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2008 IEEE INTERNATIONAL ELECTRON DEVICES MEETING (IEDM)



Daniel Cardiff

The 54th IEDM will Convene in San Francisco, CA, December 15-17, 2008

The world's premier forum for leading-edge research into electronic, microelectronic, and nano-electronic devices and processes is the Electron Devices Society's annual technical conference, the IEEE International Electron Devices Meeting (IEDM). This year the IEDM will be held in San Francisco, California, U.S.A., at the Hilton San Francisco Hotel. It will run December 15-17, 2008, preceded by a

full day of Short Courses on Sunday, December 14.

The IEDM draws presentations and attendees from industry, academia, and governmental agencies worldwide. No other meeting presents as much leading work in so many different areas of microelectronics, encompassing both silicon and non-silicon device and process technology, molecular electronics, nanotechnology, optoelectronics and MEMS (microelectromechanical system) technology.

IEDM 2008 will offer a full slate of short courses, evening panel debates, invited plenary talks and presentation of prestigious IEEE/EDS awards, in addition to an outstanding technical program.

Short Courses

The IEDM sponsors two short courses on Sunday, December 14, from 9 a.m. to 5:30 p.m. The courses are "22nm CMOS Technology"

(continued on page 6)

YOUR COMMENTS SOLICITED

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

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

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

Newsletter Deadlines

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

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

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YOUR CAREER AND NETWORKING WITH IEEE ELECTRON DEVICES SOCIETY AdCom MEMBERS



Ravi Todi

Come join us on Sunday evening, December 14, at 5-7 p.m., at the Hilton San Francisco Hotel for a free EDS sponsored, career development strategy session, especially designed for graduate students and young professionals, who are Graduates of the Last Decade (GOLD). The session includes a seminar on career development strategies in today's globally competitive world and a panel discussion focusing on career options and career path selection with expert panelists from academia, research, design, development and manufacturing and will be followed by a golden opportunity for you to meet with EDS Officers and Administrative Committee (AdCom) members

at a special networking session. Establishing a network with successful EDS AdCom members and enjoying some of the other key EDS benefits (e.g., online access to ED Letters and Transactions and the IEDM proceedings) are some of the primary reasons for joining EDS. This event will be held in conjunction with EDS' flagship conference, the IEEE International Electron Devices Meeting (IEDM), held December 15-17. For information concerning the IEDM and to register for the GOLD Seminar, please visit the web-site at <http://www.his.com/~iedm/>.

Mary Ann Bopp, Manager for Career Development at IBM, will present a seminar entitled Career Development: Imagine the Possibilities. She will talk about how to approach career development, whether you are tenured in your profession and want to continue to grow in your field of expertise, or you want to

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

For additional details on this EDS sponsored GOLD event, please contact EDS GOLD representative, Dr. Ravi Todi at rtodi@ieee.org.

Ravi M. Todi

*IEEE GOLD Committee Representative
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IEEE and GOLD Products and Services for Young Members

Online resources:

- IEEE: <http://www.ieee.org/membership/congrats>
- GOLD: <http://www.ieee.org/organizations/rab/gold/>
- IEEE Xplore® – access the world of IEEE information online through one dynamic interface.
- IEEE Spectrum – this monthly magazine is the flagship publication of the IEEE for technology innovators, business leaders, and the intellectually curious. Spectrum explores future technology trends and the impact of those trends on society and business.
- IEEE Job Site - post your resume and receive a confidential email when a job listing matches your skill set.
- IEEE Career & Employment Resources.
- IEEE Center for Education & Training.
- Electro-Technology Industries (ETI) database.
- GOLD-sponsored internet conferences, seminars, and professional workshops.

Personal Benefits:

- IEEE Personal Email Alias - identify yourself as part of a worldwide community of innovators by registering for a free IEEE email alias, complete with virus scanning software.

- What's New @ IEEE - subscribe to one of eleven monthly email newsletters that feature IEEE information, career assistance and industry news.
- Your own Web account for online services.
- IEEE Financial Advantage Program - includes insurance programs, credit cards and investment opportunities.
- Opportunity to volunteer and travel to exotic locations; keep current in your technical focus, follow industry trends; publish in IEEE Journals and magazines.

Network & Exchange Information at:

- Technical Conference Listing - search through the conference database to find the next IEEE-sponsored conference/symposia in your area of expertise;
- Local section and Society chapter and affinity group meetings;
- Fun social events.

Discount for Graduating Student Members:

- IEEE student members who graduate and are elevated to full IEEE membership will automatically receive a one-year discount of 50% off of the full higher grade IEEE and Society membership dues rates upon renewal.

UPCOMING TECHNICAL MEETINGS

2008 IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE (SISC)



*The Catamaran Resort Hotel,
San Diego, California*

The 39th IEEE Semiconductor Interface Specialists Conference (SISC) will be held December 11-13, 2008, at the Catamaran Resort Hotel in San Diego, CA, immediately prior to the IEEE International Electron Devices Meeting (IEDM). The SISC is a workshop-style conference that provides a unique forum for device engineers, materials scientists, and solid-state physicists, to openly discuss issues of common interest. Principal topics are semiconductor/insulator interfaces, the physics of insulating thin films, and the interaction among materials science, device physics, and state-of-the-art technology. Emphasis is on transistor and memory devices incorporating high-k gate dielectrics and metal gate electrodes on silicon and on high-carrier-mobility substrates. The conference alternates between the East and West Coasts, and meets just before the IEDM to encourage the participation of IEDM attendees. SISC is sponsored by the IEEE Electron Devices Society, and the Materials Research Society (MRS) has cooperating status.

An important goal of the conference is to provide an environment that encourages interplay between scientific and technological issues. Oral sessions of invited and contributed talks, as well as a lively poster session, are designed to encourage discussion. Conference participants have numerous opportunities for social gatherings with renowned scientists and engineers. They also enjoy the lush Catamaran Resort Hotel grounds with colorful fish and tropical birds, just steps from the Pacific Ocean. San Diego boasts Balboa Park, an expansive campus of museums, parks, and possibly the premier zoo in North America; the Old Town, with preserved buildings and icons of the Spanish heritage of San Diego; the upscale coastal community La Jolla; and Sea World. In December, San Diego typically has fabulous weather.

Conference focus

The program includes more than 50 presentations from all areas of MOS science and technology. The topics evolve with the state-of-the-art, and include but are not limited to:

- dielectrics (SiO_2 , SiON , and high-k) on Si and their interfaces
- insulators on high-mobility and alternative substrates (SiGe , Ge , III-V, SiC , etc.)
- MOS gate stacks with metal gates and work function control
- alternative and epitaxial high-k gate dielectrics
- stacked dielectric layers for NVM applications
- oxide and interface structure, chemistry, defects, and passivation: theory and experiment
- gate dielectric conduction and

breakdown; hot carrier, plasma and radiation damage

- electrical and physical characterization, performance and reliability of MOS-based devices
- surface cleaning technology and impact on dielectrics and interfaces

Invited presentations

This year's invited presentations will include:

- **Dr. Mauro Alessandri**, Numonyx, Agrate Brianza, Italy, High-k dielectrics for next generations non-volatile memories
- **Prof. Suman Datta**, Pennsylvania State University, University Park, PA, USA, Sub-quarter volt supply voltage III-V tunnel transistors for green nanoelectronics
- **Prof. Alex Demkov**, University of Texas, Austin, USA, Epitaxial oxide/semiconductor systems
- **Prof. Paul McIntyre**, Stanford University, USA, Interface studies of metal oxide gate insulators on Ge and III-V substrates
- **Dr. Vijay Narayanan**, IBM Research, Yorktown Heights, NY, USA, High-k/metal gate technology: An ode to materials research and innovation
- **Dr. Sangwoo Pae**, Intel, Hillsboro, OR, USA, Reliability mechanisms in high-k & metal gate transistor technologies
- **Prof. Akira Toriumi**, University of Tokyo, Japan, Physical model of V_{th} instability in high-k MOSFETs

Unique poster session

A unique feature of SISC is the attention paid to the poster presentations.

(continued on page 7)

2008 IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP (IIRW)

The 2008 IEEE International Integrated Reliability Workshop (IIRW) will be held from October 12-16 at Stanford Sierra Camp, near South Lake Tahoe, California. The Workshop site is exceptional. The camp cabins are nestled among the pines and cedars along the shoreline of beautiful Fallen Leaf Lake. All cabin rooms have decks with magnificent views of the lake and the surrounding Sierra peaks.

The workshop focus is on achieving electronic device reliability through optimization of fabrication, design, testing, characterization and simulation as well as on identification of the underlying physical mechanisms and defects responsible for reliability problems. The IIRW consistently attracts an outstanding international group of engineers and scientists who work on a wide range of issues associated with device scaling, integration of novel materials, new test methodologies, and reliability modeling.

This year's meeting will follow a long tradition, offering introductory and advanced tutorials, excellent technical presentations on "hot" reliability topics, discussion groups and special interest groups. Drew Turner, IBM, has organized an excellent tutorial program. A partial list of invited tutorial speakers and topics: Tibor Grasser, Technical University of Vienna, "The Negative Bias Temperature Instability (NBTI)," Chadwin Young, SEMATECH, "Measurement Issues for High-k Technology and NBTI," William Tonti, "E-Fuse Reliability," Alvin Strong, IBM, "JEDEC," Wilfried Haensch, IBM, "Reliability of 'Future' Devices." Tutorial speakers are approachable and available throughout the workshop, one of the benefits of the friendly, intimate setting. In addition to tutorials, the meeting will include several dozen contributed presentations on important reliability issues. "Hot" reliability topics for



Attendees of the 2007 IEEE IIRW, pose at the edge of beautiful Fallen Leaf Lake

the workshop include problems with high-k and nitrided SiO₂ gate devices, NBTI/PBTI, Cu interconnects, low-k dielectrics, product reliability and burn in strategy, reliability modeling and simulations, SiGe and strained Si, and emerging memory technologies. The presentations will be opened by a distinguished keynote speaker, Dakshi Dakshinamoorthy, Vice President of quality and reliability, Freescale Semiconductor.

The IIRW provides a level of interaction and quality feedback unmatched by other reliability meetings. This is so for three reasons. (1) The workshop encourages questions and comments for all presentations and provides ample time for this. (2) The workshop schedules congenial poster sessions for extended technical conversations. (3) The workshop arranges small group encounters, discussion groups and special interest groups, organized by technical interests and without distractions. These group interactions often start long term collaborations. The workshop is especially useful to people new to the field because of the introduction to reliability which it provides as well as ample opportunities to interact at length with other professionals.

In short, the workshop provides an excellent opportunity to learn, to present your own work, get feed-



An afternoon hike in nearby Mount Tallac provides spectacular views like this one, above Stanford Sierra Camp and Fallen Leaf Lake. Lake Tahoe is on the left and Fallen Leaf Lake is on the right

back, and build relationships with colleagues from all over the globe. More information about the IIRW can be found at the website: <http://www.iirw.org>. You should also feel free to contact the General Chair, Pat Lenahan, Penn State, 814-863-4630, PMLESM@engr.psu.edu or the Technical Program Chair, Guoqiao Tao, NXP Semiconductor, +31 24 35 345 49, Guoqiao.tao@nxp.com.

We look forward to seeing you at the 2008 IIRW!

*Pat Lenahan
2008 IIRW General Program Chair
Penn State University
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*Guoqiao Tao
2008 IIRW Technical
Program Chair
NXP Semiconductor
Nijmegen, The Netherlands*

Photograph courtesy of Bill Tonti, IBM

Photograph courtesy of Jason Ryan,
Penn State University

(continued from page 1)

and "More Than Moore: Technologies for Functional Diversification". These courses will be presented by experts in the fields, with lectures and introductory material for the general audience and will progress towards description of the latest developments. Attendees will have the opportunity to learn about emerging new areas and important developments. Advance registration is required.

Emerging Technology Session

IEDM 2008 will feature a special session on Tuesday, December 16, with papers focused on nanoelectronics technologies for the life sciences.

Technical Program

This year's technical areas of coverage are:

- CMOS Devices and Technology
- Characterization, Reliability and Yield
- Displays, Sensors and MEMS
- Memory Technology
- Modeling and Simulation
- Process Technology
- Quantum, Power, and Compound Semiconductor Devices
- Solid State and Nanoelectronic Devices

CMOS Devices and Technology sessions will cover breakthroughs and advancements in device physics, novel MOS device structures, circuit/device interaction and co-optimization, CMOS scaling issues, high performance, low power, analog/RF devices, and CMOS platform technology and manufacturing issues, such as DFM and process control. Other topics of interest are SOI, high-mobility channel devices such as strained silicon and SiGe MOS devices, and 3D integrated circuits.

Characterization, Reliability and Yield sessions will focus on areas of yield and reliability, both front-end

and back-end of the process. Topics include, but are not limited to, hot carriers, gate dielectric wearout and breakdown, process charging damage, latch-up, ESD, soft errors, noise and mismatch behavior, bias temperature instabilities, and reliability of high-k and low-k materials, circuits, and packaging. Other topics include interconnect reliability, electromigration, the impact of back-end processing on devices, chip-packaging interaction, manufacturing technologies for reliability, physics of failure analysis, as well as reliability issues for memory and logic technologies and characterization and measurement.

Displays, Sensors and MEMS sessions will cover critical devices, structures, and integration for imaging, displays, detectors, sensors, and micro-electromechanical systems (MEMS). A subset of key topics in the Displays and Sensors area includes CMOS imagers, CCDs, TFTs, organic, amorphous, and polycrystalline devices, vacuum microelectronics, emissive displays and sensors for chemical, molecular and biological detection. Topics of interest in the MEMS area include resonators, switches, and passives for RF applications, integrated sensors, micro-optical devices, micro-fluidic and biomedical devices, and micro power generators, with particular emphasis on integrated implementations. Other relevant subjects include design, fabrication, reliability, theory, and modeling.

Memory Technology sessions will discuss memory-related technology, from novel memory cell concepts to fully integrated memories and manufacturing. Areas of interest include volatile and nonvolatile memories, processes for advanced memories, novel memory cells include NEMS-based device, 3D integration, reliability and modeling.

Modeling and Simulation sessions will discuss all areas of analytical, numerical, and statistical approaches to the modeling of electronic, optical and multiphysical devices, their isolation and interconnection. Topics include physical and compact models for devices and interconnects, and the modeling of fabrication processes and equipment, including simulation algorithms, process characterization, parameter extraction, early compact models for advanced technologies; performance evaluation and technology benchmarking methodology. Submissions should advance the modeling and simulation art or apply existing techniques to gain new insights into devices.

Process Technology sessions will cover front- and back-end process modules for fabrication of logic, memory and 3-D integrated circuits. Front-end topics will include substrate technologies; lithography; etching; isolation; thin dielectrics; high-k materials and metal electrodes for transistors and MIM capacitors; shallow junctions; silicides; self-assembly techniques and new materials. Back-end topics will include conductor systems; low-k materials, contact and via processes; barrier materials; planarization, design considerations for multi-level interconnects, and advanced packaging.

Quantum, Power and Compound Semiconductor Devices sessions will cover compound semiconductors with electronic and optoelectronic device applications (e.g. GaAs, InP, GaN, SiC, SiGe, antimonides and related alloys). Papers also will discuss discrete and integrated high-power/current/voltage devices including those on silicon. Topics will include FETs, HBTs, LEDs, lasers, external modulators, and high-power and compound RF and millimeter-wave devices. Also, devices with ballistic

and quantum effects; spintronics, optoelectronic ICs, optical interconnects; photonic bandgap structures and crystals, and integrated RF components including inductors, capacitors and switches.

Solid State and Nanoelectronic Devices sessions will focus on novel solid state and nanoelectronic devices such as novel memory cells; nanoelectronic devices including nanotubes, nanowires, and quantum dots; devices for bioelectronic applications; spintronic based devices; NEMS-based logic and memory devices; molecular devices and new device characterization and performance evaluation methodologies.

Plenary Presentations

This year's Plenary presentations will be given by Peter Fromherz of Max Planck Institute, Tatsuo Saga from Sharp, and Stefan K. Lai from Ovonyx, Inc.

Evening Panel Discussions

On Tuesday evening, December 16, beginning at 8:00 p.m., the IEDM will

offer one evening Panel Discussion on "The future of fabs - for who, for what, and for how much?" plus a Special Evening Session on "ISSCC Highlights at IEDM"

Special Program

IEDM 2008 will feature a special program track on "Circuit-Device Interactions"

IEDM LUNCHEON

The IEDM 2008 luncheon will offer a presentation by Prof. Jim Plummer of Stanford University on "Educating Engineers for the 21st Century" and will be held on Tuesday, December 16, at 12:20 p.m. in the Grand Ballroom. Luncheon tickets are available through Advance Registration or on-site at a cost of \$45.00 to conference attendees only.

For registration and other information, visit the IEDM 2008 home page at <http://www.ieee-iedm.org/> or contact Conference Manager Phyllis Mahoney, 19803 Laurel Valley Place, Montgomery Village, MD 20886, USA; tel. (301) 527-0900, ext.

103; fax (301) 527-0994; or email: phyllism@widerkehr.com. The submission date for regular papers has already passed, but a limited number of Late-News Papers will be accepted for presentation until September 15, 2008. A "How to write for the IEDM" article can be found at <http://www.his.com/~iedm/call/authorguide.doc>

The San Francisco area provides many attractions for visitors and we encourage attendees to explore them in the off hours of the conference. The IEDM committee members look forward to seeing you in December.

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2008 IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE (SISC)

(continued from page 4)

Each author of a poster presentation has the opportunity to introduce their work orally, using two visuals, to the entire SISC audience during special poster introduction sessions. The posters are then presented during a separate poster reception on Thursday evening.

Student participation encouraged

SISC is a popular conference with students, who can get immediate and candid feedback on their latest results from the experts in the field. In addition to a strongly reduced registration fee for students, a Best Student Presentation award is given every year in memory of E.H. Nicollian, a pioneer in

the exploration of the metal-oxide-semiconductor system who had a strong presence within the SISC.

Accompanying program

The scientific content of the conference is complemented by informal events designed to encourage lively discussion and debate. A hospitality suite with complimentary drinks is available to attendees to continue their discussions on every evening of the conference. Friday afternoon has no scheduled talks, to allow time to meet informally, relax, or visit local San Diego attractions. On Friday evening the conference hosts a banquet and awards ceremony, complete with

the now-famous (and always riotous) limerick contest. The limericks never fail to give the conference presentations, people and events an entirely new perspective!

SISC is always a rewarding experience for specialists, students, as well as newcomers to the field. For more information about the conference, to consult its program and to register, please visit <http://www.ieeesisc.org>. We hope you will include SISC in your IEDM itinerary.

*Martin M. Frank
2008 SISC Arrangements Chair
IBM T. J. Watson Research Center
Yorktown Heights, NY, USA*

SOCIETY NEWS

2008 EDS REGION 8 CHAPTERS MEETING SUMMARY

The 2008 EDS Region 8 Chapters Meeting was held at the Divani Caravel Hotel, Athens, Greece, on Saturday, May 31, in conjunction with the EDS Administrative Committee (AdCom) Meeting. This year's meeting was well attended with approximately 50 EDS members and a high chapter representation - 27 chapters from the entire Region 8 area. The previous EDS Region 8 Chapters Meeting was held two years ago in Naples, Italy.

The meeting was hosted by EDS President, Cor Claeys, who opened the meeting with a welcome to the participants. Reports by Juin Liou, EDS Vice-President of Regions/Chapters and Paul Yu, EDS Vice-President of Educational Activities, followed, with Juin speaking on the history of EDS chapters, chapter subsidies, new chapters recently formed and potential new chapters, especially the increase of new chapters in Region 10. Paul Yu encouraged the Region 8 chapters to nominate students who are doing a good job, for the EDS Student Fellowship Awards. He also explained how much the EDS Distinguished Lecturer Program has grown in recent years and mentioned the increase in the number of EDS mini-colloquia being planned.

Eighteen chapters presented reports at the meeting, which was divided into two sessions with a half hour break for refreshments and socializing.

During the first half of the meeting, chapters from Eastern and Central Europe, Scandinavia and the former Soviet Union, present-

ed reports given by the following representatives: Kostyantyn Ilyenko (East Ukraine), Artem Yakovlev (Novosibirsk State Technical University Student Branch) Tamar Gogua (Republic of Georgia), Pavel Turalchuk (St. Petersburg), Oleg Stukach (Tomsk), Yuri Poplavko (Central Ukraine), Ihor Tupyachak (West Ukraine), Jordan Kolev (Bulgaria) and Milan Polivka (Czechoslovakia). In addition to the usual reports on recent and future chapter activities, many presenters included interesting pictures and facts about their homelands, highlighting the diverse cultures of the region. It was also brought to the audience's attention the unique challenges each chapter faces.

The second half of the meeting commenced after the refreshment break and was well represented by chapters from the United Kingdom, the Middle East, Africa and Western Europe. Chapter representatives, Ibrahim Salem (Egypt), Gady Golan (Israel), Monuko du Plessis (South Africa), Haluk Kulah (Turkey) Ali Rezazadeh (UK & the Republic of Ireland), Fabrizio Bonani (Northern Italy), Jurriaan Schmitz (Benelux), Olivier Bonnaud (France) and Olivier Bulteel (Universite Catholique de Louvain Student Branch), shared their EDS DL successes and all attendees were invited by various chapters to attend the many conferences organized in the region. A few of the European chapters reported that the potential to attract many more members from local industries was quite high and plans to tap into these sources are in the works.

Following the chapter reports, an open forum discussion was led by Juin Liou and covered important issues like the need for more communication between IEEE and the chapters to better understand IEEE and EDS member benefits and the request for increased funding to chapters who want the assistance. Many discussions and suggestions were voiced on the ways the internet could be used to create new member benefits, increase student membership, advertise existing programs and expand the audience for EDS Distinguished Lecturers and conference short courses.

The most common request by the Region 8 chapters was that they want IEEE to become pro-active in their benefits to members, with more of a personal touch.

Thanks was given to John-Paraskevas Xanthakis, ED Greece Chapter Chair, in recognition for his outstanding assistance to the EDS Executive Office, especially for finding the perfect location for the meeting and being the liaison for visa processing at the various embassies. The smooth running of the EDS meetings would not have been possible without his enthusiastic, volunteer spirit.

The Chapters Meeting was followed by an excellent buffet featuring many Greek specialties.

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

2007 EDS PAUL RAPPAPORT AWARD

A high priority of the Electron Devices Society is to recognize and enhance the quality of papers published in EDS archival literature. Every year, the Society confers its prestigious Paul Rappaport Award to the best paper published in the *IEEE Transactions on Electron Devices*. Among other criteria including technical excellence, an important metric for selection for the award is comprehensive and impartial referencing of prior art. The winning paper was selected from among 350 manuscripts that were published in 2007. The article is entitled, "Design and Performance Modeling for Single-Walled Carbon Nanotubes as Local, Semiglobal, and Global Interconnects in Gigascale Integrated Systems." This paper was published in the January, 2007 issue of the *IEEE Transactions on Electron Devices*, and was authored by Azad Naeemi and James D. Meindl. The award will be presented in the plenary session of

the IEEE International Electron Devices Meeting to be held on December 15, 2008, in San Francisco, California. In addition to the award certificate, the authors will receive a check for \$2,500. On behalf of the Electron Devices Society, I would like to congratulate the authors for this achievement. Brief biographies of the authors are given below.



Azad Naeemi was born in Kerman, Iran and received the B.S. degree from the Sharif University, Tehran, Iran and M.S. and Ph.D. degrees from the Georgia

Institute of Technology, Atlanta, Georgia. He is currently an Assistant Professor in the School of Electrical and Computer Engineering at Georgia Tech. His primary area of interest is

exploring nanotechnology solutions to the challenges facing giga- and terascale systems.



James D. Meindl is director of the Nanotechnology Research Center, the Microelectronics Research Center and Pettit Chair Professor at Georgia Tech. He

is a Life-Fellow of the IEEE, a member of NAE, and received the 2006 IEEE Medal of Honor. He received his B.S., M.S., and Ph.D. from Carnegie Mellon University.

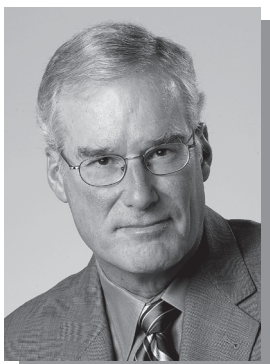
*Renuka P. Jindal
EDS President-Elect and
Vice President of Publications
University of Louisiana at Lafayette
Lafayette, LA, USA*

EDS MEMBER NAMED RECIPIENT OF THE 2008 IEEE ROBERT N. NOYCE MEDAL

Paul R. Gray of the Provost University of California, Berkeley, CA, USA, was named recipient of the 2008 IEEE Robert N. Noyce Medal. His citation states, "For pioneering the development of analog integrated circuits"

Paul R. Gray, Executive Vice Chancellor and Provost, Emeritus at the University of California at Berkeley has laid many of the foundations for mixed signal integrated circuit design, which today is central to wireless communication devices, computer disk drives and a variety of other electronics applications.

Dr. Gray's achievements in academia and industry research have been substantial. The early work of he and his col-



leagues and students helped overcome many of the technical problems related to the use of standard low-cost complementary metal-oxide-semiconductor (CMOS) technology, making them suitable for such applications. His research is frequently cited and used in many areas of modern analog integrated circuit design.

During his 37-year academic career, Dr. Gray has authored or co-authored nearly 170 published papers and has secured 11 patents. He co-authored the book, "Analysis and Design of Analog Integrated Circuits," currently in its fourth edition, which is considered to be one of the standard undergraduate texts in the field of

electronic design. Dr. Gray's students have gone on to establish a number of prominent companies in the semiconductor technology space, most notably Marvell Technology Group, founded by Berkeley graduates, which currently has a market value of more than US\$6 billion.

An IEEE Life Fellow, Dr. Gray is a past recipient of the IEEE James H. Mulligan Jr. Education Medal, the IEEE Solid State Circuits Award and the American Society for Engineering Education Benjamin Garver Lamme Award. He holds a bachelor's, masters and doctorate degrees from the University of Arizona, Tucson.

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

2007 GEORGE E. SMITH AWARD

A high priority of the Electron Devices Society is to recognize and enhance the quality of papers published in EDS archival literature. The George E. Smith Award was established in 2002 to recognize the best paper appearing in a fast turnaround archival publication of EDS, targeted to *IEEE Electron Device Letters*. Among other criteria including technical excellence, an important metric for selection for the award is comprehensive and impartial referencing of prior art. The paper winning the 2007 George E. Smith Award was selected from among 278 manuscripts that were published in 2007. The article is entitled "Vertically Stacked SiGe Nanowire Array Channel CMOS Transistors". This paper appeared in the March 2007 issue of *Electron Device Letters* and was authored by Navab Singh, W.W. Fang, L.K. Bera, H.S. Nguyen, S.C. Rustagi, G.Q. Lo, N. Balasubramanian and D.-L. Kwong. The award will be presented in the plenary session of the International Electron Devices Meeting to be held on December 15, 2008, San Francisco, CA. In addition to the award certificate, the authors will receive a check for \$2,500. On behalf of the Electron Devices Society I would like to congratulate the authors for this achievement. Brief biographies of the authors follow.



Navab Singh received M.TECH. degree in Solid State Materials from I.I.T. Delhi, India, in 1995. After working for 5 years in semiconductor lithography, he joined the

Institute of Microelectronics, Singapore in July 2001, where he is currently a Member of Technical Staff leading the nanowire device research activity. He has also received Ph.D. degree in Electrical and Computer Engineering from National University of Singapore, Singapore in 2008.



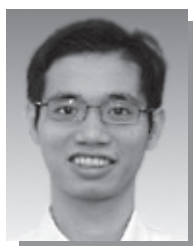
W.W. (Lina) Fang, received B.Eng. degree in Electrical and Computer Engineering from National University of Singapore, Singapore in 2006, where she is cur-

rently pursuing her Ph.D. degree. From July 2006 to March 2007, she was with the Institute of Microelectronics, Singapore, and worked on nanowire devices.



Lakshmi Bera received Ph.D. degree in Physics from Indian Institute of Kharagpur, India in 1999. From April 2001 to August 2006, he was with the Institute

of Microelectronics, Singapore, where he worked new device materials and architectures. He is currently with the Chartered Semiconductor Manufacturing Ltd., Singapore.



H.S. Nguyen received B.Eng. degree in Materials from National University of Singapore, Singapore in 2005. From July 2005 to July 2007, he was with the Institute

of Microelectronics, Singapore, and worked on Si/SiGe epitaxy technology.



Subhash C. Rustagi received Ph.D. degrees in Physics from Kurukshetra University, Kurukshetra, Haryana, India, in 1980. In 1982, he joined CARE, I. I. T. Delhi,

India. Since 1999, he has been with the Institute of Microelectronics, Singapore, where he is currently a Member of Technical Staff working on modeling and transport in nanowire CMOS devices.



Guo-Qiang (Patrick) Lo, received Ph.D. degree in Electrical and Computer Engineering from University of Texas at Austin, TX, USA in 1992. He worked

12 years with Integrated Device Technology, Inc. USA, and since Oct. 2004, has been with the Institute of Microelectronics, Singapore, where he is currently the Director for Nanoelectronics and Photonics Program and Semiconductor Process Technology Lab.



N. Balasubramanian received Ph.D. in physics from the Indian Institute of Technology, Madras, India, in 1990. He was with the Institute of Micro-

electronics, Singapore, where he held various positions including Director for Semiconductor Process Technology Lab. Since April 2008, he is with Silterra, Malaysia.



Dim-Lee Kwong received Ph.D. degree from Rice University, Houston, TX, USA. Since 2005, he has been with the Institute of Microelectronics, Singapore, as the

Executive Director. Prior to that, he was professor in Electrical and Computer Engineering and held an Earl N. and Margaret Brasfield Endowed Professorship at University of Texas, Austin, USA, and Temasek professor at the National University of Singapore. Over 54 students received their Ph.D. degree under his supervision.

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

2007 T-SM BEST PAPER AWARD WINNERS

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

The Editorial Staff is pleased to announce that the paper entitled "Across Wafer Critical Dimension Uniformity Enhancement through Lithography and Etch Process Sequence: Concept, Approach, Modeling, and Experiment," by Qiaolin Zhang, Kameshwar Poola, and Costas J. Spanos has been recognized as the best paper published in the 2007 Transactions. This paper, which appeared in the November issue, has been chosen for its contribution of methods for process control across multiple process steps to achieve improved fidelity and uniformity of gate critical dimension in advanced technologies. The approach explores both models for post-lithography resist profile geometry as a function of key post-exposure bake parameters, and models of critical dimension (CD) variation across the wafer arising in plasma etch and other process steps. Using these models, feed-forward approaches are proposed and demonstrated to compensate for the downstream etch variation by tuning the post-exposure bake temperature distribution, achieving reduced post-etch CD variation in the coupled lithography-etch process sequence.



Qiaolin (Charlie) Zhang (M'05) received the B.S. degree (with the highest honors) from the Department of Automation, University of Science and Technology of China (USTC), in 2001, and the M.S. and Ph.D. degrees in electrical engineering and mechanical engineering from the University of California, Berkeley, in 2005 and 2006, respectively.

He worked on lithography process characterization, modeling, optimization/control and related software development at Advanced Micron Devices in 2004 through 2006. Since May 2006, he has been working on advanced lithography modeling for OPC/RET/DFM in Technology Look-Ahead group in the Mask Synthesis Division, Synopsys Inc., Mountain View, CA. His research interests include semiconductor manufacturing modeling, Optical Proximity Correction modeling, process variation on circuit performance, design for manufacturing, electronics design automation, integrated circuits process metrology, and yield modeling and analysis.

Dr. Zhang was awarded Best Student Paper Award from AEC/APC 2005 and AEC/APC 2006, respectively. He has served as a Paper Reviewer for *IEEE Transactions on Semiconductor Manufacturing* and Conference Session Chair for International Symposium on Quality Electronic Design.



Kameshwar Poola received the B. Tech. degree from the Indian Institute of Technology, Bombay, in 1980, and the Ph.D. degree from the Cen-

ter for Mathematical System Theory, University of Florida, Gainesville, in 1984, both in electrical engineering.

He served on the faculty of the Department of Electrical and Computer Engineering at the University of Illinois, Urbana, from 1984 through 1991. Since then, he has been at the University of California, Berkeley, where he is now serving as Professor in the Departments of Mechanical Engineering and Electrical Engineering and Computer Sciences. He has also held visiting appointments at Honeywell, McGill University, and M.I.T, and has worked as a Field Engineer with Schlumberger AFR, Paris. He is a Cofounder of OnWafer Technologies (acquired by KLA-Tencor in 2007), which offers yield enhancement and metrology solutions for the semiconductor industry. He has been awarded five patents. His research interests include sensor networks, robust and adaptive control, system identification, semiconductor manufacturing, and mathematical biology.

Dr. Poola was awarded the 1984 Outstanding Dissertation Award from the University of Florida, the 1988 NSF Presidential Young Investigator Award, the 1993 Hugo Schuck Best Paper Prize, the 1994 Donald P. Eckman Award, a 1997 JSPS Fellowship, and the 1997 Distinguished Teaching Award from the University of California, Berkeley.



Costas J. Spanos (M'87SM'92F'98) received the electrical engineering Diploma (with honors) from the National Technical University of Athens, Greece, 1980, and the M.S. and Ph.D. degrees in electrical and computer engineer-

ing from Carnegie Mellon University, Pittsburgh, PA, in 1981 and 1985, respectively.

From 1985 to 1988, he was with the advanced CAD development group of Digital Equipment Corporation, Hudson, MA. In 1988, he joined the faculty at the Department of Electrical Engineering and Computer Sciences of the UC Berkeley, where he is now a Professor and the Associate Dean for Research for the College of Engineering. He has published more than 150 referred publications. His

research interests include the development of flexible manufacturing systems, the application of statistical analysis in the design and fabrication of integrated circuits, and the development and deployment of novel sensors and computer-aided techniques in semiconductor manufacturing. He was Director of the Berkeley Microfabrication Laboratory, from 1996 to 2000.

Dr. Spanos has served in the technical committees of the IEEE Symposium on VLSI Technology, the International

Semiconductor Manufacturing Sciences Symposium, the Advanced Semiconductor Manufacturing Symposium, and the International Workshop on Statistical Metrology. He was the Editor of the *IEEE Transactions on Semiconductor Manufacturing*, from 1991 to 1994. He received best paper awards in 1992, 1997, 2001, and 2005.

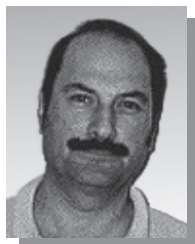
*Duane Boning
T-SM Editor-in-Chief*

*Massachusetts Institute of Technology
Cambridge, MA, USA*

ANNOUNCEMENT OF THE 2008 EDS MASTERS STUDENT FELLOWSHIP WINNERS



Paul K.L. Yu



Agis A. Iliadis

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

The Society is concerned with research, development, design and manufacture related to materials, processing, technology, and ap-

plications of such devices, and scientific, technical, educational and other activities that contribute to the advancement of this field.

EDS proudly announces four 2008 EDS Masters Student Fellowship winners. Brief biographies of the 2008 recipients appear below. Detailed articles about each Masters Student Fellowship winner and their work will appear in forthcoming issues of the EDS Newsletter.



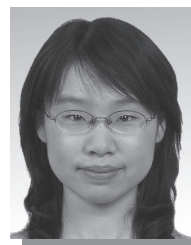
studies at the University of Central Florida concentrating in Microelectronics and since January 2008 she has been part of the ESD group conducted by Dr. J.J. Liou. Main areas of interest are microelectronic computer-aided design and electrostatic discharge (ESD) modeling and simulation. Her current research involves characterization and current dissipation in transistor arrays and designing electrostatic discharge (ESD) protection clamps.

Blerina Aliaj received her B.S. Degree from University of South Florida in 2007 in Electrical Engineering. She currently is continuing her graduate



Daniel Camacho is a graduate student at Southern Methodist University in Dallas, Texas, where he has been enrolled since the Spring of 2008. He received his BSEE

in September 2007 from the "Pontificia Universidad Javeriana" in Bogotá, Colombia. Mr. Camacho's main areas of interest are: Analog and Mixed-Signal Integrated Circuits Design, VLSI and System on Chip Design and Test, Radiation Tolerant CMOS Integrated Circuit Design. He has conducted research on high performance mixed signal CMOS VLSI circuits, particularly working on frequency synthesizers.



Jiale Liang received her B.S. with highest honors in Microelectronics from Peking University, China, in 2007. After graduation, she was awarded Gerald

L. Pearson Memorial Fellowship for the master level study in Electrical Engineering at Stanford University. In October 2007, she joined Prof. H.-S. Philip Wong's Nanoelectron-

ics group and began to conduct research on the properties (device physics) and modeling of Carbon Nanotubes (CNTs). She is currently working on the analytical ballistic theory of CNTs, with a focus on the analytical carrier density, quantum capacitance and transport of CNT devices. Jiale has authored or co-authored six papers on journals and conferences.



Jianqiang Lin received the B. Eng degree with first

class honors in Electrical Engineering in 2007 from the National University of Singapore (NUS), Singapore. He was awarded the MOE Scholarship for undergraduate study in 2003-2007. He is currently a graduate student in the Silicon Nano Device Laboratory (SNDL), NUS. His research interest includes novel device structures for MOSFET subthreshold slope scaling; Strained Si and III-V high mobility channel MOSFET for high performance application. He has worked on I-MOS simulation and modeling; lattice-mismatched stressors for nano scale Si MOSFET. Cur-

rently he is working on GaAs and InGaAs MOS devices. He is the author or co-author of 9 international journal and conference papers of above mentioned topics.

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

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

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

Carter Armstrong
N. Bell
Giorgio Cellere
Andris Ezis
Nicolas Fourches
Luiz Franca Neto
Prince Francis
Donald Gardner
Andreas Gehring
Michael Hayduk
Jian Jang Huang
Richard King
Johan Klootwyk*

Ronald Kubacki
Arvind Kumar
Y. Kuo
David Kyser
Yong Kyu Lee
Patrick Lenahan
Hong-Jyh Li
Jyu-Tsong Lin
Andrew C. Lish
Diana Loree
Wing Luk
Antonio Luque Estepa
Ron Maltiel

Mohamed M. Mansour
Donald Miller*
Yasuyuki Miyamoto
James Moon
Toshikazu Nishida
Alessandro Paccagnella
Kedar Patel
Rodrigo Picos Gaya
Boris Polsky
Vladislav Potanin
Jin Qiu
Angel Rodriguez
Alexandre R. Romariz

Bryan Root
Timothy Sands*
Manoj Saxena
Richard Sharp
Ang Shenp
Ulrich Schaper
Shyam Surthi
Joseph Talghader
Roland Thewes
Giovanni Verzellesi

* = 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>



2009 IEEE EDS MASTERS STUDENT FELLOWSHIP



CALL FOR NOMINATIONS

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

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

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

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

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

Nomination Package:

- Nominating letter by an EDS member who served as candidate's mentor or faculty advisor
 - Two-page (maximum) statement by the student describing his or her education and research interests and Accomplishments. This can include undergraduate, graduate and summer internship research work.
 - One-page biographical sketch of the student (including student's mailing address and e-mail address)
 - One copy of the student's transcripts/grades
 - A letter of recommendation from an individual familiar with the student's research and educational credentials
- Letters of recommendation cannot be from the nominator

Timetable:

- Nomination packages are due at the EDS Executive Office no later than March 15, 2009
- Recipients will be notified by May 15, 2009
- Monetary awards will be presented by the Dean or Department Chair of the recipient's graduate program at the beginning of the next academic term
- Nomination packages can be submitted by mail, fax or e-mail, but a hard copy must be received at the EDS Office

Send completed package to:

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

For more information contact:

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

IEEE ANNUAL ELECTION - DID YOU VOTE YET?

This is a reminder for EDS members to vote in the 2008 IEEE Annual Election for the following positions and candidates. Listed below are the positions and candidates that will appear on the 2008 IEEE Annual Election ballot.

Position	Candidates
IEEE President-Elect, 2009	Moshe Kam (Nominated by IEEE Board of Directors) Pedro A. Ray (Nominated by IEEE Board of Directors)
Division I Delegate-Elect/Director-Elect, 2009	Alfred E. Dunlop (Nominated by Division I) Hiroshi Iwai (Nominated by Division I)
Region 2 Delegate-Elect/Director-Elect, 2009-2010	Ralph M. Ford (Nominated by Region 2) Murty S. Polavarapu (Nominated by Region 2)
Region 4 Delegate-Elect/Director-Elect, 2009-2010	James N. Riess (Nominated by Region 4) Hamid Vakilzadian (Nominated by Region 4)
Region 6 Delegate-Elect/Director-Elect, 2009-2010	Edward G. Perkins (Nominated by Region 6) S. K. Ramesh (Nominated by Region 6)
Region 8 Delegate-Elect/Director-Elect, 2009-2010	Marko Delimar (Nominated by Region 8) Gerhard P. Hancke (Nominated by Region 8)
Region 10 Delegate-Elect/Director-Elect, 2009-2010	R. Muralidharan (Nominated by Region 10) Wai-Choong (Lawrence) Wong (Nominated by Region 10)
Standards Association Board of Governors Member-at-Large, 2009-2010	Young Kyun Kim (Nominated by Standards Assoc.) Stanley L. Moyer (Nominated by Standards Assoc.) James R. Williamson (Nominated by Standards Assoc.)
Standards Association Board of Governors Member-at-Large, 2009-2010	Andrew L. Drozd (Nominated by Standards Assoc.) Paul Nikolich (Nominated by Standards Assoc.)
Technical Activities Vice President-Elect, 2009	Roger D. Pollard (Nominated by Technical Activities) Robert C. Rassa (Nominated by Technical Activities)
IEEE-USA President-Elect, 2009	Evelyn H. Hirt (Nominated by IEEE-USA) Ronald G. Jensen (Nominated by IEEE-USA)
IEEE-USA Member-at-Large, 2009-2010	Jean M. Eason (Nominated by IEEE-USA) Emily A. Sopensky (Nominated by IEEE-USA)

Petition Candidates

There are no petition candidates for any elective position in the 2008 IEEE Annual Election.

Completed ballots must be received by noon U.S. CentralTime (17:00 Greenwich MeanTime) on 1 October. Members can also access the ballot and related materials electronically. To learn more, visit the election site at <http://www.ieee.org/election> or contact Carrie Loh, IEEE Corporate Activities at +1 732 562 3934, e-mail: c.loh@ieee.org.

EDS DISTINGUISHED LECTURER VISITS ORANGE COUNTY, CALIFORNIA

by Hector J. De Los Santos

On April 10, 2008, EDS Distinguished Lecturer, Dr. Usha Varshney, presented a talk on "Research and Education Opportunities in the Electrical, Communications, and Cyber Systems (ECCS) at the National Science Foundation," at the ED/MTT Orange County Chapter.

Currently, Dr. Varshney is the Director of Electrical, Communications, and Cyber Systems (ECCS) division of the National Science Foundation (NSF). In 2003-2004, she was a Legislative Fellow in the United States



*Dr. Usha Varshney, EDS
Distinguished Lecturer*

108th Congress and a ComSci Fellow in the U.S. Department of Commerce under Science and Technology Fellowship Program. She joined the NSF in

1997 as a Program Director of Electronics, Photonics, Device Technologies, and Integrative Systems. From 1987 to 1997, she was the Director of Research and Senior Research Scientist in industry. She is a Fellow of IEEE and a Fellow of AAAS. She has authored numerous papers, holder of seven patents, and is the recipient of numerous awards and recognitions.

The talk started with an overview on National trends related to

NSF budget, NSF Mission, Vision and the Strategic Outcome Goals, the NSF Organizational Structure, FY 2009 Budget Request, and future investments in priority areas. Then it was followed by a brief description of various Programs and Initiatives in Engineering and its Divisions. In particular, the presentation highlighted research and education priorities in the ECCS Division, and concluded with challenges to foster government/industry/university cooperation, to pursue national and international competitiveness and to integrate research and education programs that will inspire young scientists and engineers.

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

REPORT ON THE IEEE EDS MINI-COLLOQUIUM HELD IN ISTANBUL, TURKEY

The IEEE EDS Distinguished Lecturers Mini-Colloquium was held at Sabanci University, in Istanbul on June 4, 2008. The Distinguished Lecturers, together with representatives from the MTT/AP/ED/EMC Turkey Chapter, attended the colloquium as speakers. Further detail on the speakers is listed below:

- Prof. Cor Claeys, IMEC, Leuven, Belgium, Electrical Engineering Department, KU Leuven, Belgium
- Prof. Albert Wang, Department of Electrical Engineering, University of California, Riverside, CA, USA
- Prof. Juin J. Liou, Department of Electrical and Computer Engineering, University of Central Florida, Orlando, FL, USA
- Prof. Hiroshi Iwai, Department of Electronics and Applied Physics, Interdisciplinary School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Japan
- Prof. Ibrahim Tekin, Electronics Engineering, Sabanci University, Istanbul, Turkey

- Prof. Haluk Kulah, Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, Turkey

After the welcome message given by Prof. Tekin of Turkey, the colloquium started with a presentation on "ESD protection issues for ICs" given by Prof. Albert Wang and Prof. Juin J. Liou. The speakers pointed out many interesting and critical issues for ESD protected chip designs. Prof. Hiroshi Iwai also talked about some of the nano-technology work that is being conducted by his team; raising many questions in the audience's mind about where "the future of micro-nanotechnol-

ogy" is going. Prof. Cor Claeys gave a speech on "reliability issues in devices such as MugFETs", which was also another hot-topic research area. The colloquium was concluded with talks given by speakers from the ED Turkey Chapter on "RFIC power amplifiers" and "MEMS technology" by Prof. Ibrahim Tekin and Prof. Haluk Kulah, respectively. After the meeting, a commemorative photograph of the speakers was taken.

*Ibrahim Tekin
MTT/AP/ED/EMC Turkey
Chapter Chair
Sabanci University
Istanbul, Turkey*



EDS Distinguished Lecturers and organizers of the mini-colloquium held at Sabanci University

REPORT ON THE MINI-COLLOQUIUM HELD IN DAEGU, KOREA

ED/MTT/SSCYeongnam Chapter Holds Inaugural Mini-Colloquia

The IEEE ED/MTT-S/SSCS Yeongnam Chapter (Chair, Prof. Yoon-Ha Jeong, POSTECH), held its inaugural mini-colloquia on "Nanotechnology and Nano Devices" on May 14, 2008, at the EXCO Conference Center in Daegu, Korea. Five IEEE Distinguished Lecturers and invited speakers, Prof. Takao Someya of Tokyo University (EDS DL), Prof. Moon-Ho Jo of POSTECH, Prof. Huei Wang of National Taiwan University (MTT-S DL), Prof. Juin Liou of University of Central Florida (EDS DL) and Prof. Jong Ho Lee of Kyungpook National University (KNU), delivered inspiring and excellent speeches.

In his opening remarks, the Yeongnam Chapter Chair, Prof. Jeong said, "IEEE Yeongnam Chapter is organized to bring together researchers, professors, engineers and students from the Gyeongbuk, Daegu and Gyeongnam areas, for disclosing their research and development results, and sharing ideas and opinions."

Speakers covered topics on "Organic transistor ICs", "Semiconductor Nanowires", "Si & compound MMICs", "ESD protection for nano CMOS" and "modeling of double gate and nanowire FETs".

This event was sponsored and supported by the IEEE Electron Devices Society, the Institute of Electronics Engineers of Korea (IEEK), the National Center for Nanomaterials Technology (NCNT), Kyung-



MQ organizers and speakers: from left to right, Profs Jinho Jo, Jinyong Chung, Jong Ho Lee, Juin Liou, Yoon-Ha Jeong, Huei Wang, Takao Someya, Moon-Ho Jo, Jae Yoon Sim and Hoon-Kyu Shin



One of the MQ sessions

pook National University (KNU), and POSTECH. About 100 professors and students from the Daegu and Pohang areas attended the seminar.

Andy Chung
ED/MTT/SSCYeongnam Chapter
Secretary
POSTECH University
Pohang, Korea

ANNUAL DVD UPDATE PACKAGE AVAILABLE TO EDS MEMBERS

The 2007 Annual DVD update package was distributed in May. It includes all issues from 2004 through 2007 of *Electron Device Letters* (EDL) and *Transactions on Electron Devices* (T-ED), as well as the proceedings of the IEEE International Electron De-

vices Meeting (IEDM) over the same period. This update is fully compatible with the EDS Archival Collection DVD and the two products work together seamlessly providing extensive search capabilities to all issues of EDL, T-ED and all technical digests of

the IEDM. The DVDs include comprehensive author, subject and publications indices, abstract pages and all articles are in searchable PDF format.

The 2007 EDS DVD Update Package is available exclusively to EDS members for a bargain price of US \$30

(students \$15) through the IEEE online Store <http://shop.ieee.org/store/> or using a downloadable order form from the EDS web-site at <http://www.ieee.org/portal/pages/society/eds/pubs/pubs.html>

You can request the 2008 EDS DVD Update Package in advance as a subscription via your 2009 IEEE Membership renewal bill when you receive it this Fall. The 2008 EDS DVD Package will be available at the latest by May 2009. Once you sign-up to receive the 2008 package via your member renewal bill, you will automatically be billed each year for sub-

sequent versions of the package.

For those interested, the EDS Archival Collection is still in stock and available solely to EDS members for US \$30 (\$9.95 students) through the IEEE online store at <http://shop.ieee.org/store/>. This archival collection includes all issues of *Transactions on Electron Devices* (1954-August 2004), *Electron Device Letters* (1980-August 2004), and all the technical digests of the IEEE International Electron Devices Meeting (IEDM) (1955-2004).

These products are being made available to our members in the spirit of providing technical information at a

most affordable price possible. Hand-in-hand with this goes the concept of individual ownership. We hope that you will adhere to this concept and encourage others interested in using them to acquire their own copy. If you are currently not an EDS member, we encourage you to become one to avail yourself of these exceptional products designed to empower our members.

Renuka P. Jindal

EDS President-Elect and

Vice-President of Publications

University of Louisiana at Lafayette
Lafayette, LA, USA

ON-LINE ACCESS TO IEEE JOURNALS AVAILABLE TO EDS MEMBERS



Renuka P. Jindal

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

- **Electron Device Letters** (All Issues From 1980 through current)
- **Transactions on Electron Devices** (All Issues From 1954 through current)
- **International Electron Devices Meeting** (All Digests From 1955 through current)
- **Journal of Lightwave Technology**

These publications can be viewed through the on-line delivery system, IEEE Xplore, which provides EDS members with the following benefits/capabilities:

- Online access to their IEEE personal subscriptions
- Full-text PDF image files for content, including all original charts, graphics, diagrams, photographs and illustrative material, from an integrated-circuit schematic to a topographic map to a photograph of a new crystalline structure

- Full-text search allows you to search metadata fields and the associated full-text journal/transaction
- Links to references and cross linking between EDS publications and other IEEE publications is available in articles
- CrossRef search offers outbound links to publications by other leading publishers, employing the google search engine
- Online version available prior to the print equivalent
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- Unlimited printing of bibliographic records and full-text documents
- Includes cover to cover material starting (starting in 2004) i.e., letters to editor, editorial boards, call for papers

In addition to the above benefits, EDS members can purchase a combined paper and on-line subscription to *Transactions on Semiconductor Manufacturing* and/or the *Journal of Microelectromechanical Systems*. Other publications offered by EDS that have both an electronic only version and a combination paper and electronic

version, also available for an additional cost, include; *Transactions on Applied Superconductivity*, *Transactions on Computer-Aided Design of Integrated Circuits and Systems*, *Transactions on Device and Materials Reliability*, *Journal of Display Technology*, *Journal of Electronic Materials*, *Transactions on Nanotechnology*, *Nanotechnology Magazine*, *Sensors Journal*, and new for 2009, *Embedded Systems Letters*, *Solid-State Circuits Magazine*, and *Photonics Journal* (electronic only).

To use the Xplore system, you must establish an IEEE Web Account. This account is also used for renewing your IEEE membership online. If you need to establish an IEEE Web Account, please visit www.ieee.org/web/accounts/. IEEE members can go to the Xplore site through the URL www.ieeeexplore.ieee.org. We encourage all members of the Society to use this dynamic system and leverage their membership benefits to the fullest extent.

Renuka P. Jindal

EDS President-Elect and

Vice-President of Publications

University of Louisiana at Lafayette
Lafayette, LA, USA.

REPORT ON THE EDS MINI-COLLOQUIUM HELD IN ATHENS, GREECE

The Electron Devices Society SRC-EAM hosted a Mini-colloquium on Monday, June, 2, 2008, at the National Technical University of Athens, Greece, in conjunction with the EDS AdCom meeting held the day before at the Divani Caravel Hotel in Athens.

The Mini-colloquium was the last of a number of EDS related events held in Athens, including the EDS Region 8 Chapters Meeting on May 31, and the EDS AdCom Meeting on June 1.

The Mini-colloquium event aimed to offer several EDS Distinguished Lecturers technical presentations to an audience composed of students from the local University, NTUA, and of scientists attending the EDS Meetings.

The program of the Mini-colloquium included eleven outstanding presentations divided into three sessions. The first session, entitled Nano Technology I, included the talk given by Prof. Hiroshi Iwai, Tokyo Institute of Technology, EDS Sr. Past President, entitled "Future nano-CMOS technology". In his talk, Prof. Iwai reviewed the past of the semiconductor device development and predicted its future. In the second talk, entitled Ultra-thin chips - a new paradigm in silicon technology - Joachim Burghartz, Director of the Institute for Microelectronics Stuttgart (IMS CHIPS), compared two generically different process technologies that can be exploited for the fabrication of ICs on extremely thin chips. The third speaker, Agis Iliadis from the University of Maryland, reported about the

development of self-assembled ZnO nanostructures through diblock copolymer synthesis on large area Si(100) wafers and device applications.

The morning program continued with three talk sessions devoted to Reliability. In the first of the Reliability talks, Prof. Durga Misra, from the New Jersey Institute of Technology, discussed in details some of the on-going research work on charge trapping in high-k dielectrics such as HfO₂ and Hf-SiO₂. The next speaker, Prof. Juin Liou from the University of Central Florida, Orlando, gave an overview on the Electrostatic discharge (ESD) sources, models, and protection schemes, followed by the examples of robust ESD solutions for protecting the data communication transceiver, high voltage IC, and gas-sensor microchip. In the last talk of this session, Prof. Albert Wang, University of California, Riverside, discussed various key aspects for ESD protection design including ESD protection principles, mixed-mode ESD design method, RF ESD design evaluation and ESD design prediction, etc.

After lunch served on the premises, the busy schedule of the day continued with two talk sessions devoted to modeling. In the first talk, Prof. John Xanthakis, from NTUA, described novel approaches to multi-dimensional Tunneling currents in nano-devices. The second talk, given by Prof. Renuka Jindal, from the University of Louisiana, Lafayette, President-Elect of the Electron Devices

Society, discussed the foundations of noise in semiconductor devices and the changes in the device structure to improve the noise performance by suppressing the effects of the extrinsic noise mechanisms. The last session of the day, entitled NanoTechnology II, opened with a talk from Prof. Jamal Deen, McMaster University, Canada, on High Sensitivity Silicon-Based Photodetection Systems for Biomedical Applications. The second speaker, Dr. Rebecca J. Nikolic, from Lawrence Livermore National Laboratory, discussed innovative devices to advance both neutron and gamma detectors with a presentation entitled "New Architectures and Materials for Semiconductor Based Radiation Detectors". The technical program of the Mini Colloquium was closed by Prof. Monuko du Plessis from the University of Pretoria, who gave a talk entitled "Integrated nano-explosive devices using nano-porous silicon" in which he investigated the explosive properties of nano-porous-silicon, impregnated with an oxidant.

The Mini-colloquium, attended by about 30 graduate students and EDS scientists, both from the local Greece Chapter and from abroad, was organized by Enrico Sangiorgi, SRC-EAM Vice-Chair.

*Enrico Sangiorgi
EDS Vice-Chair SRC-EAM
Universita' di Bologna
Forli, Italy*



Attendees and EDS Distinguished Lecturers at the mini-colloquium in Athens

EDS MEMBERSHIP FEE SUBSIDY PROGRAM (MFSP)

IEEE policy currently allows a 50% discount on IEEE dues and one society membership for any individual whose annual salary is less than US\$12,600. This offering is referred to as the Minimum Income Special Considerations Option. The Electron Devices Society currently has a program for its chapters called the Membership Fee Subsidy Program (MFSP), which both complements the IEEE Minimum Income offering and provides a significant additional benefit for qualified individuals.

With the EDS Membership Fee Subsidy Program, EDS will pay 50% of the IEEE and EDS dues for any **new/existing** member or student qualifying for the Minimum Income option. EDS will cover up to twelve

(12) chapter members/students per year. Each member/student can only be covered 'one time' under this program and four of the twelve members/students each year must be new IEEE/EDS members/students. The individuals can be applying for either regular membership or student membership. This program is also available to all unemployed members. Although the IEEE Minimum Income option allows individuals to purchase publication subscriptions for one-society at a 50% reduced rate, the EDS MFSP does not cover the payment of publication subscriptions.

If a chapter has individuals who qualify for the reduced IEEE Minimum Income offering and the EDS MFSP, all the Chapter Chair needs to do is

obtain the IEEE/EDS membership application forms or IEEE Renewal Bills from all individuals participating in the program (maximum 12) and submit them to Laura Riello of the EDS Executive Office, for processing. Once received, the application forms will be coded with a special account number and submitted to the pertinent IEEE department for processing.

Aside from being a program for existing EDS chapters, the EDS Membership Fee Subsidy Program is also an extremely good means to help facilitate the launching of new chapters in low income geographical areas. For any questions concerning the program, please contact Laura Riello (l.riello@ieee.org) of the EDS Executive Office.

EDS SENIOR MEMBER PROGRAM



Albert Wang

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

EDS 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 towards 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/organizations/rab/md/empl_notification_form.html.

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

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

For more information concerning Senior Membership, please visit <http://www.ieee.org/web/membership/senior-members/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*

REGIONAL AND CHAPTER NEWS

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

ED Mid-Hudson

- by Fernando Guarín

The Electron Devices Society chapter at Mid-Hudson in New York hosted IEEE Fellow and EDS Distinguished Lecturer, Dr. Tak Ning, April 7, 2008, at the IBM facility in East Fishkill, New York. The event was arranged by Dr. Ravi Todi and began with an informal gathering and a working lunch. Dr. Ning delivered a very interesting talk entitled *"Focus on SOI for SoC as We Approach the End of CMOS Scaling"*. He engaged the audience by pointing out the fact that the glass for continuing the rapid progress in silicon technology appears half full because system designers need a lot more than just ever-faster transistors. One such need is system-on-chip (SoC) integration where various system functions, not just logic and SRAM devices, are being integrated on a chip. During this talk, the fundamentals that could limit the scaling of CMOS at or beyond the 15 nm node and the reasons why SOI CMOS is the preferred technology platform for SoC development were discussed. Dr. Ning is an IBM Fellow currently working at the Thomas J. Watson Research Center.

~ Ibrahim Abdel-Motaleb, Editor

ED Boise

- Nirmal Ramaswamy

The sixth Annual IEEE Workshop on Microelectronics and Electron Devices (WMED) was held on April 18, 2008, Boise, Idaho. The goal of the

2008 IEEE WMED was to bring distinguished speakers and industry leaders to address the pertinent issues and concepts of today's semiconductor industry. The event provided a forum for 100+ attendees including about 40 IEEE members interested in reviewing and discussing all aspects of microelectronics such as processing, electrical characterization, design, and emerging device technologies. The details of the workshop are located at: <http://www.ewh.ieee.org/r6/boise/wmed2008/WMED2008.htm>.

This workshop included five invited talks (with three IEEE Electron Devices Society (EDS) Distinguished Lecturers), seven contributed papers, two popular tutorials, and six student posters. The invited speakers are:

- Dr. Gurtej Sandhu, Director, Advanced Technology R&D, Micron Technology, Inc., "Trends, Challenges and Opportunities in Semiconductor Memory Technology Scaling."
- Dr. Krishna Parat, Flash Device Manager, Intel Corporation, "NAND Flash Memory Scaling – Key Challenges and Future Outlook."
- Prof. Vivek Subramanian, Univ. of California Berkeley, "Printed Electronics for Low-cost Tags and Sensors."
- Dr. Ken MacWilliams, VP & GM Maydan Technology Center, Applied Materials, "Emergence of Double Patterning and in Particular Self-aligned Double Patterning for the 32nm Hal-pitch and Below."
- Dr. Hector De Los Santos, CEO, NanoMEMS Research LLC, "NanoMEMS."

Whereas the invited tutorials and speakers are:

- Mr. Steve Groothuis/Prof. Cary Yang, Santa Clara University,

"Current Capacity of Carbon Nanofiber Interconnects."

- Prof. Scott Dunham, University of Washington, "Utilization of atomistic computations in process modeling."

The success of a regional IEEE workshop like WMED can only be attributed to the hard work and determination of volunteers in the Treasure Valley. The IEEE ED Boise Chapter officers and members believe that WMED provides a forum for the interaction between well-known speakers, microelectronic technologists, and future engineers involved in the semiconductor industry to discuss research, explore



Dr. Gurtej Sandhu (2008 IEEE WMED Keynote Speaker) talked about some of the barriers and solutions in high technology non volatile memory manufacturing



The over 100 attendees listened intently and asked some focused questions to each of the invited speakers

new techniques, and to network with local and remote colleagues.

The IEEE EDS was the technical co-sponsor of the workshop. The chapter would like to thank the financial sponsors: Boise State University's College of Engineering, Micron Foundation, IEEE Boise Section, and the IEEE ED Boise Chapter.

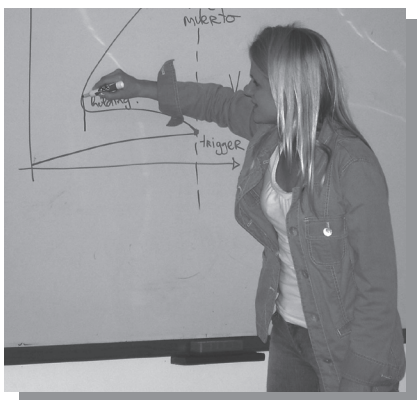
The Seventh Annual Workshop on Microelectronics and Electron Devices (WMED) is planned to be held in March/April 2009 Boise, Idaho. Please visit the WMED-2009, website for further details: <http://www.ewh.ieee.org/r6/boise/wmed2009/WMED2009.htm>. Enquiries regarding this workshop should be directed to: Dr. Shyam Surthi, 2009 IEEE WMED General Chair, Tel: 208-368-1773, Fax: 208/368-2565, E-mail: ssurthi@micron.com.

~ Samar Saha, Editor

CAS/ED/PEL Venezuela

- by A. Ortiz-Conde

The IEEE ED/CPMT Orlando Chapter Chair, Slavica Malobabic, visited our chapter on Thursday, July 3, 2008, in order to continue to strengthen the ongoing EDS activities among our chapters. Slavica is presently a Ph.D. candidate at the University of Central Florida (UCF), USA, under the guidance of Prof. J.J. Liou.

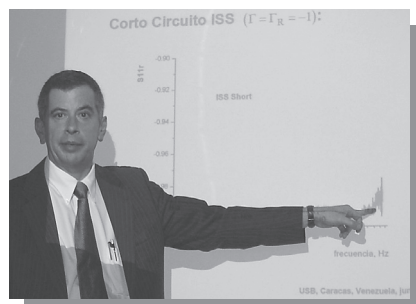


Orlando ED/CPMT Chapter Chair, Slavica Malobabic, answers a question during her recent talk at Simón Bolívar University, in Caracas, Venezuela

During her visit, she met with our Chapter's officers and members, and presented a two-hour talk at Simón Bolívar University (USB), Caracas, Venezuela. The first part of the talk was a brief description of EDS activities in general, coupled to our collaboration activities in particular. The second part was a technical seminar where she presented a comprehensive and up-to-date description of research activities in Microelectronics at UCF, with special emphasis on Electrostatic Discharge (ESD) phenomena and protection. There was very active participation of the audience, and the many questions and answers motivated additional informal meetings which took place after the conclusion of the official seminar. Additionally, Slavica met with different research groups at USB to discuss ongoing research activities.

Continuing Venezuela's Chapter series of technical seminars and workshops, a two-hour technical lecture was held on Thursday June 19, 2008, at Simón Bolívar University, Caracas. The special invited lecturer on this occasion was Dr. Roberto S. Murphy, who talked on the topic of "Modeling and Characterization of High Frequency MOSFETs."

Dr. Murphy is the Director of Studies at "Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE)", Puebla, México. He is internationally known for his academic activities in the area of high frequency devices. Dr. Murphy is the author of a text-



Dr. Roberto Murphy during his presentation

book about Electromagnetic Theory, numerous articles in technical journals and conference proceedings, and is actively involved in higher education planning and development in Mexico, and in the organization of specialized international conferences and workshops.

At this seminar he presented a comprehensive and up-to-date description of high frequency MOSFET applications in RF and microwave electronics, and the impact they are having in revolutionizing wireless communications. Special emphasis was placed on the delicate issues involved with the measurement, modeling, and parameter extraction of these devices.

More than 30 faculty members, graduate and undergraduate students, from several Venezuelan universities actively participated in the seminar. There was a very lively involvement of the audience in discussions, and the many interesting questions and answers motivated additional informal meetings which took place after the conclusion of the official seminar.

The same day, by invitation of the Office of the Dean of Research of Simón Bolívar University, Dr. Murphy met with different research groups of that institution to discuss their ongoing research activities and to explore possible collaboration.

For additional information contact Professor Adelmo Ortiz-Conde at ortizc@ieee.org.

~ Jacobus W. Swart, Editor

EUROPE, MIDDLE EAST & AFRICA (REGION 8)

AP/ED/MTT/CPMT Saratov/Penza
- by Nikita M. Ryskin

On June 25-27, the 3rd annual conference for young scientists, "Nano-

electronics, Nanophotonics and Non-linear Physics" (NNNPh'08) was held in Saratov. The conference was hosted by the Saratov Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Science, with technical and financial co-sponsorship from the AP/ED/MTT/CPMT Saratov/Penza Chapter.

The conference program included 10 Plenary Lectures by invited speakers, 45 talks and 28 posters presented by young scientists and students. The presentations were divided into 4 sessions: "Micro and nanoelectronics, nanomaterials and nanostructures", "Optics and nanophotonics", "Acousto and magnetoelectronics", and "Nonlinear physics". Over 100 participants from many regions of Russia attended the conference. The book of abstracts was published and distributed at the conference.

The chapter supported the conference financially and technically,

with many IEEE members serving as members of the Program Committee. Dr. Irene E. Kuznetsova served as the Local Technical Committee Chair. Chapter Chair Prof. N.M. Ryskin and Vice-Chair Dr. O.E. Glukhova also served as Session Co-Chairs.

The conference was attended by the Russian IEEE Section Chair, Prof. Yu.V. Gulyaev, Section Vice-Chair Prof. S.A. Nikitov, and Section Treasurer Prof. V.I. Anisimkin. They met with Saratov/Penza Chapter Officers and discussed current activities and future plans of the chapter.

Conference web page is located at <http://nnnph06.fatal.ru/main.php>

~ **Tomislav Suligoj, Editor**

ED/EMB/IM Estonia

- by *Olev Märtens*

The IEEE Estonia Section – Electron Devices/Engineering in Medicine and Biology/Instrumentation & Measurement Chapter was formed April 24, 2007. The chapter held four seminars in its first year:

1. The first seminar was held in north-west Estonia, at Roosta Camp and Holiday Village, August 19-20 2007. The activities of the chapter were presented by the Chapter Chair, Dr. Olev Märtens. The full program of the event is available at [http://isc.dcc.ttu.ee/ieee/ws/WS2007/ChapterWorkshop2007.asp#TIME TABLE](http://isc.dcc.ttu.ee/ieee/ws/WS2007/ChapterWorkshop2007.asp#TIME%20TABLE). Among other things, Prof. Mart Min (member of EMBS and IMS), talked about "lab-on-Chip", and master student, Raul Kala, about bio-medical research on sleep processes of humans. Number of participants was 25 (IEEE members 18).

2. A seminar titled, "smart house" was held at Tallinn University of Technology, in Estonia, on May 22, 2008, together with the Tallinn University of Technology and Competence Center ELIKO. Different topics of sensorics, intelligent control, robotics, etc., were covered. Number of participants was 70 (IEEE members 12).

3. A Robotics seminar was held at Tallinn University of Technology, in Estonia, June 3, 2008, together with Tallinn University of Technology and Competence Center. Different topics of sensorics, RFID; intelligent control, robotics and robot swarms, etc., were covered. Number of participants was 45 (IEEE members 8).

4. The latest seminar was held in Tartu science park, Estonia, June 26, 2008. The activities of Tallinn University of Technology and Competence Center ELIKO were presented for Tartu University people, and for companies at science park. Different fields of electronics and ICT (also possibly for future co-operation) were covered: power electron devices, bio-medical electronics, RFID technology, machine vision. RF sensors, etc. Number of participants was 32 (IEEE members 8).

MIXDES 2008

- by *Andrzej Napieralski*

15th International Conference "Mixed Design of Integrated Circuits and Systems"

On June 19–20, 2008, Poznan, Poland, the annual International Conference MIXDES 2008 took place. The event was organized by the Technical University of Lodz together with the Poznan University of Technology and the Warsaw University of Technology. The conference was technically co-sponsored by IEEE Poland Section, the IEEE ED and CAS Chapters and the Polish Academy of Sciences, Committee of Electronics and Telecommunication, Section of Microelectronics and Sections of Signals and Electronic Circuits and Systems.

In addition to the regular program two special sessions were organized:

- "Compact Modeling and Characterization of Nano CMOS Technologies" organized by Daniel Tomaszewski (Institute of Electron Technologies) and Władysław Grabinski (GMC Suisse, Switzerland),



Honorary Conference Chairman, Russian IEEE Section Chair, Prof. Yu.V. Gulyaev (IRE RAS, Moscow), giving the plenary lecture "Biomedical Radio Engineering"



Participants of the Robotics seminar held at Tallinn University of Technology



MIXDES conference and joint meeting participants in front of the Poznan City Hall

- CARE Project Special Session organized by Dariusz Makowski and Mariusz Grecki (Technical University of Lodz, Poland).

The conference was attended by over 110 scientists coming from 30 countries all over the world. During the conference, six invited papers and 149 regular papers were presented at oral, poster, and special sessions. The conference proceedings (639 pages, ISBN: 83-922632-7-8, IEEE Catalog Number: CFP08MIX-PRT) and CD ROM (ISBN: 83-922632-8-6, IEEE Catalog Number: CFP08MIX-CDR) were published by the Technical University of Łódź.

The following invited keynote presentations were given:

- *"High Performance Computing in Nanoscale Electro-thermal Modeling and Simulations"*, A.W. Skorek (Univ. Quebec at Trois-Rivières, Canada and Tech. Univ. Białystok, Poland)
- *"LTCC in Microelectronics, Microsystems, and Sensors"*, K.A. Peterson, R.T. Knudson, E.J. Garcia, K.D. Patel, M. Okandan, C.K. Ho, C.D. James, S.B. Rohde, B.R. Rohrer (Sandia Labs, USA), F. Smith, L.R. Zawicki (Honeywell

Federal Manufact. and Techn., USA), B.D. Wroblewski (Sandia Labs, USA)

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

Based on evaluation of the quality of the papers and presentations, eleven of the papers received the Best Paper Award. Additionally, the paper entitled "Development of Pipeline ADC for the Luminosity Detector at ILC" (M. Idzik, K. Swientek, S. Kulis, AGH Univ. of Science and Technology, Poland) received the Poland Section IEEE ED Chapter Special Award from the Section Chairman.

All the conference participants and accompanying persons, as every year, enjoyed the social program. During the second conference day, the participants had the opportunity to visit the most interesting places in Poznań.

The next MIXDES 2009 Conference will take place in Łódź. The Preliminary Call for Papers is available at <http://www.mixdes.org/downloads/call2009.pdf>. More information about the past and next MIXDES Conferences can be found at <http://www.mixdes.org>.

ED Poland

- by Mariusz Orlikowski and Andrzej Napieralski

On June 19, 2008, Poznań, Poland, during the 15th MIXDES conference, a joint meeting of the Poland Section of the IEEE ED Chapter and the Section of Microelectronics of Committee of Electronics and Telecommunication of Polish Academy of Science, was held. The meeting started with the presentation of Dr. Paweł Sniatała "Some Aspects on CAE Tools for Analog and Digital Circuits." The meeting was also the opportunity to present nominations to fellowship of Polish Academy of Sciences to some of the ED Chapter members. Prof. Andrzej Napieralski also presented a report "State of the Art and Future of Microelectronics." Afterwards, the participants had the opportunity to participate in a tour over Poznań city center via the historical tramway.

~ Zygmunt Ciota, Editor

ASIA & PACIFIC (REGION 10)

ED Japan

- by Mitsumasa Koyanagi

A DL talk entitled "Novel On-Chip Integrated Magnetic Micro-Inductor for RF IC" was given by Prof. Tian Ling Ren of Tsinghua University, China, at the Suzukakedai Campus of Tokyo Institute of Technology, Yokohama, Japan, on June 26, 2008. The DL abstract was as follows: An on-chip inductor was key element to RF IC. However, conventional planar spiral inductor suffered from large size and low quality factor due to energy losses. In this talk, ferrite thin-film integrated inductor was proposed. Systematic investigation of CMOS-compatible on-chip ferrite-integrated RF inductor was introduced, including inductor design and simulation, ferrite material selection, and integration pro-



The DL meeting on June 26, 2008 – back row, 4th and 5th from left: Prof. Tian Ling Ren, Tsinghua University, China, and Prof. Hiroshi Iwai, Partner and EDS Jr. Past President



Prof. Koyanagi, Chair of organizing committee, giving opening remarks at 3D-SIC 2008

cess and technique. The developed novel ferrite-based inductor showed encouraging improvements for inductance and quality factor at GHz RF operation, and can be IC process compatible. This DL meeting, attended by 20 people, was very meaningful.

The second International Conference on 3D System Integration (3D-SIC 2008) was held at the Hitotsubashi Memorial Hall, Tokyo, Japan, May 12-13, 2008. This conference was co-sponsored by the ED Japan Chapter. 3D-SIC 2008 is the only conference in Japan, which covers all the topics on 3D LSI and SiP, such as 3D process technology,

materials, fabrication machines, circuits technology, design methodology, and new application. The number of attendees exceeded 200 and there were a lot of famous engineers and scientists from Japan, Korea, India, Singapore, USA, Germany, Belgium, and France. All attendees had opportunities for stimulating discussions among 3D researchers around the world.

In addition, in the first half of 2008, the ED Japan Chapter held 3 joint technical meetings with the Japan Society of Applied Physics, the Association of Super-Advanced Electronics Technologies, etc.

ED Kansai

- by Michinori Nishihara

The ED Kansai Chapter held the 6th International Meeting for Future of Electron Devices, Kansai (2008 IMFEDK) at Osaka University Nakanoshima Center, Osaka, Japan, May 22-23, 2008, with 143 attendees.

The meeting was opened by a tutorial session which covered power electronics from material and device point of view by Dr. Okumura of AIST and Dr. Shinohe of Toshiba, respectively. The program was opened with remarks by Prof. Yoshihiro Hamakawa and followed by three keynote speeches by Dr. Ohashi and Dr. Matsui both from AIST, and Dr. Kado from NTT.

They touched on different aspects of recent progress in semiconductor technology, such as power electronics, robotics, and sub-terahertz applications. There were three regular technical sessions and one special session for students. The regular session covered A) Simulation and Modeling, B) Silicon Devices and C) Compound Semiconductor Devices. In the special session, students from universities and colleges of Japan and Asian countries gave short presentations prior to their poster session. They showed great passion and enthusiasm in presenting their field of research.

At the end of the meeting we selected the following papers and gave out awards. The Grand Award was presented to Naohito Suzumura of Renesas Technology Corp. and the Student Award was presented to the following students: Takayuki Tochio (Kansai University), Toru Hiyoshi (Kyoto University), Yusuke Kagei (Osaka University), Jiyong Cha (Hankuk University of Foreign Studies), Makoto Kawabata (University of Hyogo), Kazuhiro Yasue (Osaka University), Daisuke Takagi (Osaka Institute of Technology), Takashi Matsumoto (Osaka University). The awards



(top) Student award recipients and Prof. K. Taniguchi at the left and Dr. N. Suzumura in the center
(bottom - left to right) Prof. Y. Hamakawa, Dr. T. Matsui, Dr. Y. Kado, Dr. H. Ohashi

were presented by Prof. Taniguchi, the Executive Committee Chair of the 2008 IMFEDK.

~ **Kazuo Tsutsui, Editor**

ED Guangzhou

- **Huang Yun**

During May 18-22, 2008, IEEE EDS Vice-President of Regions/Chapters, Prof. Juin J. Liou, University of Central Florida, was invited to visit the IEEE ED Guangzhou Chapter.

Prof. Liou's lecture was named "Advanced on-chip electrostatic discharge (ESD) protection solutions for digital, analog, and RF integrated circuits". The mechanism and protect techniques of ESD were introduced, also many practical design and technical cases about advanced ESD protect structures for digital, analog and RF integrated circuits were presented. After the lecture, he also spoke on how to organize activities at the Chapter.



Prof. Juin J. Liou (1st row, 4th from left) and some members of the IEEE ED Guangzhou Chapter

Prof. Liou's visit prompted the technical exchange. Based on the platform of IEEE EDS, the Guangzhou Chapter will enhance international technical communication in the field of quality and reliability of electronic devices.

ED Peking University

- **by Runsheng Wang**

The ED Peking University (PKU) Student Chapter held an EDS DL talk on March 20, 2008. Prof. Vijay K. Arora of Wilkes University, was invited to deliver a lecture entitled "The Role of Scattering-Limited and Ballistic Transport in Performance Evaluation of Nano-CMOS Circuit". Prof. Arora presented his ballistic mobility model and the channel quasi-pinchoff model, which gave us a new insight into the physics of carrier transport. There were about 40 attendees and afterwards, Prof. Arora had a discussion with our members and students to share his research experience.

An upcoming international event to be held in Beijing is the IEEE 9th International Conference on Solid-State and Integrated Circuit Technology (ICSICT'08). The conference will be held October 20-23, 2008 and hosted by Peking University, IEEE Beijing Section, and the Chinese Institute of Electronics. The Conference is one of the biggest and the most important conferences on integrated circuits and microelectronics in Asia. The ED PKU Student Chapter is participating in this important event by providing student helpers and assistance in organizing various aspects. More information of the conference can be found at <http://www.ime.pku.edu.cn/icsict/> and <http://www.cie-china.org>.



Prof. Arora presenting his talk at Peking University, Beijing, China

ED Shanghai

- by Yu-Long Jiang

The ED Shanghai Chapter was involved in organizing the 8th International Workshop on Junction Technology (IWJT-2008), May 15-16, 2008. IWJT is an important annual event for researchers in the area of junction technology. The first three workshops were held in Japan and then held alternately in China and Japan since 2004. IWJT-2008 was sponsored by the Chinese Institute of Electronics and the Japan Society of Applied Physics (Silicon Technology Division), technically co-sponsored by the IEEE Electron Devices Society, the IEEE ED Shanghai and Japan Chapters. It was also supported by the School of Microelectronics at Fudan University, the Natural Science Foundation of China and Imago Scientific Instruments.

IWJT-2008 consists of one plenary, six parallel, and one poster sessions and a total of 50 papers, including 37 oral and 13 poster papers, were accepted for presentation. Over 80 participants from 10 countries and regions attended the workshop. Prof. Hiroshi Iwai of Tokyo Institute of Technology delivered a keynote speech entitled "CMOS Technology after Reaching the Scale Limit." Dr. Hsing-Huang Tseng of SEMATECH gave a keynote speech on "The Chal-

lenges and Progress of USJ Formation & Process Integration for 32nm Technology and Beyond," and Prof. Ru Huang of Peking University presented a keynote speech on "New Device Architectures for Nano-CMOS Technology: Walking to End of the Roadmap and the Impact on RF/Analog Applications." In addition, 18 invited talks were presented by prominent scientists in the parallel sessions. After the one and half day technical program, a tour to Fudan University was arranged.

IWJT-2008 has provided an excellent opportunity for Chinese scientists and engineers on junction technology to keep in touch with the world's pioneering scientists. Meanwhile, it has served as a platform for overseas researchers to have a better understanding on the rapid progress of microelectronics research and industry in Mainland China.

ED Tainan

-by Wen-Kuan Yeh

The ED Tainan Chapter held one DL talk in Taiwan, May 5-7, 2008. Prof. Jiann-shiun Yuan gave three talks at National Cheng Kung University, National University of Kaohsiung and National Sun Yat-sen University. The first talk on "MOS Gate Oxide Breakdown Effect on RF Circuits,"



From right to left: Prof. Y. K. Fang, Prof. Wen-Kuan Yeh (vice-chair of ED Tainan Chapter), Prof. Jiann-shiun Yuan (DL speaker), Prof. T.-K. Chiang (Treasurer of ED Tainan Chapter) and some of the attendees

focused on the stressed induced CMOS circuit degradation. The other two talks, "CMOS Device and Circuit Reliability," focused on the inspection of RF circuit performance caused by CMOS oxide degradation. About 50 students and several professors from local universities attended.

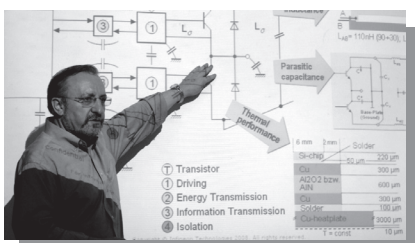
ED Taipei

- by Steve Chung

The ED Taipei Chapter held two DL talks in the 2nd quarter of 2008. On May 2, Prof. Leo Lorenz of Infineon China gave a DL talk on "Power Semiconductor: An Enabling Technology for Energy Efficiency and Embedded Power Integration." The talk covered various aspects of power MOSFETs, IGBT and SiC based device and IC technologies for high power applications. Around 50 graduate students of local universities and many engineers from the Science Park attended. Another talk was held on June 11, 2008. Prof. Milton Feng of the University of Illinois at Urbana-Champaign was invited to give a lecture entitled "Transistor Laser: An innovative three-terminal laser." In the talk, he addressed the invention of the 3-terminal laser, its recent progress and future prospects. Prof. Feng predicted that the 3-terminal laser will serve an important role in future OEIC applications. The talk was attended by 40 participants, including students and professors from local universities.



Some of the attendees from IWJT-2008



Dr. Leo Lorenzo was presenting the power integration technology during the DL talk



Prof. Milton Feng (left) photos with Steve Chung (Chapter Chair) during the DL talk held in Taipei Chapter

The Taipei Chapter would like to take this opportunity to announce that a workshop entitled "Power Semiconductor Devices and Design Criteria", was held July 7-10 and 14-15, at National Tsing-Hua University (NTHU). The workshop was hosted by the Center for Advanced Power Technologies of NTHU and conducted by Dr. Leo Lorenzo from Infineon Technologies China Co. Ltd. and also served as the Chapter membership promotion activity. Twenty graduate students were solicited to join IEEE EDS as a student member, with the benefit of registration fee waiver for this workshop.

ED Xian

-- by Yimen Zhang

Prof. Juin J. Liou visited the Xian Chapter, May 21-25, 2008, and delivered an EDS Distinguished Lecture entitled "On-Chip Electrostatic Discharge (ESD) Protection for Microchips." The DL talk was attended by more than 50 local professionals and students. This excellent lecture covered various aspects of ESD, especially latest research results of ESD



From left to right: Prof. Yiqi Zhuang (Dean, School of Microelectronics), Prof. Yue Hao, Prof. Juin J. Liou, Prof. Yimen Zhang (Chapter Chair) and Prof. Yuming Zhang (Vice Dean, School of Microelectronics)

design in low voltage and high voltage applications. Before the talk, Prof. Liou met some EDS members of the chapter, professors of Xidian University, and leaders from the National Base of Integrated Circuit Design in Xian. Several issues, such as organization of ED activities, establishment of ESD Lab, and collaborations in research, were discussed in the meeting. He also visited the laboratories of the Microelectronics School in the new campus of Xidian University, and met with Prof. Yue Hao, Vice President of Xidian University.

~ Hei Wong, Editor

ED Calcutta

- by C.K. Sarkar

The EDS Chapter of the IEEE Cal-

cutta Section is a relatively new chapter organizing various technical seminars and co-sponsoring several conferences. In 2007, the chapter organized a mini-colloquium at Bhubaneswara, jointly with the ED North Jersey Chapter and the IEEE Calcutta Section. Five DL speakers participated.

After this success the chapter organized another mini-colloquium (WIMNACT-14) March 6-8, 2008, with the theme Nano Electronics. The ED Chapters of Japan and Bhubaneswara, with the IEEE Calcutta Section, also supported the event. The five DL speakers were Professor Iwai, Professor Oda, and Professor Shiriashi from Japan, Professor Deleonibus Simon from France, and Professor Durga Misra from USA. The event was followed by invited talks from different parts of the country. The faculty members and students of the host institute, Sikkim Manipal Institute of Technology, Majitar, Sikkim, also participated in the WIMNACT and presented their work. An effort has been taken to start a new EDS Chapter under the IEEE Calcutta Section. This event was a successful exercise to communicate the message of IEEE and EDS among students and faculty members.



WIMNACT-14 at Sikkim Manipal Institute of Technology, India, March 6-8, 2008

ED Nepal

- by Bhadra Pokharel

Nepal is a Himalayan country, where approximately 37% of the people are literate. A large number of government as well as private educational institutions have been mushrooming within this decade. Research in higher education is still lagging behind due to the lack of a proper economic, industrial and research oriented environment. The majority of educated people are involved in administrative and lower level teaching jobs. In technological fields, a small group of scientists, engineers and doctors are eager to be involved in their respective research fields. We hope an esteemed organization like IEEE can be a bridge to provide research environments for them.

Since the middle of 2007, we have been involving the IEEE community directly and indirectly, through the initiation of the Calcutta Chapter Chair, Prof. C. K. Sarkar. Finally, the Upper Pradesh (UP) India Section Committee approved the formation of the ED Nepal Chapter on March 29, 2008. The Nepal Chapter has only 12 members. Many student physicists and engineers have keen interest

to join the IEEE EDS. In the near future we will extend the committee. We feel proud to be part of the IEEE community.

The chapter also participated in the Grand Science and Technology Exhibition in June 2008, which was jointly organized by the GoldenGate Education Network Nepal, Science and Development Nepal and the Nepal Physical Society. We have decided to organize an international conference on "Frontiers in Physics" on June 1-4, 2009, jointly with the Nepal Physical Society and Central Department of Physics. We also plan to organize a mini-colloquia in Kathmandu, Nepal, along with the Calcutta Chapter just after the conference in June 2009.

REL/CPMT/ED Singapore

- by Alastair Trigg

As I write, final preparations are underway for the International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA), held at the Grand Copthorne Hotel in Singapore from July 7-11. Proceedings and programs have been printed, banners and signs constructed, menus have been prepared and the hard

work of many organizing committee members will come to fruition next week. By the time you read this, it will be all over.

Over 50 papers will have been presented together with about 20 poster presentations. Professor Dimitri Antoniadis from MIT and Dr. Raj Master from AMD will have given their keynote papers. We will know who won the best paper and best poster awards. In my next contribution I will tell you all about IPFA 2008 and of course you can find out more on the website: <http://www.ieee.org/ipfa>

Our other flagship conference, EPTC 2008, will be held in Singapore from December 9-12, 2008. Over 250 abstracts were submitted by the deadline for abstract submission. There will be keynote speeches by well-known experts, Dr. G.Q. (Kouchi) Zhang, from NXP, Prof. Michael Pecht from the University of Maryland, and Prof. CP Wong from Georgia Tech. This will be the 10th Anniversary of EPTC, so there will be special celebrations, social events and networking activities. Full details of EPTC can be found at the website: <http://www.eptc-ieee.net>.

~ Xing Zhou, Editor

EDS MEETINGS CALENDAR

(AS OF SEPTEMBER 5, 2008)

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

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

October 12 - 15, 2008, T **IEEE International Conference on Computer Design**, Location: Resort at Squaw Creek, Lake Tahoe, CA, USA, Contact: Kevin Rudd, E-Mail: Kevin.w.rudd@intel.com, Deadline: 5/9/08, www: www.iccd.et.tudelft.nl

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

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

October 12 - 15, 2008, * **IEEE Compound Semiconductor IC Symposium**, Location: Monterey Portola Plaza, Monterey, CA, USA, Contact: Mohammad Madihian, E-Mail: madih@mve.biglobe.ne.jp, Deadline: 5/12/08, www: www.csics.org

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

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

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

October 13 - 15, 2008, @ **IEEE Bipolar/BiCMOS Circuits and Technology Meeting**, Location: Monterey Portola Plaza, Monterey, CA, USA, Contact: Janice Jopke, E-Mail: ccsevents@comcast.net, Deadline: 3/17/08, www: www.ieee-bctm.org

October 20 - 23, 2008, T **International Conference on Solid-State & Integrated Circuits Technology**, Location: Beijing Jingyan Hotel, Beijing, China, Contact: Yang-Yuan Wang, E-Mail: yyw@ime.pku.edu.cn, Deadline: 5/31/08, www: www.ime.pku.edu.cn/icsit

October 20 - 22, 2008, T **IEEE Nanotechnology Materials and Device Conference**, Location: Kyoto University, Kyoto, Japan, Contact: Takao Somiya, E-Mail: secretary@ieee-nmdc2008.org, Deadline: 6/1/08, www: www.ieee-nmdc2008.org

October 26 - 29, 2008, T **IEEE International Conference on Sensors**, Location: Grand Hotel Tiziano e dei Congressi, Lecce, Italy, Contact: Roma

Multiservizi S.r.l., E-Mail: info@romamultiservizi.com, Deadline: 4/7/08, www: www.ieee-sensors2008.org

October 27 - 30, 2008, T **International Microprocesses and Nanotechnology Conference**, Location: JAL Resort Sea Hawk Hotel, Fukuoka, Japan, Contact: Hiroaki Masuko, E-Mail: secretariat@imnc.jp, Deadline: 6/30/08, www: www.imnc.jp

October 27 - 29, 2008, @ **IEEE International Symposium on Semiconductor Manufacturing**, Location: Hyatt Regency Tokyo, Tokyo, Japan, Contact: Nobuhiro Otsuka, E-Mail: issm_2008@semiconportal.com, Deadline: 6/2/08, www: <https://www.semiconportal.com/issm/>

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

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

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

November 11 - 14, 2008, T **Non-Volatile Memory Technology Symposium**, Location: Asilomar Conference Grounds, Pacific Grove, CA, USA, Contact: Kristy Campbell, E-Mail: krisccampbell@boisestate.edu, Deadline: 6/2/08, www: www.nvmts.org

November 12 - 14, 2008, 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: iceee@cinvestav.mx, Deadline: 6/16/08, www: <http://cce.cinvestav.mx>

November 18 - 21, 2008, T **TENCON**, Location: University of Hyderabad, Hyderabad, India, Contact: M.B. Srinivas, E-Mail: srinivas@mail.iit.ac.in, Dead-

line: 5/15/08, www: www.tencon2008.org

November 20 - 21, 2008, @ **International Workshop on Next-Generation Electronics**, Location: Kun-Sun University, Tainan, Taiwan, Contact: Juin Liou, E-Mail: liou@ucf.edu, Deadline: 9/30/08, www: <http://www.ele.ksu.edu.tw/jllin/www/IWNE2008/index.htm>

November 24 - 25, 2008, T **International SoC Design Conference**, Location: Bexco Conference Center, Busan, Korea, Deadline: 8/17/08, www: <http://www.isocc.org/>

November 25 - 27, 2008, T **IEEE International Conference on Semiconductor Electronic**, Location: Persaa Johor Intl. Convention Center, Johor Bahru, Malaysia, Contact: Sahbudin Shaari, E-Mail: sahbudin@vlsi.eng.ukm.my, Deadline: Not Available, www: www.eng.ukm.my/icse2008

December 8 - 10, 2008, T **International Conference on Field-Programmable Technology**, Location: Grand Formosa Regent, Taipei, Taiwan, Contact: Wai-Kei Mak, E-Mail: wkmak@cs.nthu.edu.tw, Deadline: 6/9/08, www: <http://www.icfpt.org>

December 8 - 10, 2008, T **IEEE Conference on Electron Devices and Solid State Circuits**, Location: Renaissance Kowloon Hotel, Hong Kong, China, Contact: K.P. Pun, E-Mail: kppun@ee.cuhk.edu.hk, Deadline: 8/29/08, www: <http://ee.cuhk.edu.hk/edssc08/>

December 11 - 13, 2008, * **IEEE Semiconductor Interface Specialists Conference**, Location: Catamaran Hotel Resort, San Diego, CA, USA, Contact: Martin Frank, E-Mail: mmfrank@us.ibm.com, Deadline: 7/25/08, www: www.ieeesisc.org

December 14 - 17, 2008, T **International Conference on Microelectronics**, Location: Millennium Hotel, Sharjah, United Arab Emirates, Contact: Mohab Anis, E-Mail: manis@vlsi.uwaterloo.ca, Deadline: 5/1/08, www: <http://www.ieee-icm.com>

December 15 - 17, 2008, * **IEEE International Electron Devices Meeting**, Location: Hilton San Francisco and Towers, San Francisco, CA, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: 6/23/08, www: <http://www.ieee.org/conference/iedm>

January 18 - 22, 2009, T **IEEE Radio and Wireless Symposium**, Location: Omni Hotel, San

Diego, CA, USA, Contact: Afshin Daryoush, E-Mail: rws2009@ece.drexel.edu, Deadline: 7/28/2008, www: <http://rawcon.org/index.html>

February 11 - 13, 2009, T **Spanish Conference on Electron Devices**, Location: Santiago de Compostela, Spain, Contact: Manuel Aldegunde Rodriguez, E-Mail: manuelantonio.aldegunde@usc.es, Deadline: Not Available, www: Not Available

March 16 - 18, 2009, T **IEEE International Symposium on Quality Electronic Design**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Tanay Karnik, E-Mail: tanay.karnik@intel.com, Deadline: 10/10/2008, www: <http://www.isqed.org/>

March 19 - 20, 2009, T **Workshop on Ultimate Integration of Silicon Devices**, Location: Aachen University, Aachen, Germany, Contact: Max Lemme, E-Mail: lemme@amo.de, Deadline: Not Available, www: www.ulisconference.org

March 19 - 20, 2009, T **International Semiconductor Technology Conference**, Location: Shanghai New Int'l Expo Center, Shanghai, China, Contact: April Peng, E-Mail: apeng@semi.org, Deadline: Not Available, www: www.semiconchina.semi.org/cistc

March 27 - 28, 2009, T **IEEE International Siberian Conference on Control and Communication**, Location: Tomsk State University of Control Systems, Tomsk, Russia, Contact: Sergei Lukianov, E-Mail: ieee@main.tusur.ru, Deadline: 12/10/08, www: www.comsoc.org/tomsk

March 30 - April 1, 2009, T **IEEE Sarnoff Symposium on Advances in Wired and Wireless Communications**, Location: Nassau Inn, Princeton, NJ, USA, Contact: Durga Misra, E-Mail: dmisra@njit.edu, Deadline: Not Available, www: http://ewh.ieee.org/r1/princetoncentraljersey/2009_Sarnoff_Symposium/

March 30 - April 2, 2009, @ **International Conference on Microelectronic Test Structures**, Location: Embassy Suites Mandalay Beach Resort, Oxnard, CA, USA, Contact: Wendy Walker, E-Mail: wendyw@widerkehr.com, Deadline: 9/15/08, www: <http://www.see.ed.ac.uk/ICMTS>

April 20 - 21, 2009, T **IEEE Wireless and Microwave Technology Conference**, Location: Marriott Suites Sand Key, Clearwater, FL, USA,

Contact: Xun Gong, E-Mail: xungong@mail.ucf.edu, Deadline: 9/15/08, www: www.wamicon.org

April 26 - 30, 2009, * **IEEE International Reliability Physics Symposium**, Location: Fairmont Queen Elizabeth Hotel, Montreal, Canada, Contact: Ronald Lacoe, E-Mail: ronald.c.lacoe@aero.org, Deadline: Not Available, www: <http://www.irps.org/>

April 27 - 30, 2009, T **International Symposium on VLSI Design, Automation and Test**, Location: Ambassador Hotel, Hsinchu, Taiwan, Contact: Elodie Ho, E-Mail: elodieho@itri.org.tw, Deadline: 10/19/08, www: <http://vlsidat.itri.org.tw/2009/General>

April 27 - 29, 2009, T **International Symposium on VLSI Technology, Systems and Applications**, Location: The Ambassador Hotel, Hsinchu, Taiwan, Contact: Clara Wu, E-Mail: clara@itri.org.tw, Deadline: 12/31/08, www: <http://vlsitsa.itri.org.tw/2009/General>

April 28 - 30, 2009, @ **IEEE International Vacuum Electronics Conference**, Location: Angelicum, Pontifical Univ. of St. Thomas Aquinas, Rome, Italy, Contact: Marinella Aloisio, E-Mail: Marinella.Aloisio@esa.int, Deadline: 12/23/08, www: www.ivec2009.org

May 10 - 12, 2009, * **IEEE/SEMI Advanced Semiconductor Manufacturing Conference**, Location: Pullman Hotel, Berlin, Germany, Contact: Margaret Kindling, E-Mail: mkindling@semi.org, Deadline: 3/31/2009, www: <http://www.semi.org/asmc2009>

May 10 - 14, 2009, @ **IEEE International Conference on Indium Phosphide and Related Materials**, Location: Marriott Newport Beach Hotel & Spa, Newport Beach, CA, USA, Contact: Mary Hendrickx, E-Mail: m.hendrickx@ieee.org, Deadline: Not Available, www: <http://www.i-leos.org>

May 16 - 23, 2009, T **IEEE International Conference on Semiconductor Electronics**, Location: The Westin Bayshore, Vancouver, Canada, Contact: Robert Fickett, E-Mail: Bob.fickett@cpii.com, Deadline: Not Available, www: www.cs.uoregon.edu/events/icse2009

May 18 - 21, 2009, T **International Electrostatic Discharge Workshop**, Location: Stanford Sierra Conference Center, Lake Tahoe, CA, USA,

Contact: Lisa Pimpinella, E-Mail: info@esda.org, Deadline: 11/14/2008, www: Not Available

May 26 - 29, 2009, T **International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication**, Location: Marco Island Marriott Beach Resort, Marco Island, FL, USA, Contact: Elizabeth Dobisz, E-Mail: elizabeth.dobisz@hitachigst.com, Deadline: 1/9/2009, www: <http://www.eipbn.org/>

May 27 - 29, 2009, T **International Workshop on Computational Electronics**, Location: Tsinghua University, Beijing, China, Contact: Zhiping Yu, E-Mail: yuzhip@tsinghua.edu.cn, Deadline: 1/15/09, www: www.iwce.org

June 7 - 12, 2009, * **IEEE Photovoltaic Specialists Conference**, Location: Marriott Convention Center, Philadelphia, PA, USA, Contact: Americo Forestieri, E-Mail: pvsc@wowway.com, Deadline: Not Available, www: www.34pvsc.org

June 14 - 18, 2009, @ **TRANSDUCERS - International Conference on Solid-State Sensors, Actuators and Microsystems**, Location: Adams Mark Hotel, Denver, CO, USA, Contact: Khalil Najafi, E-Mail: najafi@eecs.umich.edu, Deadline: Not Available, www: <http://www.transducers09.org/>

June 25 - 28, 2009, T **International Image Sensor Workshop**, Location: Bergen, Norway, Contact: Eric Fossum, E-Mail: fossum@imagesensors.org, Deadline: Not Available, www: www.imagesensors.org

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: 1/9/2009, www: www.esda.org

October 12 - 14, 2009, @ **IEEE Bipolar/BiCMOS Circuits and Technology Meeting**, Location: TBD, Capri, Italy, Contact: Janice Jopke, E-Mail: ccsevents@comcast.net, Deadline: 3/16/09, www: <http://www.ieee-bctm.org>

December 7 - 9, 2009, * **IEEE International Electron Devices Meeting**, Location: Washington Hilton and Towers, Washington, DC, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: <http://www.ieee.org/conference/iedm>

REPORT ON THE IEEE ED VENEZUELA MINI-COLLOQUIUM

A Mini-Colloquium entitled "Current Topics in Electron Devices" was held on Sunday, April 27, 2008, at the InterContinental Presidente Cancún Resort, Cancún, Quintana Roo, México. This mini-colloquium was organized by Venezuela's EDS Chapter and sponsored by EDS, as a pre-conference event, immediately preceding the Seventh International Caribbean Conference on Devices, Circuits and Systems (ICCDCS 2008).

Adelmo Ortiz-Conde and Francisco J. García Sánchez acted as moderators. The first speaker was Prof. Chih-Tang Sah who disserted on "The Driftless-Windless Electromigration Theory." He was followed by Prof. Juin J. Liou, of the University of Central Florida, who lectured about "Advanced Electrostatic Discharge (ESD) Protection for Digital, Analog, and RF Integrated Circuits." A talk on the general topic of "Post-Breakdown Conduction in MOS Devices:

From Physical Models to Circuit Applications" was presented by Prof. Enrique Miranda of the Universitat Autònoma de Barcelona, Spain. After a lunch break, the afternoon session was started by Dr. Magali Estrada of CINVESTAV-IPN, DF, Mexico, who presented a lecture on "Polymeric Devices: Basic Issues, Fabrication and Applications." The last lecture was "An Overview on Photovoltaic Energy Generation," delivered by Dr. Jacobus Swart, of the Centro de Pesquisa Renato Archer, Campinas, Brazil. There were around forty participants, of which about one third were students from Mexican institutions. The Mini-Colloquium was adjourned in the early evening. Afterwards, the Distinguished Lecturers and the participants gathered at the Resort's socializing facilities to continue informal conversations.

For additional information contact Professor Adelmo Ortiz-Conde at ortizc@ieee.org.



A group of organizers and distinguished lecturers who attended the mini-colloquium held in Cancun, Mexico

*Adelmo A. Ortiz-Conde
ED Venezuela Chapter Chair
Universidad Simon Bolivar
Caracas, Venezuela*