self-nominations received. Nominees are asked to submit a two-page biographical resume in a standard format.

Effective with the 2009 election, the EDS AdCom approved a change to now require that each nominee be endorsed by a 'full' voting member, i.e., one of the four officers (President, President-Elect, Treasurer or Secretary), the Jr. or Sr. Past President or one of the 22 current AdCom Members-at-Large.

Nominations are closed on 15 October, and the biographical resumes and endorsement letters are distributed to the 'full' voting members of AdCom prior to the December AdCom meeting. The election is then held after the conclusion of the meeting. *The nominees do not need to attend the AdCom Meeting/Election to run. On the other hand, if elected, the nominees are expected to attend the two AdCom meetings a year. In general, the travel and accommodation costs to attend these meetings are borne by the elected member.*

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

Ilesanmi Adesida
EDS Chair of Nominations and Elections
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Report from the EDS Vice-President of Technical Activities

Joachim N. Burghartz
EDS Vice-President of Technical Activities

It is first of all my great pleasure to introduce myself as the chair of technical activities, having taken over from April Brown beginning January 2009.

The Electron Devices Society has set-up technical committees to help make sure the society is serving the right technical areas. The committees coordinate with meetings and publications to help insure that the technical information that is relevant to the field of electron devices remains on target and covers all the areas the members of the EDS are interested in. The technical committees advise and support the EDS executive committee upon request, serve as point of contact to IEEE staff on all technical questions, and act as a liaison to technically related societies and councils.

The work of the technical activities committees involves currently 171 experts from industry, academia and governmental institutions worldwide. There are 14 technical committees ranging across a wide spectrum of topics and covering all aspects of electron devices and related technologies. They range from mainstream silicon technologies (VLSI Technology and Circuits) to more exotic materials (Organic Electronics) and emerging areas (Nanotechnology).

The current committees and the names of their chairs are listed on the following page.

The primary reason for those technical committees is to insure the society is responsive to new trends. The EDS, as an active technical society, needs to provide its members with technical offerings that are in tune with emerging trends. Through those offerings we want to help the society to better serve its members and to grow in membership.

The society needs to be nimble enough to assist in getting meetings started or expanded for including new topical areas. Currently, about 25 conferences are financially sponsored

Compact Modeling	Jamal Deen	McMaster University.
Compound Semiconductor Devices & Circuits	Supriyo Bandyopadhyay	Virginia Commonwealth University
Device Reliability Physics	Anthony Oates	TSMC
Electronic Materials	Judy Hoyt	MIT
Microelectromechanical Systems	Chang Liu	University of Illinois at Urbana-Champaign
Nanotechnology	Edwin Chihchuan Kan	Cornell University
Optoelectronic Devices	Yeshaiahu 'Shaya' Fainman	University of California at San Diego
Organic Electronics	Hagen Klauk	Max Planck Institute for Solid State Research
Photovoltaic Devices	Steven A. Ringel	The Ohio State University
Power Devices and ICs	Richard K. Williams	Advanced Analogic Technologies Inc.
Semiconductor Manufacturing	Bob Doering	Texas Instruments
Technology Computer Aided Design	Enrico Sangiorgi	Universita' di Bologna
Vacuum Devices	Dan Goebel	Jet Propulsion Laboratory
VLSI Technology and Circuits	Bin Zhao	Freescale Semiconductor

and over 140 meetings have technical co-sponsorship from the Electron Devices Society. The technical committees assist the EDS Vice-President of Meetings in evaluating newly proposed conferences and meetings that apply for financial sponsorship or technical co-sponsorship in terms of relevance to EDS and coordination with the existing meetings.

The technical committees also cooperate with the publications committee to help insure that in the EDS publications the relevant topics are covered. We follow the development of the publications of closely related societies and councils within IEEE to help make sure that all those publications are well aligned to each other. Moreover, suggestions for special issues on timely topics are made to EDS publications.

A recently conducted survey has shown us that we are covering the right topics and that EDS is providing the right services to its members. However, we aim at continuously advising the EDS president and his team to be able to keep these services timely and to its best. We have to be concerned not only about the selection and organization of the technical areas within the EDS but increasingly at its boundaries. Future device technologies will be based on maximum performance and functionality at minimum power and physical size. Their design thus requires an interdisciplinary approach involving, besides the device design and optimization, aspects of circuit design, packaging, radio frequency and millimeter waves, optical/electrical interfaces, sensing and actuating, nano materials and structures and others. It will therefore be increasingly important to entertain a fruitful collaboration with other IEEE societies and with the IEEE councils through joint activities. The mutual highlights evening sessions at the IEDM and the ISSCC, the flagship conferences of the Electron Devices Society and the Solid-State Circuits Society, already mark a good effort in that respect.

Through reviews and advice, we, the chairs and members of the technical committees, aim at assisting EDS officers and staff in improving the overall quality and success in order to best serve the technical community of the EDS.

Joachim N. Burghartz
EDS Vice-President of Technical Activities
IMS CHIPS and University of Stuttgart
Stuttgart, Germany

In Remembrance of Professor James H.C. Lin

Professor James H.C. Lin, a pioneer in early electron device development and a recipient of Electron Device Society's J.J. Ebers Award, passed away on March 5, 2009 in Silver Spring, MD, USA. He was 89. Professor Lin, (or Jimmy, as he liked to be called), had a long and highly successful career in the forefront of modern engineering. Before joining the Electrical Engineering faculty of University of Maryland in College Park, MD, he worked at RCA, CBS and Westinghouse. At Westinghouse, he developed the lateral transistor, a pioneering invention that withstood the tests of time. We all know that. We know that he invented many of the critical components used in radios, TVs, electronic cameras and computers. His life was intertwined with the great engineering feat of this and the last century – the invention and development of the integrated circuit. He was a great engineer in an age of engineers. But,

perhaps more importantly, everyone he came in contact with knew Jimmy simply as this: a good man, a person who influenced your life for the better. That, more than anything, made him an ideal teacher and friend.

I'm sure many people reading this have worked with Jimmy for about half a century. I started working with him when I was just starting out in grad school, almost 40 years ago. He has been a kind of fixture in our lives. What struck me most in those early days was the example of strength he set – both physical and intellectual. Most of you know that he was quite an athlete. In fact, he was known as a college tennis star in China in the late '30s. Once, he and I went to the Vail conference on non-volatile memories. I knew about Jimmy's affinity for tennis, so to please my advisor (or so I thought) I brought my tennis racket along. I tried to get Jimmy to play. I thought my lack of skill would be offset by his age – he was about 50 at the time. To me, this was ancient. When I tried to get a game going, he told me, very seriously, that he was sorry but that would be very frustrating – for me. Subsequently, I had an opportunity to observe Jimmy on the court and I can tell you a match between us would have been more than frustrating for me. It would have been fatal.

The example he set for work was also that of strength. It was physically and mentally demanding. The lab we worked in was, it seemed to me, always in use day and night. There was little talk about textbook solutions to the problems we encountered. There were no textbooks for most of the things we did. Jimmy taught me how to use an old Brownie camera to make photo-masks for the test structures I was building. Even though I (and most of my colleagues,) mainly involved ourselves in modeling physical phenomena, he taught us that unless we actually observed the phenomenon and "played with it with our own hands" our knowledge of it was unsatisfactory.

To this end, he created the first cleanroom for component fabrication at the University of Maryland (and one of the first such facilities in the United States.) I think the word "scrounge" was invented to characterize Jimmy's getting equipment to base this activity on. I remember coming in some days to help Jimmy unload his car filled with furnace tubes and what-nots donated by the various labs he worked in from the old RCA in New Jersey to CBS Labs (up in Connecticut, I think). He got whatever he thought might be useful in the future. He truly had "the long view" and that future still hasn't arrived for some of that equipment – like the first projection electron beam lithography tool from Westinghouse research some 30 years ago. By the way, this idea is getting re-visited by KLA Corporation on a $90M grant! I think the Westinghouse tool is still in a basement over in Martin Hall. He liked to keep his options open.

But still, his gift for discerning the important directions of technological development was uncanny. Right after the first oil crisis, Jimmy set me working on improved efficiency solar cells. Maybe now we're finally getting serious about this important technology. He set Me, As He Did Many Others On The Path Of My Career, On The Direction Of My Life. And He Didn't Drop Out After That. He Always Checked In On Us, Helping Us In Our Mid-Course Correction, An Ever-Present Advisor.

This Continuous Dialog On Concept And Implementation, For Me, Extended Pretty Much Until the last few weeks. Nate Bluzer, Jimmy and I commuted to the old Westinghouse ATL until the early '80s, and I used Jimmy as a resource in my teaching from the 1980's on to today. I try to work with my graduate students the way Jimmy taught me. Look for the concept, get the "hands on" and ignore the trivia – the hype and buzz that's a frequent unfortunate by-product of the science funding process. I also insist (as Jimmy did) that they do not speak Chinese to each other!

Martin Peckerar
Department of Electrical and Computer Engineering
University of Maryland
College Park, MD, USA

PVSC William R. Cherry Award Winner

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.

This award is presented at each IEEE/EDS Photovoltaic Specialists Conference. The recipient is selected by the William R. Cherry Committee composed of past PVSC conference

chairpersons and past recipients of the award.

Stuart Wenham

Stuart Wenham was born in Sydney, Australia in 1957. He is currently a Scientia Professor at The University of New South Wales (UNSW) in Sydney. Upon graduating from UNSW in 1980 with 1st Class Honors and University Medal, he jointly, with Dr. Godfrey, established Australia's first solar cell production line. In 1983, he invented the *Buried Contact Solar Cell* jointly with his Ph.D. supervisor Prof. Martin Green. This solar cell has been commercialized by BP Solar as its Saturn technology and listed by the Australian Academy of Technological Sciences and Engineering (ATSE) as one of Australia's *Top 100 Inventions of the Twentieth Century*.

In the early 1990's, jointly with Prof. Green and Dr. Shi, he invented the thin-film *Crystalline-Silicon-on-Glass* technology subsequently commercialized through CSG Solar in Germany. In 1998, he became Director of the Key Centre for Photovoltaic Engineering at UNSW, following which he and his team developed the world's first Engineering Degree in Photovoltaic Engineering. This program was launched in 2000 with many of its graduates now in industry leadership positions world-wide. Also in 1998, Prof. Wenham and his team invented the *Laser Doped Selective Emitter* solar cell currently being commercialized by several companies world-wide. This technology is based on the PERL solar cell design also developed by the same team and responsible for holding the world-record for silicon solar cell performance for more than a decade. In 2003 with Dr. Mai, he invented the Semiconductor Finger Solar Cell, believed to be the most efficient screen-printed solar cell manufactured commercially. This was followed in 2005 with the development of the high performance Pluto technology at Suntech Power jointly with Dr. Shi and Dr. Ji, with the current Pluto manufacturing capacity being 100MW and planned to reach 1GW in the near future.

Professor Wenham has authored/co-authored several books and DVD's including the *Virtual Production Line for Solar Cell Manufacturing* and *Applied Photovoltaics*, one of the most widely used texts in the industry and translated into several languages. While remaining Director of the ARC Photovoltaics Centre of Excellence at UNSW, Stuart Wenham became CTO of Suntech Power in 2005, the world's largest photovoltaic module manufacturer.

He has been awarded several national and international prizes for his work including the World Technology Award for Energy in 2006, the Australia Prize for Science and Technology (with Martin Green) in 1999 and the Australian Academy of Technological Sciences and Engineering Clunies Ross Medal in 2008. He is a Fellow of the ATSE, the IEEE and the Institute of Engineers Australia.

John D. Meakin
Consultant
Weybridge, VT, USA

EDS Members Named Recipients of 2009 IEEE Technical Field Awards

Four EDS Members were among the recipients of the 2009 IEEE Technical Field Awards. They are:

Burn J. Lin of TSMC, Ltd., Hsin-Chu, Taiwan, received the 2009 IEEE Cledo Brunetti Award. His citation states, "For contributions to immersion lithography for the manufacture of integrated circuit devices."

Burn J. Lin is recognized as a technical leader in the semiconductor manufacturing industry and most responsible for 193-nm immersion lithography. In 2002, Dr. Lin proposed immersion lithography, which is a resolution-enhancement process that replaces the air gap between the lens and the wafer surface with a liquid medium, such as purified water. Through Dr. Lin's perseverance in convincing the industry that a change was needed, immersion lithography was adopted, and manufacturing of 45-nm feature sizes and smaller have become possible.

He has continued the cause for immersion lithography with groundbreaking papers that have mapped out scaling laws for super-high numerical aperture immersion optics, and he has led the development of defect-reduction methods to address concerns regarding the technology. As a result, immersion lithography has quickly become a manufacturing technology in just a few years.

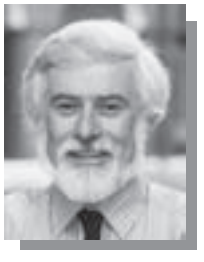
An IEEE Life Fellow, Dr. Lin is currently the senior director of the Nanopatterning Technology Division at TSMC, Ltd., the world's largest silicon foundry.

Eric R. Fossum of Samsung Electronics Semiconductor Research and Development Center, Yongin City, South Korea, has been named the recipient of the 2009 IEEE Andrew S. Grove Award. His citation states, "For significant contributions to the invention, development and commercialization of CMOS image sensors."

Eric R. Fossum's development of the active pixel image sensor based on CMOS technology has had a profound effect on digital photography, enabling and improving applications such as Web cams, cell phone cameras, high-end digital cameras, high-speed machine/medical vision systems, and automotive cameras. As an alternative to the charge-coupled device (CCD) sensor, Dr. Fossum's CMOS active-pixel sensor took advantage of shrinking design rules and adapted successful CCD signal processing techniques to put an amplifier on each pixel of the image sensor to yield a high-quality image. Other advantages include better speed, reduced size and less power consumption, which made it favorable for consumer devices. He co-founded Photobit Corporation in 1995 to accelerate the technology's commercial use, and in 2001 the company was acquired by Micron Technology, one of the world's largest suppliers of image sensors for mobile applications. An IEEE Fellow, Fossum holds 119 U.S. patents and is currently a consultant for the Samsung Electronics Semiconductor Research and Development Center, where he leads a team of researchers in advanced imaging sensors.

Shojiro Asai of Rigaku Corporation, Tokyo Japan, has been selected to receive the 2009 IEEE Frederik Philips Award. His citation states, "For leadership in research and development in electron device technologies and their applications."

Shojiro Asai's contributions in electron device technologies helped position Hitachi Ltd. as a leader in the semiconductor field and benefited the industry as a whole. Dr. Asai was a leader in the development of sub-micon MOS devices. The 2-D numerical simulator for carrier transport his team built for this purpose, was a world benchmark during the 1970s. He was instrumental in the development of electron beam mask making and direct writing, now indispensible tools for semiconductor manufacturing. He also led the efforts in dynamic random access memories with 3-D memory cells and microcontrollers with embedded nonvolatile memories and digital signal processor capabilities. These are now key components in computers, cell phones and personal navigators. Dr. Asai was a key leader in developing low-cost, tamper-resistant radio frequency identification (RF-ID) technology. It provides the ability to trace industrial and commercial goods throughout the entire product lifecycle. An IEEE Life Fellow, Dr. Asai is currently executive vice president of Rigaku Corporation, Tokyo, Japan.



John C. Bean of the University of Virginia, Charlottesville, VA, has been named the recipient of the 2009 IEEE Undergraduate Teaching Award. His citation states, "For providing opportunities to both undergraduate and pre-college students for discovery through both laboratory projects and virtual experiments on the world wide web."

John C. Bean's goal of providing students with exciting "moments of discovery" while studying today's complicated world of micro- and nanoelectronics was realized with the creation of the Web-based "UVA Virtual Lab," which uses virtual reality to reveal features such as fields and forces that are invisible to the human eye and to transport users from human to atomic scales. Covering topics ranging from basic electric circuits and virtual disassembly of scientific instruments to explanations of micro/nano device operation, the site's impact can be seen in the more than 2,000 worldwide educational institutions that have viewed more than 4 million Web pages since 2005. Dr. Bean also redesigned the University of Virginia's "Introduction to Engineering Design" format by replacing a series of dry lectures with hands-on freshman-level project courses based on a semester-long team robotics competition in which students take responsibility for all organizational and operational decisions. An IEEE Fellow, Dr. Bean is currently the J.M. Money Professor of Engineering and Applied Science at the University of Virginia, Charlottesville.

Alfred U. Mac Rae
EDS Vice-President of Awards
Mac Rae Technologies
Berkeley Heights,
NJ, USA

Status Report from the 2008 EDS PhD Student Fellowship Winners

Paul K.L. Yu
EDS Vice-President of Educational Activities

Agis A. Iliadis
EDS Masters Student Fellowship Chair

In 2000, the IEEE approved the establishment of the Electron Devices Society PhD Student Fellowship Program. The Program is designed to promote, recognize, and support graduate level study and research within the Electron Devices Society's Fields of Interest, which include: All aspects of the 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. In deference to the increasing globalization of our Society, at least one fellowship is to be awarded to students in each of three geographical regions: Americas, Europe/Mid-East/Africa, and Asia & Pacific.

In July 2008, EDS announced the winners of the 2008 Fellowships'. The four winners were: Ahmed E. Islam of Purdue University, West Lafayette, Indiana; Jay Mody, IMEC, Leuven, Belgium; Runsheng Wang, Peking University, Beijing, China; and Jiahui Yuan, Georgia Institute of Technology, Atlanta, Georgia. The winners are pursuing distinctly different research topics for their doctoral degrees. The following are brief progress reports written by the award winners.

Ahmad Ehteshamul Islam is pursuing a PhD with Professor M. Ashraful Alam in ECE, Purdue University. His PhD thesis on "Theory and Characterization of Random Defect Formation and Its Implication on Hyper-scaled CMOS Variability" is expected to be completed in 2009. In the course of his research, he has published more than 20 journals/conference papers. His current work has instigated the concept of degradation-free transistor, a possibility – if demonstrated and adopted – may reshape how circuits are designed and evaluated now-a-days for handling CMOS variabilities. Currently, he is exploring these possibilities that would enable transistors to operate at V_{DD} < 1V, which is almost a dream in existing CMOS technology.

Jay Mody is currently pursuing his PhD degree under the guidance of Professor Wilfried Vandervorst at the Katholieke Universiteit, Leuven and IMEC vzw. His doctoral thesis is titled "Dopant and Carrier Profiling in FinFET - Based Structures." The doctoral research centers on development of Scanning Spreading Resistance Microscopy (SSRM) technique for routine quantitative 3D-carrier profiling in FinFET-based devices with sub-nm resolution. He has authored or co-authored 20 scientific papers which have appeared in top-tier journals and international conferences. His dissertation is expected to complete by September 2010.

Runsheng Wang's research interests include novel nano-devices design, fabrication, and reliability, with focus on multi-gate devices and Si nanowire transistors. He has authored or coauthored 28 scientific papers in international journals and conferences, among which he won the Best Student Paper Award of the 9th International Conference on Solid-State and Integrated-Circuit Technology (ICSICT). From November 2008 to August 2009, he is a Visiting Researcher at Purdue University working on III-V MOSFETs. After that, he will continue working toward the PhD degree at the Institute of Microelectronics, Peking University. His PhD thesis is expected to be completed in 2010.

Jiahui Yuan's research focuses on the detailed understanding of the fundamental scaling issues of SiGe heterojunction bipolar transistors (HBTs), and to date has centered on two specific areas: 1) using operating temperature as a tuning knob for both enhancing performance to better define the ultimate speed limits of such devices, as well as uncovering new device physics phenomena in these operating temperature extremes; and 2) defining a viable scaling path towards THz bandwidth in SiGe HBTs. Since the

receipt of this fellowship in August 2008, he has published (or submitted) one journal paper and two conference papers on these two areas, and filed one patent disclosure.

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

Agis A. Iliadis
EDS Masters Student Fellowship Chair
University of Maryland
College Park, MD, USA

IEEE Nanotechnology Council Announces 2009 Award Winners

IEEE Nanotechnology Council Awards Committee (Chaired by Prof. James J. Coleman) announced its 2009 award winners for IEEE Nanotechnology Pioneer Award, IEEE NTC Distinguished Service Award and IEEE NTC Early Career Award. These awards will be presented at IEEE NANO 2009 in Genoa, Italy in July 2009.

Nanotechnology Pioneer Award
The NTC Pioneer Award in nanotechnology is to recognize individuals who by virtue of initiating new areas of research, development or engineering have had a significant impact on the field of nanotechnology. The winner of the 2009 award is:

Professor Susumu Noda (Kyoto University) "for pioneering contributions to photonic crystals and nanophotonics."

Distinguished Service Award
The purpose of the Distinguished Service Award is to recognize an individual who has performed outstanding service for the benefit and advancement of the IEEE Nanotechnology Council. The winner of the 2009 award is:

Professor Fumihito Arai (Tohoku University) "for his dedicated service to NTC during its formative years."

Nanotechnology Early Career Award
The purpose of the Nanotechnology Early Career Award is to recognize individuals who have made contributions with major impact on the field of nanotechnology. The winner of the 2009 award is:

Professor Adrienne Stiff-Roberts (Duke University) for her contributions to the "development of nanoscale quantum dots for infrared detection."

Congratulations to all the winners.

James J. Coleman
IEEE NTC Awards Committee Chair
Department of Electrical and Computer Engineering
University of Illinois at Urbana-Champaign

EDS Membership at Your Service!

Renuka P. Jindal
EDS President-Elect

As we continue to enhance the value of IEEE Electron Devices Society membership, we have added yet another member benefit. Any paper that has been recommended for publication either in *IEEE Transactions on Electron Devices* or *IEEE Electron Device Letters*, but lacks the rigor of the English Language, is eligible for free copy-editing service. This is subject to the condition that *ALL authors* are EDS members at the time of submission of the manuscript. As the number of non-native English speaking authors continues to grow in our journals, we feel this service would provide value.

This will not only enhance the value of EDS membership and hopefully encourage more professionals to join IEEE EDS, but also improve the readability and comprehension of papers available through our flagship publications. If you have any other ideas on how to increase the value of EDS membership, please do not hesitate to contact us at eds@ieee.org.

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

Congratulations to the EDS Members Recently Elected to IEEE Senior Member Grade!

Vishwanath Bhat
Amalendu Bhattacharyya*
Roc Blumenthal
Louis Brousseau
Jim Browning
David Butler*
Peter Catrysse
Chih-Hung Chen*
Jihong Chen
Hoi Wai Choi
Patrick Chu
Andre Cropper
Marie Denison
Jaydeb Goswami
Vera Gradisnik
Edmundo Gutierrez-D
Douglas Hackler
Jovan Hadzi-Vukovic
Chien-jih Han
Brett Hertzberg
Masashi Horiguchi
Jeffrey Hung
Nitin Jain
Soji John
Ilya Karpov
William Knowlton
Randy Koval
Francis Kub
Man Pio Lam
Yu-Cheng Lin
Satish Mahajan
Carlos Mazure
Roy Meade*
Luis Merege Sanches
Akio Nakagawa
Pai-Hung Pan
Inna Patrick
Robert Plana
William Redman-White
Johann Reithmaier
Cora Salm
Zaliman Sauli*
Michael Schroter
Yagyadeva Sharma
Donald Soderman
Akif Sultan
Jonathan Terry*
Norman Tien
Hieu Tran
Leonard Trombetta
Takamasa Usui
David Verbitsky
Mingxiang Wang
Paul S. Weiss
Chung-Cheng Wu*
Xiaoguang Zhang
Xu Zhu
Thomas Zimmer

* = 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 Senior Member Program

Albert Wang
EDS Vice-President of Membership

The Electron Devices Society established the EDS Senior Member Program to both complement and enhance the IEEE's Nominate-a-Senior-Member Initiative and make IEEE/EDS members aware of the opportunity and encourage them to elevate their IEEE membership grade to Senior Member. This is the highest IEEE grade for which an individual can apply and is the first step to becoming a Fellow of IEEE. If you have been in professional practice for 10 years, you may be eligible for Senior Membership.

New Senior Members receive an engraved wood and bronze plaque and a credit certificate for US$25 to be used toward a new IEEE society membership. Upon your request, the IEEE Admission & Advancement Department will send a letter to your employer recognizing this new status as well. The URL to request this letter is http://www.ieee.org/web/membership/senior-members/notification.html.

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

Please be aware that even if you decide to list EDS as your nominating entity, you still need to have an IEEE member nominate you along with two

other references. Your nominator and your references all must be active IEEE members holding Senior Member, Fellow or Honorary Member grade.

For more information concerning Senior Membership, please visit http://www.ieee.org/web/membership/senior-members/index.html. To apply for Senior Member grade, please complete an application form, which is available at http://www.ieee.org/web/membership/senior-members/application.html. You can also request a hard copy Senior Member packet via mail or fax by contacting IEEE Admissions and Advancements Department, Attn: Denise Howard, 445 Hoes Lane, Piscataway, NJ 08854, USA, Fax: +1 732 463 9359, E-mail: d.howard@ieee.org.

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

Thank you for supporting IEEE and EDS.

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

EDS Chapter Subsidies for 2010

The deadline for EDS chapters to request a subsidy for 2010 is 1 September 2009. For 2009, the EDS AdCom awarded funding to 75 chapters, with most amounts primarily ranging from US$250 to US$1,500. In June, Chapter Chairs were sent an e-mail notifying them of the current funding cycle and providing them with a list of guidelines. In general, activities which are considered fundable include, but are not limited to, membership promotion travel allowances for invited speakers to chapter events, and support for student activities at local institutions. Subsidy requests should be sent via e-mail or fax to the EDS Sr. Administrator, Laura J. Riello, IEEE, EDS Executive Office, 445 Hoes Lane, Piscataway, NJ 08854, l.riello@ieee.org or fax 732 235 1626. Prior to the submission of a subsidy request, the Chapter Chair must have submitted a chapter activity report by July 1st to its respective SRC Chair and Laura Riello of the EDS Executive Office. This report should have included a general summary of chapter activities (one to two pages) for the prior July 1st – June 30th period and a copy was required to be included with your chapter subsidy request. Final decisions concerning subsidies will be made by the EDS SRC Chairs/Vice Chairs in December. Subsidy checks will be issued by late December.

EDS Chapter of the Year Award Call for Nominations

The EDS Chapter of the Year Award is given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st – June 30th period. Nominations for the award can only be made by Chapter Partners, SRC Chairs/Vice-Chairs, or self-nominated by Chapter Chairs. The nomination form is available at http://www.ieee.org/portal/pages/society/eds/awards/chapter_award.html or by contacting Laura Riello (l.riello@ieee.org) from the EDS Executive Office.

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

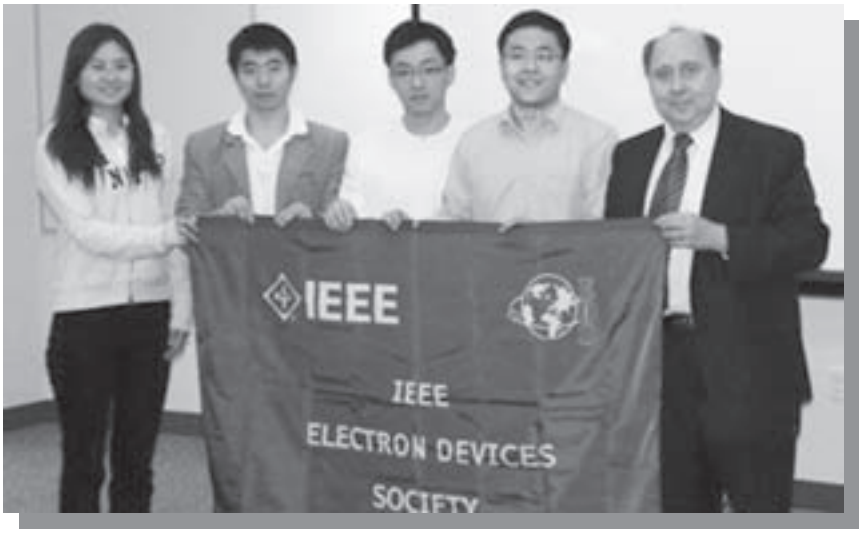
As of the 2007 Award, the EDS AdCom approved a ruling whereby a chapter that wins the Chapter of the Year Award cannot win again for a period of 3 years.

The schedule for the award process is as follows:

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

IEEE EDS Mini-Colloquium on Microelectronics at University of California, Riverside

On April 17, 2009, the IEEE EDS Mini-Colloquium on Microelectronics was held successfully at the University of California, Riverside (UCR). This mini-colloquium was organized to celebrate the establishment of the new IEEE EDS UCR Student Branch Chapter. Three IEEE Distinguished Lecturers attended the mini-colloquium to deliver three seminar talks: "Nanotechnology Research Challenges for More Moore and Beyond" by EDS President, Prof. Cor Claeys from IMEC; "Millibits to Terabits/pS and Beyond – 60+ Years of Innovation" by EDS President-Elect, Prof. Renuka Jindal from University of Louisiana; and "Advanced on-Chip



EDS President Prof. Cor Claeys (R-1) inaugurated the newly established IEEE EDS UCR Student Chapter and presented the EDS banner to the UCR Chapter Officers

Some mini-colloquium participants (Front from Left: Prof. Reza Abbaschian, Engineering Dean at UCR, Prof. Liou, Prof. Jindal and Prof. Claeys)

Prof. Jindal presents Certificate to the Best Student Paper (Graduate) winners

Prof. Abbaschian (L-2) and Prof. Albert Wang (R-1), EDS VP, present Certificate to the Best Student Paper Award (Undergraduate) winners

ESD Protection in CMOS/BiCMOS" by EDS Vice-President Regions/ Chapters, Prof. Juin Liou from University of Central Florida.

The event started with an official inauguration of the EDS UCR Student Chapter by EDS President, Prof. Claeys, who handed over the EDS banner to the UCR Chapter Officers. This EDS mini-colloquium was jointly held with the 1st IEEE Student Research Forum @ UCR (ISRF-UCR), a new annual student research symposium organized by the EDS UCR Student Chapter as its first major academic event. ISRF-UCR means to provide an interactive forum for students, both graduate and undergraduate, at UCR to share their research outcomes and experiences to promote the research sprits among students. About forty student papers, including 20 undergraduate research papers, were accepted for interactive presentations. Our EDS guest speakers also served as the judges to selected the Best Student Papers for both graduate and undergraduate student presenters. The events were very well received by an audience of about 80 people on campus. Our students also enjoyed the interactions with our EDS guests very much.

Xin Wang
ED University of California Riverside Student Branch Chapter Chair
University of California
Riverside, CA, USA

Report on the EDS Mini-Colloquium Held in Seoul, Korea

An IEEE Mini-colloquium (MQ) on Nano-Scale Devices and Circuits, sponsored by the Electron Devices Society, took place April 9–10, 2009, at the BK21 program of Seoul National University and the ED Korea Chapter. The event was held in Doyeon Hall at the Inter-University Semiconductor Research Center (ISRC) of Seoul National University, Seoul, and attracted about 50 participants. The MQ was organized by the ED Korea Chapter, SSCS Seoul Chapter, and the ED/SSCS/ MTT Youngnam Chapter. Opening

Some of the attendees of EDS/SSCS joint mini-colloquium held April 9–10, 2009, in Seoul, Korea

The April 2009 mini-colloquium organizers and DL speakers, (from left to right) Professors Hyungcheol Shin, Jong-Ho Lee, Jinyong Chung, Kwangsup Yoon, Juin J. Liou, Phillip K. T. Mok, Mansun Chan, Dr. Takayuki Kawahara, Professors Hei Wong and King Leong Pey

remarks were given by Prof. Byung-Gook Park, who is director of ISRC of Seoul National University. Total number of talks was 11: Four EDS Distinguished Lecturer (DL) talks, 2 SSCS DL talks, 3 EDS talks and 2 SSCS talks. Each talk lasted 50 minutes including questions and answers.

On April 9, Dr. Takayuki Kawahara from Central Research Laboratory, Hitachi Ltd, Japan, gave a DL talk on "SPRAM (SPin-transfer torque RAM) Technology for Green IT World." Dr. Kawahara reviewed the current status and future prospect for this technology, and explained the impact on the green IT world. Another DL talk, entitled "On-Chip Switching DC-DC Converters-Design and Challenges," was given by Prof. Phillip K. T. Mok from Hong Kong University of Science and Technology, Hong Kong. Prof. Mok spoke to the audience about the switching dc-dc converter and offered a brief overview of the requirement of these switching converters, and discussed the design issues and challenges in implementing these converters on-chip. Prof. Hyungcheol Shin from Seoul National University, Seoul, Korea, explained a channel thermal noise model and focused on the characterization and analysis of RTN in nano-scale MOSFETs including DRAM cells and flash memory cells. Prof. Jong-Ho Lee from Kyungpook National University, Daegu, Korea, spoke on "High-Density Flash Memory Cells and Characterization." During his talk, he introduced a high-density NOR cell based on recessed channel and several NAND strings consisted of nano-scale cells without source/drain, and touched RTN noise in flash memory cells and string. Dr. Byung-Ha Park from Samsung Electronics Co., Ltd, Korea, discussed on limitations and challenges in devices and mixed-signal IC design in nano-scale technology and some design examples implemented in sub-100 nm technologies.

On April 10, there were 6 talks and a poster session in the MQ. Prof. Hei Wong from City University of Hong Kong, Hong Kong, gave a DL talk on "Complex High-k Oxides: The Promising Candidates for Next Generation CMOS Technology." He reviewed the material properties associated with electronic structures, and discussed the physical mechanisms and the effects of doping with foreign atoms such as N and Al. Prof. King Leong Pey from Nanyang Technical University, Singapore, delivered a DL talk on "The Chemistry of Nanosize Breakdown Path in Ultrathin SiON and High-k Gate Dielectrics of Nanoelectronic Devices." He spoke on the recent development in physical analysis techniques to decode the nature of the breakdown path and reviewed the influence and extent of the dielectric breakdown to the surrounding material and structural modification. Prof. Juin J. Liou of University of Central Florida, Florida, USA, gave a DL talk on "Advanced On-Chip Electrostatic Discharge (ESD) Protection Solutions in CMOS/BiCMOS Technologies." He gave an overview on the ESD sources, models, protection schemes, and testing and followed by the examples of robust ESD solution designs for protecting various CMOS/BiCMOS ICs. A final DL talk on "3-D Stacked Nanowire Transistor Technology" was given by Prof. Mansun Chan from Hong Kong University of Science and Technology, Hong Kong. Prof. Chan reviewed fabrication methods to from nanowire matrix transistor and challenges to realize such transistors. He also described a newly developed fabrication process based on inductive plasma etching and stress limited oxidation to form nanowire matrix. Prof. Bumman Kim of POSTECH, Pohang, Korea, presented "A New Emerging Technology of Digitally Assisted RF Circuits." During his talk, he introduced the trend of the digitally assisted RF circuit and shown some of the RF circuit implementation carried out at POSTECH. Dr. Sungwoong Chung of Hynix Semiconductor Inc., Korea, gave a talk on "3-D Memory Cell Transistor as an Access Device for DRAM and Other Applications." In his talk, he spoke about the history of DRAM cell transistors and stressed the Saddle Fin transistor as a promising cell transistor, and introduced high-density emerging memories including 1-T DRAM.

We had a poster session for 1 hour in the afternoon of April 10th. Speakers including 6 DLs and organizing committee members selected 3 best post papers: two EDS papers and one SSCS paper. One of two EDS awardees is Mr. Ki-Heung Park of Kyungpook National University

and his paper is entitled "Fully Depleted Double-Gate 1T-DRAM Cell with NVM Function for Improved Performance." Another winner is Mr. Sanghoon Lee of Seoul National University and his paper is entitled "A New Method for Lateral Location of Oxide traps Extraction in Short Channel MOSFET's." One SSCS award was presented to Mr. Hyungdong Roh of Hanyang University, for the paper entitled "A Sub-1-V 20 kHz-Bandwidth Delta-Sigma Modulator."

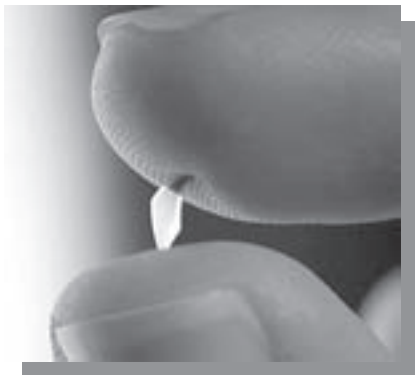
Jong-Ho Lee
ED Korea Chapter Chair
Kyungpook National University
Daegu, Korea

EDS Distinguished Lecturer Visits the ED/MTT Orange County Chapter

Joachim Burghartz

The ED/MTT Orange County Chapter, California, was honored on February 13, 2009, with the visit of Dr. Joachim Burghartz, EDS Distinguished Lecturer. Dr. Burghartz presented a talk entitled, **"Ultra-thin Chips - a New Paradigm in Silicon Technology."**

Since the Fall of 2005, Dr. Burghartz has been the Director of the Institute for Microelectronics Stuttgart (IMS CHIPS) and is also affiliated with the University of Stuttgart as a full professor. From 1998 to 2005, he was a professor at TU Delft in The Netherlands, serving as the Scientific Director of Delft research institute DIMES from 2001 to 2005. From 1987 to 1998, he was with the IBM T.J. Watson Research Center in Yorktown Heights, New York, where he was engaged in early development of SiGe HBT technology and later, in the integration of passive components, particularly inductors, for application to monolithic RF circuits. He received his MS degree from RWTH Aachen in 1982 and his Ph.D. degree in 1987 from the University of Stuttgart, both in Germany. Joachim is an IEEE Fellow and an AdCom member of the IEEE Electron Devices Society. He has published more than 250 reviewed articles and holds about 30 patents.



Chipfilm between fingers

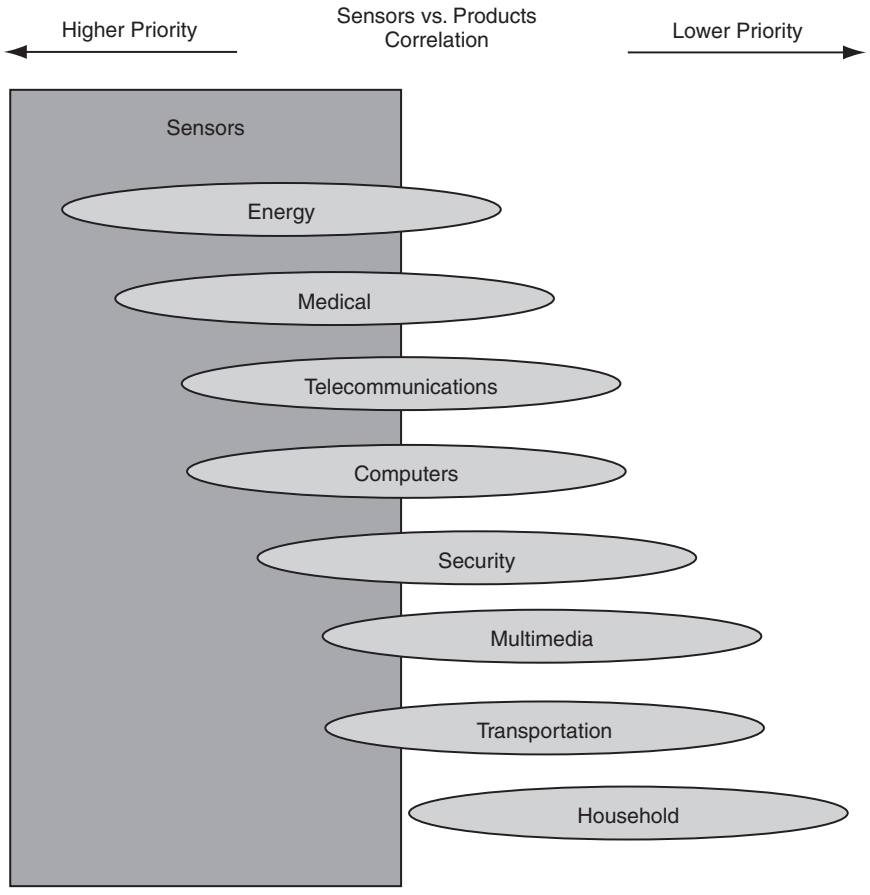
The talk posited that, in contrast to conventional thick silicon chips, ultra-thin chips will be the basis for new applications, such as 3D integrated circuits (3D-ICs) and systems-in-foil (SiF). It then proceeded to introduce and compare two generically different process technologies that can be exploited for the fabrication of ICs on extremely thin chips. The talk concluded with the presentation and discussion of several application results and demonstrations based on work that has been presented at recent IEDM and ISSCC conferences.

This EDS DL was organized in collaboration with the California Institute for Telecommunications and Information Technology (**Calit2**) of the University of California, Irvine. For additional information, contact Dr. Héctor J. De Los Santos at hector.delossantos@ieee.org.

Héctor J. De Los Santos
ED/MTT Orange County
Chapter Chair
NanoMEMS Research, LLC
Irvine, CA, USA

International Survey on Priorities for Nano-Electrotechnologies Standards

The Electron Devices Society contributed to the success of a recent survey to build a consensus on priorities for international standards to accelerate innovations in nano-electrotechnologies. The survey was web-based and opened for approximately 6 months during 2008. The National Institute of Standards and Technology (NIST) and Energetics Incorporated collaborated with the International Electrotechnical Commission Technical Committee 113 (IEC TC 113) on nano-electrotechnologies to survey members of the international community about priorities for standards and measurements in this field. It elicited more than 450 completed survey responses from 45 countries. Energetics and NIST report on the survey results in a paper, *Priorities for Standards and Measurements to Accelerate Innovations in Nano-electrotechnologies: Analysis of the NIST-Energetics-IEC TC 113 Survey*, that will be published in the NIST Journal of Research, Volume 114, Issue 2, March–April 2009. A preprint version of the survey analysis is now available for download at http://www.nist.gov/eeel/semiconductor/upload/NIST_Energetics_Survey.pdf.



Schematic of the correlation of the highest priority Cross-Cutting Technology item Sensors with the ranked items in the Products Category

Analyzing the survey results by two different statistical methods gave consistent priorities for items ranked in each of five nano-electrotechnology categories: 1) Properties, 2) Products, 3) Cross-cutting Technologies, 4) General Discipline Areas, and 5) Stages of the Linear Economic Model. The global consensus suggests that standards and measurements having the highest priorities are those for electronic and electrical properties of sensors and fabrication tools that support performance assessments of nanotechnology enabled sub-assemblies used in energy, medical, and computer products.

Nano-electrotechnologies are expected to be one of the key technologies of the 21st century. They have enormous potential for the development of new products with exceptional performance. Recent reports indicate that the materials and equipment market for nanoelectronics was $1.8 billion in 2005 and is expected to grow to over $4 billion in 2010. The continued rapid growth of nano-electrotechnologies-based industries has required increased international standardization activities to support equitable and efficient business models. Effective international standards will permit the use of nano-enabled products in any nation.

Herbert S. Bennett
Semiconductor Electronics Division, NIST
Gaithersburg, MD, USA

Regional and Chapter News

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

ED Dallas

- by Héctor J. De Los Santos

On April 2, the ED Dallas Chapter and the University of Texas at Arlington's NanoFab jointly hosted Dr. Héctor J. De Los Santos, EDS Distinguished Lecturer. Dr. De Los Santos presented the talk "**Nano-MEMS**." The event was the first installment of the UTA-NanoFab's Spring 2009 Distinguished Speaker Series on Micro & Nano-Systems.

Dr. De Los Santos is well known internationally for his R&D activities in Nanoelectromechanical Quantum Circuits and Systems and RF MEMS (NanoMEMS). He is an IEEE Fellow and IEEE EDS Distinguished Lecturer. Dr. De Los Santos holds 17 US patents, and is author of bestseller textbooks, including Introduction to Microelectromechanical (MEM) Microwave Systems (1999), now in Artech House' IPF® (In-Print-Forever®) series, and RF MEMS Circuit Design for Wireless Communications (2001). His most recent book, Principles and Applications of NanoMEMS Physics, was published by Springer in 2005.

The talk began by highlighting progress to date in the maturing RF MEMS technology and its applications. It then turned over to discuss a number of emerging concepts that are enabled by the convergence and coexistence of micro and nanofabrication techniques that include mechanical devices operating in the quantum regime, and that could be the genesis of NanoMEMS Systems on Chip. In this context, a theoretical analysis of a novel nanoelectromechanical quantum tunneling frequency multiplier circuit, that exploits electrostatic, spring and Casimir forces, was presented. The talk concluded with an overview of speculative future concepts addressing optoelectronic-based medical diagnostics, nanobiomedical and communications applications.

For additional information, contact Dr. Héctor J. De Los Santos at hector.delossantos@ieee.org.

2009 ISAGST

- by Paul Kirsch

An in-depth exploration of functional stacks in future (sub 32 nm node) logic and memory devices will be the focus of this year's International Symposium on Advanced Gate Stack Technology on August 23–26 in San Francisco, California. Hosted by SEMATECH and co-sponsored by IEEE, the symposium will feature leading experts from all areas of advanced gate stack science and technology who will discuss strategies for implementing high-k and metal gate stack technology into memory (flash, DRAM) and logic (high performance, low standby power) for 22 nm node and beyond. Stacks for advanced high-mobility channels will also be discussed including InGaAs, Graphene and Ge.

The Symposium will include developments in "functional" stacks—including stacks for mechanical (MEMS), spin-based and resistance/phase change devices. Key topics include the following:

- High-k/metal gate stacks for Si, SiGe, III-V high performance MOSFETs
- Metal/high-k/metal gate stacks for storage capacitors and resistive change memory
- High-k/metal gate for flash memory
- Insulators and metals needed for high performance NEMS and sensors
- Magnetic material stacks needed for spin based devices

Additional program and registration information is available at http://www.sematech.org/meetings/announcements/8671/index.htm.

The International Symposium on Advanced Gate Stack Technology is part of the SEMATECH Knowledge Series, a set of public, single-focused industry meetings designed to increase global knowledge in key areas of semiconductor R&D.

ED/MTT Orange County

- by Héctor J. De Los Santos

The ED/MTT Orange County Chapter was honored on February 12, 2009, with a visit by Dr. Werner Weber, EDS Distinguished Lecturer. Dr. Weber presented his talk entitled, "**3D Stacking of Silicon Chips**."

Since 2005, Dr. Weber has managed various research projects on the development and system integration of logic chips and MEMS, for the Automotive, Industrial and Multimarket business groups of Infineon Technologies, Munich, Germany. From 1998–2005, he was

Werner Weber (center), EDS Distinguished Lecturer, flanked by Orange County Chapter Chairman, Héctor J. De Los Santos (left) and Chapter Vice Chairman, Rajesh Prabhakar (right)

responsible for the Laboratory on Emerging Technologies at Infineon's Corporate Research, which addressed various topics in the field of ambient intelligence such as wearable electronics, smart textiles, ubiquitous sensor networks, and distributed low-cost electronics. From 1983 through 1998, he was engaged in MOS device physics and basic circuit design and managed projects on technology-related circuits in advanced memories at the Research Labs of Siemens AG. Prior to that he worked in the field of semiconductor thin films at IBM's T.J. Watson Research Center, Yorktown Heights, New York. Dr. Weber received the Dipl. Phys. degree from the Technical University of Munich in 1976 and the Dr. rer. nat. degree from the Ludwig-Maximilians University, Munich in 1981. He is a member of the ISSCC and IEDM program committees and is a Fellow of the IEEE.

His talk began by highlighting recent trends in the semiconductor industry tracking the transfer from Moore's law-driven developments in the 80s and 90s to the more recent 'More than Moore' hype. In particular, different 3D integration trends were discussed, including fine-pitch and coarse-pitch inter-chip vias for vertical chip stacks, traditional bond wires on chip-stacks, µ-Flip Chip, Molded Interconnect Devices, bare dies in Printed Circuit Boards. The talk concluded with a discussion of the impact of these trends on the value chain of the entire electronics industry.

For additional information, contact Dr. De Los Santos at hector.delossantos@ieee.org.

~ Adam Conway, Editor

EUROPE, MIDDLE EAST & AFRICA (REGION 8)

ED Poland

- Mariusz Orlikowski and Zygmunt Ciota

On June 25–27, 2009, the 16th MIXDES Conference "Mixed Design of Integrated Circuits and Systems," co-sponsored by IEEE, will be held at the Hotel Orbis Grand, Łódź, Poland. The areas of interest are as follows:

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

During the conference there are four special sessions planned:

"Device Level Support for Emerging CMOS Technologies" organized by Dr. Daniel Tomaszewski (Institute of Electron Technology, Poland) and Dr. Władysław Grabiński (GMC Suisse, Switzerland).

"EuCARD - European Coordination for Accelerator Research and Development" organized by Dr. Stefan Simrock (DESY, Germany) and Dr. Dariusz Makowski (Technical University of Łódź, Poland).

"PERPLEXUS - Bioinspired Computing Framework for Modeling Complex Virtually-unbounded Systems" organized by Dr. Rafał Kiełbik (Technical University of Łódź, Poland).

"The Future of Mobile and Embedded Systems" organized by Dr. Bartłomiej Świercz (Teleca Poland sp. z o.o. and Technical University of Łódź, Poland).

During the conference, the HELMAR representatives will present the latest equipment from Keithley and Karl Suss. The AM Technologies will present news from Agilent Technologies.

The meeting of the IEEE ED Poland Chapter is also planned. All people interested in this meeting, in particular all the members of the IEEE Poland Section, are invited to take part in the event. For more information, please refer to *http://www.mixdes.org*.

~ Zygmunt Ciota, Editor

AP/ED/MTT/CPMT/ NPS Saratov/Penza

- by Nikita M. Ryskin

The XIV Saratov Winter School–Seminar in Microwave Electronics and Radio Physics was successfully held in Saratov, Russia, February 3–8, 2009. Such schools have been held every three years since 1970, giving a unique opportunity for the presentation and discussion of broad topics related to vacuum microwave electronics. The XIV School was organized by Saratov State University (SSU) with technical and financial co-sponsorship of the IEEE Saratov/Penza Chapter. Financial co-sponsors were the Russian Foundation for Basic Research and "Dynasty" Foundation. Members of the

Saratov/Penza Chapter Chair, Nikita M. Ryskin and East Ukraine Chapter Vice-Chair, Kostyantin V. Ilyenko (Kharkov, Ukraine) at the poster session

Saratov/Penza Chapter played an active role in the organizing of the School: Prof. D. I. Trubetskv served as a Conference Chairman, Prof. Yu. I. Levin, Prof. Yu. P. Sharaevsky and Prof. N. M. Ryskin were key members of the Local Organizing Committee responsible for the technical and social program.

The technical program included 27 invited plenary lectures reviewing topical problems of theory, simulation and technology of vacuum tubes, high-power microwaves, vacuum microelectronics, microwave electrodynamics, nonlinear science and its application to microwave electronics. Among them there were "Vlasov kinetic theory of many-particle systems" (P. A. Polyakov, Moscow State University), "Development of field emitters from carbon-containing materials" (G. G. Sominsky, St. Petersburg Polytechnic University), "Quasi-optical control of intense beams of microwave radiation" (M. I. Petelin, IAP RAS, Nizhny Novgorod), "Terahertz band gyrodevices" (V. L. Bratman, IAP RAS), and "Open resonators and waveguides from multilayered metamaterial" (A. P. Sukhorukov and D. O. Saparina, Moscow State University). Also, the program included 20 oral and 36 poster presentations. Total number of participants was nearly 100 from many regions of Russia (Moscow, St. Petersburg, Saratov, Tomsk, Nizhny Novgorod, Rostov, etc.), as well as guests from Belarus, Ukraine, and the USA.

Special issues of the Russian journals "Applied Nonlinear Dynamics" and "Radiophysics and Quantum Electronics" with selected papers presented at the conference will be published in 2009.

Conference webpage is http://nonlin.sgu.ru/conf/conf.php?id=9&lang=en

Plenary session of SIBCON conference

2009 SIBCON

- by Oleg Stukach and Mino Stallo

The Siberian Conference on Control and Communications SIBCON 2009, was held in Tomsk, Russia. It was the eighth event of the IEEE Russia Siberia Section, Tomsk IEEE Chapter & Student Branch sponsored by RFBR with technical co-sponsorship by the Electron Devices Society. The conference highlighted exciting multidisciplinary areas of applications that are likely to provide modern technological challenges. The technical program was organized into invited and contributed oral paper sessions. The conference proceedings were published in a hard-copy version that was distributed at the conference.

In addition to the attraction of an outstanding technical program, most attendees were clearly enjoyed the opportunity to view the wooden architecture of the city. The evening weather was perfect and the siteseeing tour provided an excellent opportunity to meet old and new friends. It was a special time for attendees to relax during the conference, to enjoy refreshments and to make plans for future events. Finally, we thank all authors who submitted and presented papers at the conference.

~Tomislav Suligoj, Editor

EDS Chapter in Formation in Argentina

- by Sergio D. Baron

Argentina's EDS chapter (in formation) made another step towards the

Dr. J. J. Liou, this author and the audience

formation of the chapter with the visit of the EDS Vice-President of Regions/Chapters, Professor Juin J. Liou. In his role as EDS Distinguished Lecturer, Professor Liou gave a talk on March 26th at IEEE Argentina's headquarters in Buenos Aires.

The large audience actively followed the words of Dr. Liou which presented a thorough overview of the state of the art in electrostatic discharge protection in microchips. Theory, protection schemes and a comparative ESD protection study were presented in a deep, but easy-to-understand fashion. On top of the technical talk, Dr. Liou presented a panorama of IEEE EDS with an accent in Region 9 progress.

Professor Liou, who also traveled to Argentina to present a keynote talk at the XVth Workshop Iberchip, answered many questions, demonstrating both a knowledge-eager audience and the specialized academic formation of the assistants.

~ Francisco J. Garcia Sanchez, Editor

Prof. Ngai Wong, Prof. Mansun Chan and Prof. Kenneth Wong in full gear for the challenge at the starting point of the Greenpower Hike

ASIA & PACIFIC (Region 10)

2009 CSTIC

- by April Peng

China Semiconductor Technology International Conference (CSTIC), a Great Success in Shanghai

The China Semiconductor Technology International Conference (CSTIC) was successfully held March 19–20, 2009, in Shanghai, China. The conference featured 239 speakers and 550 attendees from around the world. Nobel Laureate and IBM Fellow, J. Georg Bednorz, Intel Senior Fellow, Robert S. Chau, IMEC CEO, Gilbert J. Declerck and Praxair Vice President and CTO, Ray Roberge, delivered the keynote presentations at the conference plenary session. More than 20 world-known experts delivered keynote speeches in each symposium.

The conference featured nine symposia covering most aspects of semiconductor manufacturing and technology including devices, design, lithography, integration, materials, processes, manufacturing as well as emerging semiconductor technologies and silicon material applications. CSTIC has become a world class event with 30 percent of its papers from the US, 11 percent from Europe, 8 percent from Japan, and 39 percent from China.

The conference hosted speakers from leading fabs, equipment and materials companies such as IBM, Intel, IMEC, UMC, Infineon, Micron, SMIC, Applied Materials, TEL and Praxair. In addition, CSTIC featured speakers from leading universities including MIT, UC Berkeley, Stanford, Yale, University of Pennsylvania, Tsinghua University, and Peking University.

This major semiconductor technology conference, a merger between ISTC and CSTIC, is co-organized by ECS and SEMI. It was co-organized by China's High Tech Expert Committee (CHTEC) and sponsored by IEEE and CEMIA.

Though this was a challenging year in the semiconductor industry, due in part to the world financial crisis, ISTC/CSTIC 2009 was a great success, with a record high number of paper submissions and attendee numbers since ISTC started in 2001. CSTIC is expected to become the largest annual semiconductor technical conference in China from 2010 and beyond. CSTIC 2010 will be held next March in Shanghai, in conjunction with the SEMICON China Show.

ED/SSC Hong Kong

- by K. P. Pun

Hong Kong Chapter Participated in Charity Walk to Raise Environmental Awareness

Environment awareness and green energy has become a major focus of institutional researches in Hong Kong promoted by local government. The IEEE Hong Kong ED/SSC Chapter has played a leading role in the research of power management technology to conserve energy, with many members doing research in this area. In addition to technical activities, the Chapter also works with many local charities to

raise public awareness of the importance of energy conservation. One major event is the Greenpower Hike. The IEEE Hong Kong Chapter financially sponsored and participated in this challenging 50 km hike over the hilly landscape of the Hong Kong Island. In foggy weather with drizzle and slippery trails, the IEEE ED/SSC teams finished the hike in 8 hours and 49 minutes, ranking 32 among 129 teams. The team members completed the hike with a warm welcome by the organizer and the support team, as well as sore legs that lasted till the next day.

The participation in the Greenpower Hike is a successful event that received strong support from local IEEE members. Besides those participating in the hike, many members were involved in the promotion and donation. The activity has increased the visibility of the IEEE contribution to local and social events. The chapter will participate in similar activities in the coming future.

~ Mansun Chan, Editor

Professor Koyanagi, Chair of the IEEE ED Japan Chapter, presented the 2008 activities and the 2009 plans at the annual meeting of the ED Japan Chapter, held in Tokyo on January 19th

ED Japan

- by Mitsumasa Koyanagi

On January 19th, the annual meeting of the ED Japan Chapter was held in Tokyo. The 2008 activities and the 2009 plans of the chapter were unanimously approved. At the meeting, the 2008 ED Japan Chapter Student Award was given to six students for their outstanding activities in the research of electron devices last year; they are: Jiezhi Chen (Univ. of Tokyo), Yusaku Kato (Univ. of Tokyo), Ken Shimizu (Univ. of Tokyo), Shoma Kuga (Waseda Univ.), Yosuke Nakakita (Univ. of Tokyo), and Yeon-Joo Jeong (Univ. of Tokyo). They received metallic certificate plaques and premiums from the chapter chair.

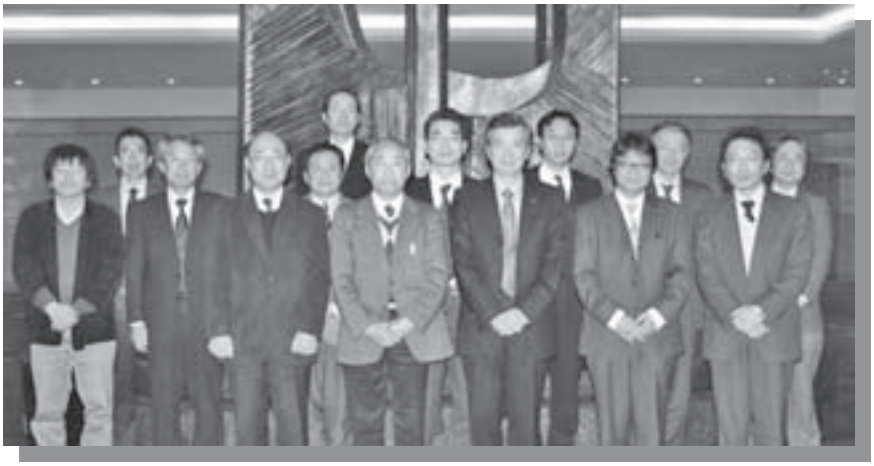
Following the annual meeting on the same day, the briefing session regarding the 2008 IEDM was held. Six speakers gave summary talks on the highlights of the IEDM. This session has gained widespread popularity among engineers and researchers in Japan who did not have a chance to attend the last IEDM. They obtained the latest information on electron device technologies. The session, with 90 participants, was very successful.

In addition, the ED Japan Chapter held three DL meetings for members. The Distinguished Lecturers are Prof. Pey Kin Leong of Nanyang Technological University, Singapore, Prof. Maimaitiyiming Aini of Xinjiang University, China, and Prof. Tan Cher Ming of Nanyang Technological University, Singapore. Each DL meeting was attended by more than 25 people and was very stimulating and fruitful.

ED Kansai

- by Michinori Nishihara

The ED Kansai Chapter held a Technical Meeting at Kansai University, Kansai University Centenary Memorial Hall, Osaka, Japan, on January 30, 2009, with 21 participants from academia and industries followed by the annual general assembly for the Chapter. Two prestigious lecturers gave presentations on device technology trends reviewing papers presented at the 2008 IEEE International Electron Devices Meeting. This was a good opportunity for ED Kansai Chapter members who could not attend IEDM 2008 to learn the most advanced device technology topics. The first talk was



New committee members of the ED Kansai Chapter

Session at the IEDM review meeting held on January 30, 2009, in Osaka

on the latest compound and power semiconductor device and process technology trends by Dr. Yasuhiro Uemoto (Panasonic). He covered not only GaN and RF based on compound semiconductors but also III-V based MOSFETs with high-k dielectrics, which is a new trend for this year. The second speaker was Dr. Tomohiro Yamashita (Renesas Technology Corp.). He described topics about the most advanced Silicon device technology toward 22 nm node including high-k and metal gate technology and new device structures such as FINFET. It was reported that there were several papers demonstrating SRAM functionality in 32 nm and 22 nm node. At the annual general assembly many subjects were reported and discussed including major items as follows: Activity report for 2008, Activity plan for 2009, IMFEDK planning status, updates on committee chairs and members etc.

ED Korea

- by Jong-Ho Lee

The Workshop on Frontier Semiconductor Devices was held at Kyungpook National University, Daegu City, Korea, March 13, 2009. The workshop was attended by 50 participants, including students and professors from several universities. Prof. Hiroshi Iwai, Tokyo Institute of Technology, Japan, delivered an IEEE Distinguished Lecture on "Roadmap for Integrated Circuits Technology for 22 nm and Beyond." He stressed the necessity of scaling-down of Si based MOS devices, and reported key technologies such as high-k gate dielectrics and metal gates. He also presented a channel technology to increase carrier mobility, and device technologies like 3-dimensional devices (multi-gate devices and wire devices) to extend scalability while keeping high performance. His talk was really impressive by including recent progress. Prof. Sorin Cristoloveanu from Institute of Microelectronics, Electromagnetism and Photonics (IMEP), INP Grenoble, France, spoke on "Ultrathin SOI and GeOI Materials and Transistors." During his talk, he introduced a novel technique to evaluate carrier mobility in SOI wafers using Corbino Pseudo-MOSFET built on SOI wafer. His talk was very interesting and useful in characterizing SOI material and devices. Prof. Jong Wan Jung from Sejong University, Korea, gave a talk on "Graphene Transistor: key properties, fabrication methods, and future trend." Dr. Hyun Kyu Yu from Electronics and Telecommunications Research Institute (ETRI), Korea, delivered a talk on "Silicon-based mm-wave ICs and Applications."

In addition, two EDS Distinguished Lecture talks were hosted. On December 29, 2008, Prof. Juin J. Liou from the University of Central Florida, Orlando, gave a Distinguished lecture entitled "Advanced On-Chip Electrostatic Discharge (ESD) Protection Solutions in CMOS/BiCMOS Technologies," at HIT of Hanyang University, Seoul, Korea. This talk was very useful for attendees to understand ESD protection in various applications, and attended by 40 participants. Prof. Takao Someya from the University of Tokyo, Tokyo, Japan, delivered a distinguished talk on "Organic Transistors: Towards Ambient Electronics," on January 19, 2009, at SAINT of Sungkyunkwan University, Suwon, Korea. The DL talk was attractive for the audience of more than 70. Prof. Somaya spoke on various organic devices and applications, and the prospect of future trend of organic devices.

~ Kazuo Tsutsui, Editor

Participants of workshop on frontier semiconductor devices held on March 13, 2009, at Kyungpook National University, Daegu, Korea

EDS MEETINGS CALENDAR
(As of 8 May 2009)

The complete EDS Calendar can be found at our web site:
http://www.ieee.org/society/eds/meetings/meetings_calendar.xml Please visit!

July 1 - 6, 2009, T **International Conference and Seminar on Micro/Nanotechnologies and Electron Devices,** Location: Novosibirsk State Technical University, Novosibirsk, Russia, Contact: Alexander Gridchin, E-mail: ieeensk@yandex.ru, Deadline: 4/10/09, www: http://www.nstu.ru/edm/edm2009/notification_engl.html

July 6 - 10, 2009, T **IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits,** Location: International Conference Center & Hotel, Suzhou, China, Contact: Song Xianzhong, E-mail: songmba@sohu.com, Deadline: 5/1/09, www: http://ewh.ieee.org/reg/10/ipfa/

July 20 - 24, 2009, @ **IEEE International Vacuum Nanoelectronics Conference**, Location: Congress Center, Hamamatsu, Japan, Contact: Yoichiro Nakanishi, E-mail: nakanishi@rie.shizuoka.ac.jp, Deadline: 3/15/09, www: http://ny7084.rie.shizuoka.ac.jp/ivnc2009/

July 26 - 30, 2009, T **IEEE Conference on Nanotechnology,** Location: Faculty of Economy, Genoa, Italy, Contact: Carmelina Ruggiero, E-mail: carmel@dist.unige.it, Deadline: 4/22/09, www: http://www.medinfo.dist.unige.it/ieeenano2009/

August 19 - 21, 2009, T **International Symposium on Low-Power Electronics and Design,** Location: San Francisco, CA, USA, Contact: Jorg Henkel, E-mail: henkel@informatik.unikarlsruhe.de, Deadline: 3/20/09, www: www.islped.org

August 23 - 26, 2009, T **International Symposium on Advanced Gate Stack Technology,** Location: W. San Francisco Hotel, San Francisco, CA, USA, Contact: Cassandra Muse, E-mail: cassandra.muse@sematech.org, Deadline: 5/22/09, www: http://www.sematech.org/meetings/announcements/8671/

August 25 - 28, 2009, T **Topical Workshop on Heterostructure Microelectronics,** Location: Mielparque-Nagano, Nagano, Japan, Contact: Takao Waho, E-mail: waho@ieee.org, Deadline: 4/30/09, www: http://www.twhm.net/

August 30 - September 4, 2009, T **Electrical Overstress/Electrostatic Discharge Symposium,** Location: Disneyland Hotel, Anaheim, USA, Contact: Lisa Pimpinella, E-Mail: info@esda.org, Deadline: 1/9/09, www: wwww.esda.org

August 31 - September 3, 2009, T **Symposium on Microelectronics Technology & Devices,** Location: Piramide Natal Resort and Convention, Natal, Brazil, Contact: Ivan Saraiva, E-mail: ivan@dimap.ufrn.br, Deadline: 3/27/09, www: www.sbmicro.org.br/sbmicro

September 9 - 11, 2009, T **International Conference on Simulation of Semiconductor Processes and Devices,** Location: Hotel Del Coronado, San Diego, CA, USA, Contact: Fely Barrera, E-mail: sispad06@gloworm.stanford.edu, Deadline: 2/20/09, www: http://www-tcad.stanford.edu/sispad09/

September 14 - 18, 2009, T **International Conference on Electromagnetics in Advanced Applications,** Location: Centro Congressi Torino Incontra, Torino, Italy, Contact: Guido Lombardi, E-mail: info@iceaa.polito.it, Deadline: 2/28/09, www: www.iceaa.net

September 14 - 18, 2009, T **International Crimean Microwave Conference "Microwave & Telecommunication Technology",** Location: Sevastopol, Ukraine, Contact: Pavel Yermolov, E-mail: 10.99057@gmail.com, Deadline: 5/20/09, www: www.crimico.org

September 14 - 18, 2009, T **European Solid-State Device Research Conference,** Location: Divani Caravel Hotel, Athens, Greece, Contact: Efi Papastavropoulou, E-Mail: efip@triaenatours.gr, Deadline: 4/4/09, www: http://www.essderc.org/en/page/ess07.aspx

September 20 - 23, 2009, T **IEEE Custom Integrated Circuits Conference,** Location: Double Tree Hotel, San Jose, CA, USA, Contact: Melissa Widerkehr, E-mail: melissaw@widerkehr.com, Deadline: Not Available, www: www.ieee-cicc.org

September 21 - 24, 2009, T **IEEE International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory,** Location: Inst. Of Applied Prob. Of Mechanics and Math, Lviv, Ukraine, Contact: Mykhalyo Andriychuk, E-Mail: andr@iapmm.lviv.ua, Deadline: 8/10/09, www: www.ewh.ieee.org/soc/cpmt/ukraine

September 25 - 25, 2009, T **International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation,** Location: University College London, London, United Kingdom, Contact: Marius Bauza, E-mail: m.bauza@ucl.ac.uk, Deadline: Not Available, www: www.ucl.ac.uk/~ucee034

September 28 - 29, 2009, T **IEEE European Microwave Integrated Circuits Conference,** Location: Nuova Fiera di Roma, Rome, Italy, Contact: Massimo Comparini, E-mail: massimo.camparini@thalesaleniaspace.com, Deadline: 2/22/09, www: http://www.eumweek.com/

September 29 - October 2, 2009, T **International Conference on Advanced Thermal Processing of Semiconductors,** Location: Marriott Hotel Albany, Albany, NY, USA, Contact: Bo Lojek, E-mail: blojek@atmel.com, Deadline: 5/31/09, www: www.ieee-rtp.org

October 4 - 9, 2009, T **Symposium on ULSI Process Integration,** Location: Vienna, Austria, Contact: Cor Claeys, E-mail: c.claeys@ieee.org, Deadline: 4/24/09, www: www.electrochem.org/meetings

October 5 - 8, 2009, * **IEEE International SOI Conference,** Location: Crowne Plaza Hotel, Foster City, CA, USA, Contact: Bobbi Armbruster, E-mail: bobbi@bacminc.com, Deadline: 5/1/09, www: www.soiconference.org

October 6 - 9, 2009, T **International Conference on Solid-State Devices and Materials,** Location: Sendai Kokusai Hotel, Sendai, Japan, Contact: Mitsumasa Koyanagi, E-mail: koyanagi@sd.mech.tohoku.ac.jp, Deadline: 3/25/09, www: www.ssdm.jp

October 11 - 14, 2009, * **IEEE Compound Semiconductor IC Symposium,** Location: Sheraton Greensboro Hotel at Four Seasons, Greensboro, NC, USA, Contact: Marko Sokolich, E-mail: msokolich@hrl.com, Deadline: 5/8/09, www: http://www.csics.org/

October 12 - 14, 2009, * **International Semiconductor Conference,** Location: Sinaia Hotel, Sinaia, Romania, Contact: Cristina Buiculescu, E-mail: cas@imt.ro, Deadline: 6/10/09, www: www.imt.ro/CAS

October 12 - 14, 2009, T **IFIP International Conference on Very Large Scale Integration,** Location: Jurere Beach Village, Florianopolis, Brazil, Contact: José Luís Güntzel, E-mail: Not Available, Deadline: 4/15/09, www: http://www.inf.ufrgs.br/vlsisoc/

October 12 - 14, 2009, * **IEEE Bipolar/BiCMOS Circuits and Technology Meeting,** Location: Capri Palace, Capri, Italy, Contact: Janice Jopke, E-mail: ccsevents@comcast.net, Deadline: 4/20/09, www: http://www.ieee-bctm.org

October 18 - 22, 2009, * **IEEE International Integrated Reliability Workshop,** Location: Stanford Sierra Conference Center, South Lake Tahoe, CA, USA, Contact: J.T. Ryan, E-mail: jtr16@psu.edu, Deadline: 7/17/09, www: www.iirw.org

October 18 - 20, 2009, T **International Conference on Nano-Networks,** Location: Hotel Flora, Luzern, Switzerland, Contact: Beatrix Ransburg, E-mail: beatrix.ransburg@icst.org, Deadline: 5/15/09, www: http://www.nanonets.org/

October 21 - 22, 2009, T **International Forum on Strategic Technology,** Location: Ho Chi Minh City University, Chi Minh City, Vietnam, Deadline: 6/15/09, www: http://www.must.edu.mn/web/index_of.php?name=DNews&news_id=602

October 25 - 28, 2009, T **IEEE International Conference on Sensors,** Location: Christchurch Convention Centre, Christchurch, New Zealand, Contact: Subhas Mukhopadhyay, E-mail: s.c.mukhopadhyay@massey.ac.nz, Deadline: 2/1/09, www: http://ieeesensors2009.massey.ac.nz

October 25 - 28, 2009, T **Non-Volatile Memory Technology Symposium,** Location: Hilton Portland & Executive Tower Hotel, Portland, OR, USA, Contact: Kristy Campbell, E-Mail: kriscampbell@boisestate.edu, Deadline: 7/1/09, www: www.nvmts.org

October 27 - 29, 2009, T **IEEE International Symposium on Microwave, Antenna, Propagation and EMC Technologies for Wireless Communications,** Location: Jingyan Hotel, Beijing, China, Contact: Mengqi Zhou, E-mail: zhoumq@public3.bta.net.cn, Deadline: 3/31/09, www: http://mape09.bjtu.edu.cn/

November 2 - 5, 2009, 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: 4/10/09, www: www.iccad.com

November 9 - 11, 2009, @ **IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems,** Location: David Intercontinental Hotel, Tel Aviv, Israel, Contact: Ortra, E-mail: comcas@ortra.com, Deadline: 6/15/09, www: www.comcas.org

November 11 - 13, 2009, T **International Conference on Electrical Engineering, Computing Science and Automatic Control,** Location: Research Center CINVESTAV-IPN, Mexico City, Mexico, Contact: Judith Esparza-Azcoitia, E-mail: cce@cinvestav.mx, Deadline: 6/22/09, www: http://cce.cinvestav.mx

November 19 - 20, 2009, @ **International Electron Devices and Materials Symposia,** Location: Kwei-Shan, Tao-Yuan, Taiwan, Contact: Chao Sung Lai, E-mail: cslai@mail.cgu.edu.tw, Deadline: Not Available, www: Not Available

November 23 - 26, 2009, T **IEEE TENCON,** Location: Suntec Int'l Convention & Exhibition Center, Singapore, China, Contact: TENCON 2009 Secretariat, E-mail: info@tencon2009.org, Deadline: 6/1/09, www: http://www.tencon2009.org/

November 25 - 27, 2009, T **IEEE Conference on Electron Devices and Solid State Circuits,** Location: Xian, China, Contact: Juin Liou, E-mail: liou@ucf.edu, Deadline: 7/29/09, www: Not Available

December 3 - 5, 2009, @ **IEEE Semiconductor Interface Specialists Conference,** Location: Key Bridge Marriott Hotel, Arlington, VA, USA, Contact: Martin Frank, E-Mail: mmfrank@us.ibm.com, Deadline: Not Available, www: http://www.ieeesisc.org/

December 7 - 9, 2009, * **IEEE International Electron Devices Meeting,** Location: Hilton Baltimore Hotel, Baltimore, MD, USA, Contact: Phyllis Mahoney, E-mail: phyllism@widerkehr.com, Deadline: Not Available, www: http://www.ieee.org/conference/iedm

December 9 - 11, 2009, T **International Conference on Field-Programmable Technology,** Location: The University of New South Wales, Sydney, Australia, Contact: Oliver Diessel, E-mail: odiessel@cse.unsw.edu.au, Deadline: 6/8/09, www: http://fpt09.cse.unsw.edu.au/

December 9 - 11, 2009, T **International Semiconductor Device Research Symposium,** Location: University of Maryland, Stamp Student Union, College Park, MD, USA, Contact: Lisa Press, E-mail: lpress@umd.edu, Deadline: Not Available, www: www.ece.umd.edu/isdrs/2009

December 14 - 16, 2009, T **International Conference on Computers and Devices for Communication,** Location: Hyatt Regency, Kolkata, India, Contact: Gopa Sen, E-mail: senstation2003@yahoo.co.uk, Deadline: 7/15/09, www: www.irpel.org/codec-09

December 15 - 19, 2009, T **International Workshop on the Physics of Semiconductor Devices,** Location: Delhi University, New Delhi, India, Contact: IWPSD 2009 Secretary, E-mail: secreatary@iwpsd.net, ashosk.kapoor@sspl.drdo.in, Deadline: 6/15/09, www: http://www.iwpsd.net/

December 19 - 22, 2009, T **International Conference on Microelectronics,** Location: Marrakech, Morocco, Contact: Mohab Anis, E-mail: manis@vlsi.uwaterloo.ca, Deadline: 6/14/09, www: http://www.ieee-icm.com

January 1, 2010 @ **International Workshop on Compact Modeling**, Location: Taiwan, Contact: Hisayo Momose, E-mail: hisayo.momose@toshiba.co.jp, Deadline: Not Available, www: Not Available

January 3 - 8, 2010 T IEEE **International Nanoelectronics Conference**, Location: City University of Hong Kong, Hong Kong, China, Contact: Ricky Fu, E-mail: apkyfu@cityu.edu.hk, Deadline: 7/15/2009, www: www.cityu.edu.hk/ieeeinec

January 9 - 15, 2010 T **IEEE Radio and Wireless Symposium**, Location: Sheraton New Orleans Hotel, New Orleans, LA, USA, Contact: Charlie Jackson, E-mail: c.jackson@ieee.org, Deadline: Not Available, www: http://rawcon.org/index.html

February 7 - 11, 2010 T **IEEE International Solid-State Circuits Conference**, Location: San Francisco Marriott, San Francisco, CA, USA, Contact: Diane Melton, E-mail: isscc@courtesyassoc.com, Deadline: Not Available, www: www.isscc.org/isscc

February 22 - 26, 2010 T **International Conference on Nanoscience and Nanotechnology**, Location: Sydney Convention & Exhibition Centre, Sydney, Australia, Contact: Liz Micallef, E-mail: arcnn@ausnano.ne, Deadline: 9/18/2009, www: www.ausnano.net/iconn2010

March 22 - 25, 2010 @ **IEEE International Conference on Microelectronic Test Structures**, Location: International Conference Center, Hiroshima, Japan, Contact: Tatsuya Ohguro, E-mail: tatsuya.ooguro@toshiba.co.jp, Deadline: Not Available, www: http://www.ee.ed.ac.uk/icmts

May 2 - 6, 2010 * **IEEE International Reliability Physics Symposium**, Location: Hyatt Regency Orange County, Anaheim, CA, USA, Contact: David Barber, E-mail: dbarbsta@aol.com, Deadline: Not Available, www: http://www.irps.org

May 16 - 19, 2010 * **International Conference on Microelectronics**, Location: University of Nis, Nis, Serbia, Contact: MIEL Conference Secretariat, E-mail: miel@elfak.ni.ac.rs, Deadline: 10/20/2009, www: http://miel.elfak.ni.ac.rs/

May 16 - 19, 2010 T **IEEE International Memory Workshop**, Location: The Shilla, Seoul, Korea, Contact: Tamer San, E-mail: t-san@ti.com, Deadline: Not Available, www: Not Available

May 23 - 27, 2010 T **IEEE International Power Modulator and High Voltage Conference**, Location: Atlanta, GA, USA, Contact: Frank Hegeler, E-mail: frank.hegeler@nrl.navy.mil, Deadline: Not Available, www: Not Available

May 31 - June 4, 2010 @ **IEEE International Conference on Indium Phosphide and Related Materials**, LOCATION: Takamatsu Symbol Tower, Kagawa, Japan, CONTACT: Takatomo Enoki, E-MAIL: tenoki@aecl.ntt.co.jp, DEADLINE: Not Available, www: http://www.iprm.jp/

June 6 - 10, 2010 @ **International Symposium on Power Semiconductor Devices & Integrated Circuits**, LOCATION: Hiroshima, Japan, CONTACT: Noriyuki Iwamuro, E-MAIL: iwamuro-noriyuki@fujielectric.co.jp, DEADLINE: Not Available, www: Not Available

June 15 - 17, 2010 @ **IEEE Symposium on VLSI Technology**, LOCATION: Hilton Hawaiian Village, Honolulu, HI, USA, CONTACT: Phyllis Mahoney, E-MAIL: phyllism@widerkehr.com, DEADLINE: 1/1/2010, www: http://www.vlsisymposium.org/index.html

June 16 - 18, 2010 T **IEEE Symposium on VLSI Circuits**, LOCATION: Hilton Hawaiian Village, Honolulu, HI, USA, CONTACT: Phyllis Mahoney, E-MAIL: phyllism@widerkehr.com, DEADLINE: 1/1/2010, www: www.vlsisymposium.org

June 28 - July 1, 2010 T **University/Government/Industry Microelectronics Symposium**, LOCATION: Purdue University, Purdue, IN, USA, CONTACT: Mary Jo Totten, E-MAIL: tottenm@purdue.edu, DEADLINE: Not Available, www: www.ugim.com

September 19 - 22, 2010 T **IEEE Custom Integrated Circuits Conference**, LOCATION: Double Tree, San Jose, CA, USA, CONTACT: Melissa Widerkehr, E-MAIL: melissaw@widerkehr.com, DEADLINE: Not Available, www: http://www.ieee-cicc.org

December 2 - 4, 2010 @ **IEEE Semiconductor Interface Specialists Conference**, LOCATION: San Diego, CA, USA, CONTACT: Martin Frank, E-MAIL: mmfrank@us.ibm.com, DEADLINE: Not Available, www: www.ieeesisc.org

December 6 - 8, 2010 * **IEEE International Electron Devices Meeting**, LOCATION: Hilton San Francisco, San Francisco, CA, USA, CONTACT: Phyllis Mahoney, E-MAIL: phyllism@widerkehr.com, DEADLINE: Not Available, www: http://www.ieee.org/conference/iedm

EDS Membership Promotion at the 2009 IEEE Photovoltaics Specialists Conference

The Electron Devices Society held a very successful membership promotion at the 2009 IEEE Photovoltaic Specialists Conference (PVSC), which was held June 7–12 in Philadelphia, Pennsylvania. Three enrollment options were offered to all who passed through the registration area.

Individuals registering for the PVSC at the non-member rate were offered a credit voucher entitling them to savings of $31.00 towards a half year IEEE and EDS membership. IEEE funded the EDS memberships and EDS sponsored the partial payments for the IEEE memberships.

All student attendees of the PVSC who were not members of the IEEE were encouraged to sign up and learn about all the organization has to offer. Interested students received a voucher (valued $18 US), entitling them to FREE half year IEEE and EDS memberships. We gained 29 new student members with a majority attending universities in North America. We urged them to visit the IEEE web site and explore all the benefits of IEEE and EDS membership, as well as informing them of the Society fellowship awards available to them.

IEEE staff, Chin Tan-Yan, Photonics Society and Joyce Lombardini, Electron Devices Society,recruiting new members at the 2009 PVSC

Eighteen IEEE members who never before joined EDS or who drifted away years ago, and more than 20 new IEEE or Photonics Society members were enrolled to access the member benefits and to be involved with the Societies supporting the PVSC.

Executive committee members were very happy to have an IEEE and EDS presence at the conference and would definitely welcome us back again next year.

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

Newly Formed AP\ED\MTT Cleveland Chapter Co-Sponsors Seminar

Hector J. De Los Santos

On April 21, 2009, the AP\ED\MTT Cleveland Chapter and the Department of Electrical Engineering and Computer Science at Case Western Reserve University (CWRU) co-sponsored a seminar by EDS Distinguished Lecturer, Dr. Hector J. De Los Santos, who presented a talk titled "Applications and Trends in RF MEMS". The talk was held on the CWRU campus and was attended by 42 people, of which 15 were IEEE members. This talk was the first event held by the newly formed AP/ED/MTT Cleveland Chapter, which added the EDS section in January of this year. This combined structure enables IEEE to better and more efficiently serve its AP, MTT and EDS members in Northeast Ohio at the local level by engaging a larger number of IEEE members at several key research institutions in the region, most notably, the University of Akron (UofA), NASA Glenn Research Center (GRC), Ohio Aerospace Institute (OAI) and Case Western Reserve University. Whereas in the past, the section struggled to grow because of its more focused structure (AP/MTT), the addition of EDS allows the section to broaden its mission to include the field of microsystems, an area that CWRU is particularly strong. It is hoped that the new structure will, through technical lectures, tutorials and other events, provide a forum for individuals who normally would not cross paths do so in an effective manner, benefiting both the individual and IEEE. If you would like to contact the AP/ED/MTT Cleveland Chapter, please email Max Scardelletti at Maximilian.C.Scardelletti@nasa.gov or Dr. Chris Zorman at christian.zorman@case.edu.

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